SIEMENS

SIRIUS

Industrial Controls

Fluitronic

Catalog
IC 10

Edition
2017

siemens.com/industrial-controls

Related catalogs

Industrial Controls IC 10 AO
SIRIUS Classic

PDF (E86060-K1010-A191-A5-7600)

Low-Voltage Power Distribution and Electrical Installation Technology LV 10
SENTRON • SIVACON • ALPHA
Protection, Switching, Measuring and Monitoring Devices, Switchboards and Distribution Systems

PDF (E86060-K8280-A101-A4-7600)
PDF/print (E86060-K8280-A101-A3-7600)

Safety Integrated SI 10
Safety Technology for Factory Automation

E86060-K7010-A101-A3-7600

Industrial Communication IK PI
SIMATIC NET

E86060-K6710-A101-B8-7600

SIMATIC ST 70
Products for Totally Integrated Automation

E86060-K4670-A101-B5-7600

SIMOTICS GP, SD, XP, DP Low-Voltage Motors D 81.1
Type series 1LE1, 1MB1 and 1PC1
Frame sizes 71 to 315
Power range 0.18 to 200 kW
E86060-K5581-A111-A8-7600

SITRAIN ITC
Training for Industry

Only available in German
E86060-K6850-A101-C5

Miscellaneous

Products for Automation and Drives CA 01
Interactive Catalog
DVD

E86060-D4001-A510-D7-7600

Industry Mall
Information and Ordering Platform on the Internet:

www.siemens.com/industrymall

Siemens TIA Selection Tool
for the selection, configuration and ordering of TIA products and devices

www.siemens.com/tst

Information and Download Center
Digital versions of the catalogs are available in the Internet

www.siemens.com/sirius/catalogs

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Please send your comments and suggestions for improvement to

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(include the catalog name in the subject field)

Trademarks

Further information about industrial controls:
www.siemens.com/sirius

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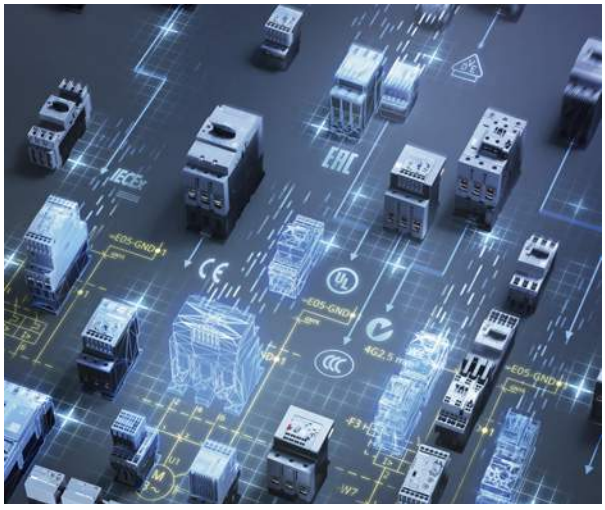
Industrial Controls

SIRIUS



Catalog IC 10 · 2017

Supersedes:
Catalog IC 10 · 2016
Catalog News IC 10 N up to 09/2016

Refer to the Industry Mall for current updates of this catalog:
www.siemens.com/industrymall

The products contained in this catalog can also be found in the Interactive Catalog CA 01.
Article No.: E86060-D4001-A510-D7-7600.

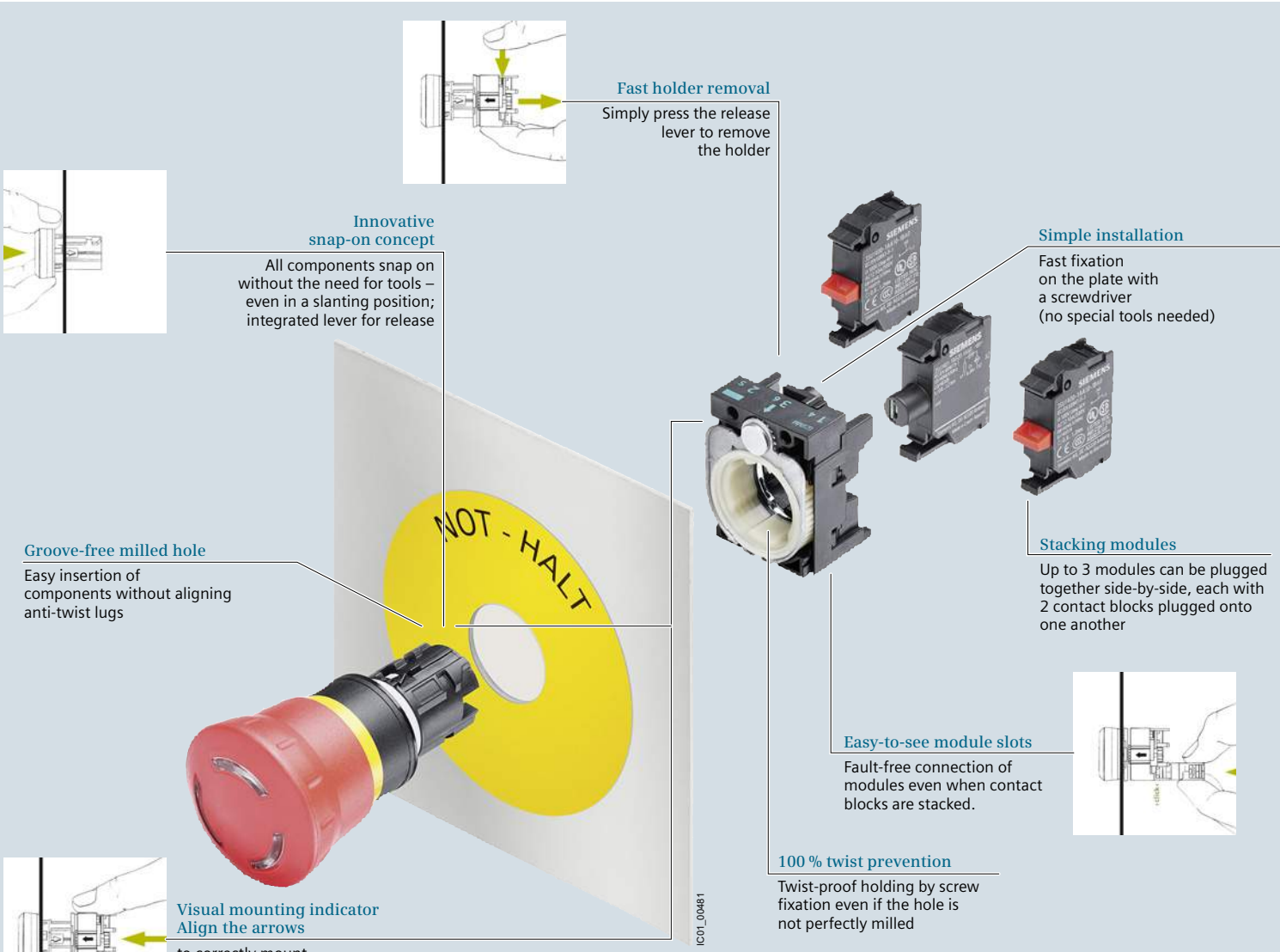
Please contact your local Siemens branch.

Printed on paper from sustainably managed forests and controlled sources.

www.pefc.org

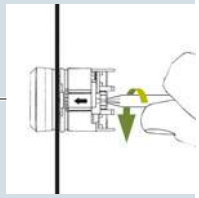
PEFC/04-31-0845

The products and systems described in this catalog are manufactured/distributed under application of a certified quality management system in accordance with EN ISO 9001
(for the Certified Registration No. see www.siemens.com/system-certificates/cp).
The certificate is recognized by all IQNet countries.



SIRIUS ACT – Performance in Action

Powerful machines need powerful controls. SIRIUS ACT offers you a unique portfolio of elegantly designed pushbuttons, indicator lights and switches that are the perfect embodiment of style, intelligence, and physical toughness. Constructed with genuine metal and high-grade plastics, engineered with smart functions and communication capabilities, these new pushbuttons, indicator lights and switches have been extreme element tested to ensure reliability for your most mission critical operations.



HIGHLIGHTS

- Modern design
- Easy to use
- Extremely rugged
- Flexible communication

Product features in detail

- Four design lines
- Solid stainless steel and high-grade plastic
- Modular concept
- NEW:
  ID key-operated switches, illuminated
  EMERGENCY STOP etc.
- Customized inscriptions possible
- Screw terminals, spring-type terminals and soldered connections
- Connection to the controller via
  AS-Interface, IO-Link and PROFINET
- Colors:

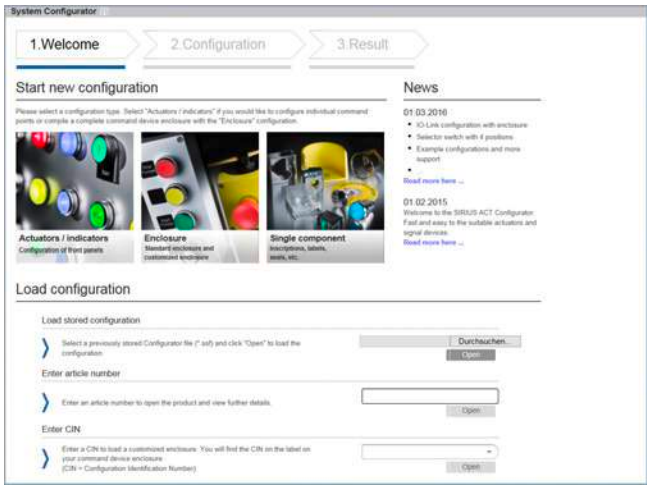
More information, see www.siemens.com/sirius-act
Selection and ordering data, see
"Commanding and Signaling Devices", page 13/1
Industry Mall, see www.siemens.com/product?3SU1

Intuitive, simple selection of products with the new configurator

Performance also means being able to configure your individual pushbuttons and signaling devices quickly and having everything under control at all times. The intuitive SIRIUS ACT configurator makes it as easy as possible for you to choose your products.

- Configurator with drag/drop function
- Storage of customized configuration
- Individual units, complete units and compact units
- Worldwide approvals

Configurator, see www.siemens.com/sirius-act/configurator



SIRIUS 3RV29 infeed system with 3RA2 load feeder and 3RM1 motor starter

Simple
Minimum wiring in the main and control circuits thanks to assembly option

Long service life
Hybrid switching technology uses benefits of relay and semiconductor technology

Compact
Only 22.5 mm wide, regardless of whether direct-on-line or reversing starter function

Economical
Thanks to low device variance due to wide setting range

Safety
Safe switching possible with F-CPU or SIRIUS 3SK safety relays

Electronic starting with hybrid switching technology

Innovative technology for saving energy.

The hybrid switching technology uses low-wear semiconductor technology for switching the motor on and off, and in the operating phase it relies on energy-saving relay technology. This ensures durability, especially with high frequency of operation, and thus significantly reduces maintenance costs and extends the life of the motor starters. In addition, due to the hybrid switching technology, motor starters have lower electromagnetic interference emissions, enabling you to increase your plant availability. Further energy savings are provided by the integrated electronic overload protection. This causes a lower intrinsic power loss than comparable motor feeders with thermal overload protection. In this way, you benefit from reduced heat generation and therefore lower cooling power. And that saves energy.

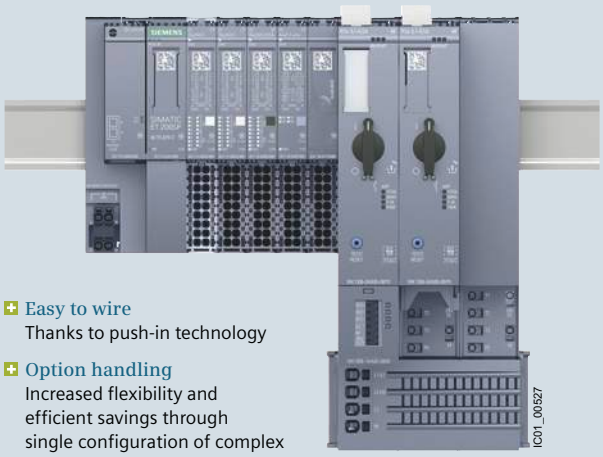
SIRIUS 3RW40 and 3RW44 soft starters

Long service life
Reduced mechanical and electrical load

Compact
Space and cost savings thanks to compact design

Simple
Fast and easy commissioning

Energy saving
Reduced temperature rise in the control cabinet thanks to bypass contacts



Easy to wire
Thanks to push-in technology

Option handling
Increased flexibility and efficient savings through single configuration of complex automation projects

Reduced space requirements
50 % slimmer than other distributed I/O

Hybrid switching technology
Durable and energy saving, since relay contacts are not subject to loading when switched

Power bus
Supply with power only once, then automatic setup with side-by-side mounting of multiple modules

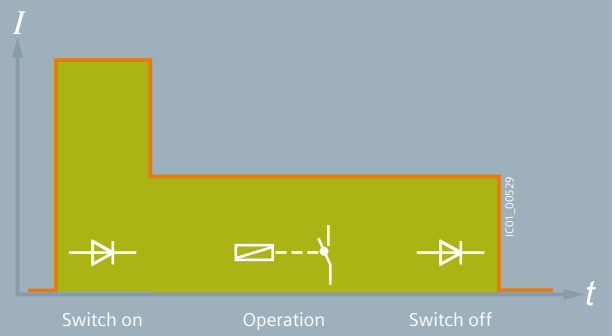
Quick stop and end position disconnection
Load switch off even at high speed – independent of central controller

Quick installation
Hook in, slide into place and engage

Once it is installed and wired, you simply connect the ET 200SP motor starter to the controller in the TIA Portal ready for parameterization.

HIGHLIGHTS

- Use of hybrid switching technology for:
  SIRIUS 3RM1 motor starters
  ET 200SP motor starters
  SIRIUS soft starters
- Additional benefits for SIRIUS 3RM1 motor starters:
  - Maximum safety: Safety function up to SIL 3/ PL e cat. 4
  - Using device connectors safety-related group shutdown with reduced wiring is possible
  - Direct connection to the 3SK safety relay, without additional wiring



Service life

Plant availability

Energy saving

SIRIUS modular system

Simple, efficient and always up-to-date

Building control cabinets should be fast, simple, flexible and space-saving.

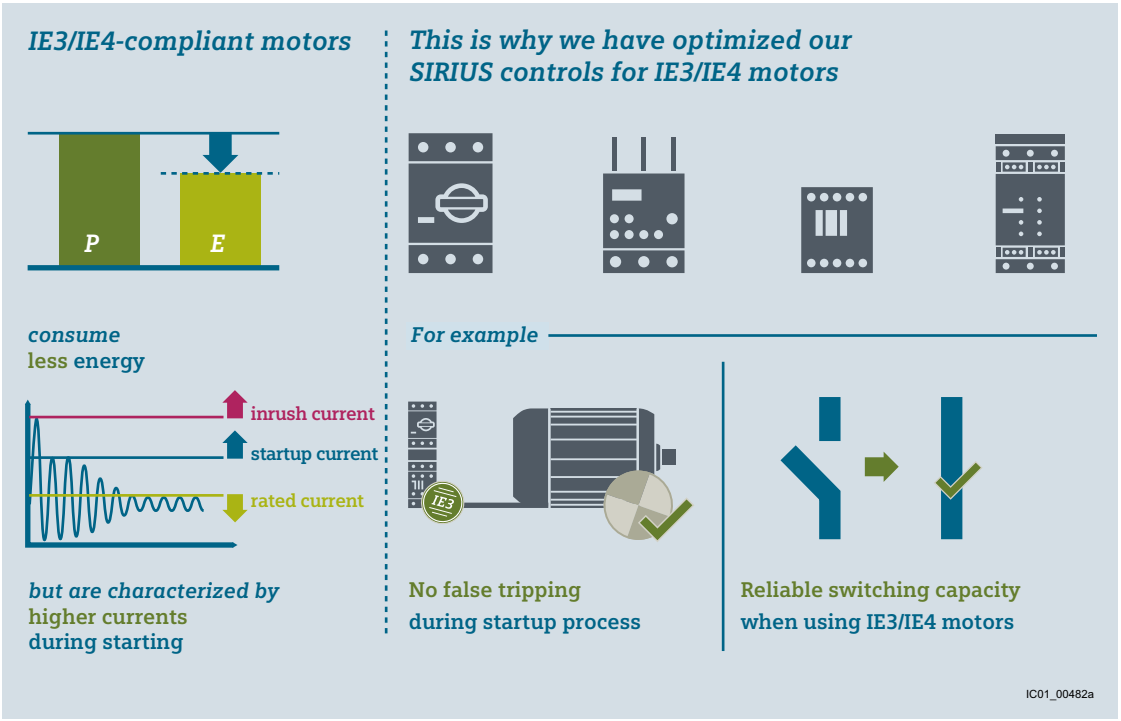
The unique SIRIUS modular system offers everything you need for switching, protecting and starting motors and industrial systems. It is a modular selection of standard components which are optimally coordinated, can be combined with ease and use the same accessories to a large extent.

With its wide range of components, the SIRIUS modular system features the most diverse functions for use in the control cabinet, and offers a host of benefits in assembly and handling, in application monitoring, and also in controller interfacing, or when planning and configuring.

Thanks to the latest innovations to the modular system in sizes S00, S0, S2 and S3 up to 100 A/115 A, today's SIRIUS modular system shows even more functional diversity and first-time highlights.

HIGHLIGHTS

- Feeder assemblies that can be plugged in completely without tools thanks to the consistent use of spring-type connections in sizes S00 and S0
- Two- and three-phase 3RR2 monitoring relays for current monitoring for direct mounting onto contactors
- 3RA27 and 3RA28 function modules feature snap-on connection to contactors enabling the easiest possible assembly of direct-on-line starters, reversing starters, and wye-delta starters and connection to the controller using less wiring via AS-Interface or IO-Link
- 3RB24 overload relay with communication capability, current value transmission, and control of the contactors via IO-Link
- One highlight of the SIRIUS devices is their IE3/IE4 suitability, so that they are optimally equipped for conversion to the new IE3/IE4 generation of motors



We are IE3/IE4 ready

SIRIUS controls –

for reliable switching and protection of IE3/IE4 motors

IE3/IE4 motors have been mandatory for mains-fed operation in Europe since January 1, 2015. The initial stage applies to the 7.5 to 375 kW output range, while in the second stage starting in 2017, the scope will be extended to include outputs down to 0.75 kW.

From an electrical viewpoint, IE3/IE4 motors behave differently than less energy-efficient models – they are characterized by higher startup currents and modified dynamic behavior. This entails certain challenges for our controls.

The latest generation of SIRIUS controls has been fully optimized for IE3/IE4. They avoid false tripping due to higher inrush currents of IE3/IE4 motors, offer optimized setting ranges for rated currents, and ensure reliable switching and protection in any situation – the best requirements for use of modern IE3/IE4 motors.

HIGHLIGHTS

- Comprehensive range of IE3/IE4 motors for every application
- Siemens offers expertise through extensive analysis of IE3/IE4 motors
- Optimized SIRIUS controls for use with IE3/IE4 motors

More information:
IE3/IE4 ready portal, see www.siemens.com/IE3ready
Configuration Manual for Controls with IE3/IE4 motors see https://support.industry.siemens.com/cs/ww/en/view/94770820

All IE3/IE4 ready products are marked in the catalog with the symbol ***IE3/IE4* ready**

Efficiency in panel building

Planning and implementing control panels quickly and reliably.

General trends such as digitalization, shorter development cycles and lack of space also mean new challenges for panel builders and designers.
Our portfolio for the control panel comprises not only products and systems, but in particular also support and solution know-how to enable you to significantly minimize the costs and work involved in designing and implementing control panels. This leaves you more time to deal with what's really important: your business!

Our tools and data help you to save time round the clock in every process phase and thus enable you to structure your processes even more efficiently.

An abundance of standards, directives and technologies call for an increasingly complex knowledge of panel building. As your panel building partner of many years' standing, we are familiar with the challenges of your everyday working life. To give you the support you need, we provide practical information in implementing your applications and requirements.

HIGHLIGHTS

- From the system cabinet to the drive train – everything you need for switching, protecting, starting and controlling from a single source
- Practical engineering support
- Useful data, tools and support in every phase of the engineering process
- Wide-ranging know-how in the application of international standards and directives

More information
See the Panel Building Market Portal at:
www.siemens.com/panelbuilding

SIRIUS in the World Wide Web

The most important online services at a glance.

Industrial controls

Home page
www.siemens.com/sirius

Information material available for downloading

Information and Download Center
www.siemens.com/sirius/catalogs

Industry Mall

Catalog and Ordering System
www.siemens.com/industrymall

Interactive Catalog on DVD

Product Catalog CA 01
www.siemens.com/automation/ca01

Configuring products and systems

Configurators
www.siemens.com/sirius/configurators

Mobile Media

Various apps available from Google Play or in the App Store
www.siemens.com/socialmedia

Product highlights

■ **SIRIUS 3RT2.4 contactors, 3-pole**
Size S3, 37 up to 55 kW

■ Article No.: 3RT204., 3RT244.

■ from page 3/56 onwards, page 4/11

■ **SIRIUS 3RA23 reversing contactor assemblies**
Size S3, 37 up to 55 kW

■ Article No.: 3RA234.-8X.30-1...

■ page 3/165

■ **SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting**
Size S3, 55 up to 90 kW

■ Article No.: 3RA244.-8X.32-1...

■ page 3/182

■ **SIRIUS 3RV2 motor starter protectors/ circuit breakers**
Size S3

■ Article No.: 3RV2.4.-4..10

■ from page 7/27

■ **SIRIUS 3RU2 thermal overload relays**
Size S3

■ Article No.: 3RU2146-4...

■ from page 7/85

■ **SIRIUS 3RB3 electronic overload relays**
Size S3

■ Article No.: 3RB3046-...., 3RB3143-4...

■ from page 7/97

■ **Contactors for railway applications SIRIUS 3RT.0 contactors, SIRIUS 3RH2 contactor relays**
Sizes S00, S3 to S12, 5.5 up to 250 kW

■ Article No.: 3RT201.-2X.4.-0LA2, 3RT204.-3X.40-0LA2, 3RT10..-2X.46-0LA2, 3RH2122-2X.40-0LA2

■ from page 4/65

SIRIUS ACT pushbuttons and indicator lights
Modular system of commanding and signaling devices

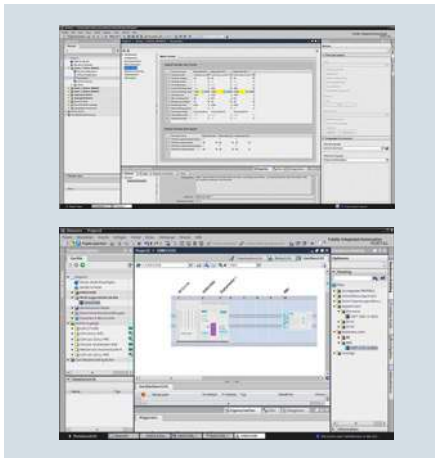
Article No.: 3SU1
from page 13/5

ET 200SP motor starters

Article No.: 3RK1308
from page 8/95

SIRIUS 3RM1 motor starters

Article No.: 3RM11, 3RM13
from page 8/86



SIRIUS Soft Starter ES (TIA Portal), SIMOCODE ES (TIA Portal)

Article No.: 3ZS1320-.C.10-0Y.5, 3ZS1322-.CC12-0Y.5
from pages 14/6, 14/20

SC22.5 analog SlimLine Compact modules
AS-Interface series of modules for the control cabinet

Article No.: 3RK1.07-...00-2AA2
page 2/72

SIRIUS 3RN2 thermistor motor protection
for PTC sensors

Article No.: 3RN20..-...30
from page 10/157

SIRIUS 3SK2 safety relays

Article No.: 3SK2112-.AA10, 3SK2122-.AA10, 3SK2941-2AA10
page 11/19

Any more questions?

Our experts are there to help you by telephone or e-mail with competent technical advice

Competent and fast technical advice regarding:

- Product selection
- Conversion from old to new
- Competitor conversion
- Special versions
- Particular requirements
- Commissioning
- Operation

Phone: +49 (911) 895-59 00
E-mail: technical-assistance@siemens.com

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Technical Assistance

One click – and you have all the information you need,

both before and after delivery.

- Industry Online Support – get fast and up-to-date information online
  https://support.industry.siemens.com

  In Industry Online Support you will find FAQs, manuals, certificates, applications & tools, and much more

- Support Request – the fast track to the experts
  https://support.industry.siemens.com/My/ww/en/requests

  Using the Support Request form in Industry Online Support you can send your query directly to Technical Assistance.

- Conversion tool – the easy and efficient way to find successor products
  www.siemens.com/sirius/conversion-tool

Introduction

Overview

With Planning Efficiency, Siemens Industry has provided answers to typical questions that often come up in electrical planning:

- What is the right product for my application?
- Where can I find product data?
- How can I design processes in a more efficient and time-saving way?

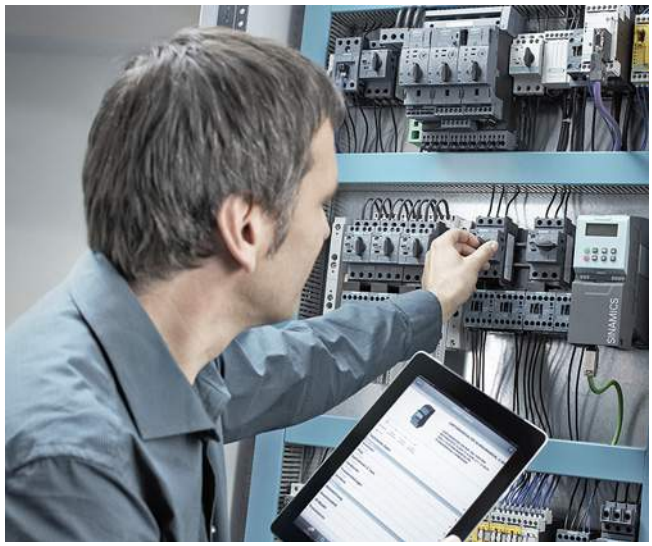
Planning Efficiency brings together the whole of Siemens Industry's electronic support. At each stage of the project, online functions make the everyday life of the planner easier through greater efficiency. At the same time, Planning Efficiency focuses on aspects such as optimization in the configuring of control cabinets.

In this early phase in electrical planning in particular, savings of up to 80 % can be made in time and costs.

IC01_00205a

In order to supply planners with everything they need and make modern electrical planning easier when configuring control cabinets, the electronic support provided by Planning Efficiency focuses on four advantages:

- Get to the right product faster with intuitive product selection
- Time savings of up to 80 % with universal product data for your CAE and CAD system
- User-friendly compilation of project-specific documentation
- Comprehensive support – anywhere, anytime



Process phases

In each process phase, Siemens Industry provides comprehensive and online functions free of charge. This enables you to access all the information and product data you need worldwide and around the clock.

Concept & selection → Mechanical design → Electrical design → Plant documentation → Ordering → Installation / service / commissioning / diagnostics

Configurators for products and systems

With just a few clicks, the respective configurator will guide you to the right product or system for your requirements. Simply enter the relevant parameters and select your individual solution.

The configurator provides suitable 3D models and dimensional drawings for the control cabinet layout diagram.

CAx Download Manager

With the CAx Download Manager, all the CAx data types required for use in all commonly used CAE and CAD systems are provided for your desired products in just four selection steps, free of charge and with daily updates. Your individual download package is then available to you for further use as a zip file. This will save up to 80 % of your time, because there is no need for manual data collection thanks to the universal manufacturer data for all commonly used CAE and CAD systems.

My Documentation Manager

We have developed a configurator for manuals to support you in creating plant documentation. With My Documentation Manager, the standard-compliant plant documentation can be compiled individually with just a few clicks. Simply select the desired chapters from the existing manuals of the installed Siemens products.

EPLAN Electric P8 Macro – the benefits for EPLAN users

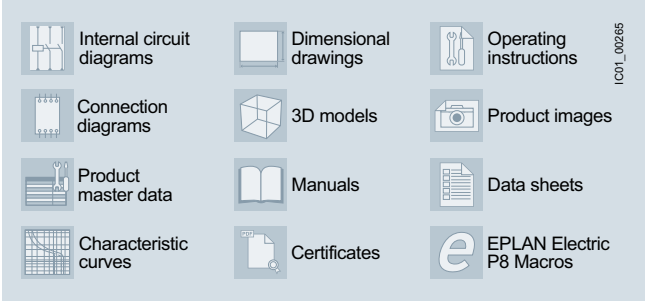
With EPLAN Electric P8 in .edz exchange format (EPLAN Data Archived Zipped), the overall time required for data integration can be reduced even further. With just a few clicks, the contained data types can be imported for any number of article numbers, and they remain linked. In this way, the installed Siemens products can be represented across different circuit diagram pages quickly and easily.

At a glance

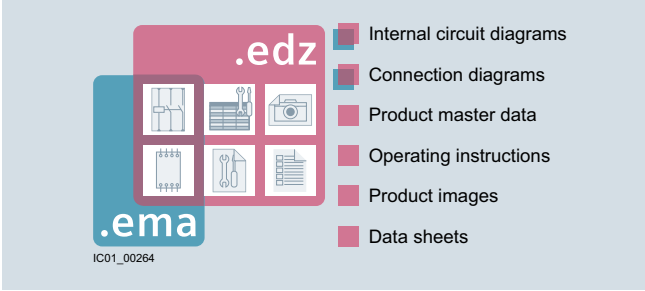
Without Planning Efficiency a lot of time used to be wasted in manual data transmission. Now you can concentrate on the essentials again. All the information and product data you need are provided by Siemens Industry and are easily accessible.

This makes configuring control cabinets more efficient and makes your everyday work easier.

For more information, see www.siemens.com/planning-efficiency.



The CAx Download Manager makes 11 universal data types and the EPLAN Electric P8 Macro available



The EPLAN Electric P8 Macro in .edz exchange format offers a lot more than the .ema exchange format

Find out more about Planning Efficiency in demonstrative videos

From old to new: The conversion tool

Every automation system becomes obsolete at some time. Replacing installed products used to involve significant time and costs. But now, with the conversion tool, you'll find the right product more quickly – this allows you to conveniently switch to SIRIUS Innovations:

- A user-friendly interface enables intuitive searches
- Simply enter the article number of the current device or descriptive text (e.g. *contactor*)
- The search result provides you with the article number of the desired device, including current data and information for using the new product
- Order conveniently through the Industry Mall

For more information, see www.siemens.com/sirius/conversion-tool.

SIRIUS configurators

Overview

For the SIRIUS product range, we offer a variety of configurators. These facilitate the selection of the right products and systems for your application.

Simply choose the desired characteristics and after a few clicks, the optimal solution will be presented to you.

The products can then be ordered conveniently through the Industry Mall.

For more information, see www.siemens.com/sirius/configurators.

Detection/Signaling

SIRIUS ACT pushbuttons and indicator lights

- Individual control elements or complete enclosures can be assembled just the way you want them
- All combinations of buttons, enclosures and switching elements can be selected individually

For more information on the SIRIUS ACT Configurator, see www.siemens.com/sirius-act/configurator.

SIRIUS 3SE5/3SF position switches

- Selection of basic switch, actuator head, as well as a matching actuator can be performed in just a few clicks.
- Individual elements can be mixed and matched and assembled to create your individual versions

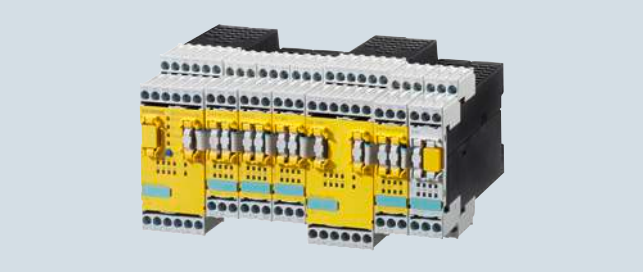
Evaluating

SIRIUS 3SK safety relays

- Fast and user-friendly creation of safety-related applications (e.g. EMERGENCY STOP and protective door monitoring)
- Simply enter the number of sensors or outputs and select suitable accessories.
- Once the configuration is complete, you are presented with the article numbers along with technical data and 3D models corresponding to the products

3RK3 Modular Safety System

- Freely configurable modular safety relays
- Intuitive selection of components
- Simple entry of the necessary inputs and outputs as well as the required communication options
- Appropriate accessories such as diagnostics displays or PC cables can be optionally added



Switching/Protecting/Starting

SIRIUS Innovations system configurator

- The easy way to find the right combination of motor starter protectors/circuit breakers, contactors and matching accessories
- Input of motor data and your desired features
- Once configuration is complete, you are presented with all the necessary article numbers along with technical data and 3D models corresponding to the products
- It also allows for more complex designs such as 3-phase busbar systems, along with complete infeed systems

SIRIUS 3RM1 motor starter

- Create individual motor starters or a complex motor starter group
- Individual selection options, such as direct or reversing starting, spring-type or screw terminals, as well as motor current and control voltage
- Graphic representation of the design during configuration
- Automatic calculation of the matching motor starter protector/circuit breaker (for group configuration)

SIRIUS 3RA6 compact starter and infeed system for 3RA6

- Simple usage – from individual compact starters or also with corresponding infeed system and AS-i connection
- In the final configuration, you will be presented with additional technical information such as CAD data and product data sheets as well as characteristic curves, operating instructions, manuals etc.

SIRIUS 3RW soft starter

- Easy and quick selection option of matching soft starters
- Note:
  For the proper dimensioning of the soft starter, you should use the Win-Soft starter tool. The link to the software is provided in the configurator.

SIRIUS 3RF solid-state switching devices

- Simple selection of individual solid-state switching devices by means of technical characteristics (e.g. zero-point switching, spring-type terminal and rated current)
- Once configuration is complete, you receive the article numbers corresponding to the products

Overview

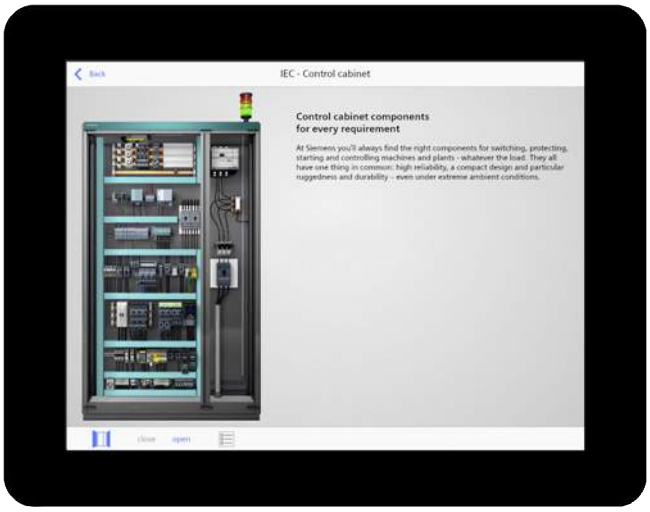
Apps for SIRIUS Planning Efficiency

Interactive control cabinet

The interactive control cabinet shows you a selected product overview, and provides you with useful information and technical data on the relevant components, thus allowing you to plan your control cabinet in advance, efficiently and easily. This saves precious time during project implementation.

Discover the interactive control cabinet[1] at www.siemens.com/sirius/cabinet.

Interactive control cabinet



[1] Now also available as an iPad app in the Apple App Store.

Online Support app

The Online Support app allows you to access over 300 000 documents on all Siemens Industry products, anywhere and any time. Whether you need help with implementing your project or with troubleshooting, or want to expand your plant or plan a new one, you now have around-the-clock access to FAQs, manuals, certificates, characteristic curves, sample applications and tools, product news and more.

The app is available free of charge from the Apple App Store and on Google Play (Android Market) using the search string: "Siemens Industry Online Support".

For more information, see www.siemens.com/industry/onlinesupportapp.

Industry Online Support app

SIRIUS Innovations DVD – also available as a web app

Thanks to the modular design of SIRIUS Innovations, our products are particularly easy to plan for the control cabinet, install and monitor. All the advantages of SIRIUS Innovations are available offline in 9 languages with 3D animations, films and screen recordings of our planning and configuring tools. Ask your sales contact person about the SIRIUS Innovations DVD.

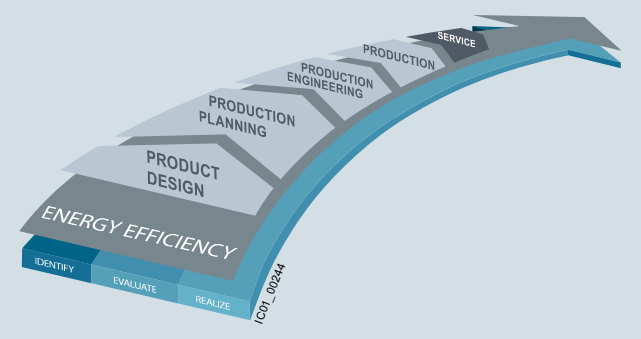
The SIRIUS Innovations DVD is now also available as a web app[1] (de/en): www.siemens.com/sirius/dvd.

SIRIUS Innovations web app

[1] Optimized for use with a resolution of 1024 x 768 on iPads and tablet PCs.

Overview

Energy management in industry



Overview of the energy management process

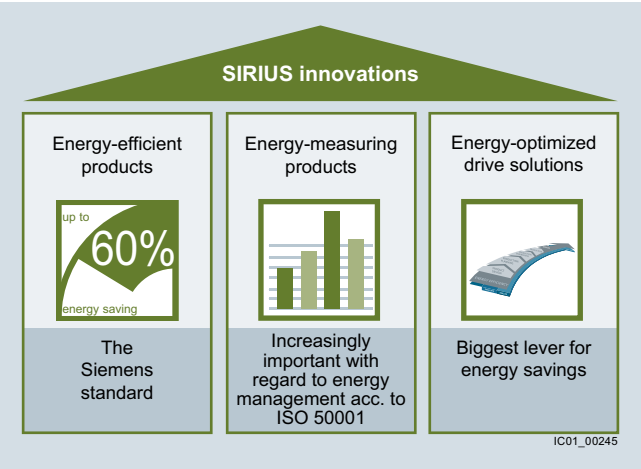
Whether you are a plant operator, planner or machine manufacturer: Energy-efficient production is a challenge and an opportunity in equal measure.

Energy-efficient production as a success factor

In order to harness energy potential, with our vast portfolio, we always maintain a clear view of the overall product development and production process. Because maximum energy efficiency in production can only be achieved through perfect interaction of all components.

That is why it is important to first create an awareness for existing energy-saving potential, recognize (identify) and assess (evaluate) opportunities for optimization through precise analysis. Finally, appropriate measures must be implemented (realized).

With our full-range portfolio of energy-efficient drive solutions, automation and services, you too will reach maximum energy efficiency, higher productivity and lasting competitiveness in your company.



Three columns of energy efficiency with products from the SIRIUS modular system

Energy-efficient products – SIRIUS reduces power loss

SIRIUS controls (3RM motor starter, 3RR2 monitoring relay, 3RB3 overload relay, 3RT2 contactor, 3RW soft starter, 3RV2 motor starter protector/circuit breaker and 3RA6 compact starter) are characterized by extremely low intrinsic power loss. This not only lowers energy costs, but also reduces the amount of waste heat in the control cabinet. This achieves higher packing density in the control cabinet and reduces the required cooling capacity in the control cabinet.

Energy-measuring products

Energy management can be instrumental in increasing plant productivity to bring about a significant improvement to the competitive ability of a company – in all industries.

Energy data acquisition represents an important component of the overall energy data management process here. Through transparency right down to the loads, it is possible to identify and utilize potential energy savings.

With communication-capable SIRIUS switching devices (SIMOCODE pro V motor management and control device, 3RR24 monitoring relay, 3RW44 soft starter) you can acquire energy data from the drive train without any additional effort.

SIRIUS controls help you make energy flows visible.

Best drive solutions in terms of energy

In order to design processes for optimal energy efficiency, it is not enough to simply measure the energy flow and deploy energy-efficient products. The greatest lever for saving energy can be derived from closely examining the application.

For sample applications on the Internet, see www.siemens.com/sirius/energysaving.

SinaSave energy efficiency tool

Amortization calculator for energy-efficient drive systems

The SinaSave energy efficiency tool determines energy saving potential and amortization times based on your individual conditions of use and therefore offers practical assistance in making decisions about investments in energy-efficient technologies.

From SinaSave version 6.0 and higher, the drive systems to be compared and the relevant drive component parameters are displayed graphically. An additional expansion are the numerous comparison possibilities for different control types and comprehensive product combinations for drive solutions for pump and fan applications.

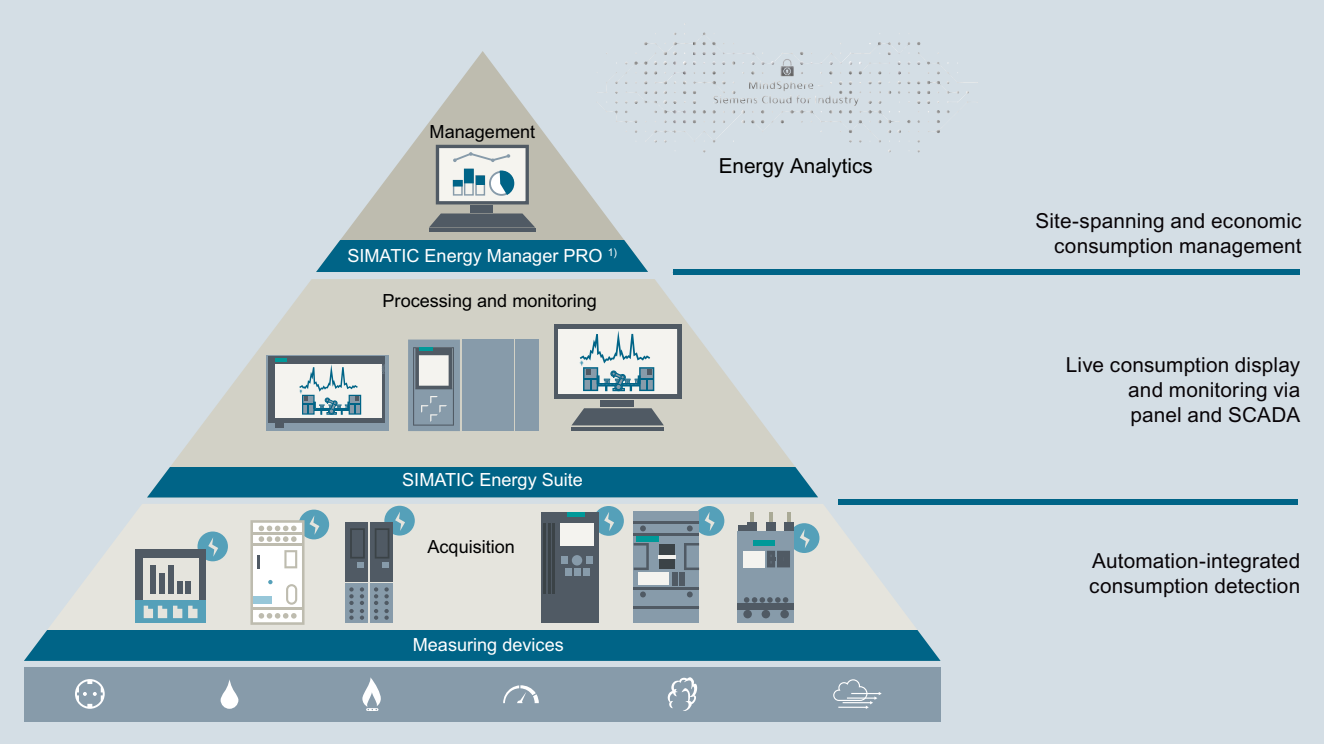
The product portfolio comprises not just SIRIUS controls, but also SIMOTICS motors and SINAMICS inverters and converters, thus offering a comprehensive range of comparison possibilities – according to your individual requirements.

For further information on the amortization calculator for energy-efficient drives see www.siemens.com/sinasave.

Introduction
Energy Management with SIMATIC Energy Suite

Integrated energy management

Overview



SIMATIC Energy Suite

A high energy consumption and automated production are typical for many industries.

If you want to keep your energy costs under control in the long term and you are already focusing on the digital future, you will equip your plant with integrated energy measuring technology, thus anchoring your energy management in the automation of your production processes – which is where most energy is consumed.
SIMATIC Energy Suite as an integrated option for the TIA Portal efficiently links energy management with automation, thus creating energy transparency in production. The considerably simplified configuration of energy measuring components from the product families[2] SIMATIC, SENTRON, SINAMICS, SIRIUS and SIMOCODE significantly reduces the configuration costs. Thanks to the end-to-end connection to SIMATIC Energy Manager PRO[1] or cloud-based Service Energy Analytics, you can seamlessly expand the recorded energy data to create a cross-site energy management system.

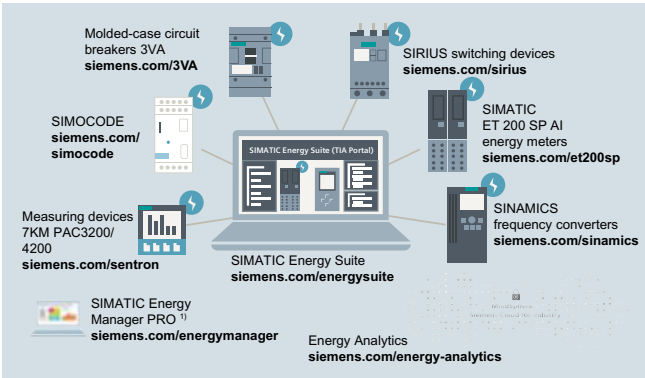
This additionally enables companies to satisfy all the required economic and energy management aspects – from the purchasing of energy and planning all the way to energy controlling.

The advantages at a glance:

- Automatic generation of energy management data
- Integration into TIA Portal and into automation
- Simple configuration

Highlights

- Simple and intuitive configuration instead of programming
- Automatic generation of the PLC energy program
- Convenient integration of measuring components from the Siemens portfolio and from the portfolio of other vendors
- Integrated into the TIA Portal and automation
- Archiving on WinCC Professional or PLC
- Seamless connection to Energy Manager PRO and Energy Analytics



Ready for SIMATIC Energy Suite

For more information on SIMATIC Energy Suite, see www.siemens.com/energysuite.

1) SIMATIC Energy Manager PRO is the innovative successor to SIMATIC B.Data

2) Products of the SIMATIC, SENTRON, SINAMICS, SIRIUS and SIMOCODE product families For details on the currently supported devices see www.siemens.com/energysuite-hardware.

Overview

AS-Interface

AS-Interface – the smart communication standard for universal connection of the field level to the control system

The AS-Interface (AS-i) – the Actuator-Sensor-Interface, to be more precise – is a smart bus system for the field level that connects all the sensors and actuators in the field to the higher-level control system more simply, flexibly and efficiently than any other.

The structure of a complex automation system is not always clear at first glance. The field level in particular, with its large numbers of devices with real-time requirements, needs a clear structure.

That is exactly what the AS-i fieldbus delivers: Via a simple two-wire cable – the yellow AS-i cable – in an AS-i network up to 62 bus nodes can be connected to the AS-i master and simultaneously supplied with power. The standard here is robust data transmission in a rugged environment with a high degree of protection for the AS-Interface.

AS-i = simple!	AS-i = flexible!	AS-i = efficient!
• Only one cable for data and energy • Time-saving assembly/installation • Engineering in the TIA Portal • User-friendly maintenance	• Flexible topologies • Open standard • Expandability • Safety engineering	• User-friendly addressing • Fast device replacement • Ruggedness and stability • Device and network diagnostics

IC01_00210

AS-i from Siemens has everything in its favor

- Complete AS-i product range for bus-based standard and safety technology from a single source
- System-wide integration of the AS-i devices into SIMATIC, SINUMERIK and the TIA Portal engineering framework
- Integration of ASIsafe applications via PROFIsafe into SIMATIC F controllers (for PROFINET/PROFIBUS)
- Quick diagnostics, specially for machine tools - at the slave, centrally via web browser, HMI or TIA Portal
- Central configuration of standard and safety technology in the TIA Portal and in STEP7 Classic – just one engineering framework for controller, AS-i Master and safety
- Integration of lower-level AS-i networks into the PCS 7 process control system
- Global spare parts logistics, consulting and service

Engineering in the Totally Integrated Automation Portal (TIA Portal)

The TIA Portal – as a key component of TIA – is an innovative engineering framework for all automation tasks. It combines control programming and configuration of visualization, and integrates the parameterization of operating mechanisms and networks, together with the programming of fail-safe applications.

The TIA Portal is particularly intuitive to operate. For example, configuring is easy using drag & drop from the hardware catalog, and you get realistic displays of all network nodes and components down to actuator/sensor level.

In addition, the engineering framework allows you to get started quickly in safety programming by means of a library with certified safety functions.

Device and network diagnostics:

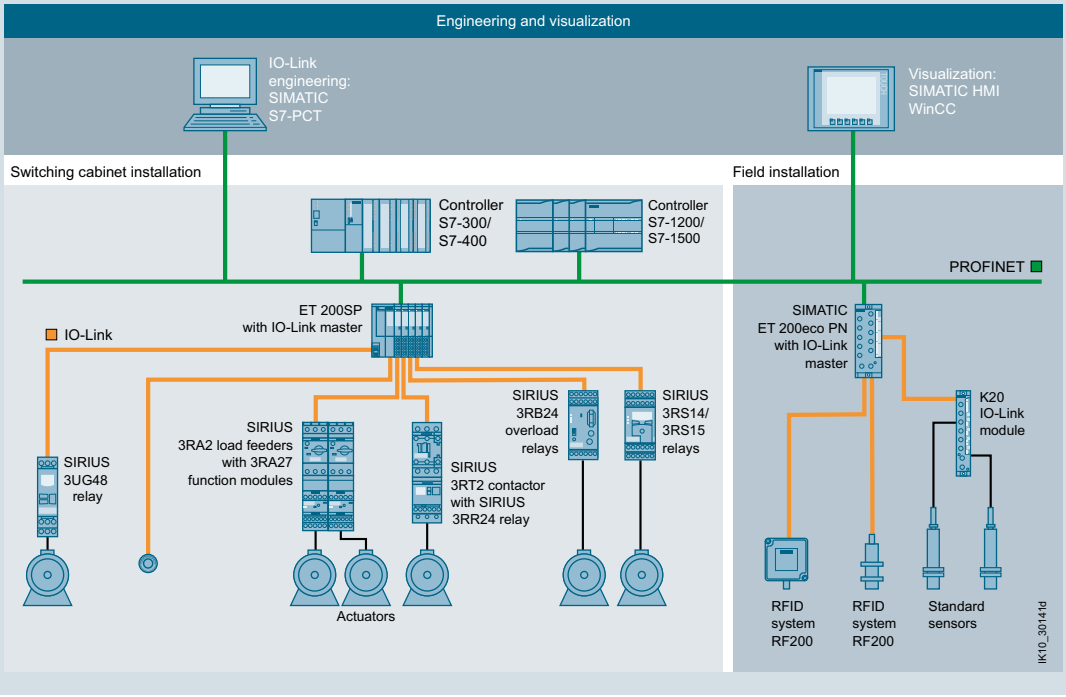
- Diagnostics and error signals can also be tracked through all bus hierarchies down to the lowest actuator/sensor level and described in plain text. The basis for this is a realistic depiction of the bus topology concerned.
- The TIA Portal also sets standards where efficiency is concerned. Data from lower-level AS-i networks can be flexibly integrated using drag & drop based on SIMATIC HMI and WinCC. All you need do is "drag" the signal information from any AS-i slave into the control display of an HMI basic panel.
- Furthermore, integrated web servers and diagnostics based on user-specific websites allow the data from all connected AS-i networks to be displayed and integrated into user-specific control concepts (e.g. website for documenting and operating a SIMATIC S7-1200).

Whatever your industry, the TIA Portal allows you not just to work more efficiently, but also to achieve lasting increases in productivity and competitiveness.

For more information, see

- www.siemens.com/as-interface
- www.siemens.com/tia-portal.

Overview



Engineering and visualization

IO-Link – more than just another interface

IO-Link is a smart concept for the uniform connection of switching devices and sensors to the control level by means of a low-cost point-to-point connections.

The IO-Link communication standard below fieldbus level enables central error diagnostics and localization down to actuator/sensor level, and facilitates both start up and maintenance by allowing parameter data to be dynamically changed directly from the application.

The increasing intelligence of field devices and their integration into automation as a whole now allows data to be accessed right down to the lowest field level. The result was: greater plant availability and less engineering work.

As an open interface, IO-Link can be integrated into all standard fieldbus and automation systems.

The advantages of IO-Link at a glance

- Engineering → reduced engineering times
  - Standardized, open system for greater flexibility (non-Siemens IO-Link devices can be integrated in engineering)
  - Uniform, transparent configuring and programming through integrated engineering (SIMATIC STEP 7)
  - Unassigned function blocks for SIMATIC for easy parameterization and diagnostics, and for reading out measured values
  - Efficient engineering thanks to pre-integration of Siemens devices into SIMATIC HMI
  - Low error rate in CAD circuit diagram design as a result of reduced control current wiring
- Installation and commissioning → reduced start up times
  - Faster assembly with minimized error rate as a result of reduced control current wiring
  - Less space required in the control cabinet
  - Low-cost circuitry where there are several feeders by making unlimited use of existing Siemens components
- Operation and maintenance → greater plant availability
  - High transparency in the system right down to field level
  - Reduction in downtimes and maintenance times thanks to system-wide diagnostics and faster fault correction
  - Support of predictive maintenance
  - High transparency through integration into energy management systems, reading out of current values and diagnostic signals
  - Shorter changeover times, even for field devices, by means of parameter and recipe management

Transparency in the process through IO-Link

High system availability and data transparency are market requirements that must also be met by the connecting of innovative control technology to a control system. A systematic diagnostics concept and efficient handling of parameter data are required for this purpose in automation.

With the aid of the IO-Link communication standard, a communication link is established between switchgear and controller, and this allows data to be exchanged efficiently. Based on a standard cable, it is therefore possible to integrate parameter, process and diagnostic data and measured values into the plant automation with ease. For example, the available diagnostic data allow potential errors to be detected quickly, thus avoiding lengthy plant down times.

As a consequence of their basic function, such as overload protection (SIRIUS 3RB24), many controls have measured values. The availability of these via IO-Link now allows conclusions to be drawn at an early stage concerning wear and tear in the application.

At the same time the option of parameterizing via IO-Link supports the device not just when parameters concerning operating time are changed, but also when the device is replaced. In the case of a spare part, for example, the parameters can be quickly transmitted to a new device via the communication system.

For more information, see www.siemens.com/io-link.

Overview

Safety Integrated – safety engineering for machines and plants

Manufacturers and operators of machines must fulfill numerous requirements: reducing costs, improving productivity, and ensuring the safety of machines.

The industrial safety technology from Siemens offers innovative, economical solutions for the functional safety of machinery.

Machine safety – compliance with directives

Before any machines or plant can be supplied or operated, they must meet the fundamental safety requirements of the EU Directives.

In order to ensure compliance with the European Machinery Directive, it is recommended that the suitably harmonized European standards EN 62061 or EN ISO 13849-1 should be applied. This gives manufacturers and operators legal certainty regarding compliance with both national regulations and the EC Directive.

The machine manufacturer uses the CE marking to document the compliance with all relevant directives and regulations in the free movement of goods. As the European directives are recognized worldwide, their use is of great help when exporting to other countries.

The aim of safety technology is therefore to allow people, machines and the environment to be protected and statutory safety requirements to be satisfied.

The quick and easy way to safe machinery

In addition to the statutory regulations governing the protection of people there are also economic reasons for avoiding personal injury and the resulting down times, and for protecting both machinery and equipment from damage.

Safety Integrated benefits machine manufacturers and plant operators in many ways:

- Lower costs for hardware, assembly and engineering
- Higher availability thanks to faster diagnostics and fewer down times

At the same time, using modular safety concepts allows them to modernize their plants more easily and at lower cost.

Smart controls ensure the functional safety of machinery

Our SIRIUS Safety Integrated controls are a central element of the Siemens Safety Integrated concept, based on Totally Integrated Automation. Whether for reliable detecting, commanding and signaling, monitoring and evaluating or starting and safe disconnection, our SIRIUS Safety Integrated controls provide cost-effective solutions for the safety of your machine or plant.

Take the SIRIUS 3SK1 safety relays for example: They are modularly expandable, and can integrate compact motor starters such as the fail-safe SIRIUS 3RM1 very simply via the the rear panel device connector. Or the SIRIUS 3RK3 Modular Safety System: this provides a high degree of functionality as an autonomous safety control downstream of a standard control, and makes smart safety solutions possible via AS-Interface.

The SIMOCODE pro modular motor management system combines all required protection, monitoring, safety and control functions for motor feeders. It can be connected to fail-safe controllers via PROFIBUS or PROFINET and shut down motors in emergency situations.

Control technology for safety solutions – SIRIUS Safety Integrated

SIRIUS Safety Integrated uses fail-safe communication via standard fieldbus systems, such as ASIsafe via AS-Interface and PROFIsafe via PROFIBUS and PROFINET, to solve even networked safety tasks of greater complexity. This opens the door to flexible safety solutions for compact machines or large-scale plants – naturally compliant with current standards up to SIL 3/PL e.

A particular highlight: The world's first integrated ASIsafe connection to the distributed I/O system ensures even more consistency. With the SIMATIC AS-i F-Links, AS-i networks can be connected quite simply to safety controls via PROFIsafe via the SIMATIC ET 200SP.

Your partner for machine and plant safety

With Safety Integrated, Siemens has provided the smart answer to constantly increasing requirements for the functional safety of a machine and for its cost-effectiveness and flexibility. Our comprehensive portfolio of safe controls, control technology and drive technology provides scalable solutions for precisely tailored safety concepts for protecting people, machines and the environment. Our products meet the current safety standards in the industry, including IEC, ISO, NFPA and UL.

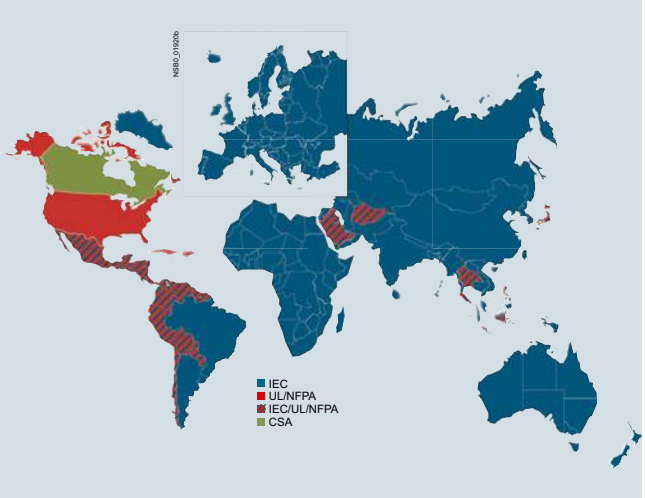
As a partner for machine and plant safety, Siemens also supports users with examples of functions and up-to-date know-how concerning international standards and directives. In addition to the free TÜV-approved Safety Evaluation Tool for evaluating safety functions in accordance with EN 62061 and EN ISO 13849-1, requirements-based training is available on CE marking, functional safety and risk assessment, and on our Safety Integrated Products.

For more information, see www.siemens.com/safety-integrated.

Application Manual "SIRIUS Safety Integrated", see https://support.industry.siemens.com/cs/ww/en/view/81366718.

SIRIUS supports you where UL is concerned

Overview



SIRIUS applications

We support you where UL is concerned

Product liability laws in the USA are way stricter than in Europe. Whoever plans to export products to North America should have them UL-certified, particularly when it comes to electrical equipment. We can help you with our comprehensive know-how and broad portfolio of UL-certified low-voltage controls.

Who or what is UL?

UL (Underwriters Laboratories Inc.®) is one of the world's leading organizations for testing and certification in the field of product safety. This independent, nonprofit US organization was founded in 1894 at the request of American fire insurance companies to analyze the fire hazards posed by electrically operated devices.

Today, UL tests and certifies the most varying materials, components and end products for their reliable operation, particularly with regard to potential personal injury and fire formation. The organization maintains subsidiaries in numerous European countries. For detailed information on the US organization as well as contact details for the various European subsidiaries see www.ul.com.

Differences between UL and IEC

The IEC standards for the IEC market merely specify the minimum safety requirements of a device or system. Technical details of the safety requirements' constructional implementation are up to the manufacturers.

In contrast, the standards for the American market are far more detailed. Depending on the standard, the required process may be monitored from product design to product production down to application, mounting and operation.

NFPA79 is the electrical standard for industrial machinery outside the control cabinet. As such it differs from and is the counterpart to the control cabinet standard UL 508A.

UL partner since 1969

Enlisting the expertise of a partner such as Siemens is a wise move for anyone who wishes to avoid unnecessary aggravation and save both time and money.

Ever since 1969 our production facility in Amberg, where the complete diversity of our low-voltage controls and distribution portfolio is developed and produced, has been working closely with Underwriters Laboratories Inc.

Our consideration not only of EU directives and IEC standards but also UL standards begins as early as in our products' development phase. This has resulted in a wide-ranging portfolio of UL-certified low-voltage switchgear, controlgear and protection circuit technology.

As a result we have comprehensive know-how on the subject of UL certification and approval, ranging from production down to the wiring of control cabinets (panels) according to UL standards, and we would be pleased to pass this knowledge on to you as part of our application consulting service.

Our portfolio of low-voltage controls ensures your being on the safer side in terms of UL and facilitates the easy and fast assembly of control cabinets according to UL.

Cost-efficiency in the construction and operation of industrial control panels for North America

- Stay flexible for a highly diverse range of solutions and add-ons with our comprehensive and matched product portfolio, from the supply of the industrial control panel to the machine's smallest actuator.
- Benefit from efficient stock-keeping thanks to the universal applicability of the products (IEC-UL/CSA).
- Implement a uniform operating and maintenance concept through our standard system.
- Save space and costs through coordinated product interfaces and compact designs.
- Experience convenient, efficient local operation thanks to easy-to-use systems.

UL-certified SIRIUS products and systems

UL-certified products to be found in this catalog include for example:

- Controls, from motor-protective circuit breakers and starters to contactors and overload relays
- Circuit breakers for plant and transformer protection
- Detection and command devices
- Power supplies

You will also find a complete selection of components for control cabinets/control panels in accordance with UL in Catalog LV 16.

On the Internet you will find information on, for example, UL standards, UL classification and a number of technical particularities of UL.

Under "Information Material" → "Standards and Approvals" we have summarized the available products and product groups. A table lists the UL standards to which the products conform and contains links to the corresponding UL reports.

For more information, see www.siemens.com/applicationconsulting/ul.

1) See Catalog D 31 "SINAMICS Inverters for Single-Axis Drives and SIMOTICS Motors".

[1] See Catalog ID 10 "Industrial Identification Systems".

Overview

More information	
Home page, see www.siemens.com/as-interface	Industry Mall, see www.siemens.com/product?as-interface

		Article No.	Page
AS-Interface: ASIsafe			
	ASIsafe enables integration of safety-related components in an AS-Interface network, for example: • EMERGENCY-STOP pushbuttons • Protective door switches • Safety light arrays Your advantage: The simple wiring of AS-Interface is maintained.		
 AS-i Master and AS-i Safety module	**AS-i Master and AS-i Safety module for ET 200SP** The CM AS-i Master ST and F-CM AS-i Safety ST modules are plugged into an ET 200SP configuration and connect an AS-i network, including safety-related inputs and outputs, with the controller. • Single, double and multiple masters possible • Per CM AS-i Master ST up to 496 DI / 496 DQ / 124 AI / 124 AQ possible • Per F-CM AS-i Safety module ST up to 31 safe input signals (2-channel) / 16 safe output channels possible • Configuration from STEP 7 V5.5 or from V13 (TIA Portal) and higher • Plant-wide safety programming of the F-CPU via SIMATIC Distributed Safety / Safety Advanced • Integrated diagnostics • No other programming tools required Your advantage: Modular connection of fail-safe AS-i networks with system-wide programming in SIMATIC and SINUMERIK controllers.	**6ES7**	2/39
 3RK3 Modular Safety System	**Modular Safety System (MSS)** Supplementing the service-proven concept of safety monitors, the 3RK3 Modular Safety System offers, for example, the following functions for ASIsafe: • Up to 50 enabling circuits including muting function • Expandable fail-safe and non-fail-safe inputs/outputs • Control of up to 12 ASIsafe outputs or 12 fail-safe independent switch-off groups • Memory module for parameters, e.g. for device replacement • Optional PROFIBUS interface for diagnostics and parameterization • SIRIUS Safety ES, the intuitive graphic parameterization and diagnostics software • AS-i Power24V capability Your advantage: Easy to configure safety functions up to Category 4, PL e, SIL 3.	**3RK3**	2/24, 11/28
 Safety monitor	**AS-Interface safety monitors** • For monitoring safe stations and for linking AS-Interface inputs and outputs • Ensures safe disconnection • Available with one or two release circuits with two-channel configuration • All versions with removable screw terminals or spring-type terminals • All safety monitors in revised Version 3 with additional options • Filtering out of brief single-channel interruptions in the sensor circuit with the expanded safety monitor Version 3 • Expanded safety monitor with integrated safe slave for controlling a distributed safe AS-i output or for safe coupling a safe signal from one AS-i network to another AS-i network • ASIMON V3 Configuration software with graphic function diagram presentation Your advantage: Easy to configure safety functions up to Category 4, PL e, SIL 3.	**3RK1**	2/28

		Article No.	Page
AS-Interface: ASIsafe (continued)			
 K45F  SC17.5F  S45F SlimLine module, safe AS-i output	**AS-Interface safety modules** • Complete portfolio of ASIsafe modules • For connection of safety switches with contacts (e.g. position switches) as well as solid-state safety sensors (ESPE) • Degree of protection IP65/IP67 or IP20 • Especially compact dimensions, with widths from 17.5 mm • Up to four safe inputs per module • Up to one safe output per module • Standard outputs are available on the module in addition • Up to Category 4, PL e, SIL 3 Your advantage: Easy integration of safe signals both in the switching cabinet and in the field.	**3RK1**	2/29
 Safety switch	**SIRIUS 3SF1 mechanical safety switches for AS-Interface** • Plastic with degree of protection IP65 and metal with degree of protection IP66/IP67 • ASIsafe electronics integrated into the enclosure • Available with separate actuator, with or without tumbler Your advantage: Conventional wiring of safety functions no longer required.	**3SF1**	12/91
 EMERGENCY STOP mushroom pushbutton in enclosure	**SIRIUS ACT EMERGENCY-STOP mushroom pushbuttons for AS-Interface** • Degree of protection IP66/IP67/IP69K • Metal or plastic version • Connection of an EMERGENCY-STOP device according to EN ISO 13850 to AS-Interface • Safety-related AS-Interface module is snapped onto the commanding device from behind • Can be used up to PL e, SIL 3 Your advantage: Easy direct connection of control elements to ASIsafe.	**3SU14 modules** **3SU18 enclosures**	13/89, 13/102 13/98

AS-Interface: Masters

The AS-Interface master connects SIMATIC control systems to AS-Interface. It automatically organizes the data traffic on the AS-Interface cable and handles not only signal processing, but also parameter setting, monitoring and diagnostics functions.

CM 1243-2 for SIMATIC S7-1200

CP 343-2, CP 343-2P for SIMATIC S7-300

CM AS-i Master ST for SIMATIC ET 200SP

F-CM AS-i Safety ST for SIMATIC ET 200SP

	Article No.	Page
Masters for SIMATIC S7		
AS-Interface master connections:		
• CM 1243-2 for SIMATIC S7-1200	**3RK7**	2/32
• CP 343-2P, CP 343-2 for SIMATIC S7-300 and ET 200M	**6GK7**	2/34
Features:		
• Connection of up to 62 AS-Interface slaves		
• Connection of up to 496 inputs and 496 outputs per master or AS-Interface network		
• Integrated analog value transmission		
• Simple configuration by adopting the actual configuration on the AS-Interface network		
• Easy operation in the input/output address area of the SIMATIC S7 comparable to standard I/O modules		
• Monitoring of the control supply voltage on the AS-Interface shaped cable		
Your advantage: Easy connection to SIMATIC controllers.		
Masters for SIMATIC ET 200		
CM AS-i Master ST for SIMATIC ET 200SP	**3RK7**	2/36
• Connection of up to 62 AS-Interface slaves per master		
• Connection of up to 496 inputs and 496 outputs per AS-Interface network		
• Integrated analog value transmission		
• Simple configuration by adopting the ACTUAL configuration on the AS-Interface network		
• Easy operation in the input/output address range of the SIMATIC (or other controller) comparable to standard I/O modules		
• Monitoring of the control supply voltage on the AS-Interface shaped cable		
• Integrated ground-fault monitoring		
Your advantage: Easy connection of fail-safe AS-i networks to distributed I/Os.		
F-CM AS-i Safety ST for SIMATIC ET 200SP	**3RK7**	2/40
• Monitoring of up to - 31 fail-safe AS-i input slaves per F-CM - 16 fail-safe AS-i outputs per F-CM		
• Transmission via PROFIsafe into the F-CPU for safety-related applications up to SIL 3 (IEC 61508/EN 62061) / PL e (EN ISO 13849-1)		
• As a result, these sensors become part of the "unlimited programming and data archiving" options of SIMATIC and of Safety Integrated.		
Your advantage: Easy connection of fail-safe AS-i networks to the distributed I/Os.		

		Article No.	Page
AS-Interface: Routers			
 DP/AS-i LINK Advanced	**Routers** • Degree of protection IP20 • PROFIBUS slave or PROFINET IO device and AS-Interface master (single or double master in case of DP/AS-i LINK Advanced and IE/AS-i LINK PN IO) • Connection of up to 62 AS-Interface slaves per AS-Interface network • Connection of up to 496 inputs and 496 outputs per AS-i network, with doubling of the project data volume for double master versions • Integrated ground-fault monitoring (in case of DP/AS-i LINK Advanced and IE/AS-i LINK PN IO) • User-friendly local diagnostics and local startup by means of a full graphic display and control keys or through a web interface with a standard browser (in case of DP/AS-i LINK Advanced and IE/AS-i LINK PN IO) • Integrated analog value transmission • Configuring and uploading of AS-Interface configuration in STEP 7 possible • User-friendly selection of AS-Interface slaves • Safety-related transition from ASIsafe to PROFIsafe available as DP/AS-i F-Link or with F-CM AS-i Safety ST for SIMATIC ET 200SP (see page 2/40) Your advantage: Compact transition to PROFIBUS or PROFINET.	**3RK3, 6GK1**	2/43
 DP/AS-Interface Link 20E			
 DP/AS-i F-Link			
 IE/AS-i LINK PN IO			
AS-Interface: Slaves			
	Slaves contain the AS-Interface electronics and connection options for sensors and actuators in the field and in the control cabinet. A total of up to 62 slaves can be connected to one bus. The slaves then exchange their data in cyclic mode with a control module (master).		
	I/O modules for use in the field, high degree of protection		
 K20 digital module	Digital I/O modules IP67 – K60, K60R, K45 and K20 • Degree of protection IP65/IP67 or IP68/IP69K • Modules available with up to degree of protection IP68/IP69K • ATEX-certified modules available for Ex Zone 22 • Connection sockets in M8/M12 • Up to eight inputs and four outputs • A/B technology available • Contacting protected against polarity reversal • Standard rail mounting and wall mounting possible • Mounting of the module on the base plate using just one screw • Diagnostics LEDs Your advantage: Reduction of mounting and startup times by up to 40 %.	**3RK1, 3RK2**	2/56
 K45 digital module			
 K60 digital module			
 K60 analog module	Analog I/O modules, IP67 – K60 • Degree of protection IP65/IP67 • Detects or transmits analog signals locally • 2-/4-channel • Input modules for up to four sensors with current signal, with voltage signal or with thermal resistor • Output modules for current or voltage • Fast analog modules available for higher access speeds Your advantage: Easy integration of analog values.	**3RK1**	2/67

	Article No.	Page
AS-Interface: Slaves (continued)		
 SlimLine Compact SC17.5  SlimLine Compact SC22.5  F90 module  Flat module **I/O modules for use in the control cabinet** • Degree of protection IP20 • No M12 plugs required for connection • Especially narrow design for SlimLine Compact modules with widths of 17.5 mm and 22.5 mm • Analog modules are also available • Removable, finger-safe terminal blocks that cannot be mixed up with the SlimLine Compact modules • Flat design of the flat modules for small control cabinets and confined conditions • Connection with screw terminals or spring-type terminals • Standard rail mounting and wall mounting possible • Diagnostics LEDs Your advantage: Modules enable space-saving use in control cabinets and small local control boxes.	**3RG9, 3RK1, 3RK2**	2/71
 AS-Interface communication module 4I/4O  AS-interface communication module 4I/3O **Special integrated solutions** AS-interface communication modules • Printed circuit board modules for customer-specific solutions • Degree of protection IP00	**3RK1, 3RK2**	2/77

	Article No.	Page
AS-Interface: Slaves (continued)		
Modules with special functions		
 Counter module Counter modules • Degree of protection IP20 • For evaluation of pulses • Connection with screw terminals or spring-type terminals Your advantage: Evaluation of pulses which exceed even the clock frequency of AS-Interface.	**3RK1**	2/79
 Ground-fault detection module Ground-fault detection modules • Degree of protection IP20 • Display using LEDs • Two signaling outputs Your advantage: Automatic diagnostics of ground faults on AS-Interface	**3RK1**	2/80
 Overvoltage protection module Overvoltage protection module • Degree of protection IP67 • Discharge through ground cable with oil-proof outer sheath • Protection at transition of lightning protection zones Your advantage: The AS-Interface overvoltage protection module protects downstream AS-Interface devices or individual sections in AS-Interface networks from conducted overvoltages.	**3RK1**	2/81
Contactors and contactor assemblies		
 SIRIUS contactors 3RT203.-1NB30-0CC0 SIRIUS 3RT contactors, 3-pole up to 250 kW SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW • Notable reduction of wiring in the control circuit • Integrated mechanical interlocking • Prevention of wiring errors in the main circuit	**3RT20** **3RA23** **3RA24**	3/15 3/155 3/170
 SIRIUS 3RA2712 function module for AS-Interface SIRIUS 3RA27 function modules for AS-Interface • Connection of 3RT20 power contactors with communication capability, 3RA23 reversing contactor assemblies, and 3RA24 contactor assemblies for star-delta (wye-delta) starting to AS-Interface • Reduction of control current wiring through plug-in design and integrated monitoring of circuit breaker/motor starter protector and contactor • Reduced space requirement in the control cabinet through fewer digital inputs and outputs in the control system • Easy configuration through operation of feeders instead of individual contactors • Enhanced operational reliability and quick wiring thanks to spring-type connections • Small number of variants through use of identical modules for size S00 to S3 contactors Your advantage: Shortening of mounting and startup times.	**3RA2712**	3/106
 3RA61 compact starter **Motor starters for operation in the control cabinet** SIRIUS 3RA6 compact starters 3RA61 direct-on-line starters, 3RA62 reversing starters • Degree of protection IP20 • Very compact load feeders with the integrated functionality of an electronic overload relay • As direct-on line or reversing starters for motors up to 15 kW/400 V • Easy expansion into a communication-capable load feeder using AS-i add-on modules • On-site safe disconnection also possible using AS-i add-on modules • Standardized integration of the loads in higher-level control systems using AS-i Your advantage: Compact solution with minimum wiring outlay for actuating direct-on-line and reversing starters in the control cabinet.	**3RA61** **3RA62**	8/67 8/68

		Article No.	Page
AS-Interface: Slaves (continued)			
	Motor starters for use in the field, high degree of protection		
 SIRIUS M200D motor starter	SIRIUS M200D motor starters for AS-Interface • High degree of protection IP65 for cabinet-free design • As direct-on-line or reversing starters for motors up to 5.5 kW/400 V • Mechanical or electronic switching for high switching frequencies • Optional with manual operation and brake control • Expanded diagnostics and parameterization possible through AS-Interface • Easy and consistent integration in STEP 7 through AS-Interface Your advantage: The correct solution for all simple applications in conveyor systems with spatially distributed drives.	**3RK1**	9/40
 Motor starters for AS-Interface, 24 V DC	Motor starters for AS-Interface, 24 V DC • Degree of protection IP65/IP67 • Direct-on-line starters, double starters or reversing starters • Up to 70 W • Quick stop function Your advantage: Simple motor starter in service-proven module design for 24 V DC motors.	**3RK1**	9/63
 SINAMICS G110M frequency inverters	**SINAMICS G110M distributed inverters** **Wide power range from 0.37 to 4 kW** • Preconfigured with SIMOGEAR • Rugged, with IP65/IP66 degree of protection, up to 55 °C ambient temperature • Local commissioning via DIP switch, standard USB interface and potentiometer or Intelligent Operator Panel (IOP) • Integrated safety functions (STO locally via F-DI or via PROFIsafe) • Integrated, specific software functionality for conveyor systems - Quick stop function for fast reaction times to sensors - Limit switch functionality, e.g. for rotary table, corner transfer unit Your advantage: the simple solution for compact drives with safety requirements in conveyor technology	**6SL3517 power modules, 6SL3544 control units**	Catalog D 31
 SINAMICS G110D frequency inverters	**SINAMICS G110D distributed inverters** **High degree of protection IP65 for cabinet-free design** • Wide power range from 0.75 to 7.5 kW • Easy commissioning and maintenance thanks to standardized plug-in connections for bus, energy and I/Os • Expanded diagnostics and parameterization through AS-Interface • Optional maintenance switch • Optional manual local operation • Same connectors used as for the M200D motor starter Your advantage: Easy, consistent implementation of distributed system concepts thanks to scaling of SINAMICS G110D, SINAMICS G120D and SIRIUS M200D products.	**6SL3511**	Catalog D 31
	Commanding and signaling devices		
 AS-Interface module	SIRIUS ACT pushbuttons and indicator lights for AS-Interface • Modular configuration based on individual specifications, or as enclosure with standard components • AS-Interface modules for base mounting or mounting in enclosure • Up to six command points for standard signals or EMERGENCY-STOP • Degree of protection IP66/IP67/IP69K • Metal or plastic version • Indicator lights with integrated LED • Any change of equipment possible even after installation Your advantage: Complete operating system with simple AS-Interface connection for your plant.	**3SU14 modules 3SU18 enclosures**	13/89, 13/102 13/98
 Signaling column	SIRIUS 8WD4 signaling columns • Many optical and acoustic elements can be combined • Up to three signaling elements can be connected using an adapter element • With LEDs or incandescent lamps Your advantage: Signaling columns for monitoring production sequences and for visual or acoustic warnings in emergency situations, with easy AS-Interface connection.	**8WD4**	13/153

		Article No.	Page
AS-Interface: Power supply units and data decoupling modules			
	AS-Interface power supply units generate a controlled direct voltage of 30 V DC with high stability and low residual ripple in conjunction with data decoupling. They are an integral component of the AS-Interface network and enable the simultaneous transmission of data and energy on one cable. In conjunction with data decoupling modules, AS-Interface can also be operated with standard power supply units.		
 IP20, 3 A	**AS-Interface power supply units** • With wide performance spectrum from 2.6 to 8 A • Degree of protection IP20 • Separation of data and energy by means of the integrated data decoupling • UL/CSA approval means the power supplies can be used worldwide. 2.6 A version with output power restricted to max. 100 W (for Class 2 circuits acc. to NEC) • Certified for global use • Integrated ground-fault and overload detection save the need for additional components and make applications reliable • Diagnostics memory, remote signaling and remote RESET allow fast detection of faults in the system • Ultra-wide input range enables single- and two-phase applications (8 A version) Your advantage: Optimum performance for each application.	**3RX9**	2/82
 IP20, 8 A			
 PSN130S 30 V DC, 8 A	**30 V power supply units** Standard 30 V power supply units without data decoupling • Power spectrum 3 A, 4 A and 8 A • Overload and short-circuit proof in every performance class • Diagnostics: If there is an output voltage > 26.5 V DC, LED and signaling contact for 30V output voltage O.K. • Primary-side connection to 120/230 V AC (1-phase) with automatic range selection Your advantage: Economical alternatives in conjunction with data decoupling modules while making full use of the maximum AS-Interface cable length.	**3RX9**	2/83
 SITOP PSU100M, 24 V DC, 20 A	**24 V power supply units** Standard 24 V power supply units (SITOP), without data decoupling • Power spectrum 2.5 to 40 A • Overload and short-circuit proof in every performance class • Add-on modules for signaling, redundancy, buffering and UPS • Single-phase, two-phase and three-phase versions Your advantage: Economical alternatives in conjunction with data decoupling modules.	**6EP**	From 15/1
 S22.5 data decoupling module	**S22.5 data decoupling modules** • Degree of protection IP20, narrow design 22.5 mm • Supply of several AS-i networks with a single power supply unit • Single and double data decoupling • Operation with 24 V DC or 30 V DC Your advantage: Cost-effective installation of AS-i networks in conjunction with standard power supply units.	**3RK1**	2/85
 DCM 1271 data decoupling module	**DCM 1271 data decoupling module for SIMATIC S7-1200** • Simple data decoupling in IP20 design • Supply of several AS-i networks with a single power supply unit • Operation with 24 V DC or 30 V DC Your advantage: cost-effective installation of AS-i networks in conjunction with standard power supply units in the design of a SIMATIC S7-1200 module.	**3RK7**	2/87
AS-Interface: Transmission media			
	AS-Interface shaped cable for connection of network stations		
 Shaped cable	**AS-Interface shaped cable** • No polarity reversal thanks to trapezoidal shape • Cables made of optimized material for different operating conditions • Special version according to UL CLASS 2 available Your advantage: Fast replacement and connection to AS-Interface by piercing method.	**3RX9**	2/89

AS-Interface: System components and accessories

Accessories comprise tools for mounting, installation and operating as well as individual components.

Repeater

Compact extension plug

Addressing units for AS-Interface V 3.0

Analyzer

M12 sealing cap

Cable terminating piece

	Article No.	Page
Repeaters and extension plugs • Repeaters for extending the AS-Interface cable by 100 m per repeater • Extension plug for extending the AS-Interface segment to max. 200 m • Parallel switching of several repeaters possible (star configuration option) • Maximum size increases (when combined) to more than 600 m • Easy mounting • IP67 module enclosure Your advantage: Lower infrastructure costs, more possibilities of use and greater freedom for plant planning.	**6GK1 repeater** **3RK1 extension plug**	2/90 2/91
Addressing units • Read-out and setting of slave addresses 0 to 31 or 1A to 31A, 1B to 31B, with automatic addressing support and prevention of double addresses • Reading out the slave profile (IO, ID, ID2) and reading out and setting the ID1 code • Input/output test when commissioning the slaves, on all digital and analog slaves according to AS-Interface Specification V3.0, including safe input slaves and complex CTT2 slaves • Display of the operational current in case of direct connection of an AS-i slave (measuring range from 0 to 150 mA) • Storage of complete network configurations (profiles of all slaves) to simplify the addressing Your advantage: Easiest way to address and test the slaves.	**3RK1**	2/92
AS-Interface analyzer • Diagnostics units for completely checking the quality and function of an AS-Interface installation • Transmission of collected data through an RS 232 interface to a PC, evaluation by software • Easy and user-friendly operation • Automatically generated test logs • Advanced trigger functions enable exact analysis • Process data can be monitored online • In addition to digital I/O data it is possible to view analog values and safety slaves in data mode. Your advantage: Preventative testing of an AS-Interface network is possible, recorded logs facilitate remote diagnostics.	**3RK1**	2/94
Miscellaneous accessories Individual components such as sealing caps, cable adapters, distributors, M12 plugs and cables, AS-Interface system manual, etc.	**3RK1, 3RT1, 3RX9, 6ES7**	2/98

		Article No.	Page
AS-Interface: Diagnostics			
 Diagnostics for AS-Interface via HMI panels	You can download the following diagnostics packages without charge from the Industry Online Support Portal: • Diagnostic block with visualization via HMI or web browser for AS-Interface: see https://support.industry.siemens.com/cs/ww/en/view/50897766 • Diagnostic block for F-CM AS-i Safety ST in ET 200SP with visualization via HMI or web browser, see https://support.industry.siemens.com/cs/ww/en/view/109479103	--	--
AS-Interface: Software			
 AS-i function block library for PCS 7	**AS-Interface block library for SIMATIC PCS 7** • Engineering and runtime software • Easy connection of AS-Interface to PCS 7 • Engineering work reduced to positioning and connecting the function blocks in the CFC • No additional configuring steps required for connection to the PCS 7 Maintenance Station, diagnostics for the AS-i system optimally guaranteed Your advantage: Easy connection of AS-Interface to PCS 7, little engineering and configuration.	3ZS1635	From 14/31

More information

Home page, see www.siemens.com/io-link

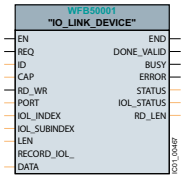
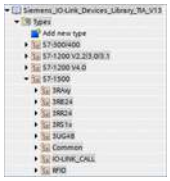
For important topics at a glance, see https://support.industry.siemens.com/cs/ww/en/view/109737170

	Article No.	Page
IO-Link		
 IO-Link family		
IO-Link is an open communication standard for sensors and actuators – defined by the IO-Link Consortium. • Dynamic changing of sensor/actuator parameters directly by the PLC • Devices can be exchanged during operation, without a PC or programming device, through re-parameterization using the user program by means of a function block (FB) or parameter server • Fast commissioning thanks to central data storage • Consistent diagnostic information as far as the sensor/actuator level • Uniform and greatly reduced wiring of different sensors/actuators/controls Your advantage: Fast commissioning and flexible maintenance thanks to central data storage, less wiring work because no passive distributors are needed.		2/101
IO-Link: Masters		
The IO-Link master modules form the heart of the IO-Link system.		
 SM 1278 4xIO-Link for SIMATIC S7-1200		
IO-Link master module for SIMATIC S7-1200		
SM 1278 4xIO-Link Master • IO-Link master as serial communication module with four ports (channels) according to IO-Link Specification V1.1 • Easy device exchange with automatic data recovery without engineering for IO-Link device • Up to four IO-Link devices (3-wire connections) can be connected to each IO-Link master module • Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device Your advantage: easy connection of IO-Link connections to the SIMATIC S7-1200.	6ES7	2/108
 CM 4x IO-Link for ET 200SP		
IO-Link master modules for ET 200SP		
CM 4xIO-Link communication module • IO-Link master as serial communication module with four ports (channels) according to IO-Link Specification V1.1 • Module replacement with automatic data recovery without engineering for IO-Link master and device • Up to four IO-Link devices (3-wire connections) can be connected to each IO-Link master module. • Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device Your advantage: easy connection of IO-Link connections to distributed I/Os.	6ES7	2/109

		Article No.	Page
IO-Link: Masters (continued)			
  6ES7148-6JA00-0AB0 6ES7148-6JD00-0AB0	**IO-Link master module for ET 200eco PN** ET 200eco PN IO-Link master • 4 IO-L + 8 DI + 4 DO 24 V DC/1.3 A - Up to four IO-Link devices (IO-Link Port Class A) can be connected - Up to eight standard sensors (8 DI) and up to four standard actuators (4 DO) can be additionally connected - Enclosure width 60 mm • 4 IO-L - Up to four IO-Link devices (IO-Link Port Class B) can be connected - Enclosure width 30 mm Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area.	**6ES7**	2/112
 CM 4xIO-Link for ET 200AL	**IO-Link master module for ET 200AL** CM IO-Link communication module • IO-Link master as serial communication module with four ports (channels) according to IO-Link Specification V1.1 • Easy device exchange with automatic data recovery without engineering for IO-Link device • Up to four IO-Link devices can be connected to each IO-Link master module • Support of IO-Link Port Class B • Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area.	**6ES7**	2/114
IO-Link: Input modules			
	IO-Link input modules make full use of the potential of IO-Link and are a more attractive solution economically than a direct sensor connection.		
 IO-Link module K20 with eight digital inputs	**K20 IO-Link modules** • Four or eight digital inputs • Degree of protection IP65/IP67 • Connection sockets in M8/M12 • Contacting protected against polarity reversal Your advantage: Reduction of mounting and startup times by up to 40 %.	**3RK5**	2/117
IO-Link: Industrial controls			
	Starters and contactor assemblies for direct-on-line, reversing and star-delta (wye-delta) starting can be connected to IO-Link through function modules without any additional, complicated wiring.		
 SIRIUS contactors 3RT201.-1B...-0CC0	**Contactors and contactor assemblies** SIRIUS 3RT contactors, 3-pole up to 250 kW SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW • Notable reduction of wiring in the control circuit • Integrated mechanical interlocking • Prevention of wiring errors in the main circuit	**3RT20** **3RA23** **3RA24**	3/15 3/155 3/170
 SIRIUS 3RA2711 function module for IO-Link	SIRIUS 3RA27 function modules • Connection of 3RT20 power contactors with communication capability, 3RA23 reversing contactor assemblies, and 3RA24 contactor assemblies for star-delta (wye-delta) starting to IO-Link • Reduction of control current wiring through plug-in technology, feeder groups and integrated monitoring of circuit breaker/motor starter protector and contactor • Reduced space requirement in the control cabinet through fewer digital inputs and outputs in the control system • Simple user program through operation of feeders instead of individual contactors • Enhanced operational reliability and quick wiring thanks to spring-type connections • Can be flexibly combined with many automation solutions using the open, standardized IO-Link wiring system • Small number of variants through use of identical modules for size S00 to S3 contactors Your advantage: Shortening of mounting and startup times	**3RA2711**	3/106

		Article No.	Page
IO-Link: Industrial controls (continued)			
 SIRIUS 3RB24 overload relay	**Overload relays** SIRIUS 3RB24 electronic overload relays for IO-Link for high-feature applications • Diagnostics and current value transmission via IO-Link • Current measuring modules (3RB29) for current values from 0.3 ... 630 A • Controlling direct-on-line, reversing and wye-delta starters via IO-Link in conjunction with contactors • Full motor protection through PTC connection Your advantage: Communication-capable overload relay enables remote diagnostics and preventative maintenance.	**3RB24**	7/122
 SIRIUS 3RA64 compact starter	**Motor starters for operation in the control cabinet** 3RA64, 3RA65 compact starters for IO-Link • Integrated functionality of a circuit breaker, contactor and electronic overload relay and various functions of optional mountable accessories • Can be used for direct starting of standard induction motors up to 32 A (approx. 15 kW/400 V) • Compact design offers enormous savings in space and wiring in the control cabinet • Low variance of devices thanks to wide setting ranges for the rated current and wide voltage ranges Your advantage: The diagnostics data of the process collected by the 3RA6 compact starter, e.g. short circuit, end of service life, limit position etc., are not only indicated on the compact starter itself but also transmitted to the higher-level control system through IO-Link.	**3RA64** **3RA65**	8/69 8/70
 SIRIUS 3RR24 monitoring relay	**Monitoring relays** SIRIUS 3RR24 monitoring relays for mounting onto 3RT2 contactors for IO-Link • Monitoring relays for mounting onto 3RT2 contactors • Parameterization and diagnostics via the display on the device or via IO-Link • Adjustable warning and switch-off limit values and on/tripping delay times • All current measured values available in the control system Your advantage: Communication-capable monitoring relay enables remote diagnostics and preventative maintenance.	**3RR24**	10/70
 SIRIUS 3UG48 monitoring relay	SIRIUS 3UG48 monitoring relays for stand-alone installation for IO-Link • Monitoring of - Network (3UG481) - Voltage (3UG483) - Current (3UG4822) - Power factor (3UG484) - Fault current (3UG4825) - Speed (3UG485) • Parameterization and diagnostics via the display on the device or via IO-Link • Adjustable warning and switch-off limit values and on/tripping delay times • All current measured values available in the control system Your advantage: Communication-capable monitoring relay enables remote diagnostics and preventative maintenance.	**3UG48**	10/111
 SIRIUS 3RS14, 3RS15 temperature monitoring relay	SIRIUS 3RS14, 3RS15 temperature monitoring relays for IO-Link • Measuring the temperature of solids, liquids and gases • Use of resistance sensors (3RS14) or thermocouples (3RS15) • Parameterization and diagnostics via the display on the device or via IO-Link; adjustable warning and switch-off limit values and on/tripping delay times • All current measured values available in the control system Your advantage: Independent monitoring easily linked to the control system.	**3RS14, 3RS15**	10/145

		Article No.	Page
IO-Link: Industrial controls (continued)			
 SIRIUS ACT 3SU1 ID key-operated switches	**SIRIUS ACT pushbuttons and indicator lights** SIRIUS ACT 3SU1 ID key-operated switches for IO-Link • Access system and selection system for four authorization levels • Authentication of groups and persons • Five ID keys with different coding • Option for individual coding via IO-Link • For installation in enclosures or fastening on front plate • Electronic module for ID key-operated switches must be ordered separately. Your advantage: Only authorized personnel can work on plants and machines	**3SU1**	13/9
 SIRIUS ACT 3SU1 electronic module	SIRIUS ACT 3SU1 electronic modules for IO-Link • Eight digital inputs and outputs possible • DI and DQ freely selectable (programmable) • Input and output functions parameterizable • Connection system (push-in) • For installation in enclosures or fastening on front plate Your advantage: no wiring required if ordered in a 3SU1 enclosure via configurator	**3SU1400**	13/89, 13/102
IO-Link: RFID system			
 RFID system for IO-Link	**SIMATIC RF200 RFID system in the HF range** SIMATIC RF210R, SIMATIC RF220R, SIMATIC RF240R, SIMATIC RF250R, SIMATIC RF260R products • Simple identification tasks such as reading an ID number (UID) • Reading of user data • Writing of user data • No RFID-specific programming, ideal for those new to RFID • Simple connection via master modules for IO-Link, such as SIMATIC S7-1200, ET 200SP, ET 200S, ET 200eco PN and ET 200AL • Use with the tried and tested ISO 15693 transponders (MDS Dxxx)	**6GT2**	Catalog ID 10
IO-Link: IODD files			
	IO Device Description (IODD) files provide the device description for IO-Link devices • Comprehensive IODD catalog of SIEMENS IO-Link devices • Freely available for downloading from Industry Online Support, see https://support.industry.siemens.com/cs/de/en/ps/15851		2/106

	Article No.	Page
IO-Link: Software		
 STEP 7 PCT **STEP 7 PCT (Port Configuration Tool)** Engineering software for configuring the IO-Link master modules for SIMATIC S7-1200, ET 200SP, ET 200eco PN and ET 200AL • Available as a stand-alone version or integrated into STEP 7 (V5.5 SP1 or later) and TIA (V12 or later) • Engineering of the IO-Link devices connected to the master • Monitoring of the process image of the IO-Link devices • Open interface for importing further IODDs • Freely available for downloading from Industry Online Support, see https://support.industry.siemens.com/cs/de/en/view/32469496		2/106
 Function block IO-Link device for TIA V13 SP1 **IO-Link function blocks (IO-Link Master and IO-Link device)** STEP 7 function block for easy acyclical data exchange in the user program • Freely available for downloading from Industry Online Support, see https://support.industry.siemens.com/cs/de/en/view/82981502		2/106
 "Siemens IO-Link Devices" function block library **"Siemens IO-Link Devices" function block library** This library provides function blocks and user-defined data types (UDTs) for all IO-Link devices from the Siemens portfolio. These blocks and UDTs standardize and simplify communication with IO-Link devices. • Freely available for downloading from Industry Online Support, see https://support.industry.siemens.com/cs/ww/en/view/90529409		2/106

Connection methods

	Screw terminals
	Spring-type terminals Spring-type terminals (push-in)
	Combicon connectors (plug-in screw terminals)
	FastConnect
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

2

Overview

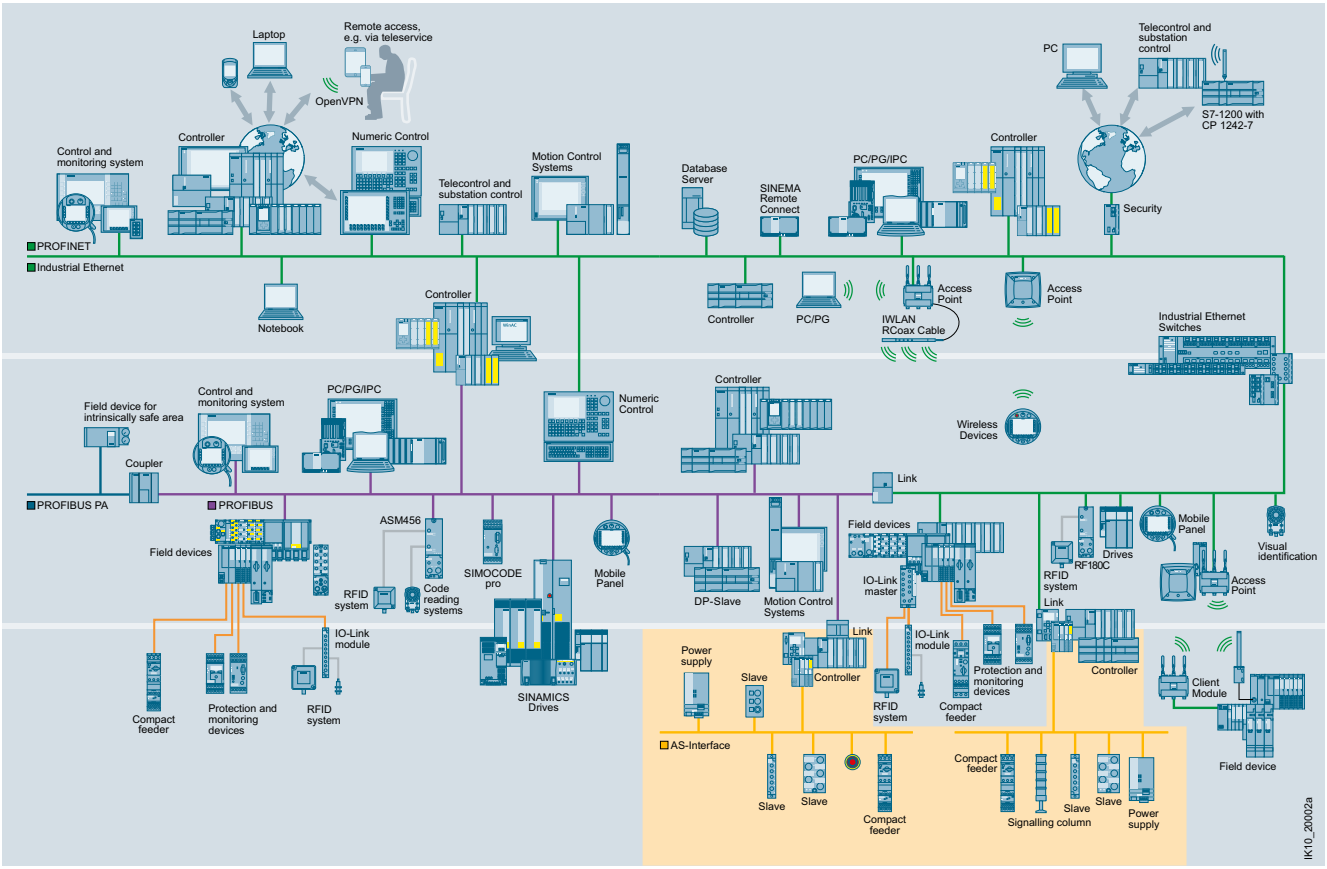
AS-Interface is an open, international standard according to EN 50295 and IEC 62026-2 for process and field communication. Leading manufacturers of actuators and sensors all over the world support the AS-Interface. Interested companies are provided with the electrical and mechanical specifications by the AS-Interface Association.

AS-Interface is a single master system. For automation systems from Siemens, there are communications processors (CPs) communications modules (CMs) and routers (links) that control the process or field communication as masters, and actuators and sensors that are activated as AS-Interface slaves.

More information

Home page, see www.siemens.com/as-interface

Industry Mall, see www.siemens.com/product?as-interface



AS-Interface in the SIMATIC NET communications landscape

Benefits

An important characteristic of the AS-Interface technology is the use of a shared two-wire cable for data transmission and distribution of auxiliary power to the sensors and actuators. A power supply unit that meets the requirements of the AS-Interface transmission method and has an external data decoupling module if required is used for the distribution of auxiliary power. The AS-Interface cable used for the wiring is mechanically coded and hence protected against polarity reversal and can be easily contacted by the insulation piercing method.

Elaborately wired control cables in the control cabinet and marshaling racks can be replaced by AS-Interface.

The AS-Interface cable can be connected to any points thanks to a specially developed cable and connection by the insulation piercing method.

With this concept you become extremely flexible and achieve high savings.

Application

I/O data exchange

The AS-i master automatically transfers the inputs and outputs between the controller and the digital and analog AS-Interface slaves. Slave diagnostics information is forwarded to the control system when required.

The latest AS-Interface masters according to the AS-Interface Specification V3.0 support integrated analog value processing. This means that data exchange with analog AS-Interface slaves is just as easy as with digital slaves.

Command interface

In addition to I/O data exchange with binary and analog AS-Interface slaves, the AS-Interface masters can provide a number of other functions through the command interface.

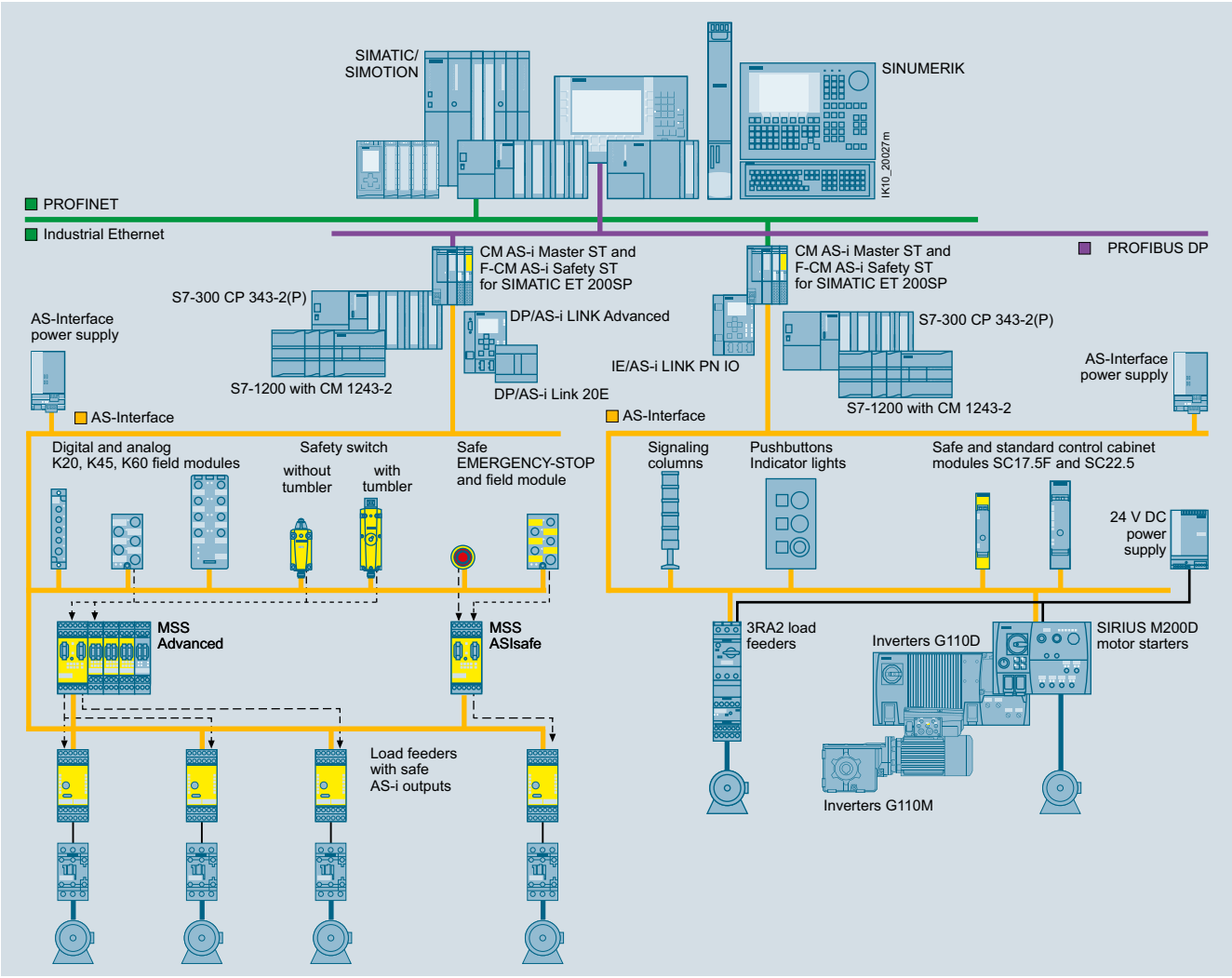
Hence it is possible, for example, for slave addresses to be issued, parameter values transferred or configuration information read out from user programs.

For more information, see https://support.industry.siemens.com/cs/de/en/view/51678777.

Overview

To implement communication, the following components of a system installation are available:

- AS-i modules for central control units such as SIMATIC S7, ET 200M/ET 200SP distributed peripherals, or network transitions from PROFIBUS or PROFINET to AS-Interface
- Power supply unit, if required in combination with a data decoupling module for the power supply to the slaves
- AS-Interface shaped cables
- Network components such as repeaters and extension plugs (cannot be used for AS-i Power24V)
- I/O modules (AS-i slaves) for connection of standard sensors/actuators
- Actuators and sensors with integrated AS-i slave
- Safe I/O modules (ASIsafe slaves) for transmitting safety-related data through AS-Interface
- Addressing device for setting slave addresses during commissioning



Example of a configuration with the system components

Features

Standard	EN 50295 / IEC 62026-2
Topology	Line, star or tree structure (same as electrical wiring)
Transmission medium	Unshielded two-wire cable (2 x 1.5 mm^2) for data and auxiliary power
Connection methods	Contacting of the AS-Interface cable by insulation piercing method
Maximum cable length	• 100 m without repeater • 200 m with extension plug • 300 m with two repeaters in series connection • 600 m with extension plugs and two repeaters in parallel connection Longer cable lengths are also possible when additional repeaters are connected in parallel

Maximum cycle time	• 5 ms in maximum configuration with 31 standard addresses • 10 ms in maximum configuration with 62 A/B addresses • Profile-specific for slaves with extended data, e.g. analog slaves
Number of stations per AS-Interface line	• Up to 62 Slaves (A/B technology) • Integrated analog value transmission
Number of binary sensors/actuators	Max. 496 DI/496 DQ
Access control	• Cyclic polling master/slave procedure • Cyclic data acceptance from host (PLC, PC)
Error safeguard	Identification and repetition of faulty message frames

Overview

Scope of AS-Interface Specification V3.0

Maximum number of slaves			Number of digital inputs	Number of digital outputs
Digital	Analog	ASIsafe	DI	DQ
62	62	31	62 × 8 = 496	62 × 8 = 496

Basic data

- AS-Interface Specification 3.0 describes a fieldbus system with an AS-i master and up to 62 AS-i slaves.
- The standard slaves continue to occupy one AS-i address (1...31).
- Slaves with extended addressing divide an address into an A address (1A...31A) and a B address (1B...31B). Up to 62 A/B slaves can be connected accordingly to one AS-Interface network.
- Mixed operation of standard slaves and A/B slaves is possible without difficulty. The AS-i master identifies automatically which type of slave is connected, so no special adjustments are required of the user.
- One digital AS-i slave typically has up to four digital inputs and four digital outputs.
- Transmission of the digital input/output data requires max. 5 ms cycle time for 31 slaves; for further values, see "Communication cycle".
- Integrated analog value transmission permits access to both analog values and digital values without the need for any special function blocks.

Communication cycle

Maximum cycle time (digital signals)
• 5 ms with 31 slaves • 10 ms with 62 slaves • Up to 20 ms for A/B slaves with 4DI/4DO • Up to 40 ms for A/B slaves with 8DI/8DO

Each address is queried in max. 5 ms cycle time. If two A/B slaves are operated on one basic address (e.g. 12A and 12B), a maximum of 10 ms will be required to update the data of both slaves.

All slave types can be mixed and used on a single AS-Interface network.

For more information, for example, to find out whether an AS-Interface slave is a standard or A/B slave, see "Selection and ordering data" of the relevant slave.

Available masters with the latest AS-Interface specification V3.0

- CM AS-i Master ST, F-CM AS-i Safety ST (ET 200SP)
- CM 1243-2 (S7-1200)
- CP 343-2, CP 343-2P (S7-300 / ET 200M)
- IE/AS-i LINK PN IO
- DP/AS-i LINK Advanced
- DP/AS-i F-Link
- DP/AS-Interface Link 20E

More information

More information
"AS-Interface" system manual
• German https://support.industry.siemens.com/cs/de/de/view/26250840
• English https://support.industry.siemens.com/cs/de/en/view/26250840

Overview

AS-Interface data decoupling modules for AS-i Power24V
Picture left: S22.5 data decoupling module,
Picture right: DCM 1271 data decoupling module for SIMATIC S7-1200

Parallel wiring frequently dominates, above all, in applications with very few I/Os. As the AS-Interface is also suitable for small applications, the additionally necessary 30 V AS-Interface power pack often also represents a cost barrier.

With the expansion of the AS-Interface to include AS-i Power24V and the associated option of using the existing standard 24 V DC power supply units in AS-i networks, the AS-Interface is now also opened for extremely tightly calculated applications.

Data and power in standard AS-Interface networks up to now

One of the great advantages of AS-Interface is the ability to convey not only data, but also the power needed for the connected slaves and sensors over the same unshielded two-conductor cable. This is owed to the service-proven AS-Interface power supply units which provide integrated data decoupling as well as overload and short-circuit protection and integrated ground-fault monitoring.

The new technology

Through the expansion of AS-Interface with AS-i Power24V it is now also possible to use 24 V standard power supply units in AS-i networks. The communication technology of AS-Interface works at the same high level of quality with an operating voltage of both 30 V DC and 24 V DC.

	Key data of AS-i Power24V
Number of slaves	Up to 62 standard slaves and up to 31 safe slaves
Topology	Any
Range	Up to 50 m
Components	• 24 V power supply unit with low residual ripple and limitation to max. 40 V • AS-i Power24V-capable data decoupling with integrated ground-fault detection • AS-i Power24V-capable masters, slaves and components

Requirements for operation of an AS-i Power24V network

- When 24 V power supply units are used, the maximum network range of 50 m must be observed to reach slaves and sensors with a sufficient level of voltage (at least 18 V).
- The power supply units must comply with the PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) standard, have a residual ripple of < 250 mV_{pp}, and must limit the output voltage to a maximum of 40 V in the event of a fault. We recommend SITOP power supplies; see page 15/1 onwards.
- When used in conjunction with standard 24 V power supply units, each AS-Interface network requires AS-i Power24V-capable data decoupling with adapted ground-fault detection; see page 2/80.
- For reliable operation of an AS-i network with 24 V voltage, it is important that the masters, slaves and other components are approved for AS-i Power24V. AS-i Power24V-capable AS-i components can also be used without restriction in standard 30 V AS-i networks.
- Use of repeaters or extension plugs in AS-i Power24V networks is not permitted.

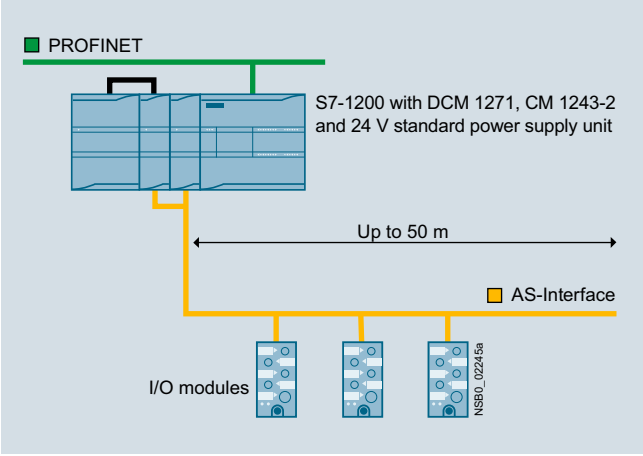
Benefits

AS-i Power24V networks incur no additional costs for an AS-Interface power supply unit because a pre-existing 24 V power supply unit can be used. This brings the user several benefits:

- The level of standardization of very small applications can be increased further.
- The additional advantages of a modern communication system in terms of commissioning, maintenance and diagnostics can be fully exploited.

Application

Configuration of an AS-i Power24V network



Configuration of an AS-i Power24V network with an AS-Interface DCM 1271 data decoupling module and S7-1200 (simple network)

More information

More information
For a complete overview of AS-i Power24V-capable devices currently available from Siemens, see https://support.industry.siemens.com/cs/de/en/view/42806066
For details of AS-i Power24V, see "AS-Interface" system manual, https://support.industry.siemens.com/cs/de/en/view/26250840

Overview

ASIsafe – Safety is included

ASIsafe enables the integration of safety-related components, such as EMERGENCY-STOP pushbuttons, protective door switches or safety light arrays, in an AS-Interface network. These are fully compatible with the familiar AS-Interface components (masters, slaves, power supplies, repeaters, etc.) in accordance with IEC 62026-2 and are operated in conjunction with them on the yellow AS-Interface cable.

Tested safety

The transmission method for safety-related signals is released for applications up to PL e according to EN ISO 13849-1 and up to SIL 3 (IEC 61508/EN 62061).

Higher-level control

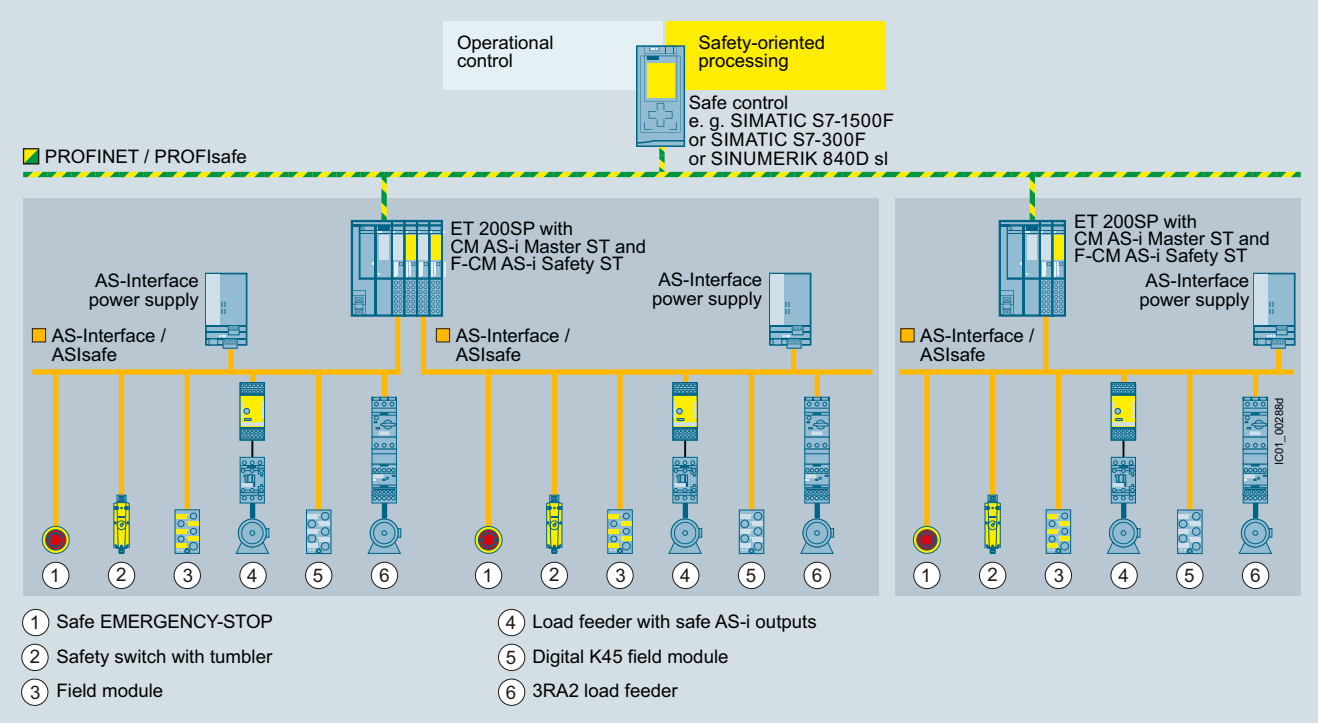
As usual, nodes on the AS-Interface bus are controlled in operation by the standard program of the higher-level SIMATIC (F) CPU or by a SINUMERIK control.

Configuring safety functions

In order to implement safe functions, the information from the safe and standard nodes must be combined logically and further parameters set. The configuration of the safety functions depends on which safety solution is being used:

- AS-i safety solution with F-CPU:
  In conjunction with the modular safety AS-i master, which is formed by combining the CM AS-i master ST and F-CM AS-i Safety ST modules in an ET 200SP station, all safety functions and combinations are configured via STEP 7 and processed in the controller (F-CPU) by the fail-safe program.
- In the case of the AS-i safety solution with local evaluation by MSS:
  In conjunction with the Modular Safety System all safety functions and combinations are configured using the MSS ES software and processed in the MSS central unit.

AS-i safety solution with F-CPU



AS-Interface configuration with AS-i Master modules in the ET 200SP

The AS-i communication modules in the ET 200SP facilitate the use of AS-Interface under fail-safe SIMATIC or SINUMERIK controllers.

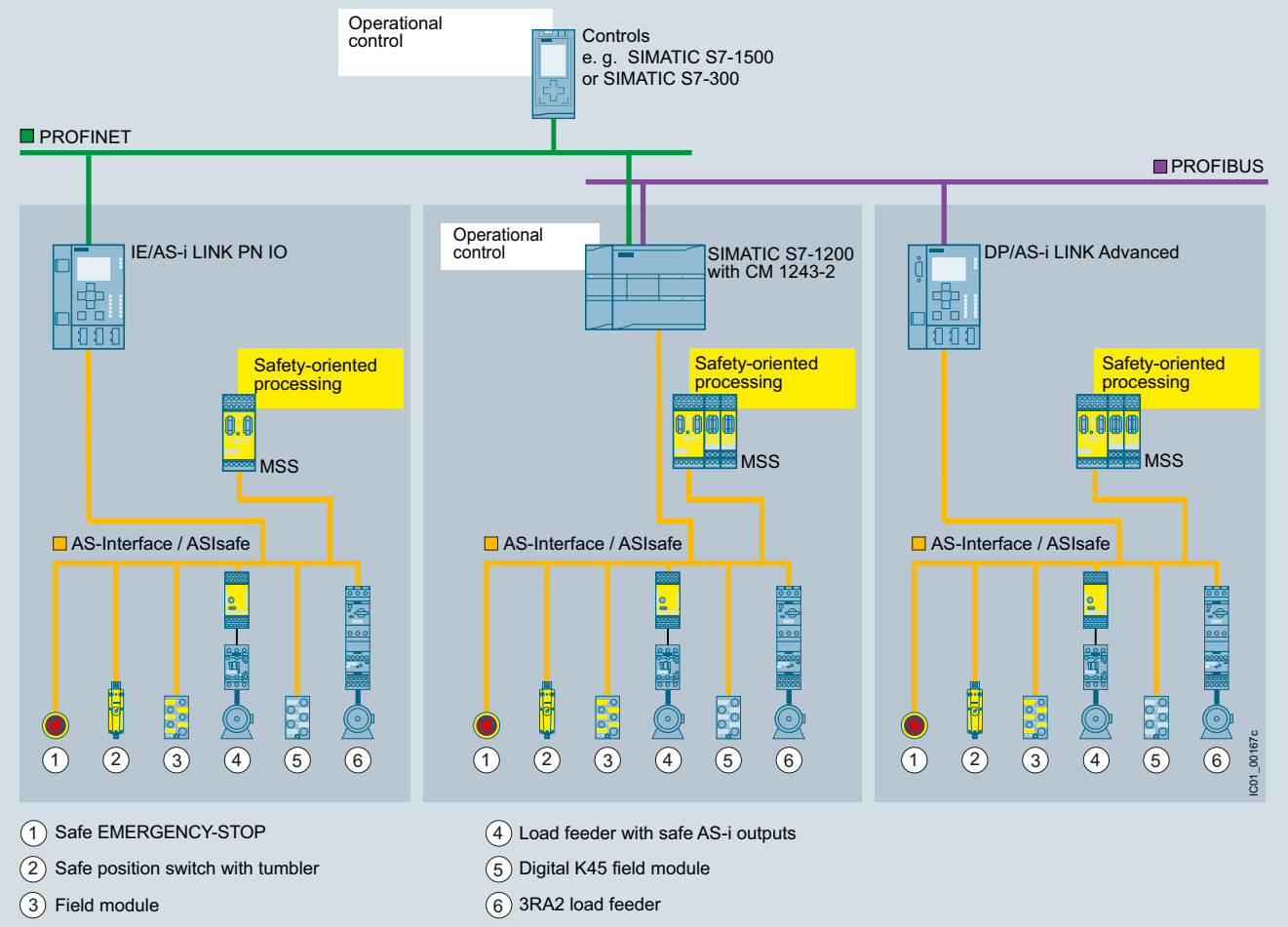
The allocation of tasks is as follows:

- Acquisition of safety-related signals via safe input slaves on the AS-Interface bus.
  Further signals can be detected through other F-DI modules of the SIMATIC.
- Evaluation and processing of signals via the fail-safe SIMATIC or SINUMERIK control
- Reacting by means of safety output modules on the AS-Interface bus or other SIMATIC F-DQ modules

Simple combination of the CM AS-i Master ST and F-CM AS-i Safety ST modules in one ET 200SP station results in a powerful, safety-oriented network transition between PROFINET (or PROFIBUS) and AS-Interface, which can be expanded further in a modular fashion with further I/O modules of the ET 200SP.

Using these design methods, it is possible to create configurations for virtually any application. Besides the single AS-i master, double, triple or generally multiple masters can be realized with or without fail-safe functionality.

AS-i safety solution with local evaluation by MSS



AS-Interface design with 3RK3 Modular Safety System (MSS)

The local AS-i safety solution uses the 3RK3 Modular Safety System (MSS) for safety-related processing. In this case, one standard controller (i.e. no F-CPU) and one standard AS-i master are sufficient.

The allocation of tasks is as follows:

- Acquisition of safety-related signals via safe input slaves on the AS-Interface bus.
  Further signals can be acquired via F-DI inputs of the central unit or the expansion modules of the MSS.
- Acquisition and processing of signals via the central unit of the MSS
- Reacting by means of safety output modules on the AS-Interface bus or via F-DQ outputs of the central unit or expansion modules of the MSS

Benefits

- Simple system structure thanks to standardized AS-Interface technique
- Safety-related and standard data on the same bus
- Existing systems can be expanded quickly and easily
- Optimum integration in TIA (Safety Diagnostics) and Safety Integrated
- Inclusion of the safety signals in the plant diagnostics, also on existing HMI panels
- Approved to PL e according to EN ISO 13849-1 or SIL 3 according to IEC 61508
- ASIsafe is certified by TÜV (Germany), NRTL (USA) and INRS (France)

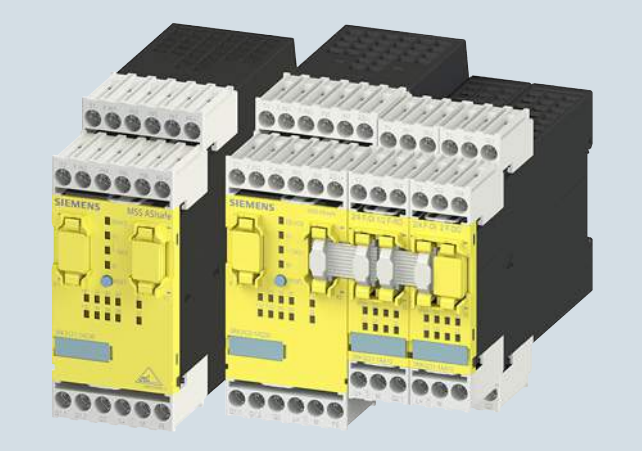
Application

Integrated safety technology in the AS-Interface system can be used wherever EMERGENCY STOP buttons, safety gate interlocks, safety switches, light grids and two-hand operation are installed.

More information

More information
For further information and typical circuit diagrams on safety engineering, see https://support.industry.siemens.com/cs/ww/en/view/83150405

Overview



MSS ASIsafe basic (left) and
MSS ASIsafe extended with two expansion modules (right)

The Modular Safety System (MSS) is the centerpiece of ASIsafe Solution local. It allows a safety-related response to signals from the ASIsafe nodes connected in the AS-i network, such as safety input modules, EMERGENCY-STOP pushbuttons or safety switches.

The MSS thus supports safety-related applications up to Category 4 according to EN ISO 13849-1 or SIL 3 according to IEC 62061.

Safe disconnection takes place via the local safety outputs of the MSS or via the distributed safe AS-Interface outputs in the AS-Interface network.

The safety functions are configured within the MSS using the SIRIUS Safety ES software. The configuration can be transmitted directly in the MSS via the system interface with the aid of a PC cable or memory module. If the DP interface module is used, transmission via PROFIBUS DP is also possible.

The MSS supports a large number of different safety functions. These can be tailored to individual needs in the form of ready-made function blocks.

The safety functions supported include the following:

- EMERGENCY-STOP
- Safety shutdown mat
- Protective door monitoring
- Protective door tumbler mechanism
- Approval switches
- Two-hand operator controls
- ESPE monitoring
- Muting
- Mode selector switches

Application

All the MSS that can be used for the AS-Interface bus support the same safety functions. Differences exist in the number of inputs/outputs and expansion modules that can be connected, and hence in the number of independent enabling circuits.

Several MSS can be used on the same AS-Interface bus.

AS-Interface is available in the following versions:

MSS ASIsafe basic

- A total of up to ten independent (2-channel) enabling circuits
  - Two of these enabling circuits via safety outputs integrated into the central unit
  - And another eight enabling circuits via ASIsafe, e.g. with distributed AS-i safety outputs

MSS ASIsafe extended

- A total of up to 20 independent (2-channel) enabling circuits
  - Two of these enabling circuits via safety outputs integrated into the central unit
  - In addition, up to eight enabling circuits via a maximum of two expansion modules
  - And another ten enabling circuits via ASIsafe, e.g. with distributed AS-i safety outputs

MSS Advanced

- A total of up to 50 independent (2-channel) enabling circuits
  - Two of these enabling circuits via safety outputs integrated into the central unit
  - In addition, up to 36 enabling circuits via a maximum of nine expansion modules
  - and another 12 enabling circuits via ASIsafe, e.g. with distributed AS-i safety outputs

Expandability

All versions above can be expanded by adding a DP interface module and a diagnostics module. In addition, various safety and non-safety expansion modules can be selected for the MSS, and these can be used in any combination; see page 11/37.

Comparison of the three MSS versions

MSS 3RK3	ASIsafe basic	ASIsafe extended	Advanced
Number of independent (2-channel) enabling circuits	2 ... 10	2 ... 20	2 ... 50
Inputs	2 F-DI and 6 DI	4 F-DI and 4 DI (expandable)	8 F-DI (expandable)
Outputs	1 F-DO and 1 F-RO	1 F-DO and 1 F-RO (expandable)	
Number Expansion modules	--	Up to 2	Up to 9
Connection to ASIsafe			
Number of safe AS-i outputs	Up to 8	Up to 10	Up to 12
Number of safe AS-i inputs	Up to 31		

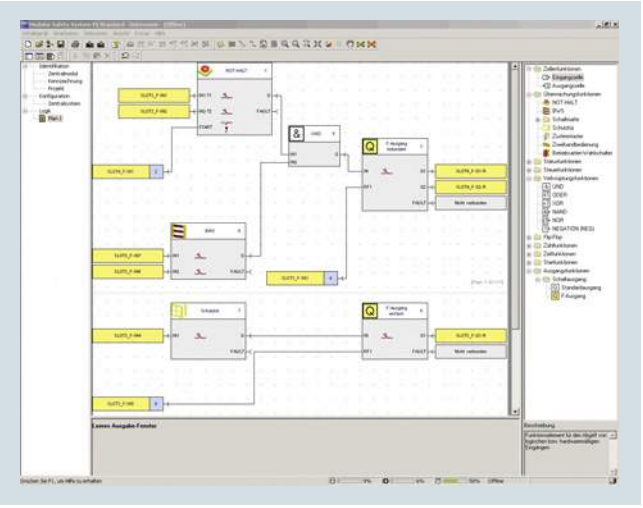
-- Not available

Software for start-up, testing and diagnostics: SIRIUS Safety ES

SIRIUS Safety ES is the engineering software for configuration, startup and diagnostics of the 3RK3 Modular Safety System and the 3SK2 safety relays.

All function elements can be positioned using drag & drop. All functions – whether safety or logic functions – are available as blocks and can also be easily combined with one another.

SIRIUS Safety ES makes it possible to test the safety application by forcing. Outputs can be individually set in order to test in advance the reaction of the downstream safety function. In addition, the parameterization can be downloaded to the MSS via PROFIBUS. The integrated macro function allows you to compile a library of your own function elements for reuse in other projects. In addition, the parameterization software is suitable for use as a reliable diagnostics tool: the status of each element as well as the configuration as a whole can be viewed online.



SIRIUS Safety ES user interface showing the ISO diagram display

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42B

Version	SD d	Screw terminals Article No.	Price per PU	SD d	Spring-type terminals Article No.	Price per PU
Central units						
 3RK3121-1AC00  3RK3121-2AC00						
3RK3 ASIsafe basic Central units for connecting to AS-Interface with safety-related inputs and outputs • 2 safe inputs • 6 standard inputs • 1 two-channel relay output • 1 two-channel electronic output • Memory module 3RK3931-0AA00 is included in the scope of supply • No expansion modules can be connected	2	**3RK3121-1AC00**		2	**3RK3121-2AC00**	
 3RK3122-1AC00  3RK3122-2AC00						
3RK3 ASIsafe extended Central units for connecting to AS-Interface with safety-related inputs and outputs • 4 safe inputs • 4 standard inputs • 1 two-channel relay output • 1 two-channel electronic output • Memory module 3RK3931-0AA00 is included in the scope of supply • Max. 2 expansion modules can be connected	2	**3RK3122-1AC00**		2	**3RK3122-2AC00**	
 3RK3131-1AC10  3RK3131-2AC10						
3RK3 Advanced Central units for connecting to AS-Interface with safety-related inputs and outputs • 8 safe inputs • 1 two-channel relay output • 1 two-channel electronic output • Memory module 3RK3931-0AA00 is included in the scope of supply • Max. 9 expansion modules can be connected	2	**3RK3131-1AC10**		2	**3RK3131-2AC10**	

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42B

Expansion modules

Version	SD d	Screw terminals Article No.	Price per PU	SD d	Spring-type terminals Article No.	Price per PU
4/8 F-DI Safety-related input modules • 8 inputs	2	**3RK3211-1AA10**		2	**3RK3211-2AA10**	
2/4 F-DI 1/2 F-RO Safety-related input/output modules • 4 inputs • 2 single-channel relay outputs	2	**3RK3221-1AA10**		2	**3RK3221-2AA10**	
2/4 F-DI 2 F-DO Safety-related input/output modules • 4 inputs • 2 two-channel electronic outputs	2	**3RK3231-1AA10**		2	**3RK3231-2AA10**	
4/8 F-RO Safety-related output modules • 8 single-channel relay outputs	2	**3RK3251-1AA10**		2	**3RK3251-2AA10**	
4 F-DO Safety-related output modules • 4 two-channel electronic outputs	2	**3RK3242-1AA10**		2	**3RK3242-2AA10**	
8 DI Standard input module • 8 inputs	2	**3RK3321-1AA10**		2	**3RK3321-2AA10**	
8 DO Standard output module • 8 solid-state outputs	2	**3RK3311-1AA10**		2	**3RK3311-2AA10**	


3RK3211-1AA10


3RK3211-2AA10


3RK3221-1AA10


3RK3221-2AA10


3RK3231-1AA10


3RK3231-2AA10


3RK3251-1AA10


3RK3251-2AA10


3RK3242-1AA10


3RK3242-2AA10


3RK3321-1AA10


3RK3321-2AA10


3RK3311-1AA10


3RK3311-2AA10

* You can order this quantity or a multiple thereof.
Illustrations are approximate

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42B

Version	SD d	Screw terminals Article No.	Price per PU	SD d	Spring-type terminals Article No.	Price per PU
Interface modules						
 3RK3511-1BA10  3RK3511-2BA10 **DP interface** PROFIBUS DP interface, 12 Mbit/s, RS 485, cyclic and acyclic data exchange	2	**3RK3511-1BA10**		2	**3RK3511-2BA10**	
Operating and monitoring modules						
 3RK3611-3AA00 **Diagnostics module** For direct display of faults, e. g. of cross-circuits	2	**3RK3611-3AA00**			--	

Accessories for MSS: see page 11/38.

More information

More information	
Modular safety system (MSS), see from 11/28 onwards SIRIUS Safety ES software, see 14/34 onwards	"3RK3 (MSS) Modular Safety System" system manual, see https://support.industry.siemens.com/cs/de/en/view/26493228

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Selection and ordering data


3RK1105-1BE04-0CA0

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Basic safety monitors Version 3 With screw terminals, removable terminals, Width 45 mm		**Screw terminals**				
• 1 enabling circuit (monitor type 1)	2	**3RK1105-1AE04-0CA0**		1	1 unit	42C
• 2 enabling circuits (monitor type 2)	2	**3RK1105-1BE04-0CA0**		1	1 unit	42C
Expanded safety monitors Version 3 With screw terminals, removable terminals, Width 45 mm						
• 1 enabling circuit (monitor type 3)	2	**3RK1105-1AE04-2CA0**		1	1 unit	42C
• 2 enabling circuits (monitor type 4)	2	**3RK1105-1BE04-2CA0**		1	1 unit	42C
Expanded safety monitor with integrated safe slave Version 3 With screw terminals, removable terminals, width 45 mm						
• 2 enabling circuits including control of a safe AS-i output / safe coupling (monitor type 6)	2	**3RK1105-1BE04-4CA0**		1	1 unit	42C
Basic safety monitors Version 3 With spring-type terminals, removable terminals, Width 45 mm		**Spring-type terminals**				
• 1 enabling circuit (monitor type 1)	2	**3RK1105-1AG04-0CA0**		1	1 unit	42C
• 2 enabling circuits (monitor type 2)	2	**3RK1105-1BG04-0CA0**		1	1 unit	42C
Expanded safety monitors Version 3 With spring-type terminals, removable terminals, Width 45 mm						
• 1 enabling circuit (monitor type 3)	2	**3RK1105-1AG04-2CA0**		1	1 unit	42C
• 2 enabling circuits (monitor type 4)	2	**3RK1105-1BG04-2CA0**		1	1 unit	42C
Expanded safety monitor with integrated safe slave Version 3 With spring-type terminals, removable terminals, Width 45 mm						
• 2 enabling circuits including control of a safe AS-i output / safe coupling (monitor type 6)	2	**3RK1105-1BG04-4CA0**		1	1 unit	42C

Accessories


3RK1901-5AA00

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
ASIsafe CD Included in the scope of supply: • ASIMON V3 configuration software on CD ROM, for PC with the 32-bit operating systems Windows XP, Windows Vista Business / Ultimate, Windows 7	2	**3RK1802-2FB06-0GA1**		1	1 unit	42C
Cable sets Included in the scope of supply: • PC configuration cable for communication between PC (serial interface) and safety monitor, length approx. 1.50 m • Data transfer cable between two safety monitors, length approx. 0.25 m	▶	**3RK1901-5AA00**		1	1 unit	42C
Sealable covers For securing against unauthorized configuration of the safety monitor	5	**3RP1902**		1	5 units	41H
Push-in lugs For screw fixing	5	**3RP1903**		1	10 units	41H

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

AS-Interface safety modules: K45F (left), K20F (center) and SC17.5F (right)

S45F SlimLine module, safe AS-i output

Safety modules for AS-Interface (ASIsafe modules) are available for field use in degree of protection IP67 (K20F and K45F compact modules) and for the control cabinet (SC17.5F SlimLine Compact modules) in degree of protection IP20.

A very compact module with an optimum price /performance ratio is thus available for very application.

All modules for the connection of (mechanical) switches and safety sensors with contacts feature crossover monitoring of the connected sensor line. On versions for the connection of electronic switches and safety sensors (e.g. light arrays) the cross-circuit monitoring must be performed by the sensor.

AS-Interface safety modules

The following modules are available for selection:

K20F compact safety modules for operation in the field

Being only 20 mm wide, the K20F module is particularly well suited for applications where modules need to be arranged in the most confined of spaces. The K20F modules are connected to the AS-Interface with a round cable with M12 cable box instead of with the AS Interface flat cable. This enables extremely compact installation. The flexibility of the round cable means that it can also be used on moving machine parts without any problems. The K20 modules are also ideal for such applications as their non-encapsulated design makes them particularly light in weight.

K45F compact safety modules for use in the field

The platform of the K45F modules covers the following variations:

- Connection of ("mechanical") switches/safety sensors with contacts:
  - K45F 2F-DI: Two safety-related inputs in operation up to Category 2 according to EN ISO 13849-1. If Category 4 is required, a two-channel input is available on the module.
  - K45F 2F-DI/2DQ: There are also two standard outputs in addition to the safe inputs. Supplied from the yellow AS-i cable
  - K45F 2F-DI/2DQ U_{aux}: same as K45F 2F-DI/2DQ, but supplied from the black 24 V DC cable
  - K45F 4F-DI: Four safety-related inputs in operation up to Category 2, two for Category 4 Extremely compact double slave (uses two full AS-i addresses).
- Connection of solid-state switches / safety sensors (non-contact protective devices, BWS):
  - K45F LS (light sensor): Safe input module for connecting electronic safety sensors with testing semiconductor outputs (OSSD).
    In particular, non-contact protective devices, such as active, optoelectronic light curtains and arrays for Type 2 and Type 4 according to IEC 61496.
    Transmitters as well as receivers are supplied with power by the yellow AS-i cable. Matching sensor cables and optionally a separate transmitter supply module are available as accessories.

SC17.5F SlimLine Compact safety modules with a width of just 17.5 mm for use in control cabinets and local control boxes

With a width of only 17.5 mm, the safe SlimLine Compact modules SC17.5F are ideal for space-saving use in a control cabinet. The modules have more than two safety inputs for connecting signals to ASIsafe networks in the control cabinet. For operation up to Category 2, both inputs can be separately assigned; if Category 4 is required, a two-channel input is available on the module.

There are also two module variants which have two standard outputs in addition to the two safety inputs. The outputs are supplied either from the yellow AS-Interface cable alone, or via auxiliary voltage from the black 24 V DC cable. The supply voltage is set via a slide switch on the rear of the device.

When using several modules, they can be connected simply via the optional device connector. This simplifies the wiring. The yellow AS-i bus cable and the 24 V DC auxiliary voltage U_{aux} then only need to be connected to one module.

AS-Interface safety modules

2

S45F SlimLine safety modules with safety outputs for the safe distributed disconnection of actuators

With the S45F SlimLine safety module, the shutdown signal, for example from the Modular Safety System, can be used via ASIsafe for distributed safety-related disconnection.

To this end, the module has a two-channel relay output. As an additional possibility the module offers normal switching of the output using an AS-i standard output bit.

The module has three digital inputs and two digital outputs for the additional connection of sensors and actuators. These can be used, among other things, for the required monitoring of downstream contactors of the feedback circuit.

Selection and ordering data

	Version			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
 3RK1205-0BQ30-0AA3	**K20F compact safety modules**								
	I/O type	U_{aux} 24 V							
	2F-DI	--		2	**3RK1205-0BQ30-0AA3**		1	1 unit	42C
 3RK1205-0BQ00-0AA3	**K45F compact safety modules**								
	Modules supplied without mounting plate								
	I/O type	U_{aux} 24 V							
	2F-DI	--		▶	**3RK1205-0BQ00-0AA3**		1	1 unit	42C
	4F-DI[1]	--		2	**3RK1205-0CQ00-0AA3**		1	1 unit	42C
	2F-DI/2DQ	--		5	**3RK1405-0BQ20-0AA3**		1	1 unit	42C
	2F-DI/2DQ	✓		5	**3RK1405-1BQ20-0AA3**		1	1 unit	42C
	2F-DI LS type 2[2]	--		5	**3RK1205-0BQ21-0AA3**		1	1 unit	42C
	2F-DI LS type 4[3]	--		5	**3RK1205-0BQ24-0AA3**		1	1 unit	42C
 3RK1405-0BE00-2AA2	**SC17.5F SlimLine Compact safety modules**								
	(Slave type: Standard)								
	Connection	I/O type	Outputs						
	Screw	2F-DI	--	2	**3RK1205-0BE00-2AA2**		1	1 unit	42C
	Spring-type (push-in)			2	**3RK1205-0BG00-2AA2**		1	1 unit	42C
	Screw	2F-DI/2Q	U_{ASI}/U_{aux} supply can be switched over	2	**3RK1405-2BE00-2AA2**		1	1 unit	42C
	Spring-type (push-in)			2	**3RK1405-2BG00-2AA2**		1	1 unit	42C
 3RK1405-1SE15-0AA2	**S45F SlimLine safety module**								
	(with safe AS-i output)								
	Connection	I/O type	U_{aux} 24 V						
	Screw	1F-RQ/3DI/2DQ	✓	2	**3RK1405-1SE15-0AA2**		1	1 unit	42C
	Spring-type			2	**3RK1405-1SG15-0AA2**		1	1 unit	42C

✓ Available or possible

-- Not available or not possible

1) Module occupies two AS-Interface addresses

2) Connection of previous Siemens light curtain FS 400 3RG7843 (type 2) through socket 1/3.

3) Connection of previous Siemens light curtain FS 400 3RG7846 (type 4) through socket 1/3, other makes through socket 2/3.

The existing SlimLine series of I/O modules for use in the control cabinet and local control boxes is being replaced by the new SlimLine Compact series. We recommend that these new devices are used in future.

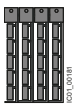
For the conversion table, see page 2/74.

Note:

The previous SlimLine devices are still available for use as replacements in existing systems. As a result of the innovation, the new SlimLine Compact devices are not fully compatible in terms of either mechanical dimensions or electrical properties.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
	Accessories for compact safety modules						
 3RK1901-2EA00	**K45 mounting plates** For mounting K45F						
	• For wall mounting	▶	**3RK1901-2EA00**		1	1 unit	42C
	• For standard rail mounting	▶	**3RK1901-2DA00**		1	1 unit	42C
	24 V supply modules for K45F LS (light sensor) • Optional, for transmitter power supply for large protective field widths • Max. current carrying capacity 200 mA • Modules supplied without mounting plate	5	**3RK1901-1NP00**		1	1 unit	42C
 3RK1901-1AA00	**Input bridges for K45F**						
	• Black version	2	**3RK1901-1AA00**		1	1 unit	42C
	• Red version	30	**3RK1901-1AA01**		1	1 unit	42C
 3RK1901-1KA00	**AS-Interface sealing caps M12** For free M12 sockets	▶	**3RK1901-1KA00**		100	10 units	42C
 3RK1901-1KA01	**AS-Interface M12 sealing caps, tamper-proof** For free M12 sockets	2	**3RK1901-1KA01**		100	10 units	42C
	Accessories for SlimLine Compact safety modules						
 3RK1901-1YA00 3RK1901-1YA01	**Device connectors** For the electrical connection of SlimLine Compact modules (connects AS-i bus cable and 24 V DC auxiliary power supply U_{aux} when using several SlimLine Compact modules)						
	• Width 17.5 mm	2	**3RK1901-1YA00**		1	1 unit	42C
	• Width 22.5 mm	2	**3RK1901-1YA10**		1	1 unit	42C
	Device termination connectors Required for the last module in the network						
	• Width 17.5 mm	2	**3RK1901-1YA01**		1	1 unit	42C
	• Width 22.5 mm	2	**3RK1901-1YA11**		1	1 unit	42C
 3ZY1121-2BA00	**Removable terminals**		**Screw terminals**				
	• Screw terminals up to 2 x 1.5 mm² or 1 x 2.5 mm²						
	- 2-pole	2	**3ZY1121-1BA00**		1	6 units	41L
	- 4-pole	2	**3ZY1141-1BA00**		1	6 units	41L
			Spring-type terminals (push-in)				
	• Push-In terminals up to 2 x 1.5 mm²						
	- 2-pole	2	**3ZY1121-2BA00**		1	6 units	41L
	- 4-pole	2	**3ZY1141-2BA00**		1	6 units	41L
	Push-in lugs for wall mounting Two lugs are required per device	2	**3ZY1311-0AA00**		1	10 units	41L
	Coding pins for removable terminals For mechanical coding of the terminals	2	**3ZY1440-1AA00**		1	12 units	41L
 3RT2900-1SB20	**Blank labels** Unit labeling plates[1]						
	• 10 mm x 7 mm, titanium gray	20	**3RT2900-1SB10**		100	816 units	41B
	• 20 mm x 7 mm, titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
 3RA2908-1A	**Tools for opening spring-type terminals**		**Spring-type terminals**				
	Screwdriver for SIRIUS devices with spring-type terminals 3.0 mm x 0.5 mm, length approx. 200 mm; Titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/20).

More information

More information
"SlimLine Compact Modules" Manual, see https://support.industry.siemens.com/cs/ww/en/view/109481489

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

CM 1243-2 communication module for S7-1200

The CM 1243-2 communication module is the AS-Interface master for the SIMATIC S7-1200 and has the following features:

- Connection of up to 62 AS-Interface slaves
- Integrated analog value transmission
- Supports all AS-Interface master functions in accordance with the AS-Interface Specification V3.0
- Indication of the operating state on the front of the device displayed via LED
- Display of operating mode, AS-Interface voltage faults, configuration faults and peripheral faults via LED behind the front panel
- Compact enclosure in the design of the SIMATIC S7-1200
- Suitable for AS-i Power24V: A standard 24 V power supply unit can be used in combination with the optional DCM 1271 data decoupling module.
- Configuration and diagnostics via the TIA portal

Design

The CM 1243-2 communication module is positioned to the left of the S7-1200 CPU and linked to the S7-1200 via lateral contacts.

It has:

- Terminals for two AS-i cables (internally jumpered) via two screw terminals each respectively
- One terminal for connection to the functional ground
- LEDs for indication of the operating state and fault statuses of the connected slaves

The screw terminals (included in scope of supply) can be removed to facilitate installation.

Function

The CM 1243-2 supports all specified functions of the AS-Interface Specification V3.0.

The values of the digital AS-i slaves can be activated via the process image of the S7-1200. During configuration of the slaves in the TIA Portal, the values of the analog AS-i slaves can also be accessed directly in the process image.

It is also possible to exchange all data of the AS-i master and the connected AS-i slaves with the S7-1200 via the data record interface.

Changeover of the operating mode, automatic application of the slave configuration and the re-addressing of a connected AS-i slave can be implemented via the control panel of the CM 1243-2 in the TIA Portal.

The optional DCM 1271 data decoupling module (see page 2/87) has an integrated detection unit for detecting ground faults on the AS-Interface cable. The integrated overload protection also disconnects the AS-Interface cable if the drive current required exceeds 4 A.

Notes on safety

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

To configure CM 1243-2, you require STEP 7 V11 + SP2 or higher.

For STEP 7 V11 + SP2 or higher, the additional Hardware Support Package for CM 1243-2 is required.
This is available via the Industry Online Support Portal. see https://support.industry.siemens.com/cs/ww/en/view/54164095.

The software enables user-friendly configuration and diagnostics of the AS-Interface master and any connected slaves.

Alternatively, you can also apply the AS-Interface ACTUAL configuration at the "touch of a button" via the control panel integrated in the TIA Portal/STEP 7.

When operated on an S7-1200 CPU with firmware version V4.0 or higher, the firmware version V1.1 (or higher) is required for the CM 1243-2.

Benefits

- More flexibility and versatility in the use of SIMATIC S7-1200 as the result of a significant increase in the number of digital and analog inputs/outputs available
- Very easy configuration and diagnostics of the AS-Interface via the TIA Portal (STEP 7 V11+SP2 or higher)
- No need for the AS-i power supply unit with AS-i Power24V: the AS-Interface cable is supplied through an existing 24 V DC PELV power supply unit. For decoupling, the AS-i DCM 1271 data decoupling module is required; see page 2/87.
- LEDs for indication of fault statuses for fast diagnostics
- Monitoring of AS-Interface voltage facilitates diagnostics

Application

The CM 1243-2 is the AS-Interface master connection for the 12xx CPUs of the SIMATIC S7-1200. Connection to the AS-Interface greatly increases the number of inputs and outputs available for S7-1200 (max. 496 DI/496 DO on the AS-Interface per CM).

The integrated analog value processing also makes the analog values available at the AS-Interface for the S7-1200 (per CM up to 31 standard analog slaves, each with up to four channels, or up to 62 A/B analog slaves, each with up to two channels).

Operating conditions

- The CM 1243-2 communication module exchanges data with the S7-1200 CPU with a cycle time of 10 ms.
- The AS-i cycle time depends on the AS-i bus capacity and is up to 5 ms in the case of 31 standard slaves; for more information, see Manual "AS-i Master CM 1243-2 and AS-i DCM 1271 Data Decoupling Module for SIMATIC S7-1200" , https://support.industry.siemens.com/cs/ww/en/view/57358958.
- For calculation of the maximum switching frequency at inputs/outputs of AS-i slaves, these cycle times and the runtime of the user program must be added up.

Selection and ordering data

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No. / Price per PU			
CM 1243-2 communication module • AS-Interface masters for SIMATIC S7-1200 • Corresponds to AS-Interface Specification V3.0 • With screw terminals, removable terminals (included in scope of supply) • Dimensions (W × H × D / mm): 30 × 100 × 75	2	**3RK7243-2AA30-0XB0**	1	1 unit	42C

3RK7243-2AA30-0XB0

Accessories

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No. / Price per PU			
5-pin screw terminal (spare part) • for AS-i master CM 1243-2 and AS-i DCM 1271 data decoupling module • With screw terminals	5	**3RK1901-3MA00**	1	1 unit	42C

More information

More information
Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/15750/man

Overview

CP 343-2P / CP 343-2

The CP 343-2P communications processor is the AS-Interface master for the SIMATIC S7-300 and the ET 200M distributed I/O station, with user-friendly parameterizing options.

The CP 343-2 is the basic version of the module.

The CP 343-2P / CP 343-2 has the following characteristics:

- Connection of up to 62 AS-Interface slaves
- Integrated analog value transmission
- Support of all AS-Interface master functions in accordance with the AS-Interface Specification V3.0
- Status displays of operating states and indication of the readiness for operation of connected slaves by means of LEDs in the front panel
- Fault indications (including AS-Interface voltage errors, configuration errors) by means of LEDs on the front plate.
- Compact enclosure in the design of the SIMATIC S7-300
- Suitable for AS-i Power24V (from product version 2/firmware version 3.1) and for standard AS-i with 30 V voltage
- Additionally for CP 343-2P: Supports the configuration of the AS-Interface network with STEP 7 V5.2 and higher

Design

The CP 343-2P / CP 343-2 is connected like an I/O module to the S7-300. It has:

- Two terminal connections for connecting the AS-Interface cable directly.
- LEDs in the front panel for indicating the operating state and the readiness for operation of all connected and activated slaves
- Pushbuttons for switching over the master operating state and for adopting the existing ACTUAL configuration of the AS-i slave as the TARGET configuration

Function

The CP 343-2P / CP 343-2 supports all specified functions of the AS-Interface Specification V3.0.

The CP 343-2P / CP 343-2 each occupy 16 bytes in the I/O address area of the SIMATIC S7-300. The digital I/O data of the standard slaves and A slaves is saved in this area. The digital I/O data of the B slaves and the analog I/O data can be accessed with the S7 system functions for read/write data records.

If required, master calls can be performed with the command interface, e.g. read/write parameters, read/write configuration.

For more information, see https://support.industry.siemens.com/cs/ww/en/view/51678777.

Notes on safety

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

All connected AS-Interface slaves are configured at the press of a button. No further configuration of the CP is required.

Additionally for CP 343-2P

The CP 343-2P also supports configuring of the AS-Interface network with STEP 7 V5.2 and higher. Specifying the AS-i configuration in HW-Config facilitates the setting of slave parameters and documentation of the plant. Uploading the ACTUAL configuration of an already configured AS-Interface network is also supported. The saved configuration cannot be overwritten at the press of a button and is therefore tamper-proof.

Benefits

- Shorter start-up times through simple configuration at the press of a button
- Design of flexible machine-related structures using the ET 200M distributed I/O system
- Provides diagnostics of the AS-Interface network
- Well suited also for complex applications thanks to connection options for 62 slaves and integral analog value processing
- Reduction of standstill and servicing times in the event of a fault thanks to the LED indicators:
  - Status of the AS-Interface network
  - Slaves connected and their readiness for operation
  - Monitoring of the AS-Interface mains voltage
- Lower costs for stock keeping and spare parts inventory because the CP can be used for the SIMATIC S7-300 and also for the ET 200M
- Additionally for CP 343-2P: Improved plant documentation and support for service assignments thanks to a description of the AS-Interface configuration in the STEP 7 project
- No need for the AS-i power supply unit with AS-i Power24V: The AS-Interface cable is supplied through an existing 24 V DC PELV power supply unit. An S22.5 AS-i data decoupling module (e.g. 3RK1901-1DE12-1AA0) is required for the decoupling, see page 2/88.
- Operation with IP20 AS-Interface power supply (see page 2/82) also possible without restrictions

Application

The CP 343-2P / CP 343-2 is the AS-Interface master connection for the SIMATIC S7-300 and the ET 200M.

Through connection to AS-Interface it is possible to access max. 248 DI/248 DO per CP, using 62 A/B slaves with 4 DI/4 DO each.

With the integrated analog value processing, it is easy to transmit analog signals (per CP up to 62 A/B analog slaves with a maximum of 2 channels each or up to 31 standard analog slaves with a maximum of 4 channels each).

The CP 343-2P is the further development of the CP 343-2 and contains its entire functionality. An existing STEP 7 user program for a CP 343-2 can thus be used without restrictions with a CP 343-2P. It is only in STEP 7 HW-Config that the two modules are configured differently, with the CP 343-2P offering additional options. This is why the CP 343-2P is recommended.

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 6GK7343-2AH11-0XA0	**CP 343-2P communications processors** • For connection of SIMATIC S7-300 and ET 200M to AS-Interface • Configuration of the AS-i network using the SET key or STEP 7 (V5.2 and higher) • Without front connector • Corresponds to AS-Interface Specification V3.0 • Dimensions (W x H x D / mm): 40 x 125 x 120	►	**6GK7343-2AH11-0XA0**		1	1 unit	42C
 6GK7343-2AH01-0XA0	**CP 343-2 communications processors** • Basic version for connection of SIMATIC S7-300 and ET 200M to AS-Interface • Configuration of the AS-i network using the SET key • Without front connector • Corresponds to AS-Interface Specification V3.0 • Dimensions (W x H x D / mm): 40 x 125 x 120	►	**6GK7343-2AH01-0XA0**		1	1 unit	42C

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Front connector, 20-pole						
• With screw terminals	1	**6ES7392-1AJ00-0AA0**		1	1 unit	230
• With spring-type terminals	1	**6ES7392-1BJ00-0AA0**		1	1 unit	230

More information

More information	
For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser. See https://support.industry.siemens.com/cs/ww/en/view/61892138. AS-i block library for PCS 7 for easy connection of AS-Interface to PCS 7; see page 14/31 onwards.	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/15754/man

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

CM AS-i Master ST for SIMATIC ET 200SP

Overview

CM AS-i Master ST for SIMATIC ET 200SP

The CM AS-i Master ST communication module is designed for use in the SIMATIC ET 200SP distributed I/O system and has the following features:

- Connection of up to 62 AS-Interface slaves
- Supports all AS-Interface master functions according to the AS-Interface Specification V3.0
- User-friendly configuration with graphic display of the AS-i line in TIA Portal V12 or higher, or via GSD in other systems
- Supply via AS-Interface cable
- Suitable for AS-i Power24V and for AS--Interface with 30 V voltage
- Integrated ground-fault monitoring for the AS-Interface cable
- Through connection to AS-Interface, the number of digital inputs and outputs available for the control system is greatly increased (max. 496 DI/496 DQ on the AS-Interface per CM AS-i Master ST).
- Integrated analog value processing (all analog profiles)

ET 200SP distributed I/O system

The SIMATIC ET 200SP is a scalable and highly flexible distributed I/O system for connecting the process signals to a central control system via PROFIBUS or PROFINET.

Up to eight CM AS-i Master STs can be plugged into a SIMATIC ET 200SP with the IM 155-6 PN standard interface module.

For more information, see "SIMATIC ET 200SP Distributed I/O system", https://support.industry.siemens.com/cs/ww/en/view/58649293.

Design

The CM AS-i Master ST module has an ET 200SP module enclosure with a width of 20 mm. A C0 type BaseUnit (BU) is required for use in the ET 200SP.

The communication module has LED indicators for diagnostics, operation, AS-i voltage and AS-i slave status and offers informative front-side module inscription for

- Plain-text marking of the module type and function class
- 2D matrix code (Article No. and serial number)
- Circuit diagram
- Color coding of the CM module type: Light gray
- Hardware and firmware version
- Complete article number

Function

The CM AS-i Master ST communication module supports all specified functions of the AS-Interface Specification V3.0.

The input/output values of the digital AS-i slaves can be activated via the cyclic process image. The values of the analog AS-i slaves are accessible via the cyclic process image (firmware V1.1 or higher) or via data record transfer.

If required, master calls can be performed with the command interface, e.g. read/write parameters, read/write configuration.

Changeover of the operating mode, automatic application of the slave configuration and the re-addressing of a connected AS-i slave can be implemented via the control panel of the CM AS-i Master ST in STEP 7.

Expansions as from firmware version V1.1

For the implementation of modular machine concepts, the AS-i Slaves can be activated or deactivated via the PLC program (option handling). The configuration of AS-i slaves can be modified while being executed, thus enabling variable machine set-ups and tool changing with integrated input/output modules during ongoing operation. AS-i input/output modules can be added to the system without deactivating the controller.

An existing AS-i installation can be read into the STEP 7 hardware configuration and adapted and documented in the project. Analog values are transmitted via the cyclic process image, the length of which is adjustable and extendable up to 288 Bytes (depending on the interface module (IM) used).

Diagnostic information is accessed via automatic alarm indications, via the process image or data record reading in the user program or in the STEP 7 engineering system in a graphical overview matrix. The transmission quality of the AS-i network can also be read out. To avoid configuration errors, duplicate addresses can be detected on the AS-i network.

The new functions are available with TIA Portal STEP 7 V13 SP1 or with STEP 7 V5.5 with HSP 2092 V3.0[1]. Configuration is possible with SIMATIC CPUs S7-300 up to S7-1500 and with a SINUMERIK 840D sl or other controller.

In the network view, the AS-i slaves' online diagnostics status can be displayed directly on the slaves (in the case of S7-1500 CPUs with updated TIA Portal STEP 7 V14 firmware or higher).

Notes on safety

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For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

[1] For HSP 2092, see https://support.industry.siemens.com/cs/ww/en/view/23183356.

Configuration

The following software is required for configuration of the CM AS-i Master ST module:

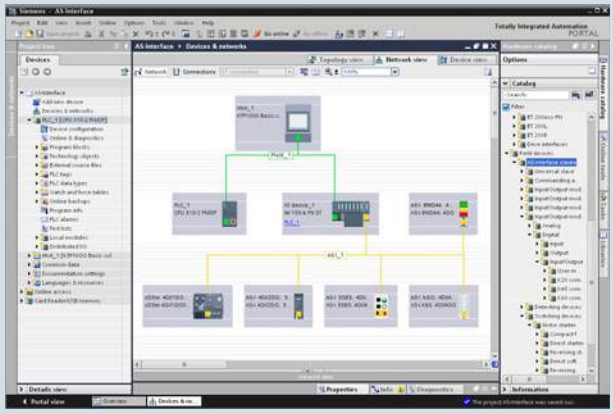
- STEP 7 (classic) V5.5 SP3 HF4 or higher with HSP 2092 or HSP 2092 V3.0 (for firmware V1.1) or
- STEP 7 (TIA Portal) V12 or higher or V13 SP1 or higher (for firmware V1.1) or
- the GSD file of the ET 200SP with STEP 7 or another engineering tool

STEP 7 enables user-friendly configuration and diagnostics of the AS-i master and any connected slaves.

Alternatively, you can also apply the AS-Interface ACTUAL configuration as the DESIRED configuration at the "touch of a button" via the control panel integrated in the TIA Portal or an optional expansion button. Configuration with the GSD file is possible only with the button.

The CM AS-i Master ST module occupies up to 288 input bytes and up to 288 output bytes in the I/O data of the ET 200SP station. The I/O assignment depends on the configuration in STEP 7.

Together with an ET 200SP CPU 1510SP/1512SP (firmware V1.8 or higher) or 1515SP PC, preprocessing of safe AS-i signals directly in the ET 200SP station and setting up of an independent AS-i Safety station without a higher-level CPU are possible (TIA Portal V13 SP1 Update 4 and higher).



Configuration of an AS-Interface network with CM AS-i Master ST via the TIA Portal

Benefits

The CM AS-i Master ST for ET 200SP communication module enables modular, simple and high-performance expansion of AS-interface networks via engineering in the TIA Portal.

Up to eight CM AS-i Master ST units can be plugged into one ET 200SP station with IM 155-6 PN Standard. The maximum configuration depends on the interface module used.

Multiple masters as well as single masters can thus be implemented in the ET 200SP depending on the number of modules.

Together with the interface module, a scalable PROFINET/AS-i Link or PROFIBUS/AS-i Link can be assembled.

Using STEP 7, the AS-i network is consistently configured and programmed with only one configuration tool.

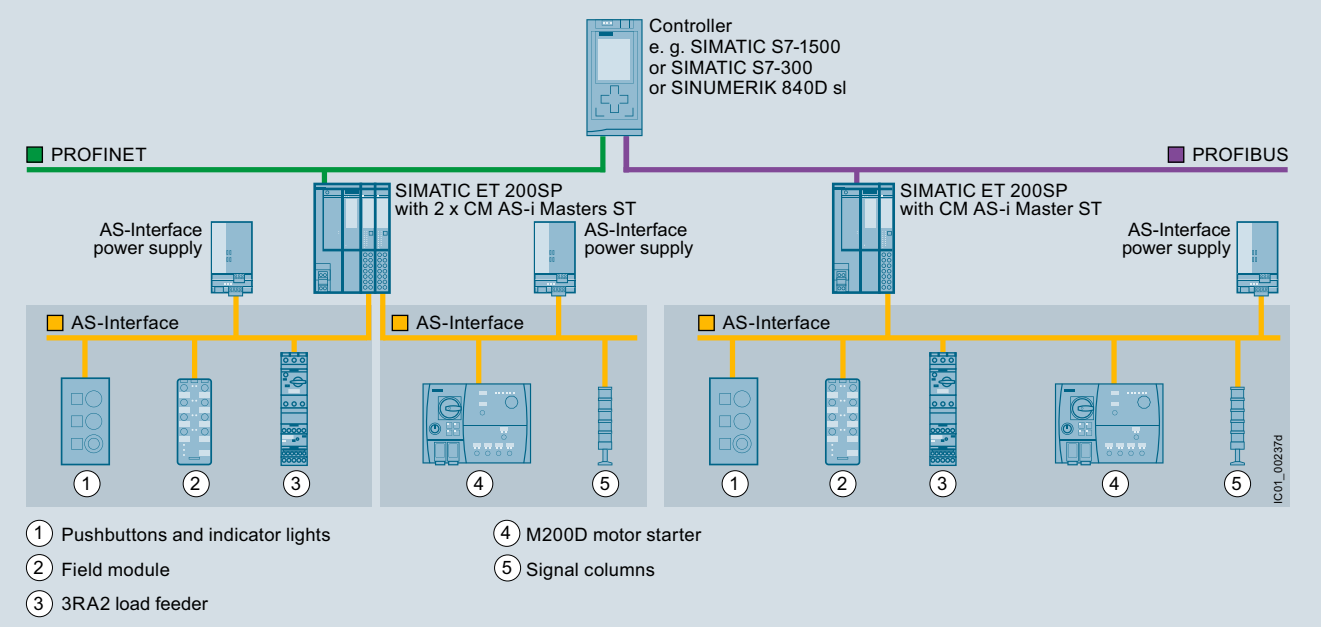
The PRONETA PC program (for ET 200SP with PROFINET interface module) is available for convenient input/output testing during the commissioning of an AS-i network without a CPU; see www.siemens.com/proneta.

For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser; see https://support.industry.siemens.com/cs/ww/en/view/61892138.

CM AS-i Master ST for SIMATIC ET 200SP

Application

Configuration examples of AS-Interface networks with CM AS-i Master ST for SIMATIC ET 200SP



Configuration of AS-Interface networks under a SIMATIC ET 200SP

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 3RK7137-6SA00-0BC1	**CM AS-i Master ST communication module** • AS-Interface Master for SIMATIC ET 200SP, can be plugged into BaseUnit type C0 • Corresponds to AS-Interface Specification V3.0 • Dimensions (W × H × D / mm): 20 x 73 x 58	2	**3RK7137-6SA00-0BC1**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

	Version	SD	Spring-type terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 6ES7193-6BP20-0DC0	**BaseUnit BU20-P6+A2+4D** • BaseUnit (light), BU type C0 • Suitable for the CM AS-i Master ST module • For connection of the AS-Interface cable to the CM AS-i Master ST • Start of an AS-i network, isolation of the AS-i voltage from the left-hand module	1	**6ES7193-6BP20-0DC0**		1	1 unit	255

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 6ES7155-6AR00-0AN0	**PROFINET Interface module IM 155-6 PN Basic** Max. 12 I/O modules, Max. 32 bytes of I/O data per station						
	• Including server module and bus adapter 2 x RJ45 ports (supplied without RJ45 connector)	1	**6ES7155-6AR00-0AN0**		1	1 unit	255
 6ES7155-6AA00-0BN0	**PROFINET Interface modules IM 155-6 PN Standard** Max. 32 I/O modules, Max. 256 bytes of I/O data per station						
	• Including server module and bus adapter 2 x RJ45 (supplied without RJ45 plug)	1	**6ES7155-6AA00-0BN0**		1	1 unit	255
	• Including server module (the bus adapter must be ordered separately; see below)	1	**6ES7155-6AU00-0BN0**		1	1 unit	255
	PROFINET Interface module IM 155-6 PN High Feature Max. 64 I/O modules, Max. 1440 bytes I/O data per station						
	• Including server module (the bus adapter must be ordered separately; see below)	1	**6ES7155-6AU00-0CN0**		1	1 unit	255
	PROFIBUS interface module IM 155-6 DP High Feature Max. 32 I/O modules, Max. 244 bytes of I/O data per station						
	• Including server module and PROFIBUS connector	1	**6ES7155-6BA00-0CN0**		1	1 unit	255
 6ES7193-6AR00-0AA0  6ES7193-6AF00-0AA0	**Bus adapters for PROFINET** For connection of the Ethernet cable to the PROFINET IM 155-6 PN interface module						
	• Connection 2 x RJ45 (supplied without RJ45 connector)	1	**6ES7193-6AR00-0AA0**		1	1 unit	255
	• Connection 2 x FC (FastConnect)	1	**6ES7193-6AF00-0AA0**		1	1 unit	255
	For more bus adapters with fiber optic cable connection, see Catalog IK PI "Industrial Communication" or the Industry Mall.						

More information

More information	
AS-i block library for PCS 7 for easy connection of AS-Interface to PCS 7, see page 14/31 onwards.	Device manual "CM AS-i Master ST for SIMATIC ET 200SP", see https://support.industry.siemens.com/cs/de/en/view/71756485. Manual "SIMATIC ET 200SP BaseUnits", see https://support.industry.siemens.com/cs/ww/en/view/59753521 Manual "SIMATIC ET 200SP Distributed I/O system", see https://support.industry.siemens.com/cs/ww/en/view/58649293

* You can order this quantity or a multiple thereof.
Illustrations are approximate

F-CM AS-i Safety ST for SIMATIC ET 200SP

Overview

F-CM AS-i Safety ST for SIMATIC ET 200SP

The F-CM AS-i Safety ST fail-safe communication module supplements an AS-Interface network without additional wiring to produce a safety-related AS-i network.

Important features:

- Fail-safe communication module for the ET 200SP
  - 31 fail-safe input channels in the process image
  - 16 fail-safe output channels in the process image
  - Certified up to SIL 3 (IEC 61508/EN 62061), PL e (EN ISO 13849-1)
  - Parameterization conforms with other fail-safe I/O modules of the ET 200SP
- The communication module supports PROFIsafe in PROFINET and PROFIBUS configurations. Can be used with fail-safe SIMATIC S7-300F/S7-416F CPUs and S7-1500F CPUs and also the fail-safe versions of the ET 200SP station with ET 200SP F-CPU 1510SP F/1512SP F (firmware V1.8 or higher) or 1515SP PC F.
- For reading up to 31 fail-safe AS-i input slaves
  - Two sensor inputs/signals for each fail-safe AS-i input slave
  - Adjustable evaluation of sensor signals: 2-channel or 2 x 1-channel
  - Integrated discrepancy evaluation in the case of 2-channel signals
  - Integrated AND operation in the case of 2 x 1-channel signals
  - Input delay can be parameterized
  - Start-up test can be set
  - Sequence monitoring can be activated
- For control of up to 16 fail-safe AS-i output circuit groups
  - The output circuit groups are controlled independently of one another.
  - One output circuit group can act on one or more actuators (e.g. to switch drives simultaneously).
  - An actuator (e.g. a contactor) is interfaced via a fail-safe AS-i output module (e.g. safe SlimLine module S45F, Article No. 3RK1405-1SE15-0AA2, see page 2/30).
  - Simple fault acknowledgment via the process image
- Simple module replacement thanks to automatic importing of the safety parameters from the coding element
- Comprehensive diagnostic options
- Can be plugged onto type C1 or type C0 BaseUnits (BU)
- Informative automatic alarm indications (firmware V1.0.1 or higher)
- Supply via AS-Interface voltage
- 8 LED indicators for diagnostics, operating state, fault indication and supply voltage
- Informative front-side module inscription
  - Plain-text marking of the module type and function class
  - 2D matrix code (Article No. and serial number)
  - Circuit diagram
  - Color coding of the CM module type: Light gray
  - Hardware and firmware version
  - Complete article number
- Optional labeling accessories
  - Labeling strips
  - Reference identification label

Design

The fail-safe F-CM AS-i Safety ST module has an ET 200SP module enclosure with a width of 20 mm.

One AS-i master according to the AS-i Specification V3.0 and safe AS-i input slaves and/or safe AS-i output modules are needed for operation. The CM AS-i Master ST communication module (Article No. 3RK7137-6SA00-0BC1) is recommended as the AS-i master for the ET 200SP; see page 2/38.

Simple combination of the CM AS-i Master ST and F-CM AS-i Safety ST modules in one ET 200SP station results in a powerful, safety-oriented network transition between PROFINET (or PROFIBUS) and AS-Interface, which can be expanded further in a modular fashion.

Combination of an ET 200SP interface module, CM AS-i Master ST and F-CM AS-i Safety ST

With the digital and analog I/O modules of the ET 200SP, additional local inputs and outputs can be realized so as to ensure that the modular AS-i router complies precisely with customer requirements. Expansion variants for almost every application are possible thanks to the selection of standard and fail-safe I/O modules.

Besides the single AS-i master, double, triple or generally multiple masters can be realized with or without fail-safe functionality.

Supported BaseUnits

With the combination of the CM AS-i Master ST and F-CM AS-i Safety ST modules, the CM module is plugged onto a light type C0 BaseUnit and, immediately to the right of it, the F-CM module is plugged onto a dark type C1 BaseUnit. The AS-i cable is connected only on the light BaseUnit of the CM module.

Notes on safety

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

The following software is required for configuration of the F-CM AS-i Safety ST module:

- STEP 7 (classic), V5.5 SP3 HF4 or higher with HSP 2093[1] and Distributed Safety V5.4 SP5 or F-Configuration Pack SP11

or

- STEP 7 (TIA Portal) V13 and higher with HSP 0070[2] and Safety Advanced V13.
  STEP 7 V13 SP1 is required for connection to the S7-1500F.
  When configuring with STEP 7 V13 SP1, the latest version of HSP 0070 V2.0 (or higher) is an essential prerequisite.
  STEP 7 Safety V13 SP1 Update 4 and the new version of HSP 0070 V3.0 (or higher) is needed for configuration of the F-CM AS-i Safety ST module in an ET 200SP station with ET 200SP F-CPU 1510SP F/1512SP F (firmware V1.8 or higher) or 1515SP PC F.

Configuration and programming are done entirely in the STEP 7 user interface. No additional configuration software is needed for commissioning.

Data management – together with all other configuration data of the SIMATIC – is realized completely in the S7 project.

The input and output channels are assigned to the process image automatically and manual linking via configuration function blocks is not necessary.

If the F-CM AS-i Safety ST module is replaced, all necessary settings are automatically imported into the new module.

The F-CM AS-i Safety ST module occupies 16 input bytes and 8 output bytes in the I/O data of the ET 200SP station.

For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser; see https://support.industry.siemens.com/cs/ww/en/view/109479103.

[1] For HSP 2093, see https://support.industry.siemens.com/cs/de/en/view/23183356.

[2] HSP 0070, see https://support.industry.siemens.com/cs/de/en/view/72341852.

Application

Thanks to use of the fail-safe module in the ET 200SP, it is possible to fulfill the safety-related application requirements in a manner that is integrated in the overall automation solution.

The safety functions required for fail-safe operation are integrated in the modules. Communication with the fail-safe SIMATIC S7 CPUs is realized via PROFIsafe.

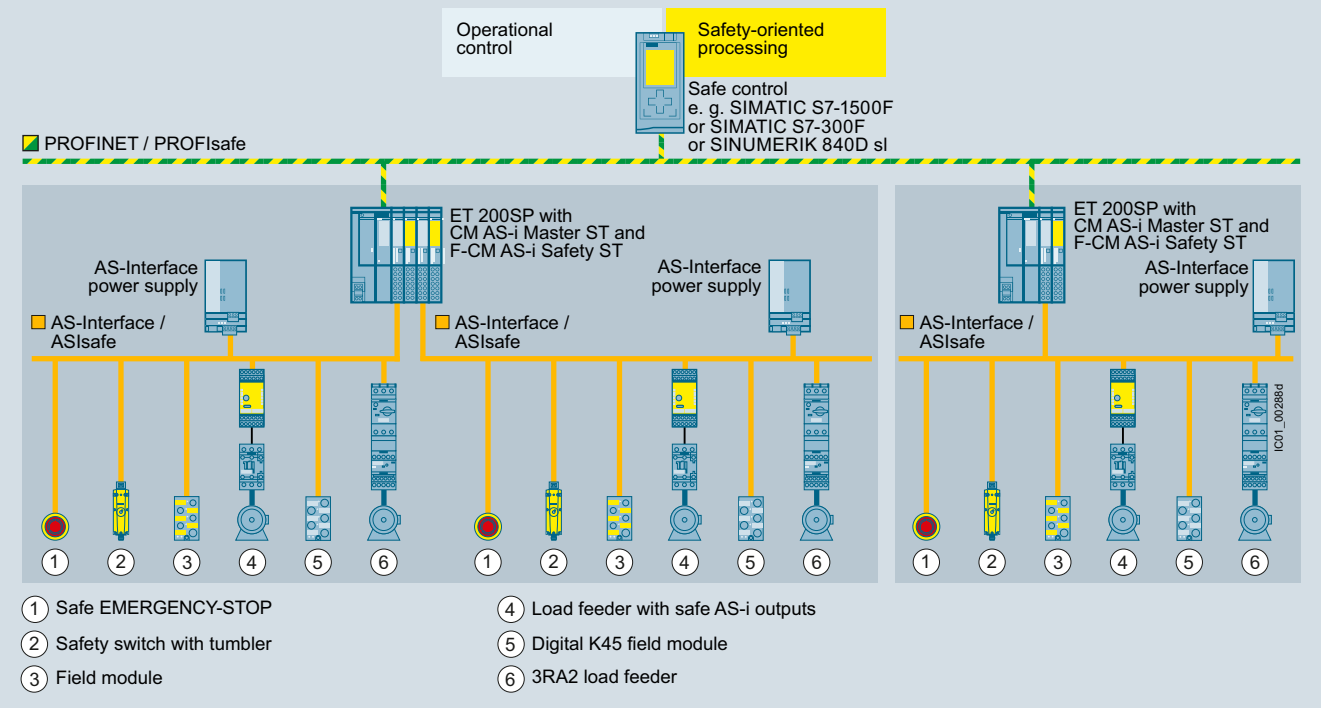
The safety application is programmed in the SIMATIC S7 F-CPU with Distributed Safety/Safety Advanced. The fail-safe input signals of the ASIsafe slave modules are read via the AS-i bus line and are combined with any chosen further signals in the fail-safe program.

The fail-safe output signals can be output via safe SIMATIC output modules or also directly via AS-i – with the help of safe AS-i output modules, e.g. safe SlimLine S45F modules, Article No. 3RK1405-1SE15-0AA2 (see page 2/30).
No special functions are required for this in the program.

Operation with SINUMERIK 840D sl is possible with SINUMERIK software version V4.7 SP2 HF1 or higher.

Together with an ET 200SP station with ET 200SP F-CPU 1510SP F/1512SP F (firmware V1.8 and higher) or 1515SP PC F, pre-processing of safe AS-i signals directly in the ET 200SP station is possible, as well as the configuration of an autonomous AS-i Safety station without a higher-level CPU.

Configuration examples of AS-Interface networks with CM AS-i Master ST and F-CM AS-i Safety ST for SIMATIC ET 200SP



AS-Interface configuration comprising an ET 200SP station with CM AS-i Master ST and F-CM AS-i Safety ST modules

F-CM AS-i Safety ST for SIMATIC ET 200SP

Selection and ordering data

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK7136-6SC00-0BC1	**F-CM AS-i Safety ST communication module** • Fail-safe module for SIMATIC ET 200SP, can be plugged onto BaseUnit type C1 (alternatively type C0) • Operation requires an AS-i master, e.g. CM AS-i Master ST (see page 2/38) • Can be used up to SIL 3 (IEC 62061/IEC 61508), PL e (EN ISO 13849-1) • Coding element type H (included in scope of supply) • Dimensions (W × H × D / mm): 20 x 73 x 58	2	**3RK7136-6SC00-0BC1**		1	1 unit	42C

Accessories

	Version	SD d	Spring-type terminals: Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 6ES7193-6BP20-0BC1	**BaseUnit BU20-P6+A2+4B** • BaseUnit (dark), BU type C1 • Suitable for the F-CM AS-i Safety ST fail-safe communication module • Continuation of an AS-i network, connection with the AS-i voltage of the left-hand module	1	**6ES7193-6BP20-0BC1**		1	1 unit	255
	Coding element type H (spare part) • For the ET 200SP-modules F-CM AS-i Safety ST and CM 4xIO-Link • Packing unit 5 items	1	**6ES7193-6EH00-1AA0**		1	5 units	256

For more accessories, see page 2/39.

More information

More information
Manual "F-CM AS-i Safety ST for SIMATIC ET 200SP", see https://support.industry.siemens.com/cs/ww/en/view/90265988
Manual "SIMATIC ET 200SP BaseUnits", see https://support.industry.siemens.com/cs/ww/en/view/59753521
Manual "SIMATIC ET 200SP Distributed I/O system", see https://support.industry.siemens.com/cs/ww/en/view/58649293

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

DP/AS-i LINK Advanced

PN	DP-M	DP-S	AS-i M		
		●	●		

IK10_10195a

The DP/AS-i LINK Advanced is a compact router between PROFIBUS (DP slave) and AS-Interface, with the following features:

- Single and double AS-Interface master (according to AS-Interface Specification V3.0) for connection of 62 AS-Interface slaves or 124 AS-Interface slaves (with a double master)
- Integrated analog value transmission
- Integrated ground-fault monitoring for the AS-Interface cable
- User-friendly local diagnostics and startup by means of a full graphic display and control keys or through a web interface with a standard browser on the PC screen
- Vertical integration (standard web interface) through Industrial Ethernet
- Supply voltage from the AS-Interface shaped cable or alternatively with 24 V DC (optional)
- Suitable for AS-i Power24V (from product version 4/firmware version 2.2) and for standard AS-i with 30 V voltage
- Module exchange without entering the connection parameters (e.g. PROFIBUS address) using C-PLUG (optional)

Design

- Compact plastic enclosure in degree of protection IP20 for standard rail mounting
- Combicon plug-in screw terminals
- Compact design:
  - Pixel graphics display in the front panel for detailed display of the operating state and readiness for operation of all connected AS-Interface slaves
  - 6 pushbuttons for starting up and testing the AS-Interface line directly on the DP/AS-i LINK Advanced
  - LED indication of the operating state of PROFIBUS DP and AS-Interface
  - Integrated Ethernet port (RJ45 socket) for user-friendly start-up, diagnostics and testing of DP/AS-i LINK Advanced through a web interface using a standard browser
- Small mounting depth thanks to recessed plug mounting
- Operation without fans and batteries

Functionality

Communications

The DP/AS-i LINK Advanced enables a PROFIBUS DP master to cyclically access the I/O data of all the slaves of a lower-level AS-Interface segment.

The DP/AS-i LINK Advanced occupies the following address space:

- As a single master: 32 bytes of input data and 32 bytes of output data in which the I/O data of the connected AS-Interface slaves (standard and A/B slaves) of an AS-i line is stored.
- As double master, double the number of bytes
- Optional additional I/O bytes for data from analog slaves

The size of the input/output image can be compressed so that only the actually required I/O address area is occupied in the system of the DP master. The integrated evaluation of analog signals is just as easy as access to digital values because the analog process data also lie directly in the I/O address area of the CPU.

PROFIBUS DP-V1 Masters also provide the option of triggering AS-Interface master calls over the acyclic PROFIBUS services (e.g. write parameters, amend addresses, read diagnostic values). Using an operating display in AS-i Link it is possible to fully commission the lower-level AS-Interface line even without a CPU.

DP/AS-i LINK Advanced is equipped with an additional Ethernet port, which enables use of the integrated web server. The web server can be called up with any standard web browser (e.g. Internet Explorer) without additional software. It allows all diagnostics information to be shown on the PC and the bus configuration and, if applicable, any adjustments, to be displayed. Firmware updates are also possible using this port.

The optional C-PLUG supports module exchange without entering the connection parameters (PROFIBUS address etc.), keeping downtimes to a minimum in the event of a fault.

Diagnostics

The following diagnostics is possible using LEDs, the display and control keys, web interface or STEP 7:

- Operating state of the DP/AS-i LINK Advanced
- Status of the link as a PROFIBUS DP slave
- Diagnostics of the AS-Interface network
- Message frame statistics
- Standard diagnostics pages in the web interface for fast diagnostics access through Ethernet using a standard browser
- For the use of the web interfaces no network settings are necessary on the PC (Zeroconf procedure).
- The reporting of diagnostic events is optionally possible via E-Mail or SNMP Trap. The integrated diagnostic buffer saves the events including time stamp.

Notes on safety

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

The DP/AS-i LINK Advanced can be configured as follows:

- With STEP 7 (classic) V5.4 or higher, or STEP 7 (TIA Portal) V12 or higher: In the case of STEP 7 configuration, the AS-Interface configuration can be uploaded in STEP 7. Furthermore, AS-Interface slaves can also be conveniently configured in HW-Config (slave selection dialog).
- By adopting the ACTUAL configuration of the AS-Interface on the display
- Alternatively, DP/AS-i LINK Advanced can be integrated into the engineering tool by means of the PROFIBUS GSD file (e.g. STEP 7 versions below V5.4 or engineering tools from third-party software providers).

Benefits

- Short start-up times through simple configuration at the press of a button and testing of the AS-Interface line using the display or web interface
- Reduction of standstill and servicing times in the event of a slave failure thanks to user-friendly diagnostics using the display or web interface and through simple module exchange with the help of the C-PLUG exchange medium
- Reduced amount of engineering work thanks to user-friendly configuration of Siemens slaves using the slave catalog in HW-Config (STEP 7)
- Costs saved by the double AS-Interface master when large volumes of project data are involved
- Saves the need for AS-i power supply unit with AS-i Power24V: The AS-Interface cable is supplied through an existing 24 V DC PELV power supply unit. For decoupling, an AS-i data decoupling module is required; see page 2/88.
- Standard mode with AS-Interface power supply (see page 2/82) possible without restrictions, whereby no further operational voltage is required.
- For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser; see https://support.industry.siemens.com/cs/ww/en/view/61892138.

Application

The DP/AS-i LINK Advanced is a PROFIBUS DP-V1 slave (according to IEC 61158/IEC 61784) and an AS-Interface master (based on AS-Interface Specification V3.0 according to IEC 62026-2). It enables transparent data access to AS-Interface from PROFIBUS DP.

Exchanging data with the PROFIBUS DP master

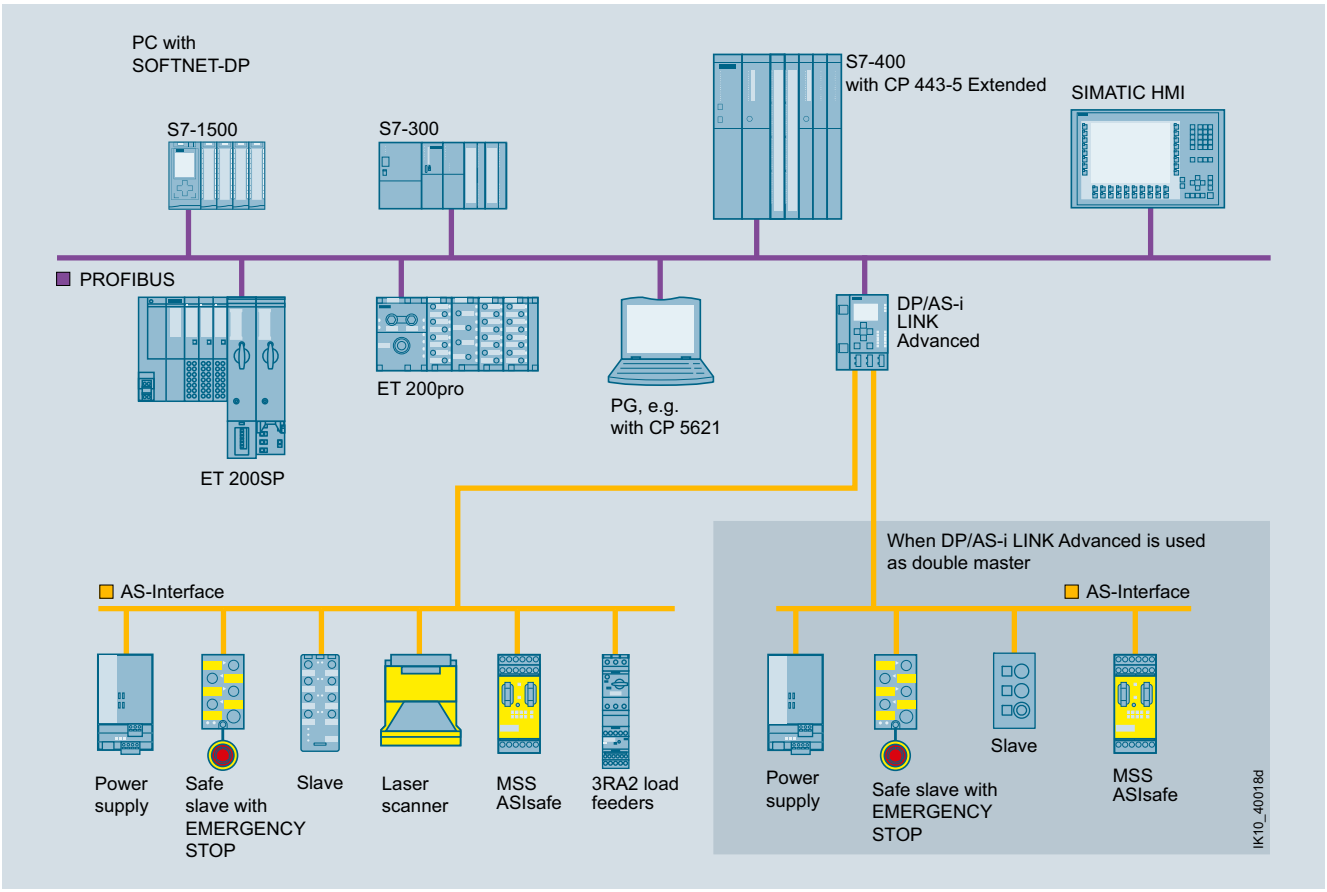
PROFIBUS DP masters (DP-V0) can exchange I/O data cyclically with the AS-Interface. DP masters with acyclic services (DP-V1) are additionally able to initiate AS-Interface master calls (e.g. reading/writing the AS-i configuration during normal operation). As such, the DP/AS-i LINK Advanced is particularly well-suited for a distributed construction and for connection of a lower-level AS-Interface network.

Single master

For applications with typical volumes of project data, it is sufficient to use the DP/AS-i LINK Advanced in its version as an AS-Interface single master. The single master can operate up to 248 DI/248 DO, using 62 A/B slaves with 4 DI/4 DO each.

Double master

The AS-Interface double master version of DP/AS-i LINK Advanced is suitable for applications with large volumes of data. In this case, twice the volume of project data can be used on two AS-Interface lines running independently of each other. The double master can operate up to 496 DI / 496 DO, using two AS-i networks each with 62 A/B slaves with 4 DI / 4 DO each.



Integration of AS-Interface on PROFIBUS through DP/AS-i LINK Advanced as single/double master

DP/AS-i LINK Advanced

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
DP/AS-i LINK Advanced						
 DP/AS-i LINK Advanced Network transition between PROFIBUS DP and AS-Interface; IP20 degree of protection; including Combicon plug-in screw terminals for connection of an AS-Interface cable (two AS-Interface cables in the case of a double master) and the optional 24 V supply; corresponds to AS-Interface specification V3.0; dimensions (W x H x D / mm): 90 x 132 x 88.5		**Combicon connection**				
• Single master with display	►	**6GK1415-2BA10**		1	1 unit	42C
• Double master with display	►	**6GK1415-2BA20**		1	1 unit	42C

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
C-PLUG Exchange medium for the simple exchange of devices in the event of a fault; for accommodating configuration and application data; can be used in SIMATIC NET products with a C-PLUG slot	1	**6GK1900-0AB00**		1	1 unit	5N3
PROFIBUS FastConnect Standard Cable GP FastConnect standard type with special design for fast installation, 2-core, shielded	1	**6XV1830-0EH10**		1	1 M	5K1
PROFIBUS FastConnect RS 485 bus connector with diagonal cable outlet (35°) With insulation displacement terminals, max. transmission rate 12 Mbit/s, connectable terminating resistor integrated						
• Without PG connection socket	1	**6ES7972-0BA60-0XA0**		1	1 unit	2AP
• With PG connection socket	1	**6ES7972-0BB60-0XA0**		1	1 unit	2AP
PROFIBUS FastConnect Stripping Tool Preset stripping tool for speedy stripping of PROFIBUS FastConnect bus cables	1	**6GK1905-6AA00**		1	1 unit	5K2
IE FC RJ45 Plug 90 RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated insulation displacement contacts for connection of Industrial Ethernet FC installation cables; with 90° cable feeder						
• 1 pack = 1 unit	1	**6GK1901-1BB20-2AA0**		1	1 unit	5K1
• 1 pack = 10 units	1	**6GK1901-1BB20-2AB0**		1	10 units	5K1
• 1 pack = 50 units	1	**6GK1901-1BB20-2AE0**		1	50 units	5K1

More information

More information	
AS-i block library for PCS 7 for easy connection of AS-Interface to PCS 7, see page 14/31 onwards.	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/15759/man

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

DP/AS-Interface Link 20E manual

PN	DP-M	DP-S	AS-i M		
		●	●		

IK10_10195a

DP/AS-Interface Link 20E connects PROFIBUS DP to AS-Interface and has the following features:

- PROFIBUS DP slave and AS-Interface master
- Up to 62 AS-Interface slaves, each with four digital inputs and four digital outputs as well as analog slaves can be connected
- Integrated analog value transmission
- Supports all AS-Interface master functions according to the AS-Interface Specification V3.0
- Supply from AS-Interface cable; hence no additional power supply required
- Suitable for AS-i Power24V (from product version 2/firmware version 3.1) and for standard AS-i with 30 V voltage
- Supports uploading of the AS-Interface configuration in STEP 7 V5.2 and higher

Design

- Compact plastic enclosure in degree of protection IP20 for standard rail mounting
- LEDs in the front panel for indicating the operating state and functional readiness of all connected slaves
- Setting of PROFIBUS DP address is possible by pressing a button
- LED indication of the PROFIBUS DP slave address, PROFIBUS DP bus faults and diagnostics
- Two pushbuttons for switching over the operating state and for adopting the existing ACTUAL configuration as the TARGET configuration

Functionality

Communications

The DP/AS-Interface Link 20E enables a DP master to access all the slaves of an AS-Interface network.

The DP/AS-Interface Link 20E occupies a standard 32 bytes of input data and 32 bytes of output data in which the digital I/O data of the connected AS-Interface slaves (standard and A/B slaves) of an AS-i line is stored.

The size of the input/output image can be compressed so that only the actually required I/O address area is occupied in the system of the PROFIBUS DP master.

The analog I/O data can be accessed with the S7 system functions for read/write data records.

Configuration

The DP/AS-Interface Link 20E is configured as follows:

- With STEP 7 (classic), V5.1 SP2 or higher or STEP 7 (TIA Portal), V12 or higher:
  In the case of STEP 7 configuration, the AS-Interface configuration can be uploaded in STEP 7 V5.2 and higher. Furthermore, AS-Interface slaves from Siemens can also be conveniently configured in HW Config (slave selection dialog).
- By adopting the ACTUAL configuration of the AS-Interface by using the SET pushbutton on the front panel
- Alternatively, DP/AS-Interface Link 20E can be integrated by means of the PROFIBUS GSD file in the engineering tool (e.g. for STEP 7 V5.1 and lower or for non-Siemens engineering tools).

Benefits

- Reduction of installation costs because the power is supplied entirely via the AS-Interface cable, which means that no additional power supply is required
- Short startup times thanks to easy configuration at the touch of a button
- The LED indicators help reduce downtime and service times if a slave fails
- Quick and easy commissioning by reading the AS-Interface configuration
- For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser; see https://support.industry.siemens.com/cs/ww/en/view/61892138.

DP/AS-Interface Link 20E

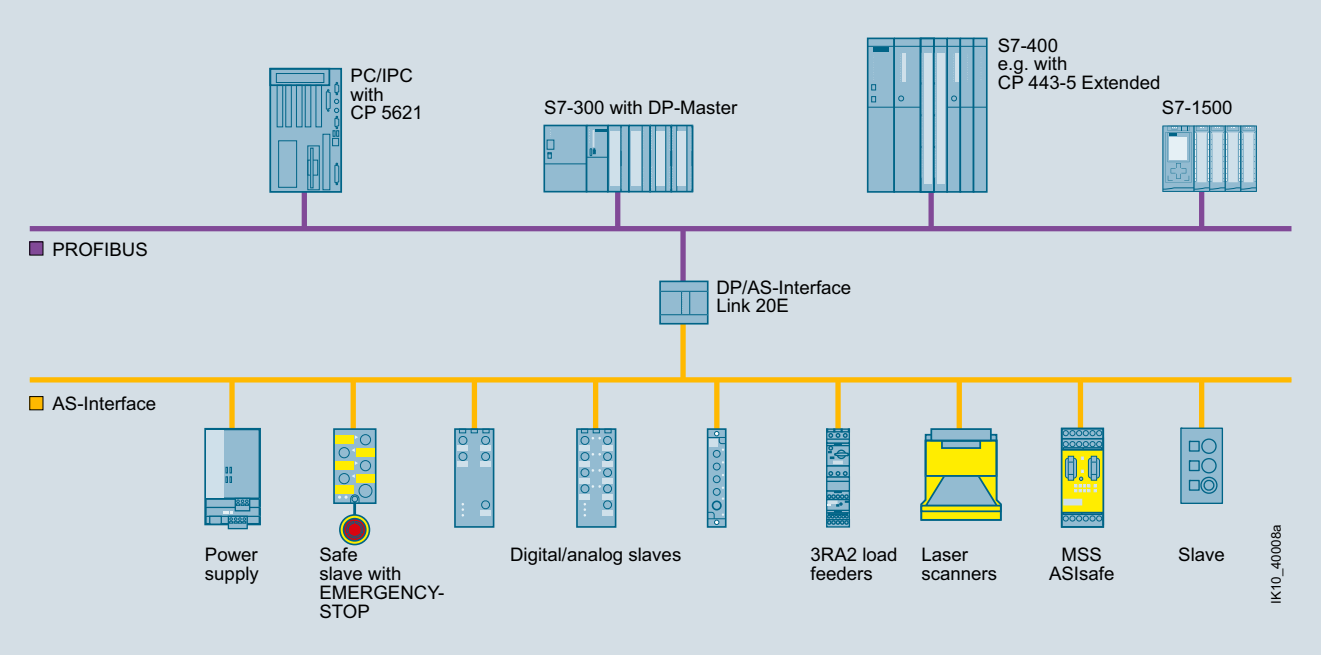
Application

The DP/AS-Interface Link 20E is a PROFIBUS DP slave (according to IEC 61158 / IEC 61784) and an AS-Interface master (according to IEC 62026-2). It enables the AS-Interface to be operated on PROFIBUS DP.

DP/AS-Interface Link 20E can operate up to 248 DI / 248 DO when using 62 A/B slaves with 4 DI / 4 DO each.

PROFIBUS DP masters (DP-V0) can exchange digital I/O data cyclically with the AS-Interface.

PROFIBUS DP masters with acyclic services (DP-V1) are additionally able to exchange analog I/O data and initiate AS-Interface master calls (e.g. reading/writing the AS-i configuration during normal operation).



Transition from PROFIBUS DP to AS-Interface using DP/AS-Interface Link 20E

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
DP/AS-Interface Link 20E						
 6GK1 415-2AA10						
Network transition between PROFIBUS DP and AS-Interface; Degree of protection IP20 including screw terminals for connection of the AS-Interface cable; corresponds to AS-Interface Specification V3.0; dimensions (W x H x D / mm): 90 x 80 x 60 (dimensions without fixing lugs)	▶	**Screw terminals**				
		6GK1415-2AA10		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
PROFIBUS FC Standard Cable GP FastConnect standard type with special design for fast installation, 2-core, shielded	1	**6XV1830-0EH10**		1	1 M	5K1
PROFIBUS FastConnect bus connectors With insulation displacement terminals, max. transmission rate 12 Mbit/s, connectable terminating resistor integrated						
• RS 485 bus connector with 90° cable feeder						
- Without PG connection socket	1	**6ES7972-0BA52-0XA0**		1	1 unit	250
- With PG connection socket	1	**6ES7972-0BB52-0XA0**		1	1 unit	250
• RS 485 bus connector with diagonal cable outlet (35°)						
- Without PG connection socket	1	**6ES7972-0BA60-0XA0**		1	1 unit	2AP
- With PG connection socket	1	**6ES7972-0BB60-0XA0**		1	1 unit	2AP
PROFIBUS FastConnect Stripping Tool Preset stripping tool for speedy stripping of PROFIBUS FastConnect bus cables	1	**6GK1905-6AA00**		1	1 unit	5K2

More information

More information
Manual, see https://support.industry.siemens.com/cs/ww/en/view/5281638

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

DP/AS-i F-Link

PN	DP-M	DP-S	AS-i M		
		●	●		

The DP/AS-i F-Link is a compact, safety-related router between PROFIBUS (DP slave) and AS-Interface, with the following features:

- Monitoring the inputs of safety-related digital AS-i slaves (ASIsafe slaves) and forwarding of data through PROFIsafe. No additional safety-related components required for the AS-Interface (e.g. MSS ASIsafe Modular Safety System)
- Can be used up to PL e according to EN ISO 13849-1 and to SIL 3 according to IEC 61508/EN 62061.
- Connection of up to 62 AS-Interface slaves
- Supports all AS-Interface master functions in accordance with AS-Interface Specification V3.0
- Typically easy transmission of non-safety-related input/output data of all AS-i slaves
- Integrated analog value transmission
- Direct integration in PROFIBUS networks
- Local diagnostics using the LEDs and display with control keys
- Sturdy and narrow plastic enclosure in degree of protection IP20 for mounting on a standard mounting rail or wall mounting (with an adapter)
- Fast device replacement in the event of a fault

Note:

Alternatively to the DP/AS-i F-Link, a powerful, safety-related router between PROFIBUS (or PROFINET) and AS-Interface can be set up by combining the CM AS-i Master ST and F-CM AS-i Safety ST modules in an ET 200SP station, see pages 2/36 to 2/42.

Functionality

Communication principle

The PROFIBUS DP master or the safe control communicates with the AS-Interface slaves over the DP/AS-i F-Link. The AS-Interface process data is mapped in different data areas for non-safety-related input and output data and safety-related input data.

Diagnostics

Extensive diagnostics is possible using the four LEDs, display and control keys or SIMATIC S7. Further details can be found in the manual. See "More Information" on page 2/51.

Configuration

The DP/AS-i F-Link is configured as follows:

- With STEP 7 version V5.4 SP1 and higher: In particular, Siemens AS-Interface slaves can be conveniently configured via the slave selection dialog.
- Uploading the ACTUAL configuration of an already configured AS-Interface network in a STEP 7 project is also possible.
- The DP/AS-i F-Link does not support AS-i safety output modules.
- The DP/AS-i F-Link cannot be configured with TIA Portal.

Programming

In contrast to the MSS ASIsafe Modular Safety System, the DP/AS-i F-Link is a pure gateway, which does not run through its own safety logic. Programming of the safety function is implemented at the level of the higher-level fail-safe PLC, e.g.:

- With Distributed Safety, Version V5.4 SP1 or higher for SIMATIC S7-300F/416F
- With SINUMERIK Safety Integrated

The safety and standard range can access the digital and analog I/O data of the connected AS-Interface slaves directly through the I/O address space of the CPU.

Operating conditions:

- In the case of an AS-i communication error (e.g. failure of an AS-i standard slave or ASIsafe slave), the DP/AS-i F-Link sends the substitute value "0" to the F controller for all safe inputs.
- No safe AS-i outputs can be operated on the AS-i line of the DP/AS-i F-Link.
- Safe control of actuators is handled by the F controller, e.g. via safe SIMATIC output modules.
- The DP/AS-i F-Link is not suitable for AS-i Power24V.

Benefits

- Safety-related signals (EMERGENCY-STOP, door interlock, light curtains, etc.) collected with AS-i and transferred to higher-level F-PLC.
- Fully fledged AS-i master according to Specification V3.0
  - Up to 248 DI/248 DO when using 62 A/B slaves with 4 DI/4 DO each
  - Up to 62 digital or analog slaves
- Connection to PROFIBUS networks, such as DP/AS-i LINK Advanced or DP/AS-Interface Link 20E
- Teaching the code sequences of ASIsafe slaves is possible at the press of a button
- Reduced amount of engineering work thanks to user-friendly configuration of all AS-i slaves from Siemens using the slave selection dialog in HW-Config (STEP 7), including setting the F-parameters of the ASIsafe slaves modeled on PROFIsafe slaves
- Use in machine tools under SINUMERIK 840 D sl possible
- Reduction of standstill and servicing times in the event of a slave failure thanks to user-friendly diagnostics using the display and through simple module exchange (only a few settings by control keys are required, without use of the configuring tool)

Application

Links between PROFIsafe and ASIsafe

The DP/AS-i F-Link is a PROFIBUS DP-V1 slave (according to IEC 61158 and IEC 61784) and an AS-i master (according to IEC 62026-2, based on AS-Interface Specification V3.0). It enables transparent data access to AS-Interface from PROFIBUS DP. The DP/AS-i F-Link is also an AS-i master with which safety-related input data can be passed from ASIsafe slaves via the PROFIsafe protocol to a fail-safe CPU with PROFIBUS DP master. No additional safety cabling or monitoring is required (in particular no MSS ASIsafe Modular Safety System).

The transmission of binary values or analog values is possible depending on the slave type. All slaves according to AS-Interface Specification V2.0, V2.1 or V3.0 can be used as AS-i slaves.

PROFIBUS DP masters according to DP-V0 or DP-V1 can exchange I/O data with lower-level AS-i slaves in cyclic mode. PROFIBUS DP masters with acyclic services according to DP-V1 are additionally able to initiate AS-i command calls (e.g. reading/writing the AS-i configuration during normal operation). In addition to digital I/O data, analog data can also be saved with high performance in the cyclic I/O of a fail-safe SIMATIC S7-300/416 F-CPU.

During operation, four display LEDs and the display provide detailed diagnostics information, which directly localizes the fault if required. Using the PLC user program it is possible to read out diagnostics data records and make them available to a higher-level operating and monitoring system (e.g. WinCC Flexible or TRANSLINE HMI).

For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser; see https://support.industry.siemens.com/cs/ww/en/view/61892138.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
DP/AS-i F-Link Network transition between PROFIBUS DP and AS-Interface for safety-related data transmission from ASIsafe to PROFIBUS DP – PROFIsafe in degree of protection IP20; corresponds to AS-Interface Specification V3.0; not released for AS-i Power24V; dimensions (W x H x D / mm): 45 x 104 x 120						
• with screw-type terminals	2	**3RK3141-1CD10**		1	1 unit	42C
• with spring-type terminals	2	**3RK3141-2CD10**		1	1 unit	42C

DP/AS-i F-Link

For accessories for the PROFIBUS connection, see page 2/49.

More information

More information	
Circuit examples for safety systems with DP/AS-i F-Link, see https://support.industry.siemens.com/cs/ww/en/view/24509484	Manual "DP/AS-i F-Link V1.0 with Supplements", see https://support.industry.siemens.com/cs/ww/en/view/24196041
The F-Link Object Manager must be installed for configuration with STEP 7 / HW-Config, see https://support.industry.siemens.com/cs/ww/en/view/24724923	

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

2

Overview

IE/AS-i LINK PN IO

PN	DP-M	DP-S	AS-i M		
●			●		

The IE/AS-i LINK PN IO is a compact network transition between PROFINET/Industrial Ethernet (PROFINET IO-Device) and AS-Interface, with the following features:

- Single and double AS-Interface master (according to AS-Interface Specification V3.0) for connection of 62 or 124 AS-Interface slaves (with a double master)
- Integrated analog value transmission
- Integrated ground-fault monitoring for the AS-Interface cable
- User-friendly local diagnostics and startup by means of a full graphic display and control keys or through a web interface with a standard browser on the PC screen
- Vertical integration (standard web interface) through Industrial Ethernet
- Supply via AS-Interface cable or with 24 V DC
- Suitable for AS-i Power24V (from product version 4 / firmware version 2.2) and for AS--Interface with 30 V voltage
- Module exchange without entering the connection parameters (IP address etc.) using C-PLUG (optional)
- Costs saved by the double AS-Interface master when large volumes of project data are involved

Design

- Compact plastic enclosure in degree of protection IP20 for standard rail mounting
- Combicon plug-in screw terminals
- Compact design
- Pixel graphics display in the front panel for detailed display of the operating state and readiness for operation of all connected AS-Interface slaves
- Six pushbuttons for starting up and testing the AS-Interface line directly on the IE/AS-i LINK PN IO
- LED display of the operating state of PROFINET IO and AS-Interface
- Integrated 2-port switch (RJ45 socket) for connection to Industrial Ethernet
- Small mounting depth thanks to recessed plug mounting
- Operation without fans and batteries

Functionality

Communications

The IE/AS-i LINK PN IO enables a PROFINET IO controller to cyclically access the I/O data of all the slaves of a lower-level AS-Interface segment. Also supported are the expanded slave types with higher I/O data volume according to AS-i Specification V3.0.

The IE/AS-i LINK PN IO occupies the following address space:

- As a single master with full expansion: 62 bytes of input data and 62 bytes of output data in which the I/O data of the connected AS-Interface slaves (standard and A/B slaves) of an AS-i line is stored.
- As double master, double the number of bytes
- Optional additional I/O bytes for data from analog slaves

The size of the input/output image can be compressed so that only the actually required I/O address area is occupied in the system of the IO controller.

The integrated evaluation of analog signals is just as easy as access to digital values because the analog process data also lie directly in the I/O address area of the CPU.

PROFINET IO controllers are additionally able to initiate AS-Interface master calls (e.g. to write parameters, change addresses, read diagnostic values) through the acyclic PROFINET services.

Using an operating display in AS-Interface Link it is possible to fully commission the lower-level AS-i line.

The IE/AS-i LINK PN IO is equipped with two Ethernet ports, which are connected by an internal switch. With the Ethernet it is possible in addition to use the integrated web server. The web server can be called up with any standard web browser (e.g. Internet Explorer) without additional software. It enables the PC to present all diagnostics information and to display the set bus configuration and parameters as well as their adaptation where applicable. Firmware updates are also possible using this port.

The optional C-PLUG supports module exchange without entering the connection parameters (e.g. IP address), keeping downtimes to a minimum in the event of a fault.

Diagnostics

The following diagnostics is possible using the display and control keys, web interface or STEP 7:

- Operating state of the IE/AS-i LINK PN IO
- State of the link as a PROFINET IO device
- Diagnostics of the AS-Interface network
- Message frame statistics
- Standard diagnostics pages in the web interface for fast diagnostics access through Ethernet using a standard browser
- Reporting of diagnostic events is optionally possible via e-mail or SNMP trap. The integrated diagnostic buffer saves the events including time stamp.

Notes on safety

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

The IE/AS-i LINK PN IO is configured as follows:

- With STEP 7 (classic) V5.4 or higher: When configuring in STEP 7, the AS-Interface configuration can be uploaded in STEP 7 V5.4 SP2 and higher. Furthermore, AS-Interface slaves from Siemens can also be conveniently configured in HW Config (slave selection dialog).
  Please observe the notes; see https://support.industry.siemens.com/cs/ww/en/view/109483764.
- Alternatively, IE/AS-i LINK PN IO can be integrated by means of the PROFINET GSD file in the engineering tool (e.g. for TIA Portal, for STEP 7 versions V5.4 SP2 and lower, or for non-Siemens engineering tools).

Benefits

- Short startup times through simple configuration at the press of a button and testing of the AS-Interface line using the display or web interface
- Reduction of standstill and servicing times in the event of a slave failure thanks to user-friendly diagnostics using the display or web interface
- Costs saved by the double AS-Interface master when large volumes of project data are involved
- Saves the need for AS-i power supply unit with AS-i Power24V: The AS-Interface cable is supplied through an existing 24 V DC PELV power supply unit. For decoupling, an AS-i data decoupling module is required; see page 2/88.
- Standard mode with AS-Interface power supply (see page 2/82) possible without restrictions, whereby no further operational voltage is required.
- For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser; see https://support.industry.siemens.com/cs/ww/en/view/61892138.

2

Application

The DP/AS-i LINK PN IO is a PROFINET IO device (according to IEC 61158 / IEC 61784) and an AS-Interface master (based on AS-Interface Specification V3.0 according to IEC 62026-2). It enables transparent data access to AS-Interface from Industrial Ethernet.

Exchanging data with PROFINET IO controllers

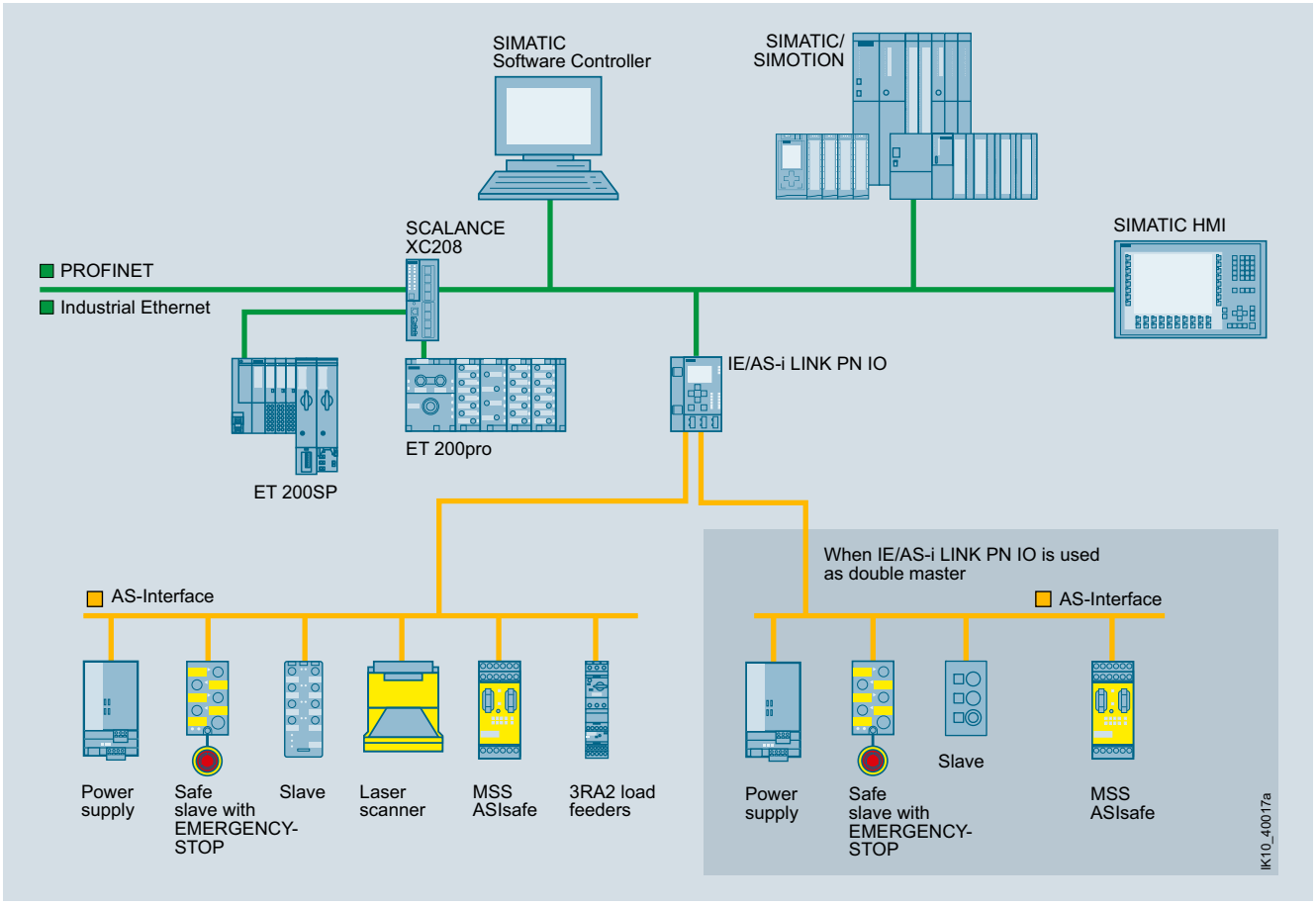
PROFINET IO controllers can exchange I/O data with AS-Interface in cyclic mode and can perform AS-i master calls in addition with acyclic services (e.g. reading/writing the AS-i configuration during normal operation). The IE/AS-i LINK PN IO is therefore suitable for distributed configurations and for integrating a lower-level AS-Interface network.

Single master

The AS-i single master version of IE/AS-i i LINK PN IO is suitable for applications with typical volumes of data. The single master can operate up to 248 DI / 248 DO, using 62 A/B slaves with 4 DI / 4 DO each.

Double master

The AS-i double master version of IE/AS-i LINK PN IO is suitable for applications with large volumes of data. In this case, twice the volume of project data can be used on two AS-i lines running independently of each other. The double master can operate up to 496 DI / 496 DO, using two AS-i networks each with 62 A/B slaves with 4 DI / 4 DO each.

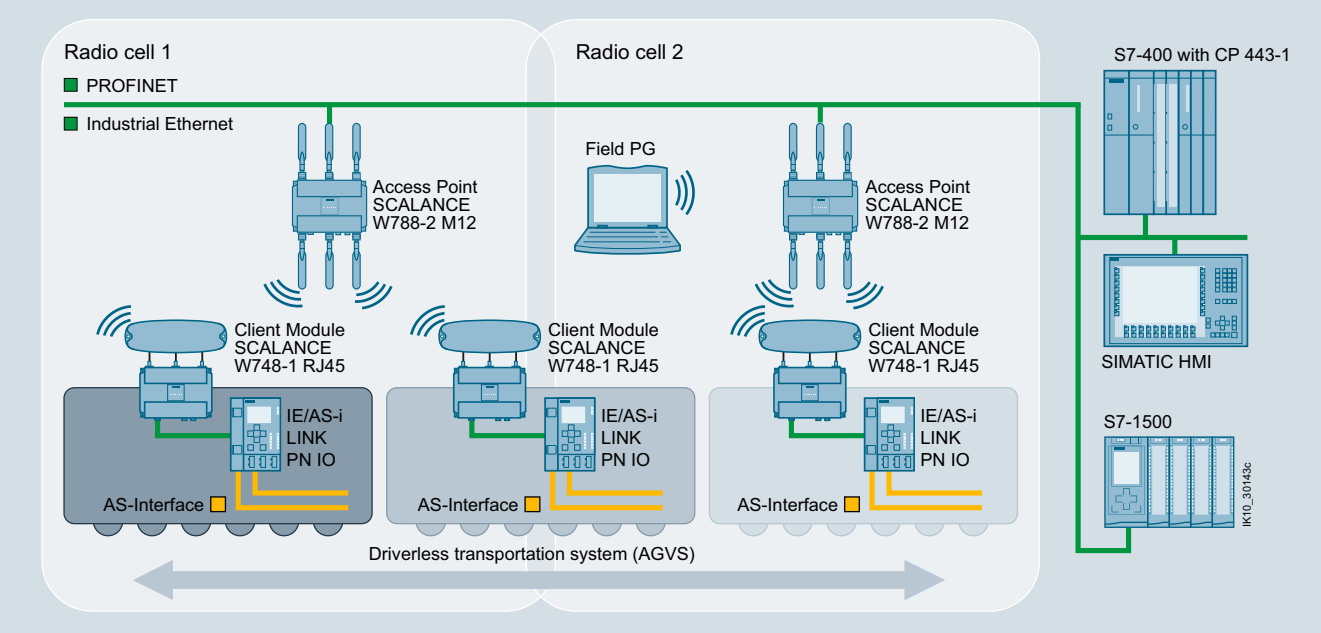


Integration of AS-Interface on PROFINET through IE/AS-i LINK PN IO as single/double master

Wireless communication

Using an upstream IWLAN client module, e.g. SCALANCE W748-1 RJ45, an AS-Interface line can be integrated in the PROFINET world by wireless means.

Sample uses are applications which up to now have been performed with fault-prone tow chain or collector wire technology. Maintenance costs are thus reduced.



Wireless communication between Industrial Ethernet and AS-Interface components

Selection and ordering data

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IE/AS-i LINK PN IO						
 IE/AS-i LINK PN IO		**Combicon connection**				
Router between PROFINET/Industrial Ethernet and AS-Interface in degree of protection IP20; including COMBICON plug-in screw terminals for connection of an AS-Interface cable (two AS-Interface cables for double masters) and the optional 24 V supply; corresponds to AS-Interface Specification V3.0; dimensions (W x H x D / mm): 90 x 132 x 88.5						
• Single master with display	▶	**6GK1411-2AB10**		1	1 unit	42C
• Double master with display	▶	**6GK1411-2AB20**		1	1 unit	42C

Accessories

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
C-PLUG	1	**6GK1900-0AB00**		1	1 unit	5N3
Exchange medium for simple exchange of devices in the event of a fault; for accommodating configuration and application data; can be used in SIMATIC NET products with a C-PLUG slot						
IE FC RJ45 Plug 90						
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated insulation displacement contacts for connection of Industrial Ethernet FC installation cables; with 90° cable feeder						
• 1 pack = 1 unit	1	**6GK1901-1BB20-2AA0**		1	1 unit	5K1
• 1 pack = 10 units	1	**6GK1901-1BB20-2AB0**		1	10 units	5K1
• 1 pack = 50 units	1	**6GK1901-1BB20-2AE0**		1	50 units	5K1

More information

More information	
AS-i block library for PCS 7 for easy connection of AS-Interface to PCS 7, see page 14/31 onwards.	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/15762/man

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

K60

K45

K20

Three coordinated series of AS-Interface compact modules with digital and analog compact modules and a high degree of protection are available for use in the field:

- Series K60 (digital and analog)
- Series K45 (digital)
- Series K20 (digital)

All compact modules are characterized by particularly simple handling. The K60 and K45 modules are mounted with a mounting plate. The mounting plate is used to mount the AS-Interface flat cables and enables mounting on a wall or standard mounting rail.

The particularly narrow K20 modules are directly mounted without a mounting plate and connected to the AS-Interface using a round cable.

Connection types

For flexible connection of different sensors and actuators, the following PIN assignments are available on the I/O modules with M12 sockets:

Standard assignment

With the standard assignment, one sensor/actuator is connected per M12 socket. In this case the signal for the outputs is acquired at PIN4 while the signal for the inputs is acquired at PIN4 and PIN2. As the result, sensors can be connected directly to PIN2 and PIN4.

Y assignment

With the Y assignment, two sensors or two actuators can be connected to one M12 socket. In this case, both PIN4 and PIN2 are provided for one sensor signal and one actuator signal on each M12 socket.

Y-II assignment

The Y-II assignment offers the following options:

- Individual connection of a sensor/actuator to one M12 socket
- Connection of two sensors/actuators to one M12 socket as follows:
  - The signal of the first sensor/actuator is connected to PIN4 of the first socket.
  - The signal of the second sensor/actuator is connected to PIN2 of the first socket and to PIN4 of the second socket.

  In this case, the second socket is not required and is closed with a sealing cap.

Overview of digital compact modules

The following table provides an overview of the important features of the digital compact modules.

Version	K60	K45	K20
8 inputs / 2 outputs	✓	--	--
8 inputs	✓	✓	--
4 inputs / 4 outputs	✓	✓	✓
4 inputs / 3 outputs	✓	--	--
4 inputs / 2 outputs	✓	--	--
4 inputs	✓	✓	✓
2 inputs / 2 outputs	--	✓	✓
4 outputs	✓	✓	✓
3 outputs	--	✓	--
AS-Interface connection	Flat cable / round cable	Flat cable	Round cable
I/O connection method	M12	M12 / M8	M12 / M8
Pin assignment	Standard / Y-II / Y	Standard / Y	Standard / Y
Degree of protection	IP65/IP67/IP68/IP69K	IP65/IP67	IP65/IP67
ATEX 3D (Zone 22)	✓	--	--
Extended address mode	✓	✓	✓

✓ Available
-- Not available

Overview

K60

The K60 digital AS-Interface compact modules are characterized by optimized handling characteristics and user-friendliness. They permit the mounting times and startup times of AS-Interface to be reduced by up to 40 %.

Mounting and connection of the AS-Interface shaped cables

Assembly of the K60 modules is performed with a mounting plate which accommodates the AS-Interface shaped cables. Two different mounting plates are offered for

- Wall mounting
- Standard rail mounting

The mounting plate and the compact module are joined together by means of a screw, with simultaneous contacting of the AS-Interface cable by the service-proven insulation piercing method.

Addressing and connection of the sensors/actuators

Addressing of the K60 modules is performed using an addressing socket integrated in the compact module. The addresses can also be assigned after installation.

K60 modules with a maximum of four digital inputs and outputs

These compact modules contain the M12 standard connections for inputs and outputs. Using M12 standard connectors, a maximum of four sensors and four actuators can be connected to the compact module.

K60 compact modules with a maximum of eight digital inputs

These modules have eight digital inputs for connection through M12 plugs.

The module requires two AS-Interface addresses for processing all eight inputs. The addressing can thus be performed through a double addressing socket integrated in the module.

K60 compact modules with four digital inputs and outputs according to AS-Interface Specification 3.0

The AS-Interface Specification V3.0 extended address mode (A/B addresses) enables connection of up to 62 slaves on one AS-Interface network. With the extended address mode, four outputs are now possible even with A/B slaves (instead of only three outputs possible up to now with Specification V2.1). Hence with full expansion of an AS-Interface network, there are now 248 inputs as well as 248 outputs available on one AS-i network.

Points to bear in mind:

- These modules can be used only with a master according to AS-i Specification V3.0.
- The cycle times for the outputs may be up to 20 ms.

K60 data couplers

An AS-Interface data coupler has been added to the K60 compact module range. Integrated in this module are two AS-i slaves which are connected to two different AS-i networks. Each of the two integrated slaves has four virtual inputs and four virtual outputs. The bidirectional data transmission of four data bits between two AS-i networks is thus possible in a simple and cost-effective manner. The data coupler needs its own address in each AS-i network.

Each AS-i network works with a different cycle time depending on the number of stations. Hence two AS-i networks are not necessarily synchronous. For this reason, the AS-i data coupler can be used to transmit only standard data and no safety data.

K60 compact modules for use in hazardous areas (ATEX)

Two versions of the K60 modules are available for operation in Zone 22 hazardous areas according to Classification II 3D (dusty atmosphere, non-conductive dust).
The version with four inputs and four outputs has the designation (Ex) II 3D Ex tD A22 IP65X T75°C and the version with four inputs has the designation (Ex) II 3D Ex tD A22 IP65X T60°C.

Special conditions have to be observed for the safe operation of these devices. In particular the module must be protected by suitable measures from mechanical damage.

Selection and ordering data

3RK1400-1DQ00-0AA3

Version					SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					d					
Digital I/O modules, IP67 - K60 • PNP transistor • Width 60 mm • Connection method: M12 • Modules supplied without mounting plate										
Type	Current carrying capacity of outputs	Slave type	Pin assign-ment	Sensor power supply off						
8 inputs/ 2 outputs[1]	2 A	A/B	Special	AS-i	2	**3RK2400-1HQ00-0AA3**		1	1 unit	42C
8 inputs[1]	--	Standard	Y-II	AS-i	▶	**3RK1200-0DQ00-0AA3**		1	1 unit	42C
	--	A/B	Y-II	AS-i	▶	**3RK2200-0DQ00-0AA3**		1	1 unit	42C
	--	A/B	Y-II	U_{aux}	5	**3RK2200-1DQ00-1AA3**		1	1 unit	42C
4 inputs/ 4 outputs	2 A	Standard	Y-II	AS-i	▶	**3RK1400-1DQ00-0AA3**		1	1 unit	42C
	2 A	Standard	Standard	AS-i	▶	**3RK1400-1CQ00-0AA3**		1	1 unit	42C
	1 A	Standard	Y-II	AS-i	2	**3RK1400-1DQ01-0AA3**		1	1 unit	42C
	1 A	Standard	Standard	AS-i	▶	**3RK1400-1DQ03-0AA3**		1	1 unit	42C
	2 A	A/B (Spec. V3.0)	Y-II	AS-i	2	**3RK2400-1DQ00-0AA3**		1	1 unit	42C
	2 A	A/B (Spec. V3.0)	Y-II	U_{aux}	2	**3RK2400-1DQ00-1AA3**		1	1 unit	42C
4 inputs/ 3 outputs	2 A	A/B	Y-II	AS-i	▶	**3RK2400-1FQ03-0AA3**		1	1 unit	42C
4 inputs/ 2 outputs	2 A	Standard	Y-II	AS-i	▶	**3RK1400-1MQ00-0AA3**		1	1 unit	42C
4 inputs	--	Standard	Y-II	AS-i	▶	**3RK1200-0CQ00-0AA3**		1	1 unit	42C
	--	A/B	Y-II	AS-i	2	**3RK2200-0CQ00-0AA3**		1	1 unit	42C
2 x 2 inputs/ 2 x 2 outputs	1 A	Standard	Y	AS-i	15	**3RK1400-1DQ02-0AA3**		1	1 unit	42C
4 outputs	2 A	Standard	Y-II	--	▶	**3RK1100-1CQ00-0AA3**		1	1 unit	42C
	2 A	A/B (Spec. V3.0)	Y-II	--	2	**3RK2100-1CQ00-0AA3**		1	1 unit	42C
Digital I/O modules, IP67 - K60, version ATEX (Ex) II 3D Ex tD A22 IP65X T75 °C/60 °C • PNP transistor • Width 60 mm • Current carrying capacity of the inputs: 200 mA • Connection method: M12 • Modules supplied without mounting plate										
Type	Current carrying capacity Outputs	Slave type	Pin assign-ment							
4 inputs/ 4 outputs	2 A	Standard	Y-II		5	**3RK1400-1DQ05-0AA3**		1	1 unit	42C
4 inputs	--	Standard	Y-II		10	**3RK1200-0CQ05-0AA3**		1	1 unit	42C
Digital I/O modules IP67 - K60 data couplers • Modules supplied without mounting plate										
Type	Current carrying capacity Outputs	Slave type	Pin assign-ment							
Data coupler 4 inputs/4 outputs (virtual)	--	Standard	--		10	**3RK1408-8SQ00-0AA3**		1	1 unit	42C

[1] Module occupies two AS-Interface addresses

* You can order this quantity or a multiple thereof.
Illustrations are approximate

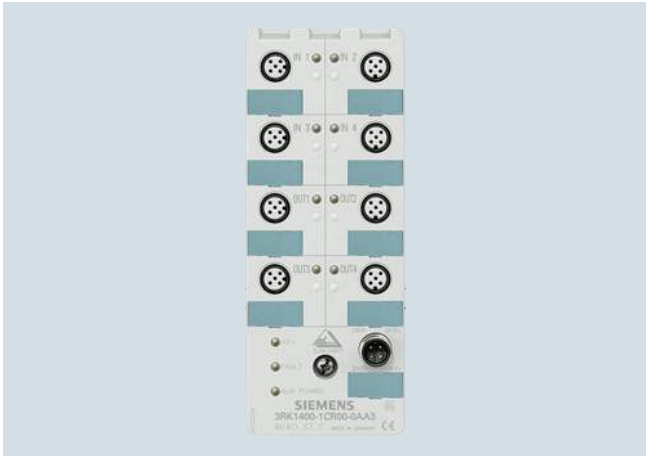
Accessories

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1901-0CA00	**K60 mounting plates** Suitable for all K60 compact modules						
	• Wall mounting	►	**3RK1901-0CA00**		1	1 unit	42C
	• Standard rail mounting	►	**3RK1901-0CB01**		1	1 unit	42C
 3RK1901-1KA00	**AS-Interface sealing caps M12** For free M12 sockets	►	**3RK1901-1KA00**		100	10 units	42C
 3RK1902-0AR00	**Sealing sets** • For K60 mounting plate and standard distributor • Cannot be used for K45 mounting plate • One set contains one straight and one shaped seal	2	**3RK1902-0AR00**		100	5 units	42D

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

Operation in particularly harsh environments



K60R module in degree of protection IP68/IP69K

Modules with degree of protection IP67 cannot be used in areas exposed to permanently high levels of humidity, in applications with drilling emulsions and cutting oils or when cleaning with high-pressure cleaners. The answer for these applications is provided by the expansion of the K60 compact modules with the K60R module with degree of protection IP68/IP69K.

The K60R modules are connected instead of the AS-Interface flat cable using a round cable with M12 cable box. The AS-Interface bus cable and the 24 V DC auxiliary power supply are routed in this case in a shared round cable.

Degree of protection IP68 permits many new applications that were impossible with the former field modules with degree of protection IP67. In applications such as filling plants or machine tools, the K60R with degree of protection IP68 enables the module to be used directly in zones exposed to permanent loading by humidity. It is thus possible to make even more rigorous savings in wiring with AS-Interface. For more information on IP68 test conditions, see "IP68/IP69KK tests" on page 2/61.

Cleaning with high-pressure cleaners, such as is regularly performed in the food and drinks industry for instance, is possible without difficulty (IP69K).

In applications with tow chains, many users rely on placing the AS-Interface bus cable in a round cable. With the K60R module, a round cable connection is possible for direct connection to a round cable. No adapter is required.

Mounting

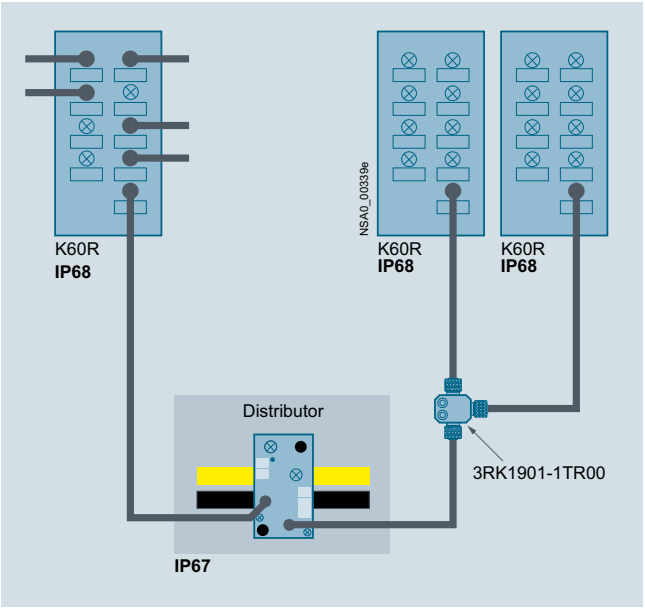
The same mounting plates are used as for the K60 modules. Instead of using flat cables, the K60R is connected using a 4-pole round cable with an M12 connection. With the K60R the mounting plate thus serves only as a fixture and ground terminal.

Addressing

Addressing is performed using the same socket as for the bus connection. Connecting the module to the addressing unit takes place over a 3-pole standard M12 cable.

When the mounting is finished, the module is connected with the addressing cable to the addressing unit and addressed. The addressing cable is then removed and the module connected to the bus cable.

Connection



K60R connection options

In the IP67 environment, the service-proven standard components are connected using flat cables. Spur lines are laid into the IP68 environment by means of an AS-Interface M12 feeder (3RK1901-1NR..). The module is connected with a round cable to an M12 cable box. For this purpose, the module has an M12 bus connection instead of the former addressing socket. The AS-Interface bus cable and the 24 V DC auxiliary voltage are routed together in a 4-pole round cable. There must be no ground conductor in this round cable. Connection to ground is made through the mounting plate.

In the IP68 environment, only cables with extruded M12 plugs may be used.

To connect more than one K60R module to one spur line, the spur line can be split again using a T distributor (3RK1901-1TR00) with degree of protection IP68.

Please note the following conditions:

- The configuration guidelines for AS-Interface apply. For all M12 connecting cables, the maximum permissible current is limited to 4 A. The cross-section of these cables is just 0.34 mm^2. For connection of the K60R modules, the aforementioned M12 connecting cables can be used for the spur lines. The voltage drop caused by the ohmic resistance (approx. 0.11 Ω/m) must be taken into account.
- For round cable connections with shared AS-i and U_{aux} in a single cable, the following maximum lengths apply:
  - Per spur line from feeder to module: max. 5 m
  - Total of all round cable segments in an AS-Interface network: max. 20 m

IP68/IP69K tests

K60R modules were tested with the following tests:

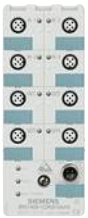
- Stricter test than IP67: 90 min at 1.8 m depth of water (IP67: 30 min at 1 m depth of water)
- Salt water test: Five months in salt water, 20 cm deep, at room temperature
- Test with particularly creepable oil: Five months completely under oil at room temperature
- Test with drilling emulsion: Five months at room temperature (components of the drilling emulsion: Anionic and non-ionic emulsifiers, paraffinic low-aromatic mineral oil, boric acid alkanolamines, corrosion inhibitors, oil content 40 %)
- Test in oil bath (Excellence 416 oil) with alternating oil bath temperature: 130 cycles of 15 to 55 °C, two months
- Cleaning with a high-pressure cleaner according to IP69K: 80 to 100 bar, 10 to 15 cm distance, time per side > 30 s, water temperature 80 °C

To simulate requirements as realistically as possible, the modules were artificially aged prior to the tests by 15 temperature cycles of -25/+85 °C. During the test, the modules were connected to 3RX1 connecting cables. Unassigned connections were closed with 3RK1901-1KA00 sealing caps.

Note:

Sealing caps and M12 connections must be tightened with the correct torque.

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 3RK1400-1CR00-0AA3	**Digital I/O modules IP68/IP69K - K60R** • 4 inputs / 4 outputs • Width 60 mm • IP68/IP69K • Standard assignment • Current carrying capacity - 200 mA (inputs) - 2 A (outputs) • Standard slave • Modules supplied without mounting plate	2	**3RK1400-1CR00-0AA3**		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

2

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 3RK1901-0CA00	**K60 mounting plates** Suitable for all K60 and K60R compact modules						
	• Wall mounting	►	**3RK1901-0CA00**		1	1 unit	42C
	• Standard rail mounting	►	**3RK1901-0CB01**		1	1 unit	42C
 3RK1901-1KA00	**AS-Interface sealing caps M12** For free M12 sockets	►	**3RK1901-1KA00**		100	10 units	42C
 3RK1901-1NR21	**AS-Interface M12 feeders, current carrying capacity up to 4 A**						
	For flat cable: AS-i/U_{aux}	For: M12 socket	Cable length: --	Cable end in feeder: Not available	2	**3RK1901-1NR20**	1	1 unit	42C
	For flat cable: AS-i/U_{aux}	For: M12 cable box	Cable length: 1 m	Cable end in feeder: Not available	2	**3RK1901-1NR21**	1	1 unit	42C
	For flat cable: AS-i/ U_{aux}	For: M12 cable box	Cable length: 2 m	Cable end in feeder: Not available	2	**3RK1901-1NR22**	1	1 unit	42C
 3RK1901-1NR04	**AS-Interface M12 feeders, 4-fold, current carrying capacity up to 4 A**						
	For flat cable: AS-i/U_{aux}	For: 4-fold M12 socket, delivery includes mounting plate (for wall and standard rail mounting)	Cable length: --	Cable end in feeder: Not available	2	**3RK1901-1NR04**	1	1 unit	42C
 3RK1901-1TR00	**M12 T distributors** • IP68 • 1 x M12 plug • 2 x M12 box	10	**3RK1901-1TR00**		1	1 unit	42C
 3RK1902-4PB15-3AA0	**M12 connecting cables** • 3-pole • For addressing AS-i slaves with M12 bus connection • Cable length 1.5 m	10	**3RK1902-4PB15-3AA0**		1	1 unit	42D

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Compact modules K45

The K45 series of compact modules supplements the large K60 compact modules which have a proven track record in industry. They are the logical consequence for rounding off the bottom end of the existing product range.

The acclaimed advantages of the existing K60 compact modules are fully emulated by the K45 modules. The K45 modules have a substantially smaller basic area and installation depth, however.

Yet in spite of these small dimensions all the modules have large labels and an integrated addressing socket.

Two mounting plates are offered for the K45 compact modules:

- Mounting plate for wall mounting
  This has a hole pattern that is identical to that of the K60 compact modules. This means that K60 compact modules can be mounted together with K45 modules in an aligned arrangement. The shaped cables can be inserted in the recesses of the mounting plates where they cause no hindrance.
- Mounting plate for standard rail mounting

Connection of the AS-Interface shaped cables

The mounting plate and the compact module are joined together by means of a screw, with simultaneous contacting of the AS-Interface cable by the service-proven insulation piercing method.

Now, mounting the AS-Interface shaped cables is in fact easier than ever. The yellow and black AS-Interface shaped cable can be inserted into the mounting plates from the left or right regardless of the position of the coding lug. The correct polarity of the applied voltages is thus guaranteed.

Addressing and connection of the sensors/actuators

Addressing of the K45 compact modules is performed using an addressing socket integrated in the module. The addresses can be assigned even when mounted.

K45 modules with a maximum of four digital inputs and outputs

These compact modules contain up to four M12 standard connections or M8 standard connections for inputs and outputs. Using M12 or M8 standard connectors, a maximum of four sensors and four actuators can be connected to the compact module. Depending on the module, the sockets can be assigned in duplicate.
Pin assignment: Y – i.e. via a socket, two sensors or one sensor/one actuator are connected.

K45 modules with a maximum of eight digital inputs

These modules have eight digital inputs for connection through M12 plugs. The sockets have duplicate assignments.
Pin assignment: Y – i.e. via a socket, two sensors or one sensor/one actuator are connected.

The module requires two AS-Interface addresses for processing all eight inputs. The addresses can be assigned through a double addressing socket integrated in the module.

K45 modules in compliance with AS-i Specification V3.0 with four digital inputs and outputs/four digital outputs

The extended address mode (A/B addresses) according to AS-Interface Specification V3.0 enables connection of up to 62 slaves on one AS-i network. With this extended address mode, four outputs are now possible even with A/B slaves (instead of only three outputs possible up to now with Specification V2.1). Hence with full expansion of an AS-Interface network, there are now 248 inputs as well as 248 outputs available on one AS-Interface system.

Points to bear in mind:

- These modules can be used only with a master according to AS-i Specification V3.0.
- The cycle times for the outputs may be up to 20 ms.

Depending on the module, the sockets can be assigned in duplicate.
Pin assignment: Y – i.e. via a socket, two sensors or one sensor/one actuator are connected.

Selection and ordering data

3RK1400-0GQ20-0AA3

Digital I/O modules, IP67 - K45

- PNP transistor
- Width 45 mm
- Current carrying capacity of the inputs: 200 mA
- Modules supplied without mounting plate

Type	Current carrying capacity of outputs	Slave type	Pin assignment	U_{aux} 24 V	Connection methods	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
						d					
8 inputs[1]	--	A/B	Y	--	M12	2	**3RK2200-0DQ20-0AA3**		1	1 unit	42C
4 inputs	--	Standard	Standard	--	M12	▶	**3RK1200-0CQ20-0AA3**		1	1 unit	42C
	--	Standard	Standard	--	M8	2	**3RK1200-0CT20-0AA3**		1	1 unit	42C
	--	A/B	Standard	--	M12	▶	**3RK2200-0CQ20-0AA3**		1	1 unit	42C
	--	A/B	Standard	--	M8	5	**3RK2200-0CT20-0AA3**		1	1 unit	42C
2 x 2 inputs	--	A/B	Y	--	M12	2	**3RK2200-0CQ22-0AA3**		1	1 unit	42C
2 inputs/ 2 outputs	2 A[2]	Standard	Standard	✓	M12	▶	**3RK1400-1BQ20-0AA3**		1	1 unit	42C
2 x (1 input/ 1 output)	0.2 A	Standard	Y	--	M12	2	**3RK1400-0GQ20-0AA3**		1	1 unit	42C
4 x (1 input/ 1 output)	0.2 A	A/B (Spec. V3.0)	Y	--	M12	5	**3RK2400-0GQ20-0AA3**		1	1 unit	42C
	0.5 A	A/B (Spec. V3.0)	Y	✓	M12	5	**3RK2400-1GQ20-1AA3**		1	1 unit	42C
4 outputs	1 A	A/B (Spec. V3.0)	Standard	✓	M12	2	**3RK2100-1CQ20-0AA3**		1	1 unit	42C
3 outputs	1 A	A/B	Standard	✓	M12	▶	**3RK2100-1EQ20-0AA3**		1	1 unit	42C
4 outputs	1 A	Standard	Standard	✓	M12	▶	**3RK1100-1CQ20-0AA3**		1	1 unit	42C
2 outputs/ 2 inputs	2 A	A/B	Standard	✓	M12	2	**3RK2400-1BQ20-0AA3**		1	1 unit	42C

✓ Available
-- Not available

[1] Module occupies two AS-Interface addresses
[2] The typical current carrying capacity per output increases with version "E12" from 1.5 to 2 A (available since approx. 07/2003).

Accessories

3RK1901-2EA00

K45 mounting plates

- For wall mounting ▶ **3RK1901-2EA00** 1 1 unit 42C
- For standard rail mounting ▶ **3RK1901-2DA00** 1 1 unit 42C

3RK1901-1MN00

Cable termination pieces ▶ **3RK1901-1MN00** 1 10 units 42C
For sealing of open cable ends (shaped AS-Interface cable) in IP67

3RK1901-1KA00

AS-Interface sealing caps

- For free M12 sockets ▶ **3RK1901-1KA00** 100 10 units 42C
- For free M8 sockets 2 **3RK1901-1PN00** 100 10 units 42C

3RK1901-1PN00

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Digital I/O modules, IP67 - K20

The K20 compact module series rounds off the AS-Interface compact modules with a particularly slim design and only 20-mm width. Thanks to its extremely compact dimensions, these modules are particularly suited for handling machine applications in the field of production engineering where modules need to be arranged in the smallest of spaces.

Robotics is yet another application area. The K20 modules are connected to the AS-Interface with a round cable with M12 cable box instead of with the AS-Interface flat cable. The AS-Interface bus cable and the 24 V DC auxiliary energy are routed in this case in a shared round cable. This enables extremely compact installation.

The flexibility of the round cable means that it can also be used on moving machine parts without any problems. The K20 modules are also ideal for such applications as their non-encapsulated design makes them particularly light in weight.

In applications with tow chains, many users rely on placing the AS-Interface bus cable in a round cable. In this case, the K20 modules support direct connection to the round cable. No flat to round cable adapter is required.

The K20 compact module range includes standard AS-Interface modules, as well as an ASIsafe version for the connection of safety-related sensors, such as EMERGENCY-STOP pushbuttons or protective door monitoring. All standard AS-Interface K20 modules support, as far as technically possible, the expanded address mode (A/B addresses) according to AS-Interface Specification V2.1, which enables connection of 62 stations to an AS-Interface network. The K20 module with four inputs and four outputs works in expanded address mode according to AS-Interface Specification V3.0 which, for the first time, supports four outputs with an A/B slave, thus enabling 248 inputs and 248 outputs in a fully expanded AS-Interface network.

For particularly space-saving dimensions, the sensors and actuators are connected over M8 plug-in connectors. Alternatively, M12 connectors with Y assignment can be used.

Selection and ordering data

3RK2200-0CT30-0AA3

Digital I/O modules, IP67 - K20
Width 20 mm

Version					SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	Current carrying capacity of outputs	Slave type	Pin assignment	Connection methods	d					
4 inputs	--	A/B	Standard	M8	2	**3RK2200-0CT30-0AA3**		1	1 unit	42C
	--	A/B	Y	M12	5	**3RK2200-0CQ30-0AA3**		1	1 unit	42C
2 inputs/ 2 outputs	1	A/B	Standard	M8	2	**3RK2400-1BT30-0AA3**		1	1 unit	42C
	1	A/B	Y	M12	2	**3RK2400-1BQ30-0AA3**		1	1 unit	42C
4 outputs	1	A/B (Spec. V3.0)	Standard	M8	2	**3RK2100-1CT30-0AA3**		1	1 unit	42C
4 inputs/ 4 outputs	1	Standard	Standard	M8	10	**3RK1400-1CT30-0AA3**		1	1 unit	42C
	1	A/B (Spec. V3.0)	Standard	M8	2	**3RK2400-1CT30-0AA3**		1	1 unit	42C
2 safe inputs	--	Standard	Y-II	M12	2	**3RK1205-0BQ30-0AA3**		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

2

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 3RK1901-1KA00  3RK1901-1PN00	**AS-Interface sealing caps**						
	• For free M12 sockets	▶	**3RK1901-1KA00**		100	10 units	42C
	• For free M8 sockets	2	**3RK1901-1PN00**		100	10 units	42C
 3RK1901-1NN10	**AS-Interface compact distributors, for AS-Interface flat cable** Current carrying capacity up to 8 A	2	**3RK1901-1NN10**		1	1 unit	42C
 3RX9801-0AA00	**AS-Interface M12 feeders** • Degree of protection IP67 • Current carrying capacity up to 2 A						
	For flat cable: AS-i; For: M12 socket; Cable length: --; Cable end in feeder: Available	▶	**3RX9801-0AA00**		1	1 unit	42C
 3RK1901-1NR10	**AS-Interface M12 feeders** • Degree of protection IP67/IP68/IP69K • Current carrying capacity up to 4 A						
	For flat cable: AS-i; For: M12 socket; Cable length: --; Cable end in feeder: Not available	2	**3RK1901-1NR10**		1	1 unit	42C
 3RK1901-1NR11	For flat cable: AS-i; For: M12 cable box; Cable length: 1 m; Cable end in feeder: Not available	2	**3RK1901-1NR11**		1	1 unit	42C
	For flat cable: AS-i; For: M12 cable box; Cable length: 2 m; Cable end in feeder: Not available	2	**3RK1901-1NR12**		1	1 unit	42C
	For flat cable: AS-i/U_{aux}; For: M12 socket; Cable length: --; Cable end in feeder: Not available	2	**3RK1901-1NR20**		1	1 unit	42C
	For flat cable: AS-i/U_{aux}; For: M12 cable box; Cable length: 1 m; Cable end in feeder: Not available	2	**3RK1901-1NR21**		1	1 unit	42C
	For flat cable: AS-i/U_{aux}; For: M12 cable box; Cable length: 2 m; Cable end in feeder: Not available	2	**3RK1901-1NR22**		1	1 unit	42C
 3RK1901-1NR04	**AS-Interface M12 feeders, 4-fold** Current carrying capacity up to 4 A						
	For flat cable: AS-i/U_{aux}; For: 4-fold M12 socket, delivery includes mounting plate (for wall and standard rail mounting); Cable length: --; Cable end in feeder: Not available	2	**3RK1901-1NR04**		1	1 unit	42C
 3RK1901-1TR00	**M12 T distributors** • IP68 • 1 x M12 plug • 2 x M12 box	10	**3RK1901-1TR00**		1	1 unit	42C
 6ES7194-1KA01-0XA0	**M12 Y-shaped coupler plugs** For connection of two sensors to one M12 socket with Y-assignment	1	**6ES7194-1KA01-0XA0**		1	1 unit	250
 3RK1902-4PB15-3AA0	**M12 connecting cables** • 3-pole • For addressing AS-i slaves with M12 bus connection • Cable length 1.5 m	10	**3RK1902-4PB15-3AA0**		1	1 unit	42D

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

K60 analog compact module

AS-Interface analog modules from the K60 compact series detect or issue analog signals locally. These modules are linked to the higher-level controller through an AS-Interface master according to Specification V2.1 or Specification V3.0.

The analog modules are divided into the following groups:

- Input modules
  - for sensors with current signal
  - for sensors with voltage signal
  - for sensors with thermal resistor
- Output modules
  - for current actuators
  - for voltage actuators

The input modules according to profile 7.3/7.4 are available with two or four input channels. It is possible in addition to convert the two-channel module to using only one input channel, thus enabling very short times before the analog value is available. The conversion is effected by means of a jumper plug at socket 3. The transmission times achieved with analog modules according to Profile 7.A.9 are shorter by half than those achieved with Profile 7.3/7.4. Operation is adjustable in this case, e.g. it is possible to choose with the ID1 code whether the module is operated with one or two channels.

The output modules are configured as two-channel modules as standard.

The input and output channels are electrically separated from the AS-Interface network. If sensors with a higher power requirement are to be connected, more power can be supplied through the auxiliary voltage as an alternative to the internal supply.

In the manual "AS-Interface Analog Modules Profile 7.3, Profile 7.A.9", the modules are presented in great detail along with their technical specifications and in-depth notes on operation. Sample function blocks round off the manual,
see "More information" on page 2/69.

Benefits

- Analog modules are just as easy to integrate in AS-Interface as digital modules
- Analog values can be easily detected and issued locally
- Preprocessing of the analog value transfer in the master enables rapid evaluation of the analog values
- Up to four values can be detected using one analog module
- Faster transmission and conversion of analog values thanks to the new option for switching to single-channel operation

In addition, Specification V3.0 now also offers:

- A/B technology, now also with analog modules
- On average, double fast transmission times (only 3 or 4 cycles, depending on the resolution selected)
- Variable adjustable mode: 12-bit or 14-bit resolution, single-channel or two-channel, selectable via the ID1 code
- Additionally simplified handling of analog value processing with Specification V3.0 masters, the DP/AS-i LINK Advanced

Selection and ordering data

Version			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
 3RK1207-1BQ44-0AA3	**Analog I/O modules, IP67 – K60, Analog profile 7.3** • Slave type: Standard • Width 60 mm • Modules supplied without mounting plate							
Inputs	Type	Measuring range						
1 or 2 inputs (selectable using jumper plug at socket 3)	Current	4 ... 20 mA or ± 20 mA (selectable)[1]	2	**3RK1207-1BQ40-0AA3**		1	1 unit	42C
	Voltage	± 10 V or 1 ... 5 V (selectable)	2	**3RK1207-2BQ40-0AA3**		1	1 unit	42C
	Thermal resistance	Pt100 or Ni100 or 0 ... 600 Ω (selectable)[1]	X	**3RK1207-3BQ40-0AA3**		1	1 unit	42C
4 inputs	Current	4 ... 20 mA or ± 20 mA (selectable)	2	**3RK1207-1BQ44-0AA3**		1	1 unit	42C
	Voltage	± 10 V or 1 ... 5 V (selectable)	10	**3RK1207-2BQ44-0AA3**		1	1 unit	42C
	Thermal resistance	Pt100 or Ni100 or 0 ... 600 Ω (selectable)	X	**3RK1207-3BQ44-0AA3**		1	1 unit	42C
Outputs	Type	Output range						
2 outputs	Current for 2-wire actuators	4 ... 20 mA or ± 20 mA or 0 ... 20 mA (selectable)[1]	2	**3RK1107-1BQ40-0AA3**		1	1 unit	42C
	Voltage for 2-wire actuators	± 10 V or 0 ... 10 V or 1 ... 5 V (selectable)	2	**3RK1107-2BQ40-0AA3**		1	1 unit	42C
 3RK2207-2BQ50-0AA3	**Analog I/O modules, IP67 – K60, Analog profile 7.A.9** • Slave type: A/B (Spec. V3.0) • Width 60 mm • Modules supplied without mounting plate							
Inputs	Type	Measuring range						
1 or 2 inputs (variably adjustable)	Current	4 ... 20 mA or ± 20 mA (selectable)	2	**3RK2207-1BQ50-0AA3**		1	1 unit	42C
	Voltage	± 10 V or 1 ... 5 V (selectable)	2	**3RK2207-2BQ50-0AA3**		1	1 unit	42C

[1] Some modules are available in the extended temperature range (from -25 to 70 °C) and for use in difficult environmental conditions (coated according to environment standard IEC 60721).

Description	SIPLUS article number	Corresponds to module
SIPLUS AS-Interface 2AA, IP67	6AG1107-1BQ40-7AA3	3RK1107-1BQ40-0AA3
SIPLUS AS-Interface 2AI, IP67	6AG1207-1BQ40-7AA3	3RK1207-1BQ40-0AA3
SIPLUS AS-Interface 2AI, IP67	6AG1207-3BQ40-7AA3	3RK1207-3BQ40-0AA3

For more information, see www.siemens.com/siplus-extreme.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Accessories

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1901-0CA00	**K60 mounting plates**						
	• Wall mounting	▶	**3RK1901-0CA00**		1	1 unit	42C
	• Standard rail mounting	▶	**3RK1901-0CB01**		1	1 unit	42C
 3RK1901-1KA00	**M12 sealing caps**	▶	**3RK1901-1KA00**		100	10 units	42C
 3RK1902-0AR00	**Sealing sets** • For K60 mounting plate and distributor • Cannot be used for K45 mounting plate • One set contains one straight and one shaped seal	2	**3RK1902-0AR00**		100	5 units	42D
 3RK1901-1AA00	**Jumper plugs** For changing over the 2-channel input modules	2	**3RK1901-1AA00**		1	1 unit	42C

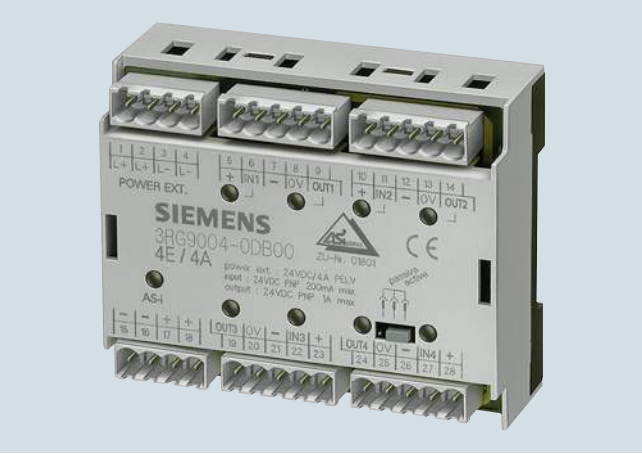
More information

More information
Manual "AS-Interface Analog Modules Profile 7.3, Profile 7.A.9", see https://support.industry.siemens.com/cs/ww/en/view/7643815

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

SC17.5F, SC17.5 and SC22.5 SlimLine Compact modules



F90 module

Flat module

For AS-Interface applications inside control cabinets, there are various module series for the most diverse requirements:

- SlimLine Compact – particularly slim design ideal for space-saving use in the control cabinet
- F90 module – particularly flat design for flat control boxes
- Flat module – special design for integration into customer-specific solutions

The existing SlimLine series of modules S22.5 and S45 are being replaced by the innovative new devices in the SlimLine Compact SC17.5, SC17.5F and SC22.5 series. The previous SlimLine modules are still available as replacements for existing systems.

Available versions

The following table provides an overview of the key features of the different series of control cabinet modules.

Feature	SlimLine Compact	F90 module	Flat module
Digital I/O	✓	✓	✓
Analog I/O	✓	--	--
Safe inputs	✓	--	--
Relay outputs	✓	--	--
A/B slave	✓	--	--
Mounting onto TH 35 standard mounting rail according to IEC 60715	✓	✓	--
Wall mounting using push-in lugs	✓	--	--
Integrated lugs for screw fixing	--	--	✓
Width in mm	17.5 or 22.5	90	80

✓ Available
-- Not available

Overview

SlimLine Compact modules

SC17.5 and SC22.5 SlimLine Compact modules with screw terminals

SlimLine Compact module SC22.5 with connector with screw terminals

The AS-Interface module series for the control cabinet SlimLine Compact with degree of protection IP20 creates space in the cabinet and in distributed local control boxes. A width of just 17.5 mm or 22.5 mm ensures considerable space savings in the control cabinet.

The SlimLine Compact module series comprises not only digital and analog I/O modules but also ASIsafe modules with safe inputs. Digital outputs are available as solid-state and relay outputs.

Sensors and actuators, as well as the AS-Interface bus cable, are connected by means of removable screw or push-in spring-type terminals. Device connectors available as accessories offer the possibility of looping through the AS-Interface bus cable and the 24 V DC power supply U_{aux} from one module to additional modules. This significantly simplifies the wiring, as the AS-Interface bus cable and U_{aux} only have to be connected to one device.

All devices for the connection of 3-wire sensors offer the option of supplying the sensors either from the AS-Interface bus cable or alternatively from the 24 V DC voltage supply U_{aux} depending on the requirements of the particular application. A slide switch is used to make the selection. If supply via U_{aux} is selected, the wiring of the sensor terminals remains unchanged. This means that no external supply is required for the sensors.

All modules have LEDs on the front that provide diagnostic information and indicate the status of the module inputs and outputs. An addressing socket integrated at the front enables the module to be addressed also when it is installed. Integrated adapters permit mounting onto a standard mounting rail – either directly for the module or for the device connector. Alternatively, the modules can also be screw-mounted using push-in lugs (accessories). These lugs for screw fastening must be ordered separately.

2

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42C

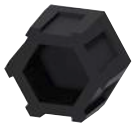
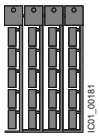
More information

"SlimLine Compact Modules" Manual, see https://support.industry.siemens.com/cs/ww/en/view/109481489

	Version I/O type	Width	Inputs	Outputs	SD	Screw terminals		SD	Spring-type terminals (push-in)	
		mm			d	Article No.	Price per PU	d	Article No.	Price per PU
SC17.5 and SC22.5 digital SlimLine Compact modules										
	Slave type: A/B slave									
 3RK2200-0CG00-2AA2	4 inputs	17.5	2-wire	--	2	**3RK2200-0CE00-2AA2**		2	**3RK2200-0CG00-2AA2**	
		22.5	3-wire	--	2	**3RK2200-2CE00-2AA2**		2	**3RK2200-2CG00-2AA2**	
	4 outputs	22.5	--	2A solid-state	2	**3RK2100-1CE00-2AA2**		2	**3RK2100-1CG00-2AA2**	
	4 inputs/ 2 outputs, relays	22.5	3-wire	Relays (CO contacts)	2	**3RK2402-2ME00-2AA2**		2	**3RK2402-2MG00-2AA2**	
 3RK2400-2CG00-2AA2	4 inputs/ 4 outputs, relays	22.5	3-wire	Relays (NO contacts)	2	**3RK2402-2CE00-2AA2**		2	**3RK2402-2CG00-2AA2**	
	4 inputs/ 4 outputs	22.5	3-wire	2A solid-state	2	**3RK2400-2CE00-2AA2**		2	**3RK2400-2CG00-2AA2**	
	Slave type: standard slave									
	4 inputs/ 4 outputs	22.5	3-wire	2A solid-state	2	**3RK1400-2CE00-2AA2**		2	**3RK1400-2CG00-2AA2**	
SC22.5 analog SlimLine Compact modules NEW										
	Slave type: standard slave									
 3RK1207-0CG00-2AA2	4 inputs	22.5	Voltage/ current selectable	--	2	**3RK1207-0CE00-2AA2**		2	**3RK1207-0CG00-2AA2**	
			Thermal resistance	--	2	**3RK1207-3CE00-2AA2**		2	**3RK1207-3CG00-2AA2**	
	2 outputs	22.5	--	Voltage/ current selectable	2	**3RK1107-0BE00-2AA2**		2	**3RK1107-0BG00-2AA2**	
SC17.5F ASIsafe SlimLine Compact modules										
 3RK1405-0BG00-2AA2	2 safe inputs	17.5	For mechanical contacts	--	2	**3RK1205-0BE00-2AA2**		2	**3RK1205-0BG00-2AA2**	
	2 safe inputs/ 2 standard outputs	17.5	For mechanical contacts	Solid-state, U_{ASI}/U_{aux} supply selectable	2	**3RK1405-2BE00-2AA2**		2	**3RK1405-2BG00-2AA2**	

* You can order this quantity or a multiple thereof.
Illustrations are approximate

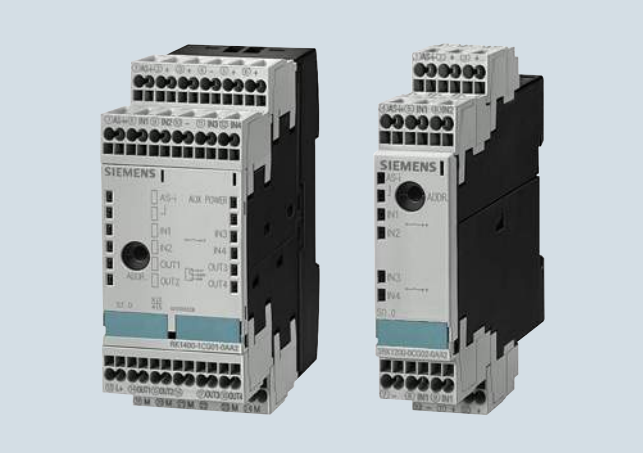
Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
 3RK1901-1YA00 3RK1901-1YA10						
Device connectors						
For electrical connection of SlimLine Compact modules (connects AS-i bus cable and 24 V DC auxiliary power supply U_{aux} when using several SlimLine Compact modules)						
• Width 17.5 mm	2	**3RK1901-1YA00**		1	1 unit	42C
• Width 22.5 mm	2	**3RK1901-1YA10**		1	1 unit	42C
 3RK1901-1YA01 3RK1901-1YA11						
Device termination connectors						
Required for the last module in the network						
• Width 17.5 mm	2	**3RK1901-1YA01**		1	1 unit	42C
• Width 22.5 mm	2	**3RK1901-1YA11**		1	1 unit	42C
 3ZY1121-2BA00						
Removable terminals		**Screw terminals**				
• Screw terminals up to 2 x 1.5 mm^2 or 1 x 2.5 mm^2						
- 2-pole	2	**3ZY1121-1BA00**		1	6 units	41L
- 4-pole	2	**3ZY1141-1BA00**		1	6 units	41L
		Spring-type terminals (push-in)				
• Push-In terminals up to 2 x 1.5 mm^2						
- 2-pole	2	**3ZY1121-2BA00**		1	6 units	41L
- 4-pole	2	**3ZY1141-2BA00**		1	6 units	41L
 3ZY1311-0AA00						
Push-in lugs for wall mounting	2	**3ZY1311-0AA00**		1	10 units	41L
Two lugs are required per device						
 3ZY1440-1AA00						
Coding pins for removable terminals	2	**3ZY1440-1AA00**		1	12 units	41L
For mechanical coding of the terminals						
 3RT2900-1SB20						
Blank labels						
Unit labeling plates[1]						
• 10 mm x 7 mm, titanium gray	20	**3RT2900-1SB10**		100	816 units	41B
• 20 mm x 7 mm, titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
 3RA2908-1A						
Tools for opening spring-type terminals		**Spring-type terminals**				
Screwdriver for SIRIUS devices with spring-type terminals 3.0 mm x 0.5 mm, length approx. 200 mm; Titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/20).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

More information



SlimLine modules S45 (picture on left) and S22.5 module (picture on right) with spring-type terminals

The existing SlimLine series of I/O modules for use in the control cabinet is being replaced by the new, innovative SlimLine Compact series. We recommend that these new devices are used in future.

The code conversion table indicates the best options for replacing the existing SlimLine devices with SlimLine Compact devices.

Note:

The previous SlimLine devices are still available for use as replacements in existing systems. As a result of the innovation, the new SlimLine Compact devices are not fully compatible in terms of either mechanical dimensions or electrical properties.

The code conversion table below links the existing SlimLine S22.5, S22.5F and S45 modules with the new SlimLine Compact SC17.5, SC17.5F and SC22.5 devices.

Code conversion table

S22.5, S22.5F and S45 SlimLine			**Comparison type: SC17.5, SC17.5F and SC22.5 SlimLine Compact**		
Screw terminals	Spring-type terminals	Version	Screw terminals	Spring-type terminals	Version
3RK1200-0CE00-0AA2	3RK1200-0CG00-0AA2	4DI, 2-wire, standard slave	3RK2200-0CE00-2AA2	3RK2200-0CG00-2AA2	4DI, 2-wire, A/B slave
3RK2200-0CE02-0AA2	3RK2200-0CG02-0AA2	4DI, A/B slave	3RK2200-2CE00-2AA2	3RK2200-2CG00-2AA2	4DI, A/B slave
3RK1200-0CE02-0AA2	3RK1200-0CG02-0AA2	4DI, standard slave			
3RK1400-0BE00-0AA2	3RK1400-0BG00-0AA2	2DI/2DQ, standard slave	3RK1400-2CE00-2AA2	3RK1400-2CG00-2AA2	4DI/4DQ, standard slave
3RK1402-0BE00-0AA2	3RK1402-0BG00-0AA2	2DI/2DQ relay, standard slave	3RK2402-2ME00-2AA2	3RK2402-2MG00-2AA2	4DI/2DQ relay, A/B slave
3RK1100-1CE00-0AA2	3RK1100-1CG00-0AA2	4DQ, standard slave	3RK2100-1CE00-2AA2	3RK2100-1CG00-2AA2	4DQ, A/B slave
3RK2400-1CE01-0AA2	3RK2400-1CG01-0AA2	4DI/4DQ A/B slave	3RK2400-2CE00-2AA2	3RK2400-2CG00-2AA2	4DI/4DQ, A/B slave
3RK2400-1FE00-0AA2	3RK2400-1FG00-0AA2	4DI/3DQ, A/B slave			
3RK1400-1CE00-0AA2	3RK1400-1CG00-0AA2	4DI/4DQ, 1A solid-state, standard slave	3RK1400-2CE00-2AA2	3RK1400-2CG00-2AA2	4DI/4DQ, 2A solid-state, standard slave
3RK1400-1CE01-0AA2	3RK1400-1CG01-0AA2	4DI/4DQ, 2A solid-state, standard slave			
3RK1402-3CE01-0AA2	3RK1402-3CG01-0AA2	4DI/4DQ (sensor supply from U_{aux}), standard slave			
3RK1402-3CE00-0AA2	3RK1402-3CG00-0AA2	4DI/4DQ, relay, standard slave	3RK2402-2CE00-2AA2	3RK2402-2CG00-2AA2	4DI/4DQ, relay, A/B slave
3RK1205-0BE00-0AA2	3RK1205-0BG00-0AA2	2F-DI	3RK1205-0BE00-2AA2	3RK1205-0BG00-2AA2	2F-DI
3RK1405-0BE00-0AA2	3RK1405-0BG00-0AA2	2F-DI/2DQ (outputs supplied from U_{ASI})	3RK1405-2BE00-2AA2	3RK1405-2BG00-2AA2	2F-DI/2DQ (U_{ASI}/U_{aux} supply selectable)
3RK1405-1BE00-0AA2	3RK1405-1BG00-0AA2	2F-DI/2DQ (outputs supplied from U_{aux})			

Selection and ordering data

3RG9002-0DB00

F90 module
- Standard slave
- Width 90 mm
- With Combicon version: Delivery without Combicon connector

Version				SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Type	Connection	Inputs	Outputs						
4 inputs/ 4 outputs	Screw	2 and 3-wire PNP transistor	PNP transistor 1 A	5	**3RG9002-0DB00**		1	1 unit	42C
		2 and 3-wire PNP transistor	PNP transistor 2 A	5	**3RG9002-0DA00**		1	1 unit	42C
		2 and 3-wire PNP transistor floating	PNP transistor 2 A	5	**3RG9002-0DC00**		1	1 unit	42C
	Combicon[1]	2 and 3-wire PNP transistor	PNP transistor 1 A	5	**3RG9004-0DB00**		1	1 unit	42C
		2 and 3-wire PNP transistor	PNP transistor 2 A	5	**3RG9004-0DA00**		1	1 unit	42C
		2 and 3-wire PNP transistor floating	PNP transistor 2 A	5	**3RG9004-0DC00**		1	1 unit	42C

[1] Scope of supply does not include Combicon connector set 3RX9810-0AA00, this must be ordered separately, see "Accessories".

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Combicon connector sets For 4I/4O modules with Combicon connection; one set comprises: • 4 x 5-pole plug for connection • Standard sensors/actuators • 2 x 4-pole plug for AS-Interface and external auxiliary voltage	5	**3RX9810-0AA00**		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Flat modules

Overview

Flat module 4I/4O

The flat module for the control cabinet in degree of protection IP20 has four inputs and four outputs.

The module is fitted at the front with an LED which indicates the module's status.

With the integrated lugs, the modules can be screwed on.

An integrated addressing socket enables the module to be addressed when it is installed.

Standard sensors/actuators and the AS-Interface cable can be connected using screw terminals.

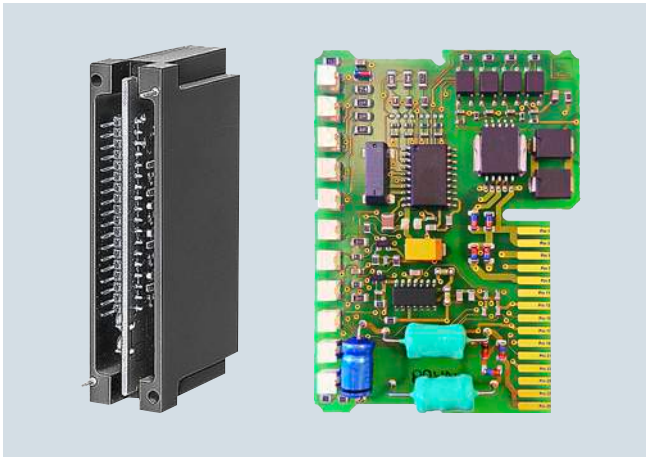
Selection and ordering data

	Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		d	Article No. / Price per PU			
 3RK1400-0CE00-0AA3	**Flat module 4I/4O** • 4 inputs / 4 outputs • 200 mA for all I/Os	2	**3RK1400-0CE00-0AA3**	1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

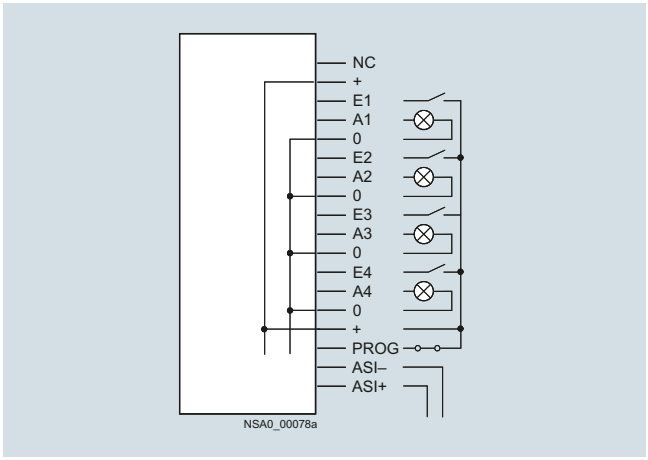
Overview

AS-Interface communication modules for printed circuit board installation



AS-Interface communication module 3RK1400-0CD00-0AA3 (left),
AS-Interface communication module 3RK1400-1CD00-0AA2 (right)

AS-Interface communication module for printed circuit board installation 3RK1400-0CD00-0AA3



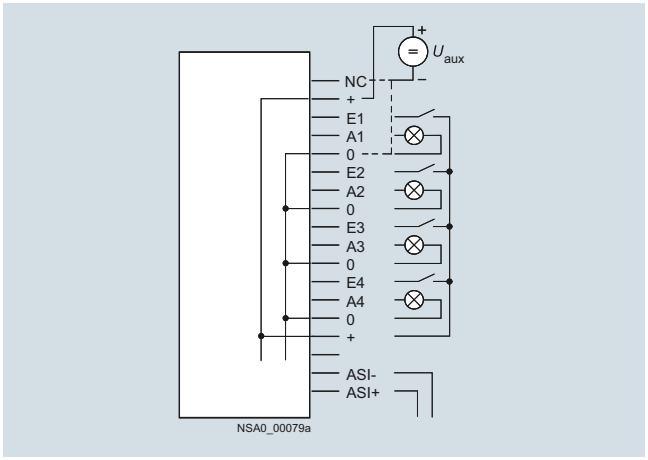
3RK1400-0CD00-0AA3 circuit diagram

With the 4I/4O module 3RK1400-0CD00-0AA3 for printed circuit board mounting, it is possible for up to four mechanical contacts to be queried or indicator lights to be operated, the necessary energy being provided by the AS-Interface system (yellow AS-Interface cable).

Note:

If the switching outputs are overloaded, the module does not respond to invoking by a master.

AS-Interface communication module for printed circuit board installation 3RK1400-0CD01-0AA3



3RK1400-0CD01-0AA3 circuit diagram

With the 4I/4O module 3RK1400-0CD01-0AA3 for printed circuit board mounting, it is possible for up to four mechanical contacts to be queried or indicator lights to be operated, the necessary energy for the inputs and outputs being provided from the auxiliary voltage (24 V PELV). If (+) is connected to U_{aux}+ and (NC) to U_{aux}–, the outputs are not short-circuit and overload proof; if U_{aux}– is connected to (0), the outputs are overload and short-circuit proof (maximum summation current 200 mA). In this case, the module does not respond even to invoking by a master when the switching outputs are overloaded.

AS-Interface communication modules

AS-Interface communication modules for printed circuit board installation, with direct printed circuit board connector, without enclosure

AS-Interface communication module for printed circuit board installation 3RK1400-1CD00-0AA2, 3RK2400-1FD00-0AA2

Connection	Connection pad
AS-i +	27, 29
AS-i -	28, 30
Sensor+	17, 18, 23, 24
Sensor-	13, 14, 19, 20
IN1	21
IN2	22
IN3	15
IN4	16
U_{aux}+ (L24+)	2, 4
U_{aux}– (M24)	1, 3
OUT1	9
OUT2	10
OUT3	5
OUT4	6 (not assigned for 3RK2400-1FD00-0AA2 4I/3O module)
OUT-	7, 8
Not assigned	11, 12, 25, 26

With the 3RK1400-1CD00-0AA2 4I/4O or 3RK2400-1FD00-0AA2 4I/3O modules for printed circuit board mounting, it is possible for up to four mechanical contacts or 3-conductor sensors according to IEC 947-5-2 to be connected.

Up to four indicator lights via the 4I/4O module or up to three indicator lights via the 4I/3O module can also be controlled. The power for short-circuit proof solid-state switching outputs is provided from an auxiliary voltage (24 V PELV).

Mounting is very easy using a "Card Edge Board-to-Board Connector". This connector can be ordered for vertical and horizontal mounting from the company AMP, for example:

- 180° version for vertical mounting (AMP): Type 530843-2
- 90° version for horizontal mounting (AMP): Type 650118-1

If the inputs are loaded with more than 200 mA, the module does not respond to invoking by a master.

AS-Interface communication module for printed circuit board installation 3RK1200-0CD00-0AA2

Connection	Connection pad
AS-i +	27, 29
AS-i -	28, 30
Sensor+	17, 18, 23, 24
Sensor-	13, 14, 19, 20
IN1	21
IN2	22
IN3	15
IN4	16
Not assigned	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 25, 26

With the 4I module for printed circuit board mounting, it is possible for up to four mechanical contacts or 3-conductor sensors to be connected, the power for inputs being provided from the AS-Interface cable.

Mounting is very easy using a "Card Edge Board-to-Board Connector". This connector can be ordered for vertical and horizontal mounting from the company AMP, for example:

- 180° version for vertical mounting (AMP): Type 530843-2
- 90° version for horizontal mounting (AMP): Type 650118-1

If the inputs are loaded with more than 200 mA, the module does not respond to invoking by a master.

Selection and ordering data

	Version	Slave type	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1400-0CD00-0AA3	**4I/4O module** (4 inputs/4 outputs)							
	• Supply of inputs and outputs using AS-Interface cable (max. 200 mA) - Printed circuit board with solder pins, protected by enclosure	Standard	10	**3RK1400-0CD00-0AA3**		1	1 unit	42C
	• Supply of inputs and outputs using external auxiliary voltage (24 V PELV) - Printed circuit board with solder pins, protected by enclosure	Standard	20	**3RK1400-0CD01-0AA3**		1	1 unit	42C
	• Supply of inputs using AS-Interface cable (max. 200 mA), supply of outputs using external auxiliary voltage (24 V PELV) - Printed circuit board with gold-plated direct connector (Card Edge Board-to-Board Connector), without enclosure	Standard	15	**3RK1400-1CD00-0AA2**		1	5 units	42C
 3RK1400-1CD00-0AA2	**4I/3O module** (4 inputs/3 outputs) • Supply of inputs using AS-Interface cable (max. 200 mA), supply of outputs using external auxiliary voltage (24 V PELV) - Printed circuit board with gold-plated direct connector (Card Edge Board-to-Board Connector), without enclosure	A/B	5	**3RK2400-1FD00-0AA2**		1	1 unit	42C
	4I module (4 inputs) • Supply of inputs using AS-Interface cable (max. 200 mA) - Printed circuit board with gold-plated direct connector (Card Edge Board-to-Board Connector), without enclosure	Standard	15	**3RK1200-0CD00-0AA2**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Counter module with spring-type terminals

The counter module is used to send hexadecimally coded count values (LSB=D0, MSB=D3) to a higher-level controller. The count value is increased by 1 for each valid count pulse at terminal 8. Beginning at 0, the module counts up to 15 and then begins again at 0. The controller adopts the current value and determines the number of pulses between two host invocations through subtraction from the previous value. The total number of count pulses is determined by adding these differences.

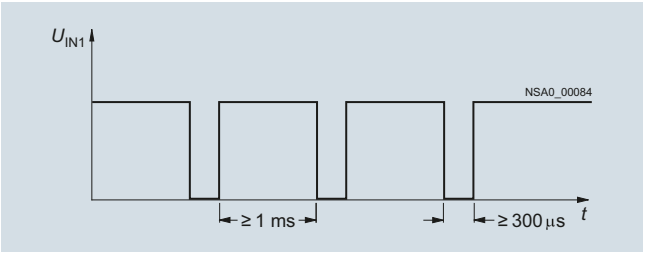
For the values sent to be unambiguous, no more than 15 count values are allowed between two host invocations or AS-Interface master invocations at terminal 8. The maximum permissible transmission frequency is calculated from these times:

$f_{TRmax} = 15 / T_{max}$

T_{max}: max. possible transmission time from the slave to the host

A further condition for the maximum frequency is the required pulse shape. For the counter to accept a pulse as valid, a Low must have been applied at the input for at least 300 µs and a High for at least 1 ms.

This results in a maximum frequency of f_{Zmax} = 1 / 1.3 ms = 769 Hz independently of the control system (see figure below).



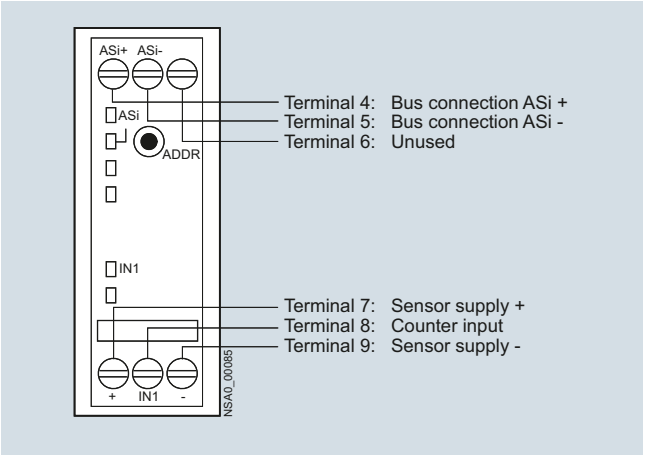
Maximum frequency for the counter module

If the time criterion stipulated in the figure is violated, the count value is rejected.

The counter is active only for the reset parameter P2 (default). The counter is deleted when P2 is set, and the incoming count pulses are not registered until after P2 is reset again.

Note:

A customized function block is necessary or must be programmed.



Counter module connection options

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Counter modules						
Width 22.5 mm						
• With screw terminals	10	**3RK1200-0CE03-0AA2**		1	1 unit	42C
• With spring-type terminals	10	**3RK1200-0CG03-0AA2**		1	1 unit	42C

3RK1200-0CE03-0AA2

3RK1200-0CG03-0AA2

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Ground-fault detection modules

Overview

Ground-fault detection modules

"Ground faults in any control circuit must not lead to unintentional starting or potentially hazardous movements or prevent the machine from stopping." (IEC 60204-1 / VDE 0113-1).

The AS-Interface ground-fault detection module is used to meet these requirements. Using this module from the SlimLine series, ground faults in AS-Interface systems can be reliably detected and reported.

The following ground faults are detected:

- Ground fault from AS-i "+"
- Ground fault from AS-i "-"
- Ground fault from sensors and actuators that are supplied from the AS-Interface voltage.

Note:

Not suitable for AS-i Power24V.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Ground-fault detection modules						
Width 22.5 mm						
• With screw terminals	5	**3RK1408-8KE00-0AA2**		1	1 unit	42C
• With spring-type terminals	5	**3RK1408-8KG00-0AA2**		1	1 unit	42C

3RK1408-8KE00-0AA2

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

AS-Interface overvoltage protection module

The AS-Interface overvoltage protection module (protection module) protects downstream AS-Interface devices or individual sections in AS-i networks from conducted overvoltages which can be caused by switching operations and remote lightning strikes. The location of the protection module forms the transition from zone 1 to 2/3 within the lightning protection zone concept. Direct lightning strikes must be coped with using additional protective measures at the transitions from lightning protection zone 0A to 1.

With the AS-Interface overvoltage protection module, it is now also possible to integrate AS-Interface in the overall overvoltage protection concept of a plant or machine.

The module has the same design and degree of protection (IP67) as the AS-Interface K45 compact modules. It is a passive module and as such does not need its own address on the AS-Interface network. The module can be used to protect the AS-Interface cable and the cable for the auxiliary voltage from overvoltage. Overvoltages are discharged through a ground cable with a green/yellow oil-proof outer sheath. This cable is fixed in the module and must be connected with low resistance to the system's ground.

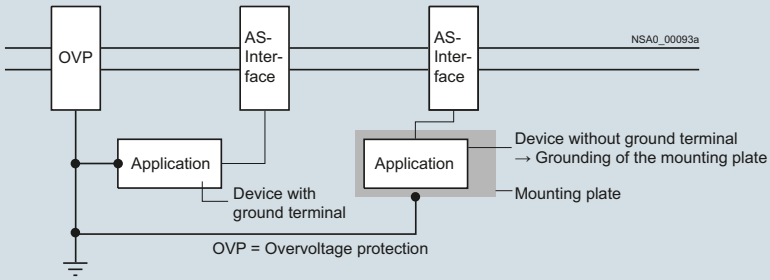
Rated discharge current I_{sn}

The rated discharge current is the peak value of a surge current of the form 8/20 µs (microseconds), for which the protection module is designed in accordance with a specified test program. With an 8/20 waveform, 100 % of the value is achieved after 8 µs and 50 % after 20 µs.

Protection level U_p

The protection level of a protection module is the highest momentary value of the voltage at the terminals, established in individual tests and characterizes the capability of a protection module to limit overvoltages to a residual level.

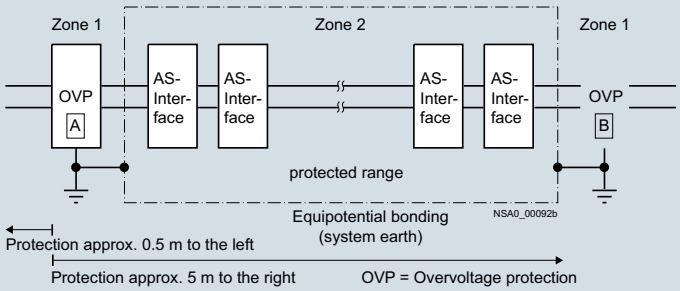
Configuration guidelines



The grounding of protection modules and the units to be protected must be effected through a shared grounding point.

If insulated devices are protected, their mounts must be included in the grounding points.

Sample application



Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
 **AS-Interface overvoltage protection module** Scope of supply includes mounting plate (for wall and standard rail mounting)	5	**3RK1901-1GA01**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

AS-Interface power supply unit for 3 A

AS-Interface power supply units feed 30 V DC into the AS-Interface cable and supply the AS-Interface components. They include power-optimized data decoupling for the separation of communication signals and control supply voltage. As the result, AS-Interface is able to convey both data and power along a single line. The power supply units are resistant to overload and short circuits.

Dimensions

AS-Interface power supply units have compact dimensions in widths of 50 / 70 / 120 mm. No distances from other devices need to be observed when mounting the power supply units.

Features

- Higher rating: The power supply units deliver currents of 2.6 to 8 A.
- Integrated data decoupling: As the result, AS-Interface is able to convey both data and power along a single line.
- Integrated ground-fault detection: The power supply units perform the reliable detection and signaling of ground faults according to IEC 60204-1. The AS-Interface voltage can be disconnected automatically in the event of a ground fault.
- Integrated overload detection: An output overload is detected and reported over a diagnostics LED.
- Diagnostics memory: Any ground faults or overloads on the output side are stored in a diagnostics memory until the device is RESET.
- Remote RESET and remote signaling: Using relay contacts, a ground fault can be signaled and evaluated by a central controller and/or indicator light.
- Diagnostics LEDs: Three different LEDs indicate the status of the AS-Interface power supply locally at the power supply unit.
- Ultra-wide input range / two-phase connection: The ultra-wide input range of 120 to 500 V of the 8 A version means that the supply units can be used in virtually any network worldwide. In addition, this version dispenses with the need for an N conductor as the device can be connected directly between 2 phases of a network.
- Operation with 24 V DC: The 3 A power supply unit is also available as a version with a 24 V DC input. This power supply unit is suitable for use in battery-powered systems or in systems with UPS (uninterruptible power supply).
- Removable terminal blocks with spring-type connections: For easy exchanging of devices, each power supply unit has three removable terminal blocks: for the input side, for the output side and for Signal/RESET connections.

Benefits

- Complete solution for supplying AS-Interface networks while making full use of the maximum possible cable length per AS-i segment
- Only AS-i masters and AS-i slaves need to be connected to the AS-Interface cable in order to operate AS-Interface
- Compact, space-saving dimensions
- Reliable power supply even for large numbers of AS-Interface modules with a high power requirement
- Integrated ground-fault and overload detection saves the need for additional components and enhances safety
- Fast fault detection and reduced downtimes thanks to diagnostics memory, remote signaling and remote RESET
- Reduced downtimes as the result of removable terminal blocks which enable the fast exchanging of devices
- Ultra-wide input range of the 8 A version permits single-phase and two-phase operation and removes the need for an N conductor
- Can be used world-wide thanks to, for example, UL/CSA approval (UL 508)
- With the 2.6 A version, the output power is restricted to max. 100 W for use in Class 2 circuits in accordance with NEC (National Electrical Code)

Selection and ordering data

3RX9501-0BA00

3RX9503-0BA00

Version		SD	Spring-type terminals		PU (UNIT, SET, M)	PS*	PG
		d	Article No.	Price per PU			
AS-Interface power supply units, IP20 • AS-i single output 30 V DC • With integrated ground-fault detection • 2.6 A version with output power restricted to max. 100 W (for Class 2 circuits in accordance with NEC) • Dimensions: Width: 50 mm (2.6 A/3 A), 70 mm (5 A), 120 mm (8 A); Height: 125 mm; Depth: 125 mm							
Output current	Input voltage						
2.6 A/max. 100 W	120/230 V AC (selectable)	►	**3RX9501-2BA00**		1	1 unit	42C
3 A	120/230 V AC (selectable)	►	**3RX9501-0BA00**		1	1 unit	42C
3 A	24 V DC	►	**3RX9501-1BA00**		1	1 unit	42C
5 A	120/230 V AC (selectable)	►	**3RX9502-0BA00**		1	1 unit	42C
8 A	120/230 ... 500 V AC (selectable)	►	**3RX9503-0BA00**		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

PSN130S 30 V power supply units for 3 A, 4 A and 8 A

The PSN130S 30 V power supplies feed 30 V DC into the AS-Interface cable and supply the AS-Interface components, but do not include data decoupling. Data decoupling modules are needed in addition therefore to separate communication signals and control supply voltage, see page 2/85 or 2/87.

The power supply units are resistant to overload and short circuits.

Dimensions

The 30 V power supply units have compact dimensions with widths of 50 and 70 mm. No distances from other devices need to be observed when mounting the power supply units.

Features

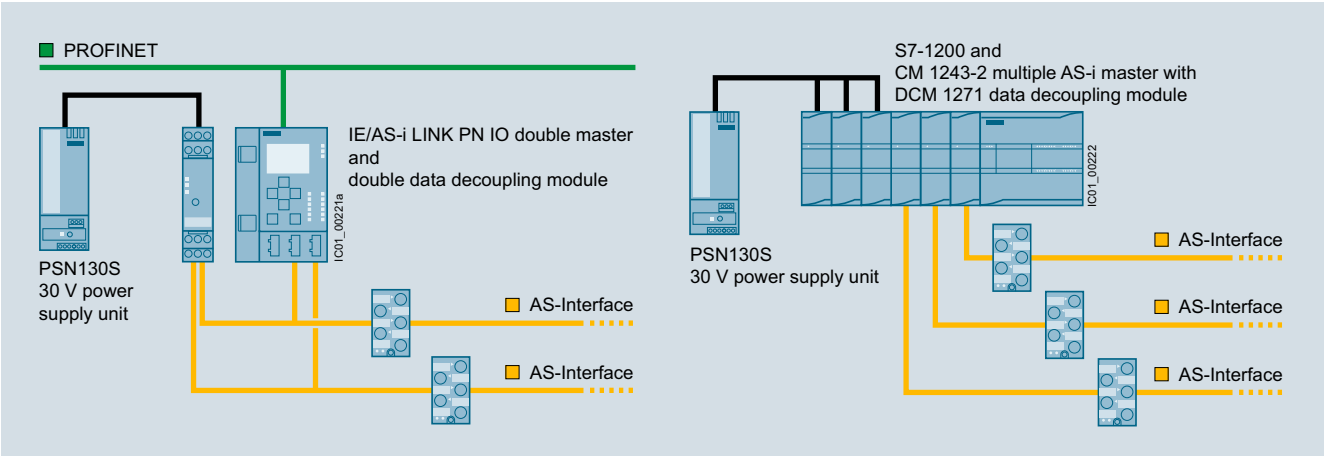
- Primary clocked power supply units for connection to a single-phase AC network
- Power for currents of 3 A, 4 A and 8 A
- The output voltage is floating, and resistant to short-circuits and no-load operation. If there is an overload, the output voltage is reduced or cut-off. After a short-circuit or overload, the devices start up again automatically.
- In the event of a device fault, the output voltage will be limited to max. 37 V.
- Modular installation devices in degree of protection IP20 and safety class I
- Diagnostics: With an output voltage > 26.5 V DC, the green LED (30V O.K.) is lit and the signaling contact 13-14 is closed.

Benefits

- Low-cost alternative solution for supplying AS-Interface networks while making full use of the maximum possible cable length per AS-i segment
- Cost advantage particularly for multiple networks
- Compact, space-saving dimensions
- Reliable power supply even for large numbers of AS-Interface modules with a high power requirement
- Can be used world-wide thanks to, for example, UL/CSA approval (UL 508)

Application

Configuration examples of AS-Interface networks with a 30 V power supply unit



Configuration of AS-Interface multiple networks, each with one PSN130S 30 V power supply unit (examples with schematic representation):
Left: Double network based on the S22.5 double data decoupling module and IE/AS-i LINK PN IO double master
Right: Triple network based on the SIMATIC S7-1200 with DCM 1271 data decoupling modules and CM 1243-2 communication processors

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Technical specifications

Version		3 A	4 A	8 A
Input data				
• Input voltage, rated value U_e	V AC	120 / 230 V, single-phase, automatic changeover		
• Range of input voltage	V AC	85 ... 132/174 ... 264		
• Mains frequency	Hz	50 / 60		
• Power consumption at full load, typ.	W	103	139	270
Output data				
• Output voltage, rated value U_a	V DC	30		
• Residual ripple	mV_{ss}	< 150		
• Output current, rated value at -20 ... +60 °C	A	3	4	8
• Max. output current at +60 ... +70 °C	A	3	3	4
Degree of efficiency in rated conditions				
• Degree of efficiency	%	87	88	90
• Power loss, typ.	W	12	17	25
Protection and monitoring				
• Output overvoltage protection	V	< 37		
• Current limit, typ.	A	4	5.5	11
Safety				
• Electrical separation primary / secondary		Output voltage PELV/SELV according to IEC 60950 and EN 50178		
• Protection class		I		
• Degree of protection		IP20		

Version		3 A	4 A	8 A
Approvals				
• UL		UL 508/CSA 22.2		
• Pollution degree		IEC 60950		
• Overvoltage category and electrical separation		EN 50178 and IEC 61558		
EMC				
• Emitted interference (class B)		IEC 61000-6-3		
• Line harmonics limit		IEC 61000-3-2		
• Interference immunity		IEC 61000-6-2		
Operating data				
Ambient temperature				
• Operation	°C	-20 ... +70		
• Transport / storage	°C	-40 ... +85		
Pollution degree		2		
Humidity class		Climate class according to DIN 50010, relative air humidity max. 100 %, without condensation		
Dimensions and weight				
• Width	mm	50	50	70
• Height x depth	mm	125 x 126.5		
• Weight	kg	0.4	0.4	0.7

Selection and ordering data

	Version	Output current	Input voltage	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	PSN130S 30 V DC power supply unit (without AS-i data decoupling) • Output voltage 30 V DC • Dimensions: Width: 50 mm (3 A/4 A), 70 mm (8 A); Height: 125 mm; Depth: 126.5 mm			d					
 3RX9511-0AA00		3 A	120/230 V AC (automatic switchover)	▶	**3RX9511-0AA00**		1	1 unit	42C
 3RX9512-0AA00		4 A	120/230 V AC (automatic switchover)	▶	**3RX9512-0AA00**		1	1 unit	42C
 3RX9513-0AA00		8 A	120/230 V AC (automatic switchover)	▶	**3RX9513-0AA00**		1	1 unit	42C

More information

More information
Operating instructions and other technical information, see https://support.industry.siemens.com/cs/ww/en/view/64364000

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

AS-Interface S22.5 double data decoupling module:
Screw-type terminal version (picture left),
spring-loaded terminal version (picture right)

With the aid of the S22.5 data decoupling module, the AS-Interface network can also be supplied with 24 V DC or 30 V DC from a standard power supply unit and the transmission of data and power can be realized along one cable.

The combination of data decoupling modules and standard power supply units is therefore a cost-efficient alternative to the service-proven AS-Interface power supply units.

The quality of the data signals and the reliable operation of the AS-i network are not negatively affected as the result.

Features of the S22.5 data decoupling unit

- Degree of protection IP20
- Narrow design: 22.5 mm wide
- Version with screw or spring-type terminals
- Versions for single and double data decoupling
- Supply of several AS-i networks with a single power supply unit
- Operation with 24 V DC or 30 V DC, grounded or non-grounded
- Adjustable current limiting up to 2 x 4 A
- Integrated ground-fault detection with fault storage
- Diagnostics LEDs and signaling contacts
- RESET by button or remote RESET

Ground-fault detection

The integrated ground-fault detection works with a grounded and non-grounded supply: The connection of negative pole and ground (upstream from the data decoupling module) customary with 24 V DC power supplies is permitted. A ground fault to the negative or positive pole on the AS-Interface network (downstream from the data decoupling module) is detected and stored as a fault and will be signaled using LEDs and a relay contact.

Benefits

- Compatible expansion of the AS-Interface system
- An existing standard power supply unit with 24 V DC or 30 V DC can be used for supplying AS-i networks
- The AS-Interface system can also be used in tightly budgeted applications because no AS-Interface power supply unit needs to be purchased
- Applications benefit in addition from the advantages of a modern bus system:
  - High level of standardization
  - Additional diagnostics and maintenance information
  - Faster commissioning
- Easy and cost-efficient design of single and multiple networks is possible

Application

The AS-Interface data decoupling module is designed for AS-Interface networks with 30 V or 24 V supply (AS-i Power24V).

Operation of an AS-i network with the data decoupling module and a 30 V standard power supply unit is technically equivalent to the use of an AS-Interface power supply unit and offers the service-proven features of AS-Interface for all applications.

AS-Interface Power24V uses a 24 V power supply unit in conjunction with a data decoupling module and is particularly suitable for:

- Compact machines using AS-Interface input/output modules
- Applications in the control cabinet for AS-Interface integration of SIRIUS Innovations contactors and compact starters (3RT2 contactors through 3RA27 function modules or 3RA6 compact starters through 3RA69 AS-i add-on modules)

When using the double data decoupling module or other data decoupling units, several AS-Interface networks can be operated with a single power supply unit. This results in an additional cost advantage.

Note:

The power supply units must comply with the PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) standards, have a residual ripple of < 250 mV_{pp}, and in the event of a fault must limit the output voltage to a maximum of 40 V. We recommend SITOP power supplies (see page 15/1 onwards) or PSN130S 30 V power supplies (see page 2/83 onwards).

Note on AS-i Power24V:

The length of an AS-i Power24V network is restricted to 50 m in order to limit the voltage drop along the cable.

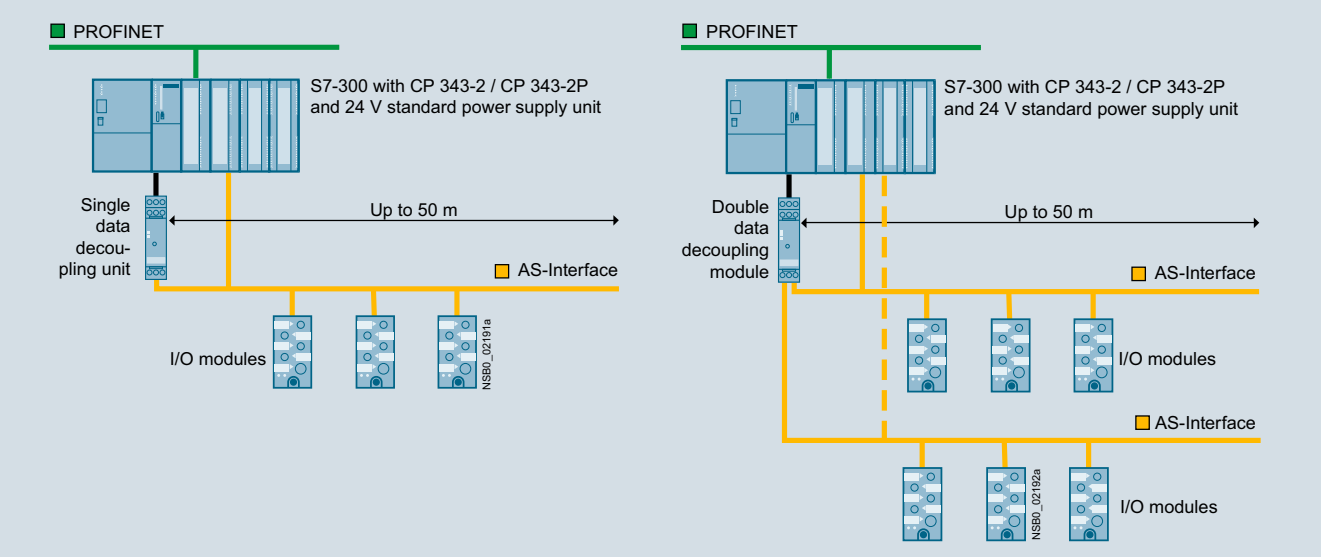
AS-i masters, AS-i slaves and the sensors and actuators supplied through the AS-i cable must be designed for the reduced voltage. Sensors and actuators for the standard voltage range of 10 to 30 V can be supplied with sufficient voltage.

Please also observe the requirements specified in "Extension of AS-i Power24V" for implementation of AS-i Power24V, see page 2/21.

For more information on AS-i Power24V, see "AS-Interface System Manual", https://support.industry.siemens.com/cs/ww/en/view/26250840.

S22.5 data decoupling modules

Construction of an AS-i Power24V network with an AS-Interface S22.5 data decoupling module



Left: single network, right: Multiple network

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 3RK1901-1DE12-1AA0	**S22.5 data decoupling modules** With screw terminals, removable terminals, width 22.5 mm, height 101 mm, depth 115 mm		**Screw terminals**				
	• Single data decoupling module, 1 x 4 A	►	**3RK1901-1DE12-1AA0**		1	1 unit	42C
	• Double data decoupling module, 2 x 4 A	►	**3RK1901-1DE22-1AA0**		1	1 unit	42C
 3RK1901-1DG12-1AA0	**S22.5 data decoupling modules** With spring-type terminals, removable terminals, width 22.5 mm, height 105 mm, depth 115 mm		**Spring-type terminals**				
	• Single data decoupling module, 1 x 4 A	►	**3RK1901-1DG12-1AA0**		1	1 unit	42C
	• Double data decoupling module, 2 x 4 A	►	**3RK1901-1DG22-1AA0**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

DCM 1271 data decoupling module for SIMATIC S7-1200

With the aid of the DCM 1271 data decoupling module, the AS-Interface network can also be supplied with 24 V DC or 30 V DC from a standard power supply unit and the transmission of data and power can be realized along one cable.

The DCM 1271 data decoupling module has the same enclosure design as the S7-1200 module and is therefore ideal for combining with the CM 1243-2 AS-i master.

The DCM 1271 data decoupling module has no connection to the backplane bus of the SIMATIC S7-1200 and is not counted as a communication module when calculating the maximum configuration.

Features of the DCM 1271 data decoupling module

- Design: S7-1200, 30 mm wide, degree of protection IP20
- Detachable terminals (scope of supply)
- Single data decoupling
- Supply of several AS-i networks with a single power supply unit
- Operation with 24 V DC or 30 V DC, grounded or non-grounded
- Current limiting at 4 A
- Integrated ground-fault detection
- Diagnostics LEDs for ground faults and overloads
- Signaling contacts for ground-fault detection

Ground-fault detection

The integrated ground-fault detection works with a grounded and non-grounded supply: The connection of negative pole and ground (upstream from the data decoupling module) customary with 24 V DC power supplies is permitted. A ground fault to the negative or positive pole on the AS-Interface network (behind the data decoupling module) is identified and signaled via LED and a transistor output.

Benefits

- An existing standard power supply unit with 24 V DC or 30 V DC can be used for supplying AS-i networks
- The AS-Interface system can also be used in tightly budgeted applications because no AS-Interface power supply unit needs to be purchased
- Applications benefit in addition from the advantages of a modern bus system:
  - High level of standardization
  - Additional diagnostics and maintenance information
  - Faster commissioning

Application

The AS-Interface data decoupling module is designed for AS-Interface networks with 30 V or 24 V supply (AS-i Power24V).

Operation of an AS-i network with the data decoupling module and a 30 V standard power supply unit is technically equivalent to the use of an AS-Interface power supply unit and offers the service-proven features of AS-Interface for all applications.

AS-i Power24V uses a 24 V power supply unit in conjunction with a data decoupling module and is particularly suitable for

- Compact machines using AS-Interface input/output modules
- Applications in the control cabinet for AS-Interface integration of SIRIUS Innovations contactors and compact starters (3RT2 contactors through 3RA27 function modules or 3RA6 compact starters through 3RA69 AS-i add-on modules)

Note:

The power supply units must comply with the PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) standards, have a residual ripple of < 250 mV_{pp}, and in the event of a fault must limit the output voltage to a maximum of 40 V. We recommend SITOP power supplies (see page 15/1 onwards) or PSN130S 30 V power supplies (see page 2/83 onwards).

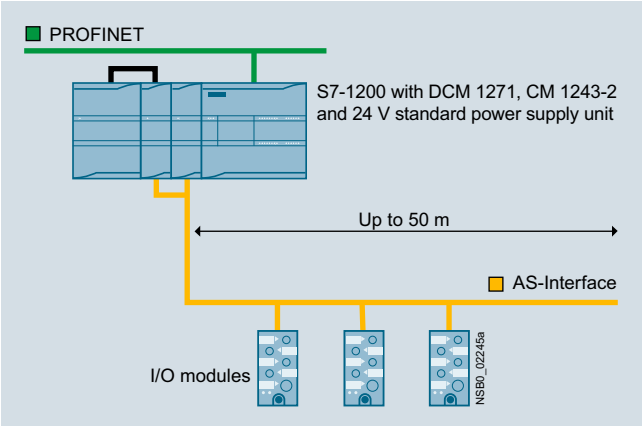
Note on AS-i Power24V:

The length of an AS-i Power24V network is restricted to 50 m in order to limit the voltage drop along the cable.

AS-i masters, AS-i slaves and the sensors and actuators supplied through the AS-i cable must be designed for the reduced voltage. Sensors and actuators for the standard voltage range of 10 to 30 V can be supplied with sufficient voltage.

Please also observe the requirements specified in "Extension of AS-i Power24V" for implementation of AS-i Power24V, see page 2/21.

For more information on AS-i Power24V, see "AS-Interface System Manual", https://support.industry.siemens.com/cs/ww/en/view/26250840.



Configuration of an AS-i Power24V network with DCM 1271 AS-Interface data decoupling unit

DCM 1271 data decoupling module

Selection and ordering data

	Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		d	Article No. / Price per PU			
 3RK7271-1AA30-0AA0	**DCM 1271 data decoupling module** • With screw terminals, removable terminals (included in scope of supply) • Dimensions (W × H × D / mm): 30 × 100 × 75	2	**3RK7271-1AA30-0AA0**	1	1 unit	42C

Accessories

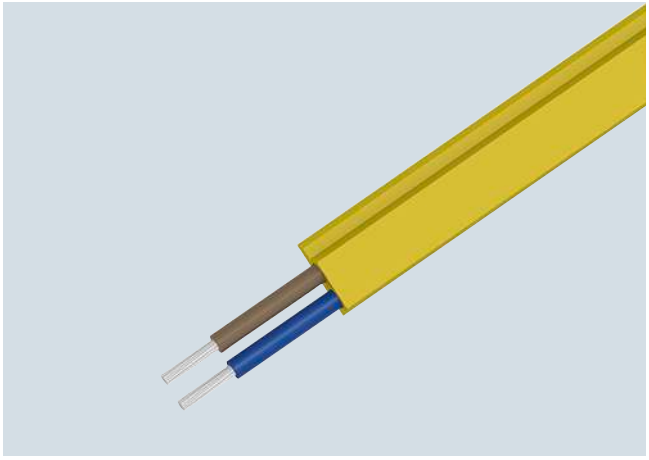
	Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		d	Article No. / Price per PU			
	Screw terminals (replacement)					
	• 5-pole for AS-i master CM 1243-2 and AS-i DCM 1271 data decoupling module	5	**3RK1901-3MA00**	1	1 unit	42C
	• 3-pole for AS-i DCM 1271 data decoupling module for connecting the power supply unit	5	**3RK1901-3MB00**	1	1 unit	42C

More information

More information	
For more information on AS-i Power24V, see "AS-Interface" system manual, https://support.industry.siemens.com/cs/de/en/view/26250840	For the "AS-i Master CM 1234-2 and AS-i DCM 1271 data decoupling unit for SIMATIC S7-1200" manual, see https://support.industry.siemens.com/cs/ww/en/view/57358958

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview



AS-Interface shaped cable

The actuator-sensor interface – the networking system used for the lowest field area – is characterized by very easy mounting and installation. A new connection method was developed specially for AS-Interface.

The stations are connected using the AS-Interface cable. This two-wire AS-Interface shaped cable has a trapezoidal shape, thus ruling out polarity reversal.

Connection is effected by the insulation piercing method. In other words, male contacts pierce the shaped AS-Interface cable and make reliable contact with the two wires. Cutting to length and stripping are superfluous. Consequently, AS-Interface stations (e.g. I/O modules, intelligent devices) can be connected in the shortest possible time. and exchanging devices is quick.

To enable use in the most varied ambient conditions (e.g. in an oily environment), the AS-Interface cable is available in different materials (rubber, TPE, PUR).

For special applications it is also possible to use an unshielded standard round cable H05VV-F 2 x 1.5 mm^2 according to AS-i Specification. With AS-Interface, data and energy for the sensors (e.g. proximity switches) and actuators (e.g. indicator lights) are transmitted over the yellow AS-Interface cable.

The black AS-Interface cable must be used for actuators with a 24 V DC supply (e.g. solenoid valves) and a high power requirement.

Suitable for operation in tow chains

The use of the AS-Interface shaped cables with TPE and PUR outer sheath was checked in a tow chain test with the following conditions:

Chain length	m	6
Travel	m	10
Bending radius	mm	75
Travel speed	m/s	4
Acceleration	m/s^2	4
Number of cycles		10 million
Duration of test		approx. 3 years (11 000 cycles per day)

After termination of the 10 million cycles only slight wear was visible due to the lugs of the tow chain. No damage to the cores and core insulation could be detected.

Note:

When using a tow chain, the cables must be installed in such a way that they are not subject to tensile forces. On no account may the cables be twisted, but they must be routed flat through the tow chain.

Selection and ordering data

3RX90..-0AA00

Version			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
AS-Interface shaped cables								
Material	Color	Quantity						
Rubber	Yellow (AS-Interface)	100 m roll	2	**3RX9010-0AA00**		1	1 unit	42C
	Yellow (AS-Interface)	1 km drum	5	**3RX9012-0AA00**		1	1 unit	42C
	Black (24 V DC)	100 m roll	2	**3RX9020-0AA00**		1	1 unit	42C
	Black (24 V DC)	1 km drum	5	**3RX9022-0AA00**		1	1 unit	42C
TPE	Yellow (AS-Interface)	100 m roll	2	**3RX9013-0AA00**		1	1 unit	42C
	Yellow (AS-Interface)	1 km drum	5	**3RX9014-0AA00**		1	1 unit	42C
	Black (24 V DC)	100 m roll	2	**3RX9023-0AA00**		1	1 unit	42C
	Black (24 V DC)	1 km drum	5	**3RX9024-0AA00**		1	1 unit	42C
TPE special version according to UL Class 2	Yellow (AS-Interface)	100 m roll	5	**3RX9017-0AA00**		1	1 unit	42C
	Black (24 V DC)	100 m roll	5	**3RX9027-0AA00**		1	1 unit	42C
PUR	Yellow (AS-Interface)	100 m roll	2	**3RX9015-0AA00**		1	1 unit	42C
	Yellow (AS-Interface)	1 km drum	5	**3RX9016-0AA00**		1	1 unit	42C
	Black (24 V DC)	100 m roll	2	**3RX9025-0AA00**		1	1 unit	42C
	Black (24 V DC)	1 km drum	5	**3RX9026-0AA00**		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

2

Overview

AS-Interface repeater

The AS-Interface repeater is used to extend the AS-Interface cable.

- In its basic version, an AS-i network comprises one segment with a maximum cable length of 100 m. An extension plug (see page 2/91) can be used to increase the cable length for a segment to a maximum of 200 m.
- If this is insufficient, however, you can use one or more repeaters
- A repeater adds an extra segment to an existing segment. The extra segment can have a cable length of up to 100 m (without extension plug) or up to 200 m (with an extension plug in the extra segment).
- Each segment requires a separate AS-i power supply unit
- Electrical separation of the two AS-Interface shaped cable lines
- Slaves can be used on both sides of the repeater
- The additional power supply can increase the current infeed for slaves/sensors and lower the voltage drop on the AS-i cable
- Separate display of the correct AS-Interface voltage for each segment
- Installed in K45 module enclosure IP67 with mounting plate
- Easy mounting

Benefits

- More possibilities of use and greater freedom for plant planning through extension of the AS-Interface network
- Reduced downtime and servicing times in the event of a fault thanks to separate display of the correct AS-Interface voltage for each side

Design of an AS-Interface network with repeaters

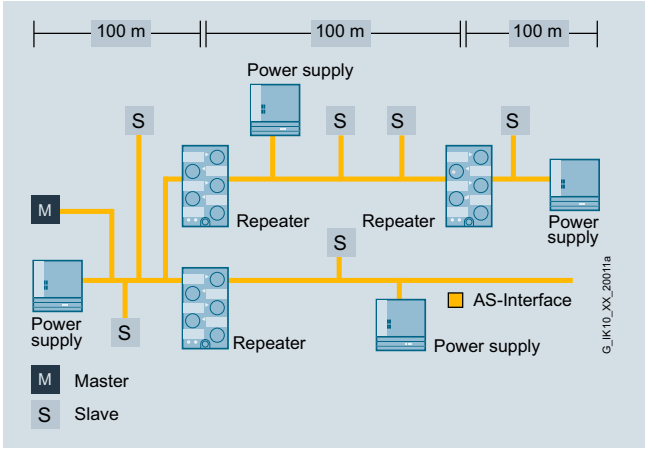
- Parallel switching of several repeaters possible (star configuration)
- Combination of series and parallel switching possible

The following conditions apply:

- When used without an extension plug no more than two repeaters are permitted between AS-i master and slave (repeaters connected in series)
- When used with an extension plug no more than one repeater is permitted between AS-i master and slave

In safety-related applications the following also applies:

- When used without an extension plug, no more than two repeaters are permitted between evaluation unit (e.g. MSS ASIsafe Modular Safety System, F-CM AS-i Safety ST for ET 200SP) and ASIsafe input slave or safe output module.
- When used with an extension plug, no more than one repeater is permitted between the evaluation unit (e.g. MSS ASIsafe Modular Safety System, F-CM AS-i Safety ST for ET 200SP) and ASIsafe input slave or safe output module.



Design of an example AS-Interface network with repeaters (without extension plug)

Note:

The AS-Interface repeater is not suitable for AS-i Power24V networks. It is recommended for use in AS-Interface networks with AS-Interface power supply units (e.g. 3RX9501-0BA00).

Application

The repeater is used to extend the AS-Interface network. In this case there are AS-Interface slave and one AS-Interface power supply unit on each side of the repeater.

In the case of a line topology with two repeaters and three extension plugs, the maximum possible size of the AS-Interface network is 600 m, see example configuration with extension plug on page 2/91.

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 6GK1210-0SA01	**Repeaters for AS-Interface** For cable extension, Scope of supply includes mounting plate (for wall and standard rail mounting)	5	**6GK1210-0SA01**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

AS-Interface extension plugs compact

With the extension plug it is possible to double the cable length possible in an AS-Interface segment from 100 to 200 m.

Only one power supply unit is needed to supply power to the slaves on the up to 200 m long segment.

The extension plug compact can be installed directly onto an AS-i shaped cable. A separate M12 feeder, as was required for earlier extension plug versions, is no longer required with extension plug compact.

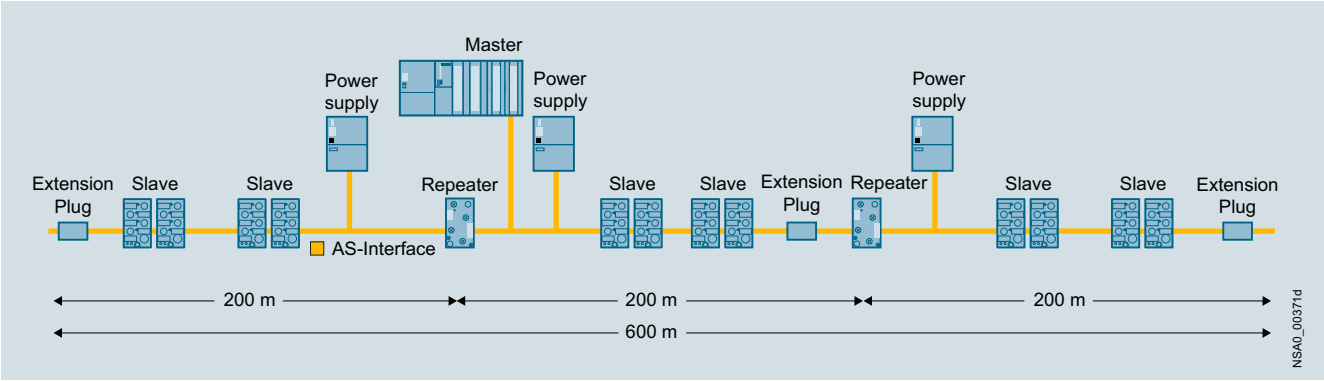
Design of an AS-Interface segment with an extension plug

To construct an AS-Interface segment with a cable length of more than 100 m and up to a maximum of 200 m, the extension plug is installed in a radius of around ± 10 m at the point of the network that is furthest from the power supply unit. The extension plug is not allowed to be used in AS-Interface networks smaller than 100 m. As with all AS-Interface networks, any network structure (line, tree, star) is possible when using the extension plug. Only one extension plug is required per 200 m segment even with a tree or star structure.

Note:

The AS-i bus cable must not terminate in the extension plug compact. The AS-Interface shaped cable can be terminated by means of a cable terminating piece to provide degree of protection IP67 where required, see "Other accessories" on page 2/99.

The AS-Interface extension plug is not suitable for AS-i Power24V networks.



Maximum network size with repeaters and extension plug (master at center of network)

Selection and ordering data

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1901-1MX02	**AS-Interface Extension Plug Compact** • Doubling of the cable length to 200 m per AS-Interface segment • With direct connection to AS-Interface shaped cable	2	**3RK1901-1MX02**		1	1 unit	42C

Accessories

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1901-1MN00	**Cable terminating piece** For sealing of open cable ends (shaped AS-Interface cable) in IP67	►	**3RK1901-1MN00**		1	10 units	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

The innovated addressing unit for AS-Interface of the AS-i Specification V3.0

The addressing unit is used to assign an address during commissioning to each AS-Interface slave. The device detects a connected slave module or a complete AS-i network and displays the found module in the LCD display. Each address can be individually set using the Up/Down keys. By turning the rotary switch, further commissioning functions are selected intuitively. The innovative device has been adapted to the current AS-i Specification V3.0 and can now also handle the I/O data of the latest slaves.

Functionality

- Reading out and adjusting the slave address 0 to 31 or 1A to 31A, 1B to 31B, with automatic addressing aid and prevention of double addresses
- Reading out the slave profile (IO, ID, ID2)
- Reading out and adjusting the ID1 code
- Input/output test when commissioning the slaves: Read input signals and write outputs with all digital and analog slaves according to AS-Interface Specification V3.0, including safe input slaves and complex CTT2 slaves
- Measuring the voltage on the AS-Interface cable (measuring range from 2 to 35 V)
- Display of the operational current in case of direct connection of an AS-i slave (measuring range from 0 to 150 mA)
- Storage of complete network configurations (profiles of all slaves) to simplify the addressing
- Adjusting the slave parameters for commissioning
- Reading out the identification and diagnostics of CTT2 slaves
- Reading out the code table of safe input slaves (ASIsafe)

Note:

For operation of the addressing unit on an AS-Interface cable with connected power supply unit, the following applies:
The AS-Interface addressing unit is suitable for standard AS-i networks and AS-i Power24V networks (min. operational voltage on the AS-Interface cable 19 V).

Benefits

- Increased power supply to the slaves to 150 mA
- Better utilization of the battery capacity thanks to improved circuitry
- Support for the current AS-i Specification V3.0
- Expanded display for simultaneously displaying input and output states
- Clearly recognizable display of status of digital inputs/outputs in binary format (0 / 1), optionally also available as hexadecimal values
- Intuitive display of analog data either as decimal, hexadecimal or as a percentage (e.g. 100 % corresponds to input/output value 20 mA)
- I/O data of complex slaves (CTT2 profile) can be displayed
- Decoded display of the input data of safe input slaves, including code table
- Simplification of the operating steps when setting the slave address with automatic read back of the set address
- Addressing cable, ready for operation even without screwing in tight into the M12 socket, thus faster availability of the addressing unit
- Proven compact housing with smooth keys and rotary switch
- Connection of standard AS-i networks possible with 30 V as well as Power24V networks
- Complex slaves with high operating currents can be addressed without external supply
- Longer operating time by automatic shutdown after approx. 5 minutes (or approx. 1 minute when data exchange is active) after last operation
- Can be used with all types of digital and analog slaves.
- Comprehensive and fast input/output test of plants, even for A/B modules with 4DI/4DQ and current analog modules with an A/B address
- Faster and more reliable commissioning of the AS-Interface modules
- One-hand operation possible, with unique selection of the functions
- Connection via M12 socket (pin 1: ASI+; Pin 3: ASI-; Pins 2, 4, 5: not used)
- Universal applicability for all AS-i networks

Selection and ordering data

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1904-2AB02	**AS-Interface addressing unit V3.0** • For AS-Interface modules and sensors and actuators with integrated AS-Interface according to AS-i Specification V3.0 • For setting the AS-i address of standard slaves, and slaves with extended addressing mode (A/B slaves) • With input/output test function and many other commissioning functions • Battery operation with 4 type AA batteries (IEC LR6, NEDA 15) • Degree of protection IP40 • Dimensions (W x H x D) mm: 84 x 195 x 35 • Scope of supply: - Addressing unit with 4 batteries - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5 m	2	**3RK1904-2AB02**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1902-4PB15-3AA0	**Addressing cable, with M12 plug to M12 socket**[1] • for addressing slaves with M12 connection, e.g. K20 or K60R modules or light curtains • Length 1.5 m, 3-pole, 3 x 0.34 mm^2	10	**3RK1902-4PB15-3AA0**		1	1 unit	42D
 3RX9801-0AA00	**AS-Interface M12 feeders** • Transition of AS-Interface cable to a standard round cable • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable • Current carrying capacity up to 2 A	►	**3RX9801-0AA00**		1	1 unit	42C
 3RK1901-1NR10	**AS-Interface M12 feeders** • AS-Interface cable transition without U_{aux}, with M12 socket • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable	2	**3RK1901-1NR10**		1	1 unit	42C
 3RK1902-4HB50-5AA0	**M12 cable plug**[2] • Extruded M12 plug (angled cable feeder 90°), other cable end open • Length: 5 m, 5-pole, color: Black	10	**3RK1902-4HB50-5AA0**		1	1 unit	42D
 3RK1902-4BA00-5AA0	**M12 plug straight**[2] • For screw fixing, 5-pole screw terminal, max. 0.75 mm^2 • A-coded, max. 4 A	10	**3RK1902-4BA00-5AA0**		1	1 unit	42D
	Addressing cable, with M12 plug to addressing plug (hollow plug)[3] • Included in the scope of supply of the addressing unit • Length 1.5 m		**Z236A**				

1) Not included in scope of supply of the 3RK1904-2AB02 addressing unit.

2) For connecting the addressing unit to an AS-i network via AS-Interface M12 feeder, a connecting cable (M12 connector to M12 connector) with the following wiring must be fabricated:
- M12 cable connector: Pin 1 / core brown ↔ M12 plug: Pin 1
- M12 cable connector: Pin 3 / core blue ↔ M12 plug: Pin 3
- Pins 2, 4, 5 not connected.

3) Can only be ordered from GMC-I Messtechnik GmbH.
See "External partners" on page 16/20.

2

Overview

AS-Interface analyzer

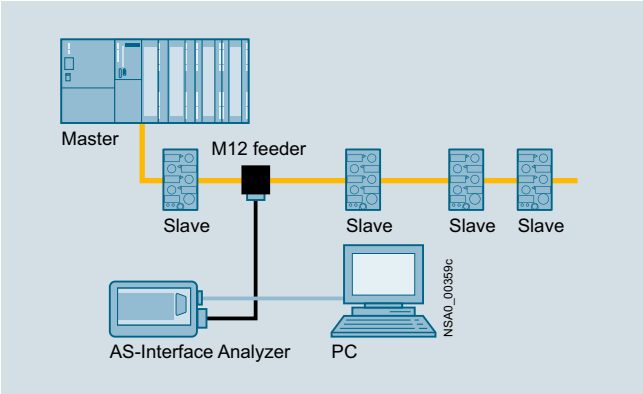
The AS-Interface analyzer is used to test AS-Interface networks.

Installation errors, e.g. loose contacts or EMC interference under extreme loads, can be revealed by this device.

Thanks to the easy-to-use software the user can assess the quality of complete networks even if he lacks detailed specialist knowledge of AS-Interface. In addition it is an easy matter with the AS-Interface analyzer to create test logs from the records produced, thus providing documentation for start-ups and service assignments.

For advanced AS-Interface users there are trigger functions for detailed diagnostics.

Connection



Connection of AS-Interface analyzer to PC and AS-Interface network

The AS-Interface analyzer follows the communication on the AS-Interface network as a passive station. The unit is supplied simultaneously from the AS-Interface cable.

This analyzer interprets the physical signals on the AS-Interface network and records the communication.

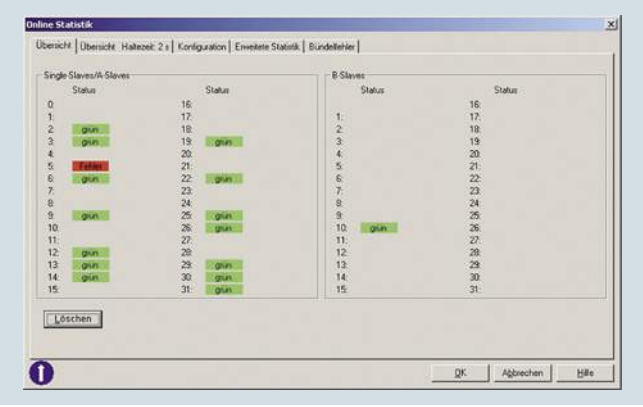
The data thus obtained is transferred through an RS 232 interface to a PC such as a notebook, for evaluation with the supplied diagnostics software.

Benefits

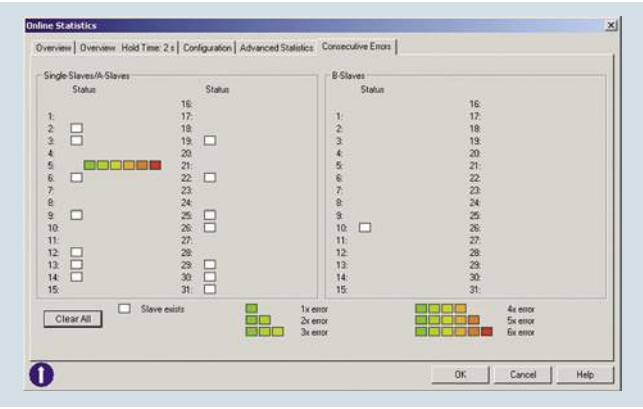
- Simple and user-friendly operation enables diagnostics of AS-Interface networks without help from specialists
- Speedy troubleshooting thanks to intuitive display in statistics mode
- Test logs provide verification of the state and quality of the installation for service and approval
- Recorded logs facilitate remote diagnostics by technical assistance
- Comprehensive trigger functions enable exact analysis
- Process data can be monitored online

Application

Online statistics



Online statistics, overview



Online statistics, details, e.g. here a fault on slave 5

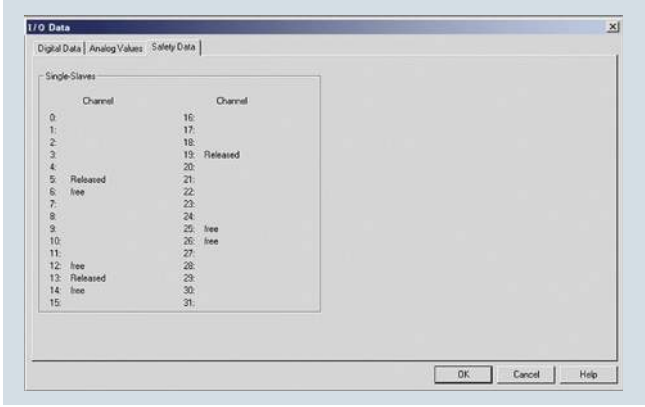
This mode provides a quick overview of the existing AS-Interface system. The error rates are displayed per slave in a traffic-light function (green, yellow, red).

The bus configuration and the currently transmitted data of the slaves are shown in a well arranged presentation.

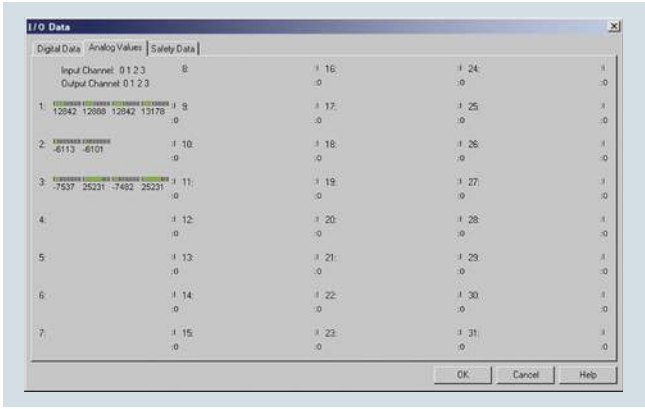
With the expanded statistics function, it is possible to determine the error rates as the number of transmitted or faulty bus message frames.

The bundle error overview shows in steps how many multiple repetitions of message frames occurred in order to enable a selective and look-ahead assessment of the transmission quality.

Data mode



Presentation of the I/O data: Safety data

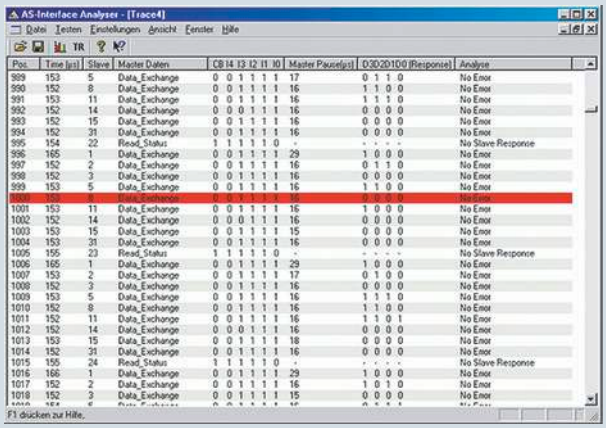


Presentation of the I/O data: Analog values

In this mode, the analyzer shows not only the digital input/output values but also the current analog values and the input status of the safety slaves.

2

Trace mode



Presentation of message frames in trace mode

The presentation of message frames in the style of a classic fieldbus analyzer is indispensable for complex troubleshooting. Extensive trigger functions and recording and viewing filters are available for this purpose. An external trigger input and trigger output round off the scope of functions in order to find even the most difficult errors.

For troubleshooting in connection with ASIsafe applications, changes of status in the code tables of safety slaves are identified and assessed.

Test log

Example of a test log

The recorded data of the online statistics are easy to output and document using a test log. Verification of the state of the plant can thus be provided for approvals or service assignments.

The integrated measurement assistant records the bus signals for a variable duration, thereby triggering creation of an automatic test log. A standardized quality test of AS-i plants is thus possible.

Note:

The AS-Interface analyzer is suitable for standard AS-i networks and AS-i Power24V networks (min. operating voltage 20 V).

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 3RK1904-3AB01	**AS-Interface analyzer** • For testing AS-Interface systems • For troubleshooting and service assignments in installations and networks with AS-Interface systems • Dimensions (W x H x D): 145 x 30 x 92 mm • Scope of supply: - AS-Interface analyzer - RS 232 cable for connecting to a PC - USB-to-serial/RS 232 adapter - Screwdriver - Magnetic adhesive tape for fastening the analyzer to metal surfaces - Service case with foam insert, dimensions (W x H x D / mm): approx. 260 x 70 x 200 - Diagnostic software (CD-ROM) for PC (Windows 95/98, ME, 2000, NT, XP, Vista Home Basic, Home Premium, Business, Ultimate, Windows 7)	2	**3RK1904-3AB01**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 3RX9801-0AA00	**AS-Interface M12 feeders** • Transition of shaped AS-Interface cable to a standard round cable • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable • Current carrying capacity up to 2 A • Degree of protection IP67	►	**3RX9801-0AA00**		1	1 unit	42C
 3RK1901-1NR10	**AS-Interface M12 feeders** • AS-Interface cable transition without U_{aux}, with M12 socket • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable • Max. 4 A • Degree of protection IP67/IP68/IP69K	2	**3RK1901-1NR10**		1	1 unit	42C
 3RK1902-4HB50-5AA0	**M12 cable plugs** • PUR cable, 5-pole • Length 5 m • Color black • Extruded M12 plug (angled cable feeder 90°), other cable end open	10	**3RK1902-4HB50-5AA0**		1	1 unit	42D

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

2

Selection and ordering data

	Version				SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					d					
 3RK1901-1NN10	**AS-Interface compact distributors, for AS-Interface flat cable** • Current carrying capacity up to 8 A • Degree of protection IP67/IP68/IP69K				2	**3RK1901-1NN10**		1	1 unit	42C
 3RX9801-0AA00	**AS-Interface M12 feeders** • Degree of protection IP67 • Current carrying capacity up to 2 A									
	For flat cable	For	Cable length	Cable end in feeder						
	AS-i	M12 socket	--	Available	▶	**3RX9801-0AA00**		1	1 unit	42C
 3RK1901-1NR10	**AS-Interface M12 feeders** • Degree of protection IP67/IP68/IP69K • Current carrying capacity up to 4 A									
	For flat cable	For	Cable length	Cable end in feeder						
 3RK1901-1NR11	AS-i	M12 socket	--	Not available	2	**3RK1901-1NR10**		1	1 unit	42C
	AS-i	M12 cable box	1 m	Not available	2	**3RK1901-1NR11**		1	1 unit	42C
	AS-i	M12 cable box	2 m	Not available	2	**3RK1901-1NR12**		1	1 unit	42C
	AS-i / U_{aux}	M12 socket	--	Not available	2	**3RK1901-1NR20**		1	1 unit	42C
	AS-i / U_{aux}	M12 cable box	1 m	Not available	2	**3RK1901-1NR21**		1	1 unit	42C
	AS-i / U_{aux}	M12 cable box	2 m	Not available	2	**3RK1901-1NR22**		1	1 unit	42C
 3RK1901-1NR04	**AS-Interface M12 feeders, 4-fold** • Degree of protection IP67 • Current carrying capacity up to 4 A									
	For flat cable	For	Cable length	Cable end in feeder						
	AS-i / U_{aux}	4-fold M12 socket, delivery includes mounting plate (for wall and standard rail mounting)	--	Not available	2	**3RK1901-1NR04**		1	1 unit	42C
 3RK1901-1TR00	**M12 T distributors** • IP68 • 1 x M12 plug • 2 x M12 box				10	**3RK1901-1TR00**		1	1 unit	42C
 6ES7194-1KA01-0XA0	**M12 Y-shaped coupler plugs** For connection of two sensors to one M12 socket with Y-assignment				1	**6ES7194-1KA01-0XA0**		1	1 unit	250

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1901-1KA00	**AS-Interface sealing caps**						
	For free M12 sockets						
	• M12	►	**3RK1901-1KA00**		100	10 units	42C
	- Tamper proof	2	**3RK1901-1KA01**		100	10 units	42C
 3RK1901-1KA01	• M 8	2	**3RK1901-1PN00**		100	10 units	42C
 3RK1901-1PN00							
 3RK1901-1MD00	**AS-Interface M20 seals** • For AS-Interface cable, shaped • For insertion in M20 glands	2	**3RK1901-1MD00**		100	10 units	42C
 3RK1901-3QM00	**Cable adapters for flat cables** Connection of AS-Interface cable to metric gland with insulation piercing method						
	• Continuation using standard cable						
	- For M16 gland	5	**3RK1901-3QM00**		1	1 unit	42C
	- For M20 gland	5	**3RK1901-3QM10**		1	1 unit	42C
	• Continuation using pins						
	- For M16 gland	10	**3RK1901-3QM01**		1	1 unit	42C
	- For M20 gland	5	**3RK1901-3QM11**		1	1 unit	42C
 3RK1901-3QA00	**Cable clips for cable adapters**	5	**3RK1901-3QA00**		100	10 units	42C
 3RK1901-1MN00	**Cable terminating piece** For sealing of open cable ends (shaped AS-Interface cable) in IP67	►	**3RK1901-1MN00**		1	10 units	42C
 3RK1901-2EA00	**Mounting plates**						
	• K45						
	- For wall mounting	►	**3RK1901-2EA00**		1	1 unit	42C
	- For standard rail mounting	►	**3RK1901-2DA00**		1	1 unit	42C
	• K60, suitable for all K60 compact modules						
	- For wall mounting	►	**3RK1901-0CA00**		1	1 unit	42C
 3RK1901-0CA00	- For standard rail mounting	►	**3RK1901-0CB01**		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Miscellaneous accessories

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1902-0AR00	**Sealing sets** • For K60 mounting plate and standard distributor • Cannot be used for K45 mounting plate • One set contains one straight and one shaped seal	2	**3RK1902-0AR00**		100	5 units	42D
	Inscription labels • For K45 and K60 compact modules • 20 x 9 mm, pastel turquoise • 19 frames with 20 labels each	15	**3RT1900-1SB50**		100	380 units	41B
 3RK1902-4GB50-4AA0	**Control cable, assembled at one end** Angular M12 socket for screw fixing, 4-pole, 4 x 0.34 mm², A-coded, black PUR sheath, max. 4 A						
	• Cable length 5 m	10	**3RK1902-4GB50-4AA0**		1	1 unit	42D
 3RK1902-4CA00-4AA0	**M12 socket, angled** For screw fixing, 4-pole screw terminal, max. 0.75 mm², A-coded, max. 4 A	10	**3RK1902-4CA00-4AA0**		1	1 unit	42D
 3RK1902-4BA00-5AA0	**M12 connector** For screw fixing, 5-pole screw terminal, max. 0.75 mm², A-coded, max. 4 A						
	• Straight	10	**3RK1902-4BA00-5AA0**		1	1 unit	42D
 3RK1902-4DA00-5AA0	• Angled	10	**3RK1902-4DA00-5AA0**		1	1 unit	42D
 3RK1902-4H...-5AA0	**Control cable, assembled at one end** Angular M12 socket for screw fixing, 5-pole, 5 x 0.34 mm², A-coded, black PUR sheath, max. 4 A						
	• Cable length 1.5 m	10	**3RK1902-4HB15-5AA0**		1	1 unit	42D
	• Cable length 5 m	10	**3RK1902-4HB50-5AA0**		1	1 unit	42D
	• Cable length 10 m	10	**3RK1902-4HC01-5AA0**		1	1 unit	42D
 3RK1902-4PB15-3AA0	**Control cable, assembled at both ends** Straight M12 connector, straight M12 socket for screw fixing, 3-pole, 3 x 0.34 mm², A-coded, black PUR sheath, max. 4 A • Cable length 1.5 m • Also for addressing AS-i slaves with M12 bus connection (e.g. K20, K60R compact modules, M200D motor starters)	10	**3RK1902-4PB15-3AA0**		1	1 unit	42D

More information

More information

"AS-Interface" system manual

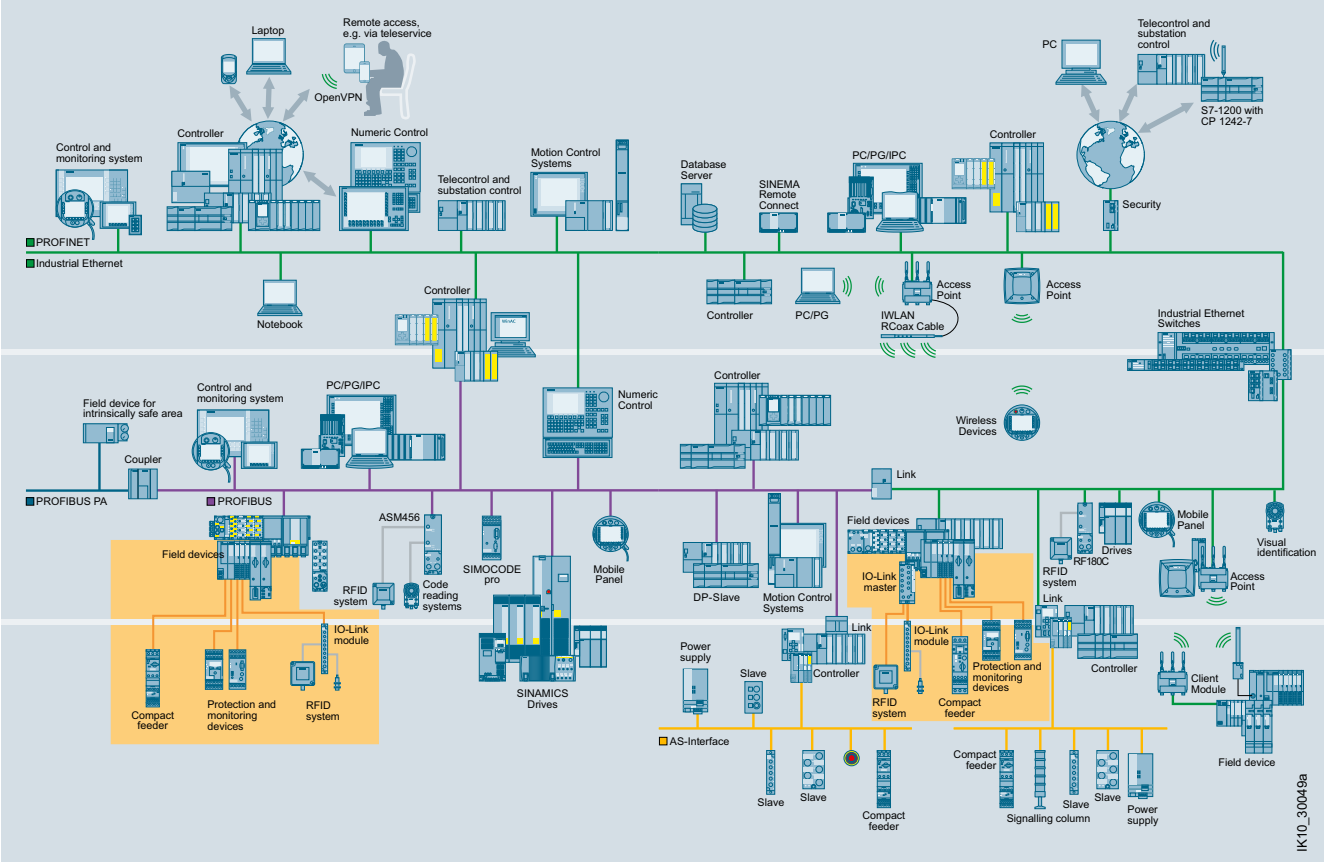
- German
  https://support.industry.siemens.com/cs/de/de/view/26250840
- English
  https://support.industry.siemens.com/cs/de/en/view/26250840

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

IO-Link is an open communication standard for sensors and actuators – defined by the PROFIBUS User Organization (PNO). IO-Link technology is based on the point-to-point connection of sensors and actuators to the control system.

Parameter and diagnostics data are transmitted in addition to the cyclic operating data for the connected sensors/actuators. The simple, unshielded three-wire cable customary for standard sensors is used for this purpose.



IO-Link in the SIMATIC NET communications landscape

Benefits

Engineering

- Standardized, open system for greater flexibility (non-Siemens IO-Link devices can be integrated in engineering)
- Uniform, transparent configuring and programming through integrated engineering (SIMATIC STEP 7)
- Unassigned SIMATIC function blocks for easy parameterization, diagnostics and read-out of measured values
- Efficient engineering thanks to pre-integration into SIMATIC HMI
- Low error rate in CAD circuit diagram design as a result of reduced control current wiring

Installation and commissioning

- Faster assembly with minimized error rate as a result of reduced control current wiring
- Less space required in the control cabinet
- Low-cost circuitry where there are several feeders by making full use of existing components

Operation and maintenance

- High transparency in the system right down to field level and integration into power management systems
- Reduction in downtimes and maintenance times thanks to system-wide diagnostics and faster fault correction
- Support of predictive maintenance
- Shorter changeover times, even for field devices, by means of parameter and recipe management

Application

IO-Link can be used in the following main applications:

- Easy connection of complex IO-Link sensors/actuators with a large number of parameters and diagnostic data to the control system
- Replacement of sensor boxes for connecting binary sensors with the IO-Link input modules optimized in terms of cabling
- Optimized cable connection of switching devices to the control system
- Simple transmission of energy values from the device to the control system for integration into a user program or power management

In these cases, all the diagnostics data is transmitted to the higher-level control system through IO-Link. The parameter settings can be changed during operation.

Integration in STEP 7

Integration of the device configuration in the STEP 7 environment guarantees:

- Quick and easy engineering
- Consistent data storage
- Quick localization and rectification of faults

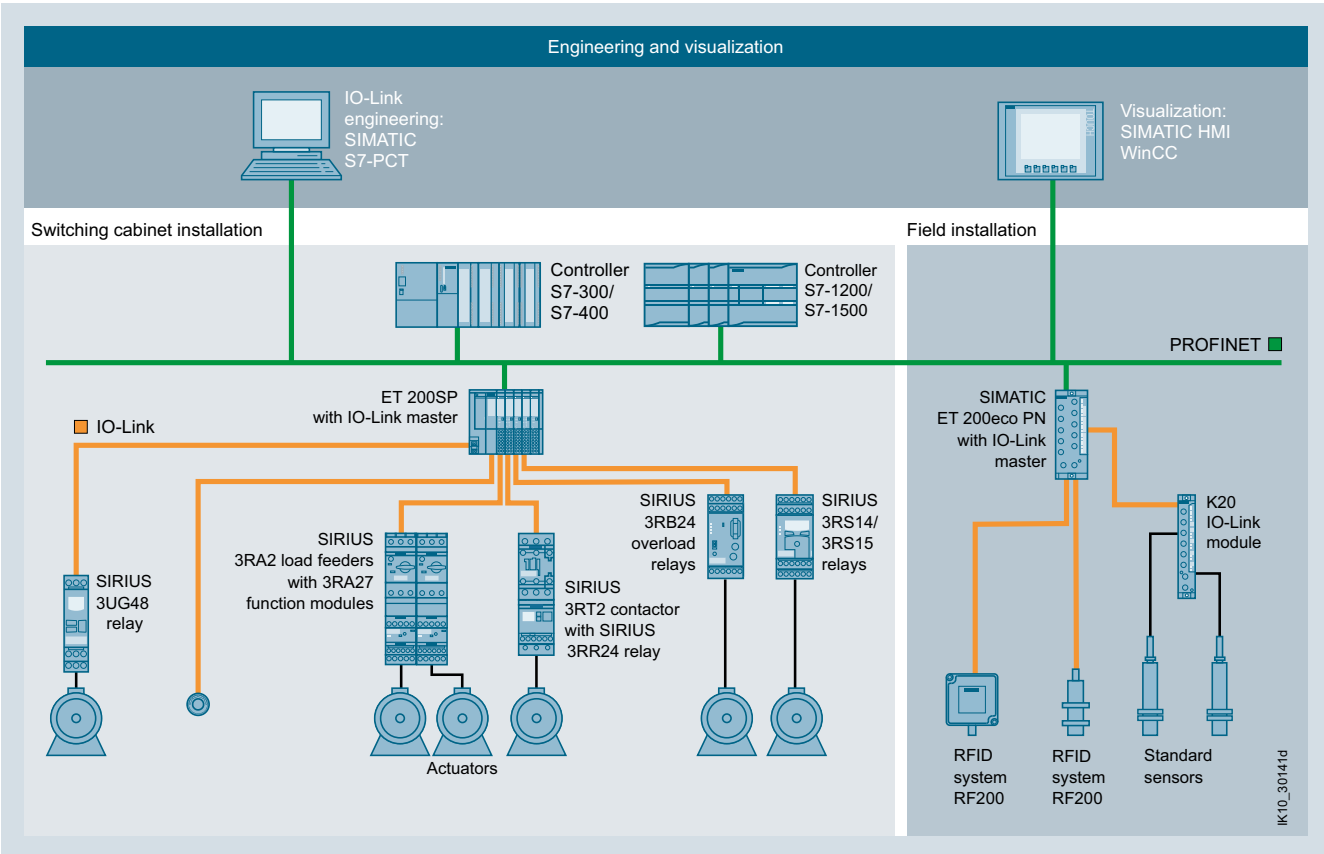
Overview

More information	
Home page, see www.siemens.com/io-link	For important topics at a glance, see https://support.industry.siemens.com/cs/ww/en/view/109737170

IO-Link product family

To implement communication, a system installation has the following main components:

- An IO-Link master
- One or more IO-Link devices, such as sensors (e.g. RFID systems), actuators or combinations thereof
- A standard 3-wire sensor/actuator cable



Example of a configuration with the system components

IO-Link compatibility

IO-Link ensures compatibility between IO-Link-capable modules and standard modules as follows:

- IO-Link sensors can generally be operated both on IO-Link modules (masters) and standard input modules.
- IO-Link sensors/actuators as well as today's standard sensors/actuators can be used on IO-Link masters.
- If conventional components are used in the IO-Link system, then of course only the standard functions are available at this point.

Analog signals

Another advantage of IO-Link technology is that analog signals are already digitized in the IO-Link sensor itself and are digitally transmitted via IO-Link communication. As the result, faults are prevented and there is no extra cost for cable shielding.

Enhancement with IO-Link input modules

IO-Link compatibility also permits connection of standard sensors/actuators, i.e. conventional sensors/actuators can also be connected to IO-Link. This is particularly cost-effective with the IO-Link input modules, which allow several sensors to be connected at one time via a cable to the controller.

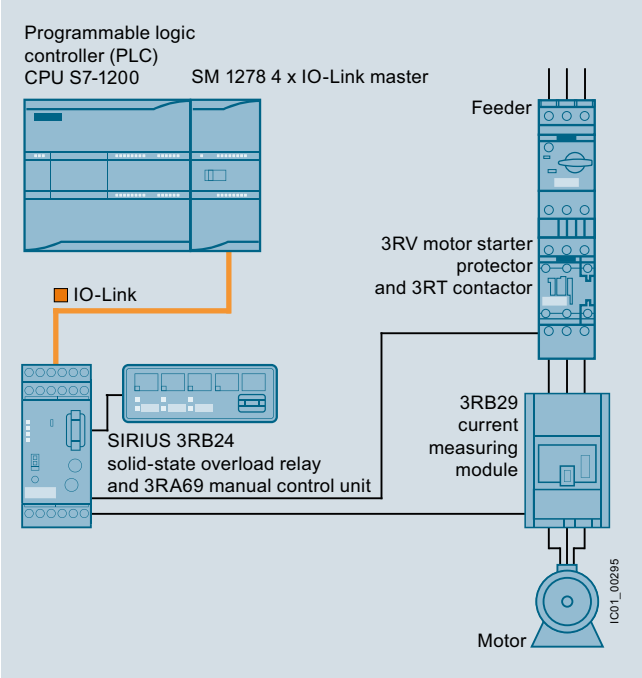
Overload relays

A starter combination, for example, consists of one or more SIRIUS 3RT contactors and one 3RB24 electronic overload relay for IO-Link plus its 3RB29 current measuring module.

3RB24 overload relays with IO-Link are basically designed to provide current-dependent protection for loads against inadmissibly high temperature rises due to overload, phase asymmetry or phase failure.

Direct-on-line starters can, therefore, as shown in the image, be connected to the control system via IO-Link without much wiring. Remote control of connected contactors, current value transmission and immediate remote fault diagnosis are just some examples of the large number of functions that can be implemented with this device.

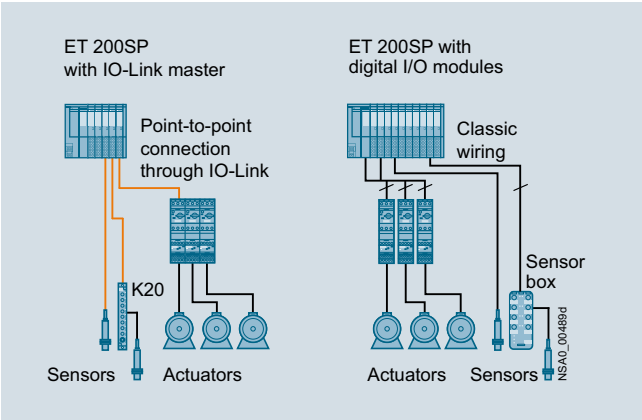
It is also possible to directly address a drive on-site via IO-Link using the optional hand-held device.



Connection of an IO-Link-capable overload relay to a SIMATIC S7-1200 controller

Load feeders and motor starters

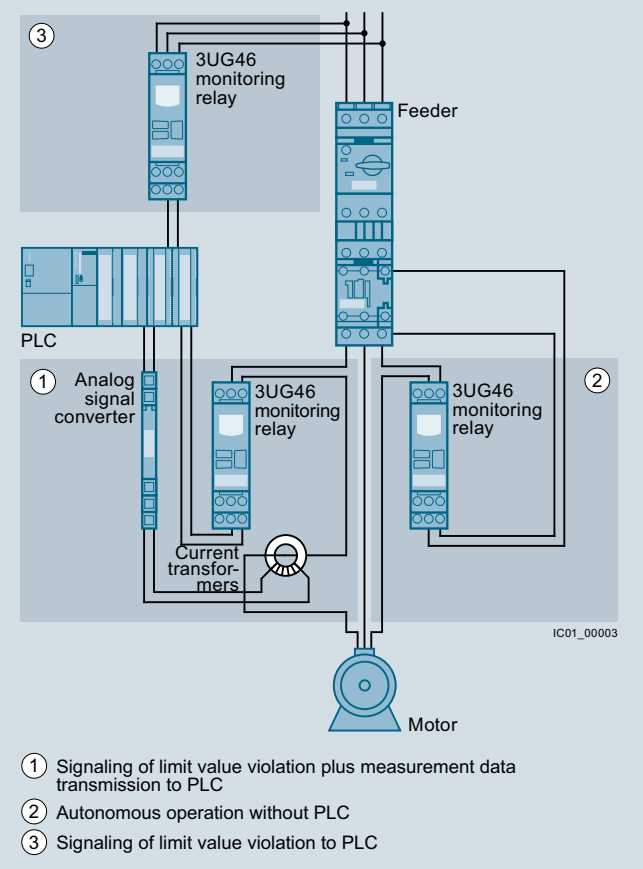
Through IO-Link it is possible to control not only sensors but also actuators in the form of load feeders and motor starters.



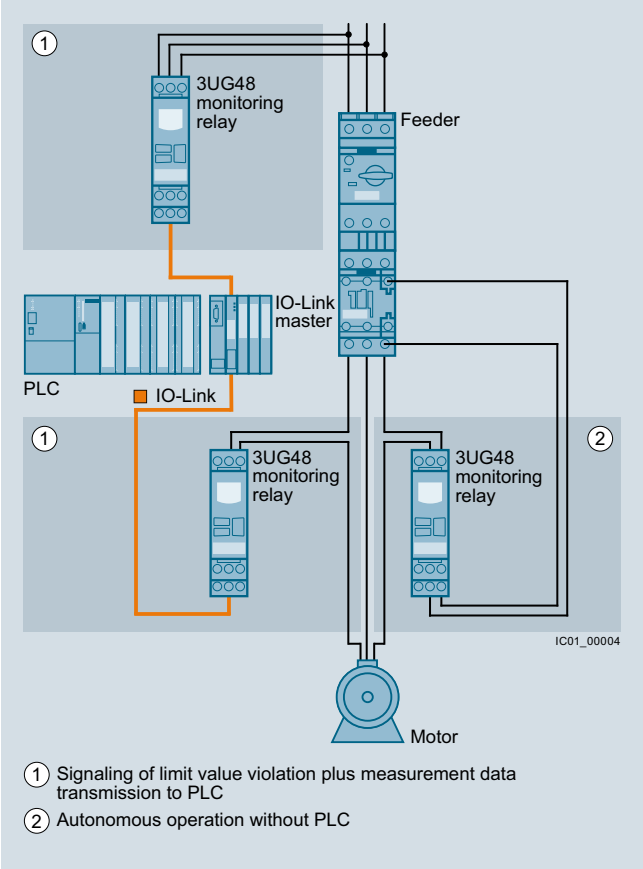
Possibilities for connecting load feeders and motor starters to IO-Link or in the conventional way

Monitoring relays

By using monitoring relays with IO-Link it is now possible to send data that has already been recorded and evaluated in the devices directly to the controller. This avoids the use of duplicated sensors.



Possibilities for interfacing conventional 3UG46 monitoring relays (in comparison with 3UG48)

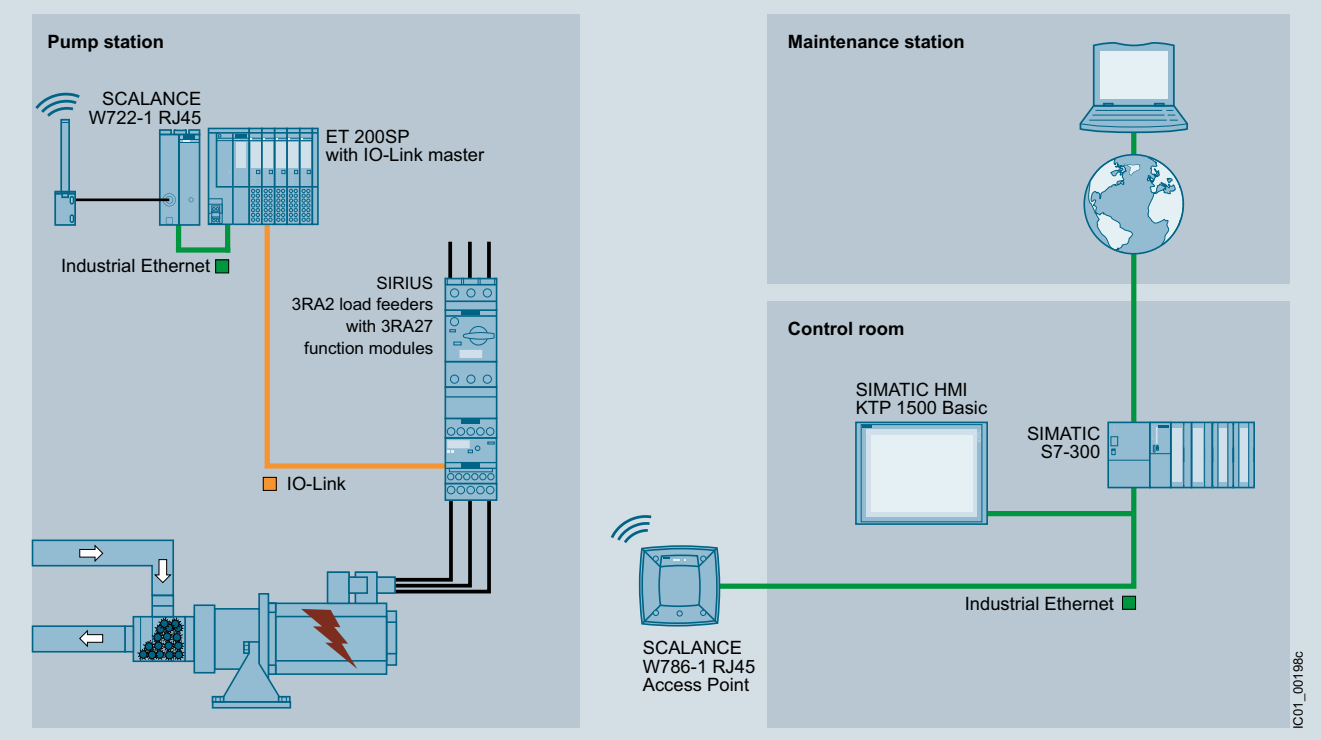


Possibilities of interfacing 3UG48 monitoring relays for IO-Link

Wireless communication

Using an upstream IWLAN client module, such as SCALANCE W722-1 RJ45, allows IO-Link to be integrated into the PROFINET world via a distributed I/O. Possible uses include acting as an alternative to fault-prone cable carrier or collector wire technology.

The individual diagnostics options offered by the various IO-Link devices provide greater transparency for the production process. Just like the parameter data for a device, these diagnostics data can be evaluated remotely using the possibilities offered by SIMATIC. This supports remote maintenance down to the lowest level in the field.



Wireless communication between Industrial Ethernet and IO-Link components

IO-Link components

IO-Link masters

SM 1278 4xIO-Link for S7-1200

Masters

IO-Link master module for S7-1200

- SM 1278 4xIO-Link signal module: see page 2/108

IO-Link master module for ET 200SP

- CM IO-Link communication module: see page 2/109

IO-Link master module for ET 200eco PN: see page 2/112

- IO-Link master 4 IO-L + 8DI + 4DO 24 V DC/1.3 A
- IO-Link master 4 IO-L

IO-Link master module for ET 200AL

- CM IO-Link communication module: see page 2/114

IO-Link devices

K20 input module

Detection with IO-Link

IO-Link input modules

K20 input module

- 4 inputs, M12 connections
- 8 inputs, standard M8 connections

See page 2/118

IO-Link devices (continued)

Switching with IO-Link

Contactors and contactor assemblies

SIRIUS 3RT contactors, 3-pole up to 250 kW: see page 3/15 onwards

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW: see page 3/155 onwards

SIRIUS 3RA24 contactor assemblies for wye-delta starting, up to 90 kW: see page 3/170 onwards

SIRIUS 3RA27 function modules

SIRIUS 3RA2711 function modules for IO-Link

- For direct-on-line, reversing, and star-delta (wye-delta) starting with IO-Link connection, see page 3/106 onwards

Motor starters for operation in the control cabinet

SIRIUS 3RA64, 3RA65 compact starters for IO-Link

- 3RA64 direct-on-line starters
- 3RA65 reversing starters

Infeed system for 3RA6

Accessories

See page 8/69 onwards

SIRIUS 3RA64 direct-on-line starter

Contactors with IO-Link

Overload relays

Overload relay SIRIUS 3RB24

SIRIUS 3RB24 solid-state overload relays for IO-Link

- Evaluation modules
- Current measuring modules from 0.3 to 630 A
- Controlling direct-on-line, reversing and star-delta starters via IO-Link in conjunction with contactors
- Full motor protection
- Diagnostics and current value transmission via IO-Link

See page 7/122 onwards

System components

IO-Link devices (continued)

Monitoring with IO-Link

Monitoring relays SIRIUS 3RR24

SIRIUS 3RR24 monitoring relays for mounting onto 3RT2 contactors for IO-Link

- Monitoring of current, phase failure, open circuit and phase sequence
- Designed for mounting on 3RT2 contactors
- Terminal supports for stand-alone installation for separate mounting

See page 10/70 onwards

Monitoring relays SIRIUS 3UG48

SIRIUS 3UG48 monitoring relays for stand-alone installation for IO-Link

- Monitoring network, voltage, current, power factor, residual current or speed depending on device design
- On/tripping delay time can be adjusted

See page 10/111 onwards

SIRIUS 3RS14 temperature monitoring relay

SIRIUS 3RS14, 3RS15 temperature monitoring relays for IO-Link

- Temperature monitoring with connected sensors
- Two limit values, can be adjusted separately

See page 10/145 onwards

Actuating and indicating with IO-Link

SIRIUS ACT 3SU1 ID key-operated switches

SIRIUS ACT 3SU1 ID key-operated switches for IO-Link

- Access system and selection system for four authorization levels
- Authentication of groups and persons
- Five ID keys with different coding
- Option for individual coding via IO-Link
- For installation in enclosures or fastening on front plate
- Electronic module for ID key-operated switches must be ordered separately.

See page 13/9 onwards

SIRIUS ACT 3SU1 electronic modules

SIRIUS ACT 3SU1 electronic modules for IO-Link

- Eight digital inputs and outputs possible
- DI and DQ freely selectable (programmable)
- Input and output functions parameterizable
- Connection system (push-in)
- For fastening on front plate; see page 13/89
- For installation in enclosure; see page 13/102

IO-Link RFID systems

RFID system for IO-Link

SIMATIC RF200 RFID system in the HF range

Products SIMATIC RF210R, SIMATIC RF220R, SIMATIC RF240R, SIMATIC RF250R, SIMATIC RF260R

- Simple identification tasks such as reading an ID number (UID)
- Reading of user data
- Writing of user data
- No RFID-specific programming, ideal for those new to RFID
- Simple connection via master modules for IO-Link, such as SIMATIC S7-1200, ET 200SP, ET 200S, ET 200eco PN and ET 200AL
- Use with the tried and tested ISO 15693 transponders (MDS xxx)

See Catalog ID 10 "Industrial Identification Systems"

IO-Link IODD files

IO Device Description (IODD) files

provide the device description for IO-Link devices

- comprehensive IODD catalog of SIEMENS IO-Link devices
- Freely available for downloading from Industry Online Support; see https://support.industry.siemens.com/cs/de/en/ps/15851

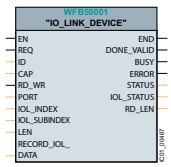
IO-Link software

STEP 7 PCT

STEP 7 PCT (Port Configuration Tool)

Engineering software for configuring the IO-Link master modules for SIMATIC S7-1200, ET 200SP, ET 200eco PN and ET 200AL

- Available as a stand-alone version or integrated into STEP 7 (V5.5 SP1 or later) and TIA (V12 or later)
- Engineering of the IO-Link devices connected to the master
- Monitoring of the process image of the IO-Link devices
- Open interface for importing further IODDs
- Freely available for downloading from Industry Online Support; see https://support.industry.siemens.com/cs/de/en/view/32469496



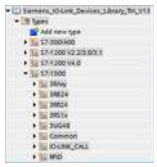
IO-Link device function block

IO-Link function blocks

(IO-Link device and IO-Link master)

STEP 7 function block for easy acyclical data exchange in the user program

- Freely available for downloading from Industry Online Support; see https://support.industry.siemens.com/cs/de/en/view/82981502



"Siemens IO-Link Devices" function block library

"Siemens IO-Link Devices" function block library

This library provides function blocks and user-defined data types (UDTs) for all IO-Link devices from the Siemens portfolio. These blocks and UDTs standardize and simplify communication with IO-Link devices.

- Freely available for downloading from Industry Online Support; see https://support.industry.siemens.com/cs/ww/en/view/90529409

Overview

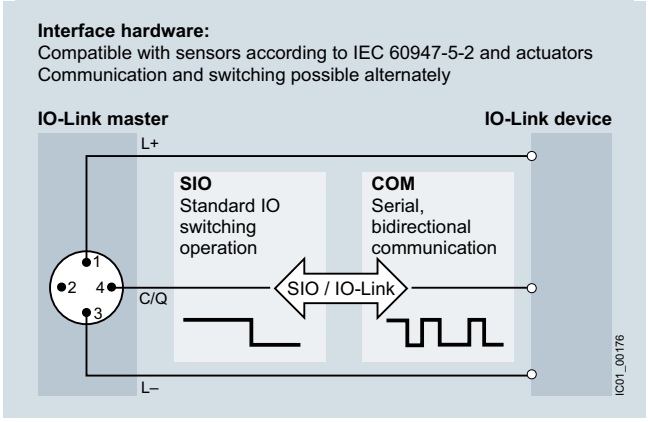
Principles of the IO-Link specification

According to the IO-Link specification, communication functions as follows:

- Transmission takes place via an unshielded three-wire cable no more than 20 m long, of the kind normally used for standard sensors.
- Digital communication from 0 to 24 V on the so-called C/Q cable
- Most of the values transmitted are measured values from the sensors
- The sensors and actuators are described by the IO Device Description (IODD)
- As a matter of principle, one IO-Link device can be connected to one IO-Link port of the master (point-to-point connection).
- The transmission rates between IO-Link master and the devices are as follows:
  - via COM1: 4 800 Bd
  - via COM2: 38 400 Bd
  - via COM3: 230 400 Bd
- The average cycle time is 2 ms for the reading/writing of 16 data bits at a transmission rate of 38 400 Bd.

IO-Link protocol

The IO-Link protocol supports both the Standard IO mode (SIO) and the IO-Link communication mode (COM).



The structure of the protocol and its message frames depends on the types of data to be transmitted.

Data types

The IO-Link specification makes a distinction between the following data types:

Process data

The process data of the devices are transferred cyclically in a data frame, with the process data width defined by the device. Process data of 0 to 32 bytes are possible per device (input and output in each case). The consistency width of the transmission is not fixed and therefore depends on the master.

Value status

Each port has a value status (PortQualifier). The value status indicates whether the process data are valid or invalid. The value status can be transferred cyclically with the process data.

Device data

Device data can be parameters, identification data and diagnostics information. Device data replacement is acyclic and in response to an inquiry from the IO-Link master. Device data can be written into the device (Write) and also read from the device (Read).

Events

When an event occurs, the device sends a signal to the master to report that an event is active. The master then reads out the event. Events can be fault messages (e.g. short-circuit) and warnings/maintenance data (e.g. contamination, overheating). Fault messages are transferred from the device via the IO-Link master to the controller or HMI. The IO-Link master can also transfer events and states. Events include, for example, cable break or communication breakdown.

Device parameters and events are sent independently of the cyclic transmission of process data. The transmissions do not affect or impair each other.

Data storage

As of Specification V1.1, a data storage concept has been created for IO-Link. In this concept, the IO-Link device initiates storage of its data on a higher-level parameter server. In the event that a device is replaced, the parameter server can restore the original parameterization. It is therefore possible to replace the devices without re-parameterization.

The IO-Link master contains the parameter server. The parameter server can also be implemented centrally in the PLC or in a system server. In this case the data must be downloaded to the control system by means of the function blocks provided.

IO-Link masters

The IO-Link master is the interface to higher-level control systems. The IO-Link master presents itself to the fieldbus as a normal fieldbus node, and is integrated into the appropriate network configurator via the relevant device description (GSD file).

IO Device Description (IODD)

The IO Device Description (IODD) has been defined to provide a full, transparent description of system characteristics as far as the IO-Link device.

The IODD contains information on communication characteristics, device parameters, identification, process and diagnostics data, and is supplied by the manufacturer. The design of the IODD is the same for all devices from all manufacturers, and is always presented in the same way by the IODD Interpreter Tools. This therefore ensures that the handling is the same for all IO-Link devices, whatever the manufacturer.

New in IO-Link Specification V1.1

The IO-Link Specification is currently available in Version 1.1, and standardized in accordance with IEC 61131-9.

Specification V1.1 offers the following new features compared with the previous Specification V1.0:

- Transmission of up to 32 bytes of process data in one cycle
- Parameter server function

SM 1278 4xIO-Link master

Overview

SM 1278 4xIO-Link master

Module for connecting up to four IO-Link devices in accordance with the IO Link specification V1.1. The IO-Link parameters are configured by means of the Port Configuration Tool (PCT) with version V3.2 and higher.

Application

The SM 1278 module enables an exchange of data with up to four external IO Link devices through one three-wire cable each or four standard actuators or standard encoders. Control can be flexibly adapted to the communication partners using the comprehensive parameter assignment options. Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

Design

- Expansion limits
  - Cable length: Max. 20 m
  - Max. 32 bytes of input data and 32 bytes of output data per port
  - Max. 32 bytes of input data and 32 bytes of output data per module

LED displays

- DIAG: Operating state display (green/red) of the module
- C1..C4: Port status display (green) for ports 1, 2, 3 and 4
- Q1..Q4: Channel status display (green) for ports 1, 2, 3 and 4
- F1..F4: Port error display (red) for ports 1, 2, 3 and 4

Depending on the CPU type used, up to 8 SM 1278 units can be used on one S7-1200 CPU.

Function

Supported functions

- I&M identification data
- Firmware update
- SIO Mode (standard IO mode)
- IO-Link parameter assignment with the S7-PCT interface configuration tool, TIA V13 and an S7-1200 CPU V4.0 or higher

Supported data transmission rates

- COM1 (4.8 kBd)
- COM2 (38.4 kBd)
- COM3 (230.4 kBd)

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 6ES7278-4BD32-0XB0	**SM 1278 4xIO-Link master signal module** For connecting up to four IO-Link devices in accordance with the IO Link Specification V1.1	1	**6ES7278-4BD32-0XB0**		1	1 unit	212

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

CM 4x IO-Link communication module

- Serial communication module for connecting up to four IO-Link devices in accordance with the IO Link specification V1.0 and V1.1. The IO-Link parameters are configured by means of the Port Configuration Tool (PCT) with version V3.0 and higher.
- Time-based IO ensures that signals are output with a precisely defined response time. By combination of inputs and outputs, products passing by, for example, can be measured exactly or liquids can be perfectly dosed.
- Supported data transmission rates
  - COM1 (4.8 kBd)
  - COM2 (38.4 kBd)
  - COM3 (230.4 kBd)
- Expansion limits
  - Cable length: Max. 20 m
  - Max. 32 bytes of input data and 32 bytes of output data per port
  - Max. 144 bytes of input data and 128 bytes of output data per module
- ET 200SP system functions supported
  - Exchange of IO-Link device parameters (V1.1 devices only) and of IO-Link master parameters without a PG including automatic backup recovery without an engineering tool by means of redundant parameter storage on the e-coding element
  - Reparameterization during ongoing operation
  - I&M identification data
  - Firmware update
  - PROFIenergy
- Can be plugged onto type A0 BaseUnits (BU) with automatic e-coding
- LED displays
  - DIAG: Operating state display (green/red) of the module
  - C1..C4: Port status display (green) for ports 1, 2, 3 and 4
  - Q1..Q4: Channel status display (green) for ports 1, 2, 3 and 4
  - F1..F4: Port error display (red) for ports 1, 2, 3 and 4
  - PWR: Supply voltage display (green)
- Informative front-side module inscription
  - Plain-text marking of the module type and function class
  - 2D matrix code (article number and serial number)
  - Connection diagram
  - CM module class color coding: Silver
  - Hardware and firmware version
  - Complete Article No.
- Optional accessories
  - Labeling strips
  - Reference identification label
  - Color-coded label with color code CC04
- Optional system-integrated shield connection

CM 4xIO-Link overview

Communication module	Article number	CC code	BU type	P. unit
CM 4xIO-Link	6ES7137-6BD00-0BA0	CC04	A0	1

Overview of BaseUnits

BaseUnit	Article number	CC codes for process terminals	CC codes for AUX terminals	P. unit
BU type A0 • New load group (light) • 16 process terminals • with 10 AUX terminals	6ES7193-6BP20-0DA0	CC01 to CC05	CC71 to CC73	1
BU type A0 • New load group (light) • 16 process terminals • with 10 AUX terminals	6ES7193-6BP20-2DA0	CC01 to CC05	CC71 to CC73	10
BU type A0 • New load group (light) • 16 process terminals • without AUX terminals	6ES7193-6BP00-0DA0	CC01 to CC05	--	1
BU type A0 • New load group (light) • 16 process terminals • without AUX terminals	6ES7193-6BP00-2DA0	CC01 to CC05	--	10
BU type A0 • Load group forwarding (dark) • 16 process terminals • with 10 AUX terminals	6ES7193-6BP20-0BA0	CC01 to CC05	CC71 to CC73	1
BU type A0 • Load group forwarding (dark) • 16 process terminals • with 10 AUX terminals	6ES7193-6BP20-2BA0	CC01 to CC05	CC71 to CC73	10
BU type A0 • Load group forwarding (dark) • 16 process terminals • without AUX terminals	6ES7193-6BP00-0BA0	CC01 to CC05	--	1
BU type A0 • Load group forwarding (dark) • 16 process terminals • without AUX terminals	6ES7193-6BP00-2BA0	CC01 to CC05	--	10

Application

- The CM 4x IO-Link communication module enables an exchange of data with up to 4 external IO-Link devices through one three-wire cable each.
- Control can be flexibly adapted to the communication partners using the comprehensive parameter assignment options.
- Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

Design

Supported BaseUnits (BU)

All BUs of the A0 type are available for the CM 4x IO-Link communication module.

Load group formation

A light BU isolates the self-establishing internal voltage buses (P1, P2, AUX), thus opening a new load group. A load group's supply voltage must be fed in on this load group's light BU.

A dark BU passes on the supply voltage of the adjacent light BU on the left through the self-establishing voltage buses P1, P2 and AUX. Therefore, a supply again is only necessary at the following light BU on the right. Setting of a further light BU is always necessary if

- a new load group is to be formed (for example, to isolate the supply voltage from module groups) or
- the maximum simultaneously required current of the load group exceeds the permissible limit of 10 A.

Color coding of terminals

The potentials at the terminals of the BaseUnit are defined by the inserted I/O module. To avoid wiring errors, the terminals' potentials can be optionally identified by module-specific color-coded labels. The color-coded label matching the relevant I/O module is defined by the I/O module's color code CCxx. This color code is also printed onto the front of the module.

The color-coded label with the color code CC04 must be used for the "CM 4x IO-Link" communication module.

In the case of BaseUnits with the additional ten internally jumpered AUX terminals, these can also be color-coded with color-coded labels. Color-coded labels are available in red, blue and yellow-green for the ten AUX terminals.

Labeling

Labeling strips

Labeling strips can be inserted into the front of the interface or I/O modules and can be labeled individually via STEP 7, macros, etc. A special additional support is not required. They can be replaced easily with the component as necessary.

Reference identification labels

Reference identification labels enable easy equipment identification (e.g. in accordance with EN 81346). They are simply plugged onto the required component (interface module, I/O modules and BaseUnits) and can thus be replaced easily with the component, whenever required.

The following labeling components are available for selection:

- Film labeling strips, light gray, roll with 500 strips, pre-perforated, for thermal transfer roll printer
- Film labeling strips, yellow, roll with 500 strips, pre-perforated, for thermal transfer roll printer
- Cardboard labeling strips (180 g/m^2), light gray, ten A4 sheets of 100 strips each, pre-perforated, for laser printer
- Cardboard labeling strips (180 g/m^2), yellow, ten A4 sheets of 100 strips each, pre-perforated, for laser printer
- Reference identification labels, white, ten mats of 16 plates each, for thermal transfer card printer or labels

System-integrated shield connection

A shield terminal that can be fitted quickly and easily is available for space-saving and EMC-optimized connection of cable shields. It consists of a shield connection element and a shield terminal that can be plugged onto the BaseUnit for each module. Low-impedance connection to functional ground (DIN rail) is carried out by the user without additional wiring

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 6ES7137-6BD00-0BA0	**CM 4xIO-Link V1.1 Standard communication module** • Serial communication module for connecting up to 4 IO-Link devices, time-based IO, BU type A0, color code CC04	1	**6ES7137-6BD00-0BA0**		1	1 unit	255

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Accessories							
 6ES7193-6BP20-0DA0	**BU15-P16+A10+2D** BU type A0; BaseUnit (light) with 16 process terminals (1...16) to the module and additionally 10 internally jumpered AUX terminals (1 A to 10 A); for beginning a new load group (max. 10 A)						
	• 1 unit	1	**6ES7193-6BP20-0DA0**		1	1 unit	255
	• 10 units	1	**6ES7193-6BP20-2DA0**		1	10 units	255
 6ES7193-6BP00-0DA0	**BU15-P16+A0+2D** BU type A0; BaseUnit (light) with 16 process terminals to the module; for beginning a new load group (max. 10 A)						
	• 1 unit	1	**6ES7193-6BP00-0DA0**		1	1 unit	255
	• 10 units	1	**6ES7193-6BP00-2DA0**		1	10 units	255
 6ES7193-6BP20-0BA0	**BU15-P16+A10+2B** BU type A0; BaseUnit (dark) with 16 process terminals (1...16) to the module and additionally 10 internally jumpered AUX terminals (1 A to 10 A); for load group continuation						
	• 1 unit	1	**6ES7193-6BP20-0BA0**		1	1 unit	255
	• 10 units	1	**6ES7193-6BP20-2BA0**		1	10 units	255
 6ES7193-6BP00-0BA0	**BU15-P16+A0+2B** BU type A0; BaseUnit (dark) with 16 process terminals to the module; for load group continuation						
	• 1 unit	1	**6ES7193-6BP00-0BA0**		1	1 unit	255
	• 10 units	1	**6ES7193-6BP00-2BA0**		1	10 units	255
	Reference identification label 10 mats of 16 labels each, for printing with thermal transfer card printer or plotter	1	**6ES7193-6LF30-0AW0**		1	10 units	255
	Labeling strips						
	500 labeling strips on a roll, light gray, for inscription with a thermal transfer roll printer	1	**6ES7193-6LR10-0AA0**		1	1 unit	255
	500 labeling strips on a roll, yellow, for inscription with a thermal transfer roll printer	1	**6ES7193-6LR10-0AG0**		1	1 unit	255
	1000 labeling strips, DIN A4, light gray, cardboard, pre-perforated, for inscription with a laser printer	1	**6ES7193-6LA10-0AA0**		1	1 unit	255
	1000 labeling strips, A4, yellow, cardboard, pre-perforated, for inscription with a laser printer	1	**6ES7193-6LA10-0AG0**		1	1 unit	255
	Color-coded labels						
	Color code CC04, for 16 process terminals, BU type A0, A1, gray (terminals 1 to 8), red (terminals 9 to 12), blue (terminals 13 to 16); 10 units	1	**6ES7193-6CP04-2MA0**		1	10 units	255
	Color code CC71, for 10 AUX terminals, BU type A0, yellow-green (terminals 1 A to 10 A); 10 units	1	**6ES7193-6CP71-2AA0**		1	10 units	255
	Color code CC72, for 10 AUX terminals, BU type A0, red (terminals 1 A to 10 A); 10 units	1	**6ES7193-6CP72-2AA0**		1	10 units	255
	Color code CC73, for 10 AUX terminals, BU type A0, blue (terminals 1 A to 10 A); 10 units	1	**6ES7193-6CP73-2AA0**		1	10 units	255
Spare parts							
	Electronic coding element type H Pack containing 5 units; included in the scope of supply of the CM 4x IO-Link module	1	**6ES7193-6EH00-1AA0**		1	5 units	256

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

ET 200eco PN IO-Link master

Overview

ET 200eco PN IO-Link master modules

The ET200eco PN IO-Link master modules belong to the ET 200eco PN compact block I/O device family and are distinguished by the following features:

- Compact block I/O devices for connection of IO-Link devices and connection to the PROFINET bus system
- Design without a control cabinet in IP67 degree of protection with M12 connection system
- Very rugged and resistant encapsulated metal enclosure
- Compact module in an enclosure width of 30 mm or 60 mm
- PROFINET connection: 2 x M12 and automatic PROFINET addressing
- 100 MBit/s data transmission rate
- LLDP neighborhood detection without PG
- Supply and load voltage connection: 2 x M12
- Channel-exact diagnostics

Application

IO-Link enables easy integration of sensors and actuators from different manufacturers. ET200eco PN IO-Link master modules enable an exchange of data with up to 4 IO-Link devices. Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.
With a high degree of protection, ruggedness and small dimensions, the IO-Link master modules are especially well-suited for use at the machine level in confined spaces. They have adjustable parameters and diagnostic functions and can therefore be flexibly adapted to individual process requirements.

The following IO-Link masters are available:

- Compact module in an enclosure width of 30 mm for connecting up to 4 IO-Link devices in accordance with the IO-Link Specification V1.0 and V1.1 and Port Class B
- Compact module in an enclosure width of 60 mm for connecting up to 4 IO-Link devices in accordance with the IO Link specification V1.0 and port class A and an additional 8 digital inputs and 4 digital outputs.

Design

The IO-Link master modules have a screw mounting hole at the front and side, and can be mounted in any position. As a result, they are extremely flexible to install on either a level surface or on aluminum mounting rails using sliding blocks.
ET 200eco PN IO-Link masters are compact modules with M12 connection technology.

Two load voltage supplies (4 A each) are available, which are able to be used by the compact module or looped through to an additional compact module (line topology). PROFINET is connected via an M12 connection and can be looped through to a further PROFINET device. The maximum cable length to the IO-Link device is 20 m.

Selection and ordering data

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	ET 200eco PN IO-Link master						
 6ES7148-6JA00-0AB0	• 4 IO-L + 8 DI + 4 DO 24 V DC/1.3 A; 8 x M12, degree of protection IP67, enclosure width 60 mm; for connecting up to 4 IO-Link devices in accordance with the IO-Link Specification V1.0 and port class A and an additional 8 digital inputs and 4 digital outputs	1	**6ES7148-6JA00-0AB0**		1	1 unit	250
 6ES7148-6JD00-0AB0	• 4 IO-L NEW 4 x M12, degree of protection IP67, enclosure width 30 mm; for connecting up to 4 IO-Link devices in accordance with the IO-Link Specification V1.0 and V1.1 and Port Class B	1	**6ES7148-6JD00-0AB0**		1	1 unit	250

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Voltage distributor Voltage distributor PD 24 V DC; 1 X 7/8", 4 X M12	1	**6ES7148-6CB00-0AA0**		1	1 unit	250
Terminal block for ET 200eco PN, 10 A insulation displacement terminations	1	**6ES7194-6CA00-0AA0**		1	1 unit	250
Replacement fuses for terminal block, 10 units	1	**6ES7194-6HB00-0AA0**		1	10 units	250
Mounting rail 0.5 m	1	**6ES7194-6GA00-0AA0**		1	1 unit	250
Profile screw For the mounting rail, 50 units	1	**6ES7194-6MA00-0AA0**		1	50 units	250
Sealing caps M12 for IP67 modules, 10 units	►	**3RK1901-1KA00**		100	10 units	42C
Labels 10 mm × 7 mm, pastel turquoise, 816 units	15	**3RT1900-1SB10**		100	816 units	41B
PROFINET M12 connection plug, can be pre-assembled IE FC M12 connector PRO, can be pre-assembled						
• 1 unit	1	**6GK1901-0DB20-6AA0**		1	1 unit	5K1
• 8 units	1	**6GK1901-0DB20-6AA8**		1	8 units	5K1
PROFINET M12 plug-in cables Pre-assembled connecting cables with 2 M12 plugs (D-coded), in various lengths:						
• 0.3 m	1	**6XV1870-8AE30**		1	1 unit	5K1
• 0.5 m	1	**6XV1870-8AE50**		1	1 unit	5K1
• 1.0 m	1	**6XV1870-8AH10**		1	1 unit	5K1
• 1.5 m	1	**6XV1870-8AH15**		1	1 unit	5K1
• 2.0 m	1	**6XV1870-8AH20**		1	1 unit	5K1
• 3.0 m	1	**6XV1870-8AH30**		1	1 unit	5K1
• 5.0 m	1	**6XV1870-8AH50**		1	1 unit	5K1
• 10.0 m	1	**6XV1870-8AN10**		1	1 unit	5K1
• 15.0 m	1	**6XV1870-8AN15**		1	1 unit	5K1
M12 connection plug for 24 V DC load supply						
Connection socket for feeding in 24 V DC; 4-pole, A-coded, 3 units	1	**6GK1907-0DC10-6AA3**		1	3 units	5W3
Plug connector for forwarding 24 V DC; 4-pole, A-coded, 3 units	1	**6GK1907-0DB10-6AA3**		1	3 units	5W3
M12 power connector cables Pre-assembled power connector cables with M12 box and plug, 4 x 0.75 mm^2 on both sides, in various lengths:						
• 0.3 m	1	**6XV1801-5DE30**		1	1 unit	5K2
• 0.5 m	1	**6XV1801-5DE50**		1	1 unit	5K2
• 1.0 m	1	**6XV1801-5DH10**		1	1 unit	5K2
• 1.5 m	1	**6XV1801-5DH15**		1	1 unit	5K2
• 2.0 m	1	**6XV1801-5DH20**		1	1 unit	5K2
• 3.0 m	1	**6XV1801-5DH30**		1	1 unit	5K2
• 5.0 m	1	**6XV1801-5DH50**		1	1 unit	5K2
• 10.0 m	1	**6XV1801-5DN10**		1	1 unit	5K2
• 15.0 m	1	**6XV1801-5DN15**		1	1 unit	5K2
M12 Y-cables						
For double connection of I/Os with a single cable to ET200, 5-pole	1	**6ES7194-6KA00-0XA0**		1	1 unit	250

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

CM IO-Link communication module

- 30-mm-wide CM IO-Link communication module
- For connecting up to 4 IO-Link devices in accordance with the IO-Link Specification V1.0 and V1.1 and Port Class B
- The IO-Link parameters are configured by means of the Port Configuration Tool (PCT) with version V3.2 and higher.

Application

The CM IO-Link communication module supports data exchange between up to four IO-Link devices.

IO-Link devices (e.g. sensors) with a class A port are interconnected by means of a 3-wire cable. IO-Link devices that require an additional supply voltage and have a class B port (e.g. actuators) are interconnected by means of a 5-wire cable.

Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

The 30-mm wide I/O modules are ideally suited for use in extremely confined spaces. They have adjustable parameters and diagnostic functions and can therefore be flexibly adapted to individual process requirements.

The following IO-Link masters are available:

- CM 4xIO-Link communication modules, 4XM12

Design

The I/O modules have a screw mounting hole at the front and side, and can be mounted in any position. As a result, they are extremely flexible to install on either a level surface or on aluminum mounting rails using sliding blocks.

The CM IO-Link communication module features:

- A backplane bus connection (Ethernet connection) with M8 connection system for connection to an interface module or other I/O modules
- A power supply connection with M8 connection system with loop-through
- LED display for port status
- LED display for channel status in SIO mode
- LED display for module status (DIAG)
- LED display for load voltage 2L+ (PWR)
- Labeling plates for channel, module and slot identification
- Integrated cable tie holder
- Meaningful module inscription on front panel:
  - Plain text marking of module type
  - Interface marking
  - LED label
- Meaningful module inscription on side panel:
  - Article number, function level and FW version
  - 2D matrix code (Article No. and serial number)
  - Pin assignments of all interfaces

Labeling plates for channel, module and slot identification are supplied with the modules. These labeling plates can be inscribed using commercially available inscription machines.

Function

- IO-Link master according to IO-Link specification V1.1
- 4 ports, Class B type
- Supported data transmission rates
  - COM1 (4.8 kBd)
  - COM2 (38.4 kBd)
  - COM3 (230.4 kBd)
- Expansion limits
  - Cable length: max. 20 m
  - Max. 32 bytes of input data and 32 bytes of output data per port
  - Max. 32 bytes of input data and 32 bytes of output data per module
- Automatic backup of device parameters when the IO-Link device is replaced (V1.1 devices only)
- Reparameterization during ongoing operation
- Standardized display and diagnostics concept:
  - Port status display (port activated or deactivated, green LED)
  - Channel status display for signal state in SIO mode (green LED)
  - Module status display (DIAG, red/green LED)
  - Display for monitoring the load voltage 2L+ (PWR, green LED)
- Supported functions:
  - Detailed module diagnostics and diagnostic interrupt
  - Identification and maintenance data IM0 ... IM3
  - Firmware update
  - PROFIenergy

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 6ES7147-5JD00-0BA0	**CM IO-Link** CM 4X IO-LINK, 4XM12; for connecting up to 4 IO-Link devices in accordance with the IO-Link Specification V1.0 and V1.1 and Port Class B	1	**6ES7147-5JD00-0BA0**		1	1 unit	254

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
	Bus cable for backplane bus (ET connection) 4-pole, shielded						
 6ES7194-2L...-0AA0	• Pre-assembled on both sides, 2 M8 plugs						
	- Length 0.19 m	1	**6ES7194-2LH02-0AA0**		1	1 unit	254
	- Length 0.3 m	1	**6ES7194-2LH03-0AA0**		1	1 unit	254
	- Length 1 m	1	**6ES7194-2LH10-0AA0**		1	1 unit	254
	- Length 2 m	1	**6ES7194-2LH20-0AA0**		1	1 unit	254
	- Length 5 m	1	**6ES7194-2LH50-0AA0**		1	1 unit	254
	- Length 10 m	1	**6ES7194-2LN10-0AA0**		1	1 unit	254
	- Length 15 m	1	**6ES7194-2LN15-0AA0**		1	1 unit	254
 6ES7194-2L...-0AB0	• Pre-assembled on both sides, 2 M8 angular plugs						
	- Length 0.3 m	1	**6ES7194-2LH03-0AB0**		1	1 unit	254
	- Length 1 m	1	**6ES7194-2LH10-0AB0**		1	1 unit	254
	- Length 2 m	1	**6ES7194-2LH20-0AB0**		1	1 unit	254
	- Length 5 m	1	**6ES7194-2LH50-0AB0**		1	1 unit	254
	- Length 10 m	1	**6ES7194-2LN10-0AB0**		1	1 unit	254
	- Length 15 m	1	**6ES7194-2LN15-0AB0**		1	1 unit	254
 6ES7194-2L..0-0AC0	• Pre-assembled on one side, 1 M8 plug						
	- Length 2 m	1	**6ES7194-2LH20-0AC0**		1	1 unit	254
	- Length 5 m	1	**6ES7194-2LH50-0AC0**		1	1 unit	254
	- Length 10 m	1	**6ES7194-2LN10-0AC0**		1	1 unit	254
	- Length 15 m	1	**6ES7194-2LN15-0AC0**		1	1 unit	254
	M8 power cable 4-pole						
 6ES7194-2L...-1AA0	• Pre-assembled on both sides, M8 plug and M8 socket						
	- Length 0.19 m	1	**6ES7194-2LH02-1AA0**		1	1 unit	254
	- Length 0.3 m	1	**6ES7194-2LH03-1AA0**		1	1 unit	254
	- Length 1 m	1	**6ES7194-2LH10-1AA0**		1	1 unit	254
	- Length 2 m	1	**6ES7194-2LH20-1AA0**		1	1 unit	254
	- Length 5 m	1	**6ES7194-2LH50-1AA0**		1	1 unit	254
	- Length 10 m	1	**6ES7194-2LN10-1AA0**		1	1 unit	254
	- Length 15 m	1	**6ES7194-2LN15-1AA0**		1	1 unit	254
 6ES7194-2L...-1AB0	• Pre-assembled on both sides, M8 angular plug and M8 angular socket						
	- Length 0.3 m	1	**6ES7194-2LH03-1AB0**		1	1 unit	254
	- Length 1 m	1	**6ES7194-2LH10-1AB0**		1	1 unit	254
	- Length 2 m	1	**6ES7194-2LH20-1AB0**		1	1 unit	254
	- Length 5 m	1	**6ES7194-2LH50-1AB0**		1	1 unit	254
	- Length 10 m	1	**6ES7194-2LN10-1AB0**		1	1 unit	254
	- Length 15 m	1	**6ES7194-2LN15-1AB0**		1	1 unit	254
 6ES7194-2L..0-1AC0	• Pre-assembled on one side, one M8 socket						
	- Length 2 m	1	**6ES7194-2LH20-1AC0**		1	1 unit	254
	- Length 5 m	1	**6ES7194-2LH50-1AC0**		1	1 unit	254
	- Length 10 m	1	**6ES7194-2LN10-1AC0**		1	1 unit	254
	- Length 15 m	1	**6ES7194-2LN15-1AC0**		1	1 unit	254

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

CM IO-Link

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 6ES7194-2AB00-0AA0	**M8 plug for Ethernet connection** 4-pole, shielded	1	**6ES7194-2AB00-0AA0**		1	1 unit	254
 6ES7194-2AA00-0AA0	**M8 power plug** • Male contact insert, 4-pole	1	**6ES7194-2AA00-0AA0**		1	1 unit	254
	• Female insert, 4-pole	1	**6ES7194-2AC00-0AA0**		1	1 unit	254
 6ES7194-2KA00-0AA0	**Ethernet connection Fast Connect Stripping Tool** Stripping tool for stripping the Ethernet connection bus cable	1	**6ES7194-2KA00-0AA0**		1	1 unit	254
 6ES7194-2BA00-0AA0	**Labeling plates** 10 x 5 mm, RAL 9016, 5 frames with 40 labels each	1	**6ES7194-2BA00-0AA0**		1	1 unit	254

More information

More information
Brochures Information material for downloading free of charge from the Internet at: http://www.siemens.com/simatic/printmaterial.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

IO-Link input modules

Using IO-Link technology, it is basically possible to connect standard sensors to IO-Link masters. However, connecting standard sensors directly to the IO-Link master does not exploit the full potential of IO-Link.

The solution lies in the technology of the IO-Link modules. Their use is a more economically attractive solution in comparison to the direct connection of a sensor.

IO-Link input modules are a sensible addition to the ET 200 distributed IOs. The IO-Link input module technology enhances IO-Link beyond pure point-to-point cable connections towards decentralized structures. The maximum cable length of an IO-Link connection between an IO-Link module and an IO-Link master is 20 m. The use of sensor boxes with accordingly complex and error-prone wiring is no longer necessary.

Transmission of parameter and diagnostic signals

The IO-Link input modules also offer the possibility of transmitting parameters and diagnostic signals. This enables for example the inputs of modules to be parameterized as NC contacts or NO contacts through IO-Link. An overload or short-circuit in the sensor supply is signaled to the control system through the IO-Link master.

M8 and M12 terminals

M8 and M12 terminals are available for connecting the sensors. Connection to the IO-Link master is made using a standard M12 connecting cable.

Benefits

Benefits of using IO-Link input modules:

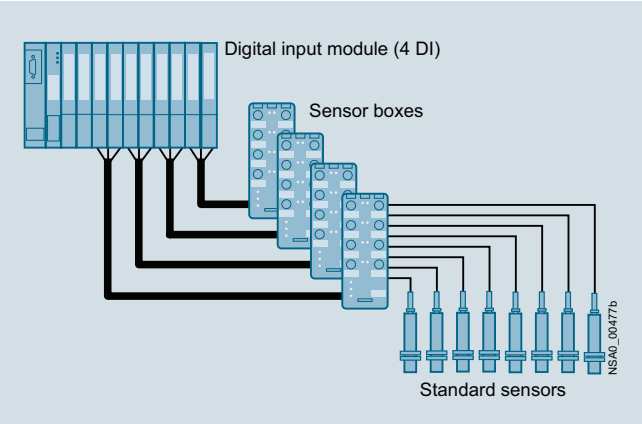
- Economical use of innovative IO-Link technology also for binary sensors
- Optimum use of all ports of the IO-Link master
- Connection of several binary sensors/actuators to one port of the IO-Link master, hence low-cost connection also of binary sensors/actuators to the control system through IO-Link
- Reduction of digital input modules in the peripheral station
- Use of parameters also for binary sensors (e.g. NC contacts, NO contacts and input delay can be parameterized)
- Reduction of cabling and hence less risk of wiring errors by dispensing with sensor boxes
- Expansion toward distributed structures using pure point-to-point wiring
- Easy and elegant integration of sensors within a radius of 20 m around an IO-Link master, e.g. in an ET 200 station
- Possibility of transmitting parameter and diagnostic signals (e.g. sensor supply overload)
- Can also be used in harsh ambient conditions thanks to a very compact design and degree of protection IP67

Application

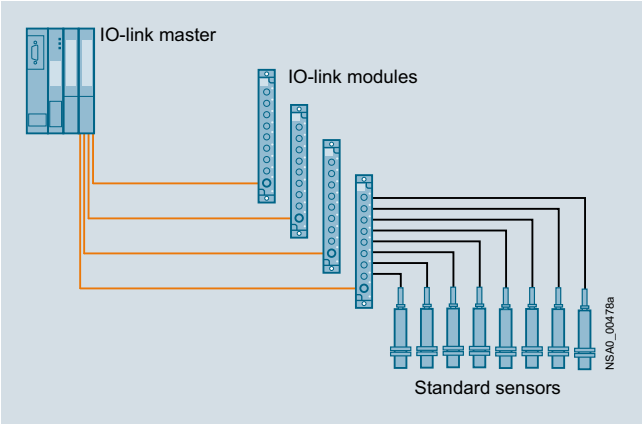
IO-Link input modules are particularly used where sensor boxes had previously been used for the connection of binary sensors.

Application example:

Replacement of sensor boxes by using IO-Link input modules



Former technology with sensor boxes



Technology with IO-Link input modules

Selection and ordering data

	Type	Pin assignment	Connection	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
  3RK5010-0BA10-0AA0 3RK5010-0CA00-0AA0	**K20 IO-Link modules**								
	• 4 inputs	Y	M12	5	**3RK5010-0BA10-0AA0**		1	1 unit	42C
	• 8 inputs	Standard	M8	5	**3RK5010-0CA00-0AA0**		1	1 unit	42C

Accessories

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1901-1KA00	**Sealing caps**						
	• M12, for free M12 sockets	▶	**3RK1901-1KA00**		100	10 units	42C
	• M8, for free M8 sockets	2	**3RK1901-1PN00**		100	10 units	42C
 3RK1901-1PN00							
 3RK1902-4GB50-4AA0	**Control cable, assembled at one end** M12 socket, angled, for screw fixing, 4-pole, 4 x 0.34 mm², A-coded, black PUR sheath, max. 4 A						
	• Cable length 5 m	10	**3RK1902-4GB50-4AA0**		1	1 unit	42D
 3RK1902-4CA00-4AA0	**M12 socket, angled** For screw fixing, 4-pole screw terminal, max. 0.75 mm², A-coded, max. 4 A	10	**3RK1902-4CA00-4AA0**		1	1 unit	42D
 3RK1902-4BA00-5AA0	**M12 connector** For screw fixing, 5-pole screw terminal, max. 0.75 mm², A-coded, max. 4 A						
	• Straight	10	**3RK1902-4BA00-5AA0**		1	1 unit	42D
 3RK1902-4DA00-5AA0	• Angled	10	**3RK1902-4DA00-5AA0**		1	1 unit	42D
 3RK1902-4H...-5AA0	**Control cable, assembled at one end** M12 socket, angled, for screw fixing, 5-pole, 5 x 0.34 mm², A-coded, black PUR sheath, max. 4 A						
	• Cable length 1.5 m	10	**3RK1902-4HB15-5AA0**		1	1 unit	42D
	• Cable length 5 m	10	**3RK1902-4HB50-5AA0**		1	1 unit	42D
	• Cable length 10 m	10	**3RK1902-4HC01-5AA0**		1	1 unit	42D
 3RK1902-4PB15-3AA0	**Control cable, assembled at both ends** M12 plug, straight, M12 socket, straight, for screw fixing, 3-pole, 3 x 0.34 mm², A-coded, black PUR sheath, max. 4 A	10	**3RK1902-4PB15-3AA0**		1	1 unit	42D
	• Cable length 1.5 m						
 6ES7194-1KA01-0XA0	**M12 Y-shaped coupler plugs** For connection of two sensors to one M12 socket with Y assignment	1	**6ES7194-1KA01-0XA0**		1	1 unit	250

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Note:
3RT1 contactors in sizes S00 to S12 and 3RA1 contactor assemblies in sizes S00 to S3 can be found

- in the Catalog Add-On IC 10 AO · 2016 in the Information and Download Center
- in the interactive Catalog CA 01
- in the Industry Mall

Conversion tool
e. g. from 3RT10 to 3RT20: see www.siemens.com/sirius/conversion-tool

Overview

More information

Home page, see www.siemens.com/sirius
Industry Mall, see www.siemens.com/product?3RT_3TK_3TC
Conversion tool, e.g. from 3RT10 to 3RT20, see www.siemens.com/sirius/conversion-tool
Online configurator for 3RT2 contactors, see www.siemens.com/sirius/configurators

Size		**S00**				**S0**					
Type		3RT201				3RT202					
3RT20 contactors											
Type		**3RT2015**	**3RT2016**	**3RT2017**	**3RT2018**	**3RT2023**	**3RT2024**	**3RT2025**	**3RT2026**	**3RT2027**	**3RT2028**
AC, DC operation		(p. 3/51, 3/52, 3/57 ... 3/60)				(p. 3/53, 3/54, 3/61 ... 3/63, 3/65)					
AC-3											
I_e/AC-3/400 V	A	7	9	12	16	9	12	17	25	32	38
400 V	**kW**	**3**	**4**	**5.5**	**7.5**	**4**	**5.5**	**7.5**	**11**	**15**	**18.5**
230 V	kW	1.5	2.2	3	4	2.2	3	4	5.5	7.5	11
690 V	kW	4	5.5	5.5	7.5	7.5	7.5	11	11	18.5	18.5
1 000 V	kW	--	--	--	--	--	--	--	--	--	--
AC-4 (at I_a = 6 x I_e)											
400 V	**kW**	**3**	**4**	**4**	**5.5**	**4**	**5.5**	**7.5**	**7.5**	**11**	**11**
400 V (200 000 operating cycles)	kW	1.15	2	2	2.5	2	2.6	3.5	4.4	6	6
AC-1 (40 °C, ≤ 690 V)											
I_e	3RT20	**18**	**22**	**22**	**22**	**40**	**40**	**40**	**40**	**50**	**50**
Accessories for contactors											
Auxiliary switch blocks	• On front	**3RH29, 3RA28** (p. 3/93 ... 3/100)				**3RH29, 3RA28** (p. 3/93 ... 3/100)					
	• Lateral	**3RH29** (p. 3/97)				**3RH29** (p. 3/97)					
Function modules	• Direct-on-line starting, wye-delta starting	**3RA281.** (p. 3/105)				**3RA281.** (p. 3/105)					
	• IO-Link, AS-Interface	**3RA271.-.AA00** (p. 3/106, 3/107)				**3RA271.-.AA00** (p. 3/106, 3/107)					
Surge suppressors		**3RT2916** (p. 3/102, 3/103)				**3RT2926** (p. 3/102, 3/103)					
3RU2 and 3RB3 overload relays											
3RU thermal overload relays		**3RU2116** 0.11 ... 16 A (p. 7/84)				**3RU2126** 1.8 ... 40 A (p. 7/84)					
3RB electronic overload relays											
• for standard applications		**3RB3016 3RB3113** 0.1 ... 16 A (p. 7/97 ... 7/99)				**3RB3026 3RB3123** 0.1 ... 40 A (p. 7/97 ... 7/99)					
• for High-Feature applications		**3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1** 0.3 ... 25 A (p. 7/120, 7/128, 7/132)				**3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1** 0.3 ... 25 A (p. 7/120, 7/128, 7/132)					
3RV20 motor starter protectors											
Motor starter protectors		**3RV2011** 0.11 ... 16 A (p. 7/26)				**3RV2021** 0.45 ... 40 A (p. 7/26)					
Link modules		**3RA1921, 3RA2911** (p. 7/49)				**3RA2921** (p. 7/49)					
3RA23 reversing contactor assemblies											
Complete units	Type	**3RA2315** (p. 3/162)	**3RA2316**	**3RA2317**	**3RA2318**	--	**3RA2324** (p. 3/163)	**3RA2325**	**3RA2326**	**3RA2327**	**3RA2328**
400 V	**kW**	**3**	**4**	**5.5**	**7.5**		**5.5**	**7.5**	**11**	**15**	**18.5**
Assembly kits, etc.		**3RA2913-2AA.** (p. 3/109)				--	**3RA2923-2AA.** (p. 3/109)				
Function modules		**3RA271.-.BA00** (p. 3/106)				--	**3RA271.-.BA00** (p. 3/106)				
3RA24 contactor assemblies for star-delta (wye-delta) starting											
Complete units	Type	**3RA2415** (p. 3/179)	**3RA2416**	**3RA2417**		**3RA2423** (p. 3/180)		**3RA2425**	**3RA2426**		
400 V	**kW**	**5.5**	**7.5**	**11**		**11**		**15/18.5**	**22**		
Assembly kits/wiring modules		**3RA2913-2BB.** (p. 3/110)				**3RA2923-2BB.** (p. 3/110)					
Function modules		**3RA271.-.CA00** (p. 3/106)				**3RA271.-.CA00** (p. 3/106)					

Note:

For safety characteristics for contactors, see "Standards and Approvals", from page 16/10 onwards.

Size		**S2**				**S3**			
Type		3RT203				3RT204			
3RT20 contactors									
Type		**3RT2035**	**3RT2036**	**3RT2037**	**3RT2038**	**3RT2045**	**3RT2046**	**3RT2047**	
AC, DC operation		(p. 3/55, 3/64, 3/66, 3/67)				(p. 3/56, 3/64, 3/68, 3/69)			
AC-3									
I_e/AC-3/400 V	A	40	50	65	80	80	95	110	
400 V	**kW**	**18.5**	**22**	**30**	**37**	**37**	**45**	**55**	
230 V	kW	11	15	18.5	22	22	22	30	
690 V	kW	22	22	37	45	55	75	90	
1 000 V	kW	--	--	--	--	37	37	37	
AC-4 (at I_a = 6 x I_e)									
400 V	**kW**	**18.5**	**22**	**30**	**37**	**37**	**45**	**55**	
400 V (200 000 operating cycles)	kW	11.6	12.6	14.7	15.8	17.9	22	24.3	
AC-1 (40 °C, ≤ 690 V)									
I_e	**A**	**60**	**70**	**80**	**90**	125	130	130	
Accessories for contactors									
Auxiliary switch blocks	• On front	**3RH29, 3RA28**			(p. 3/93 ... 3/100)	**3RH29, 3RA28**			(p. 3/93 ... 3/100)
	• Lateral	**3RH29**			(p. 3/97)	**3RH29**			(p. 3/97)
Function modules	• Direct-on-line starting	**3RA283.**			(p. 3/105)	**3RA283.**			(p. 3/105)
	• IO-Link, AS-Interface	**3RA271.-.AA00**			(p. 3/106, 3/107)	**3RA271.-.AA00**			(p. 3/106, 3/107)
Surge suppressors		**3RT2936**			(p. 3/102, 3/103)	**3RT2936**[1], **3RT2946**			(p. 3/102, 3/103)
Terminal covers		**3RT2936-4EA2**			(p. 3/116)	**3RT2946-4EA2**			(p. 3/116)
3RU2 and 3RB overload relays									
3RU thermal overload relays		**3RU2136**	11 ... 80 A		(p. 7/85)	**3RU2146**	28 ... 100 A		(p. 7/85)
3RB electronic overload relays									
• for standard applications		**3RB3036 3RB3133**	12.5 ... 80 A		(p. 7/97 ... 7/99)	**3RB3046 3RB3143**	12.5 ... 115 A		(p. 7/97 ... 7/99)
• for High-Feature applications		**3RB22, 3RB23 and 3RB24 with 3RB2906-2JG1 current measuring module**	10 ... 100 A		(p. 7/120, 7/128) (p. 7/132)	**3RB22, 3RB23 and 3RB24 with 3RB2906-2JG1 current measuring module**	10 ... 100 A		(p. 7/120, 7/128) (p. 7/132)
3RV20 motor starter protectors									
Motor starter protectors		**3RV2031, 3RV2032**		9.5 ... 80 A	(p. 7/27)	**3RV2041, 3RV2042**		28 ... 100 A	(p. 7/27)
Link modules		**3RA2931**			(p. 7/49)	**3RA1941**			(p. 7/49)
3RA23 reversing contactor assemblies									
Complete units	Type	**3RA2335** (p. 3/164)	**3RA2336**	**3RA2337**	**3RA2338**	**3RA2345** (p. 3/165)	**3RA2346**	**3RA2347**	
400 V	**kW**	**18.5**	**22**	**30**	**37**	**37**	**45**	**55**	
Assembly kits/wiring modules		**3RA2933-2AA.**			(p. 3/109)	**3RA2943-2AA.**			(p. 3/109)
Function modules		**3RA271.-.BA00**			(p. 3/106)	**3RA271.-.BA00**			(p. 3/106)
Mechanical interlocks		**3RA2934-2B**			(p. 3/113)	**3RA2934-2B**			(p. 3/113)
3RA24 contactor assemblies for star-delta (wye-delta) starting									
Complete units	Type	**3RA2434** (p. 3/181)	**3RA2435**	**3RA2436**	**3RA2437**	**3RA2444** (p. 3/182)	**3RA2445**	**3RA2446**	
400 V	**kW**	**22/30**	**37**	**45**	**55**	**55**	**75**	**90**	
Assembly kits/wiring modules		**3RA2933-2BB./-2C**			(p. 3/110)	**3RA2943-2BB./-2C**			(p. 3/110)
Function modules		**3RA271.-.CA00**			(p. 3/106)	**3RA271.-.CA00**			(p. 3/106)

[1] From product version E03 onwards, 3RT2936-1B/-1E surge suppressors can be used for 3RT2.4 contactors.

Note:

For safety characteristics for contactors, see "Standards and Approvals", from page 16/10 onwards.

Switching Devices – Contactors and Contactor Assemblies

Power Contactors for Switching Motors

Introduction

Size			**S6**			**S10**			**S12**	
Type			3RT105			3RT1.6			3RT1.7	
3RT10 contactors · 3RT12 vacuum contactors										
Type			**3RT1054**	**3RT1055**	**3RT1056**	**3RT1064**	**3RT1065**	**3RT1066**	**3RT1075**	**3RT1076**
AC, DC operation			(p. 3/70, 3/71)			(p. 3/70, 3/71)			(p. 3/70, 3/71)	
Type			--	--	--	**3RT1264**	**3RT1265**	**3RT1266**	**3RT1275**	**3RT1276**
						(p. 3/134)			(p. 3/134)	
AC-3										
I_e/AC-3/400 V		A	115	150	185	225	265	300	400	500
400 V		**kW**	**55**	**75**	**90**	**110**	**132**	**160**	**200**	**250**
230 V	3RT10/3RT12	kW	37	45	55	55	75	90	132	160
690 V	3RT10/3RT12	kW	110	132	160	200	250	250	400	400/500
1 000 V		kW	75	90	90	90/315	132/355	132/400	250/560	250/710
AC-4 (at I_a = 6 x I_e)										
400 V	3RT10/3RT12	**kW**	**55**	**75**	**90**	**110**	**132**	**160**	**200**	**250**
400 V		kW	29	38	45	54/78	66/93	71/112	84/140	98/161
(200 000 operating cycles)										
AC-1 (40 °C, ≤ 690 V)										
I_e	3RT10/3RT12	**A**	**160**	**185**	**215**	**275/330**	**330**	**330**	**430/610**	**610**
3RT14 AC-1 contactors										
Type			**3RT1456**		(p. 4/12)	**3RT1466**		(p. 4/12)	**3RT1476**	(p. 4/12)
I_e/AC-1/40 °C/≤ 690 V		**A**	**275**			**400**			**690**	
Accessories for contactors										
Auxiliary switch blocks	• On front • Lateral		**3RH19, 3RT1926** **3RH19**							(p. 3/96, 3/101) (p. 3/98, 3/99)
Surge suppressors			**3RT1956-1C** (RC element)							(p. 3/103)
Terminal covers			**3RT1956-4EA.**		(p. 3/116)	**3RT1966-4EA.**				(p. 3/116)
Box terminal blocks			**3RT1955-4G, 3RT1956-4G**		(p. 3/114)	**3RT1966-4G**				(p. 3/114)
3RB2 overload relays										
3RB electronic overload relays										
• for standard applications			**3RB2056** 50 ... 200 A **3RB2153**		(p. 7/109) (p. 7/111)	**3RB2066** 55 ... 250 A or 160 ... 630 A **3RB2163**				(p. 7/109) (p. 7/111)
• for High-Feature applications			**3RB22, 3RB23 and 3RB24**		(p. 7/120) (p. 7/128)	**3RB22, 3RB23 and 3RB24**				(p. 7/120) (p. 7/128)
			with 3RB2956-2TH2 current measuring module 20 ... 200 A		(p. 7/132)	**with current measuring module 3RB2966-2WH2** 63 ... 630 A				(p. 7/132)
3RV10 molded case motor starter protectors										
Molded case motor starter protectors			**3RV1063** 40 ... 200 A		(p. 7/67)	**3RV1073** 160 ... 400 A		(p. 7/67)	**3RV1083** 252 ... 630 A	(p. 7/67)
Reversing contactor assemblies[1]										
Complete units	Type		--							
400 V		**kW**	**55**	**75**	**90**	**110**	**132**	**160**	**200**	**250**
Assembly kits/ wiring modules			**3RA1953-2A**		(p. 3/109)	**3RA1963-2A**		(p. 3/109)	**3RA1973-2A**	(p. 3/109)
Mechanical interlocks			**3RA1954-2A**		(p. 3/113)					
Contactor assemblies for star-delta (wye-delta) starting[1]										
Complete units	Type		--							
400 V		**kW**	--							
Assembly kits/ wiring modules			**3RA1953-2B**		(p. 3/111)	**3RA1963-2B**		(p. 3/111)	**3RA1973-2B**	(p. 3/111)

[1] Contactor assemblies for customer assembly:
- For reversing contactor assemblies, see pages 3/167 to 3/169
- For star-delta (wye-delta) assemblies, see pages 3/184 to 3/189.

Note:

For safety characteristics for contactors, see "Standards and Approvals", from page 16/10 onwards.

Size			**14**		
Type			3TF6		
3TF68/3TF69 vacuum contactors					
Type			**3TF68** (p. 3/135, 3/136)	**3TF69** (p. 3/135, 3/136)	
AC-3					
I_e/AC-3/400 V		A	630	820	
400 V		**kW**	**335**	**450**	
230 V	3RT10/3RT12	kW	200	260	
690 V	3RT10/3RT12	kW	600	800	
1 000 V		kW	600	800	
AC-4 (at I_a = 6 x I_e)					
400 V	3RT10/3RT12	**kW**	**355**	**400**	
400 V (200 000 operating cycles)		kW	168	191	
AC-1 (40 °C, ≤ 690 V)					
I_e	3RT10/3RT12	**A**	**700**	**910**	
Accessories for contactors					
Auxiliary switch blocks					
• Lateral			**3TY7561**		(p. 3/137)
Surge suppressors			**3TX7572**		(p. 3/138)
Terminal covers			**3TX7686, 3TX7696**		(p. 3/138)
3RB2 overload relays					
3RB electronic overload relays					
• for standard applications			**3RB2066, 3RB2163** 55 ... 250 A or 160 ... 630 A (p. 7/109, 7/110) (p. 7/111)	**3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1 with 3UF series transformer to 820 A** (p. 7/120, 7/128) (p. 7/132)	
• for High-Feature applications			**3RB22, 3RB23 and 3RB24 with 3RB2966-2WH2 current measuring module** 63 ... 630 A (p. 7/120, 7/128) (p. 7/132)	63 ... 820 A	
3RV10 molded case motor starter protectors					
Molded case motor starter protectors			**3RV1083** 252 ... 630 A		(p. 7/67)
Reversing contactor assemblies					
Complete units		Type	--		
400 V		**kW**	**335**		
Assembly kits/wiring modules			**3TX7680-1A**		(Industry Mall)
Mechanical interlocks			**3TX7686-1A**		(Industry Mall)
Contactor assemblies for star-delta (wye-delta) starting					
Complete units		Type	--		
400 V		**kW**	**630**		
Assembly kits/wiring modules			**3TX7680-1B**		(Industry Mall)

Note:

For safety characteristics for contactors, see "Standards and Approvals", from page 16/10 onwards.

Introduction

Size		--
Type		3TG10
3TG10 power relays/miniature contactors		
Type		**3TG10**
Number of main contacts		4
AC, DC operation		(p. 3/151)
AC-1 (40 °C, ≤ 690 V)		
***I*e**	**A**	**20**
***P* at 400 V**	**kW**	**13**
At 230 V	kW	7.5
AC-2 and AC-3		
*I*e/400 V	A	8.4
***P* at 400 V**	**kW**	**4**

Connection methods

The contactors are available with screw terminals (box terminals or flat connectors) or with spring-type terminals.

Devices of the 3TF2 series are also available for connection with flat connectors and solder pin connectors.

The 3TG10 power relays/miniature contactors are available with screw terminals or flat connectors.

- Screw terminals
- Spring-type terminals
- Flat connectors
- Solder pin connections

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Support function

The 3RT20 contactors up to 18.5 kW can also be ordered via an online configurator.

Use of 3RT contactors, 3RT and 3TF vacuum contactors, reversing contactor assemblies, and contactor assemblies for star-delta (wye-delta) starting with IE3/IE4 motors

Note:

For the use of 3RT contactors, 3RT and 3TF vacuum contactors, reversing contactor assemblies and contactor assemblies for star-delta (wye-delta) starting in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring; see Application Manual "SIRIUS Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820.

For more information see Preface, page 7.

SUVA-certified safety contactors

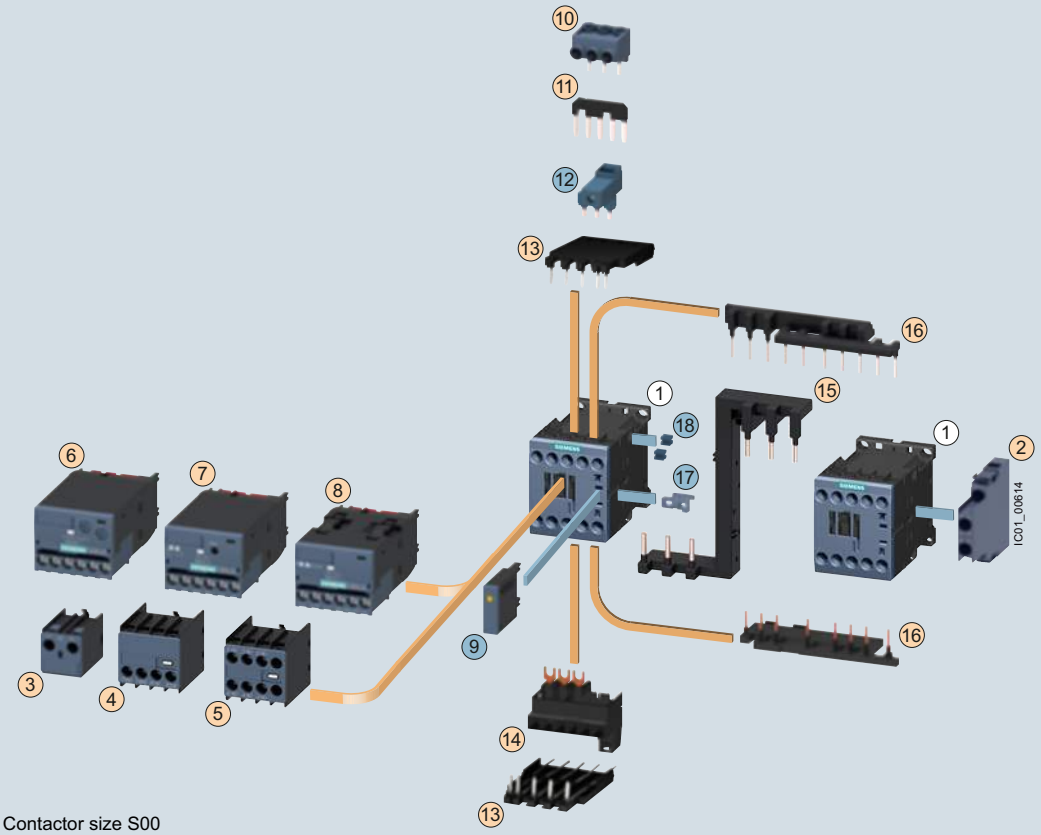
We offer special safety contactors for use in safety-related applications. They have NC contacts with mirror contact function and they have SUVA certification. This means they have non-removable auxiliary switch blocks and cannot be operated manually. They thus comply with all requirements for use in safety applications.

Overview

The SIRIUS family of controls

The SIRIUS modular system with its components for the switching, starting, protection and monitoring of motors and industrial systems stands for the fast, flexible and space-saving construction of control cabinets.

3RT2 contactors
Size S00 with mountable accessories



(1) Contactor size S00

(2) 2-pole auxiliary switch block, laterally mountable
(3) 1-pole auxiliary switch block, for snapping onto the front cable entry from the top
(4) 2-pole auxiliary switch block, for snapping onto the front cable entry from the bottom
(5) 4-pole auxiliary switch block, for snapping onto the front
(6) 3RA28 function module
(7) 3RA27 function module for AS-Interface, direct starting
(8) 3RA27 function module for IO-Link, direct starting
(9) Surge suppressor with/without LED
(10) Three-phase feeder terminal

(11) Star jumper, 3-pole, without connecting terminal
(12) Link for paralleling, 3-pole, with connecting terminal
(13) Solder pin adapter
(14) Connection module (adapter and connector) for contactors with screw-type connection
(15) Safety main current connector for two contactors

Assembly kit 3RA2913-2AA1
comprising:
(16) Wiring modules on the top and bottom for connecting the main, auxiliary and control current paths, electrical interlock [1] included (NC contact interlock), can be broken off (NC contact interlock)
(17) Mechanical interlocks [2]
(18) Two connecting clips for two contactors [2]

For contactors
For contactors and coupling contactors

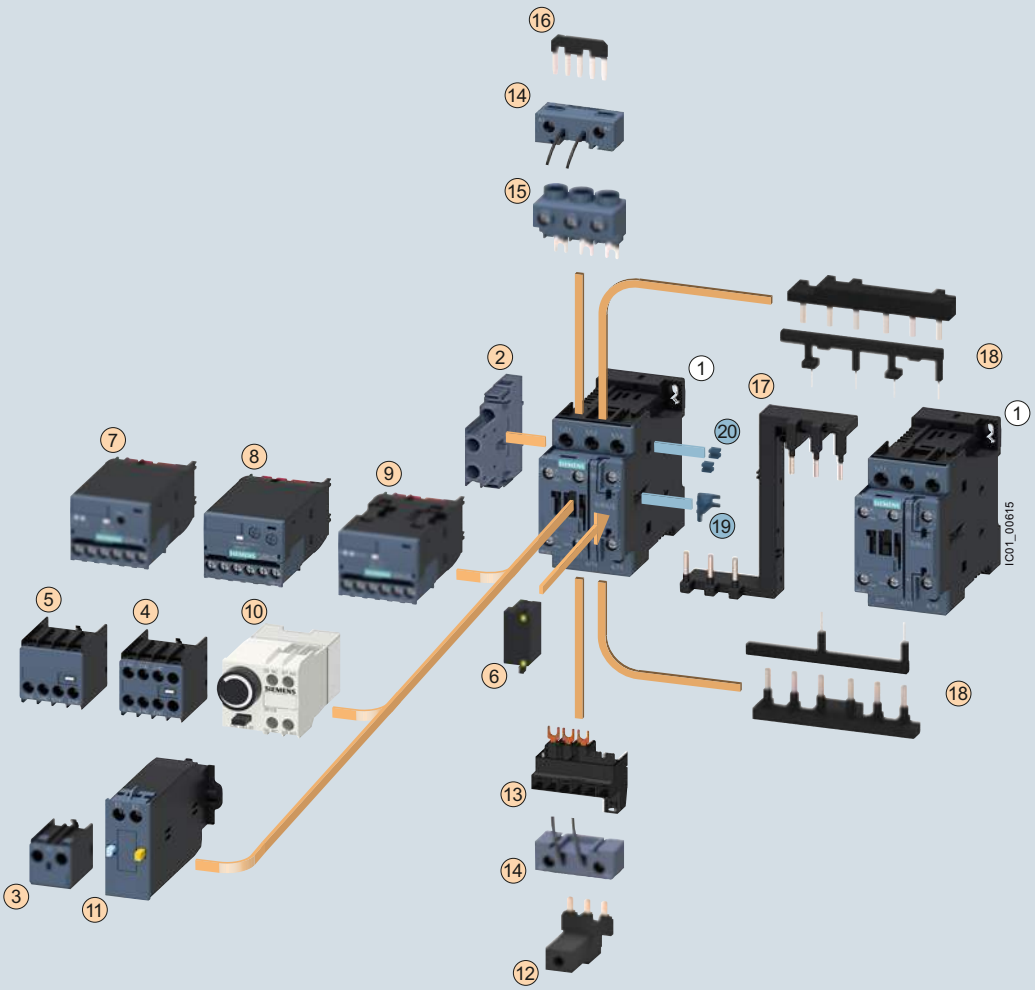
[1] 3RT201. contactors with one NC contact in the basic unit are required for the electrical interlock. An additional NO contact is required for momentary-contact operation.

[2] The parts (17) and (18) can only be ordered together as 3RA2912-2H mechanical connectors.

For accessories and spare parts, see pages 3/75 to 3/123.

General data

3RT2 contactors
Size S0 with mountable accessories



(1) Contactor size S0

(2) 2-pole auxiliary switch block, laterally mountable
(3) 1-pole auxiliary switch block, for snapping onto the front cable entry from the top
(4) 4-pole auxiliary switch block, for snapping onto the front
(5) 2-pole auxiliary switch block, for snapping onto the front cable entry from the bottom
(6) Surge suppressor with/without LED
(7) 3RA27 function module for AS-Interface, direct starting
(8) 3RA28 function module
(9) 3RA27 function module for IO-Link, direct starting
(10) Pneumatically delayed auxiliary switch block
(11) Mechanical latching block

(12) Link for paralleling, 3-pole, with connecting terminal
(13) Connection module (adapter and plug) for contactors with screw-type connection
(14) Coil terminal module, on the top and bottom
(15) Three-phase feeder terminal
(16) Link for paralleling (star jumper), 3-pole, without connecting terminal
(17) Safety main current connector for two contactors

Assembly kit 3RA2923-2AA1
comprising:

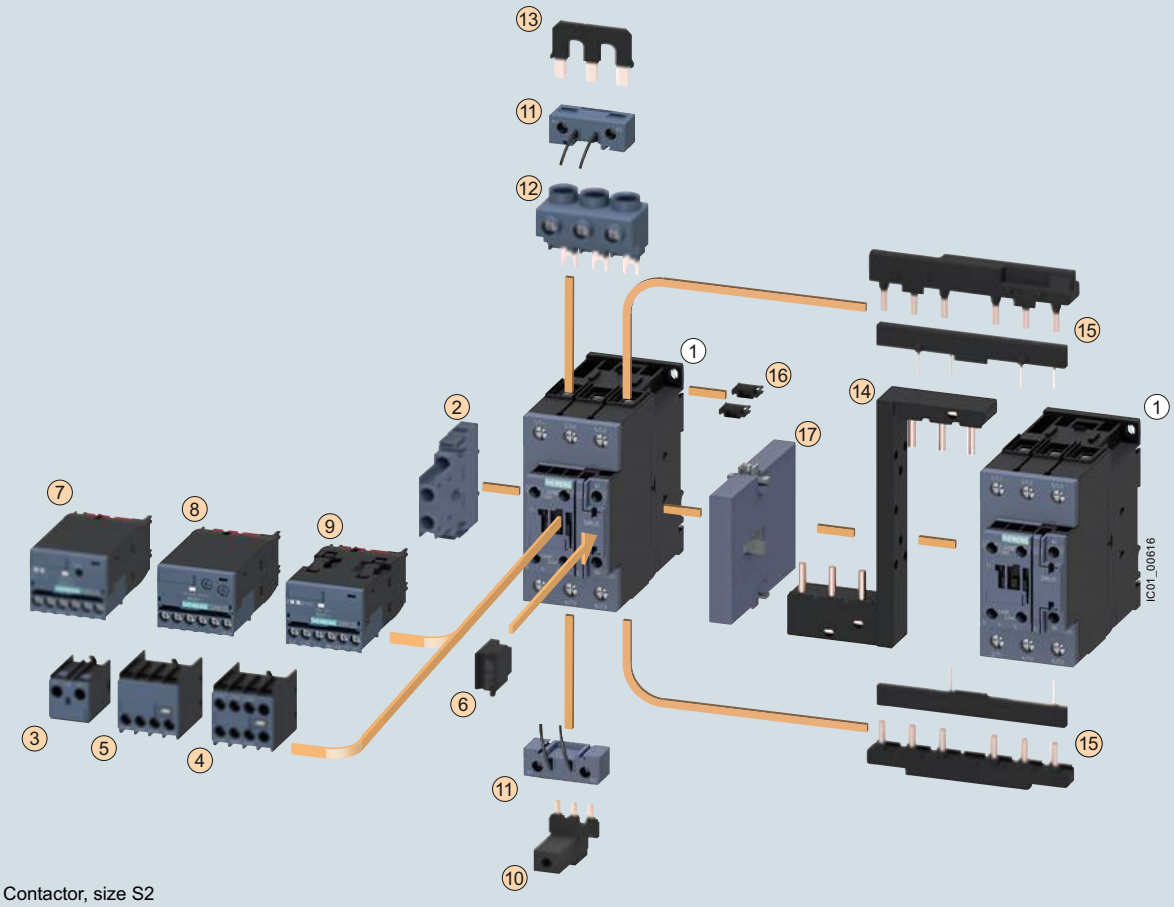
(18) Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included (NC contact interlock)
(19) Mechanical interlocks [1)]
(20) Two connecting clips for two contactors [1)]

For contactors
For contactors and coupling contactors

[1)] The parts (19) and (20) can only be ordered together as 3RA2912-2H mechanical connectors.

For accessories and spare parts, see pages 3/75 to 3/123.

3RT2 contactors
Size S2 with mountable accessories



① Contactor, size S2

② 2-pole auxiliary switch block, laterally mountable
③ 1-pole auxiliary switch block, for snapping onto the front, cable entry from above
④ 4-pole auxiliary switch block, for snapping onto the front
⑤ 2-pole auxiliary switch block, for snapping onto the front, cable entry from below
⑥ Surge suppressor with/without LED
⑦ 3RA27 function modules for AS-Interface, direct start
⑧ 3RA28 function modules
⑨ 3RA27 function modules for IO-Link, direct start
⑩ Link for paralleling, 3-pole, with connection terminal
⑪ Coil terminal module, top and bottom
⑫ Three-phase feeder terminal
⑬ Link for paralleling (star jumper), 3-pole, without connection terminal
⑭ Safety main current connector for two contactors

Assembly kit 3RA2933-2AA1 comprising:

⑮ Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included (NC contact interlock)
⑯ Two connecting clips for two contactors

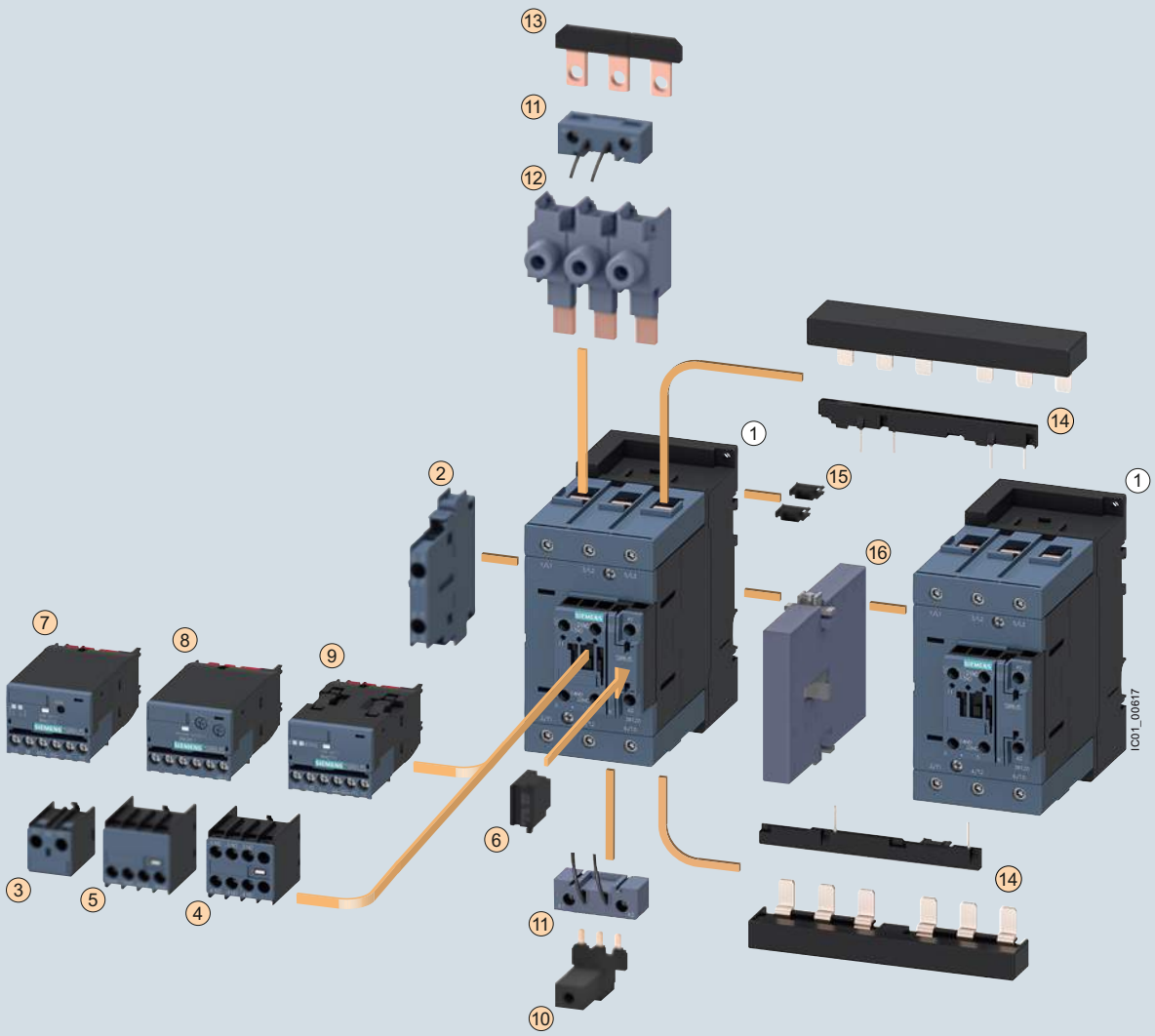
To be ordered separately:

⑰ Mechanical interlocks

For accessories and spare parts, see pages 3/75 to 3/123.

General data

3RT2 contactors
Size S3 with mountable accessories



(1) Contactor, size S3

(2) 2-pole auxiliary switch block, laterally mountable
(3) 1-pole auxiliary switch block, for snapping onto the front, cable entry from above
(4) 4-pole auxiliary switch block, for snapping onto the front
(5) 2-pole auxiliary switch block, for snapping onto the front, cable entry from below
(6) Surge suppressor with/without LED
(7) 3RA27 function modules for AS-Interface, direct-on-line starting
(8) 3RA28 function modules
(9) 3RA27 function modules for IO-Link, direct-on-line starting
(10) Links for paralleling, 3-pole, with connection terminal
(11) Coil terminal module, top and bottom
(12) Single-phase infeed terminals (3 units)
(13) Links for paralleling (star jumper), 3-pole without connecting terminal

Assembly kit 3RA2943-2AA1 comprising:

(14) Wiring modules on the top and bottom for connecting the main, auxiliary and control current paths, electrical interlock[1)] included (NC contact interlock), can be broken off (NC contact interlock)
(15) Two connectors for two contactors

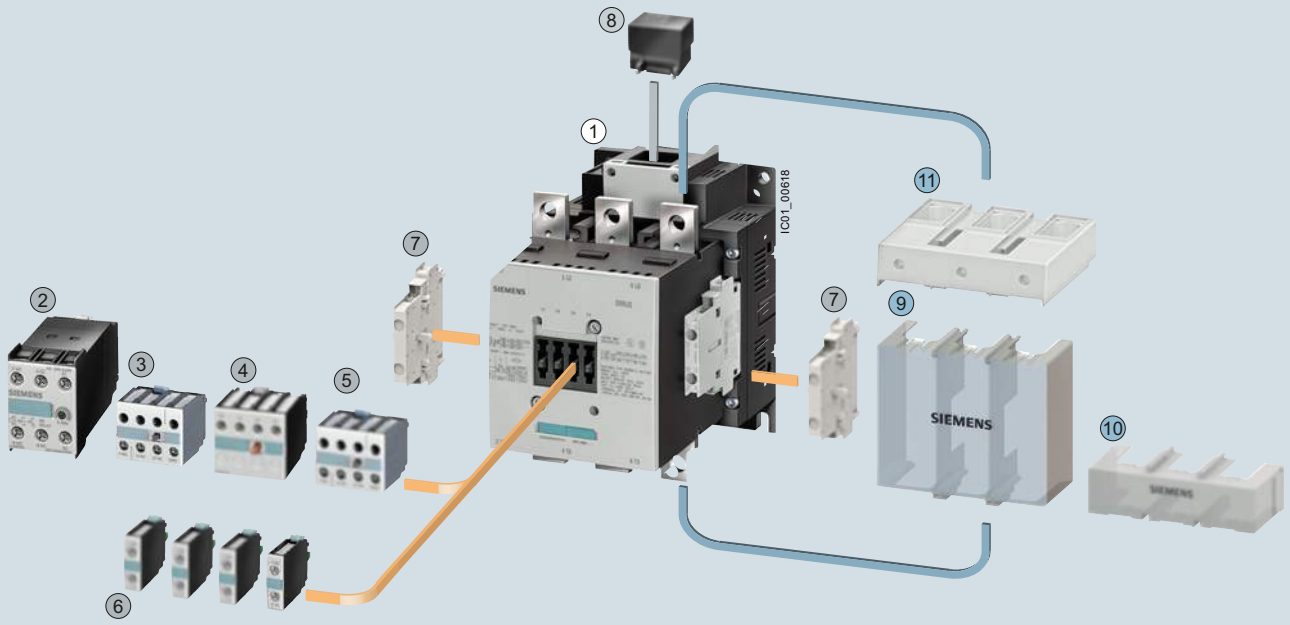
To be ordered separately:

(16) Mechanical interlock

[1)] 3RT201. contactors with one NC contact in the basic unit are required for the electrical interlock. An additional NO contact is required for momentary-contact operation.

For accessories and spare parts, see pages 3/75 to 3/123.

3RT1 contactors
Sizes S6 to S12 with mountable accessories
(illustration for basic unit)



(1) 3RT10 and 3RT14 air-break contactor, sizes S6, S10 and S12

(2) Auxiliary switch block, solid-state time-delay (ON or OFF-delay or Star-delta (wye-delta) starting)
(3) 4-pole auxiliary switch block
(4) 2-pole auxiliary switch block, cable entry from above
(5) 2-pole auxiliary switch block, cable entry from below
(6) 1-pole auxiliary switch block (up to 4 can be snapped on)
(7) 2-pole auxiliary switch block, laterally mountable left or right
(8) Surge suppressor (RC element) for plugging into top of withdrawable coil

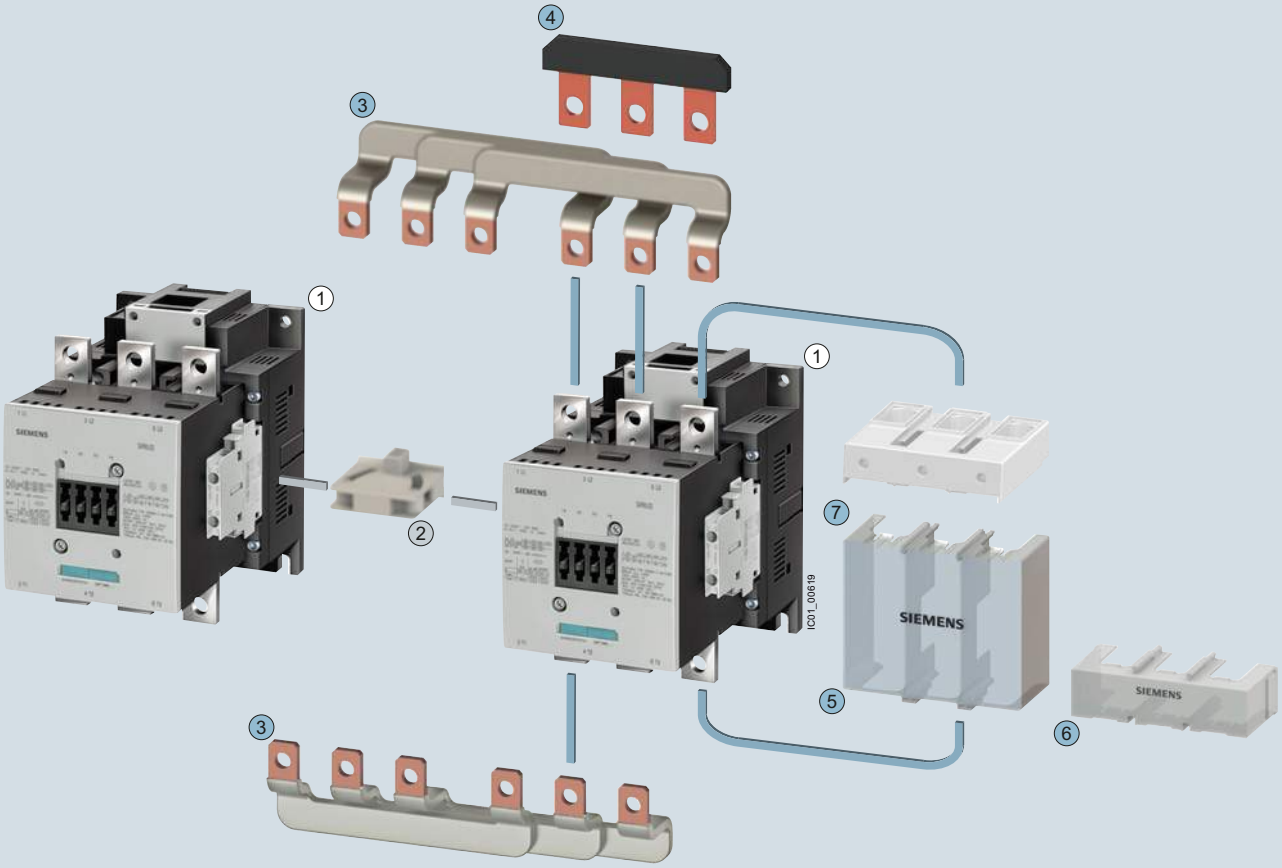
(9) Terminal cover for cable lug and busbar connection
(10) Terminal cover for box terminal
(11) Box terminal block

Accessories identical for sizes S6 to S12
Different accessories for sizes S6 and S10/S12

For accessories and spare parts, see pages 3/75 to 3/123.

General data

Contactor assemblies, 3RT1 contactors
Size S6 with mountable accessories



(1) 3RT10 and 3RT14 air-break contactor, size S6

(2) Mechanical interlock, laterally mountable
(3) Individual wiring modules on the top and bottom
(4) Star jumper (links for paralleling), 3-pole, with through-hole
(5) Terminal cover for cable lugs and busbar connection
(6) Terminal cover for box terminal
(7) Box terminal block

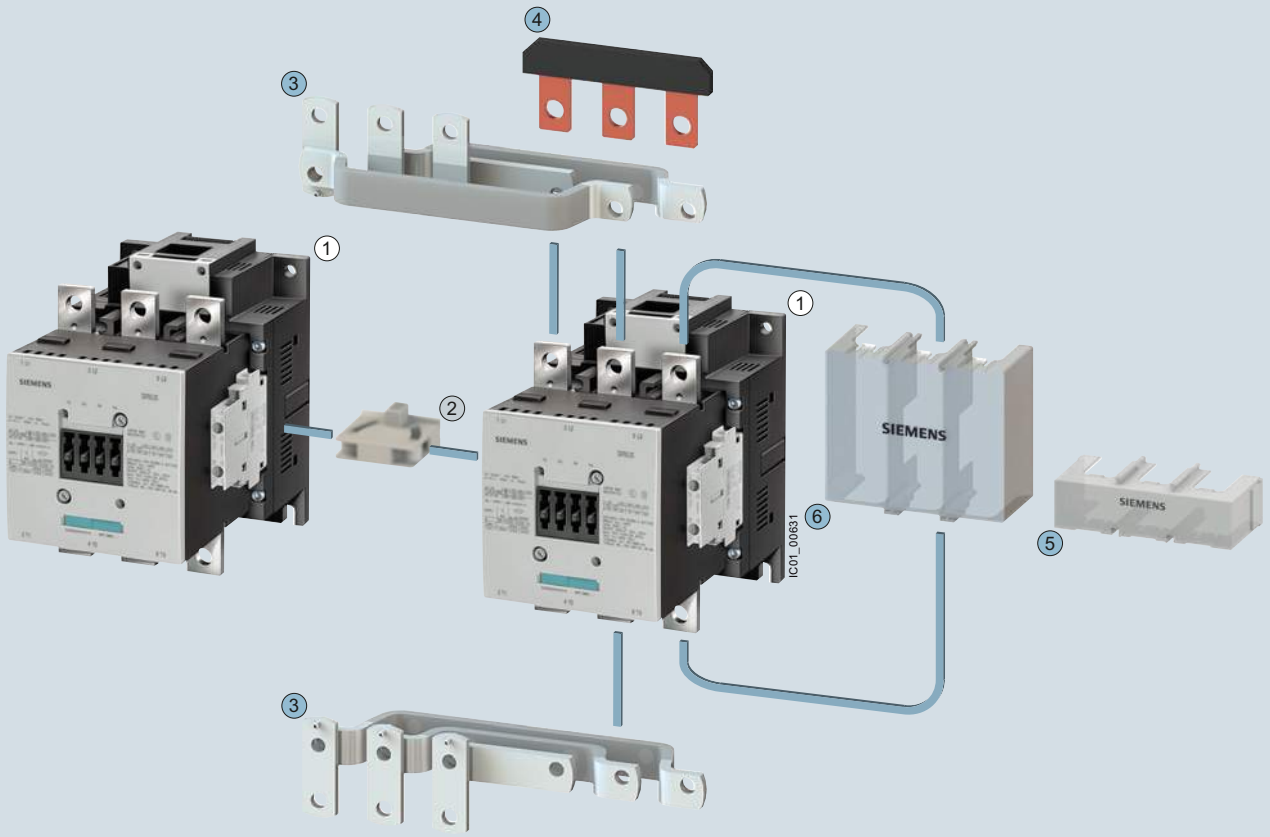
Accessories identical for sizes S6 to S12
Different accessories for sizes S6 and S10/S12

For accessories and spare parts, see pages 3/75 to 3/123.

For contactor assemblies for customer assembly from 3RT1 contactors, see

- For reversing contactor assemblies, pages 3/167 to 3/169
- For star-delta (wye-delta) assemblies, pages 3/184 to 3/189.

Contactor assemblies, 3RT1 contactors
Sizes S6 to S12 with mountable accessories



1 3RT10 and 3RT14 air-break contactor, sizes S6, S10 and S12 or 3RT12 vacuum contactor, sizes S10 and S12

2 Mechanical interlock, laterally mountable
3 Individual wiring modules on the top and bottom
4 Star jumper (link for paralleling), 3-pole, with through-hole, 3RT1956-4BA31
5 Terminal cover for box terminal
6 Terminal cover for cable lug and busbar connection

Accessories identical for sizes S6 to S12
Different accessories for sizes S6 and S10/S12

For accessories and spare parts for

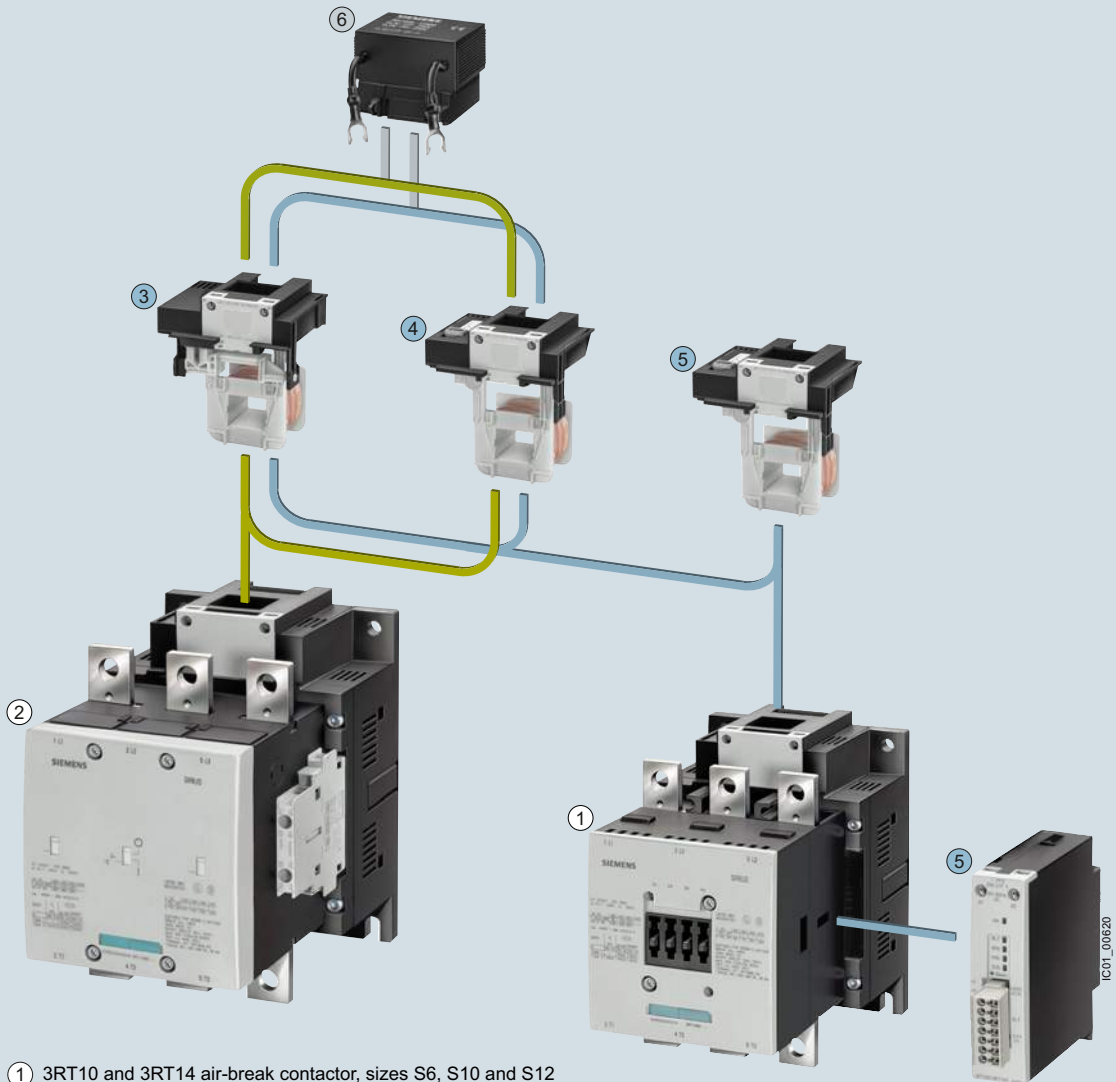
- 3RT10 and 3RT14 contactors, see pages 3/75 to 3/123
- 3RT12 vacuum contactors, see pages 3/137 to 3/140

For contactor assemblies for customer assembly from 3RT1 contactors, see

- For reversing contactor assemblies, pages 3/167 to 3/169
- For star-delta (wye-delta) assemblies, pages 3/184 to 3/189.

General data

3RT1 contactors
Sizes S6 to S12 with mountable accessories



(1) 3RT10 and 3RT14 air-break contactor, sizes S6, S10 and S12
(3RT1054, size S6 shown here)

(2) 3RT12 vacuum contactor, sizes S10 and S12
(3RT1266, size S10 shown here)

(3) Withdrawable coils for 3RT1...-.**A**... contactors with conventional operating mechanism
(size S10: differentiation between 3RT10/3RT14 air-break contactors and
3RT12 vacuum contactors)
(size S12: the same for air-break and vacuum contactors)

(4) Withdrawable coils for 3RT1...-.**N**... contactors with solid-state operating mechanism.
(size S10: differentiation between 3RT10/3RT14 air-break contactors and
3RT12 vacuum contactors)
(size S12: the same for air-break and vacuum contactors)

(5) Withdrawable coils and laterally mountable module (plug-on) for 3RT1...-.**P**... air-break contactors with solid-state operating mechanism and remaining lifetime indicator

(6) Surge suppressor (RC element), plug-mountable on withdrawable coils
- 3RT1...-.**A**... with conventional operating mechanism
- 3RT1...-.**N**... with solid-state operating mechanism

◯ Same accessories for sizes S6 to S12
◯ Different accessories depending on size

For accessories and spare parts for

- 3RT10 and 3RT14 contactors, see pages 3/75 to 3/123
- 3RT12 vacuum contactors, see pages 3/137 to 3/140

Overview

Version	Size	Ratings of three-phase motors at 50 Hz and 400 V kW	Connection methods: Screw terminals	Connection methods: Spring-type terminals	Type	Page
Power contactors for switching motors						
AC operation						
Basic unit	S00	3 ... 7.5	✓	✓	3RT201.-.A.0.	3/51
• With permanently mounted auxiliary switch block (SUVA-certified safety contactor)			✓	✓	3RT201.-..P04-3MA0	3/52
Basic unit	S0	4 ... 18.5	✓	✓	3RT202.-.A.00	3/53
• With removable mounted auxiliary switch block			✓	✓	3RT202.-.A.04	3/54
• With permanently mounted auxiliary switch block (SUVA-certified safety contactor)			✓	✓	3RT202.-.CL24-3MA0	3/54
Basic unit	S2	18.5 ... 37	✓	✓	3RT203.-.A.00	3/55
• With removable mounted auxiliary switch block			✓	--	3RT203.-1A.04	3/55
• With permanently mounted auxiliary switch block			✓	✓	3RT203.-.CL24-3MA0	3/55
Basic unit	S3	37 ... 55	✓	✓	3RT204.-.A.00	3/56
• With removable mounted auxiliary switch block			✓	--	3RT204.-1A.04	3/56
• With permanently mounted auxiliary switch block			✓	--	3RT204.-1CL24-3MA0	3/56
DC operation						
Basic unit	S00	3 ... 7.5	✓	✓	3RT201.-.B.4.	3/57
• With integrated coil circuit (diode)			✓	✓	3RT201.-.FB4.	3/57
• With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and integrated coil circuit (diode)			✓	✓	3RT201.-..B44-3MA0	3/58
• With voltage tap-off			✓	✓	3RT201.-.BB4.-0CC0	3/58
Basic unit	S0	4 ... 18.5	✓	✓	3RT202.-.B.40	3/61
• With coil circuit plugged into front (diode assembly)			✓	✓	3RT202.-.FB40	3/61
• With removable mounted auxiliary switch block			✓	✓	3RT202.-.BB44	3/61
• With permanently mounted auxiliary switch block (SUVA-certified safety contactor)			✓	✓	3RT202.-..B44-3MA0	3/62
• With voltage tap-off			✓	✓	3RT202.-.BB40-0CC0	3/62
DC operation for direct control from the PLC (coupling relays)						
Basic unit with and without integrated coil circuit	S00	3 ... 5.5	✓	✓	3RT201.-..B4.	3/59, 3/60
Basic unit with integrated coil circuit	S0	4 ... 15	✓	✓	3RT202.-.KB40	3/63
Basic unit with integrated coil circuit	S2	18.5 ... 37	✓	✓	3RT203.-.KB40	3/64
Basic unit with integrated coil circuit	S3	37 and 45	✓	✓	3RT204.-.KB40	3/64
AC/DC operation (50/60 Hz AC and DC)						
Basic unit with integrated coil circuit	S0	5.5 ... 18.5	✓	✓	3RT202.-.N.30	3/65
Basic unit with integrated coil circuit	S2	18.5 ... 37	✓	✓	3RT203.-.N.30	3/66
• With removable mounted auxiliary switch block			✓	--	3RT203.-1N.34	3/66
• With permanently mounted auxiliary switch block			✓	✓	3RT203.-.NB34-3MA0	3/67
• With voltage tap-off			✓	✓	3RT203.-.NB30-0CC0	3/67
Basic unit with integrated coil circuit	S3	37 ... 55	✓	✓	3RT204.-.N.30	3/68
• With removable mounted auxiliary switch block			✓	--	3RT204.-1N.34	3/68
• With permanently mounted auxiliary switch block			✓	✓	3RT204.-.NB34-3MA0	3/69
• With voltage tap-off			✓	✓	3RT204.-.NB30-0CC0	3/69
Basic unit						
• Conventional operating mechanism	S6 ... S12	55 ... 250	✓[1)]	✓	3RT10..-.A.36	3/70
• Solid-state operating mechanism						
- With 24 V DC control signal input, e.g. for control by PLC			✓[1)]	✓	3RT10..-.N.36	3/71
- With 24 V DC control signal input · with indication of remaining lifetime (RLT), e.g. for control by PLC			✓[1)]	--	3RT10..-.P.35	3/72

-- Version not possible

✓ Version possible

[1)] Screw terminal optionally with box terminals or with busbar connections.

SIRIUS 3RT contactors, 3-pole up to 250 kW

Contactors with screw terminals: 3RT2 (sizes S00 to S3) and 3RT1 (sizes S6 to S12)

3RT contactors, sizes S00 to S12

Our power range:

- Contactors for switching motors:
  - Size S00: 3RT201 up to 7.5 kW
  - Size S0: 3RT202 up to 18.5 kW
  - Size S2: 3RT203 up to 37 kW
  - Size S3: 3RT204 up to 55 kW
  - Sizes S6 to S12: 3RT10 up to 250 kW
- For vacuum contactors for switching motors, see page 3/124 onwards:
  - Sizes S10 and S12: 3RT12 up to 250 kW
  - Size 14: 3TF6 up to 450 kW

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1 (auxiliary switches)

3RT contactors

The 3RT contactors are climate-proof and are suitable and tested for use worldwide.

If the devices are used in ambient conditions which deviate from common industrial conditions (IEC 60721-3-3 "Stationary Use, Weather-Protected"), information must be obtained about possible restrictions with regard to the reliability and endurance of the device and possible protective measures. In this case contact our Technical Assistance,
Tel.: +49 (911) 895-5900
E-mail: technical-assistance@siemens.com

Auxiliary contact complement

- Size S00: an auxiliary contact is integrated in the basic device.
- Sizes S0 to S3: the basic units contain two integrated auxiliary contacts (1 NO + 1 NC).
  All basic units, with the exception of coupling relays, can be expanded using auxiliary switch blocks; see page 3/87 for the permitted selection of auxiliary switches.
- Sizes S6 to S12: These contactors are supplied with two laterally mounted auxiliary switch blocks. The fitting of auxiliary switches is possible on the front and on the side (the 3RT12 vacuum contactor is an exception: only lateral fitting of auxiliary switches is possible here).

For detailed information about fitting of auxiliary switches, see pages 3/87 to 3/92.

Contact reliability

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT contactors or 3RH contactor relays should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Connection methods

Main circuit

- Sizes S00 and S0: screw or spring-type terminals, spring-type terminals with convenient plug-in design for device connectors
- Size S2: Screw terminals
- Sizes S3 to S12: screw terminals with or without box terminal; with the box terminal removed: connection with busbar or cable lugs on the device connecting bar possible

Auxiliary circuit

- Sizes S00 to S12: Screw or spring-type terminals

Electromagnetic compatibility (EMC)

The 3RT contactors fulfill the requirements for environment category A.

Note:

When the contactors are used in an environment with frequency converters, the information in the manuals must be observed. See "More information" on page 3/19.

Short-circuit protection

For short-circuit protection of contactors without overload relays, see "Technical specifications":

- For 3RT2 contactors, see pages 3/24, 3/30, 3/34 and 3/39
- For 3RT1 contactors, see page 3/44

Refer to the manuals for details of short-circuit protection of the contactors with overload relays; see "More information" on page 3/19.

For fuseless assembly of motor feeders consisting of 3RV2 motor starter protector and 3RT2 contactor, selection guides are available; see "SIRIUS 3RA2 load feeders" from page 8/4 onwards.

Motor protection

3RT2 contactors

For protection against overload, 3RU2 thermal overload relays (see page 7/84 onwards) or 3RB3 electronic overload relays (see page 7/97 onwards) can be mounted on the 3RT2 contactors.

3RT1 contactors

For protection against overload, 3RB2 electronic overload relays (see page 7/109 onwards) can be mounted on the 3RT1 contactors.

Plant and application monitoring

For monitoring and measuring in the application, 3RR2 monitoring relays can be mounted on the 3RT2 contactors (see page 10/62).

Ratings of three-phase motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

The power rating specifications of the contactors in kW (in accordance with IEC 60947-4-1, Table G) are guide values for 4-pole standard motors at 50 Hz AC and specified voltage (e. g. 400 V). The actual starting and rated data of the motor to be switched must be considered when selecting the units.

Surge suppression

3RT contactors supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (assembly of diode and Zener diode for short break times) for damping opening surges in the coil. See page 3/103.

- Size S00: the surge suppressors are plugged onto the front of the contactors here. Space is provided for them next to a snap-on auxiliary switch block.
- Sizes S0 and S3: the surge suppressors can be plugged onto the front of the devices. In the case of size S3 contactors, surge suppressors can only be used as from product version E03.
- Sizes S6 to S12: Withdrawable coils with integrated coil switch (varistor)

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (for details, see the relevant manual → "More information" on page 3/19).

Contactors with voltage tap-off

Sizes S00 to S3

The S00 to S3 contactors with voltage tap-off are special versions for mounting the SIRIUS function modules for connection to the control system through IO-Link or AS-Interface (see page 3/79 onwards).

Without a function module, these contactors can be used like the standard versions.

For more information on IO-Link and AS-Interface see "Industrial Communication" from page 2/1 onwards.

Control supply voltage

Different versions of operating mechanisms are available depending on the contactor size:

- AC or DC operation for sizes S00 to S3
- AC/DC operating mechanism for sizes S0 to S12 that can operate on AC (50 to 60 Hz) or DC.

Operating mechanism types

Sizes S6 to S12

Two types of solenoid operation are available:

- Conventional operating mechanisms
- Solid-state operating mechanisms
  - The operating mechanism for the contactors features solid-state control of the contactor coil. Overvoltage damping of the operating mechanism coil is already integrated in the electronics. The operating mechanisms are powered via a supply voltage with an operating range from 0.7 to 1.25 x U_s, optionally also controlled depending on the chosen mode of operation. Alternatively, control is via the separate 24 V DC control signal input. Various rated voltage ranges for AC/DC control are available.
  - This version is additionally available with a 24 V DC PLC relay output and a remaining lifetime indicator (RLT).

Solenoid coils

- Sizes S0 to S3: coil replacement is possible.
- As from size S6: For simple coil replacement, e. g. if the application is replaced, the solenoid coil can be pulled out upwards after the release mechanism has been actuated and can be replaced by any other coil of the same size.

SIRIUS 3RT contactors, 3-pole up to 250 kW

Article No. scheme

Product versions		Article number
SIRIUS power contactors		**3RT2** □ □ □ – □ □ □ □ □ – □ □ □ □
Device type	e. g. 0 = 3-pole motor contactor	□
Size of the contactor	e. g. 4 = S3	□
Power dependent on size	e. g. 5 = 37 kW in the case of S3	□
Type of electrical connection	e. g. 1 = screw terminals (main and auxiliary circuits)	□
Operating range / solenoid coil circuit	e.g. A = AC standard / without coil circuit	□
Rated control supply voltage	e.g. P0 = 230 V AC, 50 Hz	□ □
Auxiliary switches	e. g. 0 = in the case of S3: 1 NO + 1 NC integrated	□
Special version		□ □ □ □
Example		**3RT2 0 4 5 – 1 A P 0 0**

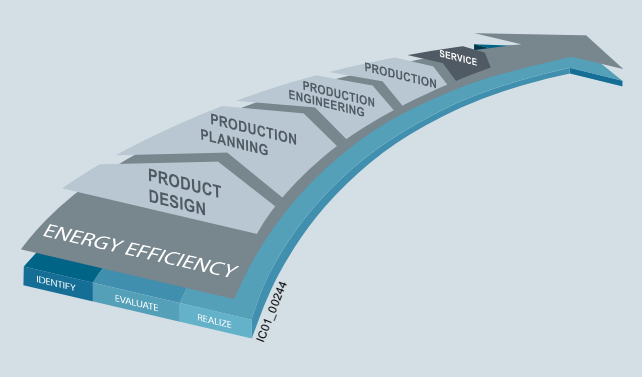
Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see www.siemens.com/sirius/energysaving).

3RT2 contactors contribute to energy efficiency throughout the plant as follows:

- AC/DC coils with electrical control for reduced power consumption when closing and in the closed state
- Smaller power supply units in the control circuit due to low holding power at 24 V DC
- Reduced heating of control cabinet:
  Technology-reduced inherent power loss of the contactors, resulting in lower cooling costs and a more compact design

Technical specifications

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16134/td

FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16134/faq

Manuals, see

- System Manual "SIRIUS – System Overview", https://support.industry.siemens.com/cs/WW/en/view/60311318
- Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", https://support.industry.siemens.com/cs/WW/en/view/60306557
- Application Manual "SIRIUS Controls with IE3/IE4 motors, https://support.industry.siemens.com/cs/ww/en/view/94770820

Type			3RT20 contactors		3RT10
Size			S00 to S2	S3	S6 to S12
Rated data of the auxiliary contacts					
acc. to IEC 60947-5-1/EN 60947-5-1 Data applies to integrated auxiliary contacts and conventional contacts in the auxiliary switch blocks					
Rated insulation voltage U_i (pollution degree 3)		V	690	1 000 (3RT20. .-0CC0: 690)	--
• For laterally mountable auxiliary switch blocks		V	690	690	500
• For front mountable auxiliary switch blocks		V	690	690	690
Conventional thermal current I_{th} = Rated operational current I_e/AC-12		A	10		
AC load					
Rated operational current I_e/AC-15/AC-14					
• For rated operational voltage U_e	Up to 230 V	A	10[1]	6	6
	400 V	A	3		3
	500 V	A	2		2
	690 V	A	1		1[2]
DC load					
Rated operational current I_e/DC-12					
• For rated operational voltage U_e	24 V	A	10		10
	60 V	A	6		6
	110 V	A	3		3
	125 V	A	2		2
	220 V	A	1		1
	440 V	A	0.3		0.3
	600 V	A	0.15		0.15[2]
Rated operational current I_e/DC-13					
• For rated operational voltage U_e	24 V	A	10[1]		10[3]
	60 V	A	2		2
	110 V	A	1		1
	125 V	A	0.9		0.9
	220 V	A	0.3		0.3
	440 V	A	0.14		0.14
	600 V	A	0.1		0.15[2]
Contact reliability at 17 V, 1 mA according to IEC 60947-5-4/EN 60947-5-4			Frequency of contact faults < 10^{-8} i. e. < 1 fault per 100 million operating cycles		

1) 3RH22, 3RH29, 3RT2…-….4, 3RT2…-….6: I_e = 6 A at AC-15/AC-14 and DC-13.

2) For laterally mountable auxiliary switch blocks, only the rated operational voltages up to 500 V apply.

3) For laterally mountable auxiliary switch blocks, DC-13/at 24 V: Max. 6 A.

Type	3RT contactors
Size	S00 to S12

Contact endurance of the auxiliary contacts

It is assumed that the operating mechanisms are switched randomly, i. e. not synchronized with the phase angle of the supply system.

The contact endurance is mainly dependent on the breaking current.

Sizes S00 to S3

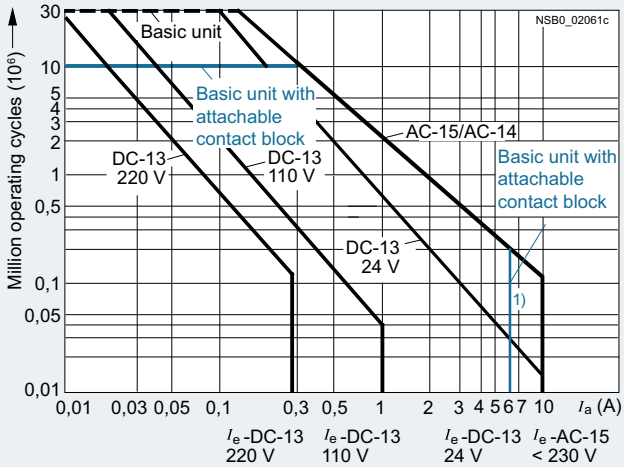


Diagram legend:
I_a = Breaking current
I_e = Rated operational current

The characteristic curves apply to:
- Integrated auxiliary contacts on 3RT20
- 3RH2911, 3RH2921 auxiliary switch blocks[1)]

Sizes S6 to S12

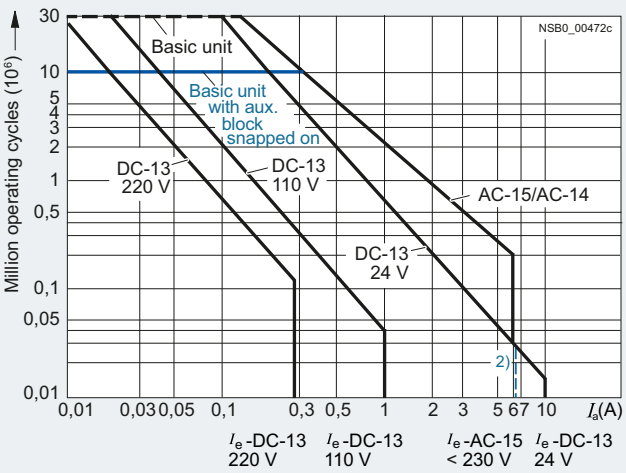


Diagram legend:
I_a = Breaking current
I_e = Rated operational current

The characteristic curves apply to:
- Integrated auxiliary contacts on 3RT10
- 3RH1911, 3RH1921 auxiliary switch blocks[3)]

1) 3RH22, 3RH29, 3RT2…-….4, 3RT2…-….6: I_e = 6 A at AC-15/AC-14 and DC-13, 3RT2.4: I_e = 6 A at AC-15/AC-14.

2) For laterally mountable auxiliary switch blocks, DC-13/at 24 V: Max. 6 A.

3) For laterally mountable auxiliary switch blocks, only the rated operational voltages up to 500 V apply.

Type	3RT2 contactors
Size	S00 and S0

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching resistive and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i. e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking 6 times the rated operational current) and is intended for a contact endurance of approximately 200 000 operating cycles.

If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

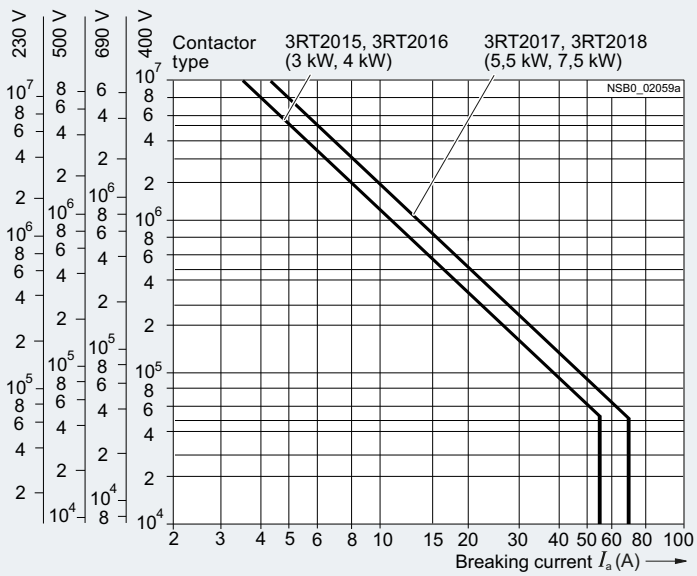
$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching (I_a = multiple of I_e) in operating cycles
- C Inching operations as a percentage of total switching operations

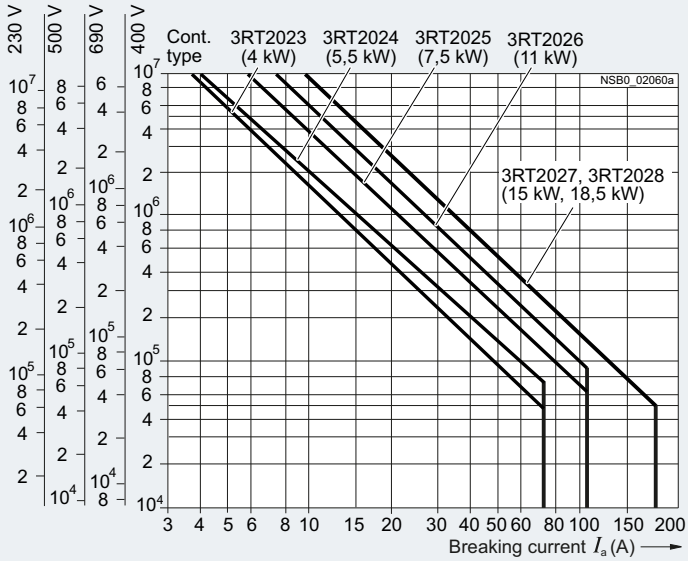
Size S00

Operating cycles at



Size S0

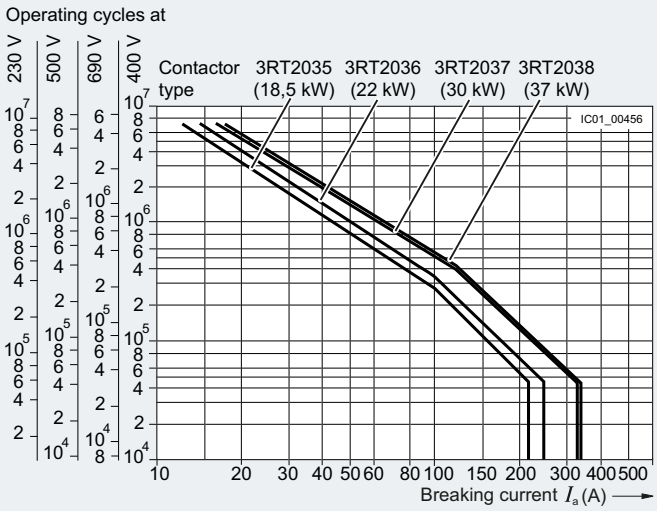
Operating cycles at



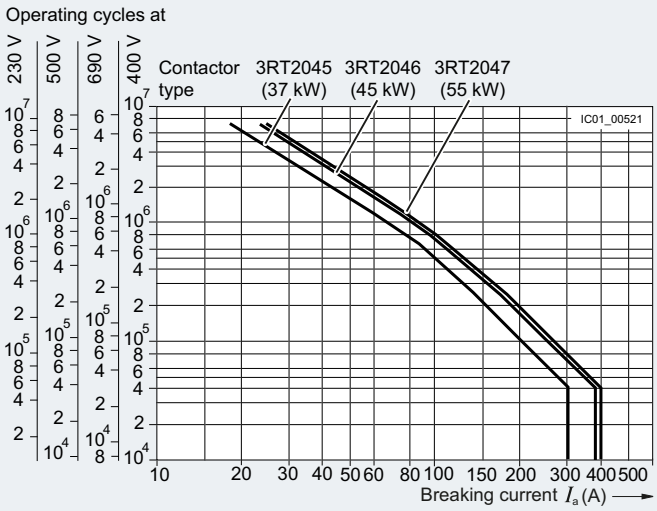
Type	3RT2 contactors
Size	S2 to S12

Contact endurance of the main contacts

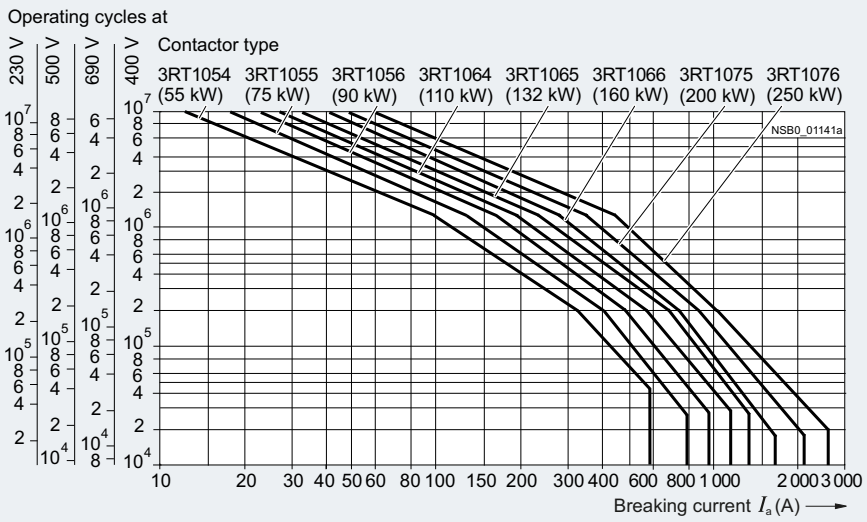
Size S2

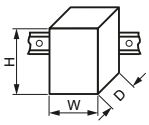
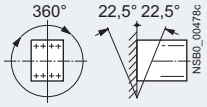


Size S3



Sizes S6 to S12



			Contactors	
Type			**3RT2015, 3RT2016**	**3RT2017, 3RT2018**
Size			**S00**	
General data				
Dimensions (W x H x D)				
• Basic unit				
- Screw terminals		mm	45 x 58 x 73	
- Spring-type terminals		mm	45 x 70 x 73	
• Basic unit with mounted auxiliary switch block				
- Screw terminals		mm	45 x 58 x 117	
- Spring-type terminals		mm	45 x 70 x 121	
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch block				
- Screw terminals		mm	45 x 58 x 147	
- Spring-type terminals		mm	45 x 70 x 147	
Permissible mounting position				
The contactors are designed for operation on a vertical mounting surface.				
Upright mounting position			Special version required	
Mechanical endurance				
• Basic unit		Operating cycles	30 million	
• Basic unit with mounted auxiliary switch block		Operating cycles	10 million	
• Basic unit with solid-state compatible auxiliary switch block		Operating cycles	5 million	
Electrical endurance			For contact endurance of the main contacts, see page 3/21.	
Rated insulation voltage U_i (pollution degree 3)		V	690	
Rated impulse withstand voltage U_{imp}		kV	6	
Protective separation between the coil and the main contacts according to IEC 60947-1, Appendix N		V	400	
Mirror contacts				
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.				
• 3RT2.1. (removable auxiliary switch block)			Yes, this applies to both the basic unit as well as to between the basic unit and the mounted auxiliary switch block acc. to IEC 60947-4-1, Appendix F	
• 3RH2919-.NF.. solid-state compatible auxiliary switch blocksNF..			Have no mirror contact for size S00	
Ambient temperature				
• During operation		°C	-25 ... +60	
• During storage		°C	-55 ... +80	
Degree of protection acc. to IEC 60529				
• On front			IP20 (screw terminals and spring-type terminals)	
• Connecting terminal			IP20 (screw terminals and spring-type terminals)	
Touch protection acc. to IEC 60529			Finger-safe (screw terminals and spring-type terminals)	
Shock resistance				
• Rectangular pulse				
- AC operation		*g*/ms	6.7/5 and 4.2/10	7.3/5 and 4.7/10
- DC operation		*g*/ms	6.7/5 and 4.2/10	7.3/5 and 4.7/10
• Sine pulse				
- AC operation		*g*/ms	10.5/5 and 6.6/10	11.4/5 and 7.3/10
- DC operation		*g*/ms	10.5/5 and 6.6/10	11.4/5 and 7.3/10

SIRIUS 3RT contactors, 3-pole up to 250 kW

			Contactors	
Type			3RT2015, 3RT2016	3RT2017, 3RT2018
Size			S00	
Short-circuit protection				
Main circuit				
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC 60947-4-1/EN 60947-4-1				
- Type of coordination "1"		A	35	50
- Type of coordination "2"		A	20	25
- Weld-free (test conditions according to IEC 60947-4-1)		A	10	
• Miniature circuit breaker (up to 230 V) with C characteristic Short-circuit current 1 kA, type of coordination "1"		A	10	
Auxiliary circuit				
Short-circuit test acc. to IEC 60947-5-1/EN 60947-5-1				
• With fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA		A	10	
• With 230 V miniature circuit breakers, C characteristic with short-circuit current I_k = 400 A		A	6	
Short-circuit protection for contactors with overload relays			See "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/39714188	
Short-circuit protection for fuseless load feeders			See 3RA2 load feeders on page 8/4 onwards	
Control				
Solenoid coil operating range				
• AC operation	50 Hz		0.8 ... 1.1 x U_s	
	60 Hz		0.85 ... 1.1 x U_s	
• DC operation	Up to 50 °C		0.8 ... 1.1 x U_s	
	Up to 60 °C		0.85 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)				
• AC operation, 50/60 Hz, standard version				
- Closing		VA	27/24.3	37/33
- P.f.			0.8/0.75	
- Closed		VA	4.2/3.3	5.7/4.4
- P.f.			0.25/0.25	
• AC operation, 50 Hz, for USA/Canada				
- Closing		VA	26.4	36
- P.f. for closing			0.81	0.8
- Closed		VA	4.4	5.9
- P.f. for closed			0.24	
• AC operation, 60 Hz, for USA/Canada				
- Closing		VA	31.7	43
- P.f. for closing			0.81	0.8
- Closed		VA	4.8	6.5
- P.f. for closed			0.25	
• DC operation (closing = closed)		W	4	
Permissible residual current of the electronics (with 0 signal)				
• AC operation			< 3 mA x (230 V/U_s)[1]	< 4 mA x (230 V/U_s)[1]
• DC operation			< 10 mA x (24 V/U_s)[1]	
Operating times at 1.0 x U_s[2]				
Total break time = Opening delay + Arcing time				
• AC operation				
- Closing delay		ms	9.5 ... 24	9 ... 22
- Opening delay		ms	4 ... 14	4.5 ... 15
• DC operation				
- Closing delay		ms	35 ... 50	
- Opening delay		ms	7 ... 12	
• Arcing time		ms	10 ... 15	

[1] The 3RT2916-1GA00 additional load module is recommended for higher residual currents, see page 3/118.

[2] The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assembly 2 to 6 times, suppressor diode +1 ms to 5 ms; varistor +2 ms to 5 ms).

			Coupling contactors		
Type			3RT201.-.HB4.	3RT201.-.JB4.	3RT201.-.KB4.
Size			S00		
Control					
Solenoid coil operating range			0.7 ... 1.25 x U_s		
Power consumption of the solenoid coils (for cold coil) Closing = Closed	At U_s 24 V DC	W	2.8		
Permissible residual current of the electronics (with 0 signal)			< 6 mA x (24 V/U_s)		
Upright mounting position			On request		
Overvoltage configuration of the solenoid coil			No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times					
• Closing delay					
- ON-delay NO		ms	35 ... 60		
- OFF-delay NC		ms	25 ... 40		
• Opening delay					
- ON-delay NO		ms	7 ... 20	38 ... 65	7 ... 20
- OFF-delay NC		ms	20 ... 30	55 ... 75	20 ... 30

			Coupling contactors		
Type			3RT201.-1MB4.-0KT0	3RT201.-1VB4.	3RT201.-1SB4.
Size			S00		
Control					
Solenoid coil operating range			0.85 ... 1.85 x U_s		
Power consumption of the solenoid coils (for cold coil) Closing = Closed	At U_s 24 V DC	W	1.6		
Permissible residual current, upright mounting position			On request		
Overvoltage configuration of the solenoid coil			No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times					
• Closing delay					
- ON-delay NO		ms	25 ... 90		
- OFF-delay NC		ms	15 ... 80		
• Opening delay					
- ON-delay NO		ms	5 ... 20	20 ... 80	5 ... 20
- OFF-delay NC		ms	10 ... 30	30 ... 90	10 ... 30

SIRIUS 3RT contactors, 3-pole up to 250 kW

			Contactors			
Type			3RT2015	3RT2016	3RT2017	3RT2018
Size			S00			
Rated data of the main contacts						
Load rating with AC						
Utilization category AC-1, switching resistive loads						
• Rated operational currents I_e	At 40 °C up to 690 V	A	18	22		
	At 60 °C up to 690 V	A	16	20		
• Rated power for AC loads[1] P.f = 0.95 (at 60 °C)	230 V	kW	6	7.5		
	400 V	kW	10.5	13		
	690 V	kW	18	22		
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm^2	2.5	4		
	At 60 °C	mm^2	2.5			
Utilization categories AC-2 and AC-3						
• Rated operational currents I_e	Up to 400 V	A	7	9	12	16
	440 V	A	7	9	11	14
	500 V	A	6	7.7	9.2	12.4
	690 V	A	4.9	6.7		8.9
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	1.5	2.2	3	4
	400 V	kW	3	4	5.5	7.5
	690 V	kW	4	5.5		7.5
Thermal load capacity	10 s current	A	56	72	96	128
Power loss per conducting path	At I_e/AC-3	W	0.42	0.7	1.24	2.2
Utilization category AC-4 (at $I_a = 6 \times I_e$)[2]						
• Maximum values						
- Rated operational current I_e	Up to 400 V	A	6.5	8.5		11.5
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	Up to 400 V	kW	3	4		5.5
• The following applies to a contact endurance of about 200 000 operating cycles:						
- Rated operational currents I_e	Up to 400 V	A	2.6	4.1		5.5
	690 V	A	1.8	3.3		4.4
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 230 V	kW	0.67	1.1		1.5
	400 V	kW	1.15	2		2.5
	690 V	kW	1.15	2.5		3.5

1) Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

2) The data applies to 3RT2516 and 3RT2517 contactors (2 NO + 2 NC) up to a rated operational voltage of 400 V only.

Type				Contactors 3RT2015	3RT2016 to 3RT2018
Size				S00	
Rated data of main contacts (continued)					
Load rating with DC					
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)					
• Rated operational currents I_e (at 60 °C)					
- 1 conducting path	Up to 24 V	A		15	20
	60 V	A		15	20
	110 V	A		1.5	2.1
	220 V	A		0.6	0.8
	440 V	A		0.42	0.6
	600 V	A		0.42	0.6
- 2 conducting paths in series	Up to 24 V	A		15	20
	60 V	A		15	20
	110 V	A		8.4	12
	220 V	A		1.2	1.6
	440 V	A		0.6	0.8
	600 V	A		0.5	0.7
- 3 conducting paths in series	Up to 24 V	A		15	20
	60 V	A		15	20
	110 V	A		15	20
	220 V	A		15	20
	440 V	A		0.9	1.3
	600 V	A		0.7	1
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)					
• Rated operational currents I_e (at 60 °C)					
- 1 conducting path	Up to 24 V	A		15	20
	60 V	A		0.35	0.5
	110 V	A		0.1	0.15
	220 V	A		--	
	440 V	A		--	
	600 V	A		--	
- 2 conducting paths in series	Up to 24 V	A		15	20
	60 V	A		3.5	5
	110 V	A		0.25	0.35
	220 V	A		--	
	440 V	A		--	
	600 V	A		--	
- 3 conducting paths in series	Up to 24 V	A		15	20
	60 V	A		15	20
	110 V	A		15	20
	220 V	A		1.2	1.5
	440 V	A		0.14	0.2
	600 V	A		0.14	0.2
Switching frequency					
Switching frequency *z* in operating cycles/hour					
Contactors without overload relays					
• No-load switching frequency	AC/DC		h^{-1}	10 000	
• Switching frequency *z* during rated operation[1)]					
- I_e/AC-1	At 400 V		h^{-1}	1 000	
- I_e/AC-2	At 400 V		h^{-1}	750	
- I_e/AC-3	At 400 V		h^{-1}	750	
- I_e/AC-4	At 400 V		h^{-1}	250	
Contactors with overload relays					
• Mean value			h^{-1}	15	

[1)] Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*: $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

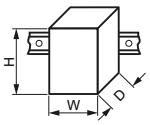
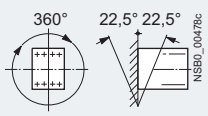
SIRIUS 3RT contactors, 3-pole up to 250 kW

		Contactors
Type		3RT2015 to 3RT2018
Size		S00
Conductor cross-sections		
Main conductors, auxiliary conductors and coil terminals (1 or 2 conductors can be connected)		**Screw terminals**
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]; max. 2 x 4
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]; 2 x 12
• Terminal screw		M3 (for Pozidriv size 2; ∅ 5 ... 6)
• Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)
Main conductors, auxiliary conductors and coil terminals[2] (1 or 2 conductors can be connected)		**Spring-type terminals**
• Operating devices[3]	mm	3.0 x 0.5
• Solid or stranded	mm^2	2 x (0.5 ... 4)
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 2.5)
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 12)
Auxiliary conductors for front and laterally mounted auxiliary switches[2] (1 or 2 conductors can be connected)		
• Operating devices[3]	mm	3.0 x 0.5
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)

1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

2) Max. external diameter of the cable insulation: 3.6 mm. On spring-type terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop must be used, see page 3/119.

3) Tool for opening the spring-type terminals, see page 3/119.

		Contactors	
Type		3RT2023 to 3RT2025	3RT2026 to 3RT2028
Size		S0	
General data			
Dimensions (W x H x D)			
AC operation			
• Basic unit			
- Screw terminals	mm	45 x 85 x 97	
- Spring-type terminals	mm	45 x 102 x 97	
• Basic unit with mounted auxiliary switch block			
- Screw terminals	mm	45 x 85 x 141	
- Spring-type terminals	mm	45 x 102 x 145	
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch block			
- Screw terminals	mm	45 x 85 x 171	
- Spring-type terminals	mm	45 x 102 x 171	
DC operation			
• Basic unit			
- Screw terminals	mm	45 x 85 x 107	
- Spring-type terminals	mm	45 x 102 x 107	
• Basic unit with mounted auxiliary switch block			
- Screw terminals	mm	45 x 85 x 151	
- Spring-type terminals	mm	45 x 102 x 155	
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch block			
- Screw terminals	mm	45 x 85 x 181	
- Spring-type terminals	mm	45 x 102 x 181	
Permissible mounting position			
The contactors are designed for operation on a vertical mounting surface.			
Upright mounting position		 Special version required, also applies to 3RT202.-. coupling contactors K.40	
Mechanical endurance			
• Basic unit and basic unit with mounted auxiliary switch block	Operating cycles	10 million	
• Basic unit with solid-state compatible auxiliary switch block	Operating cycles	5 million	
Electrical endurance		For contact endurance of the main contacts, see page 3/21.	
Rated insulation voltage U_i (pollution degree 3)	V	690	
Rated impulse withstand voltage U_{imp}	kV	6	
Protective separation between the coil and the main contacts (according to IEC 60947-1, Appendix N)	V	400	
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			
• Integrated auxiliary switches		Yes, acc. to IEC 60947-4-1, Appendix F	
• 3RT2.2. (removable auxiliary switch block)		Yes, acc. to IEC 60947-4-1, Appendix F	
Permissible ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-55 ... +80	
Degree of protection acc. to IEC 60529			
• On front		IP20 (screw terminals and spring-type terminals)	
• Connecting terminal		IP20 (screw terminals and spring-type terminals)	
Touch protection acc. to IEC 60529		Finger-safe (screw terminals and spring-type terminals)	
Shock resistance			
• Rectangular pulse			
- AC operation	g/ms	7.5/5 and 4.7/10	8.3/5 and 5.310
- DC operation	g/ms	10/5 and 7.5/10	
• Sine pulse			
- AC operation	g/ms	11.8/5 and 7.4/10	13.5/5 and 8.3/10
- DC operation	g/ms	15/5 and 10/10	

SIRIUS 3RT contactors, 3-pole up to 250 kW

			Contactors		
Type			3RT2023 to 3RT2025	3RT2026	3RT2027, 3RT2028
Size			S0		
Short-circuit protection					
Main circuit					
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC 60947-4-1/EN 60947-4-1					
- Type of coordination "1"		A	63	100	125
- Type of coordination "2"		A	25	35	50
- Weld-free (test conditions according to IEC 60947-4-1)		A	10	16	
• Miniature circuit breaker with C characteristic (short-circuit current 3 kA, type of coordination "1")		A	25	32	40
Auxiliary circuit					
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection at $I_k \leq 1$ kA)		A	10		
• 230 V miniature circuit breakers, C characteristic (short-circuit current $I_k < 400$ A)		A	10		
Short-circuit protection for contactors with overload relays			See Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/39714188		
Short-circuit protection for fuseless load feeders			See 3RA2 load feeders on page 8/4 onwards		

			Contactors				
Type			3RT2023 to 3RT2025	3RT2026 to 3RT2028	3RT202.-.NB3	3RT202.-.NF3..	3RT202.-.NP3
Size			S0				
Control							
Type of operating mechanism			AC or DC		AC/DC		
Solenoid coil operating range	AC/DC		0.8 ... 1.1 x U_s [1]		0.7 ... 1.3 x U_s [2]		
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)							
• AC operation, 50 Hz, standard version							
- Closing		VA	65	77	6.6	11.9	12.7
- P.f.			0.82		0.98		
- Closed		VA	7.6	9.8	1.9	1.6	3.9
- P.f.			0.25		0.86	0.79	0.51
• AC operation, 50/60 Hz, standard version							
- Closing		VA	68/67	81/79	6.6/6.7	11.9/12.0	12.7/14.7
- P.f.			0.72/0.74		0.98/0.98		
- Closed		VA	7.9/6.5	10.5/8.5	1.9/2.0	1.6/1.8	3.9/4.3
- P.f.			0.25/0.28		0.86/0.82	0.79/0.74	0.51/0.56
• AC operation, 50 Hz, for USA/Canada							
- Closing		VA	65	77	--		
- P.f.			0.82	0.82	--		
- Closed		VA	7.6	9.8	--		
- P.f.			0.25	0.28	--		
• AC operation, 60 Hz, for USA/Canada							
- Closing		VA	73	87	--		
- P.f.			0.76		--		
- Closed		VA	7.2	9.4	--		
- P.f.			0.28		--		
• DC operation (closing = closed)		W	5.9/5.9		5.9/1.4	10.2/1.3	14.3/1.9
Permissible residual current of the electronics (with 0 signal)							
• AC operation		mA	< 6 mA x (230 V/U_s)		< 7 mA x (230 V/U_s)		
• DC operation		mA	< 16 mA x (24 V/U_s)				
Operating times at 1.0 x U_s [3]							
• AC operation							
- Closing delay		ms	10 ... 18	10 ... 17	65 ... 80	50 ... 70	60 ... 80
- Opening delay		ms	4 ... 16		30 ... 45	35 ... 45	30 ... 50
• DC operation							
- Closing delay		ms	55 ... 80		60 ... 80	56 ... 70	60 ... 80
- Opening delay		ms	16 ... 17		30 ... 45	35 ... 45	30 ... 50
• Arcing time		ms	10				

1) Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s
- at 60 Hz: 0.85 to 1.1 x U_s.

2) The following applies to $U_{s\,max}$ = 280 V: Upper limit = 1.1 x $U_{s\,max}$.

3) The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2 to 6 times).

			Coupling contactors
Type			**3RT202.-.KB4.**
Size			**S0**
Control			
Solenoid coil operating range			0.7 ... 1.25 x U_s
Power consumption of the solenoid coils (for cold coil) Closing = Closed	At U_s 24 V DC	W	4.5
Permissible residual current of the electronics (with 0 signal)			< 10 mA x (24 V/U_s)
Overvoltage configuration of the solenoid coil			Built-in varistor  *U*
Operating times			
• Closing delay			
- ON-delay NO		ms	65 ... 90
- OFF-delay NC		ms	55 ... 80
• Opening delay			
- ON-delay NO		ms	19 ... 21
- OFF-delay NC		ms	25 ... 31

				Contactors				
Type				**3RT2023**	**3RT2024**	**3RT2025**	**3RT2026**	**3RT2027**	**3RT2028**
Size				**S0**					
Rated data of the main contacts									
Load rating with AC									
Utilization category AC-1, switching resistive loads									
• Rated operational current I_e	At 40 °C up to 690 V	A		40				50	
	At 60 °C up to 690 V	A		35				42	
• Rated power for AC loads[1] P.f = 0.95 (at 60 °C)	230 V	kW		13.3				15.5	
	400 V	kW		23				27.5	
	690 V	kW		40				47.5	
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm^2		10					
	At 60 °C	mm^2		10					
Utilization categories AC-2 and AC-3									
• Rated operational currents I_e	Up to 400 V	A		9	12	17	25	32	38
	440 V	A		9	12	17	22	32	35
	500 V	A		9	12	17	18	32	
	690 V	A		9		13		21	
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW		2.2	3	4	5.5	7.5	11
	400 V	kW		4	5.5	7.5	11	15	18.5
	690 V	kW		7.5		11		18.5	
Thermal load capacity	10 s current	A		80	110	150	200	260	300
Power loss per conducting path	At I_e/AC-3	W		0.4	0.5	0.9	1.6	2.7	3.8
Utilization category AC-4 (for I_a = 6 x I_e)									
• Maximum values:									
- Rated operational current I_e	Up to 400 V	A		8.5	12.5	15.5		22	
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 400 V	kW		4	5.5	7.5		11	
• The following applies to a contact endurance of about 200 000 operating cycles:									
- Rated operational currents I_e	Up to 400 V	A		4.1	5.5	7.7	9	12	
	690 V	A		3.3	5.5	7.7	9	12	
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 110 V	kW		0.5	0.73	1	1.2	1.6	
	230 V	kW		1.1	1.5	2	2.5	3.4	
	400 V	kW		2	2.6	3.5	4.4	6	
	690 V	kW		2.5	4.6	6	7.7	10.3	

[1] Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

Type				Contactors 3RT2023 to 3RT2025	3RT2026 to 3RT2028
Size				S0	
Rated data of main contacts (continued)					
Load rating with DC					
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)					
• Rated operational currents I_e (at 60 °C)					
- 1 conducting path	Up to 24 V	A		35	
	60 V	A		20	
	110 V	A		4.5	
	220 V	A		1	
	440 V	A		0.4	
	600 V	A		0.25	
- 2 conducting paths in series	Up to 24 V	A		35	
	60 V	A		35	
	110 V	A		35	
	220 V	A		5	
	440 V	A		1	
	600 V	A		0.8	
- 3 conducting paths in series	Up to 24 V	A		35	
	60 V	A		35	
	110 V	A		35	
	220 V	A		35	
	440 V	A		2.9	
	600 V	A		1.4	
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)					
• Rated operational currents I_e (at 60 °C)					
- 1 conducting path	Up to 24 V	A		20	
	60 V	A		5	
	110 V	A		2.5	
	220 V	A		1	
	440 V	A		0.09	
	600 V	A		0.06	
- 2 conducting paths in series	Up to 24 V	A		35	
	60 V	A		35	
	110 V	A		15	
	220 V	A		3	
	440 V	A		0.27	
	600 V	A		0.16	
- 3 conducting paths in series	Up to 24 V	A		35	
	60 V	A		35	
	110 V	A		35	
	220 V	A		10	
	440 V	A		0.6	
	600 V	A		0.6	
Switching frequency					
Switching frequency *z* in operating cycles/hour					
Contactors without overload relays					
• No-load switching frequency	AC	h^{-1}		5 000	
	DC	h^{-1}		1 500	
• Switching frequency *z* during rated operation[1)]					
- I_e/AC-1	At 400 V	h^{-1}		1 000	
- I_e/AC-2	At 400 V	h^{-1}		1 000	750
- I_e/AC-3	At 400 V	h^{-1}		1 000	750
- I_e/AC-4	At 400 V	h^{-1}		300	250
Contactors with overload relays					
• Mean value		h^{-1}		15	

[1)] Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*: $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

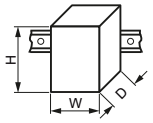
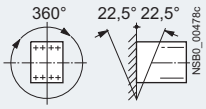
		Contactors
Type		3RT2023 to 3RT2028
Size		S0
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		**Screw terminals**
• Solid or stranded	mm^2	2 x (1 ... 2.5)[1]; 2 x (2.5 ... 10)[1]
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (1 ... 2.5)[1]; 2 x (2.5 ... 6)[1]; 1 x 10
• AWG cables, solid or stranded	AWG	2 x (16 ... 12)[1]; 2 x (14 ... 8)[1]
• Terminal screws - Tightening torque	Nm	M4 (for Pozidriv size 2; ∅ 5 ... 6) 2 ... 2.5 (18 ... 22 lb.in)
Auxiliary conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]
• Terminal screws - Tightening torque	Nm	M3 (for Pozidriv size 2; ∅ 5 ... 6) 0.8 ... 1.2 (7 ... 10.3 lb.in)
Main conductors[2] (1 or 2 conductors can be connected)		**Spring-type terminals**
• Operating devices[3]	mm	3.0 x 0.5
• Solid or stranded	mm^2	2 x (1 ... 10)
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (1 ... 6)
• Finely stranded without end sleeve	mm^2	2 x (1 ... 6)
• AWG cables, solid or stranded	AWG	2 x (18 ... 8)
Auxiliary conductors[2] (1 or 2 conductors can be connected)		
• Operating devices[3]		3.0 x 0.5
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)

1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

2) Max. external diameter of the cable insulation: 3.6 mm.
On spring-type terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop must be used, see page 3/119.

3) Tool for opening the spring-type terminals, see page 3/119.

SIRIUS 3RT contactors, 3-pole up to 250 kW

		Contactors			
Type		3RT2035	3RT2036	3RT2037	3RT2038
Size		S2			
General data					
Dimensions (W x H x D)					
• Basic units - Screw/spring-type terminals	mm	55 x 114 x 130			
• Basic unit with mounted auxiliary switch block - Screw terminals - Spring-type terminals	mm mm	55 x 114 x 174 55 x 114 x 178			
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch block - Screw/spring-type terminals	mm	55 x 114 x 204			
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.					
Upright mounting position		 Special version required			
Mechanical endurance					
• Basic units and basic units with mounted auxiliary switch block	Operating cycles	10 million			
• Basic units with solid-state compatible auxiliary switch block	Operating cycles	5 million			
Electrical endurance		For contact endurance of the main contacts, see page 3/22 onwards.			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Protective separation between the coil and the main contacts (according to IEC 60947-1, Appendix N)	V	400			
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.					
• Integrated auxiliary switches		Yes, acc. to IEC 60947-4-1, Appendix F			
• 3RT2.3. (removable auxiliary switch block)		Yes, acc. to IEC 60947-4-1, Appendix F			
Permissible ambient temperature					
• During operation	°C	-25 ... +60			
• During storage	°C	-55 ... +80			
Degree of protection acc. to IEC 60529					
• On front		IP20			
• Connecting terminal		IP00 (for higher degree of protection, use additional terminal covers)			
Touch protection acc. to IEC 60529		Finger-safe for vertical touching from the front			
Shock resistance					
• Rectangular pulse - AC operation - DC operation	 *g*/ms *g*/ms	 11.8/5 and 7.4/10 7.7/5 and 4.5/10			
• Sine pulse - AC operation - DC operation	 *g*/ms *g*/ms	 18.5/5 and 11.6/10 12/5 and 7/10			
Short-circuit protection					
Main circuit					
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC 60947-4-1/EN 60947-4-1					
- Type of coordination "1"	A	160		250	
- Type of coordination "2"	A	80		125	160
- Weld-free (test conditions according to IEC 60947-4-1)	A	16	25	50	
Auxiliary circuit					
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection at $I_k \leq 1$ kA)	A	10			
• 230 V miniature circuit breakers, C characteristic (short-circuit current $I_k < 400$ A)	A	10			
Short-circuit protection for contactors with overload relays		See Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/39714188			
Short-circuit protection for fuseless load feeders		See 3RA2 load feeders on page 8/4 onwards			

		Contactors		Coupling contactors
Type		3RT203.-.A...	3RT203.-.N.3.	3RT203.-.KB4.
Size		S2		
Control				
Type of operating mechanism		AC	AC/DC	DC
Solenoid coil operating range				
• AC operation[1]		0.8 ... 1.1 x U_s	--	
• AC/DC operation[1]		--	0.8 ... 1.1 x U_s	--
• DC operation		--		0.8 ... 1.2 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)				
• AC operation, 50 Hz, standard version				
- Closing	VA	190	--	
- P.f.		0.72	--	
- Closed	VA	16	--	
- P.f.		0.37	--	
• AC operation, 50/60 Hz, standard version				
- Closing	VA	210/188	--	
- P.f.		0.69/0.65	--	
- Closed	VA	17.2/16.5	--	
- P.f.		0.36/0.39	--	
• AC operation, 50/60 Hz, for USA/Canada				
- Closing	VA	212/188	--	
- P.f.		0.67/0.65	--	
- Closed	VA	18.516.5	--	
- P.f.		0.37/0.39	--	
• AC/DC operation				
- Closing for AC operation	VA	--	40	--
- P.f.		--	0.64/0.5	--
- Closed for AC operation	VA	--	2	--
- P.f.		--	0.36/0.39	--
• DC operation				
- Closing for DC operation	W	--	23[2]	
- Closed for DC operation	W	--	1	1
Permissible residual current of the electronics (with 0 signal)				
• AC/DC operation	mA	--	< 20	--
• DC operation	mA	--		< 20
Overvoltage configuration of the solenoid coil		--	Built-in varistor  U	Built-in varistor  U
Operating times at 0.7 ... 1.25 x U_s[3]				
Total break time = Opening delay + Arcing time				
• DC operation				
- Closing delay	ms	--		45 ... 60
- Opening delay	ms	--		35 ... 55
Operating times at 1.0 x U_s[3]				
• AC operation				
- Closing delay	ms	12 ...22	50 ... 60	--
- Opening delay	ms	10 ...18	40 ... 50	--
• DC operation				
- Closing delay	ms	--	45 ... 55	
- Opening delay	ms	--	40 ... 50	
• Arcing time	ms	10 ... 20		

[1] Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s
- at 60 Hz: 0.85 to 1.1 x U_s.

[2] In the case of DC coils, increased starting currents (2.6 A on average) occur during the first 200 ms. For direct control from a PLC, we recommend special 3RT203.-.KB4. coupling contactors with adapted power consumption, suitable for a PLC output current of 2 A (see page 3/64).

[3] The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2 to 6 times).

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type				Contactors 3RT2035	3RT2036	3RT2037	3RT2038
Size				S2			
Rated data of the main contacts							
Load rating with AC							
Utilization category AC-1, switching resistive load							
• Rated operational current I_e	At 40 °C up to 690 V		A	60	70	80	90
	At 60 °C up to 690 V		A	55	60	70	80
• Rated power for AC loads[1] P.f. = 0.95 (at 60 °C)	230 V		kW	23	26	30	34
	400 V		kW	39	46	53	59
	690 V		kW	68	79	91	102
• Minimum conductor cross-section for loads with I_e	At 40 °C		mm^2	16	25		35
	At 60 °C		mm^2	16		25	
Utilization categories AC-2 and AC-3							
• Rated operational currents I_e	Up to 400 V		A	40	50	65	80
	440 V		A	40	50	65	80
	500 V		A	40	50	65	80
	690 V		A	24		47	58
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V		kW	11	15	18.5	22
	400 V		kW	18.5	22	30	37
	690 V		kW	22		37	45
Thermal load capacity	10 s current		A	400	420	520	640
Power loss per conducting path	At I_e/AC-3		W	2.2	4	3.8	5.7
Utilization category AC-4 (for $I_a = 6 \times I_e$)							
• Maximum values							
- Rated operational current I_e	Up to 400 V		A	35	41	55	
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 400 V		kW	18.5	22	30	
• The following applies to a contact endurance of about 200 000 operating cycles:							
- Rated operational currents I_e	Up to 400 V		A	22	24	28	30
	690 V		A	18.5	20	22	24
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 110 V		kW	3.2	3.5	4.1	4.3
	230 V		kW	6.7	7.3	8.5	9.1
	400 V		kW	11.6	12.6	14.7	15.8
	690 V		kW	16.8	18.2	20	21.8

[1] Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

Type				Contactors 3RT2035	3RT2036	3RT2037	3RT2038
Size				S2			
Rated data of main contacts (continued)							
Load rating with DC							
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)							
• Rated operational currents I_e (at 60 °C)							
- 1 conducting path	Up to 24 V	A		55			
	60 V	A		23			
	110 V	A		4.5			
	220 V	A		1			
	440 V	A		0.4			
	600 V	A		0.25			
- 2 conducting paths in series	Up to 24 V	A		55			
	60 V	A		45			
	110 V	A		45			
	220 V	A		5			
	440 V	A		1			
	600 V	A		0.8			
- 3 conducting paths in series	Up to 24 V	A		55			
	60 V	A		55			
	110 V	A		55			
	220 V	A		45			
	440 V	A		2.9			
	600 V	A		1.4			
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)							
• Rated operational currents I_e (at 60 °C)							
- 1 conducting path	Up to 24 V	A		35			
	60 V	A		6			
	110 V	A		2.5			
	220 V	A		1			
	440 V	A		0.1			
	600 V	A		0.06			
- 2 conducting paths in series	Up to 24 V	A		55			
	60 V	A		45			
	110 V	A		25			
	220 V	A		5			
	440 V	A		0.27			
	600 V	A		0.16			
- 3 conducting paths in series	Up to 24 V	A		55			
	60 V	A		55			
	110 V	A		55			
	220 V	A		25			
	440 V	A		0.6			
	600 V	A		0.35			
Switching frequency							
Switching frequency *z* in operating cycles/hour							
Contactors without overload relays							
• No-load switching frequency	AC	h^{-1}		5 000			
	AC/DC	h^{-1}		1 500			
• Switching frequency *z* during rated operation[1)]							
- I_e/AC-1	At 400 V	h^{-1}		1 200	1 000	800	700
- I_e/AC-2	At 400 V	h^{-1}		750	600	400	350
- I_e/AC-3	At 400 V	h^{-1}		1 000	800	700	500
- I_e/AC-4	At 400 V	h^{-1}		300	250	200	150
Contactors with overload relays							
• Mean value		h^{-1}		15			

1) Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*: $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

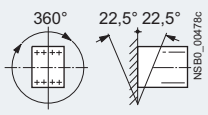
SIRIUS 3RT contactors, 3-pole up to 250 kW

		Contactors
Type		3RT2035 to 3RT2038
Size		S2
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		Screw terminals
• Solid or stranded	mm^2	2 x (1 ... 35)[1]; 1 x (1 ... 50)[1]
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (1 ... 25)[1]; 1 x (1 ... 35)[1]
• AWG cables, solid or stranded	AWG	2 x (18 ... 2)[1]; 1 x (18 ... 1)[1]
• Terminal screws - Tightening torque	Nm	Pozidriv size 2; ∅ 5 ... 6 3 ... 4.5 (27 ... 40 lb.in)
Auxiliary and control conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]
• Terminal screws - Tightening torque	Nm	M3 (for Pozidriv size 2; ∅ 5 ... 6) 0.8 ... 1.2 (7 ... 10.3 lb.in)
Auxiliary and control conductors[2] (1 or 2 conductors can be connected)		Spring-type terminals
• Operating devices[3]	mm	3.0 x 0.5
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)

1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

2) Max. external diameter of the cable insulation: 3.6 mm.
On spring-type terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop must be used, see page 3/119.

3) Tool for opening the spring-type terminals, see page 3/119.

		Contactors		
Type		3RT2045	3RT2046	3RT2047
Size		S3		
General data				
Dimensions (W x H x D)				
• Basic unit - Screw/spring-type terminals	mm	70 x 140 x 152		
• Basic unit with mounted auxiliary switch block - Screw terminals - Spring-type terminals	mm mm	70 x 140 x 196 70 x 140 x 200		
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch block - Screw/spring-type terminals	mm	70 x 140 x 226		
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.				
Upright mounting position		 Special version required		
Mechanical endurance				
• Basic units and basic units with mounted auxiliary switch block	Operating cycles	10 million		
• Basic units with solid-state compatible auxiliary switch block	Operating cycles	5 million		
Electrical endurance		For contact endurance of the main contacts, see page 3/22.		
Rated insulation voltage U_i (pollution degree 3)	V	1 000 (3RT20..-.....-0CC0: 690)		
Rated impulse withstand voltage U_{imp}	kV	6		
Protective separation between the coil and the main contacts (according to IEC 60947-1, Appendix N)	V	400		
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.				
• Integrated auxiliary switches		Yes, acc. to IEC 60947-4-1, Appendix F		
• 3RT2.4. (removable auxiliary switch block)		Yes, acc. to IEC 60947-4-1, Appendix F		
Permissible ambient temperature				
• During operation	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Degree of protection acc. to IEC 60529				
• On the front		IP20		
• Connecting terminal		IP00 (for higher degree of protection, use additional terminal covers)		
Touch protection acc. to IEC 60529		Finger-safe for vertical touching from the front		
Shock resistance				
• Rectangular pulse - AC operation - DC operation	 g/ms g/ms	 10.3/5 and 6.7/10 6.7/5 and 4.0/10 (3RT204.-.KB40: 6.3/5 and 3.6/10)		
• Sine pulse - AC operation - DC operation	 g/ms g/ms	 16.3/5 and 10.5/10 10.6/5 and 6.3/10 (3RT204.-.KB40: 9.8/5 and 5.6/10)		
Short-circuit protection				
Main circuit				
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC 60947-4-1/EN 60947-4-1 - Type of coordination "1" - Type of coordination "2" - Weld-free (test conditions according to IEC 60947-4-1)	 A A A	 250 160 On request	 160	 200
Auxiliary circuit				
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection at $I_K \leq 1$ kA)	A	10		
• 230 V miniature circuit breakers, C characteristic (short-circuit current $I_K < 400$ A)	A	10		
Short-circuit protection for contactors with overload relays		On request		
Short-circuit protection for fuseless load feeders		See 3RA2 load feeders on page 8/4 onwards		

SIRIUS 3RT contactors, 3-pole up to 250 kW

		Contactors		Coupling contactors
Type		3RT204.-.A...	3RT204.-.N.3.	3RT204.-.KB4.
Size		S3		
Control				
Type of operating mechanism		AC	AC/DC	DC
Solenoid coil operating range				
• AC operation[1]		0.8 ... 1.1 x U_s	--	
• AC/DC operation[1]		--	0.8 ... 1.1 x U_s	--
• DC operation		--		0.8 ... 1.2 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)				
• AC operation, 50 Hz, standard version				
- Closing	VA	296	--	--
- P.f.		0.61	--	--
- Closed	VA	19	--	--
- P.f.		0.38	--	--
• AC operation, 50/60 Hz, standard version				
- Closing	VA	348/296	--	--
- P.f.		0.62/0.55	--	--
- Closed	VA	25/18	--	--
- P.f.		0.35/0.41	--	--
• AC operation, 50/60 Hz, for USA/Canada				
- Closing	VA	326/326	--	--
- P.f.		0.62/0.55	--	--
- Closed	VA	22/22	--	--
- P.f.		0.38/0.4	--	--
• AC/DC operation				
- Closing for AC operation	VA	--	163	--
- P.f.		--	--	--
- Closed for AC operation	VA	--	3.1	--
- P.f.		--	--	--
• DC operation				
- Closing for DC operation	W	--	76[2]	25
- Closed for DC operation	W	--	1.8	0.9
Permissible residual current of the electronics (with 0 signal)				
• AC/DC operation	mA	--	< 20	--
• DC operation	mA	--		< 20
Overvoltage configuration of the solenoid coil		--	Built-in varistor  U	Built-in varistor  U
Operating times at 0.8 ... 1.2 x U_s[3]				
Total break time = Opening delay + Arcing time				
• DC operation				
- Closing delay	ms	--		50 ... 70
- Opening delay	ms	--		38 ... 57
Operating times at 1.0 x U_s[3]				
• AC operation				
- Closing delay	ms	15 ...25	50 ... 70	--
- Opening delay	ms	11 ...20	38 ... 57	--
• DC operation				
- Closing delay	ms	--	50 ... 70	--
- Opening delay	ms	--	38 ... 57	--
• Arcing time	ms	10 ... 20		

[1] Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s
- at 60 Hz: 0.85 to 1.1 x U_s.

[2] In the case of DC coils, increased starting currents (2.6 A on average) occur during the first 200 ms. For direct control from a PLC, we recommend special 3RT204.-.KB4. coupling contactors with adapted power consumption, suitable for a PLC output current of 2 A (see page 3/64).

[3] The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2 to 6 times).

			Contactors		
Type			3RT2045	3RT2046	3RT2047
Size			S3		
Rated data of the main contacts					
Load rating with AC					
Utilization category AC-1, switching resistive loads					
• Rated operational current I_e	At 40 °C up to 690 V	A	125	130	
	At 60 °C up to 690 V	A	105	110	
• Rated power for AC loads[1] P.f. = 0.95 (at 60 °C)	230 V	kW	40	42	
	400 V	kW	69	72	
	690 V	kW	119	125	
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm^2	50		
	At 60 °C	mm^2	35		
Utilization categories AC-2 and AC-3					
• Rated operational currents I_e	Up to 400 V	A	80	95	110
	500 V	A	80	95	110
	690 V	A	58	78	98
	1 000 V	A	30		
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	22	22	30
	400 V	kW	37	45	55
	690 V	kW	55	75	90
	1 000 V	A	37		
Thermal load capacity	10 s current	A	760		880
Power loss per conducting path	At I_e/AC-3	W	5.3	6.6	7.9
Utilization category AC-4 (for $I_a = 6 \times I_e$)					
• Maximum values					
- Rated operational current I_e	Up to 400 V	A	66	80	97
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 400 V	kW	37	45	55
• The following applies to a contact endurance of about 200 000 operating cycles:					
- Rated operational currents I_e	Up to 400 V	A	34	42	46
	690 V	A	24	30	36
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 110 V	kW	4.9	6.1	6.7
	230 V	kW	10.4	12	14
	400 V	kW	17.9	22	24.3
	690 V	kW	21.8	27.4	32.9

[1] Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

SIRIUS 3RT contactors, 3-pole up to 250 kW

				Contactors		
Type				3RT2045	3RT2046	3RT2047
Size				S3		
Rated data of main contacts (continued)						
Load rating with DC						
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)						
• Rated operational currents I_e (at 60 °C)						
- 1 conducting path	Up to 24 V	A		100		
	60 V	A		60		
	110 V	A		9		
	220 V	A		2		
	440 V	A		0.6		
	600 V	A		0.4		
- 2 conducting paths in series	Up to 24 V	A		100		
	60 V	A		100		
	110 V	A		100		
	220 V	A		10		
	440 V	A		1.8		
	600 V	A		1.0		
- 3 conducting paths in series	Up to 24 V	A		100		
	60 V	A		100		
	110 V	A		100		
	220 V	A		80		
	440 V	A		4.5		
	600 V	A		2.6		
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)						
• Rated operational currents I_e (at 60 °C)						
- 1 conducting path	Up to 24 V	A		40		
	60 V	A		6		
	110 V	A		2.5		
	220 V	A		1		
	440 V	A		0.15		
	600 V	A		0.06		
- 2 conducting paths in series	Up to 24 V	A		100		
	60 V	A		100		
	110 V	A		100		
	220 V	A		7		
	440 V	A		0.42		
	600 V	A		0.16		
- 3 conducting paths in series	Up to 24 V	A		100		
	60 V	A		100		
	110 V	A		100		
	220 V	A		35		
	440 V	A		0.8		
	600 V	A		0.35		
Switching frequency						
Switching frequency *z* in operating cycles/hour						
Contactors without overload relays						
• No-load switching frequency	AC	h^{-1}		5 000		
	AC/DC	h^{-1}		1 000		
• Switching frequency *z* during rated operation[1)]						
- I_e/AC-1	At 400 V	h^{-1}		900		
- I_e/AC-2	At 400 V	h^{-1}		400	350	
- I_e/AC-3	At 400 V	h^{-1}		1 000	850	
- I_e/AC-4	At 400 V	h^{-1}		300	250	200
Contactors with overload relays						
• Mean value		h^{-1}		15		

1) Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*: $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

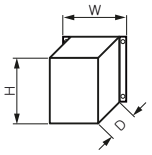
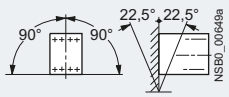
		Contactors		
Type		3RT2045	3RT2046	3RT2047
Size		S3		
Conductor cross-sections				
Main conductors (1 or 2 conductors can be connected)		**Screw terminals**		
• Solid	mm^2	2 x (2.5 ... 16)[1]		
• Stranded	mm^2	2 x (6 ... 16)[1]; 2 x (10 ... 50)[1]; 1 x (10 ... 70)[1]		
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (2.5 ... 35)[1]; 1 x (2.5 ... 50)[1]		
• AWG cables, solid or stranded	AWG	2 x (10 ... 1/0)[1]; 1 x (10 ... 2/0)[1]		
• Terminal screws		Hexagon socket, size 4		
- Tightening torque	Nm	4.5 ... 6 (40 ... 53 lb.in)		
Auxiliary and control conductors (1 or 2 conductors can be connected)				
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]		
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]		
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]		
• Terminal screws		M3 (for Pozidriv size 2; ∅ 5 ... 6)		
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)		
Auxiliary and control conductors[2] (1 or 2 conductors can be connected)		**Spring-type terminals**		
• Operating devices[3]	mm	3.0 x 0.5		
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)		
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)		
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)		
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)		

1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

2) Max. external diameter of the conductor insulation: 3.6 mm. On spring-type terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop must be used, see page 3/119.

3) Tool for opening the spring-type terminals, see page 3/119.

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type		3RT1054	3RT1055, 3RT1056	3RT1064, 3RT1065, 3RT1066	3RT1075	3RT1076
Size		S6		S10	S12	
General data						
Dimensions (W x H x D) 						
• Basic unit	mm	120 x 172 x 170		145 x 210 x 202	160 x 214 x 225	
• Basic unit with mounted auxiliary switch block	mm	120 x 172 x 217		145 x 210 x 251	160 x 214 x 271	
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.						
Mechanical endurance	Operating cycles	10 million				
Electrical endurance		For contact endurance of the main contacts, see page 3/22.				
Rated insulation voltage U_i (pollution degree 3)	V	1 000				
Rated impulse withstand voltage U_{imp}	kV	8				
Protective separation between the coil and the main contacts according to IEC 60947-1, Appendix N	V	690				
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.		Yes, acc. to IEC 60947-4-1, Appendix F				
Permissible ambient temperature						
• During operation	°C	-25 ... +60				
• During storage	°C	-55 ... +80				
Degree of protection acc. to IEC 60529						
• On the front		IP00 (IP20 with box terminal/cover)				
• Connecting terminal		IP00 (for higher degree of protection, use additional terminal covers)				
Touch protection acc. to IEC 60529		Finger-safe for vertical touching from the front with cover				
Shock resistance						
• Rectangular pulse	g/ms	8.5/5 and 4.2/10				
• Sine pulse	g/ms	13.4/5 and 6.5/10				
Electromagnetic compatibility (EMC)		See page 3/17				
Short-circuit protection						
Main circuit Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC 60947-4-1/EN 60947-4-1						
• Type of coordination "1"	A	355		500	630	
• Type of coordination "2"	A	315		400	500	
• Weld-free	A	80	160	250		315
Auxiliary circuit						
Short-circuit test						
• With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1	A	10				
• with miniature circuit breaker with C characteristic with short-circuit current I_k = 400 A	A	10				
Short-circuit protection for contactors with overload relays		See Configuration Manual "Configuring SIRIUS – Selection Data for Fuseless Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/40625241				

Type			3RT105.	3RT106.	3RT107.
Size			S6	S10	S12
Control					
Operating range of the solenoid operating mechanism	AC/DC		0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$		
Power consumption of the solenoid operating mechanism (with cold coil and rated rated range $U_{s\,min}$ ... $U_{s\,max}$)					
Conventional operating mechanisms					
• AC operation					
- Closing at $U_{s\,min}$		VA/p.f.	250/0.9	490/0.9	700/0.9
- Closing at $U_{s\,max}$		VA/p.f.	300/0.9	590/0.9	830/0.9
- Closed at $U_{s\,min}$		VA/p.f.	4.8/0.8	5.6/0.9	7.6/0.9
- Closed at $U_{s\,max}$		VA/p.f.	5.8/0.8	6.7/0.9	9.2/0.9
• DC operation					
- Closing at $U_{s\,min}$		W	300	540	770
- Closing at $U_{s\,max}$		W	360	650	920
- Closed at $U_{s\,min}$		W	4.3	6.1	8.5
- Closed at $U_{s\,max}$		W	5.2	7.4	10
Solid-state operating mechanisms					
• AC operation					
- Closing at $U_{s\,min}$		VA/p.f.	190/0.8	400/0.8	560/0.8
- Closing at $U_{s\,max}$		VA/p.f.	280/0.8	530/0.8	750/0.8
- Closed at $U_{s\,min}$		VA/p.f.	3.5/0.6	5.5/0.5	5.6/0.5
- Closed at $U_{s\,max}$		VA/p.f.	4.8/0.6	8.5/0.4	9/0.4
• DC operation					
- Closing at $U_{s\,min}$		W	250	440	600
- Closing at $U_{s\,max}$		W	320	580	800
- Closed at $U_{s\,min}$		W	2.1	2.8	3
- Closed at $U_{s\,max}$		W	2.8	3.4	3.6
PLC control input acc. to IEC 61131-2					
• Version			Type 2 – suitable for signals from semiconductor switches		
• Rated voltage		V DC	24		
• Operating range		V DC	17 ... 30		
• Power consumption		mA	≤ 30		
Operating times (Total break time = Opening delay + Arcing time)					
Conventional operating mechanisms					
• For $U_{s\,min}$ ... $U_{s\,max}$					
- Closing delay		ms	25 ... 50	35 ... 50	50 ... 70
- Opening delay		ms	40 ... 60	50 ... 80	70 ... 100
Solid-state operating mechanism, actuated via A1/A2					
• For $U_{s\,min}$ ... $U_{s\,max}$					
- Closing delay		ms	100 ... 120	110 ... 130	125 ... 150
- Opening delay		ms	80 ... 100		
Solid-state operating mechanism, actuated via PLC input					
• For $U_{s\,min}$ ... $U_{s\,max}$					
- Closing delay		ms	40 ... 60	50 ... 65	65 ... 80
- Opening delay		ms	80 ... 100		
• Arcing time		ms	10 ... 15		

SIRIUS 3RT contactors, 3-pole up to 250 kW

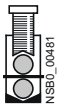
Type		3RT1054	3RT1055	3RT1056	3RT1064	3RT1065	3RT1066	3RT1075	3RT1076
Size		S6			S10			S12	
Rated data of the main contacts									
Load rating with AC									
Utilization category AC-1 Switching resistive load									
• Rated operational currents I_e									
- At 40 °C up to 690 V	A	160	185	215	275	330		430	610
- At 60 °C up to 690 V	A	140	160	185	250	300		400	550
- At 60 °C up to 1 000 V	A	80	90	100		150		200	
• Rated power for AC loads[1] with p.f. = 0.95 (at 60 °C)									
- At 230 V	kW	53	60	70	94	113		151	208
- At 400 V	kW	92	105	121	164	197		263	362
- At 500 V	kW	115	131	152	205	246		329	452
- At 690 V	kW	159	181	210	283	340		454	624
- At 1 000 V	kW	131	148	165	164	246		329	
• Minimum conductor cross-section for loads with I_e									
- At 40 °C	mm^2	70	95		150	185		2 x 150	2 x 185
- At 60 °C	mm^2	50	70	95	120	185		240	2 x 185
Utilization categories AC-2 and AC-3									
• Rated operational currents I_e									
- Up to 500 V	A	115	150	185	225	265	300	400	500
- At 690 V	A	115	150	170	225	265	280	400	450
- At 1 000 V	A	53	65		68	95		180	
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz									
- At 230 V	kW	37	50	61	73	85	97	132	164
- At 400 V	kW	64	84	104	128	151	171	231	291
- At 500 V	kW	81	105	132	160	189	215	291	363
- At 690 V	kW	113	146	167	223	265	280	400	453
- At 1 000 V	kW	75	90			132		250	
Thermal load capacity, 10 s current	A	1 100	1 300	1 480	1 800	2 400		3 200	4 000
Power loss per main conducting path at I_e/AC-3/500 V	W	7	9	13	17	18	22	35	55
Utilization category AC-4 (for $I_a = 6 \times I_e$)									
Maximum values:									
• Rated operational current I_e									
- Up to 400 V	A	97	132	160	195	230	280	350	430
• Rated power of squirrel-cage motors with 50 and 60 Hz									
- At 400 V	kW	55	75	90	110	132	160	200	250
The following applies to a contact endurance of about 200 000 operating cycles:									
• Rated operational currents I_e									
- Up to 500 V	A	54	68	81	96	117	125	150	175
- Up to 690 V	A	48	57	65	85	105	115	135	150
• Rated power of squirrel-cage motors with 50 and 60 Hz									
- At 230 V	kW	16	20	25	30	37	40	48	56
- At 400 V	kW	29	38	45	54	66	71	85	98
- At 500 V	kW	37	47	57	67	82	87	105	123
- At 690 V	kW	48	55	65	82	102	112	133	148

[1] Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

Type			3RT1054	3RT1055	3RT1056	3RT1064	3RT1065	3RT1066	3RT1075	3RT1076
Size			S6			S10			S12	
Rated data of main contacts (continued)										
Load rating with DC										
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)										
• Rated operational currents I_e (at 60 °C)										
- 1 conducting path	Up to 24 V	A	160			200	300		400	
	60 V	A	160			200	300		330	
	110 V	A	18				33			
	220 V	A	3.4				3.8			
	440 V	A	0.8				0.9			
	600 V	A	0.5				0.6			
- 2 conducting paths in series	Up to 24 V	A	160			200	300		400	
	60 V	A	160			200	300		400	
	110 V	A	160			200	300		400	
	220 V	A	20				300		400	
	440 V	A	3.2				4			
	600 V	A	1.6				2			
- 3 conducting paths in series	Up to 24 V	A	160			200	300		400	
	60 V	A	160			200	300		400	
	110 V	A	160			200	300		400	
	220 V	A	160			200	300		400	
	440 V	A	11.5				11			
	600 V	A	4				5.2			
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)										
• Rated operational currents I_e (at 60 °C)										
- 1 conducting path	Up to 24 V	A	160			200	300		400	
	60 V	A	7.5				11			
	110 V	A	2.5				3			
	220 V	A	0.6							
	440 V	A	0.17				0.18			
	600 V	A	0.12				0.125			
- 2 conducting paths in series	Up to 24 V	A	160			200	300		400	
	60 V	A	160			200	300		400	
	110 V	A	160			200	300		400	
	220 V	A	2.5							
	440 V	A	0.65							
	600 V	A	0.37							
- 3 conducting paths in series	Up to 24 V	A	160			200	300		400	
	60 V	A	160			200	300		400	
	110 V	A	160			200	300		400	
	220 V	A	160			200	300		400	
	440 V	A	1.4							
	600 V	A	0.75							
Switching frequency										
Switching frequency *z* in operating cycles/hour										
Contactors without overload relays										
• No-load switching frequency		h^{-1}	2 000							
- Reduced in the case of contactors with solid-state operating mechanism at U_s = 21 ... 27.3 V AC/DC		h^{-1}	1 000			AC-1 values				
• Switching frequency *z* during rated operation[1]										
- I_e/AC-1	At 400 V	h^{-1}	800			750	800	750	700	500
- I_e/AC-2	At 400 V	h^{-1}	400	300		250	300	250	200	170
- I_e/AC-3	At 400 V	h^{-1}	1 000	750		500	700	500		420
- I_e/AC-4	At 400 V	h^{-1}	130							
Contactors with mounted overload relay										
• Mean value		h^{-1}	60							

[1] Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*: $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type		3RT105.		3RT106.	3RT107.
Size		S6		S10	S12
Conductor cross-sections					
Main conductors (1 or 2 conductors connectable)		**Screw terminals**			
With mounted box terminals	Type	3RT1955-4G (55 kW)	3RT1956-4G	3RT1966-4G	
• Terminal screws		M10 (hexagon socket, A/F 4)		M12 (hexagon socket, A/F 5)	
- Tightening torque	Nm lb.in	10 ... 12 90 ... 110		20 ... 22 180 ... 195	
Front clamping point connected					
 NSB0_00479					
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	16 ... 70	16 ... 120	70 ... 240	
• Finely stranded without end sleeve	mm^2	16 ... 70	16 ... 120	70 ... 240	
• Stranded	mm^2	16 ... 70	16 ... 120	95 ... 300	
• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	3/0 ... 600 kcmil	
• Ribbon cable conductors (number x width x thickness)	mm	Min. 3 x 9 x 0.8 Max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8 Max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8 Max. 20 x 24 x 0.5	
Rear clamping point connected					
 NSB0_00480					
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	16 ... 70	16 ... 120	120 ... 185	
• Finely stranded without end sleeve	mm^2	16 ... 70	16 ... 120	120 ... 185	
• Stranded	mm^2	16 ... 70	16 ... 120	120 ... 240	
• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	250 ... 500 kcmil	
• Ribbon cable conductors (number x width x thickness)	mm	Min. 3 x 9 x 0.8 Max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8 Max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8 Max. 20 x 24 x 0.5	
Both clamping points connected (minimum cross-section 16 mm^2)					
 NSB0_00481					
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185	
• Finely stranded without end sleeve	mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185	
• Stranded	mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 70, max. 2 x 240	
• AWG cables, solid or stranded	AWG	Max. 2 x 1/0	Max. 2 x 3/0	Min. 2 x 2/0, Max. 2 x 500 kcmil	
• Ribbon cable conductors (number x width x thickness)	mm	Max. 2 x (6 x 15.5 x 0.8)	Max. 2 x (10 x 15.5 x 0.8)	Max. 2 x (20 x 24 x 0.5)	
Busbar connections					
Connecting bar (max. width)	mm	17		25	
Cable lug connection					
• Finely stranded with cable lug[1)2)]	mm^2	16 ... 95		50 ... 240	
• Stranded with cable lug[1)2)]	mm^2	25 ... 120		70 ... 240	
• AWG cables, solid or stranded	AWG	4 ... 250 kcmil		2/0 ... 500 kcmil	
• Terminal screws		M8 x 25 (A/F 13)		M10 x 30 (A/F 17)	
- Tightening torque	Nm lb.in	10 ... 14 90 ... 124		14 ... 24 124 ... 210	
Auxiliary conductors (1 or 2 conductors connectable)					
• Solid	mm^2	2 x (0.5 ... 1.5)[3)]; 2 x (0.75 ... 2.5)[3)]; max. 2 x (0.75 ... 4)[3)]			
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[3)]; 2 x (0.75 ... 2.5)[3)]			
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)			
• Terminal screws		M3 (Pozidriv size 2)			
- Tightening torque	Nm lb.in	0.8 ... 1.2 7 ... 10.3			
Auxiliary conductors[4)] (1 or 2 conductors connectable)		**Spring-type terminals**			
• Operating devices[5)]		3.0 x 0.5; 3.5 x 0.5			
• Solid	mm^2	2 x (0.25 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.25 ... 1.5)			
• Finely stranded without end sleeve	mm^2	2 x (0.25 ... 2.5)			
• AWG cables, solid or stranded	AWG	2 x (24 ... 14)			

1) 3RT105.: When using cable lugs according to EN 46235, use the 3RT1956-4EA1 terminal cover for conductor cross-sections from 95 mm^2 to keep to the phase clearance, see page 3/116.

2) 3RT106. and 3RT107.: When using cable lugs according to DIN 46234, the 3RT1966-4EA1 terminal cover must be used for conductor cross-sections of 240 mm^2 and more and when using cable lugs in accordance with DIN 46235 for conductor cross-sections of 185 mm^2 and more to keep to the phase clearance, see page 3/116.

3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

4) Max. external diameter of the conductor insulation: 3.6 mm. An "insulation stop" must be used for conductor cross-sections ≤ 1 mm^2; see page 3/119.

5) Tool for opening the spring-type terminals, see page 3/119.

Data for North America

Type			Contactors 3RT2015	3RT2016	3RT2017	3RT2018
Size			S00			
CSA and UL rated data						
Rated insulation voltage		V AC	600			
Uninterrupted current, at 40 °C, open and enclosed		A	20			
Maximum horsepower ratings (from CSA and UL approved values)						
• Rated power for three-phase motors at 60 Hz	At 200 V	hp	1.5	2	3	
	230 V	hp	2	3		5
	460 V	hp	3	5	7.5	10
	575 V	hp	5	7.5	10	
Short-circuit protection[1] (Contactor)	At 600 V	kA	5			
• CLASS J fuse[2]		A	60			
• Circuit breakers in accordance with UL 489 ("Inverse Time Breakers")		A	50			
• Combination motor controllers, Type E according to UL 508 and UL 60947-4-1			3RV2.1[1] or 3RV2.2[1]			

[1] For more information about short-circuit values, e.g. for protection against short-circuit currents, see Certificate of Compliance for the individual devices, https://support.industry.siemens.com/cs/ww/en/ps/16134/cert.

For the dimensioning of load feeders, see the Configuration Manual "Configuring SIRIUS Innovations for UL", https://support.industry.siemens.com/cs/ww/en/view/53433538.

[2] Values for RK5 fuses on request.

Type			Contactors 3RT2023	3RT2024	3RT2025	3RT2026	3RT2326-.....-4AA0	3RT2027	3RT2028
Size			S0						
CSA and UL rated data									
Rated insulation voltage		V AC	600						
Uninterrupted current, at 40 °C, open and enclosed		A	30					42	
Maximum horsepower ratings (from CSA and UL approved values)									
• Rated power for three-phase motors at 60 Hz	At 200 V	hp	2	3		5	3	10	
	230 V	hp	3		5	7.5	5	10	
	460 V	hp	5	7.5	10	15	10	20	25
	575 V	hp	7.5	10	15	20	15	25	
Short-circuit protection[1] (contactor)	At 600 V	kA	5						
• CLASS J fuse[2]		A	125					150	
• Circuit breakers in accordance with UL 489 ("Inverse Time Breakers")		A	70					100	
• Combination motor controllers, Type E according to UL 508 and UL 60947-4-1	At 480 V	Type	3RV202[1]						
	At 600 V	Type	3RV202[1]						

[1] For more information about short-circuit values, e.g. for protection against short-circuit currents, see Certificate of Compliance for the individual devices, https://support.industry.siemens.com/cs/ww/en/ps/16134/cert.

For the selection and dimensioning of load feeders, see the UL guide "Industrial Control Panels for North America", https://support.industry.siemens.com/cs/ww/en/view/53433538.

[2] Values for RK5 fuses on request.

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type			Contactors						
			3RT2035	3RT2036, 3RT2336-.....-4AA0	3RT2037	3RT2038	3RT2045	3RT2046	3RT2047
Size			S2				S3		
SIRIUS and UL rated data									
Rated operational voltage		V AC	600						
Uninterrupted current, at 40 °C, open and enclosed		A	55	60	80	90	62	77	99
Maximum horsepower ratings (from SIRIUS and UL approved values)									
• Rated power for three-phase motors at 60 Hz	At 200/208 V	hp	10	15	20		25	30	
	230/240 V	hp	15		20	25	30		40
	460/480 V	hp	30	40	50		60	75	
	575/600 V	hp	40	50		60	60	75	100
Short-circuit protection[1] (contactor)	At 600 V	kA	5	10			10		
• RK5 fuse		A	150	200	250	250	300	350	350
• Combination motor controllers, Type E according to UL 508 and UL 60947-4-1		Type	3RV203[1]				--		

[1] For more information about short-circuit values, e.g. for protection against short-circuit currents, see Certificate of Compliance for the individual devices, https://support.industry.siemens.com/cs/ww/en/ps/16134/cert.

For the selection and dimensioning of load feeders, see the UL guide "Industrial Control Panels for North America", https://support.industry.siemens.com/cs/ww/en/view/53433538.

Size			3RT1054	3RT1055	3RT1056	3RT1064	3RT1065	3RT1066	3RT1075	3RT1076
			S6			S10			S12	
SIRIUS and UL rated data										
Rated operational voltage		V AC	600							
Uninterrupted current, at 40 °C, open and enclosed		A	140	195		250	330		400	540
Maximum horsepower ratings (from SIRIUS and UL approved values)										
• Rated power for three-phase motors at 60 Hz	At 200 V	hp	40	50	60		75	100	125	150
	230 V	hp	50	60	75		100	125	150	200
	460 V	hp	100	125	150		200	250	300	400
	575 V	hp	125	150	200		250	300	400	500
Short-circuit protection			For more information, see Certificate of Compliance for the individual devices, https://support.industry.siemens.com/cs/ww/en/ps/16134/cert. For the dimensioning of load feeders, see Configuration Manual "Configuring SIRIUS Innovations UL", https://support.industry.siemens.com/cs/ww/en/view/53433538.							

Type			Contactors			
			3RT201	3RT202 ... 3RT204		3RT1054 ... 3RT1076
Size			S00	S0 ... S3		S6 ... S12
			Integrated or mountable auxiliary switch block	Integrated	Mountable auxiliary switch block	Mountable auxiliary switch block
SIRIUS and UL rated data of the auxiliary contacts						
Rated voltage		V AC	600			
Switching capacity			A 600, Q 600	A 600, P 600	A 600, Q 600	A 600, Q 600
• Uninterrupted current at 240 V AC		A	10			

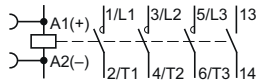
Selection and ordering data

AC operation

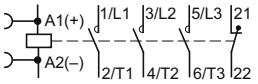
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1A...

3RT201.-2A...

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50/60 Hz	SD	**Screw terminals**		SD	**Spring-type terminals**	
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V		NO	NC							
A	**kW**	A				V AC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S00[1]												
• With auxiliary contact 1 NO, Ident. No. **10**												
												
7	**3**	18	**10**	1	--	24	▶	**3RT2015-1AB01**	▶		**3RT2015-2AB01**	▶
						110	▶	**3RT2015-1AF01**	▶		**3RT2015-2AF01**	▶
						230	▶	**3RT2015-1AP01**	▶		**3RT2015-2AP01**	▶
			01	--	1	24	▶	**3RT2015-1AB02**	▶		**3RT2015-2AB02**	▶
						110	▶	**3RT2015-1AF02**	▶		**3RT2015-2AF02**	▶
						230	▶	**3RT2015-1AP02**	▶		**3RT2015-2AP02**	▶
9	**4**	22	**10**	1	--	24	▶	**3RT2016-1AB01**	▶		**3RT2016-2AB01**	▶
						110	▶	**3RT2016-1AF01**	▶		**3RT2016-2AF01**	▶
						230	▶	**3RT2016-1AP01**	▶		**3RT2016-2AP01**	▶
			01	--	1	24	▶	**3RT2016-1AB02**	▶		**3RT2016-2AB02**	▶
						110	▶	**3RT2016-1AF02**	▶		**3RT2016-2AF02**	▶
						230	▶	**3RT2016-1AP02**	▶		**3RT2016-2AP02**	▶
12	**5.5**	22	**10**	1	--	24	▶	**3RT2017-1AB01**	▶		**3RT2017-2AB01**	▶
						110	▶	**3RT2017-1AF01**	▶		**3RT2017-2AF01**	▶
						230	▶	**3RT2017-1AP01**	▶		**3RT2017-2AP01**	▶
			01	--	1	24	▶	**3RT2017-1AB02**	▶		**3RT2017-2AB02**	▶
						110	▶	**3RT2017-1AF02**	▶		**3RT2017-2AF02**	▶
						230	▶	**3RT2017-1AP02**	▶		**3RT2017-2AP02**	▶
16	**7.5**	22	**10**	1	--	24	▶	**3RT2018-1AB01**	▶		**3RT2018-2AB01**	▶
						110	▶	**3RT2018-1AF01**	▶		**3RT2018-2AF01**	▶
						230	▶	**3RT2018-1AP01**	▶		**3RT2018-2AP01**	▶
			01	--	1	24	▶	**3RT2018-1AB02**	▶		**3RT2018-2AB02**	▶
						110	▶	**3RT2018-1AF02**	▶		**3RT2018-2AF02**	▶
						230	▶	**3RT2018-1AP02**	▶		**3RT2018-2AP02**	▶

• With auxiliary contact 1 NC, Ident. No. **01**



[1] Coil operating range
- at 50 Hz: 0.8 to 1.1 × U_s
- at 60 Hz: 0.85 to 1.1 × U_s.

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

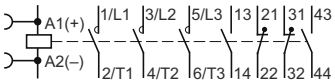
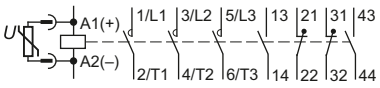
SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201..-1AP04-3MA0

3RT201..-2AP04-3MA0

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50/60 Hz	SD	Screw terminals		SD	Spring-type terminals	
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C										
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V										
A	**kW**	A		NO	NC	V AC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S00 [1]												
With permanently mounted auxiliary switch block (SUVA-certified safety contactor)												
												
7	**3**	18	**22**	2	2	230	2	**3RT2015-1AP04-3MA0**		5	**3RT2015-2AP04-3MA0**	
9	**4**	22	**22**	2	2	230	2	**3RT2016-1AP04-3MA0**		5	**3RT2016-2AP04-3MA0**	
12	**5.5**	22	**22**	2	2	230	2	**3RT2017-1AP04-3MA0**		5	**3RT2017-2AP04-3MA0**	
16	**7.5**	22	**22**	2	2	230	▶	**3RT2018-1AP04-3MA0**		5	**3RT2018-2AP04-3MA0**	
With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and varistor plugged into the front												
												
7	**3**	18	**22**	2	2	230	5	**3RT2015-1CP04-3MA0**		5	**3RT2015-2CP04-3MA0**	
9	**4**	22	**22**	2	2	230	5	**3RT2016-1CP04-3MA0**		5	**3RT2016-2CP04-3MA0**	
12	**5.5**	22	**22**	2	2	230	5	**3RT2017-1CP04-3MA0**		5	**3RT2017-2CP04-3MA0**	
16	**7.5**	22	**22**	2	2	230	5	**3RT2018-1CP04-3MA0**		5	**3RT2018-2CP04-3MA0**	

[1] Coil operating range
- at 50 Hz: 0.8 to 1.1 × U_s
- at 60 Hz: 0.85 to 1.1 × U_s.

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1A.00

3RT202.-2A.00

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50 Hz	SD	Screw terminals		SD	Spring-type terminals	
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C										
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V	Ident. No.	Version NO	Version NC			Article No.	Price per PU		Article No.	Price per PU
A	**kW**	A		NO	NC	V AC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S0												
9	**4**	40	**11**	1	1	24	▶	**3RT2023-1AB00**		2	**3RT2023-2AB00**	
						110	▶	**3RT2023-1AF00**		2	**3RT2023-2AF00**	
						230	▶	**3RT2023-1AP00**		▶	**3RT2023-2AP00**	
12	**5.5**	40	**11**	1	1	24	▶	**3RT2024-1AB00**		2	**3RT2024-2AB00**	
						110	▶	**3RT2024-1AF00**		2	**3RT2024-2AF00**	
						230	▶	**3RT2024-1AP00**		▶	**3RT2024-2AP00**	
17	**7.5**	40	**11**	1	1	24	▶	**3RT2025-1AB00**		2	**3RT2025-2AB00**	
						110	▶	**3RT2025-1AF00**		2	**3RT2025-2AF00**	
						230	▶	**3RT2025-1AP00**		▶	**3RT2025-2AP00**	
25	**11**	40	**11**	1	1	24	▶	**3RT2026-1AB00**		2	**3RT2026-2AB00**	
						110	▶	**3RT2026-1AF00**		2	**3RT2026-2AF00**	
						230	▶	**3RT2026-1AP00**		▶	**3RT2026-2AP00**	
32	**15**	50	**11**	1	1	24	▶	**3RT2027-1AB00**		2	**3RT2027-2AB00**	
						110	▶	**3RT2027-1AF00**		2	**3RT2027-2AF00**	
						230	▶	**3RT2027-1AP00**		▶	**3RT2027-2AP00**	
38	**18.5**	50	**11**	1	1	24	▶	**3RT2028-1AB00**		2	**3RT2028-2AB00**	
						110	▶	**3RT2028-1AF00**		2	**3RT2028-2AF00**	
						230	▶	**3RT2028-1AP00**		2	**3RT2028-2AP00**	

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202..-1A.04

3RT202..-2A.04

3RT202..-1CL24-3MA0

3RT202..-2CL24-3MA0

Rated data			Auxiliary contacts		Rated control supply voltage U_s at 50 Hz	SD	Screw terminals		SD	Spring-type terminals	
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C									
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version			Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V									
A	**kW**	A		NO NC	V AC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail											
Size S0											
With removable mounted auxiliary switch block											
9	**4**	40	**22**	2 2	24	5	**3RT2023-1AB04**		5	**3RT2023-2AB04**	
					230	▶	**3RT2023-1AP04**		2	**3RT2023-2AP04**	
12	**5.5**	40	**22**	2 2	24	5	**3RT2024-1AB04**		5	**3RT2024-2AB04**	
					110	5	**3RT2024-1AF04**		5	**3RT2024-2AF04**	
					230	▶	**3RT2024-1AP04**		2	**3RT2024-2AP04**	
17	**7.5**	40	**22**	2 2	24	5	**3RT2025-1AB04**		5	**3RT2025-2AB04**	
					110	5	**3RT2025-1AF04**		5	**3RT2025-2AF04**	
					230	▶	**3RT2025-1AP04**		2	**3RT2025-2AP04**	
25	**11**	40	**22**	2 2	24	5	**3RT2026-1AB04**		5	**3RT2026-2AB04**	
					110	5	**3RT2026-1AF04**		5	**3RT2026-2AF04**	
					230	▶	**3RT2026-1AP04**		2	**3RT2026-2AP04**	
32	**15**	50	**22**	2 2	24	5	**3RT2027-1AB04**		5	**3RT2027-2AB04**	
					110	5	**3RT2027-1AF04**		5	**3RT2027-2AF04**	
					230	▶	**3RT2027-1AP04**		2	**3RT2027-2AP04**	
38	**18.5**	50	**22**	2 2	24	5	**3RT2028-1AB04**		5	**3RT2028-2AB04**	
					110	5	**3RT2028-1AF04**		5	**3RT2028-2AF04**	
					230	▶	**3RT2028-1AP04**		2	**3RT2028-2AP04**	
With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and varistor permanently plugged into the front											
9	**4**	40	**22**	2 2	230	5	**3RT2023-1CL24-3MA0**		5	**3RT2023-2CL24-3MA0**	
12	**5.5**	40	**22**	2 2	230	2	**3RT2024-1CL24-3MA0**		5	**3RT2024-2CL24-3MA0**	
17	**7.5**	40	**22**	2 2	230	5	**3RT2025-1CL24-3MA0**		5	**3RT2025-2CL24-3MA0**	
25	**11**	40	**22**	2 2	230	5	**3RT2026-1CL24-3MA0**		5	**3RT2026-2CL24-3MA0**	
32	**15**	50	**22**	2 2	230	5	**3RT2027-1CL24-3MA0**		5	**3RT2027-2CL24-3MA0**	
38	**18.5**	50	**22**	2 2	230	5	**3RT2028-1CL24-3MA0**		5	**3RT2028-2CL24-3MA0**	

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

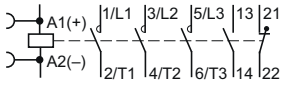
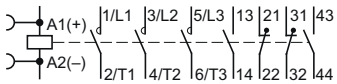
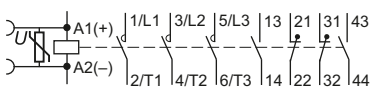

3RT203.-1A.00


3RT203.-3A.00


3RT203.-1A.04


3RT203.-1CL24-3MA0


3RT203.-3CL24-3MA0

Rated data			Auxiliary contacts		Rated control supply voltage U_s at 50 Hz	SD	Screw terminals	SD	Spring-type terminals
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C	Ident. No.	Version			Article No. Price per PU		Article No. Price per PU
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to							
400 V	**400 V**	690 V							
A	**kW**	A	NO	NC	V AC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail									
Size S2									
									
40	**18.5**	60	**11**	1	1	24	▶ **3RT2035-1AB00**	2	**3RT2035-3AB00**
						110	▶ **3RT2035-1AF00**	5	**3RT2035-3AF00**
						230	▶ **3RT2035-1AP00**	▶	**3RT2035-3AP00**
50	**22**	70	**11**	1	1	24	▶ **3RT2036-1AB00**	5	**3RT2036-3AB00**
						110	▶ **3RT2036-1AF00**	5	**3RT2036-3AF00**
						230	▶ **3RT2036-1AP00**	▶	**3RT2036-3AP00**
65	**30**	80	**11**	1	1	24	▶ **3RT2037-1AB00**	5	**3RT2037-3AB00**
						110	▶ **3RT2037-1AF00**	5	**3RT2037-3AF00**
						230	▶ **3RT2037-1AP00**	▶	**3RT2037-3AP00**
80	**37**	90	**11**	1	1	24	▶ **3RT2038-1AB00**	5	**3RT2038-3AB00**
						110	▶ **3RT2038-1AF00**	5	**3RT2038-3AF00**
						230	▶ **3RT2038-1AP00**	▶	**3RT2038-3AP00**
With removable mounted auxiliary switch block									
									
40	**18.5**	60	**22**	2	2	24	▶ **3RT2035-1AB04**		--
						110	▶ **3RT2035-1AF04**		--
						230	▶ **3RT2035-1AP04**		--
50	**22**	70	**22**	2	2	24	▶ **3RT2036-1AB04**		--
						110	▶ **3RT2036-1AF04**		--
						230	▶ **3RT2036-1AP04**		--
65	**30**	80	**22**	2	2	24	▶ **3RT2037-1AB04**		--
						110	▶ **3RT2037-1AF04**		--
						230	▶ **3RT2037-1AP04**		--
80	**37**	90	**22**	2	2	24	5 **3RT2038-1AB04**		--
						110	▶ **3RT2038-1AF04**		--
						230	▶ **3RT2038-1AP04**		--
With permanently mounted auxiliary switch block and varistor permanently plugged into the front									
									
40	**18.5**	60	**22**	2	2	230	5 **3RT2035-1CL24-3MA0**	5	**3RT2035-3CL24-3MA0**
50	**22**	70	**22**	2	2	230	5 **3RT2036-1CL24-3MA0**	5	**3RT2036-3CL24-3MA0**
65	**30**	80	**22**	2	2	230	5 **3RT2037-1CL24-3MA0**	5	**3RT2037-3CL24-3MA0**
80	**37**	90	**22**	2	2	230	5 **3RT2038-1CL24-3MA0**	5	**3RT2038-3CL24-3MA0**

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

SIRIUS 3RT contactors, 3-pole up to 250 kW IE3/IE4 ready NEW

AC operation

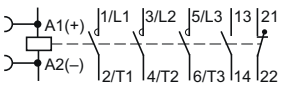
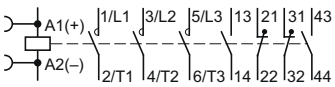
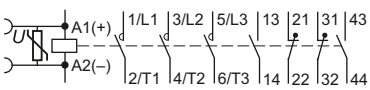
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT204.-1A.00

3RT204.-3A.00

3RT204.-1A.04

3RT204.-1CL24-3MA0

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50 Hz	SD	Screw terminals		SD	Spring-type terminals	
AC-2 and AC-3, t_u: Up to 60° C		AC-1, t_u: 40 °C										
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V										
A	**kW**	A		NO	NC	V AC	d			d		
For screw fixing and snap-on mounting onto TH 35 and TH 75 standard mounting rails												
Size S3												
												
80	**37**	125	**11**	1	1	24	1	**3RT2045-1AB00**		5	**3RT2045-3AB00**	
						110	1	**3RT2045-1AF00**		5	**3RT2045-3AF00**	
						230	1	**3RT2045-1AP00**		1	**3RT2045-3AP00**	
95	**45**	130	**11**	1	1	24	1	**3RT2046-1AB00**		5	**3RT2046-3AB00**	
						110	1	**3RT2046-1AF00**		5	**3RT2046-3AF00**	
						230	1	**3RT2046-1AP00**		1	**3RT2046-3AP00**	
110	**55**	130	**11**	1	1	24	X	**3RT2047-1AB00**		X	**3RT2047-3AB00**	
						110	X	**3RT2047-1AF00**		X	**3RT2047-3AF00**	
						230	X	**3RT2047-1AP00**		X	**3RT2047-3AP00**	
With removable mounted auxiliary switch block												
												
80	**37**	125	**22**	2	2	24	5	**3RT2045-1AB04**			--	
						110	1	**3RT2045-1AF04**			--	
						230	1	**3RT2045-1AP04**			--	
95	**45**	130	**22**	2	2	24	5	**3RT2046-1AB04**			--	
						110	1	**3RT2046-1AF04**			--	
						230	1	**3RT2046-1AP04**			--	
110	**55**	130	**22**	2	2	24	X	**3RT2047-1AB04**			--	
						110	X	**3RT2047-1AF04**			--	
						230	X	**3RT2047-1AP04**			--	
With permanently mounted auxiliary switch block and varistor permanently plugged into the front												
												
80	**37**	125	**22**	2	2	230	X	**3RT2045-1CL24-3MA0**			--	
95	**45**	130	**22**	2	2	230	X	**3RT2046-1CL24-3MA0**			--	
110	**55**	130	**22**	2	2	230	X	**3RT2047-1CL24-3MA0**			--	

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

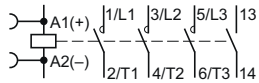
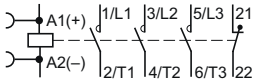
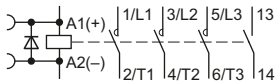
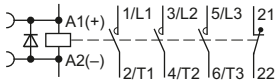
* You can order this quantity or a multiple thereof.
Illustrations are approximate.

DC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1B...

3RT201.-2B...

Rated data			Auxiliary contacts			Rated control supply voltage U_s	SD	Screw terminals	SD	Spring-type terminals
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No. Price per PU		Article No. Price per PU
400 V	**400 V**	690 V								
A	**kW**	A		NO	NC	V DC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S00										
• With auxiliary contact 1 NO, Ident. No. **10** 								• With auxiliary contact 1 NC, Ident. No. **01** 		
7	**3**	18	**10**	1	--	24 220	▶ 2	**3RT2015-1BB41** **3RT2015-1BM41**	▶ 5	**3RT2015-2BB41** **3RT2015-2BM41**
			01	--	1	24 220	▶ 5	**3RT2015-1BB42** **3RT2015-1BM42**	▶ 5	**3RT2015-2BB42** **3RT2015-2BM42**
9	**4**	22	**10**	1	--	24 220	▶ 5	**3RT2016-1BB41** **3RT2016-1BM41**	▶ 5	**3RT2016-2BB41** **3RT2016-2BM41**
			01	--	1	24 220	▶ 5	**3RT2016-1BB42** **3RT2016-1BM42**	▶ 5	**3RT2016-2BB42** **3RT2016-2BM42**
12	**5.5**	22	**10**	1	--	24 220	▶ 5	**3RT2017-1BB41** **3RT2017-1BM41**	▶ 5	**3RT2017-2BB41** **3RT2017-2BM41**
			01	--	1	24 220	▶ 5	**3RT2017-1BB42** **3RT2017-1BM42**	▶ 5	**3RT2017-2BB42** **3RT2017-2BM42**
16	**7.5**	22	**10**	1	--	24 220	▶ 5	**3RT2018-1BB41** **3RT2018-1BM41**	▶ 5	**3RT2018-2BB41** **3RT2018-2BM41**
			01	--	1	24 220	▶ 5	**3RT2018-1BB42** **3RT2018-1BM42**	▶ 5	**3RT2018-2BB42** **3RT2018-2BM42**
With integrated coil circuit (diode)[1)]										
• With auxiliary contact 1 NO, Ident. No. **10** 								• With auxiliary contact 1 NC, Ident. No. **01** 		
7	**3**	18	**10**	1	--	24	▶	**3RT2015-1FB41**	▶	**3RT2015-2FB41**
			01	--	1	24	▶	**3RT2015-1FB42**	▶	**3RT2015-2FB42**
9	**4**	22	**10**	1	--	24	▶	**3RT2016-1FB41**	▶	**3RT2016-2FB41**
			01	--	1	24	▶	**3RT2016-1FB42**	▶	**3RT2016-2FB42**
12	**5.5**	22	**10**	1	--	24	▶	**3RT2017-1FB41**	▶	**3RT2017-2FB41**
			01	--	1	24	▶	**3RT2017-1FB42**	▶	**3RT2017-2FB42**
16	**7.5**	22	**10**	1	--	24	▶	**3RT2018-1FB41**	▶	**3RT2018-2FB41**
			01	--	1	24	▶	**3RT2018-1FB42**	▶	**3RT2018-2FB42**

1) When using contactors with IE3/IE4 motors, use contactors fitted with varistors instead of diodes. For more information about dimensioning and configuring, see page 3/6.

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready

DC operation

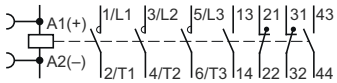
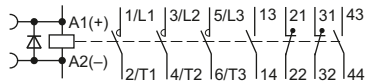
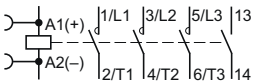
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B


3RT201.-1BB44-3MA0

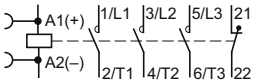

3RT201.-2BB44-3MA0


3RT201.-1BB4.-0CC0


3RT201.-2BB4.-0CC0

Rated data			Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals	
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C									
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version			Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V									
A	**kW**	A		NO NC	V DC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail											
Size S00											
With permanently mounted auxiliary switch block (SUVA-certified safety contactor)											
											
7	**3**	18	**22**	2	2	24	▶	**3RT2015-1BB44-3MA0**	2	**3RT2015-2BB44-3MA0**	
9	**4**	22	**22**	2	2	24	▶	**3RT2016-1BB44-3MA0**	2	**3RT2016-2BB44-3MA0**	
12	**5.5**	22	**22**	2	2	24	2	**3RT2017-1BB44-3MA0**	2	**3RT2017-2BB44-3MA0**	
16	**7.5**	22	**22**	2	2	24	2	**3RT2018-1BB44-3MA0**	2	**3RT2018-2BB44-3MA0**	
With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and integrated coil circuit (diode)[1)]											
											
7	**3**	18	**22**	2	2	24	2	**3RT2015-1FB44-3MA0**	2	**3RT2015-2FB44-3MA0**	
9	**4**	22	**22**	2	2	24	2	**3RT2016-1FB44-3MA0**	2	**3RT2016-2FB44-3MA0**	
12	**5.5**	22	**22**	2	2	24	2	**3RT2017-1FB44-3MA0**	5	**3RT2017-2FB44-3MA0**	
16	**7.5**	22	**22**	2	2	24	2	**3RT2018-1FB44-3MA0**	5	**3RT2018-2FB44-3MA0**	
With voltage tap-off (only available with 24 V DC coils)											
• With auxiliary contact 1 NO, Ident. No. **10**											
											
7	**3**	18	**10**	1	--	24	▶	**3RT2015-1BB41-0CC0**	▶	**3RT2015-2BB41-0CC0**	
			01	--	1	24	▶	**3RT2015-1BB42-0CC0**	2	**3RT2015-2BB42-0CC0**	
9	**4**	22	**10**	1	--	24	▶	**3RT2016-1BB41-0CC0**	2	**3RT2016-2BB41-0CC0**	
			01	--	1	24	2	**3RT2016-1BB42-0CC0**	2	**3RT2016-2BB42-0CC0**	
12	**5.5**	22	**10**	1	--	24	2	**3RT2017-1BB41-0CC0**	▶	**3RT2017-2BB41-0CC0**	
			01	--	1	24	5	**3RT2017-1BB42-0CC0**	▶	**3RT2017-2BB42-0CC0**	
16	**7.5**	22	**10**	1	--	24	2	**3RT2018-1BB41-0CC0**	▶	**3RT2018-2BB41-0CC0**	
			01	--	1	24	2	**3RT2018-1BB42-0CC0**	2	**3RT2018-2BB42-0CC0**	

• With auxiliary contact 1 NC, Ident. No. **01**



[1)] When using contactors with IE3/IE4 motors, use contactors fitted with varistors instead of diodes. For more information about dimensioning and configuring, see page 3/6.

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

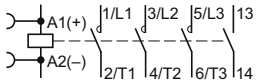
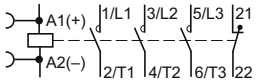
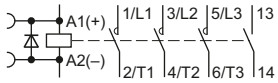
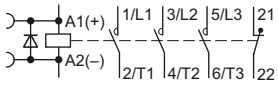
DC operation for direct control from the PLC

- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be extended with auxiliary switch blocks

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1.B4.

3RT201.-2.B4.

Rated data			Auxiliary contacts			Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals	
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C										
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V	Ident. No.	Version NO	Version NC			Article No.	Price per PU		Article No.	Price per PU
A	**kW**	A		NO	NC	V DC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S00												
Diode, varistor or RC element, attachable												
(no auxiliary switch blocks can be mounted)												
• With auxiliary contact 1 NO, Ident. No. **10**												
												
• With auxiliary contact 1 NC, Ident. No. **01**												
												
Operating range **0.7 ... 1.25 x U_s**, power consumption of the solenoid coils **2.8 W** at 24 V												
7	**3**	18	**10**	1	--	24	5	**3RT2015-1HB41**		5	**3RT2015-2HB41**	
			01	--	1	24	5	**3RT2015-1HB42**		5	**3RT2015-2HB42**	
9	**4**	22	**10**	1	--	24	5	**3RT2016-1HB41**		5	**3RT2016-2HB41**	
			01	--	1	24	2	**3RT2016-1HB42**		5	**3RT2016-2HB42**	
12	**5.5**[1]	22	**10**	1	--	24	5	**3RT2017-1HB41**		5	**3RT2017-2HB41**	
			01	--	1	24	▶	**3RT2017-1HB42**		5	**3RT2017-2HB42**	
Operating range **0.85 ... 1.85 x U_s**, power consumption of the solenoid coils **1.6 W** at 24 V												
7	**3**	18	**10**	1	--	24	5	**3RT2015-1MB41-0KT0**		5	**3RT2015-2MB41-0KT0**	
			01	--	1	24	5	**3RT2015-1MB42-0KT0**		5	**3RT2015-2MB42-0KT0**	
9	**4**	22	**10**	1	--	24	5	**3RT2016-1MB41-0KT0**		5	**3RT2016-2MB41-0KT0**	
			01	--	1	24	5	**3RT2016-1MB42-0KT0**		5	**3RT2016-2MB42-0KT0**	
12	**5.5**[1]	22	**10**	1	--	24	5	**3RT2017-1MB41-0KT0**		5	**3RT2017-2MB41-0KT0**	
			01	--	1	24	5	**3RT2017-1MB42-0KT0**		5	**3RT2017-2MB42-0KT0**	
With integrated coil circuit (diode)[1]												
(no auxiliary switch blocks can be mounted)												
• With auxiliary contact 1 NO, Ident. No. **10**												
												
• With auxiliary contact 1 NC, Ident. No. **01**												
												
Operating range **0.7 ... 1.25 x U_s**, power consumption of the solenoid coils **2.8 W** at 24 V												
7	**3**	18	**10**	1	--	24	2	**3RT2015-1JB41**		2	**3RT2015-2JB41**	
			01	--	1	24	2	**3RT2015-1JB42**		5	**3RT2015-2JB42**	
9	**4**	22	**10**	1	--	24	▶	**3RT2016-1JB41**		5	**3RT2016-2JB41**	
			01	--	1	24	2	**3RT2016-1JB42**		5	**3RT2016-2JB42**	
12	**5.5**[1]	22	**10**	1	--	24	5	**3RT2017-1JB41**		5	**3RT2017-2JB41**	
			01	--	1	24	5	**3RT2017-1JB42**		5	**3RT2017-2JB42**	
Operating range **0.85 ... 1.85 x U_s**, power consumption of the solenoid coils **1.6 W** at 24 V												
7	**3**	18	**10**	1	--	24	5	**3RT2015-1VB41**		5	**3RT2015-2VB41**	
			01	--	1	24	5	**3RT2015-1VB42**		5	**3RT2015-2VB42**	
9	**4**	22	**10**	1	--	24	5	**3RT2016-1VB41**		5	**3RT2016-2VB41**	
			01	--	1	24	5	**3RT2016-1VB42**		5	**3RT2016-2VB42**	
12	**5.5**[1]	22	**10**	1	--	24	5	**3RT2017-1VB41**		5	**3RT2017-2VB41**	
			01	--	1	24	5	**3RT2017-1VB42**		5	**3RT2017-2VB42**	

[1] When using contactors with IE3/IE4 motors, use contactors fitted with varistors instead of diodes. In the case of 5.5 kW coupling contactors, use 5.5 kW coupling contactors of size S0; see page 3/63.
For more information about dimensioning and configuring, see page 3/6.

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready

DC operation for direct control from the PLC

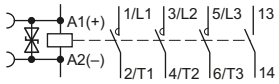
- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be extended with auxiliary switch blocks

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

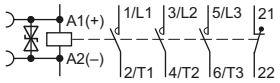
3RT201.-1.B4.

3RT201.-2.B4.

Rated data			Auxiliary contacts			Rated control supply voltage U_s	SD	Screw terminals	SD	Spring-type terminals
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No. / Price per PU		Article No. / Price per PU
400 V	**400 V**	690 V								
A	**kW**	A		NO	NC	V DC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S00										
With integrated coil circuit (suppressor diode)[1]										
(no auxiliary switch blocks can be mounted)										
• With auxiliary contact 1 NO, Ident. No. **10**										
Operating range **0.7 ... 1.25 x U_s**, power consumption of the solenoid coils **2.8 W** at 24 V										
7	**3**	18	**10**	1	--	24	2	**3RT2015-1KB41**	2	**3RT2015-2KB41**
			01	--	1	24	2	**3RT2015-1KB42**	▶	**3RT2015-2KB42**
9	**4**	22	**10**	1	--	24	2	**3RT2016-1KB41**	2	**3RT2016-2KB41**
			01	--	1	24	2	**3RT2016-1KB42**	2	**3RT2016-2KB42**
12	**5.5**[1]	22	**10**	1	--	24	5	**3RT2017-1KB41**	▶	**3RT2017-2KB41**
			01	--	1	24	5	**3RT2017-1KB42**	▶	**3RT2017-2KB42**
Operating range **0.85 ... 1.85 x U_s**, power consumption of the solenoid coils **1.6 W** at 24 V										
7	**3**	18	**10**	1	--	24	5	**3RT2015-1SB41**	5	**3RT2015-2SB41**
			01	--	1	24	5	**3RT2015-1SB42**	5	**3RT2015-2SB42**
9	**4**	22	**10**	1	--	24	5	**3RT2016-1SB41**	5	**3RT2016-2SB41**
			01	--	1	24	5	**3RT2016-1SB42**	5	**3RT2016-2SB42**
12	**5.5**[1]	22	**10**	1	--	24	5	**3RT2017-1SB41**	5	**3RT2017-2SB41**
			01	--	1	24	5	**3RT2017-1SB42**	5	**3RT2017-2SB42**



• With auxiliary contact 1 NC, Ident. No. **01**



[1] When using contactors with IE3/IE4 motors, use contactors fitted with varistors instead of diodes. In the case of 5.5 kW coupling contactors, use 5.5 kW coupling contactors of size S0; see page 3/63.
For more information about dimensioning and configuring, see page 3/6.

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

DC operation

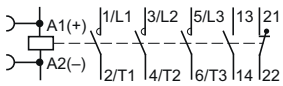
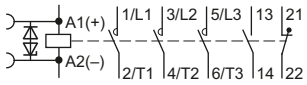
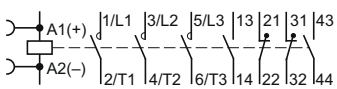
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1B.40

3RT202.-2B.40

3RT202.-1B.44

3RT202.-2B.44

Rated data			Auxiliary contacts			Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals	
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C										
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC							
A	**kW**	A				V DC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S0												
												
9	**4**	40	**11**	1	1	24	▶	**3RT2023-1BB40**	▶		**3RT2023-2BB40**	
12	**5.5**	40	**11**	1	1	24	▶	**3RT2024-1BB40**	▶		**3RT2024-2BB40**	
						220	5	**3RT2024-1BM40**		5	**3RT2024-2BM40**	
17	**7.5**	40	**11**	1	1	24	▶	**3RT2025-1BB40**	▶		**3RT2025-2BB40**	
						220	5	**3RT2025-1BM40**		5	**3RT2025-2BM40**	
25	**11**	40	**11**	1	1	24	▶	**3RT2026-1BB40**	▶		**3RT2026-2BB40**	
						220	5	**3RT2026-1BM40**		5	**3RT2026-2BM40**	
32	**15**	50	**11**	1	1	24	▶	**3RT2027-1BB40**	▶		**3RT2027-2BB40**	
						220	5	**3RT2027-1BM40**		5	**3RT2027-2BM40**	
38	**18.5**	50	**11**	1	1	24	▶	**3RT2028-1BB40**	▶		**3RT2028-2BB40**	
						220	5	**3RT2028-1BM40**		5	**3RT2028-2BM40**	
With coil circuit plugged into front (diode assembly)												
												
9	**4**	40	**11**	1	1	24	2	**3RT2023-1FB40**	▶		**3RT2023-2FB40**	
12	**5.5**	40	**11**	1	1	24	▶	**3RT2024-1FB40**	▶		**3RT2024-2FB40**	
17	**7.5**	40	**11**	1	1	24	▶	**3RT2025-1FB40**	▶		**3RT2025-2FB40**	
25	**11**	40	**11**	1	1	24	▶	**3RT2026-1FB40**	▶		**3RT2026-2FB40**	
32	**15**	50	**11**	1	1	24	▶	**3RT2027-1FB40**	▶		**3RT2027-2FB40**	
38	**18.5**	50	**11**	1	1	24	▶	**3RT2028-1FB40**	▶		**3RT2028-2FB40**	
With removable mounted auxiliary switch block												
												
9	**4**	40	**22**	2	2	24	▶	**3RT2023-1BB44**	▶		**3RT2023-2BB44**	
12	**5.5**	40	**22**	2	2	24	▶	**3RT2024-1BB44**	▶		**3RT2024-2BB44**	
17	**7.5**	40	**22**	2	2	24	▶	**3RT2025-1BB44**	▶		**3RT2025-2BB44**	
25	**11**	40	**22**	2	2	24	▶	**3RT2026-1BB44**	▶		**3RT2026-2BB44**	
32	**15**	50	**22**	2	2	24	▶	**3RT2027-1BB44**	▶		**3RT2027-2BB44**	
38	**18.5**	50	**22**	2	2	24	▶	**3RT2028-1BB44**	▶		**3RT2028-2BB44**	

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready

DC operation

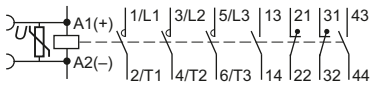
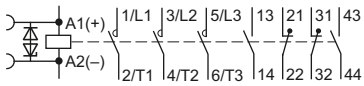
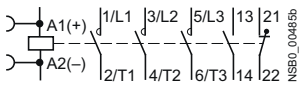
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1.B44-3MA0

3RT202.-2.B44-3MA0

3RT202.-1BB40-0CC0

3RT202.-2BB40-0CC0

Rated data			Auxiliary contacts			Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals	
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C										
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V										
A	**kW**	A		NO	NC	V DC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S0												
With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and coil circuit permanently plugged into the front (varistor)												
												
12	**5.5**	40	**22**	2	2	24	2	**3RT2024-1DB44-3MA0**		5	**3RT2024-2DB44-3MA0**	
17	**7.5**	40	**22**	2	2	24	5	**3RT2025-1DB44-3MA0**		5	**3RT2025-2DB44-3MA0**	
25	**11**	40	**22**	2	2	24	5	**3RT2026-1DB44-3MA0**		5	**3RT2026-2DB44-3MA0**	
32	**15**	50	**22**	2	2	24	5	**3RT2027-1DB44-3MA0**		5	**3RT2027-2DB44-3MA0**	
With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and coil circuit permanently plugged into the front (diode assembly)												
												
9	**4**	40	**22**	2	2	24	2	**3RT2023-1FB44-3MA0**		5	**3RT2023-2FB44-3MA0**	
12	**5.5**	40	**22**	2	2	24	5	**3RT2024-1FB44-3MA0**		5	**3RT2024-2FB44-3MA0**	
17	**7.5**	40	**22**	2	2	24	5	**3RT2025-1FB44-3MA0**		5	**3RT2025-2FB44-3MA0**	
25	**11**	40	**22**	2	2	24	5	**3RT2026-1FB44-3MA0**		5	**3RT2026-2FB44-3MA0**	
32	**15**	50	**22**	2	2	24	5	**3RT2027-1FB44-3MA0**		5	**3RT2027-2FB44-3MA0**	
38	**18.5**	50	**22**	2	2	24	5	**3RT2028-1FB44-3MA0**		5	**3RT2028-2FB44-3MA0**	
With voltage tap-off												
												
9	**4**	40	**11**	1	1	24	2	**3RT2023-1BB40-0CC0**		2	**3RT2023-2BB40-0CC0**	
12	**5.5**	40	**11**	1	1	24	2	**3RT2024-1BB40-0CC0**		2	**3RT2024-2BB40-0CC0**	
17	**7.5**	40	**11**	1	1	24	2	**3RT2025-1BB40-0CC0**		2	**3RT2025-2BB40-0CC0**	
25	**11**	40	**11**	1	1	24	2	**3RT2026-1BB40-0CC0**		2	**3RT2026-2BB40-0CC0**	
32	**15**	50	**11**	1	1	24	2	**3RT2027-1BB40-0CC0**		2	**3RT2027-2BB40-0CC0**	
38	**18.5**	50	**11**	1	1	24	2	**3RT2028-1BB40-0CC0**		2	**3RT2028-2BB40-0CC0**	

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

DC operation for direct control from the PLC

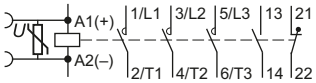
- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be extended with auxiliary switch blocks

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1KB40

3RT202.-2KB40

Rated data			Auxiliary contacts			Rated control supply voltage U_s	SD	**Screw terminals**	SD	**Spring-type terminals**
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V	Ident. No.	Version NO	Version NC			Article No. / Price per PU		Article No. / Price per PU
A	**kW**	A		NO	NC	V DC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S0										
With integrated coil circuit (varistor)										
(no auxiliary switch blocks can be mounted)										
Operating range **0.7 ... 1.25 x U_s**, power consumption of the solenoid coils **4.5 W** at 24 V										
9	**4**	40	**11**	1	1	24	►	**3RT2023-1KB40**	►	**3RT2023-2KB40**
12	**5.5**	40	**11**	1	1	24	►	**3RT2024-1KB40**	5	**3RT2024-2KB40**
17	**7.5**	40	**11**	1	1	24	►	**3RT2025-1KB40**	2	**3RT2025-2KB40**
25	**11**	40	**11**	1	1	24	►	**3RT2026-1KB40**	2	**3RT2026-2KB40**
32	**15**	50	**11**	1	1	24	►	**3RT2027-1KB40**	5	**3RT2027-2KB40**



Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready

DC operation for direct control from the PLC

- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC outputs with 2 A
- Cannot be expanded with auxiliary switch blocks

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

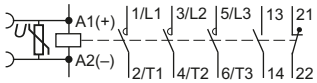
3RT203.-1KB40

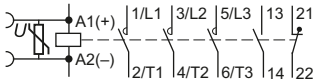
3RT203.-3KB40

3RT204.-1KB40

3RT204.-3KB40

Rated data			Auxiliary contacts			Rated control supply voltage U_s	SD	Screw terminals	SD	Spring-type terminals
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No. / Price per PU		Article No. / Price per PU
400 V	**400 V**	690 V								
A	**kW**	A		NO	NC	V DC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S2										
With integrated coil circuit (varistor)										
(no auxiliary switch blocks can be mounted)										
Operating range **0.8 ... 1.2 x U_s**, power consumption of the solenoid coils **23 W** at 24 V										
40	**18.5**	60	**11**	1	1	24	▶	**3RT2035-1KB40**	X	**3RT2035-3KB40**
50	**22**	70	**11**	1	1	24	▶	**3RT2036-1KB40**	X	**3RT2036-3KB40**
65	**30**	80	**11**	1	1	24	▶	**3RT2037-1KB40**	X	**3RT2037-3KB40**
80	**37**	90	**11**	1	1	24	▶	**3RT2038-1KB40**	X	**3RT2038-3KB40**
Size S3 NEW										
With integrated coil circuit (varistor)										
(no auxiliary switch blocks can be mounted)										
Operating range **0.8 ... 1.2 x U_s**, power consumption of the solenoid coils **25 W** at 24 V										
80	**37**	125	**11**	1	1	24	X	**3RT2045-1KB40**	X	**3RT2045-3KB40**
95	**45**	130	**11**	1	1	24	X	**3RT2046-1KB40**	X	**3RT2046-3KB40**





Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

AC/DC operation (50/60 Hz AC and DC)

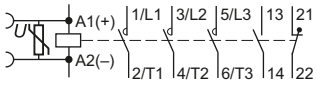
- Extended operating range of the solenoid coil 0.7 to 1.3 x U_s
- Reduced power consumption when closing and in the closed state

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1N.30

3RT202.-2N.30

Rated data			Auxiliary contacts			Rated control supply voltage U_s [1]	SD	**Screw terminals**	SD	**Spring-type terminals**
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V	Ident. No.	Version NO	Version NC			Article No. / Price per PU		Article No. / Price per PU
A	**kW**	A		NO	NC	V AC/DC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S0										
With integrated coil circuit (varistor)										
12	**5.5**	40	**11**	1	1	21 ... 28	▶	**3RT2024-1NB30**	5	**3RT2024-2NB30**
						95 ... 130	▶	**3RT2024-1NF30**	5	**3RT2024-2NF30**
						200 ... 280 [2]	▶	**3RT2024-1NP30**	▶	**3RT2024-2NP30**
17	**7.5**	40	**11**	1	1	21 ... 28	▶	**3RT2025-1NB30**	5	**3RT2025-2NB30**
						95 ... 130	▶	**3RT2025-1NF30**	5	**3RT2025-2NF30**
						200 ... 280 [2]	▶	**3RT2025-1NP30**	▶	**3RT2025-2NP30**
25	**11**	40	**11**	1	1	21 ... 28	▶	**3RT2026-1NB30**	▶	**3RT2026-2NB30**
						95 ... 130	▶	**3RT2026-1NF30**	▶	**3RT2026-2NF30**
						200 ... 280 [2]	▶	**3RT2026-1NP30**	▶	**3RT2026-2NP30**
32	**15**	50	**11**	1	1	21 ... 28	▶	**3RT2027-1NB30**	▶	**3RT2027-2NB30**
						95 ... 130	▶	**3RT2027-1NF30**	5	**3RT2027-2NF30**
						200 ... 280 [2]	▶	**3RT2027-1NP30**	▶	**3RT2027-2NP30**
38	**18.5**	50	**11**	1	1	21 ... 28	5	**3RT2028-1NB30**	5	**3RT2028-2NB30**
						95 ... 130	5	**3RT2028-1NF30**	5	**3RT2028-2NF30**
						200 ... 280 [2]	▶	**3RT2028-1NP30**	▶	**3RT2028-2NP30**



[1] Coil operating range: 0.7 x $U_{s\,min}$ to 1.3 x $U_{s\,max}$.
[2] The following applies to $U_{s\,max}$ = 280 V: Upper limit = 1.1 x $U_{s\,max}$.

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready

AC/DC operation (50/60 Hz AC and DC)

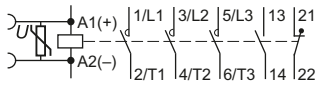
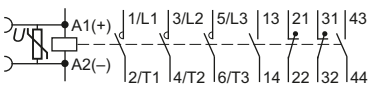
- Extended operating range of the solenoid coil 0.8 to 1.1 x U_s
- Reduced power consumption when closing and in the closed state

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT203.-1N.30

3RT203.-3N.30

3RT203.-1N.34

Rated data			Auxiliary contacts			Rated control supply voltage U_s [1]	SD	**Screw terminals**	SD	**Spring-type terminals**
AC-2 and AC-3, t_u: Up to 60° C		AC-1, t_u: 40 °C	Ident. No.	Version				Article No. Price per PU		Article No. Price per PU
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V		NO	NC					
A	**kW**	A				V AC/DC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S2										
With integrated coil circuit (varistor)										
										
40	**18.5**	60	**11**	1	1	20 ... 33	▶	**3RT2035-1NB30**	▶	**3RT2035-3NB30**
						83 ... 155	5	**3RT2035-1NF30**	5	**3RT2035-3NF30**
						175 ... 280	5	**3RT2035-1NP30**	5	**3RT2035-3NP30**
50	**22**	70	**11**	1	1	20 ... 33	▶	**3RT2036-1NB30**	▶	**3RT2036-3NB30**
						83 ... 155	5	**3RT2036-1NF30**	5	**3RT2036-3NF30**
						175 ... 280	5	**3RT2036-1NP30**	5	**3RT2036-3NP30**
65	**30**	80	**11**	1	1	20 ... 33	▶	**3RT2037-1NB30**	▶	**3RT2037-3NB30**
						83 ... 155	5	**3RT2037-1NF30**	5	**3RT2037-3NF30**
						175 ... 280	5	**3RT2037-1NP30**	5	**3RT2037-3NP30**
80	**37**	90	**11**	1	1	20 ... 33	▶	**3RT2038-1NB30**	▶	**3RT2038-3NB30**
						83 ... 155	5	**3RT2038-1NF30**	5	**3RT2038-3NF30**
						175 ... 280	5	**3RT2038-1NP30**	2	**3RT2038-3NP30**
With removable mounted auxiliary switch block and integrated coil circuit (varistor)										
										
40	**18.5**	60	**22**	2	2	20 ... 33	▶	**3RT2035-1NB34**		**--**
						83 ... 155	5	**3RT2035-1NF34**		**--**
						175 ... 280	5	**3RT2035-1NP34**		**--**
50	**22**	70	**22**	2	2	20 ... 33	▶	**3RT2036-1NB34**		**--**
						83 ... 155	5	**3RT2036-1NF34**		**--**
						175 ... 280	5	**3RT2036-1NP34**		**--**
65	**30**	80	**22**	2	2	20 ... 33	▶	**3RT2037-1NB34**		**--**
						83 ... 155	5	**3RT2037-1NF34**		**--**
						175 ... 280	5	**3RT2037-1NP34**		**--**
80	**37**	90	**22**	2	2	20 ... 33	▶	**3RT2038-1NB34**		**--**
						83 ... 155	5	**3RT2038-1NF34**		**--**
						175 ... 280	5	**3RT2038-1NP34**		**--**

[1] Coil operating range: 0.8 x $U_{s\,min}$ to 1.1 x $U_{s\,max}$.

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

AC/DC operation (50/60 Hz AC and DC)

- Extended operating range of the solenoid coil 0.8 to 1.1 x U_s
- Reduced power consumption when closing and in the closed state

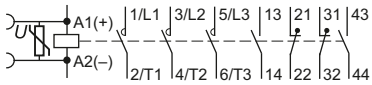
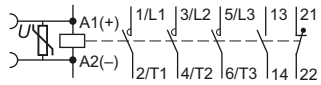
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT203.-1NB34-3MA0

3RT203. -3NB34-3MA0

3RT203.-1NB30-0CC0

3RT203.-3NB30-0CC0

Rated data			Auxiliary contacts			Rated control supply voltage U_s [1]	SD	Screw terminals		SD	Spring-type terminals	
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C										
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V										
A	**kW**	A		NO	NC	V AC/DC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S2												
With permanently mounted auxiliary switch block and integrated coil circuit (varistor)												
												
40	**18.5**	60	**22**	2	2	20 ... 33	5	**3RT2035-1NB34-3MA0**		5	**3RT2035-3NB34-3MA0**	
50	**22**	70	**22**	2	2	20 ... 33	2	**3RT2036-1NB34-3MA0**		5	**3RT2036-3NB34-3MA0**	
65	**30**	80	**22**	2	2	20 ... 33	▶	**3RT2037-1NB34-3MA0**		5	**3RT2037-3NB34-3MA0**	
80	**37**	90	**22**	2	2	20 ... 33	▶	**3RT2038-1NB34-3MA0**		2	**3RT2038-3NB34-3MA0**	
With voltage tap-off and integrated coil circuit (varistor)												
												
40	**18.5**	60	**11**	1	1	20 ... 33	2	**3RT2035-1NB30-0CC0**		2	**3RT2035-3NB30-0CC0**	
50	**22**	70	**11**	1	1	20 ... 33	2	**3RT2036-1NB30-0CC0**		2	**3RT2036-3NB30-0CC0**	
65	**30**	80	**11**	1	1	20 ... 33	2	**3RT2037-1NB30-0CC0**		2	**3RT2037-3NB30-0CC0**	
80	**37**	90	**11**	1	1	20 ... 33	2	**3RT2038-1NB30-0CC0**		2	**3RT2038-3NB30-0CC0**	

[1] Coil operating range: 0.8 x $U_{s\,min}$ to 1.1 x $U_{s\,max}$.

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

SIRIUS 3RT contactors, 3-pole up to 250 kW IE3/IE4 ready NEW

AC/DC operation (50/60 Hz AC and DC)

- Extended operating range of the solenoid coil 0.8 to 1.1 x U_S
- Reduced power consumption when closing and in the closed state

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT204.-1N.30

3RT204.-3N.30

3RT204.-1N.34

Rated data			Auxiliary contacts			Rated control supply voltage U_s [1]	SD	Screw terminals	SD	Spring-type terminals
AC-2 and AC-3, t_u: Up to 60° C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No. Price per PU		Article No. Price per PU
400 V	**400 V**	690 V								
A	**kW**	A		NO	NC	V AC/DC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S3										
With integrated coil circuit (varistor)										
80	**37**	125	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	X X X	**3RT2045-1NB30** **3RT2045-1NF30** **3RT2045-1NP30**	X X X	**3RT2045-3NB30** **3RT2045-3NF30** **3RT2045-3NP30**
95	**45**	130	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	X X X	**3RT2046-1NB30** **3RT2046-1NF30** **3RT2046-1NP30**	X X X	**3RT2046-3NB30** **3RT2046-3NF30** **3RT2046-3NP30**
110	**55**	130	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	X X X	**3RT2047-1NB30** **3RT2047-1NF30** **3RT2047-1NP30**	X X X	**3RT2047-3NB30** **3RT2047-3NF30** **3RT2047-3NP30**
With removable mounted auxiliary switch block and integrated coil circuit (varistor)										
80	**37**	125	**22**	2	2	20 ... 33 83 ... 155 175 ... 280	X X X	**3RT2045-1NB34** **3RT2045-1NF34** **3RT2045-1NP34**		**--** **--** **--**
95	**45**	130	**22**	2	2	20 ... 33 83 ... 155 175 ... 280	X X X	**3RT2046-1NB34** **3RT2046-1NF34** **3RT2046-1NP34**		**--** **--** **--**
110	**55**	130	**22**	2	2	20 ... 33 83 ... 155 175 ... 280	X X X	**3RT2047-1NB34** **3RT2047-1NF34** **3RT2047-1NP34**		**--** **--** **--**

[1] Coil operating range: 0.8 x $U_{s\,min}$ to 1.1 x $U_{s\,max}$.

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

AC/DC operation (50/60 Hz AC and DC)

- Extended operating range of the solenoid coil 0.8 to 1.1 x U_s
- Reduced power consumption when closing and in the closed state

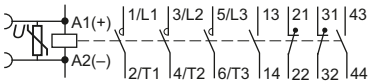
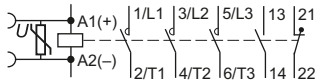
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT204.-1NB34-3MA0

3RT204.-3NB34-3MA0

3RT204.-1NB30-0CC0

3RT204.-3NB30-0CC0

Rated data			Auxiliary contacts			Rated control supply voltage U_s [1]	SD	Screw terminals		SD	Spring-type terminals	
AC-2 and AC-3, t_u: Up to 60 °C		AC-1, t_u: 40 °C										
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V										
A	**kW**	A		NO	NC	V AC/DC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S3												
With permanently mounted auxiliary switch block and integrated coil circuit (varistor)												
												
80	**37**	125	**22**	2	2	20 ... 33	X	**3RT2045-1NB34-3MA0**		X	**3RT2045-3NB34-3MA0**	
95	**45**	130	**22**	2	2	20 ... 33	X	**3RT2046-1NB34-3MA0**		X	**3RT2046-3NB34-3MA0**	
110	**55**	130	**22**	2	2	20 ... 33	X	**3RT2047-1NB34-3MA0**		X	**3RT2047-3NB34-3MA0**	
With voltage tap-off and integrated coil circuit (varistor)												
												
80	**37**	125	**11**	1	1	20 ... 33	X	**3RT2045-1NB30-0CC0**		X	**3RT2045-3NB30-0CC0**	
95	**45**	130	**11**	1	1	20 ... 33	X	**3RT2046-1NB30-0CC0**		X	**3RT2046-3NB30-0CC0**	
110	**55**	130	**11**	1	1	20 ... 33	X	**3RT2047-1NB30-0CC0**		X	**3RT2047-3NB30-0CC0**	

[1] Coil operating range: 0.8 x $U_{s\,min}$ to 1.1 x $U_{s\,max}$.

Other voltages according to page 3/73 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready

AC/DC operation (50/60 Hz AC and DC)

- Withdrawable coils with integrated coil switch (varistor)
- Auxiliary and control conductors: Screw or spring-type terminals
- Main conductors: Busbar connections, for 3RT1054 (55 kW) box terminals[1)]

3RT105.

3RT106.

3RT107.

Size	Rated data AC-2 and AC-3, t_u: Up to 60° C Operational current I_e up to 500 V	Ratings of three-phase motors at 50 Hz and 230 V	400 V	500 V	690 V	AC-1, t_u: 40 °C Operational current I_e up to 690 V	Auxiliary contacts, lateral Version NO	NC	Rated control supply voltage U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	kW	**kW**	kW	kW	A			V AC/DC	d					
Conventional operating mechanisms															
											Screw terminals				
S6	115	37	**55**	75	110	160	2	2	110 ... 127	▶	**3RT1054-1AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1054-1AP36**		1	1 unit	41B
	150	45	**75**	90	132	185	2	2	110 ... 127	▶	**3RT1055-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1055-6AP36**		1	1 unit	41B
	185	55	**90**[2)]	110	160	215	2	2	110 ... 127	▶	**3RT1056-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1056-6AP36**		1	1 unit	41B
S10	225	55	**110**	160	200	275	2	2	110 ... 127	▶	**3RT1064-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1064-6AP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	110 ... 127	▶	**3RT1065-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1065-6AP36**		1	1 unit	41B
	300	90	**160**[2)]	200	250	330	2	2	110 ... 127	▶	**3RT1066-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1066-6AP36**		1	1 unit	41B
S12	400	132	**200**	250	400	430	2	2	110 ... 127	▶	**3RT1075-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1075-6AP36**		1	1 unit	41B
	500	160	**250**[2)]	355	400	610	2	2	110 ... 127	▶	**3RT1076-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1076-6AP36**		1	1 unit	41B
											Spring-type terminals for coil and auxiliary switch terminals				
S6	115	37	**55**	75	110	160	2	2	110 ... 127	5	**3RT1054-3AF36**		1	1 unit	41B
									220 ... 240	5	**3RT1054-3AP36**		1	1 unit	41B
	150	45	**75**	90	132	185	2	2	110 ... 127	5	**3RT1055-2AF36**		1	1 unit	41B
									220 ... 240	5	**3RT1055-2AP36**		1	1 unit	41B
	185	55	**90**[2)]	110	160	215	2	2	110 ... 127	5	**3RT1056-2AF36**		1	1 unit	41B
									220 ... 240	5	**3RT1056-2AP36**		1	1 unit	41B
S10	225	55	**110**	160	200	275	2	2	110 ... 127	5	**3RT1064-2AF36**		1	1 unit	41B
									220 ... 240	5	**3RT1064-2AP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	110 ... 127	5	**3RT1065-2AF36**		1	1 unit	41B
									220 ... 240	5	**3RT1065-2AP36**		1	1 unit	41B
	300	90	**160**[2)]	200	250	330	2	2	110 ... 127	5	**3RT1066-2AF36**		1	1 unit	41B
									220 ... 240	5	**3RT1066-2AP36**		1	1 unit	41B
S12	400	132	**200**	250	400	430	2	2	110 ... 127	5	**3RT1075-2AF36**		1	1 unit	41B
									220 ... 240	5	**3RT1075-2AP36**		1	1 unit	41B
	500	160	**250**[2)]	355	400	610	2	2	110 ... 127	5	**3RT1076-2AF36**		1	1 unit	41B
									220 ... 240	5	**3RT1076-2AP36**		1	1 unit	41B

1) Alternatively, the 3RT1054 contactor (55 kW) can also be supplied with busbar connections instead of box terminals.
In the 8th position of the article number, the **"1"** must be replaced with **"6"** for screw terminals, e. g. 3RT1054-**6**A..., for spring-type terminals, the **"3"** must be replaced with **"2"**, e. g. 3RT1054-**2**A....

2) When using 3RT10.6-.**A**... contactors with IE3/IE4 motors from 8.5 times the starting current, use the versions with solid-state operating mechanism 3RT10.6-.**N**..., see page 3/71.
For more information about dimensioning and configuring, see page 3/6.

Other voltages according to page 3/74 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

AC/DC operation (50/60 Hz AC and DC)

- Withdrawable coils with integrated coil switch (varistor)
- Auxiliary and control conductors: screw or spring-type terminals
- Main conductors: Busbar connections, for 3RT1054 (55 kW) box terminals[1)]

3RT105.

3RT106.

3RT107.

Size	Rated data AC-2 and AC-3, t_u: Up to 60° C Operational current I_e up to 500 V	Ratings of three-phase motors at 50 Hz and 230 V	400 V	500 V	690 V	AC-1, t_u: 40 °C Operational current I_e up to 690 V	Auxiliary contacts, lateral Version NO	NC	Rated control supply voltage U_s V AC/DC	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	kW	**kW**	kW	kW	A	NO	NC	V AC/DC	d					
Solid-state operating mechanisms · with 24 V DC control signal input e.g. for control from the PLC															
											Screw terminals				
S6	115	37	**55**	75	110	160	2	2	96 ... 127	2	**3RT1054-1NF36**		1	1 unit	41B
									200 ... 277	▶	**3RT1054-1NP36**		1	1 unit	41B
	150	45	**75**	90	132	185	2	2	96 ... 127	2	**3RT1055-6NF36**		1	1 unit	41B
									200 ... 277	▶	**3RT1055-6NP36**		1	1 unit	41B
	185	55	**90**	110	160	215	2	2	96 ... 127	2	**3RT1056-6NF36**		1	1 unit	41B
									200 ... 277	▶	**3RT1056-6NP36**		1	1 unit	41B
S10	225	55	**110**	160	200	275	2	2	96 ... 127	2	**3RT1064-6NF36**		1	1 unit	41B
									200 ... 277	2	**3RT1064-6NP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	96 ... 127	2	**3RT1065-6NF36**		1	1 unit	41B
									200 ... 277	2	**3RT1065-6NP36**		1	1 unit	41B
	300	90	**160**	200	250	330	2	2	96 ... 127	5	**3RT1066-6NF36**		1	1 unit	41B
									200 ... 277	2	**3RT1066-6NP36**		1	1 unit	41B
S12	400	132	**200**	250	400	430	2	2	96 ... 127	2	**3RT1075-6NF36**		1	1 unit	41B
									200 ... 277	2	**3RT1075-6NP36**		1	1 unit	41B
	500	160	**250**	355	400	610	2	2	96 ... 127	2	**3RT1076-6NF36**		1	1 unit	41B
									200 ... 277	2	**3RT1076-6NP36**		1	1 unit	41B
											Spring-type terminals for coil and auxiliary switch terminals				
S6	115	37	**55**	75	110	160	2	2	96 ... 127	5	**3RT1054-3NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1054-3NP36**		1	1 unit	41B
	150	45	**75**	90	132	185	2	2	96 ... 127	5	**3RT1055-2NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1055-2NP36**		1	1 unit	41B
	185	55	**90**	110	160	215	2	2	96 ... 127	5	**3RT1056-2NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1056-2NP36**		1	1 unit	41B
S10	225	55	**110**	160	200	275	2	2	96 ... 127	5	**3RT1064-2NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1064-2NP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	96 ... 127	5	**3RT1065-2NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1065-2NP36**		1	1 unit	41B
	300	90	**160**	200	250	330	2	2	96 ... 127	5	**3RT1066-2NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1066-2NP36**		1	1 unit	41B
S12	400	132	**200**	250	400	430	2	2	96 ... 127	5	**3RT1075-2NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1075-2NP36**		1	1 unit	41B
	500	160	**250**	355	400	610	2	2	96 ... 127	5	**3RT1076-2NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1076-2NP36**		1	1 unit	41B

1) Alternatively, the 3RT1054 contactor (55 kW) can also be supplied with busbar connections instead of box terminals.
In the 8th position of the article number, the **"1"** must be replaced with **"6"** for screw terminals, e. g. 3RT1054-**6**N…, for spring-type terminals, the **"3"** must be replaced with **"2"**, e. g. 3RT1054-**2**N….

Other voltages according to page 3/74 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

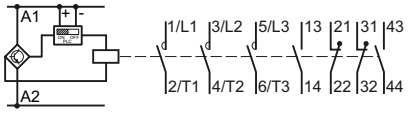
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready

AC/DC operation (50/60 Hz AC and DC)

- Withdrawable coils with integrated coil switch (varistor)
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections, for 3RT1054 (55 kW) box terminals[1)]
- Indication of remaining lifetime (RLT)

3RT1056-6P..

Size	Rated data AC-2 and AC-3, t_u: Up to 60° C Operational current I_e up to	Ratings of three-phase motors at 50 Hz and 230 V	400 V	500 V	690 V	AC-1, t_u: 40 °C Operational current I_e up to	Auxiliary contacts, lateral Version NO	NC	Rated control supply voltage U_s	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	500 V					690 V									
	A	kW	**kW**	kW	kW	A			V AC/DC	d					
Solid-state operating mechanisms · with 24 V DC control signal input · with indication of remaining lifetime (RLT) e. g. for control from the PLC															
															
S6	115	37	**55**	75	110	160	1	1	96 … 127	5	**3RT1054-1PF35**		1	1 unit	41B
									200 … 277	5	**3RT1054-1PP35**		1	1 unit	41B
	150	45	**75**	90	132	185	1	1	96 … 127	5	**3RT1055-6PF35**		1	1 unit	41B
									200 … 277	5	**3RT1055-6PP35**		1	1 unit	41B
	185	55	**90**	110	160	215	1	1	96 … 127	5	**3RT1056-6PF35**		1	1 unit	41B
									200 … 277	5	**3RT1056-6PP35**		1	1 unit	41B
S10	225	55	**110**	160	200	275	1	1	96 … 127	5	**3RT1064-6PF35**		1	1 unit	41B
									200 … 277	5	**3RT1064-6PP35**		1	1 unit	41B
	265	75	**132**	160	250	330	1	1	96 … 127	5	**3RT1065-6PF35**		1	1 unit	41B
									200 … 277	5	**3RT1065-6PP35**		1	1 unit	41B
	300	90	**160**	200	250	330	1	1	96 … 127	5	**3RT1066-6PF35**		1	1 unit	41B
									200 … 277	5	**3RT1066-6PP35**		1	1 unit	41B
S12	400	132	**200**	250	400	430	1	1	96 … 127	5	**3RT1075-6PF35**		1	1 unit	41B
									200 … 277	5	**3RT1075-6PP35**		1	1 unit	41B
	500	160	**250**	355	400	610	1	1	96 … 127	5	**3RT1076-6PF35**		1	1 unit	41B
									200 … 277	5	**3RT1076-6PP35**		1	1 unit	41B

1) Alternatively, the 3RT1054 contactor (55 kW) can also be supplied with busbar connections instead of box terminals.
In the 8th position of the article number, the **"1"** must be replaced with **"6"**, e.g. 3RT1054-**6**.....

Other voltages according to page 3/74 on request.

For accessories and spare parts, see pages 3/75 to 3/123.

Options

Rated control supply voltages for 3RT2 contactors, possible on request (change of the 10th and 11th digits of the article number)

Delivery time on request

Rated control supply voltage U_S	Contactor type	3RT201, 3RH2	3RT202	3RT203	3RT204
	Size	S00	S0	S2	S3
Sizes S00 to S3					
AC operation[1]					
Solenoid coils for 50 Hz (exception: Size S00: 50 and 60 Hz[2])					
24 V AC		B0	B0	B0	B0
42 V AC		D0	D0	D0	D0
48 V AC		H0	H0	H0	H0
110 V AC		F0	F0	F0	F0
230 V AC		P0	P0	P0	P0
240 V AC		U0	U0	U0	U0
400 V AC		V0	V0	V0	V0
Solenoid coils for 50 and 60 Hz[2]					
24 V AC		B0	C2	C2	C2
42 V AC		D0	D2	D2	D2
48 V AC		H0	H2	H2	H2
110 V AC		F0	G2	G2	G2
220 V AC		N2	N2	N2	N2
230 V AC		P0	L2	L2	L2
Solenoid coils (for USA and Canada[3]**)**					
50 Hz	**60 Hz**				
110 V AC	120 V AC	K6	K6	K6	K6
220 V AC	240 V AC	P6	P6	P6	P6
Solenoid coils (for Japan)					
50/60 Hz[4]	**60 Hz**[5]				
100 V AC	110 V AC	G6	G6	G6	G6
200 V AC	220 V AC	N6	N6	N6	N6
400 V AC	440 V AC	R6	R6	R6	R6
DC operation[1]					
12 V DC		A4	A4	--	--
24 V DC		B4	B4	--	--
42 V DC		D4	D4	--	--
48 V DC		W4	W4	--	--
60 V DC		E4	E4	--	--
110 V DC		F4	F4	--	--
125 V DC		G4	G4	--	--
220 V DC		M4	M4	--	--
230 V DC		P4	P4	--	--

Examples

AC operation	3RT2023-1A**P0**0	Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC.
	3RT2023-1A**G2**0	Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC.
DC operation	3RT2025-2B**B4**0	Contactor with spring-type terminals; for rated control supply voltage 24 V DC.
	3RT2025-2B**G4**0	Contactor with spring-type terminals; for rated control supply voltage 125 V DC.

1) For deviating coil voltages and operating ranges of sizes S00 and S0, a SITOP 24 V DC power supply with wide-range input can be used for the coil control, see page 15/1 onwards.

2) Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_S
- at 60 Hz: 0.85 to 1.1 x U_S.

3) Coil operating range
- Size S00:
  at 50 Hz: 0.85 to 1.1 x U_S
  at 60 Hz: 0.8 to 1.1 x U_S
- Sizes S0 to S3: at 50 Hz and 60 Hz: 0.8 to 1.1 x U_S.

4) Coil operating range
- Size S00
  at 50/60 Hz: 0.85 to 1.1 x U_S
- Size S0
  at 50 Hz: 0.8 to 1.1 x U_S
  at 60 Hz: 0.85 to 1.1 x U_S.

5) Coil operating range at 60 Hz: 0.8 to 1.1 x U_S.

Rated control supply voltage	Contactor type	3RT2.2.-.N	Rated control supply voltage	Contactor type	3RT2.3.-.N	3RT2.4.-.N
$U_{S\,min}$ ... $U_{S\,max}$[1]	Size	S0	$U_{S\,min}$ ... $U_{S\,max}$[1]	Size	S2	S3
Sizes S00 to S3						
AC/DC operation (50/60 Hz AC, DC)						
21 ... 28 V AC/DC		B3	20 ... 33 V AC/DC		B3	B3
95 ... 130 V AC/DC		F3	83 ... 155 V AC/DC		F3	F3
200 ... 280 V AC/DC[2]		P3	175 ... 280 V AC/DC		P3	P3

1) Coil operating range
- Size S0: 0.7 x $U_{S\,min}$ to 1.3 x $U_{S\,max}$
- Sizes S2 and S3: 0.8 x $U_{S\,min}$ to 1.1 x $U_{S\,max}$.

2) The following applies to S0 and $U_{S\,max}$ = 280 V: Upper limit = 1.1 x $U_{S\,max}$.

SIRIUS 3RT contactors, 3-pole up to 250 kW

Rated control supply voltages for 3RT1 contactors, possible on request (change of the 10th and 11th digits of the article number)

Delivery time on request

Rated control supply voltage U_s	Contactor type	3RT1.5.-.A, 3RT1.6.-.A, 3RT1.7.-.A	Rated control supply voltage U_s	Contactor type	3RT1.5.-.N, 3RT1.6.-.N, 3RT1.7.-.N	3RT1.5.-.P, 3RT1.6.-.P, 3RT1.7.-.P
$U_{s\,min}$ ... $U_{s\,max}$	Size	S6 to S12	$U_{s\,min}$ ... $U_{s\,max}$	Size	S6 to S12	S6 to S12
Sizes S6 to S12						
AC/DC operation (50/60 Hz AC, DC)						
Conventional operating mechanisms[1]			**Solid-state operating mechanisms[2]**			
23 ... 26 V AC/DC		B3	21 ... 27.3 V AC/DC		B3	--
42 ... 48 V AC/DC		D3	96 ... 127 V AC/DC		F3	F3
110 ... 127 V AC/DC		F3	200 ... 277 V AC/DC		P3	P3
200 ... 220 V AC/DC		M3				
220 ... 240 V AC/DC		P3				
240 ... 277 V AC/DC		U3				
380 ... 420 V AC/DC		V3				
440 ... 480 V AC/DC		R3				
500 ... 550 V AC/DC		S3				
575 ... 600 V AC/DC		T3				

[1] Operating range: 0.8 x $U_{s\,min}$ to 1.1 × $U_{s\,max}$.

[2] Operating range: 0.7 x $U_{s\,min}$ to 1.25 × $U_{s\,max}$.

Overview

Extensive accessories and spare parts are available for SIRIUS 3RT power contactors and SIRIUS 3RH2 contactor relays.

These components are easily fitted to the contactors without the use of any tools according to requirements.

Overview graphics with mountable accessories

- For 3RT2 contactors, see pages 3/7 to 3/10
- For 3RT1 contactors, see pages 3/11 to 3/14
- For 3RH2 contactor relays, see page 5/5

Version	For contactors 3RT2, Sizes S00 to S3; 3RH2, Size S00	 3RT1, Sizes S6 to S12	Selection and ordering data Page
Accessories for 3RT contactors and 3RH2 contactor relays			
Auxiliary switch blocks			
Instantaneous			
• Solid-state compatible auxiliary switch blocks	3RH29.1	3RH19.1	3/87 ... 3/99
Delayed			
• Pneumatic time-delay auxiliary switch blocks	3RT2926-2P..1	--	3/100
• Solid-state time-delay auxiliary switch blocks	3RA2813, 3RA2814, 3RA2815	3RT1926-2E/-2F/-2G	3/100, 3/101
Surge suppressors			
• Without LED	3RT29.6-1B/-1C/-1D/-1E	3RT19.6-1C	3/102, 3/103
• With LED	3RT29.6-1J/-1L/-1M	--	3/103
Modules for contactor control			
Coupling links for control by PLC	3RH29.4-.GP11	--	3/104
3RA28 function modules			
• For direct on-line starting: ON delay or OFF-delay	3RA2811, 3RA2812, 3RA2831, 3RA2832	--	3/105
• For star-delta (wye-delta) starting	3RA2816	--	3/105
3RA27 function modules for IO-Link or AS-Interface			
• For direct-on-line, reversing or star-delta (wye-delta) starting	3RA271.-.A/.B/.C	--	3/106
Mechanical latching blocks	3RT2926-3A.31	--	3/108
OFF-delay devices for contactors with AC/DC and DC operation	3RT2916-2B.01	--	3/108
Link modules			
Link modules from motor starter protector to contactor	3RA.9.1	--	7/49
Safety main current connectors for two contactors	3RA29.6-1A	--	3/109
Assembly kits			
• For reversing contactor assemblies	3RA29.3-2AA.	3RA19.3-2A	3/109
• For contactor assemblies for star-delta (wye-delta) starting	3RA29..-2BB., 3RA29.3-2C	3RA1953-3G, 3RA19.3-2./-3.	3/110, 3/111
Single wiring modules	3RA.9.3-3.A.	3RA19.3-3.	3/112
Star jumpers (links for paralleling), 3-pole	3RT.9.6-4BA3.	3RT19.6-4BA31	3/112
Mechanical interlock kits for two contactors	3RA29.2-2H	--	3/113
Mechanical interlocks for contactor assemblies	3RA2934-2B	3RA1954-2.	3/113
Mechanical connectors for contactor assemblies	3RA29.2-2.	3RA1932-2D	3/113
Terminal modules/adapters			
Links for paralleling for main circuits	3RT.9.6-4BB.1	--	3/114
Single-phase infeed terminals	3RA2943-3L	--	3/114
Three-phase infeed terminals	3RA2913-3K, 3RV29.5-5A.	--	3/114
• with increased clearances and creepage distances	3RV2935-5E	--	3/114
Three-phase busbars	3RV1915-1AB	--	3/114
Auxiliary terminals	--	3TX7500-0A	3/114
Box terminal blocks	--	3RT19..-4G	3/114
Solder pin adapters for contactor assembly on printed circuit boards	3RT1916-4KA.	--	3/115
Coil connection modules for connections from top or from below	3RT2926-4R.1.	--	3/115
Motor feeder connector	3RT1900-4RE01	--	3/115
Covers			
Terminal covers	3RT29.6-4EA.	3RT19.6-4EA., 3TX65.6-3B	3/116
Sealable covers	3RT2916-4MA10	3RT1926-4MA10	3/116

General data

Version	For contactors 3RT2, Sizes S00 to S3; 3RH2, Size S00	 3RT1, Sizes S6 to S12	Selection and ordering data Page
Accessories for 3RT contactors and 3RH2 contactor relays (continued)			
Miscellaneous accessories			
Base plates			
• For reversing contactor assemblies	--	3RT19.2-2A	3/117
• For contactor assemblies for star-delta (wye-delta) starting	3RA29.2-2F	3RA19.2-2.	3/117
Adapters for screw fixing	3RT1926-4P	--	3/117
EMC suppression modules	3RT2916-1P..	--	3/117
Additional load modules	3RT2916-1GA00	--	3/118
LED modules for displaying contactor operation	3RT2926-1QT00	3RT1926-1QT00	3/118
Control kit for manual operation	3RT29.6-4MC00	--	3/118
Insulation stop for securely holding back the conductor insulation for conductors up to 1 mm^2	3RT2916-4JA02	3RT1916-4JA02	3/119
Tools for opening spring-type terminals	3RA2908-1A	3RA2908-1A	3/119
Blank labels	3RT2900-1SB.0	3RT1900-1S..0	3/119
Spare Parts for 3RT2 Contactors			
Solenoid coils	3RT29..-5...1	--	3/120, 3/121
Withdrawable coils	--	3RT19..-5....	3/122
Contacts with fixing parts	3RT29..-6.	3RT19..-6.	3/123
Arc chambers	--	3RT19..-7.	3/123

Overview

Auxiliary switches

The auxiliary switches can be designed as positively driven contacts in 3RH contactor relays or also as mirror contacts in the case of 3RT power contactors.

For more information on positively driven operation and mirror contacts, see Manuals → "More information", page 3/82, and in the selection and ordering data from page 3/87 onwards.

Solid-state time-delay auxiliary switch blocks for mounting on 3RT2 contactors and 3RH2 contactor relays

See pages 3/82 and 3/100

The 3RA28 solid-state time-delay auxiliary switches which can be mounted onto the contactor are designed for applications in the range from 24 to 240 V AC/DC (wide voltage range). Both the electrical and mechanical connection are made by simple snapping on and locking.

The time-delay auxiliary switch is supplied with power directly by two plug-in contacts through the coil terminals of the contactor, in parallel with A./A2.

A protection circuit (varistor) is integrated in each module.

A sealable cover is available to protect against careless adjustment of the set times.

Note:

Mounting more auxiliary switches to the contactor is not permitted.

Surge suppressors

- Without LED (also for spring-type terminals)
  Sizes S00 to S3, see page 3/102
- With LED (also for spring-type terminals):
  Sizes S00 to S3, see page 3/103

All 3RT2 contactors and 3RH2 contactor relays can be retrofitted with RC elements or varistors for damping opening surges in the coil. Diodes or diode assemblies (comprising noise suppression diodes and Zener diodes for short break times) can be used.

The surge suppressors are plugged onto the front of size S00 contactors. Space is provided for them next to a snap-on auxiliary switch block.

Varistors, RC elements or diode assemblies can be plugged onto the front of size S0 to S3 contactors.

Coupling contactors are supplied either without overvoltage damping or with a suppressor diode, varistor or diode connected as standard, according to the version.

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assembly 2 to 6 times, varistor +2 to 5 ms).

Coupling links for control by PLC

See pages 3/84 and 3/104

- Operation with 24 V DC
- Operating range 17 to 30 V
- Low power consumption of 0.5 W
- An LED indicates the switching state.

The 3RH2924-1GP11 coupling link has an integrated surge suppressor (varistor) for the contactor coil being switched and is mounted onto the size S0 contactor coil via a coil connection module.

Accessories

3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays

See pages 3/85 and 3/105

Simply by being plugged in place, the SIRIUS function modules enable different functionalities required for the assembly of starters to be realized in the feeder. The function modules and wiring kits thus help to reduce the wiring work within the feeder practically to zero.

SIRIUS function modules for direct-on-line starting

The electronic timing relays which can be mounted onto the contactor are available in these versions:

- Sizes S00 and S0 for applications in the range from 24 to 240 V AC/DC (wide voltage range)
- Sizes S2 and S3 for applications in either the range from 24 to 90 V AC/DC or 90 to 240 V AC/DC

Both the electrical and mechanical connection are made by simple snapping on and locking.

A protection circuit (varistor) is integrated in each module.

The electronic timing relay with semiconductor output uses two contact legs to actuate the contactor underneath by means of a semiconductor after the set time *t* has elapsed.

The switching state feedback is performed by a mechanical switching state indicator (plunger). In addition, the auxiliary switches in the contactors are freely accessible and can be used for feedbacks to the control system or for signal lamps.

A sealable cover is available to protect against careless adjustment of the set times.

The snap-on function modules for direct-on-line starting are used above all for realizing timing functions independently of the control system.

With the OFF-delay variant of the timing relay it is possible for example for the fan motor for cooling a main drive to be switched off with a delay so that sufficient cooling after operation is guaranteed; the programmer of the control system does not need to worry about such technical details of the plant.

The ON-delay timing relays enable for example the time-delayed starting of several drives so that the summation starting current does not rise too high, which could result in voltage failure.

The use of snap-on function modules for direct-on-line starting results in the following advantages:

- Reduction of control current wiring
- Prevention of wiring errors
- Reduction of testing costs
- Implementation of timing functions independently of the control system
- Less space required in the control cabinet compared to a separate timing relay
- No additive protection circuit required (varistor integrated)

Assembly of reversing starters

We offer ready-made wiring kits for the assembly of reversing starters. Use of these wiring kits offers further advantages; see page 3/161.

SIRIUS function modules for star-delta (wye-delta) starting

Both interlocking and timing functions are required for the assembly of star-delta (wye-delta) starters. With the function modules for star-delta (wye-delta) starting and the matching link modules for the main circuit, these starters can be assembled easily and with absolutely no errors.

The entire sequence in the control circuit is integrated in the snap-on modules. This covers:

- An adjustable star time *t* from 0.5 to 60 s
- A non-adjustable dead interval of 50 ms
- Electrical contacting of the contactors by means of coil pick-off (contact legs)
- Feedback of the switching state at the contactor using a mechanical switch position indicator (plunger)
- Electrical interlocking between the contactors

These modules do not require their own terminals and can therefore be used for contactors with both screw and spring-type terminals in all the sizes S00 to S3. To start the star-delta (wye-delta) starter, only the first of the three contactors (line contactor) is actuated, like in the case of a direct-on-line starter. All other functions then take place inside the individual modules.

This also offers advantages if the timing function was previously implemented in a controller, as it again results in a significant reduction in the number of PLC outputs, the programming work and the wiring outlay.

The kits for the main circuit include the mechanical interlock, the star jumper, the wiring modules at the top and at the bottom, and the required connectors or connecting clips.

A protection circuit (varistor) is integrated in the basic module.

The function modules for star-delta (wye-delta) starting are mostly used where current-limiting measures for starting a drive are required and a high level of availability is essential at the same time. This technology has been used with success for several decades and has the additional advantage of requiring relatively little know-how. Through the use of function modules, the assembly work with simple standard components is even easier and absolutely error-free.

The use of function modules for star-delta (wye-delta) starting results in the following advantages:

- Operation solely through the line contactor A1/A2 – no further control current wiring needed
- Prevention of wiring errors
- Reduction of testing costs
- Integrated electrical interlocking saves costs and prevents errors
- Less space needed in the control cabinet compared to using a separate timing relay
- Adjustable starting in star mode from 0.5 to 60 s
- Independent of the contactor's control supply voltage (24 to 240 V AC/DC)
- Varistor integrated – no additive protection circuit required
- Mechanically coded assembly enables easy configuration and reliable wiring
- Fewer versions – one module kit for screw and spring-type connection and for all the contactor sizes S00 to S3
- Mechanical interlocking (with wiring kit for the main circuit)

SIRIUS 3RA27 function modules for IO-Link or AS-Interface for mounting on 3RT2 contactors

See pages 3/86 and 3/106

The SIRIUS 3RA27 function modules enable the assembly of starters and contactor assemblies for direct-on-line, reversing and star-delta (wye-delta) starting without any additional, complicated wiring of the individual components. They include the key control functions required for the particular feeder, e.g. timing and interlocking, and can be connected to the control system via either IO-Link or AS-Interface.

The electrical and mechanical connection to the contactor is established by snapping on and locking. An additive protection circuit for the individual contactors can be dispensed with completely because a varistor is integrated in the modules. Feedback from the contactor contacts is performed with Hall sensors which provide reliable feedback concerning the switching state even under extremely dusty conditions.

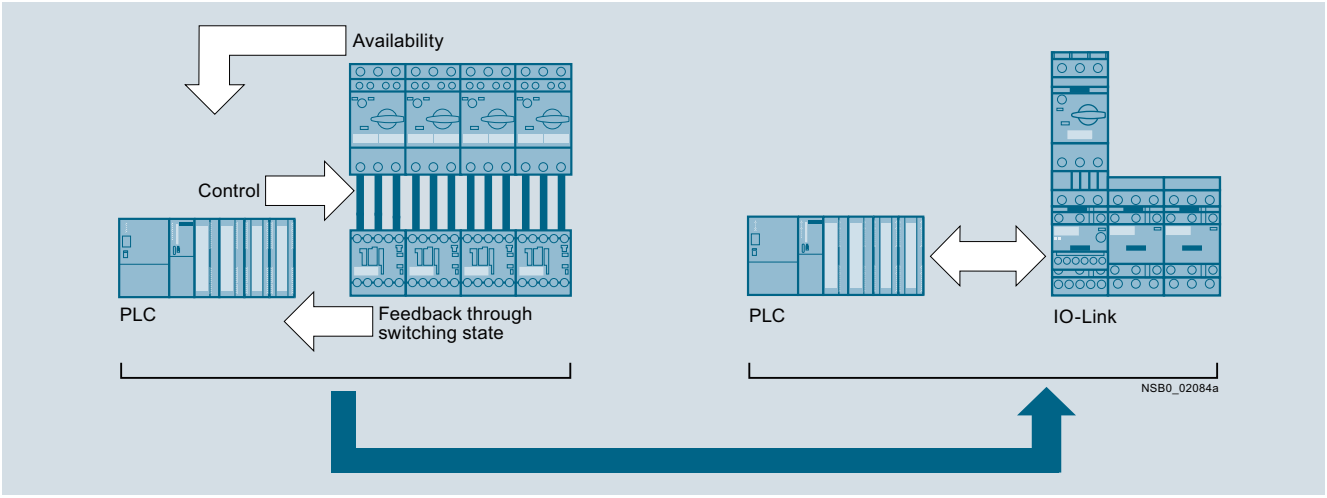
The starters are connected to the higher-level control system through IO-Link, with the possibility of connecting up to four starters as a group to one port of the IO-Link master,

or optionally via AS-Interface, Specification V2.1 or higher, in A/B technology. As a result, up to 62 starters can be connected to one master and the address is entered in the normal manner with an addressing unit.

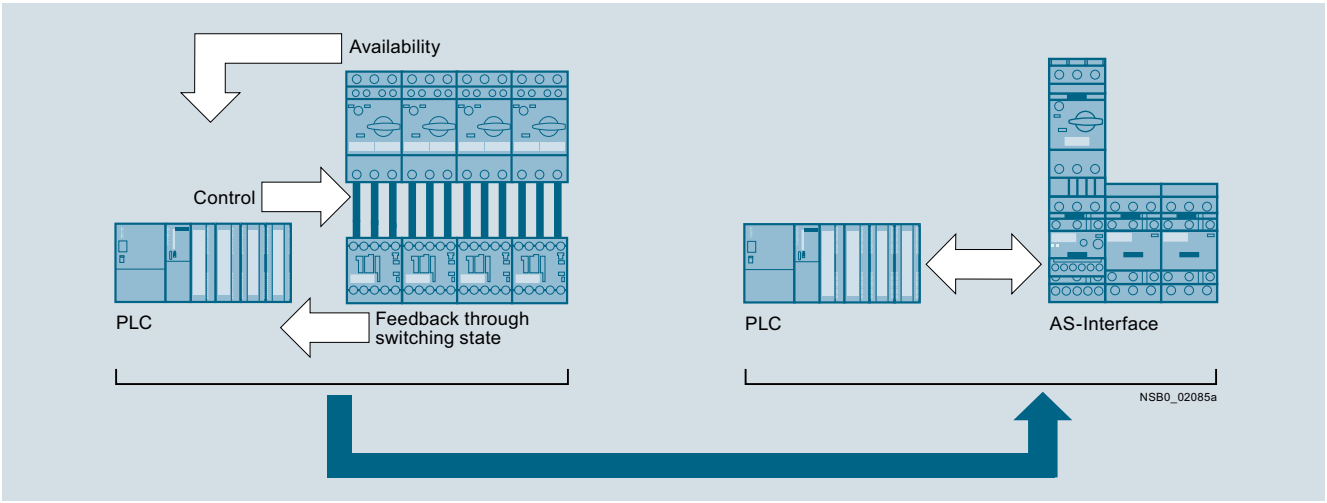
Through this type of connection to the control system, a maximum of wiring is saved. In the case of AS-Interface, the wiring amounts to the control supply voltage and the two individual wires for AS-Interface.

The following essential signals are thus transmitted:

- Availability of the feeder in response to an indirect inquiry from the motor starter protector/circuit breaker
- Starter control
- Feedback concerning the switching state of the starter



Signal transmission through IO-Link

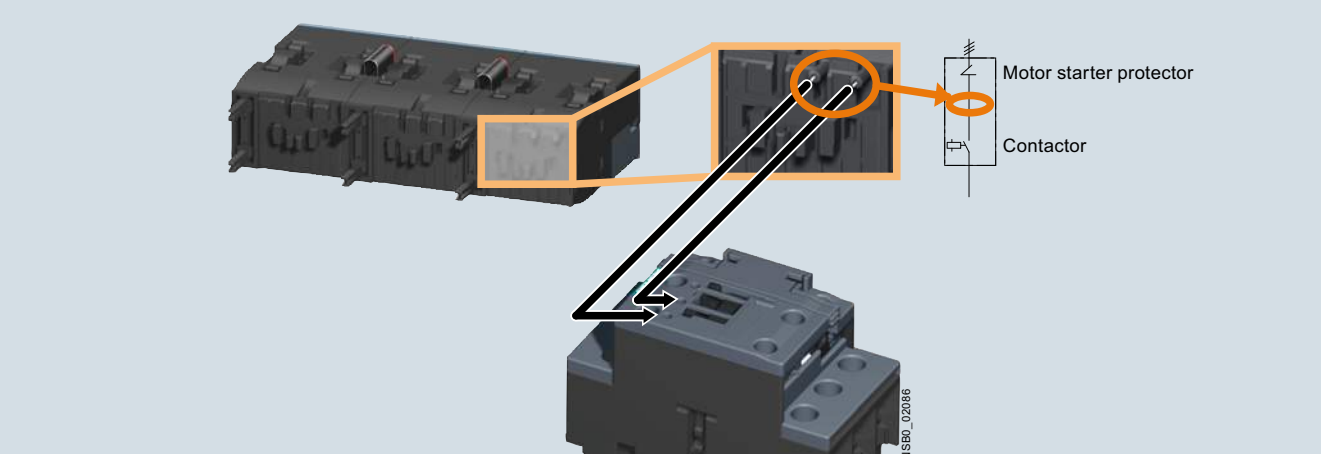


Signal transmission through AS-Interface

Accessories

The inquiry from the motor starter protector/circuit breaker does not take place through additive wiring between the auxiliary switch and the module but by means of a voltage inquiry at the contactor input.

This requires special versions of the contactors with voltage tap-off (see pages 3/58, 3/62, 3/67 and 3/69).



Availability signal through voltage tap-off

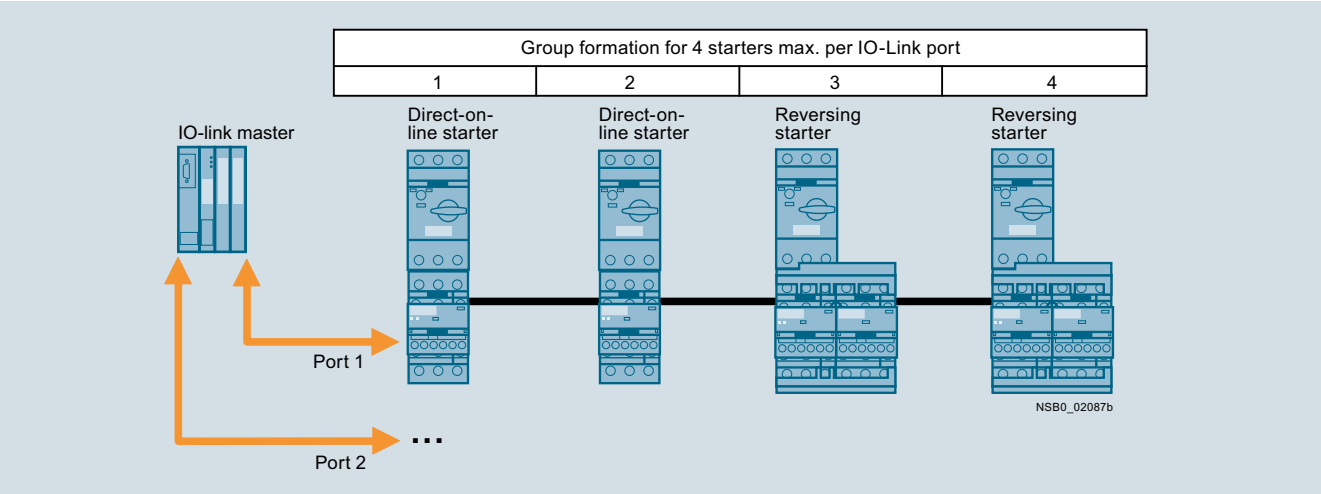
The following benefits result from the use of SIRIUS 3RA27 function modules:

- Reduction of control current wiring. In the case of IO-Link to no more than three cables for four feeders.
- Elimination of testing costs and wiring errors
- Reduction of configuration work
- Parameter server functionality
- Integration in TIA means unambiguous IO-Link diagnostics if a fault occurs
- Dispensing with IO modules saves space in the control cabinet
- All essential timing and interlocking functions for reversing duty and star-delta (wye-delta) starting are integrated
- No additive protection circuit required

For more information on IO-Link and AS-Interface, see "Industrial Communication", from page 2/1 onwards.

SIRIUS 3RA2711 function modules for IO-Link for mounting on 3RT2 contactors

By grouping up to four starters, it is possible to connect up to 16 starters to one master of the ET 200SP or S7-1200. In this case all the signals of the individual controls are made available directly in the process image of the input through only three individual wires per starter group. If the same potential is present at the ET 200SP or S7-1200 master and at the switching devices, the wiring can be reduced further by connecting the supply voltage of the contactor coils to the communication wires via jumpers.



Group formation with IO-Link

In case of a malfunction, the corresponding error signals are also sent directly to the PLC in acyclic mode. This is in addition to transmission of the switching signals and status signals.

Possible error signals:

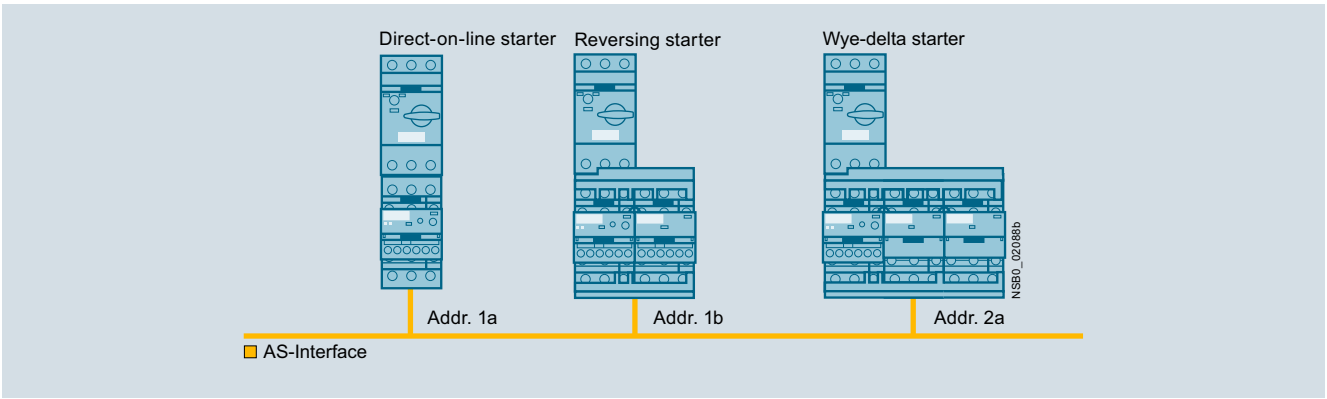
- Switching element defective
- No main voltage (motor starter protector tripped)
- No control supply voltage
- Limit position on the right / on the left
- Manual mode
- Process image fault

This easy integration of the starters in the TIA world does not limit the flexibility in the field in the least. For example, all function modules have special terminals in order to enable direct local disconnection. These terminals can be connected for example to a position switch. The input interrupts the voltage supply to the contactor coil directly, i.e. without going through the PLC. These terminals are jumpered in the as-delivered state.

Local manual operation of the complete starter group is also straightforward using a hand-held device. The latter is easily connected to the last starter and can be built into the front panel of the control cabinet if required. This offers significant advantages particularly for commissioning.

SIRIUS function modules with IO-Link are used above all in machines and plants in which there are several motor feeders in one control cabinet. Using IO-Link, the connection of these feeders to the automation level is easy, quick and error-free. And with IO modules no longer needed, the width of the PLC is far smaller.

SIRIUS 3RA2712 function modules for AS-Interface for mounting on 3RT2 contactors



Topology with AS-Interface

This easy integration of the starters in the TIA world does not limit the flexibility in the field in the least. For example, all function modules have special terminals in order to enable direct local disconnection. These terminals can be connected for example to a position switch. The input interrupts the voltage supply to the contactor coil directly, i.e. without going through the PLC. These terminals are jumpered in the as-delivered state.

SIRIUS function modules with AS-Interface are recommended above all in machines and plants requiring easy connection of several different sensors and actuators both inside and outside the control cabinet to the higher-level control system. And with IO modules no longer needed, the width of the PLC is far smaller.

3

Technical specifications

More information

Technical specifications
- For SIRIUS 3RT2 contactors and SIRIUS 3RH2 contactor relays, see https://support.industry.siemens.com/cs/ww/en/ps/16208/td
- For SIRIUS 3RT1 contactors, see https://support.industry.siemens.com/cs/ww/en/ps/16209/td

FAQs
- For SIRIUS 3RT2 contactors and SIRIUS 3RH2 contactor relays, see https://support.industry.siemens.com/cs/ww/en/ps/16208/faq
- For SIRIUS 3RT1 contactors, see https://support.industry.siemens.com/cs/ww/en/ps/16209/faq

Manuals, see
- System Manual "SIRIUS – System Overview", https://support.industry.siemens.com/cs/WW/en/view/60311318
- Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", https://support.industry.siemens.com/cs/WW/en/view/60306557
- "SIRIUS manual - SIRIUS 3RA28 Function Modules for mounting on 3RT2 Contactors", https://support.industry.siemens.com/cs/ww/en/view/60279150
- Manual "SIRIUS 3RA2711 Function Modules for IO-Link", https://support.industry.siemens.com/cs/ww/en/view/39319600
- Manual "SIRIUS 3RA2712 Function Modules for AS-Interface", https://support.industry.siemens.com/cs/ww/en/view/39318922

Solid-state time-delay auxiliary switch blocks for mounting on 3RT202 to 3RT204 contactors (sizes S00 to S3) and 3RH2 contactor relays (size S00)

Type			3RA2813	3RA2814	3RA2815
Function			ON-delay	OFF-delay with control signal	OFF-delay without control signal
General data					
Dimensions (basic unit with mounted solid-state time-delay auxiliary switch block)			See 3RT2 contactors (pages 3/23, 3/29, 3/34, 3/39) and 3RH2 contactor relays (page 5/8)		
Rated insulation voltage U_i Pollution degree 3, overvoltage category III		V AC	300		
Rated impulse withstand voltage U_{imp}		kV AC	4		
Permissible ambient temperature					
• During operation		°C	-25 ... +60		
• During storage		°C	-40 ... +80		
Degree of protection acc. to IEC 60529			IP20		
Shock resistance Half-sine acc. to IEC 60068-2-27		*g*/ms	15/11		
Vibration resistance acc. to IEC 60068-2-6		Hz/mm	10 ... 55/0.35		
Electromagnetic compatibility (EMC)			IEC 61000-6-2, IEC 61000-6-4, IEC 61812-1, IEC 60947-4-1		
Overvoltage protection			Varistor integrated		
Permissible mounting position			Any (for the mounting position of 3RT2 contactors, see pages 3/23, 3/29, 3/34, 3/39; for the mounting position of 3RH2 contactor relays, see page 5/7)		
Control					
Operating range of excitation			0.85 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency		
Rated power		W	1		
• Power consumption at 230 V AC, 50 Hz		VA	2		
Recovery time		ms	150		--
Minimum ON period		ms	--	35	200
Setting accuracy, typ., with reference to upper limit of scale			± 15 %		
Repeat accuracy, max.			± 1 %		
Load side					
Rated operational currents I_e					
• AC-15 at 24 ... 250 V, 50 Hz		A	3		
• DC-13	- At 24 V	A	1		
	- At 125 V	A	0.2		
	- At 250 V	A	0.1		
Mechanical endurance		Operating cycles	10 x 10^6		
Electrical endurance at AC-15, 250 V, 3 A		Operating cycles	100 000		
Switching frequency for load					
• With I_e at 230 V AC		h^{-1}	2 500		
• With 3RT2 contactor at 230 V AC		h^{-1}	2 500		
Residual current, max.		mA	--		
Voltage drop, max., with conducting output		VA	--		
Short-circuit protection					
• Fuse links, operational class gG: DIAZED, type 5SB		A	4		

Type		3RA2813	3RA2814	3RA2815
Function		ON-delay	OFF-delay with control signal	OFF-delay without control signal
Conductor cross-sections				
Connection type (1 or 2 conductors can be connected)		Screw terminals		
• Solid	mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)		
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)		
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)		
• Terminal screws		M3 (for standard screwdriver size 2 or Pozidriv 2)		
• Tightening torque	Nm	0.8 ... 1.2		
Connection type (1 or 2 conductors can be connected)		Spring-type terminals		
• Solid	mm^2	2 x (0.25 ... 1.5)		
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.25 ... 1.5)		
• Finely stranded without end sleeve	mm^2	2 x (0.25 ... 1.5)		
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)		
• Operating devices	mm	3.0 x 0.5		

Solid-state time-delay auxiliary switch blocks, for snapping onto 3RT1 contactors

Type		3RT1926-2E, 3RT1926-2F, 3RT1926-2G
Size		S6 to S12
General data		
Dimensions (W x H x D)	mm	45 x 26 x 50
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III according to IEC 60664-1	V AC	250
Permissible ambient temperature		
• During operation	°C	-25 ... +60
• During storage	°C	-40 ... +80
Degree of protection acc. to IEC 60529		
Terminals		IP20
Shock resistance Half-sine acc. to IEC 60068-2-27	*g*/ms	15/11
Vibration resistance acc. to IEC 60068-2-6	Hz/mm	10 ... 55/0.35
Electromagnetic compatibility (EMC)		IEC 61812-1
Permissible mounting position		Any (see 3RT1 contactors, page 3/44)
Control		
Operating range of excitation		0.85 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency
Rated power	W	2
Power consumption at 230 V AC, 50 Hz	VA	4
Recovery time	ms	150
Minimum ON period	ms	200 (OFF-delay)
Setting accuracy, typ. with reference to upper limit of scale	%	± 15
Repeat accuracy, max.	%	± 1

Type		3RT1926-2E, 3RT1926-2F, 3RT1926-2G
Size		S6 to S12
Load side		
Rated operational currents I_e		
• AC-15, 230 V, 50 Hz	A	3
• DC-13, 24 V	A	1
• DC-13, 110 V	A	0.2
• DC-13, 230 V	A	0.1
Short-circuit protection		
Fuse links, operational class gG: DIAZED, type 5SB	A	4
Mechanical endurance	Operating cycles	10×10^6
Switching frequency for load		
• with I_e at 230 V AC	h^{-1}	2 500
• With 3RT2016 contactor at 230 V AC	h^{-1}	5 500
Conductor cross-sections		
Connection type (1 or 2 conductors can be connected)		Screw terminals
• Solid	mm^2	2 x (0.5 ... 1.5) 2 x (0.75 ... 4)
• Finely stranded with end sleeve	mm^2	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)
• Terminal screws		M3
• Tightening torque	Nm	0.8 ... 1.2

Accessories

Coupling links for control by PLC

Type		3RH2924-1GP11	3RH2914-.GP11
Mounting on contactors of size		S0	S00 to S3
General data			
Standards		IEC 60947	
Rated insulation voltage U_i (pollution degree 3)	V	300	
Protective separation between coil and contacts acc. to IEC 60947-1, Appendix N	V AC	Up to 300	
Degree of protection acc. to IEC 60529			
• Connections		IP20	
Permissible ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-40 ... +80	
Control side			
Rated control supply voltage U_s	V DC	24	
Operating range	V DC	17 ... 30	
Power consumption at U_s	W	0.5	
Nominal current input	mA	20	
Release voltage	V	≥ 4	
Function display		Yellow LED	
Protection circuit		Varistors	
Load side			
Mechanical endurance	Operating cycles	20 million	10 million
Electrical endurance at I_e	Operating cycles	0.1 million	
Switching frequency	h^{-1}	5 000 operating cycles/h	
Make-time	ms	Approx. 7	
Break-time	ms	Approx. 4	
Bounce time	ms	Approx. 2	
Contact material		$AgSnO_2$	
Switching voltage	V AC/DC	24 ... 250	
Rated operational current I_e			
• AC-15/AC-14 at 230 V	A	3	
• DC-13 at 230 V	A	0.1	
Permissible residual current of the electronics (with 0 signal)	mA	2.5	
Conductor cross-sections			
Connection type (1 or 2 conductors can be connected)		**Screw terminals**	
• Solid	mm^2	2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)	
• Terminal screws		M3	
Connection type (1 or 2 conductors can be connected)		**Spring-type terminals**	
• Solid	mm^2	--	2 x (0.25 ... 1.5)
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	--	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve	mm^2	--	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	--	2 x (24 ... 16)
• Operating devices	mm	--	3.0 x 0.5

3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays

Type			**3RA2811**	**3RA2831**	**3RA2812**	**3RA2832**	**3RA2816**
Mounting on contactors of size			**S00, S0**	**S2, S3**	**S00, S0**	**S2, S3**	**S00 to S3**
Function			**For direct-on-line starting**				**For star-delta (wye-delta) starting**
			ON-delay		**OFF-delay with control signal**		
General data							
Dimensions (basic unit with mounted function module)			See 3RT2 contactors (pages 3/23, 3/29, 3/34, 3/39) and 3RH2 contactor relays (page 5/8)				
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III		V AC	300				
Rated impulse withstand voltage U_{imp}		kV AC	4				
Overvoltage protection			Varistor integrated				
Recovery time		ms	50				150
Minimum ON period		ms	--		35		--
Setting accuracy With reference to upper limit of scale	Typ.		± 15 %				
Repeat accuracy	Max.		± 1 %				
Degree of protection acc. to IEC 60529			IP20				
Permissible ambient temperature							
• During operation		°C	-25 ... +60				
• During storage		°C	-40 ... +80				
Shock resistance Half-sine acc. to IEC 60068-2-27		*g*/ms	15/11				
Vibration resistance acc. to IEC 60068-2-6		Hz/mm	10 ... 55/0.35				
Electromagnetic compatibility (EMC)			IEC 61000-6-2, IEC 61000-6-4, IEC 61812-1, IEC 60947-4-1				
Permissible mounting position			Any (for the mounting position of 3RT2 contactors, see pages 3/23, 3/29, 3/34, 3/39; for the mounting position of 3RH2 contactor relays, see page 5/7)				
Control side							
Operating range of excitation			0.85 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency				
Rated power		W	1				
• Power consumption at 230 V AC, 50 Hz		VA	1				2
Load side							
Mechanical endurance		Operating cycles	100×10^6				10×10^6
Electrical endurance							
• With 3RT2028 contactor		Operating cycles	100 000				--
• At AC-15, 250 V, 3 A		Operating cycles	--				100 000
Switching frequency for load							
• With I_e at 230 V AC		h^{-1}	2 500				--
• With 3RT2 contactor at 230 V AC		h^{-1}	2 500				--
Residual current	Max.	mA	5	--			--
Voltage drop With conducting output	Max.	VA	3.5	--			--
DIAZED fuse protection	Operational class gG	A	--				4
Conductor cross-sections							
Connection type (1 or 2 conductors can be connected)			**Screw terminals**				
• Solid		mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)				--
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)				--
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)				--
• Terminal screws			M3 (for standard screwdriver size 2 or Pozidriv 2)				--
• Tightening torque		Nm	0.8 ... 1.2				--
Connection type (1 or 2 conductors can be connected)			**Spring-type terminals**				
• Operating devices		mm	3.0 x 0.5				--
• Solid		mm^2	2 x (0.25 ... 1.5)				--
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	2 x (0.25 ... 1.5)				--
• Finely stranded without end sleeve		mm^2	2 x (0.25 ... 1.5)				--
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)				--

Accessories

3RA27 function modules for IO-Link for mounting on 3RT2 contactors

Type			**3RA2711**
General data			
Dimensions			See 3RT2 contactors on pages 3/23, 3/29, 3/34 and 3/39
Suitable for IO-Link masters acc. to specification			1.1
Permissible ambient temperature			
• During operation	Acc. to IEC 60947-1	°C	-25 ... +60
• During storage	Acc. to IEC 60721-3-1	°C	-40 ... +80
• During transport	Acc. to IEC 60721-3-2	°C	-40 ... +80
Degree of protection			IP20
Operating voltage U_{Hi}		V DC	24 ± 20 %
Max. length of the cables for the input Y1–Y2	Acc. to EN 50295	m	30
Electromagnetic compatibility (EMC)			IEC 61000-6-2, IEC 61000-6-4, IEC 60947-4-1
Conductor cross-sections			
Connection type (1 or 2 conductors can be connected)			**Screw terminals**
• Solid		mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)
• Terminal screws			M3 (for standard screwdriver Ø 6 mm or Pozidriv 2)
• Tightening torque of the terminal screws		Nm	0.8 ... 1.2
Connection type (1 or 2 conductors can be connected)			**Spring-type terminals**
• Operating devices		mm	3.0 x 0.5
• Solid		mm^2	2 x (0.25 ... 1.5)
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve		mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)

3RA27 function modules for AS-Interface for mounting on 3RT2 contactors

Type			**3RA2712**
General data			
Dimensions			See 3RT2 contactors on pages 3/23, 3/29, 3/34 and 3/39
Slave type			A/B slave
Suitable for AS-i masters acc. to specification			2.1 or higher
AS-i slave profile IO.ID.ID2			7.A.E
ID1 code (factory setting)			7
Permissible ambient temperature			
• During operation	Acc. to IEC 60947-1	°C	-25 ... +60
• During storage	Acc. to IEC 60721-3-1	°C	-40 ... +80
• During transport	Acc. to IEC 60721-3-2	°C	-40 ... +80
Degree of protection			IP20
Operational voltage			
• AS-Interface		V	26.5 ... 31.6
• AUX PWR 24 V DC		V	24 ± 20 %
Current consumption, max.			
• AS-Interface		mA	30
• AUX PWR			
- Maximum pick-up/hold current	Size S00	mA	200/200
	Size S0	mA	300/300
	Size S2	mA	1 300/50
	Size S3	mA	4 000/70
Max. length of the cables for the input Y1–Y2	Acc. to EN 50295	m	30
Electromagnetic compatibility (EMC)			IEC 61000-6-2, IEC 61000-6-4, IEC 60947-4-1
Conductor cross-sections			
Connection type (1 or 2 conductors can be connected)			**Screw terminals**
• Solid		mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)
• Terminal screws			M3 (for standard screwdriver Ø 6 mm or Pozidriv 2)
• Tightening torque of the terminal screws		Nm	0.8 ... 1.2
Connection type (1 or 2 conductors can be connected)			**Spring-type terminals**
• Operating devices		mm	3.0 x 0.5
• Solid		mm^2	2 x (0.25 ... 1.5)
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve		mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)

Selection and ordering data

Auxiliary switch: Terminal designations and identification numbers for auxiliary contacts

Terminal designations

The terminal designations are 2-digit, e.g. 13, 14, 21, 22:

- Tens digit: Sequence digit
  - Related terminals have the same sequence digit
- Units digit: Function digit
  - 1-2 for normally closed contacts (NC)
  - 3-4 for normally open contacts (NO)

Identification numbers

The identification number indicates the number and type of the auxiliary contacts, e.g. 40, 31, 22, 13:

- 1st digit: number of normally open contacts (NO)
- 2nd digit: number of normally closed contacts (NC)

Examples:

- 31 = 3 NO + 1 NC
- 40 = 4 NO

Selection aid for mountable auxiliary switch blocks for power contacts and contactor relays

The auxiliary switch blocks of the 3RH29 series for mounting on the front and side can be used for 3RT2 power contactors as well as for 3RH2 contactor relays.

The possible combinations of basic unit and mounted auxiliary switch block can be found in the tables; see pages 3/88 to 3/92.

Where the columns and lines intersect (blue and green in the example) you will find the identification number for the combination of basic unit (column) and auxiliary switch block (line).

Additional auxiliary switch blocks			3-pole contactors		
Article number	Auxiliary contacts		3RT201	3RT201	3RT202 to 3RT204
	Version		S00	S00	S0 to S3
	NO	NC	10	01	11
			13 14	21 22	13 21 14 22
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.
			According to EN 50012[1]		
Auxiliary switch blocks without NO contacts					
3RH2911-□HA01	--	1	**11**	02	**12**
3RH2911-□HA02	--	2	**12**	03	**13**
3RH2911-□HA03	--	3	**13**	04	14
3RH2911-□FA04	--	4	14	--	--
Auxiliary switch blocks with 1 NO contact					
3RH2911-□HA10	1	--	20	11	**21**

1 For screw terminals
2 For spring-type terminals

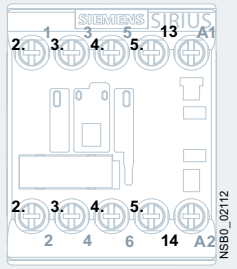
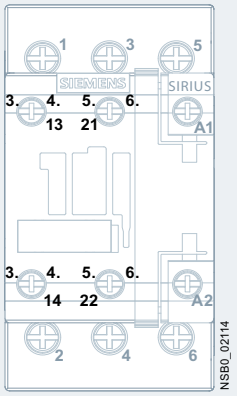
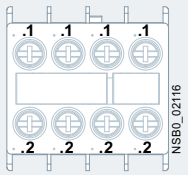
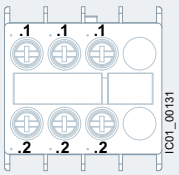
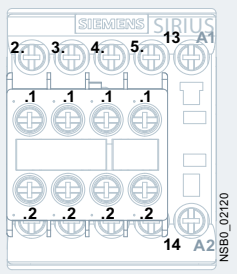
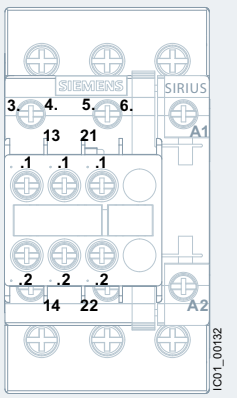
[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

Example 1

Basic unit: 3-pole 3RT2017 motor contactor with 1 NO
Required: 1 NO + 4 NC (Ident. No. 14)
Result: 3RH2911-.FA04 auxiliary switch block

Example 2

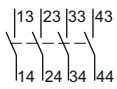
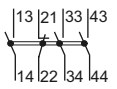
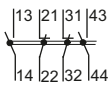
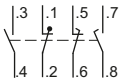
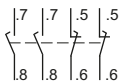
Basic unit: 3-pole 3RT2023 motor contactor with 1 NO + 1 NC
Required: 1 NO + 4 NC (Ident. No. 14)
Result: Auxiliary switch block 3RH2911-.HA03

	Example 1	*Example 2*
Type	**3RT20 motor contactor, S00 with 1 NO**	**3RT20 motor contactor, S0 with 1 NO + 1 NC**
		
Sequence digit	**2. 3. 4. 5.**	**3. 4. 5. 6.**
Type	**Auxiliary switch blocks with 4 NC, 3RH2911-.FA04**	**Auxiliary switch blocks with 3 NC, 3RH2911-.HA03**
		
Function digit	.1 .1 .1 .1 .2 .2 .2 .2	.1 .1 .1 .2 .2 .2
Combination	**3RT20 motor contactor, S00 with aux. switch block**	**3RT20 motor contactor, S0 with aux. switch block**
		
Terminal designation	**13 21 31 41 51** **14 22 32 42 52**	**13 21 31 41 51** **14 22 32 42 52**
Result	**Ident. No. 14**	**Ident. No. 14**

Auxiliary switch blocks, instantaneous

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts		S00		S0 to S3	S00		S0, S2		S00		
	Version		3RT201		3RT202, 3RT203, 3RT2.4	3RT231	3RT251	3RT232, 3RT233	3RT252, 3RT253	3RH21, 3RH24		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
			13 21 / 14 22	21 / 22	13 21 / 14 22			13 21 / 14 22	13 21 / 14 22	13 23 33 43 / 14 24 34 44	13 21 33 43 / 14 22 34 44	13 21 31 43 / 14 22 32 44
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8	5. 6. 7. 8.	5. 6. 7. 8.
			According to EN 50012[1]			According to EN 50012[1]				According to EN 50011[1]		
Auxiliary switch blocks, front												
Without NO contact												
3RH2911-□HA01	--	1	**11**	02	**12**	01	01	**12**	**12**	**41X**	**32X**	**23X**
3RH2911-□HA02	--	2	**12**	03	**13**	02	02	**13**	--	**42E**	**33X**	24
3RH2911-□HA03	--	3	**13**	04	14	03	--	--	--	43	34	--
3RH2911-□FA04	--	4	14	--	--	--	--	--	--	**44E**	--	--
With 1 NO contact												
3RH2911-□HA10	1	--	20	11	**21**	**10**	**10**	**21**	**21**	**50E**	**41E**	**32E**
3RH2911-□HA11	1	1	**21**	12	**22**	11	11	**22**	**22**	**51X**	**42X**	**33X**
3RH2911-□HA12	1	2	**22**	13	**23**	12	12	**23**	--	52	43	34
3RH2911-□HA13	1	3	**23**	14	24	13	--	--	--	**53X**	**44X**	--
With 2 NO contacts												
3RH2911-□HA20	2	--	30	21	**31**	20	20	**31**	**31**	**60E**	**51X**	**42X**
3RH2911-□HA21	2	1	**31**	22	**32**	21	21	**32**	**32**	61	52	43
3RH2911-□HA22	2	2	**32**	23	33	22	22	33	--	**62X**	53	**44X**
3RH2911-□FA22	2	2	32	23	33	**22**	**22**	33	--	**62X**	53	**44X**
With 3 NO contacts												
3RH2911-□HA30	3	--	40	31	**41**	30	30	**41**	**41**	70	61	52
3RH2911-□HA31	3	1	**41**	32	42	31	31	42	42	**71X**	**62X**	**53X**
With 4 NO contacts												
3RH2911-□FA40	4	--	50	41	51	40	40	51	51	**80E**	**71X**	**62X**

[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts		S00		S0 to S3	S00		S0, S2		S00		
	Version		3RT201		3RT202, 3RT203, 3RT2.4	3RT231	3RT251	3RT232, 3RT233	3RT252, 3RT253	3RH21, 3RH24		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
												
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8	5. 6. 7. 8.	5. 6. 7. 8.
			According to EN 50005			According to EN 50005				According to EN 50005		
Auxiliary switch blocks, front												
***With make-before-break*[1)]**												
3RH2911-□FB11	1	1										
			21	12	22	11	11	22	22	51	42	33
3RH2911-□FB22	2	2										
			32	23	33	22	22	33	--	62	53	44
3RH2911-□FC22	2	2										
			32	23	33	22	22	33	--	62	53	44
Complete inscription with terminals from top or bottom												
3RH2911-1AA10	1	--										
			20	11	21	10	10	21	21	50	41	32
3RH2911-1BA10	1	--										
			20	11	21	10	10	21	21	50	41	32
3RH2911-1AA01	--	1										
			11	02	12	01	01	12	12	41	32	23
3RH2911-1BA01	--	1										
			11	02	12	01	01	12	12	41	32	23
3RH2911-1LA11	1	1										
			21	12	22	11	11	22	22	51	42	33
3RH2911-1MA11	1	1										
			21	12	22	11	11	22	22	51	42	33
3RH2911-1LA20	2	--										
			30	21	31	20	20	31	31	60	51	42
3RH2911-1MA20	2	--										
			30	21	31	20	20	31	31	60	51	42

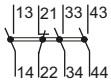
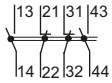
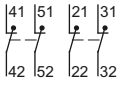
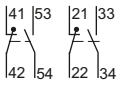
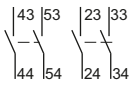
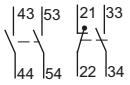
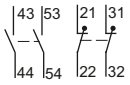
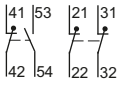
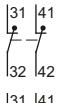
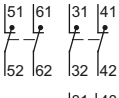
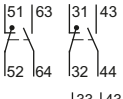
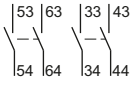
[1)] Contacts with make-before-break have no mirror contact function.

Auxiliary switch blocks, instantaneous

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts		S00		S0 to S3	S00		S0, S2		S00		
	Version		3RT201		3RT202, 3RT203, 3RT2.4	3RT231	3RT251	3RT232, 3RT233	3RT252, 3RT253	3RH21, 3RH24		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
			13 21 / 14 22		13 21 / 14 22			13 21 / 14 22	13 21 / 14 22	13 23 33 43 / 14 24 34 44	13 21 33 43 / 14 22 34 44	13 21 31 43 / 14 22 32 44
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8	5. 6. 7. 8.	5. 6. 7. 8.
			According to EN 50005			According to EN 50005				According to EN 50011[1]		
Auxiliary switch blocks, front												
With complete inscription (for contactor relays)[2]												
3RH2911-□GA40	4	--	53 63 73 83 / 54 64 74 84			--	--	--	--	**80E**	--	--
3RH2911-□GA31	3	1	53 61 73 83 / 54 62 74 84			--	--	--	--	**71E**	--	--
3RH2911-□GA22	2	2	53 61 71 83 / 54 62 72 84			--	--	--	--	**62E**	--	--
3RH2911-□GA13	1	3	53 61 71 81 / 54 62 72 82			--	--	--	--	**53E**	--	--
3RH2911-□GA04	--	4	51 61 71 81 / 52 62 72 82			--	--	--	--	**44E**	--	--
Complete inscription												
3RH2911-□XA40 -0MA0	4	--	53 63 73 83 / 54 64 74 84			50	41	51	40	40	51	51	**80E**	**71X**	**62X**
3RH2911-□XA31 -0MA0	3	1	53 61 73 83 / 54 62 74 84			41	32	42	31	31	42	42	**71E**	**62X**	53
3RH2911-□XA22 -0MA0	2	2	53 61 71 83 / 54 62 72 84			32	23	33	22	22	33	--	**62E**	53	**44X**
3RH2911-□XA04 -0MA0	--	4	51 61 71 81 / 52 62 72 82			14	--	--	--	--	--	--	**44E**	--	--
Solid-state compatible												
3RH2911-□NF02	--	2	.1 .1 / .2 .2			12	03	13	02	02	13	--	42	33	24
3RH2911-□NF11	1	1	.3 .1 / .4 .2			21	12	22	11	11	22	22	51	42	33
3RH2911-□NF20	2	--	.3 .3 / .4 .4			30	21	31	20	20	31	31	60	51	42

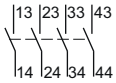
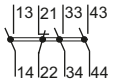
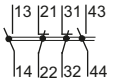
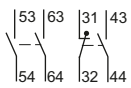
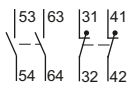
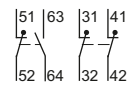
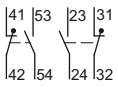
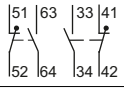
[1] Combinations according to EN 50011 and IEC 60947-5-1 are in **bold** print.
All combinations comply with EN 50005.

[2] For selection and ordering data, see page 3/95.

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts		S00		S0 to S3	S00		S0, S2		S00		
	Version		3RT201		3RT202, 3RT203, 3RT2.4	3RT231	3RT251	3RT232, 3RT233	3RT252, 3RT253	3RH21		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
												
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8	5. 6. 7. 8.	5. 6. 7. 8.
			According to EN 50012[1]			According to EN 50012[1]				According to EN 50011[1]		
Lateral auxiliary switch blocks												
For size S00		Left	Right									
3RH2911-□DA02	--	2			**12**	--	--	02	02	--	--	--	--
3RH2911-□DA02	--	4			14	--	--	--	--	--	--	--	--
3RH2911-□DA11	1	1			**21**	--	--	11	11	--	--	--	--
3RH2911-□DA11	2	2			32	--	--	22	22	--	--	--	--
3RH2911-□DA20	2	--			30	--	--	20	20	--	--	--	--
3RH2911-□DA20	4	--			50	--	--	40	40	--	--	--	--
3RH2911-□DA20 + **3RH2911-□DA11**	2 1	-- 1			**41**	--	--	31	31	--	--	--	--
3RH2911-□DA20 + **3RH2911-□DA02**	2 --	-- 2			**32**	--	--	22	22	--	--	--	--
3RH2911-□DA11 + **3RH2911-□DA02**	1 --	1 2			**23**	--	--	13	--	--	--	--	--
For sizes S0 to S3		Left	Right										
3RH2921-□DA02	--	2			12	03	**13**	02	02	**13**	--	--	--	--
3RH2921-□DA02	--	4			14	--	--	--	--	--	--	--	--	--
3RH2921-□DA11	1	1			21	12	**22**	11	11	**22**	**22**	--	--	--
3RH2921-□DA11	2	2			32	23	33	22	22	33	--	--	--	--
3RH2921-□DA20	2	--			30	21	**31**	20	20	**31**	**31**	--	--	--
3RH2921-□DA20	4	--			50	41	51	40	40	51	51	--	--	--

[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

Auxiliary switch blocks, instantaneous

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts		S00		S0 to S3	S00		S0, S2		S00		
	Version		3RT201		3RT202, 3RT203, 3RT2.4	3RT231	3RT251	3RT232, 3RT233	3RT252, 3RT253	3RH21		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
												
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8	5. 6. 7. 8.	5. 6. 7. 8.
			According to EN 50012[1]			According to EN 50012[1]				According to EN 50011[1]		
Lateral auxiliary switch blocks												
For sizes S00 to S3			Left Right									
3RH2921-□DA20 + **3RH2921-□DA11**	2	--				41	32	42	31	31	42	42	--	--	--
	1	1													
3RH2921-□DA20 + **3RH2921-□DA02**	2	--				32	23	33	22	22	33	--	--	--	--
	--	2													
3RH2921-□DA11 + **3RH2921-□DA02**	1	1				23	14	24	13	--	--	--	--	--	--
	--	2													
For contactor relays[2]			Left												
3RH2921-□DA02	--	2				--	--	--	--	--	--	--	**42Z**	**33X**	24
3RH2921-□DA11	1	1				--	--	--	--	--	--	--	**51X**	**42X**	**33X**
3RH2921-□DA20	2	--				--	--	--	--	--	--	--	**60Z**	**51X**	**42X**
Solid-state compatible															
For size S00			Left Right												
3RH2911-2DE11	1	1				21	--	--	11	11	--	--	--	--	--
3RH2911-2DE11	2	2				32	--	--	22	22	--	--	--	--	--
For sizes S00 to S3			Left Right												
3RH2921-2DE11	1	1				21	12	22	11	11	22	22	--	--	--
3RH2921-2DE11	2	2				32	23	33	22	22	33	--	--	--	--
For contactor relays[2]			Left												
3RH2921-2DE11	1	1				--	--	--	--	--	--	--	**51X**	**42X**	**33X**

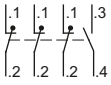
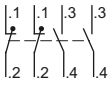
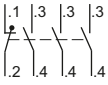
[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

[2] Without positively driven operation.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH2911-1HA22

3RH2911-2HA22

For contactors/ contactor relays[1]	Auxiliary contacts Version			SD	Screw terminals		SD	Spring-type terminals	
					Article No.	Price per PU		Article No.	Price per PU
Type	NO	NC		d			d		
Auxiliary switch blocks for snapping onto the front									
Sizes S00 to S3									
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4	--	1		▶	**3RH2911-1HA01**		▶	**3RH2911-2HA01**	
3RH21, 3RH24	--	2		▶	**3RH2911-1HA02**		▶	**3RH2911-2HA02**	
	--	3		5	**3RH2911-1HA03**		5	**3RH2911-2HA03**	
	1	--		▶	**3RH2911-1HA10**		▶	**3RH2911-2HA10**	
	1	1		▶	**3RH2911-1HA11**		▶	**3RH2911-2HA11**	
	1	2		▶	**3RH2911-1HA12**		▶	**3RH2911-2HA12**	
	1	3		▶	**3RH2911-1HA13**		▶	**3RH2911-2HA13**	
	2	--		▶	**3RH2911-1HA20**		▶	**3RH2911-2HA20**	
	2	1		▶	**3RH2911-1HA21**		▶	**3RH2911-2HA21**	
	2	2		▶	**3RH2911-1HA22**		▶	**3RH2911-2HA22**	
	3	--		5	**3RH2911-1HA30**		5	**3RH2911-2HA30**	
	3	1		▶	**3RH2911-1HA31**		▶	**3RH2911-2HA31**	

[1] For detailed information on use, see page 3/88.

3

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B


3RH2911-1FC22

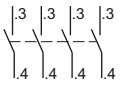
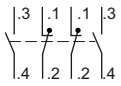
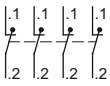
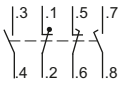

3RH2911-2FC22


3RH2911-1AA01


3RH2911-1BA01


3RH2911-1LA11


3RH2911-1MA11

For contactors/ contactor relays[1]	Connections Position	Auxiliary contacts Version					SD	Screw terminals		SD	Spring-type terminals	
								Article No.	Price per PU		Article No.	Price per PU
Type		NO	NC	NO	NC		d			d		
Auxiliary switch blocks for snapping onto the front												
Sizes S00 to S3												
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4	--	4	--	--	--		▶	**3RH2911-1FA40**		▶	**3RH2911-2FA40**	
3RH21, 3RH24	--	2	2	--	--		▶	**3RH2911-1FA22**		▶	**3RH2911-2FA22**	
	--	--	4	--	--		▶	**3RH2911-1FA04**		▶	**3RH2911-2FA04**	
	--	--	--	1	1		▶	**3RH2911-1FB11**		▶	**3RH2911-2FB11**	
	--	1	1	1	1		▶	**3RH2911-1FB22**		▶	**3RH2911-2FB22**	
	--	--	--	2	2		▶	**3RH2911-1FC22**		▶	**3RH2911-2FC22**	
1- and 2-pole auxiliary switch blocks, cable entry from top or bottom												
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4	Top	1	--	--	--		▶	**3RH2911-1AA10**			**--**	
	Bottom	1	--	--	--		▶	**3RH2911-1BA10**			**--**	
3RH21, 3RH24	Top	--	1	--	--		▶	**3RH2911-1AA01**			**--**	
	Bottom	--	1	--	--		▶	**3RH2911-1BA01**			**--**	
	Top	1	1	--	--		▶	**3RH2911-1LA11**			**--**	
	Bottom	1	1	--	--		▶	**3RH2911-1MA11**			**--**	
	Top	2	--	--	--		▶	**3RH2911-1LA20**			**--**	
	Bottom	2	--	--	--		▶	**3RH2911-1MA20**			**--**	

[1] For detailed information on use, see pages 3/88 and 3/89.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B


3RH2911-1GA22


3RH2911-2GA22

For contactor relays[1]	Contactor relay with auxiliary switch block	Auxiliary contacts			SD	Screw terminals		SD	Spring-type terminals	
	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
Type		NO	NC		d			d		
Auxiliary switch blocks for snapping onto the front										
Size S00										
Blocks for the assembly of contactor relays with 8 contacts										
3RH2140, 3RH2440, Ident. No. 40E	**80E**	4	--	53 63 73 83 / 54 64 74 84	▶	**3RH2911-1GA40**		▶	**3RH2911-2GA40**	
	71E	3	1	53 61 73 83 / 54 62 74 84	▶	**3RH2911-1GA31**		▶	**3RH2911-2GA31**	
	62E	2	2	53 61 71 83 / 54 62 72 84	▶	**3RH2911-1GA22**		▶	**3RH2911-2GA22**	
	53E	1	3	53 61 71 81 / 54 62 72 82	▶	**3RH2911-1GA13**		▶	**3RH2911-2GA13**	
	44E	--	4	51 61 71 81 / 52 62 72 82	▶	**3RH2911-1GA04**		▶	**3RH2911-2GA04**	

[1] For detailed information on use, see page 3/90.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B


3RH2911-1XA22-0MA0


3RH2911-2XA22-0MA0

For contactors/ contactor relays[1]	Auxiliary contacts			SD	Screw terminals		SD	Spring-type terminals	
	Version				Article No.	Price per PU		Article No.	Price per PU
Type	NO	NC		d			d		
Auxiliary switch blocks for snapping onto the front									
Sizes S00 to S3									
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4	4	--	53 63 73 83 / 54 64 74 84	▶	**3RH2911-1XA40-0MA0**		▶	**3RH2911-2XA40-0MA0**	
3RH21, 3RH24	3	1	53 61 73 83 / 54 62 74 84	▶	**3RH2911-1XA31-0MA0**		▶	**3RH2911-2XA31-0MA0**	
	2	2	53 61 71 83 / 54 62 72 84	▶	**3RH2911-1XA22-0MA0**		▶	**3RH2911-2XA22-0MA0**	
	--	4	51 61 71 81 / 52 62 72 82	▶	**3RH2911-1XA04-0MA0**		5	**3RH2911-2XA04-0MA0**	

[1] For detailed information on use, see page 3/90.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH1921-1C...

3RH1921-2C...

For contactors	Auxiliary contacts						SD	Screw terminals		SD	Spring-type terminals	
	Ident. No.	Version						Article No.	Price per PU		Article No.	Price per PU
Type		NO	NC	NO	NC		d			d		
Auxiliary switch blocks for snapping onto the front												
Sizes S6 to S12[1]												
	4-pole auxiliary switch blocks											
	• Acc. to EN 50012											
3RT1.5 ... 3RT1.7	**22**	2	2	--	--	53 61 71 83 / 54 62 72 84	5	**3RH1921-1XA22-0MA0**		20	**3RH1921-2XA22-0MA0**	
	1-pole auxiliary switch blocks											
	• Acc. to EN 50005 and EN 50012											
3RT1.5 ... 3RT1.7	**10**	1	--	--	--	.3 / .4	▶	**3RH1921-1CA10**		▶	**3RH1921-2CA10**	
	01	--	1	--	--	.1 / .2	▶	**3RH1921-1CA01**		▶	**3RH1921-2CA01**	
	10	--	--	1	--	.7 / .8	▶	**3RH1921-1CD10**			**--**	
	01	--	--	--	1	.5 / .6	▶	**3RH1921-1CD01**			**--**	

[1] Exception: 3RT12.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH2911-1DA02

3RH2911-2DA02

For contactors[1]	Auxiliary contacts			SD	Screw terminals		SD	Spring-type terminals	
	Version				Article No.	Price per PU		Article No.	Price per PU
Type	NO	NC		d			d		
Laterally mountable auxiliary switch blocks, mounting on the right and/or on the left, 2-pole									
Size S00			Left Right						
3RT2.1	--	2	41 51 / 42 52; 21 31 / 22 32	2	**3RH2911-1DA02**		2	**3RH2911-2DA02**	
	1	1	41 53 / 42 54; 21 33 / 22 34	2	**3RH2911-1DA11**		2	**3RH2911-2DA11**	
	2	--	43 53 / 44 54; 23 33 / 24 34	2	**3RH2911-1DA20**		2	**3RH2911-2DA20**	
Sizes S0 to S3			Left Right						
3RT2.2[2], 3RT2.3, 3RT2.4	--	2	51 61 / 52 62; 31 41 / 32 42	2	**3RH2921-1DA02**		2	**3RH2921-2DA02**	
	1	1	51 63 / 52 64; 31 43 / 32 44	2	**3RH2921-1DA11**		2	**3RH2921-2DA11**	
	2	--	53 63 / 54 64; 33 43 / 34 44	2	**3RH2921-1DA20**		2	**3RH2921-2DA20**	

[1] For detailed information on use, see pages 3/91and 3/92.

[2] With 3RT232. and 3RT252. contactors, mountable only on the right.

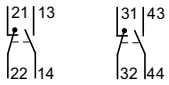
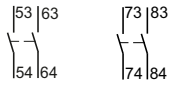
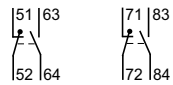
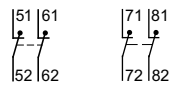
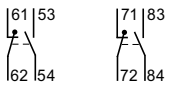
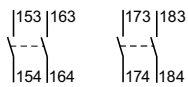
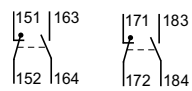
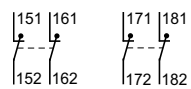
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH1921-1DA11,
3RH1921-1JA11,
3RH1921-1EA..,
3RH1921-1KA..

3RH1921-2DA11,
3RH1921-2JA11,
3RH1921-2EA..,
3RH1921-2KA..

For contactors	Auxiliary contacts			SD	Screw terminals		SD	Spring-type terminals	
	Version				Article No.	Price per PU		Article No.	Price per PU
Type	NO	NC		d			d		
Lateral auxiliary switch blocks, mounting on the left or right, 2-pole									
Sizes S6 to S12			Left / Right						
	First auxiliary switch block								
	• Acc. to EN 50012								
3RT1.5 ... 3RT1.7	1	1		▶	**3RH1921-1DA11**		▶	**3RH1921-2DA11**	
	• Acc. to EN 50005								
3RT1.5 ... 3RT1.7	2	--		▶	**3RH1921-1EA20**		▶	**3RH1921-2EA20**	
	1	1		▶	**3RH1921-1EA11**			**--**	
	--	2		▶	**3RH1921-1EA02**		▶	**3RH1921-2EA02**	
	Second auxiliary switch block								
	• Acc. to EN 50012								
3RT1.5 ... 3RT1.7	1	1		▶	**3RH1921-1JA11**		▶	**3RH1921-2JA11**	
	• Acc. to EN 50005								
3RT1.5 ... 3RT1.7	2	--		▶	**3RH1921-1KA20**		20	**3RH1921-2KA20**	
	1	1		▶	**3RH1921-1KA11**			**--**	
	--	2		▶	**3RH1921-1KA02**		20	**3RH1921-2KA02**	

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B


3RH2911-1NF..


3RH2911-2NF..


3RH2911-2DE11


3RH1921-2DE11, 3RH1921-2JE11

For contactors/ contactor relays[1]	Contacts Version		SD	Screw terminals		SD	Spring-type terminals	
				Article No.	Price per PU		Article No.	Price per PU
Type	NO	NC	d			d		
Solid-state compatible auxiliary switch blocks, 2-pole								
• For operation in dusty atmospheres • For solid-state circuits with rated operational currents I_e/AC-14 and DC-13 from 1 ... 300 mA at 3 ... 60 V • Hard gold-plated contacts • Laterally mountable auxiliary switches and auxiliary switches for snapping onto the front for 3RT2 contactors, sizes S0 to S3, are designed as mirror contacts according to IEC 60947-4-1, Appendix F.								
Auxiliary switch blocks for snapping onto the front								
Sizes S00 to S3								
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4	--	2		2	**3RH2911-1NF02**	2	**3RH2911-2NF02**	
3RH21, 3RH24	1	1		▶	**3RH2911-1NF11**	▶	**3RH2911-2NF11**	
	2	--		▶	**3RH2911-1NF20**	▶	**3RH2911-2NF20**	
Lateral auxiliary switch blocks, mounting on the right and/or on the left acc. to EN 50012								
Size S00			Left Right					
	Auxiliary switch block							
3RT2.1	1	1			--	2	**3RH2911-2DE11**	
Sizes S0 to S3			Left Right					
	Auxiliary switch block							
3RT2.2, 3RT2.3, 3RT2.4	1	1			--	2	**3RH2921-2DE11**	
Sizes S6 to S12			Left Right					
	First auxiliary switch block							
3RT1.5 ... 3RT1.7	1	1			--	▶	**3RH1921-2DE11**	
	Second auxiliary switch block							
3RT1.5 ... 3RT1.7	1	1			--	▶	**3RH1921-2JE11**	

[1] For detailed information on use, see pages 3/90 and 3/92.

Auxiliary switch blocks, delayed

Selection and ordering data

For contactors Type	Time setting range *t* s	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pneumatic time-delay auxiliary switch blocks for mounting on 3RT2 contactors							
Size S0							
Auxiliary contacts 1 NO and 1 NC[1]							
ON-delay							
3RT202	0.1 … 30	10	**3RT2926-2PA01**		1	1 unit	41B
	0.1 ... 30[2]	10	**3RT2926-2PA01-0MT0**		1	1 unit	41B
	1 ... 60	10	**3RT2926-2PA11**		1	1 unit	41B
	1 ... 60[2]	10	**3RT2926-2PA11-0MT0**		1	1 unit	41B
OFF-delay							
3RT202	0.1 … 30	10	**3RT2926-2PR01**		1	1 unit	41B
	0.1 ... 30[2]	10	**3RT2926-2PR01-0MT0**		1	1 unit	41B
	1 ... 60	10	**3RT2926-2PR11**		1	1 unit	41B
	1 ... 60[2]	10	**3RT2926-2PR11-0MT0**		1	1 unit	41B

3RT2926-2P. . .

1) In addition to these, no other auxiliary contacts are permitted.
2) Certificate for furnaces according to EN 50156-1 on request.

For technical specifications, see manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", https://support.industry.siemens.com/cs/WW/en/view/60306557.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA2813-1FW10

3RA2813-2AW10

For contactors Type	Rated control supply voltage U_s[1] V	Time setting range *t* s	Output/ Auxiliary contacts	SD d	Screw terminals Article No.	Price per PU	SD d	Spring-type terminals Article No.	Price per PU
Solid-state time-delay auxiliary switch blocks[2] for mounting on 3RT2 contactors and 3RH2 contactor relays									
Sizes S00 to S3									
	The electrical connection between the solid-state time-delay auxiliary switch and the contactor or contactor relay underneath is established automatically when it is snapped on and locked.								
	ON-delay (varistor integrated)								
3RT2[3][4], 3RH21[3], 3RH24	24 ... 240 AC/DC	0.05 ...100, (1, 10, 100 selectable)	1 CO	2	**3RA2813-1AW10**		2	**3RA2813-2AW10**	
			1 NO + 1 NC	2	**3RA2813-1FW10**		2	**3RA2813-2FW10**	
	OFF-delay with control signal (varistor integrated)								
3RT2[3][4], 3RH21[3], 3RH24	24 ... 240 AC/DC	0.05 ...100, (1, 10, 100 selectable)	1 CO	2	**3RA2814-1AW10**		2	**3RA2814-2AW10**	
			1 NO + 1 NC	2	**3RA2814-1FW10**		2	**3RA2814-2FW10**	
	OFF-delay without control signal[5] (varistor integrated)								
3RT2[3][4], 3RH21[3], 3RH24	24 ... 240 AC/DC	0.05 ...100, (1, 10, 100 selectable)	1 CO	2	**3RA2815-1AW10**		2	**3RA2815-2AW10**	
			1 NO + 1 NC	2	**3RA2815-1FW10**		2	**3RA2815-2FW10**	

1) AC voltage values apply for 50 Hz and 60 Hz.
2) The solid-state time-delay auxiliary switch blocks are also available as 3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays; see page 3/105.
3) Cannot be fitted onto coupling relays and coupling contactor relays.
4) From product version E04 onwards, 3RA281. solid-state time-delayed auxiliary switch blocks can be used for 3RT2.4 contactors.
5) Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact change-over to the correct setting.

For technical specifications, see page 3/82.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

3RT1926-2....

For contactors Type	Auxiliary contacts	Rated control supply voltage U_s [1] V	Time setting range t s	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solid-state time-delay auxiliary switch blocks For mounting on 3RT1 contactors									
Sizes S6 to S12									
	ON-delay[2]								
3RT10, 3RT14	1 NO + 1 NC	24 AC/DC	0.05 ... 1	10	**3RT1926-2EJ11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2EJ21**		1	1 unit	41H
			5 ... 100	2	**3RT1926-2EJ31**		1	1 unit	41H
		100 ... 127 AC	0.05 ... 1	15	**3RT1926-2EC11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2EC21**		1	1 unit	41H
			5 ... 100	10	**3RT1926-2EC31**		1	1 unit	41H
		200 ... 240 AC	0.05 ... 1	5	**3RT1926-2ED11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2ED21**		1	1 unit	41H
			5 ... 100	5	**3RT1926-2ED31**		1	1 unit	41H
	OFF-delay without control signal[2][3]								
3RT10, 3RT14	1 NO + 1 NC	24 AC/DC	0.05 ... 1	▶	**3RT1926-2FJ11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2FJ21**		1	1 unit	41H
			5 ... 100	▶	**3RT1926-2FJ31**		1	1 unit	41H
		100 ... 127 AC/DC	0.05 ... 1	5	**3RT1926-2FK11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2FK21**		1	1 unit	41H
			5 ... 100	5	**3RT1926-2FK31**		1	1 unit	41H
		200 ... 240 AC/DC	0.05 ... 1	5	**3RT1926-2FL11**		1	1 unit	41H
			0.5 ... 10	2	**3RT1926-2FL21**		1	1 unit	41H
			5 ... 100	2	**3RT1926-2FL31**		1	1 unit	41H
	Star-delta (wye-delta) starting (varistor integrated)[2]								
3RT10, 3RT14	1 NO delayed + 1 NO instantaneous, dead time 50 ms	24 AC/DC	1.5 … 30	▶	**3RT1926-2GJ51**		1	1 unit	41H
		100 ... 127 AC	1.5 … 30	▶	**3RT1926-2GC51**		1	1 unit	41H
		200 ... 240 AC	1.5 … 30	▶	**3RT1926-2GD51**		1	1 unit	41H

1) The AC voltages are valid for 50 and 60 Hz.

2) Connecting terminals A1 and A2 for the control supply voltage of the solid-state time-delay auxiliary switch must be connected to the associated contactor by means of connecting cables.

3) Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact change-over to the correct setting.

Surge suppressors

Selection and ordering data

For contactors	Version	Rated control supply voltage U_s [1] AC operation	Rated control supply voltage U_s [1] DC operation	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	V DC	d					
Surge suppressors without LED (also for spring-type terminals)									
Size S00									
 3RT2916-1B.00	**For plugging onto the front side of the contactors (with and without auxiliary switch blocks)**								
3RT2.1, 3RH2	**Varistors**	24 ... 48	24 ... 70	▶	**3RT2916-1BB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2916-1BC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2916-1BD00**		1	1 unit	41B
		240 ... 400	--	▶	**3RT2916-1BE00**		1	1 unit	41B
		400 ... 600	--	2	**3RT2916-1BF00**		1	1 unit	41B
3RT2.1, 3RH2	**RC element**	24 ... 48	24 ... 70	▶	**3RT2916-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2916-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2916-1CD00**		1	1 unit	41B
		240 ... 400	--	2	**3RT2916-1CE00**		1	1 unit	41B
		400 ... 600	--	2	**3RT2916-1CF00**		1	1 unit	41B
3RT2.1, 3RH2	**Noise suppression diode**	--	12 ... 250	▶	**3RT2916-1DG00**		1	1 unit	41B
3RT2.1, 3RH2	**Diode assemblies** (diode and Zener diode) For DC operation	--	12 ... 250	▶	**3RT2916-1EH00**		1	1 unit	41B
Size S0									
 3RT2926-1E.00	**For plugging onto the front side of the contactors (before installing the auxiliary switch block)**								
3RT2.2	**Varistors** [2]	24 ... 48	24 ... 70	▶	**3RT2926-1BB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2926-1BC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2926-1BD00**		1	1 unit	41B
		240 ... 400	--	▶	**3RT2926-1BE00**		1	1 unit	41B
		400 ... 600	--	2	**3RT2926-1BF00**		1	1 unit	41B
3RT2.2	**RC elements**	24 ... 48	24 ... 70	▶	**3RT2926-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2926-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2926-1CD00**		1	1 unit	41B
		240 ... 400	--	2	**3RT2926-1CE00**		1	1 unit	41B
		400 ... 600	--	2	**3RT2926-1CF00**		1	1 unit	41B
3RT2.2	**Diode assemblies**	--	24	▶	**3RT2926-1ER00**		1	1 unit	41B
	For DC operation	--	30 ... 250	▶	**3RT2926-1ES00**		1	1 unit	41B
Sizes S2 and S3									
 3RT2936-1B.00	**For plugging onto the front side of the contactors (before installing the auxiliary switch block)**								
3RT2.3, 3RT2.4	**Varistors** [2][3]	24 ... 48	--	▶	**3RT2936-1BB00**		1	1 unit	41B
		48 ... 127	--	▶	**3RT2936-1BC00**		1	1 unit	41B
		127 ... 240	--	▶	**3RT2936-1BD00**		1	1 unit	41B
		240 ... 400	--	5	**3RT2936-1BE00**		1	1 unit	41B
		400 ... 600	--	5	**3RT2936-1BF00**		1	1 unit	41B
3RT2.3	**RC elements**	24 ... 48	24 ... 70	▶	**3RT2936-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2936-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2936-1CD00**		1	1 unit	41B
		240 ... 400	--	5	**3RT2936-1CE00**		1	1 unit	41B
		400 ... 600	--	5	**3RT2936-1CF00**		1	1 unit	41B
3RT2.4	**RC elements** NEW	24 ... 48	24 ... 70	▶	**3RT2946-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2946-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2946-1CD00**		1	1 unit	41B
		240 ... 400	--	▶	**3RT2946-1CE00**		1	1 unit	41B
		400 ... 600	--	5	**3RT2946-1CF00**		1	1 unit	41B
3RT2.3, 3RT2.4	**Diode assemblies** [3] For DC operation	--	24	▶	**3RT2936-1ER00**		1	1 unit	41B
		--	30 ... 250	▶	**3RT2936-1ES00**		1	1 unit	41B

1) Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

2) The varistor is already integrated on the AC/DC contactors.

3) From product version E03 onwards, 3RT2936-1B/-1E surge suppressors can be used for 3RT2.4 contactors.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Surge suppressors without LED

Sizes S6 to S12


3RT1956-1C.00

For connecting to withdrawable coil for contactors with
• conventional operating mechanism 3RT1...-.A...
• solid-state operating mechanism 3RT1...-.N...

For contactors Type	Version	Rated control supply voltage U_s [1] AC operation V AC	DC operation V DC	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					Screw terminals				
3RT1.5 ... 3RT1.7	**RC elements**	24 ... 48	24 ... 70	▶	**3RT1956-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT1956-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT1956-1CD00**		1	1 unit	41B
		240 ... 400	--	▶	**3RT1956-1CE00**		1	1 unit	41B
		400 ... 600		15	**3RT1956-1CF00**		1	1 unit	41B
					Spring-type terminals				
3RT1.5 ... 3RT1.7	**RC elements**	24 ... 48	24 ... 70	▶	**3RT1956-1CB02**		1	1 unit	41B
		48 ... 127	70 ... 150	2	**3RT1956-1CC02**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT1956-1CD02**		1	1 unit	41B
		240 ... 400	--	2	**3RT1956-1CE02**		1	1 unit	41B
		400 ... 600		15	**3RT1956-1CF02**		1	1 unit	41B

[1] Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

Surge suppressors with LED (also for spring-type terminals)

Size S00


3RT2916-1J.00

For plugging onto the front side of the contactors (with and without auxiliary switch blocks)

For contactors Type	Version	Rated control supply voltage U_s [1] AC operation V AC	DC operation V DC	Power consumption P of the LED at U_s mW	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT2.1, 3RH2	**Varistors**	24 ... 48	12 ... 24	10 ... 120	▶	**3RT2916-1JJ00**		1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	▶	**3RT2916-1JK00**		1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	▶	**3RT2916-1JL00**		1	1 unit	41B
		--	150 ... 250	160 ... 950	2	**3RT2916-1JP00**		1	1 unit	41B
3RT2.1, 3RH2	**Noise suppression diodes**	--	24 ... 70	20 ... 470	▶	**3RT2916-1LM00**		1	1 unit	41B
		--	50 ... 150	50 ... 700	2	**3RT2916-1LN00**		1	1 unit	41B
		--	150 ... 250	160 ... 950	▶	**3RT2916-1LP00**		1	1 unit	41B

Size S0


3RT2926-1MR00

For plugging onto the front side of the contactors (before installing the auxiliary switch block)

For contactors Type	Version	Rated control supply voltage U_s [1] AC operation V AC	DC operation V DC	Power consumption P of the LED at U_s mW	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT2.2	**Varistors**	24 ... 48	12 ... 24	10 ... 120	▶	**3RT2926-1JJ00**		1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	▶	**3RT2926-1JK00**		1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	▶	**3RT2926-1JL00**		1	1 unit	41B
3RT2.2	**Diode assemblies**	--	24	20 ... 470	▶	**3RT2926-1MR00**		1	1 unit	41B

Sizes S2 and S3


3RT2936-1J.00

For plugging onto the front side of the contactors (before installing the auxiliary switch block)

For contactors Type	Version	Rated control supply voltage U_s [1] AC operation V AC	DC operation V DC	Power consumption P of the LED at U_s mW	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT2.3, 3RT2.4	**Varistors**[2]	24 ... 48	12 ... 24	10 ... 120	5	**3RT2936-1JJ00**		1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	5	**3RT2936-1JK00**		1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	▶	**3RT2936-1JL00**		1	1 unit	41B

[1] Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

[2] From product version E03 onwards, 3RT2936 surge suppressors can be used for 3RT2.4 contactors.

Modules for contactor control

Selection and ordering data

For contactors Type	Version	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coupling links for control by PLC							
Size S0							
 3RH2924-1GP11	**For mounting onto the coil terminals of the contactors (for contactors with screw terminals only)** With LED for the switching state and with integrated varistor for damping opening surges						
3RT2.2	• 24 V DC control, 17 ... 30 V DC operating range	►	**3RH2924-1GP11**		1	1 unit	41B
Sizes S00 to S3							
 3RH2914-1GP11	**For mounting on the front side of contactors with AC, DC or AC/DC operation**						
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4 3RH2	• 24 V DC control, 17 ... 30 V DC operating range	5	**3RH2914-1GP11**		1	1 unit	41B
			Spring-type terminals				
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4 3RH2	• 24 V DC control, 17 ... 30 V DC operating range	5	**3RH2914-2GP11**		1	1 unit	41B

For technical specifications, see page 3/84.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA2811-2CW10

3RA2812-1DW10

3RA2816-0EW20

For contactors	Size	Version	Rated control supply voltage U_s [1]	Time setting range t	SD	Screw terminals	SD	Spring-type terminals
Type			V AC/DC	s	d	Article No. / Price per PU	d	Article No. / Price per PU
3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays								
For direct-on-line starting								
3RT2.1[2], 3RT2.2[2], 3RH21[2], 3RH24	S00, S0	**ON-delay Two-wire design, varistor integrated** The electrical connection between the function module and the contactor underneath is established automatically when it is snapped on and locked.	24 ... 240	0.05 ...100 (1, 10, 100; selectable)	2	**3RA2811-1CW10**	2	**3RA2811-2CW10**
3RT2.3[2] 3RT2.4[2][3]	S2, S3		24 ... 90 90 ... 240	0.05 ...100 (1, 10, 100; selectable)	2 2	**3RA2831-1DG10** **3RA2831-1DH10**	2 2	**3RA2831-2DG10** **3RA2831-2DH10**
3RT2.1[2], 3RT2.2[2], 3RH21[2], 3RH24	S00, S0	**OFF-delay with control signal** Varistor integrated The electrical connection between the function module and the contactor underneath is established automatically when it is snapped on and locked.	24 ... 240	0.05 ...100 (1, 10, 100; selectable)	2	**3RA2812-1DW10**	2	**3RA2812-2DW10**
3RT2.3[2] 3RT2.4[2][3]	S2, S3		24 ... 90 90 ... 240	0.05 ...100 (1, 10, 100; selectable)	2 2	**3RA2832-1DG10** **3RA2832-1DH10**	2 2	**3RA2832-2DG10** **3RA2832-2DH10**
For star-delta (wye-delta) starting								
3RT2.1, 3RT2.2, 3RT2.3[2], 3RT2.4[2][4]	S00 ... S3	Varistor integrated The electrical connection between the function module and the contactor assembly is established automatically by snapping on and plugging in the connecting cables.	24 ... 240	0.5 ... 60 (10, 30, 60; selectable)	2	**3RA2816-0EW20**	2	**3RA2816-0EW20**
Accessories								
3RA28	S00 ... S3	**Sealable covers**			2	**3RA2910-0**	2	**3RA2910-0**

[1] AC voltage values apply for 50 Hz and 60 Hz.

[2] Cannot be fitted onto coupling relays and coupling contactor relays.

[3] From product version E03 onwards, 3RA283. function modules can be used for 3RT2.4 contactors.

[4] From product version E04 onwards, 3RA2816 function modules can be used for 3RT2.4 contactors.

For technical specifications, see page 3/85.

Assembly of reversing starters

We offer ready-made wiring kits for the assembly of reversing starters. Use of these wiring kits offers further advantages; see page 3/161.

Manual

For the manual "SIRIUS – SIRIUS 3RA28 function modules for mounting on 3RT2 contactors", see https://support.industry.siemens.com/cs/ww/en/view/60279150.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Modules for contactor control

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA2711-1AA00 3RA2711-2AA00 3RA2711-1BA00 3RA2711-2BA00 3RA2712-1CA00 3RA2711-2CA00

For contactors Type	Version	SD d	Screw terminals Article No.	Price per PU	SD d	Spring-type terminals Article No.	Price per PU
SIRIUS 3RA27 function modules for direct-on-line starting							
3RT201 ... 3RT204[1]	**IO-Link connection** Includes one module connector for assembling an IO-Link group	2	**3RA2711-1AA00**		2	**3RA2711-2AA00**	
	AS-Interface connection	2	**3RA2712-1AA00**		2	**3RA2712-2AA00**	
SIRIUS 3RA27 function modules for reversing starting[2]							
3RT201 ... 3RT204[1]	**IO-Link connection** comprising one basic and one coupling module and an additional module connector[3] for assembling an IO-Link group	2	**3RA2711-1BA00**		2	**3RA2711-2BA00**	
	AS-Interface connection comprising one basic and one coupling module	2	**3RA2712-1BA00**		2	**3RA2712-2BA00**	
	Assembly kits for making 3-pole contactor assemblies See page 3/109						
SIRIUS 3RA27 function modules for star-delta (wye-delta) starting[4]							
3RT201 ... 3RT204[1]	**IO-Link connection** comprising one basic and two coupling modules and an additional module connector[3] for assembling an IO-Link group	2	**3RA2711-1CA00**		2	**3RA2711-2CA00**	
	AS-Interface connection comprising one basic and two coupling modules	2	**3RA2712-1CA00**		2	**3RA2712-2CA00**	
	Assembly kits for making 3-pole contactor assemblies See page 3/110						

1) From product version E06 onwards, 3RA271. function modules can be used for 3RT2.4 contactors.

2) For prewired reversing contactor assemblies with voltage tap-off, see pages 3/162 to 3/165. When these contactor assemblies are used, the assembly kit for the wiring is already integrated.

3) 3RA2711-0EE17 module connectors for size S3 must be ordered separately; see page 3/107.

4) For complete contactor assemblies for star-delta (wye-delta) starting including function modules, see pages 3/179 to 3/182.

For technical specifications for 3RA27 function modules, see page 3/86.

For contactors with voltage tap-off, see pages 3/58, 3/62, 3/67 and 3/69.

For IO-Link masters and AS-Interface masters, routers and power supply units see "Industrial Communication", from page 2/1 onwards.

Manuals

- Manual "SIRIUS – SIRIUS 3RA2711 Function Modules for IO-Link": see https://support.industry.siemens.com/cs/ww/en/view/39319600
- Manual "SIRIUS – SIRIUS 3RA2712 Function Modules for AS-Interface": see https://support.industry.siemens.com/cs/ww/en/view/39318922


3RA2711-0EE10


3RA2711-0EE06


3RA2711-0EE15


3RA2910-0


3RA6935-0A


3RA2711-0EE11

For function modules	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		d					
Accessories for 3RA27 function modules							
3RA271.-..A00	**Module connector set** Comprising: • Two module connectors, (14-pole, short) • Two interface covers	2	**3RA2711-0EE10**		1	1 unit	41B
3RA271.-..A00	**Module connectors**						
	• 14-pole						
	- 6 cm	NEW 2	**3RA2711-0EE17**		1	1 unit	41B
	- 9 cm	2	**3RA2711-0EE06**		1	1 unit	41B
	- 13 cm	NEW 2	**3RA2711-0EE18**		1	1 unit	41B
	- 26 cm	2	**3RA2711-0EE07**		1	1 unit	41B
	- 33.5 cm	2	**3RA2711-0EE08**		1	1 unit	41B
	• 10-pole, 9 cm for additional auxiliary voltage infeed	2	**3RA2711-0EE16**		1	1 unit	41B
	Note: For selection of module connectors, see Manual "SIRIUS – SIRIUS 3RA2711 Function Modules for IO-Link", https://support.industry.siemens.com/cs/ww/en/view/39319600						
3RA271.-..A00	**Interface covers** (Set of 5)	2	**3RA2711-0EE15**		1	1 unit	41B
3RA271.-..A00	**Sealable covers**	2	**3RA2910-0**		1	5 units	41B
Operator panel for communication via IO-Link							
3RA2711-..A00	**Operator panel (set)** Comprising: • 1 x operator panel • 1 x enabling module • 1 x interface cover • 1 x fixing terminal	10	**3RA6935-0A**		1	1 unit	42F
3RA2711-..A00	**Connection cables** For connecting the operator panel to the coupling module Length 2 m, 10- to 14-pole	2	**3RA2711-0EE11**		1	1 unit	41B
3RA2711-..A00	**Enabling modules** (replacement)	10	**3RA6936-0A**		1	1 unit	42F
3RA2711-..A00	**Interface covers** (replacement)	10	**3RA6936-0B**		1	5 units	42F

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Modules for contactor control

	For contactors	Rated control supply voltage U_s	Time setting range t	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	Type	V	s	d	Article No.	Price per PU			
Mechanical latching blocks (no switching state change in the event of voltage drop)									
	Size S0								
	For snapping onto the front of contactors								
	The contactor remains in the energized state after a power failure.								
 3RT2926-3A.31	3RT202	24 AC/DC	--	5	**3RT2926-3AB31**		1	1 unit	41B
		110 AC/DC	--	5	**3RT2926-3AF31**		1	1 unit	41B
		230 AC/DC	--	5	**3RT2926-3AP31**		1	1 unit	41B
OFF-delay devices for contactors with AC/DC and DC operation									
	Sizes S00 to S3								
	Non-adjustable delay time								
 3RT2916-2B.01	3RT201.-1BF4., 3RT202.-1BF4., 3RT203.-1NF3., 3RH2...-1BF40	110 AC/DC	S00: > 0.1 S0: > 0.08 S2: > 0.25	5	**3RT2916-2BK01**		1	1 unit	41B
	3RT201.-1BM4./1BP4., 3RT202.-1BM4./1BP4., 3RT203.-1NP3., 3RH2...-1BM40/1BP40	220/230 AC/DC	S00: > 0.5 S0: > 0.3 S2: > 0.8	5	**3RT2916-2BL01**		1	1 unit	41B
	3RT201.-1BB4., 3RT202.-1BB4., 3RT203.-1NB3., 3RT2.4.-1NB3., 3RH2...-1BB40	24 DC	S00: > 0.2 S0: > 0.1 S2: > 0.1 S3: > 0.05	2	**3RT2916-2BE01**		1	1 unit	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data

For contactors Type	Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Safety main circuit connectors for two contactors								
3RT2.1	**S00**	For series connection of two contactors	2	**3RA2916-1A**		1	1 unit	41B
3RT2.2	**S0**		2	**3RA2926-1A**		1	1 unit	41B
3RT2.3	**S2**		2	**3RA2936-1A**		1	1 unit	41B


3RA2926-1A

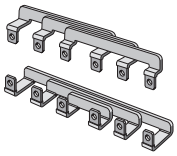
PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41B

For contactors Type	Size	Version	SD d	Article No.	Price per PU	SD d	Article No.	Price per PU
Assembly kits for reversing contactor assemblies for making 3-pole contactor assemblies								
				Screw terminals			**Spring-type terminals**	
3RT201	**S00-S00**	The assembly kit contains: mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom						
		• For main, auxiliary and control circuits ▶		**3RA2913-2AA1**		▶	**3RA2913-2AA2**	
3RT202	**S0-S0**	The assembly kit contains: mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom						
		• For main, auxiliary and control circuits[1] ▶		**3RA2923-2AA1**			**--**	
		• Only for main circuit[2]		**--**		▶	**3RA2923-2AA2**	
3RT203	**S2-S2**	The assembly kit contains: two connectors for two contactors, wiring modules on the top and bottom (The 3RA2934-2B mechanical interlock must be ordered separately; see page 3/113)						
		• For main and auxiliary circuits ▶		**3RA2933-2AA1**			**--**	
		• Only for main circuit[3]		**--**		5	**3RA2933-2AA2**	
3RT2.4	**S3-S3**	The kit contains: two connectors for two contactors, wiring modules on the top and bottom (The 3RA2934-2B mechanical interlock must be ordered separately; see page 3/113)						
		• For main and auxiliary circuits NEW ▶		**3RA2943-2AA1**			**--**	
		• Only for main circuit[3] NEW		**--**		▶	**3RA2943-2AA2**	
3RT105	**S6-S6**	The kit contains: wiring modules on the top and bottom	2	**3RA1953-2A**		2	**3RA1953-2A**	
3RT1.6	**S10-S10**		2	**3RA1963-2A**		2	**3RA1963-2A**	
3RT1.7	**S12-S12**		2	**3RA1973-2A**		2	**3RA1973-2A**	


3RA2923-2AA1


3RA2923-2AA2


3RA2933-2AA1


3RA1953-2A

[1] Use of the 3RA2923-2AA1 assembly kit in conjunction with the 3RT202.-.....-3MA0 contactors is limited because the auxiliary switches in the basic unit are not allowed to be used on account of the permanently mounted auxiliary switch block.

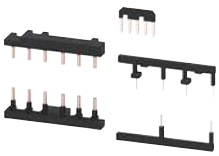
[2] Version in size S0 with spring-type terminals:
Only the wiring modules for the main circuit are included.
No connecting clips are included for the auxiliary and control circuit.

[3] Version in sizes S2 and S3 with spring-type terminals in the auxiliary and control circuits: Only the wiring modules for the main circuit are included.
A cable set is included for the auxiliary circuit.

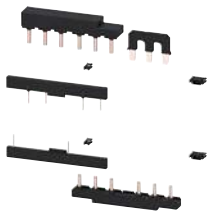
Link modules

PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41B


3RA2913-2BB1


3RA2923-2BB1


3RA2923-2BB2

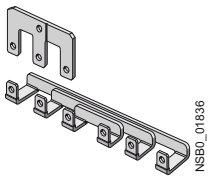
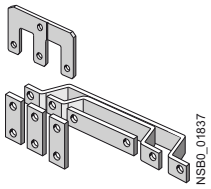

3RA2933-2BB1

For contactors Type	Size	Version	SD d	Screw terminals Article No.	Price per PU	SD d	Spring-type terminals Article No.	Price per PU
Assembly kits[1] for contactor assemblies for star-delta (wye-delta) starting for making 3-pole contactor assemblies								
3RT201	**S00-S00-S00**	The assembly kit contains: mechanical interlock, four connecting clips for three contactors, a star jumper, wiring modules on the top and bottom						
		• For main, auxiliary and control circuits	▶	**3RA2913-2BB1**		▶	**3RA2913-2BB2**	
3RT202	**S0-S0-S0**	The assembly kit contains: mechanical interlock, four connecting clips for three contactors, a star jumper, wiring modules on the top and bottom						
		• For main, auxiliary and control circuits	▶	**3RA2923-2BB1**			**--**	
		• Only for main circuit		**--**		▶	**3RA2923-2BB2**	
3RT202	**S0-S0-S0**	The assembly kit contains: mechanical interlock, four connecting clips for three contactors, a star jumper, wiring modules on the top and bottom, three-phase infeed terminal						
		• For main, auxiliary and control circuits	5	**3RA2924-2BB1**			**--**	
3RT203	**S2-S2-S0**	The kit[2] contains: two connectors for three contactors, an S0 star jumper, a spacer, wiring modules on the top and bottom (S2-S0) for the main circuit, a cable set for the auxiliary circuit, a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor	▶	**3RA2933-2C**		▶	**3RA2933-2C**	
3RT203	**S2-S2-S2**	The kit[2] contains: four connectors for three contactors, an S2 star jumper, a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor and						
		• Wiring modules on the top and bottom for the main circuit and the auxiliary circuit	▶	**3RA2933-2BB1**			**--**	
		• Wiring modules on the top and bottom for the main circuit, a cable set for the auxiliary circuit		**--**		5	**3RA2933-2BB2**	
3RT2.4	**S3-S3-S2**	The kit[2] contains: two connectors for three contactors, an S2 star jumper, a spacer, wiring modules on the top and bottom (S3-S2) for the main circuit, a cable set for the auxiliary circuit, a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor	NEW ▶	**3RA2943-2C**		▶	**3RA2943-2C**	
3RT2.4	**S3-S3-S3**	The kit[2] contains: four connectors for three contactors, an S3 star jumper, a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor and						
		• Wiring modules on the top and bottom for the main circuit and the auxiliary circuit	NEW ▶	**3RA2943-2BB1**			**--**	
		• Wiring modules on the top and bottom for the main circuit, a cable set for the auxiliary circuit	NEW	**--**		▶	**3RA2943-2BB2**	

1) When using the function modules for contactor assemblies for star-delta (wye-delta) starting, the wiring modules for the auxiliary current are not required.

2) The 3RA2934-2B mechanical interlock for sizes S2 and S3 must be ordered separately; see page 3/113.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

	For contactors Type	Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Assembly kits for contactor assemblies for star-delta (wye-delta) starting for making 3-pole contactor assemblies									
			The kit contains: link rails at bottom (a double infeed between the line contactor and the delta contactor is recommended.)						
 3RA1953-2B	3RT1.5, 3RT2.4	**S6-S6-S3 for connection with box terminal**	The S3 star jumper must be ordered separately; see page 3/112.	NEW X	**3RA1953-3G**		1	1 unit	41B
	3RT1.5	**S6-S6-S6 for connection with box terminal**	--	2	**3RA1953-2B**		1	1 unit	41B
	3RT1.5	**S6-S6-S6 for connection without box terminal**	--	2	**3RA1953-2N**		1	1 unit	41B
 3RA1953-2N, 3RA1963-2B, 3RA1973-2B	3RT1.6, 3RT1.5	**S10-S10-S6 for connection with box terminal**	The S6 star jumper must be ordered separately; see page 3/112.	20	**3RA1963-3E**		1	1 unit	41B
	3RT1.6	**S10-S10-S10 for connection without box terminal**	--	2	**3RA1963-2B**		1	1 unit	41B
 3RA1963-3E	3RT1.7, 3RT1.6	**S12-S12-S10 for connection with box terminal**	The S10 star jumper must be ordered separately; see page 3/112.	20	**3RA1973-3E**		1	1 unit	41B
	3RT1.7	**S12-S12-S12 for connection without box terminal**	--	5	**3RA1973-2B**		1	1 unit	41B

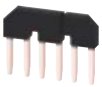
Link modules

PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41B


3RA2913-3DA1


3RA2913-3DA2


3RT1933-3D


3RT1916-4BA31


3RT2916-4BA32


3RT1936-4BA31

For contactors Type	Size	Version		SD d	Article No.	Price per PU	SD d	Article No.	Price per PU
Single wiring modules for making 3 and 4-pole contactor assemblies									
					Screw terminals			**Spring-type terminals**	
3RT201	**S00-S00**	• Top (in-phase)	PS = 5 units	5	**3RA2913-3DA1**		5	**3RA2913-3DA2**	
		• Bottom (with phase reversal)	PS = 5 units	5	**3RA2913-3EA1**		5	**3RA2913-3EA2**	
3RT202	**S0-S0**	• Top (in-phase)	PS = 5 units	5	**3RA2923-3DA1**		5	**3RA2923-3DA2**	
		• Bottom (with phase reversal)	PS = 5 units	5	**3RA2923-3EA1**		5	**3RA2923-3EA2**	
3RT203	**S2-S2**	• Top (in-phase) Contactor clearance 10 mm	PS = 5 units	▶	**3RA1933-3D**		▶	**3RA1933-3D**	
		• Bottom (with phase reversal) Contactor clearance 10 mm	PS = 5 units	▶	**3RA1933-3E**		▶	**3RA1933-3E**	
3RT2.4	**S3-S3**	• Top (in-phase) Contactor clearance 10 mm		▶	**3RA1943-3D**		▶	**3RA1943-3D**	
		• Bottom (with phase reversal) Contactor clearance 10 mm		▶	**3RA1943-3E**		▶	**3RA1943-3E**	
3RT105	**S6-S6**	• Top (in-phase, for connection with box terminal) Contactor clearance 10 mm		2	**3RA1953-3D**		2	**3RA1953-3D**	
		• Top (with phase reversal, for connection without box terminal) Contactor clearance 10 mm		2	**3RA1953-3P**		2	**3RA1953-3P**	
Star jumpers (links for paralleling), 3-pole									
					Screw terminals			**Spring-type terminals**	
3RT201	**S00**	**With through-hole**		▶	**3RT1916-4BA31**		2	**3RT2916-4BA32**	
3RT202	**S0**	The links for paralleling can be reduced by one pole.		▶	**3RT1926-4BA31**		2	**3RT2926-4BA32**	
3RT203	**S2**	Without connecting terminal		▶	**3RT1936-4BA31**		▶	**3RT1936-4BA31**	
3RT2.4	**S3**			▶	**3RT1946-4BA31**		▶	**3RT1946-4BA31**	
3RT1.5	**S6**			▶	**3RT1956-4BA31**		▶	**3RT1956-4BA31**	
3RT1.6, 3RT1.7	**S10, S12**			▶	**3RT1966-4BA31**		▶	**3RT1956-4BA31**	

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

	For contactors Type	Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mechanical interlock kits for two contactors for making 3 and 4-pole contactor assemblies									
 3RA29.2-2H	3RT201, 3RT231	**S00-S00**	The interlocking assembly kits can be used without a contactor clearance. One assembly kit consists of a mechanical interlock and two connecting clips.	5	**3RA2912-2H**		1	10 units	41B
	3RT202, 3RT232	**S0-S0**		5	**3RA2922-2H**		1	10 units	41B

	For contactors Type	Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mechanical interlocks for contactor assemblies									
			A contactor clearance of 10 mm must be considered when using the following mechanical interlocks.						
 3RA2934-2B	3RT203, 3RT2.4	**S2-S2-S0, S2-S2-S2, S3-S3-S2, S3-S3-S3**	**Mechanical interlocks** Note: The mechanical interlock for sizes S2 and S3 must be ordered separately.	▶	**3RA2934-2B**		1	1 unit	41B
	3RT105 with 3RT2.4	**S6 (3RT1)-S6 (3RT1)-S3 (3RT2)**	**Adapter in addition to the mechanical interlock** NEW The mechanical interlock is only possible together with this 3RA1954-2G adapter and the 3RA1954-2A mechanical interlock. Two connectors are included with the adapter, the interlock must be ordered separately.	X	**3RA1954-2G**		1	1 unit	41B
 3RA1954-2A	3RT1.5 3RT1.6 3RT1.7	**S6 S10 S12**	**Mechanical interlocks** Without auxiliary contacts; Contactor sizes S6, S10 and S12 can be interlocked with each other as required. No adaption of mounting depth is necessary.	▶	**3RA1954-2A**		1	1 unit	41B
Mechanical connectors for contactor assemblies									
			Two connectors are required for each assembly. The contactor clearance must be considered when selecting the connectors.						
			For 3-pole contactors						
 3RA1932-2D	3RT203, 3RT2.4	**S2-S2, S3-S3**	• Without contactor clearance	▶	**3RA2932-2C**		1	10 units	41B
			• With 10 mm contactor clearance	▶	**3RA2932-2D**		1	10 units	41B
	3RT1.5	**S6-S6**	• With 10 mm contactor clearance (1 unit corresponds to 2 parts for 1 assembly)	▶	**3RA1932-2D**		1	10 units	41B
			For 4-pole contactors						
	3RT233	**S2-S2**	• With 20 mm contactor clearance	2	**3RA2932-2G**		1	10 units	41B

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Terminal modules/adapters

Selection and ordering data


3RT1916-4BB31


3RT2926-4BB31


3RT1936-4BB31


3RT1946-4BB31


3RT1916-4BB41

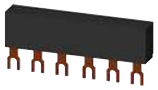
For contactors	Size	Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Type			d	Article No. Price per PU			
Links for paralleling for main circuits							
		The links for paralleling (insulated) can be reduced by one pole. With connecting terminal					
		3-pole					
3RT201	**S00**	• Max. conductor cross-section: 25 mm², stranded	▶	**3RT1916-4BB31**	1	1 unit	41B
3RT202	**S0**	• Max. conductor cross-section: 50 mm², stranded	2	**3RT2926-4BB31**	1	1 unit	41B
3RT203	**S2**	• Max. conductor cross-section: 120 mm², stranded	▶	**3RT1936-4BB31**	1	1 unit	41B
3RT2.4	**S3**	• Max. conductor cross-section: 185 mm², stranded A cover plate is included for touch protection (can only be used when the box terminal is removed).	NEW ▶	**3RT1946-4BB31**	1	1 unit	41B
		4-pole					
3RT231, 3RT251	**S00**	• Max. conductor cross-section: 25 mm², stranded	15	**3RT1916-4BB41**	1	1 unit	41B


3RA2913-3K


3RV2925-5AB


3RV2935-5A

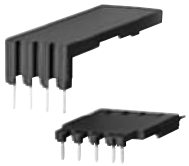

3RV2935-5E


3RV1915-1AB


3RT195.-4G

For contactors	Size	Version	SD	Article No. Price per PU	PU (UNIT, SET, M)	PS*	PG
Type			d				
Single-phase infeed terminals							
3RT2.4	**S3**	Conductor cross-section: 95 mm²	NEW 2	**3RA2943-3L**	1	1 unit	41B
Three-phase infeed terminals							
		Infeed terminal blocks for the line contactor for large conductor cross-sections					
3RT201	**S00**	• Max. conductor cross-section: up to 10 mm², AWG 12 ... 8	2	**3RA2913-3K**	1	10 units	41B
3RT202	**S0**	• Max. conductor cross-section: up to 25 mm², AWG 10 ... 2/0	▶	**3RV2925-5AB**	1	1 unit	41E
3RT203	**S2**	• Max. conductor cross-section: up to 70 mm², AWG 10 ... 2/0	▶	**3RV2935-5A**	1	1 unit	41E
Three-phase infeed terminals with increased clearances and creepage distances							
3RT203	**S2**	Max. conductor cross-section: up to 70 mm², AWG 10 ... 2/0	▶	**3RV2935-5E**	1	1 unit	41E
Three-phase busbars							
3RT202	**S0**	Bridging phase-by-phase of all input terminals of the line contactor (Q11) and delta contactor (Q13)	▶	**3RV1915-1AB**	1	1 unit	41E
Auxiliary terminals, three-pole							
3RT1.5	**S6**	For connection of auxiliary and control cables (0.5 ... 2.5 mm²) to the main conductor terminals	5	**3TX7500-0A**	1	1 unit	41B
Box terminal blocks							
		For round and ribbon cables Connectable cross-sections of the contactors: see Technical Specifications, page 3/48.					
3RT1.5	**S6**	• Up to 70 mm², as standard on 3RT1054-1 contactor (55 kW)	▶	**3RT1955-4G**	1	1 unit	41B
		• Up to 120 mm²	▶	**3RT1956-4G**	1	1 unit	41B
3RT1.6, 3RT1.7	**S10, S12**	• Up to 240 mm², With auxiliary conductor connection up to 2.5 mm²	▶	**3RT1966-4G**	1	1 unit	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

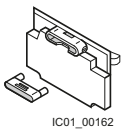
	For contactors Type	Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solder pin adapters for mounting contactors on printed circuit boards up to 5.5 kW / 12 A									
					Screw terminals				
	3RT2.1, 3RH21	**S00**	Assembly kit for soldering contactors with an integrated auxiliary contact onto a printed circuit board Note: For 1 contactor, 1 set is required.	2	**3RT1916-4KA1**		1	4 units	41B
 3RT1916-4KA1									
	3RT2.1, 3RH21	**S00**	Assembly kit for soldering contactors with 4-pole mounted auxiliary switch block onto a printed circuit board. Note: For 1 contactor, 1 set is required.	5	**3RT1916-4KA2**		1	4 units	41B
									
 3RT1916-4KA2									
Coil connection modules for connections from top or from below									
	3RT2.2, 3RT2.3, 3RT2.4	**S0 to S3**	• Connection from top	2	**3RT2926-4RA11**		1	1 unit	41B
			• Connection from below	2	**3RT2926-4RB11**		1	1 unit	41B
			• Connection diagonally	2	**3RT2926-4RC11**		1	1 unit	41B
3RT2926-4RA11									
					Spring-type terminals				
	3RT2.2	**S0**	• Connection from top	2	**3RT2926-4RA12**		1	1 unit	41B
			• Connection from below	2	**3RT2926-4RB12**		1	1 unit	41B
3RT2926-4RA12									

	For contactors Type	Size	Version	SD d	**Screw terminals** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor feeder connectors for contactors with screw terminals									
			**Adapters for contactors** Ambient temperature $t_{u\ max.}$ = 60 °C						
	3RT2.1, 3RH2	**S00**	• Rated operational current I_e at AC-3/400 V: 20 A	5	**3RT1916-4RD01**		1	1 unit	41B
	3RT2.2	**S0**	• Rated operational current I_e at AC-3/400 V: 25 A	5	**3RT1926-4RD01**		1	1 unit	41B
3RT1926-4RD01									
	3RT2.1, 3RT2.2, 3RH2	**S00, S0**	**Motor feeder connectors for contactor**	5	**3RT1900-4RE01**		1	1 unit	41B
3RT1900-4RE01									

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Covers

Selection and ordering data

	For contactors Type	Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal covers									
			Motor feeder connectors for contactors with screw terminals (box terminals) (2 units required per contactor)						
 3RT2936-4EA2	3RT203	**S2**	• For 3-pole contactors	2	**3RT2936-4EA2**		1	1 unit	41B
	3RT2.4	**S3**		NEW ▶	**3RT2946-4EA2**		1	1 unit	41B
	3RT1.5	**S6**[1]		▶	**3RT1956-4EA2**		1	1 unit	41B
	3RT1.6, 3RT1.7	**S10**[1], **S12**[1]		▶	**3RT1966-4EA2**		1	1 unit	41B
 3RT1956-4EA2	3RT233, 3RT253	**S2**	• For 4-pole contactors (scope of supply: one 3-pole and two 1-pole terminal covers are supplied)	5	**3RT2936-4EA4**		1	1 unit	41B
			Covers for contactors with cable lugs and busbar connections For complying with the phase clearances and as touch protection if box terminal is removed (2 units required per contactor)						
 3RT1956-4EA1	3RT1.5	**S6**[1]	• Length: 100 mm	▶	**3RT1956-4EA1**		1	1 unit	41B
	3RT1.6, 3RT1.7	**S10**[1], **S12**[1]	• Length: 120 mm	▶	**3RT1966-4EA1**		1	1 unit	41B
			• For the assembly kits for 3RA1953-.. contactor assemblies for star-delta (wye-delta) starting (page 3/111) or the 3RA1953-3. single-wiring modules (page 3/112)						
	3RT1.5	**S6**	- Length: 38 mm	▶	**3RT1956-4EA4**		1	1 unit	41B
			Terminal covers						
			• Cover the three busbar connections, between contactor and 3RB2 overload relay						
	3RT1.5	**S6**	- Length: 27 mm	▶	**3RT1956-4EA3**		1	1 unit	41B
	3RT1.6, 3RT1.7	**S10**[2], **S12**[2]	- Length: 42 mm	▶	**3RT1966-4EA3**		1	1 unit	41B
 3TX6526-3B			• can be screwed on free screw end; covers one busbar connection (1 set = 6 units)						
	3RT1.5	**S6**	- M8	5	**3TX6526-3B**		1	1 unit	41B
	3RT1.6, 3RT1.7	**S10, S12**	- M10	5	**3TX6546-3B**		1	1 unit	41B
Sealable covers									
 3RT2916-4MA10	3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4, 3RH2[3]	**S00 ... S3**	for preventing manual operation (Not suitable for coupling relays)	2	**3RT2916-4MA10**		1	5 units	41B
 IC01_00162 3RT1926-4MA10	3RT1.5 ... 3RT1.7[3]	**S6 ... S12**		15	**3RT1926-4MA10**		1	5 units	41B

[1] Also fits on contactors of sizes S6 to S12 with box terminals.

[2] The 3RT1966-4EA3 cover is required in addition for use in reversing contactor assemblies and contactor assemblies for star-delta (wye-delta) starting.

[3] Exception: contactors and contactor relays with auxiliary switch block mounted onto the front.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data

For contactors Type	Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Base plates								
For reversing contactor assemblies								
3RT1.5	**S6**	For customer assembly of reversing contactor assemblies	5	**3RA1952-2A**		1	1 unit	41B
3RT1.6	**S10**		5	**3RA1962-2A**		1	1 unit	41B
3RT1.7	**S12**		5	**3RA1972-2A**		1	1 unit	41B
For contactor assemblies for star-delta (wye-delta) starting								
3RT2/ 3RT2/ 3RT2	**S2-S2-S0, S2-S2-S2**	For configuring contactor assemblies for star-delta (wye-delta) starting	2	**3RA2932-2F**		1	1 unit	41B
	S3-S3-S2, S3-S3-S3	NEW	3	**3RA2942-2F**		1	1 unit	41B
3RT1/ 3RT1/ 3RT2	**S6-S6-S3**	For customer assembly of contactor assemblies for star-delta (wye-delta) starting with **laterally mounted** timing relay	5	**3RA1952-2E**		1	1 unit	41B
3RT1/ 3RT1/ 3RT1	**S6-S6-S6**	10 mm distance between the contactors	5	**3RA1952-2F**		1	1 unit	41B
	S10-S10-S6		5	**3RA1962-2E**		1	1 unit	41B
	S10-S10-S10		5	**3RA1962-2F**		1	1 unit	41B
	S12-S12-S10		5	**3RA1972-2E**		1	1 unit	41B
	S12-S12-S12		5	**3RA1972-2F**		1	1 unit	41B
Adapters for screw fixing								
3RT2.2	**S0**	Screw adapters for securing the contactors, 2 units required per contactor (1 pack contains 10 sets for 10 contactors)	15	**3RT1926-4P**		1	10 units	41B
EMC suppression modules; three-phase, up to 7.5 kW								
For contactors with AC or DC operation								
				Screw terminals				
3RT201	**S00**	**RC elements** (3 x 220 Ω/0.22 µF)						
		• Up to 400 V	▶	**3RT2916-1PA1**		1	1 unit	41B
		• Up to 575 V	2	**3RT2916-1PA2**		1	1 unit	41B
		• Up to 690 V	15	**3RT2916-1PA3**		1	1 unit	41B
3RT201	**S00**	**Varistors**						
		• Up to 400 V	2	**3RT2916-1PB1**		1	1 unit	41B
		• Up to 575 V	2	**3RT2916-1PB2**		1	1 unit	41B
		• Up to 690 V	15	**3RT2916-1PB3**		1	1 unit	41B


3RA2932-2F

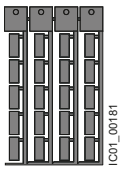

3RT1926-4P

3RT2916-1PA.

Miscellaneous accessories

	For contactors Type	Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Additional load modules									
 3RT2916-1GA00	3RT2.1, 3RH2	**S00**	For plugging onto the front side of the contactors with or without auxiliary switch blocks For increasing the permissible residual current and for limiting the residual voltage. It ensures the safe opening of contactors with direct control via 230 V AC semiconductor outputs of SIMATIC controllers. It acts simultaneously as a surge suppressor. Rated voltage: 50/60 Hz AC, 180 ... 255 V Operating range: 0.8 ... 1.1 x U_s	▶	**3RT2916-1GA00**		1	1 unit	41B
LED modules for displaying contactor operation									
 3RT2926-1QT00	3RT2	**S00 ... S3**	For snapping into the location hole of an inscription label on the front of a contactor either directly on the contactor or on the front auxiliary switch. The LED module is connected to coil terminals A1 and A2 of the contactor and indicates its energized state. Yellow LED. Rated voltage: 24 ... 240 V AC/DC with reverse polarity protection.	5	**3RT2926-1QT00**		1	5 units	41B
	3RT1.5 ... 3RT1.7	**S6 ... S12** The connecting leads have to be extended.		5	**3RT1926-1QT00**		1	5 units	41B
Control kit									
 3RT2916-4MC00	3RT2.1, 3RH2	**S00**	For manual operation of contactor contacts for start up and service	2	**3RT2916-4MC00**		1	5 units	41B
	3RT2.2	**S0**		2	**3RT2926-4MC00**		1	5 units	41B
	3RT2.3	**S2**		2	**3RT2936-4MC00**		1	5 units	41B

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

	For contactors Type	Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Insulation stop for securely holding back the conductor insulation on conductors up to 1 mm²									
					Spring-type terminals				
 3RT2916-4JA02			**Insulation stop strip**, can be inserted in cable entry of the spring-type terminal (two strips per contactor required)						
	3RT2.1, 3RH2	**S00**	• For basic units, removable individually	5	**3RT2916-4JA02**		1	20 units	41B
	3RT2.2 ... 3RT2.4, 3RT1, 3RH29	**S0 ... S12**	• For auxiliary and control current on basic units and for mountable 3RH29 auxiliary switches, removable in pairs	5	**3RT1916-4JA02**		1	20 units	41B
Tools for opening spring-type terminals									
 3RA2908-1A	3RT	**S00 ... S12**	**Screwdrivers** for all SIRIUS devices with spring-type terminals Length: approx. 200 mm; 3.0 mm x 0.5 mm; titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B
Blank labels									
 3RT2900-1SB20			**Unit labeling plates** for SIRIUS devices[1]						
	3RT2	**S00 ... S3**	• 10 mm × 7 mm, titanium gray	20	**3RT2900-1SB10**		100	816 units	41B
			• 20 mm × 7 mm, titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
	3RT1	**S6 ... S12**	• 10 mm × 7 mm, pastel turquoise	15	**3RT1900-1SB10**		100	816 units	41B
			• 20 mm × 7 mm, pastel turquoise	20	**3RT1900-1SB20**		100	340 units	41B
			Adhesive labels for SIRIUS devices						
	3RT2	**S00 ... S3**	• 19 mm × 6 mm, titanium gray	5	**3RT2900-1SB60**		100	3 060 units	41B
	3RT1	**S6 ... S12**	• 19 mm × 6 mm						
			- Pastel turquoise	15	**3RT1900-1SB60**		100	3 060 units	41B
			- Zinc/yellow	15	**3RT1900-1SD60**		100	3 060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/20).

Solenoid coils

Selection and ordering data

Screw terminals and spring-type terminals

3RT2924-5A.01

For contactors	Rated control supply voltage U_s			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	50 Hz	50/60 Hz	60 Hz						
Type	V	V	V	d					
Solenoid coils · AC operation									
Size S0									
3RT2023-.A, 3RT2024-.A, 3RT2025-.A	24	--	--	5	**3RT2924-5AB01**		1	1 unit	41B
	42	--	--	5	**3RT2924-5AD01**		1	1 unit	41B
	48	--	--	5	**3RT2924-5AH01**		1	1 unit	41B
	110	--	--	5	**3RT2924-5AF01**		1	1 unit	41B
	230	--	--	5	**3RT2924-5AP01**		1	1 unit	41B
	400	--	--	5	**3RT2924-5AV01**		1	1 unit	41B
	--	24	--	5	**3RT2924-5AC21**		1	1 unit	41B
	--	42	--	5	**3RT2924-5AD21**		1	1 unit	41B
	--	48	--	5	**3RT2924-5AH21**		1	1 unit	41B
	--	110	--	5	**3RT2924-5AG21**		1	1 unit	41B
	--	220	--	5	**3RT2924-5AN21**		1	1 unit	41B
	--	230	--	5	**3RT2924-5AL21**		1	1 unit	41B
	--	--	24	5	**3RT2924-5AC11**		1	1 unit	41B
	110	--	120	5	**3RT2924-5AK61**		1	1 unit	41B
	220	--	240	5	**3RT2924-5AP61**		1	1 unit	41B
	--	100	110	5	**3RT2924-5AG61**		1	1 unit	41B
	--	200	220	5	**3RT2924-5AN61**		1	1 unit	41B
	--	400	440	5	**3RT2924-5AR61**		1	1 unit	41B
3RT2026-.A, 3RT2027-.A, 3RT2028-.A, 3RT2325-.A, 3RT2326-.A, 3RT2327-.A, 3RT2526-.A	24	--	--	5	**3RT2926-5AB01**		1	1 unit	41B
	42	--	--	5	**3RT2926-5AD01**		1	1 unit	41B
	48	--	--	5	**3RT2926-5AH01**		1	1 unit	41B
	110	--	--	5	**3RT2926-5AF01**		1	1 unit	41B
	230	--	--	5	**3RT2926-5AP01**		1	1 unit	41B
	400	--	--	5	**3RT2926-5AV01**		1	1 unit	41B
	--	24	--	5	**3RT2926-5AC21**		1	1 unit	41B
	--	42	--	5	**3RT2926-5AD21**		1	1 unit	41B
	--	48	--	5	**3RT2926-5AH21**		1	1 unit	41B
	--	110	--	5	**3RT2926-5AG21**		1	1 unit	41B
	--	220	--	5	**3RT2926-5AN21**		1	1 unit	41B
	--	230	--	5	**3RT2926-5AL21**		1	1 unit	41B
	--	--	24	5	**3RT2926-5AC11**		1	1 unit	41B
	110	--	120	5	**3RT2926-5AK61**		1	1 unit	41B
	220	--	240	5	**3RT2926-5AP61**		1	1 unit	41B
	--	100	110	5	**3RT2926-5AG61**		1	1 unit	41B
	--	200	220	5	**3RT2926-5AN61**		1	1 unit	41B
	--	400	440	5	**3RT2926-5AR61**		1	1 unit	41B

Note:

Contactors with AC and AC/DC coils have different depths. It is only possible to replace the coils on AC contactors with AC coils, and on AC/DC contactors with AC/DC coils. It is not possible to replace the coils on DC contactors.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Screw terminals and spring-type terminals

3RT2934-5A.01

3RT2934-5N.31

For contactors	Rated control supply voltage U_s				SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	50 Hz	50/60 Hz	60 Hz	DC						
Type	V	V	V		d					
Solenoid coils · AC operation										
Size S2										
3RT203.-.A, 3RT233.-.A, 3RT253.-.A	24	--	--	--	5	**3RT2934-5AB01**		1	1 unit	41B
	42	--	--	--	5	**3RT2934-5AD01**		1	1 unit	41B
	48	--	--	--	5	**3RT2934-5AH01**		1	1 unit	41B
	110	--	--	--	5	**3RT2934-5AF01**		1	1 unit	41B
	230	--	--	--	5	**3RT2934-5AP01**		1	1 unit	41B
	400	--	--	--	5	**3RT2934-5AV01**		1	1 unit	41B
	--	24	--	--	5	**3RT2934-5AC21**		1	1 unit	41B
	--	42	--	--	5	**3RT2934-5AD21**		1	1 unit	41B
	--	48	--	--	5	**3RT2934-5AH21**		1	1 unit	41B
	--	110	--	--	5	**3RT2934-5AG21**		1	1 unit	41B
	--	220	--	--	5	**3RT2934-5AN21**		1	1 unit	41B
	--	230	--	--	5	**3RT2934-5AL21**		1	1 unit	41B
	110	--	120	--	5	**3RT2934-5AK61**		1	1 unit	41B
	220	--	240	--	5	**3RT2934-5AP61**		1	1 unit	41B
	--	--	480	--	5	**3RT2934-5AV61**		1	1 unit	41B
	--	--	600	--	5	**3RT2934-5AT61**		1	1 unit	41B
	--	100	110	--	5	**3RT2934-5AG61**		1	1 unit	41B
	--	200	220	--	5	**3RT2934-5AN61**		1	1 unit	41B
	--	400	440	--	5	**3RT2934-5AR61**		1	1 unit	41B
Size S3 NEW										
3RT2.4.-.A	24	--	--	--	X	**3RT2944-5AB01**		1	1 unit	41B
	42	--	--	--	X	**3RT2944-5AD01**		1	1 unit	41B
	48	--	--	--	X	**3RT2944-5AH01**		1	1 unit	41B
	110	--	--	--	X	**3RT2944-5AF01**		1	1 unit	41B
	230	--	--	--	X	**3RT2944-5AP01**		1	1 unit	41B
	400	--	--	--	X	**3RT2944-5AV01**		1	1 unit	41B
	--	24	--	--	X	**3RT2944-5AC21**		1	1 unit	41B
	--	42	--	--	X	**3RT2944-5AD21**		1	1 unit	41B
	--	48	--	--	X	**3RT2944-5AH21**		1	1 unit	41B
	--	110	--	--	X	**3RT2944-5AG21**		1	1 unit	41B
	--	220	--	--	X	**3RT2944-5AN21**		1	1 unit	41B
	--	230	--	--	X	**3RT2944-5AL21**		1	1 unit	41B
	110	--	120	--	X	**3RT2944-5AK61**		1	1 unit	41B
	220	--	240	--	X	**3RT2944-5AP61**		1	1 unit	41B
	--	--	480	--	X	**3RT2944-5AV61**		1	1 unit	41B
	--	--	600	--	X	**3RT2944-5AT61**		1	1 unit	41B
	--	100	110	--	X	**3RT2944-5AG61**		1	1 unit	41B
	--	200	220	--	X	**3RT2944-5AN61**		1	1 unit	41B
	--	400	440	--	X	**3RT2944-5AR61**		1	1 unit	41B
Solenoid coils · AC/DC operation, with varistor										
Size S2										
3RT203.-.A, 3RT233.-.A, 3RT253.-.A	--	20 ... 33	--	20 ... 33	5	**3RT2934-5NB31**		1	1 unit	41B
	--	30 ... 42	--	30 ... 42	5	**3RT2934-5ND31**		1	1 unit	41B
	--	48 ... 80	--	48 ... 80	5	**3RT2934-5NE31**		1	1 unit	41B
	--	83 ... 155	--	83 ... 155	5	**3RT2934-5NF31**		1	1 unit	41B
	--	175 ... 280	--	175 ... 280	5	**3RT2934-5NP31**		1	1 unit	41B
Size S3 NEW										
3RT2.4.-.A	--	20 ... 33	--	20 ... 33	X	**3RT2944-5NB31**		1	1 unit	41B
	--	30 ... 42	--	30 ... 42	X	**3RT2944-5ND31**		1	1 unit	41B
	--	48 ... 80	--	48 ... 80	X	**3RT2944-5NE31**		1	1 unit	41B
	--	83 ... 155	--	83 ... 155	X	**3RT2944-5NF31**		1	1 unit	41B
	--	175 ... 280	--	175 ... 280	X	**3RT2944-5NP31**		1	1 unit	41B

Note:

It is only possible to replace the coils on AC contactors with AC coils, and on AC/DC contactors with AC/DC coils.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Solenoid coils

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

Withdrawable coils


3RT1955-5A..1


3RT1955-5N..1

For contactors		Rated control supply voltage U_s	SD	Screw terminals	SD	Spring-type terminals
Size	Type	V	d	Article No. / Price per PU	d	Article No. / Price per PU
Conventional operating mechanisms for AC/DC						
S6	3RT105, 3RT145	23 ... 26 AC/DC	5	**3RT1955-5AB31**	5	**3RT1955-5AB32**
		42 ... 48 AC/DC	5	**3RT1955-5AD31**	5	**3RT1955-5AD32**
		110 ... 127 AC/DC	5	**3RT1955-5AF31**	5	**3RT1955-5AF32**
		200 ... 220 AC/DC	5	**3RT1955-5AM31**	5	**3RT1955-5AM32**
		220 ... 240 AC/DC	5	**3RT1955-5AP31**	5	**3RT1955-5AP32**
		240 ... 277 AC/DC	5	**3RT1955-5AU31**	5	**3RT1955-5AU32**
		380 ... 420 AC/DC	5	**3RT1955-5AV31**	5	**3RT1955-5AV32**
		440 ... 480 AC/DC	5	**3RT1955-5AR31**	5	**3RT1955-5AR32**
		500 ... 550 AC/DC	5	**3RT1955-5AS31**	5	**3RT1955-5AS32**
		575 ... 600 AC/DC	5	**3RT1955-5AT31**	5	**3RT1955-5AT32**
S10	3RT106, 3RT146	23 ... 26 AC/DC	5	**3RT1965-5AB31**	5	**3RT1965-5AB32**
		42 ... 48 AC/DC	5	**3RT1965-5AD31**	5	**3RT1965-5AD32**
		110 ... 127 AC/DC	5	**3RT1965-5AF31**	5	**3RT1965-5AF32**
		200 ... 220 AC/DC	5	**3RT1965-5AM31**	5	**3RT1965-5AM32**
		220 ... 240 AC/DC	5	**3RT1965-5AP31**	5	**3RT1965-5AP32**
		240 ... 277 AC/DC	5	**3RT1965-5AU31**	5	**3RT1965-5AU32**
		380 ... 420 AC/DC	5	**3RT1965-5AV31**	5	**3RT1965-5AV32**
		440 ... 480 AC/DC	5	**3RT1965-5AR31**	5	**3RT1965-5AR32**
		500 ... 550 AC/DC	5	**3RT1965-5AS31**	5	**3RT1965-5AS32**
		575 ... 600 AC/DC	5	**3RT1965-5AT31**	5	**3RT1965-5AT32**
S12	3RT107, 3RT147	23 ... 26 AC/DC	5	**3RT1975-5AB31**	5	**3RT1975-5AB32**
		42 ... 48 AC/DC	5	**3RT1975-5AD31**	5	**3RT1975-5AD32**
		110 ... 127 AC/DC	5	**3RT1975-5AF31**	5	**3RT1975-5AF32**
		200 ... 220 AC/DC	5	**3RT1975-5AM31**	5	**3RT1975-5AM32**
		220 ... 240 AC/DC	5	**3RT1975-5AP31**	5	**3RT1975-5AP32**
		240 ... 277 AC/DC	5	**3RT1975-5AU31**	5	**3RT1975-5AU32**
		380 ... 420 AC/DC	5	**3RT1975-5AV31**	5	**3RT1975-5AV32**
		440 ... 480 AC/DC	5	**3RT1975-5AR31**	5	**3RT1975-5AR32**
		500 ... 550 AC/DC	5	**3RT1975-5AS31**	5	**3RT1975-5AS32**
		575 ... 600 AC/DC	5	**3RT1975-5AT31**	5	**3RT1975-5AT32**
Solid-state operating mechanisms for AC/DC with 24 V DC control signal input, e.g. for control by PLC						
S6	3RT105, 3RT145	21 ... 27.3 AC/DC	5	**3RT1955-5NB31**	5	**3RT1955-5NB32**
		96 ... 127 AC/DC	5	**3RT1955-5NF31**	5	**3RT1955-5NF32**
		200 ... 277 AC/DC	5	**3RT1955-5NP31**	5	**3RT1955-5NP32**
S10	3RT106, 3RT146	21 ... 27.3 AC/DC	5	**3RT1965-5NB31**	5	**3RT1965-5NB32**
		96 ... 127 AC/DC	5	**3RT1965-5NF31**	5	**3RT1965-5NF32**
		200 ... 277 AC/DC	5	**3RT1965-5NP31**	5	**3RT1965-5NP32**
S12	3RT107, 3RT147	21 ... 27.3 AC/DC	5	**3RT1975-5NB31**	5	**3RT1975-5NB32**
		96 ... 127 AC/DC	5	**3RT1975-5NF31**	5	**3RT1975-5NF32**
		200 ... 277 AC/DC	5	**3RT1975-5NP31**	5	**3RT1975-5NP32**
• **Additionally with PLC relay output and remaining lifetime indicator (RLT)** (withdrawable coil with laterally mounted solid-state module)						
S6	3RT105, 3RT145	96 ... 127 AC/DC	5	**3RT1955-5PF31**		--
		200 ... 277 AC/DC	5	**3RT1955-5PP31**		--
S10	3RT106, 3RT146	96 ... 127 AC/DC	5	**3RT1965-5PF31**		--
		200 ... 277 AC/DC	5	**3RT1965-5PP31**		--
S12	3RT107, 3RT147	96 ... 127 AC/DC	5	**3RT1975-5PF31**		--
		200 ... 277 AC/DC	5	**3RT1975-5PP31**		--
Solid-state operating mechanisms for DC with 24 ... 110 V DC control signal input e. g. for control by PLC with extended operating range NEW						
(see also traction contactors on page 4/67)						
S6	3RT105..-.X...-0LA2	24 DC		--	5	**3RT1955-5XB42**
		72 DC		--	5	**3RT1955-5XJ42**
		110 DC		--	5	**3RT1955-5XF42**
S10	3RT106..-.X...-0LA2	24 DC		--	5	**3RT1965-5XB42**
		72 DC		--	5	**3RT1965-5XJ42**
		110 DC		--	5	**3RT1965-5XF42**
S12	3RT107..-.X...-0LA2	24 DC		--	5	**3RT1975-5XB42**
		72 DC		--	5	**3RT1975-5XJ42**
		110 DC		--	5	**3RT1975-5XF42**

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data

For contactors		Version		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type			d					
Contacts with fixing parts									
For contactors with 3 main contacts									
S2	3RT2035	Main contacts (3 NO contacts) for utilization category AC-3 (1 set = 3 movable and 6 fixed switching elements with fixing parts)		5	**3RT2935-6A**		1	1 unit	41B
	3RT2036			5	**3RT2936-6A**		1	1 unit	41B
	3RT2037			5	**3RT2937-6A**		1	1 unit	41B
	3RT2038			5	**3RT2938-6A**		1	1 unit	41B
S3	3RT2.45		NEW	X	**3RT2945-6A**		1	1 unit	41B
	3RT2.46		NEW	X	**3RT2946-6A**		1	1 unit	41B
	3RT2.47		NEW	X	**3RT2947-6A**		1	1 unit	41B
S6	3RT1054			►	**3RT1954-6A**		1	1 unit	41B
	3RT1055			►	**3RT1955-6A**		1	1 unit	41B
	3RT1056			►	**3RT1956-6A**		1	1 unit	41B
S10	3RT1064			►	**3RT1964-6A**		1	1 unit	41B
	3RT1065			►	**3RT1965-6A**		1	1 unit	41B
	3RT1066			►	**3RT1966-6A**		1	1 unit	41B
S12	3RT1075			►	**3RT1975-6A**		1	1 unit	41B
	3RT1076			2	**3RT1976-6A**		1	1 unit	41B
S6	3RT1456	Main contacts (3 NO contacts) for utilization category AC-1 (1 set = 3 movable and 6 fixed switching elements with fixing parts)		5	**3RT1956-6D**		1	1 unit	41B
S10	3RT1466			5	**3RT1966-6D**		1	1 unit	41B
S12	3RT1476			2	**3RT1976-6D**		1	1 unit	41B
For contactors with 4 main contacts									
S2	3RT2336	Main contacts (4 NO contacts) for utilization category AC-1 (1 set = 3 moving and 6 fixed switching elements and replacement pole with fixing parts)		5	**3RT2936-6E**		1	1 unit	41B
	3RT2337			5	**3RT2937-6E**		1	1 unit	41B
Arc chambers									
For contactors with 3 main contacts									
S6	3RT1054	For contactors with AC/DC coil only		5	**3RT1954-7A**		1	1 unit	41B
	3RT1055			5	**3RT1955-7A**		1	1 unit	41B
	3RT1056			5	**3RT1956-7A**		1	1 unit	41B
	3RT1456			5	**3RT1956-7B**		1	1 unit	41B
S10	3RT1064			5	**3RT1964-7A**		1	1 unit	41B
	3RT1065			5	**3RT1965-7A**		1	1 unit	41B
	3RT1066			5	**3RT1966-7A**		1	1 unit	41B
	3RT1466			5	**3RT1966-7B**		1	1 unit	41B
S12	3RT1075			5	**3RT1975-7A**		1	1 unit	41B
	3RT1076			5	**3RT1976-7A**		1	1 unit	41B
	3RT1476			5	**3RT1976-7B**		1	1 unit	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Vacuum contactors

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1 (auxiliary switches)

The SIRIUS 3RT12 and 3TF68/3TF69 vacuum contactors are suitable for use in any climate. They are finger-safe according to IEC 60529. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices (see pages 3/116 and 3/138).

Connection methods

The vacuum contactors are available with screw terminals (box terminals).

Contact reliability

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the vacuum contactors or 3RH contactor relays should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Short-circuit protection

For short-circuit protection of vacuum contactors without overload relays, see "Technical specifications", page 3/129.

For short-circuit protection of vacuum contactors with overload relays, see the Configuration Manual "Configuring SIRIUS – Selection Data for Fuseless Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/40625241.

Electromagnetic compatibility (EMC)

The contactors with solid-state operating mechanism comply with the international standards IEC/EN 60947-1 and IEC/EN 60947-4-1.

These contactors have been developed for environment A.

Note:

Environment A refers to private low-voltage or industrial networks/locations/plants, including high-grade sources of interference.

Environment A corresponds to devices of Class A with CISPR 11, EN 55011.

Note:

In connection with converters, the control cables must be routed separately from the load cables to the converter.

Motor protection

For protection against overload, 3RB2 electronic overload relays (see page 7/109 onwards) can be mounted on the vacuum contactors. These must be ordered separately.

Ratings of three-phase motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

The power rating specifications of the vacuum contactors in kW are guide values for 4-pole standard motors at 50 Hz AC and specified voltage (e.g. 400 V). The actual starting and rated data of the motor to be switched must be considered when selecting the units.

Surge suppression

The vacuum contactors can be retrofitted with varistors for damping opening overvoltages in the coil.

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 to 5 ms)

Vacuum contactors are basically unsuitable for switching DC voltage.

SIRIUS 3RT12 vacuum contactors, 3-pole, 110 to 250 kW

AC/DC operation

The contactors can be operated with AC (50 to 60 Hz) as well as with DC.

Two types of solenoid operation are available:
- Conventional operating mechanism, version 3RT12..-.A
- Solid-state operating mechanism, version 3RT12..-.N

Withdrawable coils

For simple coil replacement, e. g. if the application is replaced, the solenoid coil can be pulled out upwards after the release mechanism has been actuated and can be replaced by any other coil of the same size.

Vacuum interrupters

In contrast to the 3RT10 contactors – the main contacts operate in air under atmospheric conditions – the contact gaps of the 3RT12 vacuum contactors are contained in hermetically enclosed vacuum interrupters. Neither arcs nor arcing gases are produced. The particular benefit of 3RT12 vacuum contactors, however, is that their electrical endurance is at least twice as long as that of 3RT10 contactors. They are therefore particularly well suited to frequent switching in inching/mixed operation, e.g. in crane control systems.

Auxiliary contact complement

The 3RT12 vacuum contactors of sizes S10 to S12 are supplied with laterally mounted auxiliary switch blocks. These can be fitted with up to eight lateral auxiliary contacts (identical auxiliary switch blocks for S10 and S12). Of these, no more than four are permitted to be NC contacts.

3TF6 vacuum contactors, 3-pole, 335 to 450 kW

Main contacts

Contact erosion indication with 3TF68/3TF69 vacuum contactors:
The contact erosion of the vacuum interrupters can be checked during operation with the help of three white double slides on the contactor base. If the distance indicated by one of the double slides is < 0.5 mm while the contactor is in the closed position, the vacuum interrupter must be replaced. To ensure maximum reliability, it is recommended to replace all three vacuum interrupters simultaneously.

Auxiliary contacts

Contact reliability:
These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Protection of the main current paths

An integrated RC varistor connection for the main current paths dampens the switching overvoltage rises to safe values. This prevents multiple restricting. It can therefore be assumed that the motor winding cannot be damaged by switching overvoltages with steep voltage rises.

During operation in installations in which the emitted interference limits cannot be observed, e. g. when used for output contactors in converters, 3TF68/3TF69..-.**Q** vacuum contactors – without connection of the main current path circuit – are recommended.

Technical specifications

Unless otherwise listed on subsequent pages, the technical specifications of the SIRIUS 3RT12 vacuum contactors correspond to those of the 3RT10 basic units; see pages 3/19, 3/22 and 3/44 to 3/50.

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16137/td

FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16137/faq

Manuals, see

- System Manual "SIRIUS – System Overview", https://support.industry.siemens.com/cs/WW/en/view/60311318
- Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", https://support.industry.siemens.com/cs/WW/en/view/60306557
- Application Manual "SIRIUS Controls with IE3/IE4 motors, https://support.industry.siemens.com/cs/ww/en/view/94770820

	SIRIUS vacuum contactors
Type	3RT12
Size	S10 and S12

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching resistive and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i. e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking 6 times the rated operational current) and is intended for a contact endurance of approximately 200 000 operating cycles.

If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

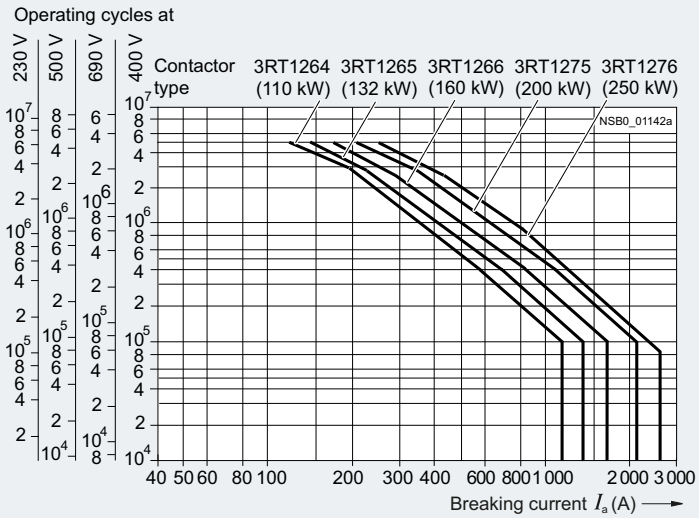
Characters in the equation:

X Contact endurance for mixed operation in operating cycles

A Contact endurance for normal operation ($I_a = I_e$) in operating cycles

B Contact endurance for inching (I_a = multiple of I_e) in operating cycles

C Inching operations as a percentage of total switching operations



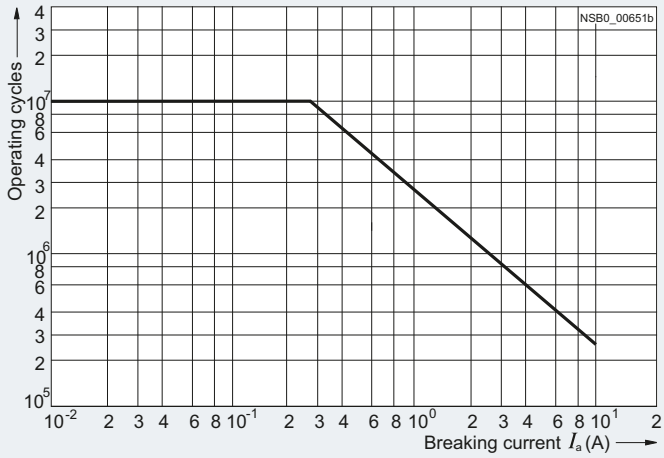
SIRIUS 3RT12 and 3TF6 vacuum contactors

		Vacuum contactors		
Type		3TF68 and 3TF69		
Size		14		
Rated data of the auxiliary contacts		According to IEC 60947-5-1		
Rated insulation voltage U_i (pollution degree 3)	V	690		
Conventional thermal current I_{th} = rated operational current I_e/AC-12	A	10		
AC load				
Rated operational current I_e/AC-15/AC-14				
• For rated operational voltage U_e				
- At 24 V	A	10		
- At 110 V	A	10		
- At 125 V	A	10		
- At 220 V	A	6		
- At 230 V	A	5.6		
- At 380 V	A	4		
- At 400 V	A	3.6		
- At 500 V	A	2.5		
- At 660 V	A	2.5		
- At 690 V	A	2.3		
DC load				
Rated operational current I_e/DC-12				
• For rated operational voltage U_e				
- At 24 V	A	10		
- At 60 V	A	10		
- At 110 V	A	3.2		
- At 125 V	A	2.5		
- At 220 V	A	0.9		
- At 440 V	A	0.33		
- At 600 V	A	0.22		
Rated operational current I_e/DC-13			Auxiliary contacts with delayed NC contact:	NS = No specification
• For rated operational voltage U_e				
- At 24 V	A	10	6	
- At 60 V	A	5	N S	
- At 110 V	A	1.14	0.98	
- At 125 V	A	0.98	N S	
- At 220 V	A	0.48	N S	
- At 440 V	A	0.13	N S	
- At 600 V	A	0.07	0.07	
cULus and UL rated data of the auxiliary contacts				
Rated voltage, max.	V AC	600		
Switching capacity		A 600, P 600		

Endurance of the auxiliary contacts

The contact endurance for utilization category AC-12 or AC-15/AC-14 depends mainly on the breaking current. It is assumed that the operating mechanisms are switched randomly, i. e. not synchronized with the phase angle of the supply system.

The characteristic curves apply to 230 V AC.



Contact erosion indication with vacuum contactors

The contact erosion of the vacuum interrupters can be checked during operation with the help of three white double slides on the contactor base.

If the distance indicated by one of the double slides is < 0.5 mm while the contactor is in the closed position, the vacuum interrupter must be replaced. To ensure maximum reliability, it is recommended to replace all three vacuum interrupters at once.

Type	**Vacuum contactors 3TF68 and 3TF69**
Size	**14**

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching resistive and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i. e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking 6 times the rated operational current) and is intended for a contact endurance of approximately 200 000 operating cycles.

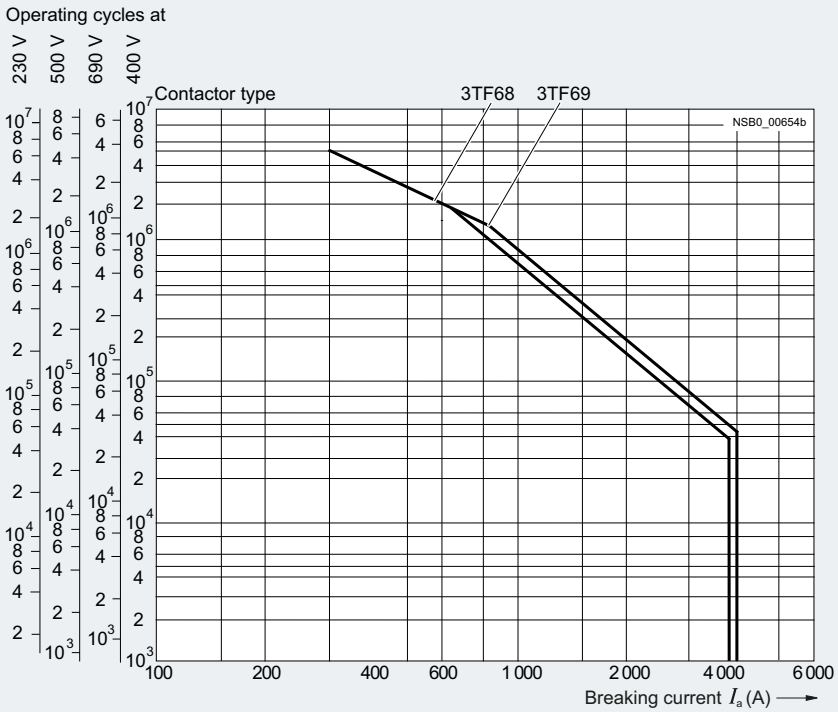
If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

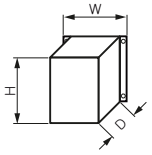
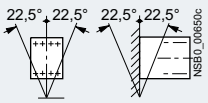
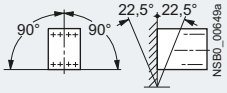
$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching (I_a = multiple of I_e) in operating cycles
- C Inching operations as a percentage of total switching operations



SIRIUS 3RT12 and 3TF6 vacuum contactors

		SIRIUS vacuum contactors					Vacuum contactors	
Type		3RT1264	3RT1265	3RT1266	3RT1275	3RT1276	3TF68	3TF69
Size		S10			S12		14	
General data								
Dimensions (W x H x D) 	mm	145 x 210 x 206			160 x 214 x 225		230 x 276 x 237	230 x 295 x 237
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.								
• To easily replace the laterally mounted auxiliary switches it is recommended to maintain a minimum distance of 30 mm between the contactors.		No					Yes	
• If mounted at a 90° angle (current paths are horizontally above each other), the switching frequency is reduced by 80 % compared with the normal values.		No					Yes	
Mechanical endurance	Operating cycles	10 million					5 million	
Electrical endurance Contact endurance of the main contacts		See page 3/125					See page 3/126	
Rated insulation voltage U_i (pollution degree 3)	kV	1						
Rated impulse withstand voltage U_{imp}	kV	8						
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N	V	690					1 000	
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.		Yes, acc. to IEC 60947-4-1, Appendix F					Yes, acc. to IEC 60947-4-1, Appendix F One NC contact each must be connected in series for the left and right auxiliary switch block respectively.	
Permissible ambient temperature								
• During operation	°C	-25 ... +60					-25 ... +55 [1]	
• During storage	°C	-55 ... +80					-55 ... +80	
Degree of protection acc. to IEC 60529								
• On the front		IP00 (IP20 with box terminal/cover)					[2][3]	
• Connecting terminal		IP00 (for higher degree of protection, use additional terminal covers)						
Touch protection acc. to IEC 60529		Finger-safe for vertical touching from the front with cover						
Shock resistance								
• Rectangular pulse								
- AC operation	g/ms	8.5/5 and 4.2/10					8.1/5 and 4.7/10	9.5/5 and 5.7/10
- DC operation	g/ms	8.5/5 and 4.2/10					9/5 and 5.7/10	8.6/5 and 5.1/10
• Sine pulse								
- AC operation	g/ms	13.4/5 and 6.5/10					12.8/5 and 7.4/10	13.5/5 and 7.8/10
- DC operation	g/ms	13.4/5 and 6.5/10					14.4/5 and 9.1/10	13.5/5 and 7.8/10
Electromagnetic compatibility (EMC)		See page 3/124						

[1] For ambient temperatures > 55 °C, only 3TF6.33-.Q..-Z A02 contactors (= without connection of the main current path circuit) can be used. Then, derating is also possible with these contactors:
- AC-1: I_e = 782 A, 644 operating cycles/h;
- AC-3: Operating range 0.85 to 1.05 x U_s, 460 operating cycles/h, mech. endurance 5 million operating cycles, lateral clearance 10 mm.

[2] For 3TF6.-.C.. the following applies:
- IP00 without cover (the connecting bar is reached directly from the front)
- IP00 with cover for conductor entry
- IP20 on the front plate with cover.

[3] For 3TF6.-.Q../-.D.. the following applies:
- IP00 without box terminal (the connecting bar, series resistor and the 3TC44 reversing contactor are reached directly from the front)
- IP00 with box terminal (the series resistor and the 3TC44 reversing contactor are reached directly).

		SIRIUS vacuum contactors					Vacuum contactors	
Type		3RT1264	3RT1265	3RT1266	3RT1275	3RT1276	3TF68	3TF69
Size		S10			S12		14	
Short-circuit protection								
Main circuit								
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1/DIN EN 60947-4-1								
• Type of coordination "1"	A	500			800		1 000	1 250
• Type of coordination "2"	A	500			800		500	630
• Weld-free (test conditions according to IEC 60947-4-1)	A	400			500		400	500
Auxiliary circuit								
Short-circuit test								
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free fuse protection at $I_k \leq 1$ kA)	A	10						
• Miniature circuit breaker with C characteristic (short-circuit current $I_k \leq 400$ A)	A	10						
Short-circuit protection for contactors with overload relays		See Configuration Manual "Configuring SIRIUS – Selection Data for Fuseless Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/40625241						

SIRIUS 3RT12 and 3TF6 vacuum contactors

			SIRIUS vacuum contactors		Vacuum contactors	
Type			3RT1264 ... 3RT1266	3RT1275, 3RT1276	3TF68	3TF69
Size			S10	S12	14	
Control						
Solenoid coil operating range		AC/DC	0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$			
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
			Conventional operating mechanisms			
• AC operation						
- Closing at $U_{s\,min}$/$U_{s\,max}$		VA	530/630	700/830	--	
- P.f.			0.9		--	
- Closed at $U_{s\,min}$/$U_{s\,max}$		VA	6.1/7.4	7.6/9.2	--	
- P.f.			0.9		--	
• DC operation						
- Closing at $U_{s\,min}$/$U_{s\,max}$		W	580/780	770/920	--	
- Closed at $U_{s\,min}$/$U_{s\,max}$		W	6.8/8.2	8.5/10	--	
			Solid-state operating mechanisms			
• AC operation						
- Closing at $U_{s\,min}$/$U_{s\,max}$		VA	420/570	560/750	1 200/1 850	600/950
- P.f.			0.8		1	0.98
- Closed at $U_{s\,min}$/$U_{s\,max}$		VA	5.5/8.5	5.6/9	13.5/49	12.9/30.6
- P.f.			0.5/0.4		0.15	0.31
• AC operation for 3TF68/3TF69..-.**Q**						
- Closing at $U_{s\,min}$		VA	--		1 000	1 150
- P.f.			--		0.99	
- Closed at $U_{s\,min}$		VA	--		11	
- P.f.			--		1	
• DC operation						
- Closing at $U_{s\,min}$/$U_{s\,max}$		W	460/630	600/800	--	
- Closed at $U_{s\,min}$/$U_{s\,max}$		W	2.8/3.4	3/3.6	--	
• DC economy circuit[1]						
- Closing at $U_{s\,min}$		W	--		1 010	960
- Closed at $U_{s\,min}$		W	--		28	20.6
PLC control input acc. to IEC 61131-2			Type 2		--	
• Rated voltage		V DC	24		--	
• Operating range		V DC	17 ... 30		--	
• Power consumption		mA	≤ 30		--	
Operating times (Total break time = Opening delay + Arcing time)					(Values apply to cold and warm coil)	
			Conventional operating mechanisms			
• For 0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$						
- Closing delay		ms	30 ... 95	45 ... 100	--	
- Opening delay		ms	40 ... 80	60 ... 100	--	
• For $U_{s\,min}$ ... $U_{s\,max}$						
- Closing delay		ms	35 ... 50	50 ... 70	--	
- Opening delay		ms	50 ... 80	70 ... 100	--	
			Solid-state operating mechanisms, actuated via A1/A2		(Values in brackets apply to contactors with reduced operating times)	
• AC operation at 0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$						
- Closing delay		ms	105 ... 145	120 ... 150	70 ... 120 (22 ... 65)	80 ... 120
- Opening delay		ms	80 ... 100		70 ... 100	70 ... 80
• AC operation for 3TF68/3TF69..-.**Q** at $U_{s\,min}$ (including reversing contactor)						
- Closing delay		ms	--		35 ... 90	45 ... 160
- Opening delay		ms	--		65 ... 90	30 ... 80
• AC operation at $U_{s\,min}$ ... $U_{s\,max}$						
- Closing delay		ms	110 ... 130	125 ... 150	80 ... 100 (30 ... 45)	85 ... 100
- Opening delay		ms	80 ... 100		70 ... 100	70
			Solid-state operating mechanisms, actuated via PLC input			
• For 0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$						
- Closing delay		ms	45 ... 80	60 ... 90	--	
- Opening delay		ms	80 ... 100		--	
• DC economy circuit for 0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$						
- Closing delay		ms	--		76 ... 110	86 ... 280
- Opening delay		ms	--		50	19 ... 25
• For $U_{s\,min}$ ... $U_{s\,max}$						
- Closing delay		ms	50 ... 65	65 ... 80	--	
- Opening delay		ms	80 ... 100		--	
• DC economy circuit for $U_{s\,min}$ ... $U_{s\,max}$						
- Closing delay		ms	--		80 ... 90	90 ... 125
- Opening delay		ms	--		50	19 ... 25
Arcing time		ms	10 ... 15		10 ... 15	10
Minimum command duration for closing	Standard	ms	--		120	
	Reduced make-time	ms	--		90	--
Minimum interval time between two ON commands		ms	--		100	300

[1] At 24 V DC; for further voltages, deviations of up to ± 10 % are possible.

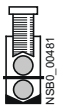
			SIRIUS vacuum contactors					Vacuum contactors	
Type			3RT1264	3RT1265	3RT1266	3RT1275	3RT1276	3TF68	3TF69
Size			S10			S12		14	
Rated data of the main contacts									
Load rating with AC									
Utilization category AC-1 Switching resistive loads									
• Rated operational currents I_e	- At 40 °C up to 690 V		330			610		700	910
	- At 40 °C up to 1 000 V	A	330			610		--	--
	- At 55 °C up to 690 V	A	--			--		630	850
	- At 55 °C up to 1 000 V	A	--			--		450	800
	- At 60 °C up to 1 000 V	A	300			550		--	--
• Rated power for AC loads[1] with p.f. = 0.95			At 60 °C			At 60 °C		At 55 °C	At 55 °C
	- At 230 V	kW	113			208		240	323
	- At 400 V	kW	197			362		415	558
	- At 500 V	kW	246			452		545	735
	- At 690 V	kW	340			624		720	970
	- At 1 000 V	kW	492			905		780	1 385
• Minimum conductor cross-section for loads with I_e	- At 40 °C	mm^2	185			2 x 185		2 x 240	$I_e \geq 800$ A: 2 x 60 x 5 (copper busbars)
	- At 55 °C	mm^2	--			--		2 x 185	$I_e < 800$ A: 2 x 240
	- At 60 °C	mm^2	185			2 x 185		--	--
Utilization categories AC-2 and AC-3									
• Rated operational currents I_e	- Up to 690 V	A	--	--	--	--	--	630	820
	- Up to 1 000 V	A	225	265	300	400	500	435	580
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	- At 230 V	kW	73	85	97	132	164	200	260
	- At 400 V	kW	128	151	171	231	291	347	450
	- At 500 V	kW	160	189	215	291	363	434	600
	- At 690 V	kW	223	265	288	400	507	600	800
	- At 1 000 V	kW	320	378	428	578	728	600	800
Thermal load capacity, 10 s current		A	1 800	2 120	2 400	3 200	4 000	5 040	7 000
Power loss per conducting path at I_e/AC-3		W	9	12	14	21	32	45	70
Utilization category AC-4 (for $I_a = 6 \times I_e$)									
Maximum values:									
• Rated operational current I_e	- Up to 690 V	A	195	230	280	350	430	610	690
• Rated power of squirrel-cage motors at 50 and 60 Hz	- At 400 V	kW	110	132	160	200	250	355	400
The following applies to a contact endurance of about 200 000 operating cycles:									
• Rated operational currents I_e	- Up to 690 V	A	97	115	140	175	215	300	360
	- Up to 1 000 V	A	68	81	98	123	151	210	250
• Rated power of squirrel-cage motors at 50 and 60 Hz	- At 230 V	kW	30	37	45	56	70	97	110
	- At 400 V	kW	55	65	79	98	122	168	191
	- At 500 V	kW	68	81	98	124	153	210[2]	250[2]
	- At 690 V	kW	94	112	138	172	212	278[2]	335[2]
	- At 1 000 V	kW	95	114	140	183	217	290[2]	350[2]
Switching frequency									
Switching frequency *z* in operating cycles/hour									
Contactors without overload relays									
• No-load switching frequency	- AC	h^{-1}	2 000					2 000	1 000
	- DC	h^{-1}	--					1 000	
• Switching frequency *z* during rated operation[3]	- I_e/AC-1 at 400 V	h^{-1}	800	750				700	
	- I_e/AC-2 at 400 V	h^{-1}	300	250				200	
	- I_e/AC-3 at 400 V	h^{-1}	750					500	
	- I_e/AC-4 at 400 V	h^{-1}	250					150	
Contactors with overload relays									
• Mean value		h^{-1}	60					15	

1) Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

2) Max. permissible rated operational current I_e/AC-4 = I_e/AC-3 up to 500 V, for reduced contact endurance and reduced switching frequency.

3) Dependence of the switching frequency z' on the operational current I' and operational voltage U': $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

SIRIUS 3RT12 and 3TF6 vacuum contactors

		SIRIUS vacuum contactors		Vacuum contactors	
Type		3RT126.	3RT127.	3TF68	3TF69
Size		S10	S12	14	
Conductor cross-sections					
Main conductors (1 or 2 conductors connectable)		Screw terminals			
With mounted box terminals	Type	3RT1966-4G		--	
• Terminal screws		M12 (hexagon socket, A/F 5)		--	
- Tightening torque	Nm	20 ... 22 (180 ... 195 lb.in)		--	
Front clamping point connected					
 NSB0_00479					
• Finely stranded with end sleeve (DIN 46228-1)	mm²	70 ... 240		--	
• Finely stranded without end sleeve	mm²	70 ... 240		--	
• Stranded	mm²	95 ... 300		--	
• AWG cables, solid or stranded	AWG	3/0 ... 600 kcmil		--	
• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 6 x 9 x 0.8; max. 20 x 24 x 0.5		--	
Rear clamping point connected					
 NSB0_00480					
• Finely stranded with end sleeve (DIN 46228-1)	mm²	120 ... 185		--	
• Finely stranded without end sleeve	mm²	120 ... 185		--	
• Stranded	mm²	120 ... 240		--	
• AWG cables, solid or stranded	AWG	250 ... 500 kcmil		--	
• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 6 x 9 x 0.8; max. 20 x 24 x 0.5		--	
Both clamping points connected					
 NSB0_00481					
• Finely stranded with end sleeve (DIN 46228-1)	mm²	Min. 2 x 50, max. 2 x 185		--	
• Finely stranded without end sleeve	mm²	Min. 2 x 50, max. 2 x 185		--	
• Stranded	mm²	Min. 2 x 70, max. 2 x 240		--	
• AWG cables, solid or stranded	AWG	Min. 2 x 2/0, max. 1 x 500 kcmil		--	
• Ribbon cable conductors (Number x Width x Thickness)	mm	Max. 2 x (20 x 24 x 0.5)		--	
Cable lug connection					
• Finely stranded with cable lug[1]	mm²	50 ... 240		--	
• Stranded with cable lug[1]	mm²	70 ... 240		--	
• AWG cables, solid or stranded	AWG	2/0 ... 500 kcmil		--	
• Terminal screws		M10 x 30 (A/F 17)		--	
- Tightening torque	Nm	14 ... 24 (124 ... 210 lb.in)		--	
Busbar connections					
• Finely stranded with cable lug	mm²	--		50 ... 240	
• Stranded with cable lug	mm²	--		70 ... 240	50 ... 240
• Solid or stranded	AWG	--		2/0 ... 500 MCM	2/0 ... 500 MCM
• Connecting bar (max. width)	mm	25		50	60 ($U_e \leq$ 690 V), 50 (U_e > 690 V)
• Terminal screws		--		M10 x 30	M12 x 40
- Tightening torque	Nm	--		14 ... 24	20 ... 35
	lb.in	--		124 ... 210	177 ... 310
With box terminal (see page 3/138)					
• Connectable laminated copper bars		--		Yes	
• Width	mm	--		15 ... 25	15 ... 38
• Max. thickness	mm	--		1 x 26 or 2 x 11	1 x 46 or 2 x 18
• Terminal screw		--		A/F 6 (hexagon socket)	A/F 8 (hexagon socket)
• Tightening torque	Nm	--		25 ... 40 (221 ... 354 lb.in)	35 ... 50 (266 ... 443 lb.in)
Auxiliary conductors (1 or 2 conductors connectable)					
• Solid	mm²	2 x (0.5 ... 1.5)[2]; 2 x (0.75 ... 2.5)[2] according to IEC 60947; max. 2 x (0.75 ... 4)		2 x (0.5 ... 1)[2]/2 x (1 ... 2.5)[2]	
• Finely stranded with end sleeve (DIN 46228-1)	mm²	2 x (0.5 ... 1.5)[2]; 2 x (0.75 ... 2.5)[2]		2 x (0.5 ... 1)[2], 2 x (0.75 ... 2.5)[2]	
• Pin-end connector to DIN 46231	mm²	--		2 x (1 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)		2 x (18 ... 12)	
• Terminal screws		M3 (Pozidriv size 2)		--	
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)		0.8 ... 1.4 (7 ... 12 lb.in)	

1) When connecting cable lugs according to DIN 46234, the 3RT1966-4EA1 terminal cover must be used for conductor cross-sections of 240 mm² and more as well as DIN 46235 for conductor cross-sections of 185 mm² and more to keep to the phase clearance; see page 3/116.

2) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Type		SIRIUS vacuum contactors					Vacuum contactors	
		3RT1264	3RT1265	3RT1266	3RT1275	3RT1276	3TF68	3TF69
Size		S10			S12		14	
cULus and cULus rated data								
Rated insulation voltage	V AC	600					600	
Uninterrupted current at 40 °C, open and enclosed	A	330			540		630	820
Maximum horsepower ratings (S and U approved values)								
• Rated power for three-phase motors at 60 Hz								
- At 200 V	hp	60	75	100	125	150	231	290
- At 230 V	hp	75	100	125	150	200	266	350
- At 460 V	hp	150	200	250	300	400	530	700
- At 575 V	hp	200	250	300	400	500	664	860
NEMA/EEMAC ratings								
SIZE	hp	--					6	7
• Uninterrupted current								
- Open	A	--					600	820
- Enclosed	A	--					540	810
• Rated power for three-phase motors at 60 Hz								
- At 200 V	hp	--					150	--
- At 230 V	hp	--					200	300
- At 460 V	hp	--					400	600
- At 575 V	hp	--					400	600
Short-circuit protection[1]	kA	10	18			30	100	
• CLASS L fuse	A	600	700	800	1 000	1 200	1 600	
• Circuit breakers acc. to UL 489	A	500	700	800	1 000	1 200	On request[1]	

1) For more information about short-circuit values, e.g. for protection against short-circuit currents, see Certificate of Compliance for the individual devices, https://support.industry.siemens.com/cs/ww/en/ps/16134/cert.

For the selection and dimensioning of load feeders, see the UL guide "Industrial Control Panels for North America", https://support.industry.siemens.com/cs/ww/en/view/53433538.

Selection and ordering data

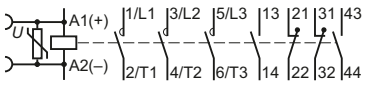
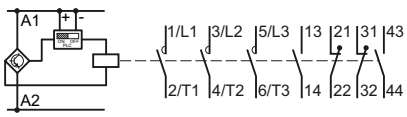
SIRIUS 3RT12 vacuum contactors, 3-pole, 110 ... 250 kW

AC/DC operation (50/60 Hz AC and DC)

- Withdrawable coils with integrated coil switch (varistor)
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections

3RT126.

3RT127.

Size	Rated data AC-2 and AC-3, t_u: Up to 60 °C					AC-1, t_u: 40 °C	Auxiliary contacts, lateral		Rated control supply voltage U_s	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	Operational current I_e up to	Ratings of three-phase motors at 50 Hz and				Operational current I_e up to					Article No.	Price per PU			
	1 000 V	230 V	**400 V**	500 V	690 V	1 000 V									
	A	kW	**kW**	kW	kW	A	NO	NC	V AC/DC	d					
Conventional operating mechanisms															
															
S10	225	55	**110**	160	200	330	2	2	110 ... 127	2	**3RT1264-6AF36**		1	1 unit	41B
									220 ... 240	2	**3RT1264-6AP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	110 ... 127	2	**3RT1265-6AF36**		1	1 unit	41B
									220 ... 240	2	**3RT1265-6AP36**		1	1 unit	41B
	300	90	**160**[1]	200	250	330	2	2	110 ... 127	2	**3RT1266-6AF36**		1	1 unit	41B
									220 ... 240	2	**3RT1266-6AP36**		1	1 unit	41B
S12	400	132	**200**	250	400	610	2	2	110 ... 127	2	**3RT1275-6AF36**		1	1 unit	41B
									220 ... 240	2	**3RT1275-6AP36**		1	1 unit	41B
	500	160	**250**[1]	355	500	610	2	2	110 ... 127	2	**3RT1276-6AF36**		1	1 unit	41B
									220 ... 240	2	**3RT1276-6AP36**		1	1 unit	41B
Solid-state operating mechanisms · with 24 V DC control signal input e.g. for control by PLC															
															
S10	225	55	**110**	160	200	330	2	2	96 ... 127	5	**3RT1264-6NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1264-6NP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	96 ... 127	5	**3RT1265-6NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1265-6NP36**		1	1 unit	41B
	300	90	**160**	200	250	330	2	2	96 ... 127	5	**3RT1266-6NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1266-6NP36**		1	1 unit	41B
S12	400	132	**200**	250	400	610	2	2	96 ... 127	5	**3RT1275-6NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1275-6NP36**		1	1 unit	41B
	500	160	**250**	355	500	610	2	2	96 ... 127	5	**3RT1276-6NF36**		1	1 unit	41B
									200 ... 277	5	**3RT1276-6NP36**		1	1 unit	41B

[1] When using 3RT12.6-6**A**... vacuum contactors with IE3/IE4 motors from 8.5 times the starting current, use the versions with solid-state operating mechanism 3RT12.6-6**N**... .
For more information about dimensioning and configuring, see page 3/6.

Other voltages according to page 3/74 on request.

For an overview of the 3RT12 vacuum contactors with mountable accessories, see pages 3/13 and 3/14.

The accessories for the 3RT1 vacuum contactors correspond to those for the basic units of the 3RT1 contactors, see from page 3/75 onwards.

For spare parts, see page 3/139.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

3TF6 vacuum contactors, 3-pole, 335 ... 450 kW

AC operation, 50/60 Hz

- Main conductors: Busbar connections
- Auxiliary and control conductors: Screw terminals
- With overvoltage protection of the coil (varistor)

3TF68/3TF69

Size	Rated data							Auxiliary contacts		Rated control supply voltage U_s	SD	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
	AC-2 and AC-3, t_u: Up to 55° C						AC-1, t_u: 40 °C	Lateral				Article No.	Price per PU			
	Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Operational current I_e up to									
	690 V	230 V	**400 V**	500 V	690 V	1 000 V	690 V									
	A	kW	**kW**	kW	kW	kW	A	NO	NC	V AC	d					
AC operation, 50/60 Hz[1]																
14	630	200	**335**[2]	434	600	--	700	4	4	110 ... 132	2	**3TF6844-0CF7**		1	1 unit	41B
										200 ... 240	►	**3TF6844-0CM7**		1	1 unit	41B
						600	700	4	4	110 ... 132	15	**3TF6844-8CF7**		1	1 unit	41B
										200 ... 240	2	**3TF6844-8CM7**		1	1 unit	41B
14	820	260	**450**[3]	600	800	--	910	4	4	110 ... 132	2	**3TF6944-0CF7**		1	1 unit	41B
										200 ... 240	►	**3TF6944-0CM7**		1	1 unit	41B
						800	910	4	4	110 ... 132	15	**3TF6944-8CF7**		1	1 unit	41B
										200 ... 240	5	**3TF6944-8CM7**		1	1 unit	41B

1) For use of 3TF6 vacuum contactors in the environment of frequency converters, we recommend ordering a special version: **3TF6...-....-Z A02**.

3TF68/3TF69 vacuum contactors in their basic version are supplied with integrated overvoltage damping for the main current paths. The surge suppression circuit is not required for operation in circuits with DC choppers, frequency converters or speed-variable operating mechanisms, for example.

The circuit could be damaged by the voltage peaks and harmonics and thus cause phase-to-phase short circuits. For this reason, the contactors can also be supplied without integrated overvoltage damping. Without additional price.
The article number must be supplemented by **"–Z"** and the order code **"A02"**.

2) When using 3TF68 vacuum contactors with IE3/IE4 motors from 8.5 times the starting current, please use 3TF69 vacuum contactors. For more information about dimensioning and configuring, see page 3/6.

3) Please inquire about use of 3TF69 vacuum contactors with IE3/IE4 motors.

For accessories and spare parts, see pages 3/137 to 3/140.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

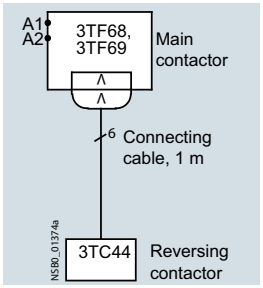
Delivery time on request

Rated control supply voltage U_s	**Contactor type**	**3TF6844-.C.., 3TF6944-.C..**
	Size	**14**
AC operation		
Solenoid coils for 50/60 Hz		
110 ... 132 V AC		F7
200 ... 240 V AC		M7
230 ... 277 V AC		P7
380 ... 460 V AC		Q7
500 ... 600 V AC		S7

SIRIUS 3RT12 and 3TF6 vacuum contactors *IE3/IE4 ready*

DC operation and for AC operation subject to strong interference

- Main conductors: Busbar connections
- Auxiliary and control conductors: Screw terminals
- DC solenoid system with 3TC44 reversing contactor for series resistor



3TF6.33-.Q.7

Size	Rated data							Auxiliary contacts Lateral		Rated control supply voltage U_s	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	AC-2 and AC-3, t_u: Up to 55° C						AC-1, t_u: 40 °C					Article No.	Price per PU			
	Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Operational current I_e up to									
	690 V	230 V	**400 V**	500 V	690 V	1 000 V	690 V									
	A	kW	**kW**	kW	kW	kW	A	NO	NC	V AC	d					
DC operation · DC economy circuit[1)2)]																
14	630	200	**335[3)]**	434	600	--	700	3	3	24 DC	15	**3TF6833-1DB4**		1	1 unit	41B
						600	700	3	3	24 DC	15	**3TF6833-8DB4**		1	1 unit	41B
14	820	260	**450[4)]**	600	800	--	910	3	3	24 DC	15	**3TF6933-1DB4**		1	1 unit	41B
						800	910	3	3	24 DC	15	**3TF6933-8DB4**		1	1 unit	41B
AC operation 50/60 Hz with DC economy circuit[2)5)] . For AC operation subject to strong interference																
14	630	200	**335[3)]**	434	600	--	700	3	3	110 ... 120 AC	15	**3TF6833-1QG7**		1	1 unit	41B
										220 ... 240 AC	2	**3TF6833-1QL7**		1	1 unit	41B
										380 ... 420 AC	15	**3TF6833-1QV7**		1	1 unit	41B
						600	700	3	3	220 ... 240 AC	15	**3TF6833-8QL7**		1	1 unit	41B
14	820	260	**450[4)]**	600	800	--	910	3	3	110 ... 120 AC	15	**3TF6933-1QG7**		1	1 unit	41B
										220 ... 240 AC	2	**3TF6933-1QL7**		1	1 unit	41B
										380 ... 420 AC	15	**3TF6933-1QV7**		1	1 unit	41B
						800	910	3	3	110 ... 120 AC	15	**3TF6933-8QG7**		1	1 unit	41B
										220 ... 240 AC	15	**3TF6933-8QL7**		1	1 unit	41B

1) On this version, a magnetic system is used in the DC economy circuit. A varistor can be retrofitted. A 3TC4417-4A.. reversing contactor is included in the scope of delivery of the vacuum contactor.

2) For use of 3TF6 vacuum contactors in the environment of frequency converters, we recommend ordering a special version: **3TF6...-....-Z A02**.

3TF68/3TF69 vacuum contactors in their basic version are supplied with integrated overvoltage damping for the main current paths. The surge suppression circuit is not required for operation in circuits with DC choppers, frequency converters or speed-variable operating mechanisms, for example.

The circuit could be damaged by the voltage peaks and harmonics and thus cause phase-to-phase short circuits. For this reason, the contactors can also be supplied without integrated overvoltage damping. Without additional price. The article number must be supplemented by **"–Z"** and the order code **"A02"**.

3) When using 3TF68 vacuum contactors with IE3/IE4 motors from 8.5 times the starting current, please use 3TF69 vacuum contactors. For more information about dimensioning and configuring, see page 3/6.

4) Please inquire about use of 3TF69 vacuum contactors with IE3/IE4 motors.

5) On this version, a magnetic system with rectifier is used in the DC economy circuit. Varistor integrated. A 3TC4417-.... reversing contactor with preassembled connecting cable (approx. 1 m) and plug is included in the scope of supply of the vacuum contactor.

For accessories and spare parts, see pages 3/137 to 3/140.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type	3TF6833-.D.., 3TF6933-.D..
	Size	14
DC operation		
Solenoid coils for DC economy circuit		
24 V DC		B4
110 V DC		F4
125 V DC		G4
220 V DC		M4
230 V DC		P4

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data

For further accessories for the SIRIUS 3RT12 vacuum contactors, see 3RT1 basic devices, from page 3/75 onwards.

	For contactors		Version	Auxiliary contacts					SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
				Version			Connections			Article No.	Price per PU			
	Size	Type		NO	NC	NC	Left	Right	d					
Auxiliary switch blocks, instantaneous														
			For lateral mounting											
 3TY7561-1.A00	14	3TF68, 3TF69	1st auxiliary switch block (replacement for 3TY7561-1A/3TY7561-1B)	1	1	--	13 21 14 22	31 43 32 44	▶	**3TY7561-1AA00**		1	1 unit	41B
		3TF68, 3TF69	1st auxiliary switch block	1	--	1	13 25 14 26	35 43 36 44	20	**3TY7561-1EA00**		1	1 unit	41B
		3TF68, 3TF69	2nd auxiliary switch block (replacement for 3TY7561-1K/3TY7561-1L)	1	1	--	53 61 54 62	71 83 72 84	2	**3TY7561-1KA00**		1	1 unit	41B
			For reconnection of the coil with DC economy circuit											
	14	3TF68, 3TF69	--	--	--	1	B1 25 B2 26	--	20	**3TY7681-1G**		1	1 unit	41B
			Solid-state compatible auxiliary switch blocks											
			For lateral mounting											
 5TY7561-1UA00	14	3TF68, 3TF69	2nd auxiliary switch block, left or right (replacement for 3TY6561-1U/3TY6561-1V)	1 CO contact			51 52 54 NSB0_00682	61 62 64 NSB0_00683	▶	**3TY7561-1UA00**		1	1 unit	41B

Power Contactors for Switching Motors
Accessories and Spare Parts for SIRIUS 3RT12 and 3TF6 Vacuum Contactors

Accessories

	For contactors Size	Type	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Main current path surge suppression modules									
	S10/ S12	3RT12	For damping overvoltages and protecting motor windings against multiple re-ignition when switching off three-phase motors For connection on the contactor feeder side (2-T1/4-T2/6-T3), for separate installation Rated operational voltage U_e						
			• 690 V AC	10	**3RT1966-1PV3**		1	1 unit	41B
			• 1 000 V AC	10	**3RT1966-1PV4**		1	1 unit	41B
Surge suppressors									
 3TX7572-3.	14	3TF68, 3TF69	**Varistors** AC operation The surge suppressor (varistor) is included in the scope of supply of the 3TF68 and 3TF69 contactors with AC operation. DC operation · DC economy circuit Varistor for snapping onto the side of the auxiliary switch (includes the peak value of the alternating voltage on the DC side) Rated control supply voltage U_s						
			• 24 ... 48 V DC	15	**3TX7572-3G**		1	1 unit	41B
			• 48 ... 127 V DC	20	**3TX7572-3H**		1	1 unit	41B
			• 127 ... 240 V DC	15	**3TX7572-3J**		1	1 unit	41B
Terminal covers									
 3TX76.6-0A	14		2 units required per contactor (1 set = 2 units).						
		3TF68	For protection against inadvertent contact with exposed busbar connections	5	**3TX7686-0A**		1	1 unit	41B
		3TF69	Can be screwed onto free screw end on middle connecting bar	5	**3TX7696-0A**		1	1 unit	41B
Links for paralleling (star jumpers), 3-pole									
	14	3TF68, 3TF69	**Links for paralleling** Without connecting terminal (the link for paralleling can be reduced by one pole)	5	**3TX7680-0D**		1	1 unit	41B
	14	3TF68, 3TF69	**Cover plates for links for paralleling** A cover plate must be used to protect against inadvertent contact with exposed busbar connections (IEC 60529).	15	**3TX7680-0E**		1	1 unit	41B
Box terminals for laminated copper bars									
	14	3TF68	**Without auxiliary conductor connection** (1 set = 3 units) With single covers for protection against inadvertent contact (IEC 60529)	30	**3TX7570-1E**		1	1 unit	41B
	14	3TF69	**With auxiliary conductor connection** (1 set = 3 units) Conductor cross-sections for auxiliary conductors: • Solid 2 x (0.75 ... 2.5) mm^2 • Finely stranded with end sleeve 2 x (0.5 ... 2.5) mm^2 • AWG, solid or stranded 2 x (18 ... 12) • Tightening torque 0.8 ... 1.4 Nm (7 ... 12 lb.in)	30	**3TX7690-1F**		1	1 unit	41B
Locking devices for mechanical interlock									
	14	3TF68	For two contactors of the same size	15	**3TX7686-1A**		1	1 unit	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

For contactors		Rated control supply voltage $U_{s\,min}$ ... $U_{s\,max}$	SD	Screw terminals		SD	Spring-type terminals	
Size	Type	V AC/DC	d	Article No.	Price per PU	d	Article No.	Price per PU
Withdrawable coils								
		Conventional operating mechanisms						
S10	3RT126	23 ... 26	5	**3RT1966-5AB31**			**--**	
		42 ... 48	5	**3RT1966-5AD31**			**--**	
		110 ... 127	2	**3RT1966-5AF31**			**--**	
		200 ... 220	5	**3RT1966-5AM31**			**--**	
		220 ... 240	2	**3RT1966-5AP31**			**--**	
		240 ... 277	5	**3RT1966-5AU31**			**--**	
		380 ... 420	5	**3RT1966-5AV31**			**--**	
		440 ... 480	5	**3RT1966-5AR31**			**--**	
		500 ... 550	5	**3RT1966-5AS31**			**--**	
		575 ... 600	5	**3RT1966-5AT31**			**--**	
S12	3RT127	23 ... 26	5	**3RT1975-5AB31**		5	**3RT1975-5AB32**	
		42 ... 48	5	**3RT1975-5AD31**		5	**3RT1975-5AD32**	
		110 ... 127	5	**3RT1975-5AF31**		5	**3RT1975-5AF32**	
		200 ... 220	5	**3RT1975-5AM31**		5	**3RT1975-5AM32**	
		220 ... 240	5	**3RT1975-5AP31**		5	**3RT1975-5AP32**	
		240 ... 277	5	**3RT1975-5AU31**		5	**3RT1975-5AU32**	
		380 ... 420	5	**3RT1975-5AV31**		5	**3RT1975-5AV32**	
		440 ... 480	5	**3RT1975-5AR31**		5	**3RT1975-5AR32**	
		500 ... 550	5	**3RT1975-5AS31**		5	**3RT1975-5AS32**	
		575 ... 600	5	**3RT1975-5AT31**		5	**3RT1975-5AT32**	
		Solid-state operating mechanisms for AC/DC with 24 V DC control signal input, e.g. for control by PLC						
S10	3RT126	21 ... 27.3	5	**3RT1966-5NB31**			**--**	
		96 ... 127	5	**3RT1966-5NF31**			**--**	
		200 ... 277	5	**3RT1966-5NP31**			**--**	
S12	3RT127	21 ... 27.3	5	**3RT1975-5NB31**		5	**3RT1975-5NB32**	
		96 ... 127	5	**3RT1975-5NF31**		5	**3RT1975-5NF32**	
		200 ... 277	5	**3RT1975-5NP31**		5	**3RT1975-5NP32**	

3RT19..-5A..1

3RT19..-5N..1

For contactors		Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type		d					
Solenoid coils								
		AC operation[1]						
14	3TF68	The solenoid coils are fitted as standard with varistors against overvoltage; the coil is supplied with switch-on electronics.		**3TY7683-0C..**				
	3TF69			**3TY7693-0C..**				
		DC operation[1] **· DC economy circuit**						
14	3TF68	The solenoid coils are supplied without reversing contactor.		**3TY7683-0D..**				
	3TF69			**3TY7693-0D..**				
Vacuum interrupters								
S10	3RT1264	Set with 3 vacuum interrupters with fixing parts	5	**3RT1964-6V**		1	1 unit	41B
	3RT1265		5	**3RT1965-6V**		1	1 unit	41B
	3RT1266		5	**3RT1966-6V**		1	1 unit	41B
S12	3RT1275		5	**3RT1975-6V**		1	1 unit	41B
	3RT1276		5	**3RT1976-6V**		1	1 unit	41B
14	3TF68	Set with 3 vacuum interrupters with components	5	**3TY7680-0B**		1	1 unit	41B
	3TF69	Note:	15	**3TY7690-0B**		1	1 unit	41B
		In order to ensure reliable operation of the contactors, only **original replacement interrupters** should be used.						

3TY76.3-0...

[1] Rated control supply voltages for solenoid coils:
The 10th and 11th digits of the article number must be supplemented accordingly, see the tables on pages 3/135 and 3/136.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Spare parts

For contactors		Version	Rated control supply voltage U_s	SD	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
Size	Type		V AC	d	Article No.	Price per PU			
Solenoid coils for main contactor									
14	3TF68..-.Q	With rectifier bridge	110 ... 120	20	**3TY7683-0QG7**		1	1 unit	41B
			220 ... 240	20	**3TY7683-0QL7**		1	1 unit	41B
			380 ... 420	X	**3TY7683-0QV7**		1	1 unit	41B
14	3TF69..-.Q	With rectifier bridge	110 ... 120	20	**3TY7693-0QG7**		1	1 unit	41B
			220 ... 240	20	**3TY7693-0QL7**		1	1 unit	41B
			380 ... 420	20	**3TY7693-0QV7**		1	1 unit	41B
3TC44 reversing contactors									
14	3TF68..-.Q, 3TF69..-.Q	Complete with series resistor, 1 m connecting cable and plug-in connector	110 ... 120	20	**3TY7684-0QG7**		1	1 unit	41B
			220 ... 240	20	**3TY7684-0QL7**		1	1 unit	41B
			380 ... 420	20	**3TY7684-0QV7**		1	1 unit	41B

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Overview

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1 (auxiliary switches)

The miniature contactors are suitable for use in any climate.

The miniature contactors with screw terminals are finger-safe according to IEC 60529.

Connection methods

The miniature contactors are available in versions with screw terminals, 6.3 mm plug-in terminals and solder pin connections for soldering in printed circuit boards.

Ratings of three-phase motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

The power rating specifications of the contactors in kW are guide values for 4-pole standard motors at 50 Hz and specified voltage (e.g. 400 V AC). The actual starting and rated data of the motor to be switched must be considered when selecting the units.

Technical specifications

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16142/td

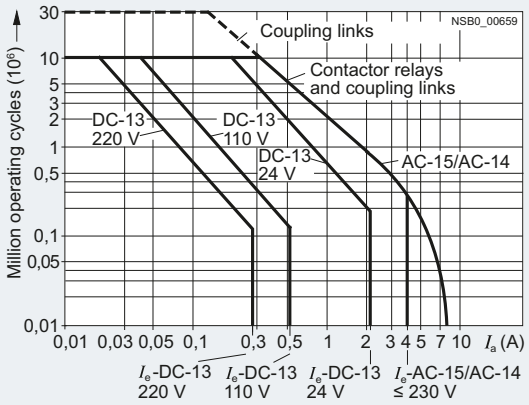
FAQs, see https://support.industry.siemens.com/cs/de/en/ps/16142/faq

Contactor	Type	3TF2

Contact endurance of the auxiliary contacts

The contact endurance for utilization category AC-12 or AC-15/AC-14 depends mainly on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

Diagram legend:
I_a = Breaking current
I_e = Rated operational current



Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching inductive AC loads (AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

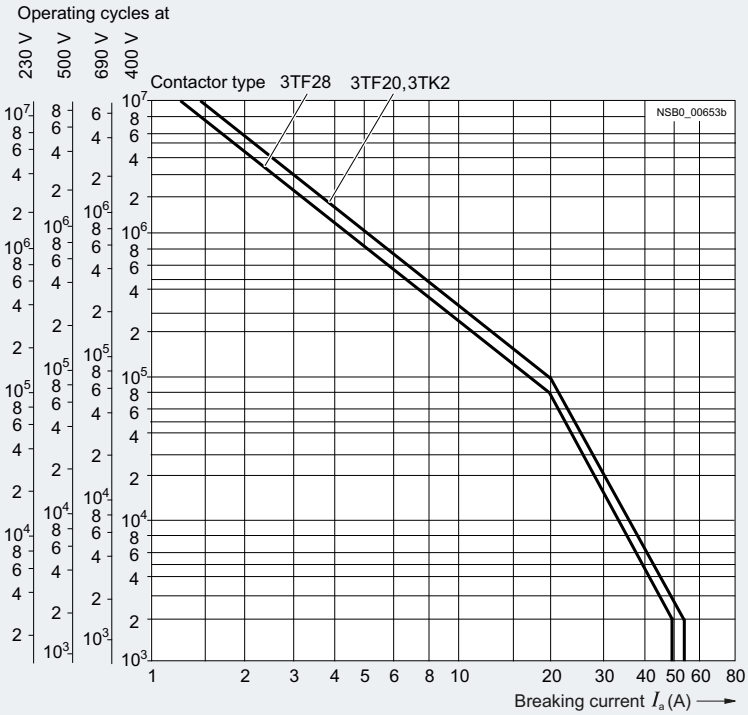
The rated operational current I_e complies with utilization category AC-4 (breaking 6 times the rated operational current) and is intended for a contact endurance of approximately 200 000 operating cycles. If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i. e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

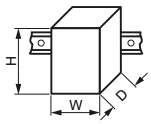
$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching (I_a = multiple of I_e) in operating cycles
- C Inching operations as a percentage of total switching operations



3TF2 miniature contactors, 3-pole

Type			3TF20, 3TF28	3TF22, 3TF29
Size			00	
General data				
Dimensions (W x H x D) 				
• Basic unit		mm	45 x 48 x 63	--
• Basic unit with mounted auxiliary switch block		mm	45 x 48 x 91	
• Basic unit with 3TX4490 surge suppressor		mm	45 x 48 x 88	45 x 48 x 116
Permissible mounting position			Any	
Mechanical endurance				
• AC operation		Operating cycles	10 million	
• DC operation			30 million	
• Auxiliary switch block			10 million	
Rated insulation voltage U_i (Pollution degree 3)				
• Screw terminals		V	690	690 (auxiliary contacts 500 V)
• Flat connectors 6.3 mm x 0.8 mm		V	500	--
• Solder pin connections		V	500	--
Rated impulse withstand voltage U_{imp} (Pollution degree 3)				
• Screw terminals		kV	6 (control circuit max. 4 kV)	
• Flat connectors 6.3 mm x 0.8 mm		kV	6	--
• Solder pin connections		kV	6	--
Protective separation between coil and main contacts (according to IEC 60947-1, Appendix N)		V	Up to 300	
Mirror contacts				
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			Yes, this applies to both the basic unit as well as to between the basic unit and the mounted auxiliary switch block acc. to IEC 60947-4-1, Appendix F	Yes, acc. to IEC 60947-4-1, Appendix F and SUVA
Permissible ambient temperature[1]				
• During operation		°C	-25 ... +55	
• During storage		°C	-55 ... +80	
Degree of protection acc. to IEC 60529				
• On front			IP20 (with screw terminals)	
• Connecting terminal			IP20 (with screw terminals)	
Touch protection acc. to IEC 60529			Finger-safe (for screw terminals)	
Shock resistance				
• Without 3TX44 auxiliary switch block				
- Rectangular pulse	AC operation	*g*/ms	8.3/5 and 5.2/10	--
	DC operation	*g*/ms	11.3/5 and 9.2/10	--
- Sine pulse	AC operation	*g*/ms	13/5 and 8/10	--
	DC operation	*g*/ms	17.4/5 and 12.9/10	--
• With 3TX44 auxiliary switch block				
- Rectangular pulse	AC operation	*g*/ms	5/5 and 3.6/10	
	DC operation	*g*/ms	9/5 and 6.9/10	9/5 and 7.3/10
- Sine pulse	AC operation	*g*/ms	7.8/5 and 5.6/10	
	DC operation	*g*/ms	13.9/5 and 10.1/10	14/5 and 11/10
Short-circuit protection				
Main circuit[2]				
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1				
- Type of coordination "1"		A	25	
- Type of coordination "2"[3]		A	10	
- Weld-free		A	10	
• Miniature circuit breaker with C characteristic		A	10	
Auxiliary circuit				
Short-circuit test				
• With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A	6	

1) Applies to 50/60 Hz coil:
At 50 Hz, 1.1 x U_s, side-by-side mounting and 100 % ON period the max. ambient temperature is +40 °C.

2) According to excerpt from IEC 60947-4-1
Type of coordination "1":
Destruction of the contactor and the overload relay is permissible.
The contactor and/or overload relay can be replaced if necessary.
Type of coordination "2":
The overload relay must not suffer any damage. Contact welding on the contactor is permissible, however, if the contacts can be easily separated.

3) A short-circuit current of $I_q \leq 6$ kA applies to type of coordination "2".

Contactor		Type	3TF2
		Size	00
Control			
Solenoid coil operating range[1]			0.8 ... 1.1 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)			
Standard version			
• AC operation, 50 Hz	Closing	VA	15
	P.f.		0.41
	Closed	VA	6.8
	P.f.		0.42
• AC operation, 60 Hz	Closing	VA	14.4
	P.f.		0.36
	Closed	VA	6.1
	P.f.		0.46
• AC operation, 50/60 Hz[1]	Closing	VA	16.5/13.2
	P.f.		0.43/0.38
	Closed	VA	8.0/5.4
	P.f.		0.48/0.42
For USA and Canada			
• AC operation, 50 Hz	Closing	VA	14.6
	P.f.		0.38
	Closed	VA	6.5
	P.f.		0.40
• AC operation, 60 Hz	Closing	VA	14.4
	P.f.		0.30
	Closed	VA	6.0
	P.f.		0.44
• DC operation	Closing = Closed	W	3
Permissible residual current of the electronic circuit[2] (with 0 signal)			
• AC operation		mA	≤ 3 x (230 V/U_s)
• DC operation		mA	≤ 1 x (230 V/U_s)
Operating times for 0.8 ... 1.1 x U_s[3] Total break time = Opening delay + Arcing time			
Values apply with coil in cold state and at operating temperature for operating range			
• AC operation	Closing delay	ms	5 ... 19
	Opening delay	ms	2 ... 22
- Dead interval			To use the 3TF2 AC-operated contactor in reversing an additional dead interval of 50 ms is required along with an NC contact interlock.
• DC operation	Closing delay	ms	16 ... 65
	Opening delay	ms	2 ... 5
• Arcing time		ms	10 ... 15
Operating times for 1.0 x U_s[3]			
• AC operation	Closing delay	ms	5 ... 18
	Opening delay	ms	3 ... 21
- Dead interval			To use the 3TF2 AC-operated contactor in reversing an additional dead interval of 50 ms is required along with an NC contact interlock.
• DC operation	Closing delay	ms	19 ... 31
	Opening delay	ms	3 ... 4
• Arcing time		ms	10 ... 15

1) Applies to 50/60 Hz coil:
At 50 Hz, 1.1 x U_s, side-by-side mounting and 100 % ON period the max. ambient temperature is +40 °C.

2) The 3TX4490-1J additional load module is recommended for higher residual currents; see page 3/150.

3) The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assembly 2 to 6 times, varistor +2 to 5 ms).

3TF2 miniature contactors, 3-pole

Contactor	Type		3TF28, 3TF29	3TF20..-0..., 3TF22..-0...	3TF20..-3..., 3TF20..-6..., 3TF20..-7...
	Size		00		
Rated data of the main contacts					
Load rating with AC					
Utilization category AC-1 Switching resistive load					
• Rated operational current I_e (at 40 °C)	Up to 400/380 V	A	18		
	690/660 V	A	18		--
• Rated operational current I_e (at 55 °C)	400/380 V	A	16		
	690/660 V	A	16		--
• Rated power of AC loads P.f. = 1	At 230/220 V	kW	6.0		
	400/380 V	kW	10		
	500 V	kW	13		
	690/660 V	kW	17		--
• Minimum conductor cross-section for loads with I_e		mm^2	2.5		
Utilization categories AC-2 and AC-3					
• Rated operational current I_e	Up to 220 V	A	5.1	9.0	
	230 V	A	5.1	9.0	
	380 V	A	5.1	9.0	
	400 V	A	5.1	8.4	
	500 V	A	4.8	6.5	
	660 V	A	4.8	5.2	--
	690 V	A	4.8	5.2	--
• Rated power for motors with slipring or squirrel cage at 50 and 60 Hz and	At 110 V	kW	0.7	1.2	
	115 V	kW	0.7	1.2	
	120 V	kW	0.7	1.3	
	127 V	kW	0.8	1.4	
	200 V	kW	1.2	2.2	
	220 V	kW	1.3	2.4	
	230 V	kW	1.4	2.5	
	240 V	kW	1.5	2.6	
	380 V	kW	2.2	4.0	
	400 V	kW	2.2	4.0	
	415 V	kW	2.5	4.0	
	440 V	kW	2.5	4.0	
	460 V	kW	2.7	4.0	
	500 V	kW	2.9	4.0	
	575 V	kW	3.2	4.0	--
	660 V	kW	3.8	4.0	--
	690 V	kW	4.0		
Utilization category AC-4					
(Contact endurance approx. 200 000 operating cycles at $I_a = 6 \times I_e$)					
• Rated operational current I_e [1]	Up to 400 V	A	1.9	2.6	
	690 V	A	1.4	1.8	--
• Rated power for motors with squirrel cage at 50 and 60 Hz and	At 110 V	kW	0.23	0.32	
	115 V	kW	0.24	0.33	
	120 V	kW	0.26	0.35	
	127 V	kW	0.27	0.37	
	200 V	kW	0.42	0.58	
	220 V	kW	0.47	0.64	
	230 V	kW	0.49	0.67	
	240 V	kW	0.51	0.70	
	380 V	kW	0.81	1.10	
	400 V	kW	0.85	1.15	
	415 V	kW	0.93	1.20	
	440 V	kW	1.0	1.27	
	460 V	kW	1.0	1.33	
	500 V	kW	1.1	1.45	
	575 V	kW	1.0	1.30	--
	660 V	kW	0.86	1.10	--
	690 V	kW	0.89	1.15	--
Thermal load capacity	10 s current	A	70		
Power loss per conducting path	At I_e/AC-3	W	0.3		

[1] The following applies: Max. permissible rated operational current I_e/AC-4 ≙ I_e/AC-3 up to 500 V for reduced contact endurance and reduced switching frequency.

Contactor	Type		3TF28, 3TF29	3TF20..-0..., 3TF22..-0...	3TF20..-3..., 3TF20..-6..., 3TF20..-7...
	Size		00		
Rated data of main contacts (continued)					
Load rating with DC					
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)					
• Rated operational currents I_e (at 55 °C)					
- 1 conducting path	Up to 24 V	A	10	16	
	60 V	A	4	6	
	110 V	A	1.5	2	
	220/240 V	A	0.6	1	
- 2 conducting paths in series	Up to 24 V	A	10	16	
	60 V	A	10	16	
	110 V	A	4	6	
	220/240 V	A	1.5	2	
- 3 conducting paths in series	Up to 24 V	A	10	16	
	60 V	A	10	16	
	110 V	A	10	16	
	220/240 V	A	4	6	
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)					
• Rated operational currents I_e (at 55 °C)					
- 1 conducting path	Up to 24 V	A	4	6	
	60 V	A	1.8	3	
	110 V	A	0.3	0.5	
	220/240 V	A	--	0.1	
- 2 conducting paths in series	Up to 24 V	A	6	10	
	60 V	A	3	5	
	110 V	A	1.5	2	
	220/240 V	A	0.3	0.5	
- 3 conducting paths in series	Up to 24 V	A	10	16	
	60 V	A	10	16	
	110 V	A	10	16	
	220/240 V	A	1.5	2	
Switching frequency					
Switching frequency *z* in operating cycles/hour					
• Contactors without overload relays for rated operation	No-load switching frequency	h^{-1}	10 000		
Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*:	AC-1	h^{-1}	1 000		
	AC-2	h^{-1}	500		
	AC-3	h^{-1}	1 000		
$z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$					
• Contactors with overload relays (mean value)		h^{-1}	15		
Conductor cross-sections					
Main and auxiliary conductors (1 or 2 conductors can be connected)			**Screw terminals**		
• Solid		mm^2	2 x (0.5 ... 2.5), 1 x 4		
• AWG cables, solid		AWG	2 x (20 ... 14), 1 x 12		
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5), 1 x 2.5		
• Pin-end connector (DIN 46231)		mm^2	1 x 1 ... 2.5		
• Terminal screw			M3		
• Prescribed tightening torque for terminal screws		Nm	0.8 ... 1.3		
		lb.in	7 ... 11		
Main and auxiliary conductors (1 or 2 conductors can be connected)			**Flat connectors**		
• When using a plug-in sleeve 6.3 – 1		mm^2	0.5 ... 1		
• Solid with 6.3–2.5		mm^2	1 ... 2.5		
			Solder pin connection (only for printed circuit boards)		
• Solder pin cross-section		mm^2	0.8 x 1.2		
• Solder pin cross-section, plug-in base		mm^2	0.32 x 1.0		

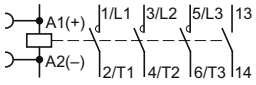
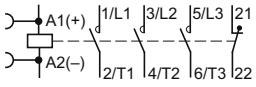
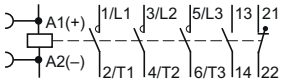
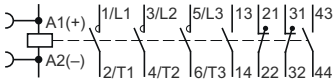
3TF2 miniature contactors, 3-pole

Contactor		Type		3TF20..-0...	3TF20..-3..., 3TF20..-6..., 3TF20..-7...
		Size		00	
cULus and cULus rated data of the 3TF20 contactors					
Rated insulation voltage U_i			V AC	600	300
Uninterrupted current	Open and enclosed		A	16	16 (10 for solder pin connection)
Maximum horsepower ratings (cULus and cULus approved values)					
• Rated power for three-phase motors at 60 Hz					
- Single-phase	At 115 V		hp	0.5	--
	200 V		hp	1	
	230 V		hp	1.5	1
	460/575 V		hp	--	
- Three-phase	At 115 V		hp	--	--
	200 V		hp	3	3 (1 for 3TF20..-6)
	230 V		hp	3	3 (1 for 3TF20..-6)
	460/575 V		hp	5	--

Contactor	Type		3TF2
	Size		00
Rated data of the auxiliary contacts according to IEC 60947-1			
Rated insulation voltage U_i (Pollution degree 3)		V	690
Conventional thermal current I_{th} = Rated operational current I_e/AC-12		A	10
AC load Rated operational current I_e/AC-15/AC-14			
• For rated operational voltage U_e	24 V	A	4
	110 V	A	4
	125 V	A	4
	220 V	A	4
	230 V	A	4
	380 V	A	3
	400 V	A	3
	500 V	A	2
	660 V	A	1
	690 V	A	1
DC load Rated operational current I_e/DC-12			
• For rated operational voltage U_e	24 V	A	4
	48 V	A	2.2
	110 V	A	1.1
	125 V	A	1.1
	220 V	A	0.5
	440 V	A	--
	600 V	A	--
Rated operational current I_e/DC-13			
• For rated operational voltage U_e	24 V	A	2.1
	48 V	A	1.1
	110 V	A	0.52
	125 V	A	0.52
	220 V	A	0.27
	440 V	A	--
	600 V	A	--
cULus, cULus and CSA rated data of the auxiliary contacts			
Rated voltage, max.		V AC	600
Auxiliary switch blocks, max.		V AC	300
Switching capacity			A 600, Q 300
Uninterrupted current at 240 V AC		A	10

Selection and ordering data

Size 00
AC-1: Operational current I_e = 16 A (at 55 °C)
Screw terminals

Rated data Utilization categories AC-2 and AC-3					Auxiliary contacts			SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Ratings of three-phase motors at 50 Hz and				Ident. No.	Version			Article No. Price per PU			
At 400/ 380 V	230/ 220 V	**400/ 380 V**	500 V	690/ 660 V		NO	NC					
A	kW	**kW**	kW	kW				d				
Miniature contactors with screw terminals · For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Ident. No. **10**									Ident. No. **01**			
												
AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]												
												
5	1.3	**2.2**	2.9	3.8	**10**	1	--	5	**3TF2810-0AP0**	1	1 unit	41B
					01	--	1	5	**3TF2801-0AP0**	1	1 unit	41B
9	2.4	**4**	4	4	**10**	1	--	2	**3TF2010-0AP0**	1	1 unit	41B
					01	--	1	2	**3TF2001-0AP0**	1	1 unit	41B
DC operation, rated control supply voltage U_s = 24 V DC												
5	1.3	**2.2**	2.9	3.8	**10**	1	--	2	**3TF2810-0BB4**	1	1 unit	41B
					01	--	1	5	**3TF2801-0BB4**	1	1 unit	41B
9	2.4	**4**	4	4	**10**	1	--	2	**3TF2010-0BB4**	1	1 unit	41B
					01	--	1	2	**3TF2001-0BB4**	1	1 unit	41B
With permanently mounted auxiliary switch blocks												
Terminal designations of the auxiliary contacts according to EN 50012												
Ident. No. **11**									Ident. No. **22**			
												
AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]												
												
5	1.3	**2.2**	2.9	3.8	**11**	1	1	20	**3TF2911-0AP0**	1	1 unit	41B
					22	2	2	15	**3TF2922-0AP0**	1	1 unit	41B
9	2.4	**4**	4	4	**11**	1	1	15	**3TF2211-0AP0**	1	1 unit	41B
					22	2	2	15	**3TF2222-0AP0**	1	1 unit	41B
DC operation, rated control supply voltage U_s = 24 V DC												
5	1.3	**2.2**	2.9	3.8	**11**	1	1	15	**3TF2911-0BB4**	1	1 unit	41B
					22	2	2	20	**3TF2922-0BB4**	1	1 unit	41B
9	2.4	**4**	4	4	**11**	1	1	20	**3TF2211-0BB4**	1	1 unit	41B
					22	2	2	2	**3TF2222-0BB4**	1	1 unit	41B

3TF20..-0..., 3TF28..-0...

3TF22..-0..., 3TF29..-0...

[1] Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s; lower operating range limit according to IEC 60947.

For further rated control supply voltages, see page 3/148.

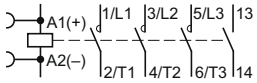
For accessories, see pages 3/149 and 3/150.

3TF2 miniature contactors, 3-pole

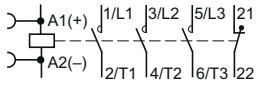
Size 00
AC-1: Operational current I_e = 16 A (at 55 °C)
Flat connectors or solder pin connection

Rated data Utilization categories AC-2 and AC-3					Auxiliary contacts			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current I_e At 400/380 V	Ratings of three-phase motors at 50 Hz and 230/220 V	**400/380 V**	500 V	690/660 V	Ident No.	Version NO	NC						
A	kW	**kW**	kW	kW				d					

Ident. No. **10**



Ident. No. **01**



Miniature contactors with flat connectors, 6.3 mm x 0.8 mm · For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Flat connectors

3TF20..-3...

AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1)]

9	2.4	**4**	4	--	**10**	1	--	15	**3TF2010-3AP0**	1	1 unit	41B
					01	--	1	15	**3TF2001-3AP0**	1	1 unit	41B

DC operation, rated control supply voltage U_s = 24 V DC

9	2.4	**4**	4	--	**10**	1	--	20	**3TF2010-3BB4**	1	1 unit	41B
					01	--	1	20	**3TF2001-3BB4**	1	1 unit	41B

Miniature contactors with flat connectors, 6.3 mm x 0.8 mm · For screw fixing (diagonal)

3TF20..-7...

AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1)]

9	2.4	**4**	4	--	**10**	1	--	20	**3TF2010-7AP0**	1	1 unit	41B
					01	--	1	20	**3TF2001-7AP0**	1	1 unit	41B

DC operation, rated control supply voltage U_s = 24 V DC

9	2.4	**4**	4	--	**10**	1	--	20	**3TF2010-7BB4**	1	1 unit	41B
					01	--	1	20	**3TF2001-7BB4**	1	1 unit	41B

Miniature contactors with solder pin connections for printed circuit boards · For screw fixing (diagonal)

Solder pin connection

3TF20..-6...

AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1)]

9	2.4	**4**	4	--	**10**	1	--	15	**3TF2010-6AP0**	1	1 unit	41B
					01	--	1	20	**3TF2001-6AP0**	1	1 unit	41B

DC operation, rated control supply voltage U_s = 24 V DC

9	2.4	**4**	4	--	**10**	1	--	2	**3TF2010-6BB4**	1	1 unit	41B
					01	--	1	2	**3TF2001-6BB4**	1	1 unit	41B

[1)] Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s; lower operating range limit according to IEC 60947.

For accessories, see pages 3/149 and 3/150.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type	3TF20, 3TF28
	Size	00
AC operation		
Solenoid coils for AC 50 and 60 Hz		
50 Hz / **60 Hz**		
24 V AC / 29 V AC		B0
110 V AC / 132 V AC		F0
230/220 V AC / 276 V AC		P0[1)]
AC operation		
Solenoid coils for AC 50/60 Hz		
230 V AC		L2
DC operation		
24 V DC		B4

[1)] Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s; lower operating range limit according to IEC 60947.

Please inquire about further voltages.

Rated control supply voltage U_s	Contactor type	3TF22, 3TF29
	Size	00
AC operation		
Solenoid coils for AC 50 and 60 Hz		
50 Hz / **60 Hz**		
230/220 V AC / 276 V AC		P0[1)]
DC operation		
24 V DC		B4

[1)] Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s; lower operating range limit according to IEC 60947.

Please inquire about further voltages.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data

Rated operational current I_e/AC-15/AC-14 at 230/220 V	400/380 V	500 V	Auxiliary contacts Ident No.	Version NO	NC	NO	NC	Connections	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	A	A							d					
Snap-on auxiliary switch blocks														
For expansion to 2, 4 or 5 auxiliary contacts according to EN 50012 Only for 3TF2.10, Ident. No. 10 (with auxiliary contact 1 NO)														
4	3	2	**11**	--	1	--	--		20	**3TX4401-1A**		1	1 unit	41A
			22	1	2	--	--		▶	**3TX4412-1A**		1	1 unit	41A
			23	1	3	--	--		5	**3TX4413-1A**		1	1 unit	41A
			32	2	2	--	--		▶	**3TX4422-1A**		1	1 unit	41A
For expansion to 3 or 5 auxiliary contacts according to EN 50005														
4	3	2	**20**	2	--	--	--	53 63 / 54 64	▶	**3TX4420-2A**		1	1 unit	41A
			11	1	1	--	--	53 61 / 54 62	▶	**3TX4411-2A**		1	1 unit	41A
			02	--	2	--	--	51 61 / 52 62	20	**3TX4402-2A**		1	1 unit	41A
			11; U	--	--	1	1	57 65 / 58 66	20	**3TX4411-2G**		1	1 unit	41A
4	3	2	**40**	4	--	--	--	53 63 73 83 / 54 64 74 84	▶	**3TX4440-2A**		1	1 unit	41A
			31	3	1	--	--	53 61 73 83 / 54 62 74 84	▶	**3TX4431-2A**		1	1 unit	41A
			22	2	2	--	--	53 61 71 83 / 54 62 72 84	▶	**3TX4422-2A**		1	1 unit	41A
			22; 2 U	--	--	2	2	57 67 75 85 / 58 68 76 86	5	**3TX4422-2G**		1	1 unit	41A

3TX44..-.A

For contactors Type	Rated control supply voltage U_s V DC	Time range (minimum times) s	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
OFF-delay devices								
For DC-operated contactors for bridging short-time power failures up to 0.8 s								
3TF2...-0BB4	24	0.25 or 0.5	15	**3TX4490-1H**		1	1 unit	41B

3TX4490-1H

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Accessories for 3TF2 miniature contactors

For contactors	Rated control supply voltage U_s		Power consumption of LED at U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	V AC	V DC	mW	d					
Surge suppressors For plugging onto miniature contactors with and without auxiliary switch blocks									
 3TX4490-3A	***Version without LED***								
	RC elements								
3TF2...-0..., 3TF2...-1...	24 ... 48	24 ... 70	--	5	**3TX4490-3R**		1	1 unit	41B
	48 ... 127	70 ... 150	--	5	**3TX4490-3S**		1	1 unit	41B
	127 ... 240	150 ... 250	--	5	**3TX4490-3T**		1	1 unit	41B
	240 ... 400	--	--	5	**3TX4490-3U**		1	1 unit	41B
	400 ... 600	--	--	5	**3TX4490-3V**		1	1 unit	41B
	Varistors								
3TF2...-0..., 3TF2...-1...	≤ 48	24 ... 70	--	▶	**3TX4490-3G**		1	1 unit	41B
	48 ... 127	70 ... 150	--	5	**3TX4490-3H**		1	1 unit	41B
	127 ... 240	150 ... 250	--	5	**3TX4490-3J**		1	1 unit	41B
	240 ... 400	--	--	5	**3TX4490-3K**		1	10 units	41B
	400 ... 600	--	--	5	**3TX4490-3L**		1	10 units	41B
	Noise suppression diodes								
3TF2...-0..., 3TF2...-1...	--	12 ... 250	--	▶	**3TX4490-3A**		1	1 unit	41B
	Diode assemblies (diode and Zener diode) For DC operation and short break times								
3TF2...-0..., 3TF2...-1...	--	24 ... 250	--	5	**3TX4490-3B**		1	1 unit	41B
 3TX4490-4G	***Version with LED***								
	Varistors								
3TF2...-0..., 3TF2...-1...	24 ... 48	12 ... 24	10 ... 120	5	**3TX4490-4G**		1	1 unit	41B
	48 ... 127	24 ... 70	20 ... 470	5	**3TX4490-4H**		1	1 unit	41B
	127 ... 240	70 ... 150	50 ... 700	5	**3TX4490-4J**		1	1 unit	41B
	--	150 ... 250	160 ... 950	20	**3TX4490-4K**		1	1 unit	41B
	Noise suppression diodes								
3TF2...-0...,	--	24 ... 70	20 ... 470	5	**3TX4490-4A**		1	1 unit	41B
3TF2...-1...	--	70 ... 150	50 ... 700	5	**3TX4490-4B**		1	1 unit	41B
	--	150 ... 250	160 ... 950	5	**3TX4490-4C**		1	1 unit	41B
Additional load modules For plugging onto miniature contactors with and without auxiliary switch blocks									
	For increasing the permissible residual current and for limiting the residual voltage. Same dimensions as for 3TX4490-3 surge suppressor.								
3TF2...-0A.., 3TF2...-1A..	230/220, 50 Hz 230, 60 Hz 230, 50/60 Hz Operating range 0.8 ... 1.1 x U_s,		--	20	**3TX4490-1J**		1	1 unit	41B
Plug-in bases with solder pin connections for printed circuit boards, 45 mm									
 3TX4491-2A	Rated insulation voltage U_i: 400 V (with pollution degree 3); rated impulse withstand voltage U_{imp}: 6 kV; rated operational current I_e: 6 A; CE and UL rated data: max. 300 V, 6 A								
3TF20..-3..., 3TF20..-7..., 3TK20..-3..., 3TK20..-7...	For contactors with flat connectors, 6.3 mm x 0.8 mm			20	**3TX4491-2A**		1	5 units	41A
Release tools									
3TF2...-7..., 3TK2...-7...	For releasing miniature contactors from 3TX4491-2A plug-in bases			20	**3TX4491-2K**		1	1 unit	41A

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Standards

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1

Version

The 3TG10 power relays/miniature contactors are available with screw terminals or 6.3 mm × 0.8 mm flat connectors. The versions with screw terminals are suitable for use in any climate and finger-safe according to IEC 60529.

The 3TG10 miniature contactors are characterized by their width of just 36 mm.

Surge suppression

The 3TG10 power relays/miniature contactors have an integrated protective circuit against opening surges.

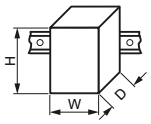
Application

Because they are hum-free they are suitable for use in household appliances and distribution boards in office and residential areas.

They can also be used for applications where there is little space such as air conditioners, heating systems, pumps and fans, i.e. for simple electrical controls.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16186/td	Reference Manual "Switching Devices - Contactors and Contactor Assemblies", see https://support.industry.siemens.com/cs/ww/en/view/35554359 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16186/faq

Type			3TG10
General data			
Dimensions (W x H x D)		mm	36 x 56 x 56
Endurance			
• Mechanical	Operating cycles		3 million
• Electrical			
- AC-1 at I_e	Operating cycles		0.1 million
- AC-3 at I_e	Operating cycles		0.4 million
Rated insulation voltage U_i (pollution degree 3)		V	400
Rated impulse withstand voltage U_{imp}		kV	4
Protective separation between coil and contacts acc. to IEC 60947-1, Appendix N		V	Up to 300
Permissible ambient temperature			
• During operation[1]		°C	-25 ... + 55
• During storage		°C	-50 ... + 80
Degree of protection acc. to IEC 60529			IP00
Touch protection acc. to IEC 60529			Finger-safe for vertical touching from the front (with screw terminals)
Short-circuit protection			
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1			
• Type of coordination "1"		A	25
• Type of coordination "2"		A	10
Miniature circuit breakers, C characteristic		A	10
Control			
Solenoid coil operating range			0.85 ... 1.1 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)			
• AC operation, 45 ... 450 Hz		VA	4.4
- P.f.			0.9 (hum-free)
• DC operation		W	4
Rated data of the main contacts			
Load rating with AC			
Utilization category AC-1, switching resistive loads			
• Rated operational current I_e up to 400 V at 55 °C[1]		A	20 for screw terminals, 16 for flat connectors
• Rated power U_e for AC loads with p.f. = 1, 230/220 V			
- For screw terminals		kW	7.5 (13 at 400 V)
- For flat connectors		kW	6 (10 at 400 V)
• Minimum conductor cross-section for loads with I_e		mm^2	2.5

[1] If the three main current paths carry a load of 20 A, the following applies if I > 10 A in the fourth conducting path: Permissible ambient temperature 40 °C.

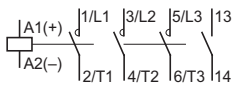
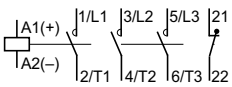
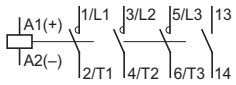
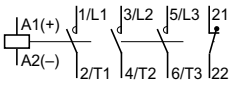
Type					3TG10
Rated data of main contacts (continued)					
Load rating with AC					
Utilization categories AC-2 and AC-3					
• Operational current for AC-3 at $U_e \leq 400$ V rated value				A	8.4
• Rated power for slipring or squirrel-cage motors with 50 and 60 Hz and at $U_e \leq 400$ V				kW	4
Utilization category AC-5a (permissible nominal impedance: ≥ 0.5 Ω)					
Switching of gas discharge lamps					
Per main current path at 230 V, 50 Hz					
Rated power/rated operational current per lamp					
• Uncompensated	18 W	0.37 A		Unit(s)	43
	36 W	0.43 A		Unit(s)	37
	58 W	0.67 A		Unit(s)	24
• DUO switching	18 W	2 x 0.11 A		Unit(s)	2 x 81
	36 W	2 x 0.21 A		Unit(s)	2 x 42
	58 W	2 x 0.32 A		Unit(s)	2 x 28
Switching gas discharge lamps with compensation or ECG					
Per main current path 230 V, 50 Hz					
Connection	Rated power per lamp	Capacitor capaci-tance	Rated opera-tional current per lamp		
• Shunt compensation	L18 W	4.5 µF	0.11 A	Unit(s)	15
	L36 W	4.5 µF	0.21 A	Unit(s)	15
	L58 W	7 µF	0.32 A	Unit(s)	10
• With ECG (single lamp)	L18 W	6.8 µF	0.10 A	Unit(s)	39
	L36 W	6.8 µF	0.18 A	Unit(s)	39
	L58 W	10 µF	0.27 A	Unit(s)	26
• With ECG (two lamps)	L18 W	10 µF	0.18 A	Unit(s)	2 x 26
	L36 W	10 µF	0.35 A	Unit(s)	2 x 26
	L58 W	22 µF	0.52 A	Unit(s)	2 x 12
Utilization category AC-5b, switching incandescent lamps Per main current path at 230 V, 50 Hz				kW	1.6
Load rating with DC					
Utilization category DC-1, switching resistive loads (*L/R* ≤ 15 ms)					
• Rated operational currents I_e					
- 1 conducting path			Up to 24 V	A	16
			60 V	A	6
			110 V	A	2
			220 V/240 V	A	0.8
- 2 conducting paths in series			Up to 24 V	A	16
			60 V	A	16
			110 V	A	6
			220 V/240 V	A	1.6
- 3 conducting paths in series			Up to 24 V	A	18
			60 V	A	18
			110 V	A	16
			220 V/240 V	A	6
- 4 conducting paths in series			Up to 24 V	A	20
			60 V	A	20
			110 V	A	20
			220 V/240 V	A	20
Utilization categories DC-3 and DC-5 Shunt-wound and series-wound motors (*L/R* ≤ 15 ms)					
• Rated operational currents I_e					
- 1 conducting path			Up to 24 V	A	10
			60 V	A	0.5
			110 V	A	0.15
			220 V/240 V	A	0
- 2 conducting paths in series			Up to 24 V	A	16
			60 V	A	5
			110 V	A	0.35
			220 V/240 V	A	0
- 3 conducting paths in series			Up to 24 V	A	16
			60 V	A	16
			110 V	A	10
			220 V/240 V	A	1.75
- 4 conducting paths in series			Up to 24 V	A	18
			60 V	A	16
			110 V	A	10
			220 V/240 V	A	2

Type			3TG10
Conductor cross-sections			
			Screw terminals
• Terminal screws			M3
• Finely stranded with end sleeve (DIN 46228 Form A/D/C)		mm^2	2 x (0.75 ... 2.5)
• Solid		mm^2	2 x (1 ... 2.5), 1 x 4
• Permissible opening tool (screwdriver)			3.0 mm x 0.5 mm (3RA2908-1A) or Pozidriv 2
			Flat connectors
• Finely stranded 6.3 mm plug-in sleeve acc. to DIN 46245/DIN 46247			
- 6.3 ... 1		mm^2	0.5 ... 1
- 6.3 ... 2.5		mm^2	1 ... 2.5
CSA and UL rating (screw terminals)			
Rated insulation voltage		V AC	600
Uninterrupted current	Open and enclosed	A	20
Maximum horsepower ratings (from CSA and UL approved values)			Single-phase/three-phase
• Rated power of three-phase motors at 60 Hz	At 115 V	hp	0.5/ --
	200 V	hp	1/ 3
	230 V	hp	1.5/ 3
	460 ... 600 V	hp	0/ 5

3

Selection and ordering data

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Rated data Utilization category AC-1 Switching of resistive loads at 55 °C		AC-2 and AC-3		Main contacts		Rated control supply voltage U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current I_e up to 400 V	Power of AC loads at 50 Hz and 400 V	Operational current I_e up to 400 V [1]	Power of AC loads at 50 Hz and 400 V	Version NO	Version NC	V	d					
A	kW	A	kW									
Hum-free · with screw terminals												
Auxiliary contacts 1 NO, Ident. No. **10**				Auxiliary contacts 1 NC, Ident. No. **01E**								
												
AC operation, 45 ... 450 Hz								**Screw terminals**				
20	13	8.4	4	4	--	24 AC	5	**3TG1010-0AC2**		1	1 unit	41H
						110 AC	5	**3TG1010-0AG2**		1	1 unit	41H
						230 AC	5	**3TG1010-0AL2**		1	1 unit	41H
				3	1	24 AC	▶	**3TG1001-0AC2**		1	1 unit	41H
						110 AC	▶	**3TG1001-0AG2**		1	1 unit	41H
						230 AC	▶	**3TG1001-0AL2**		1	1 unit	41H
DC operation												
20	13	8.4	4	4	--	24 DC	5	**3TG1010-0BB4**		1	1 unit	41H
				3	1	24 DC	▶	**3TG1001-0BB4**		1	1 unit	41H
Hum-free · with 6.3 mm x 0.8 mm flat connectors												
Auxiliary contacts 1 NO, Ident. No. **10**				Auxiliary contacts 1 NC, Ident. No. **01E**								
												
AC operation, 45 ... 450 Hz								**Flat connectors**				
16	10	8.4	4	4	--	24 AC	5	**3TG1010-1AC2**		1	1 unit	41H
						110 AC	30	**3TG1010-1AG2**		1	1 unit	41H
						230 AC	5	**3TG1010-1AL2**		1	1 unit	41H
				3	1	24 AC	30	**3TG1001-1AC2**		1	1 unit	41H
						110 AC	30	**3TG1001-1AG2**		1	1 unit	41H
						230 AC	5	**3TG1001-1AL2**		1	1 unit	41H
DC operation												
16	10	8.4	4	4	--	24 DC	5	**3TG1010-1BB4**		1	1 unit	41H
		8.4	4	3	1	24 DC	5	**3TG1001-1BB4**		1	1 unit	41H

3TG10..-0...

3TG10..-1...

[1] The rated operational currents apply to each pole.

Accessories

Version	Max. rate operational currents I_e/AC-1 (at 55 °C) of the contactors	Max. conductor cross-sections	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	mm^2	d					
Links for paralleling (insulated star jumpers)[1]								
3-pole								
• Without connecting terminal (replacement for 3TX4490-2C)	16	--	▶	**3RT1916-4BA31**		1	1 unit	41B
• With connecting terminal (replacement for 3TX4490-2A)	40	25	▶	**3RT1916-4BB31**		1	1 unit	41B
4-pole								
• With connecting terminal (replacement for 3TX4490-2B)	40	25	15	**3RT1916-4BB41**		1	1 unit	41B

3RT1916-4BB31

[1] The links for paralleling can be reduced by one pole. The rated operational currents apply to each pole.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

More information	
Home page, see www.siemens.com/sirius Industry Mall, see www.siemens.com/product?3RA23_3RT1	Conversion tool, e.g. from 3RT10 to 3RT20, see www.siemens.com/sirius/conversion-tool Online configurator for 3RT2 contactors, see www.siemens.com/sirius/configurators

The 3RA23 reversing contactor assemblies in sizes S00 to S3 can be ordered as follows:

- Fully wired and tested, with mechanical and electrical interlock; see from page 3/162 onwards
- For all individual parts for customer assembly, see from page 3/75 onwards.

The 3RA23 reversing contactor assemblies have screw or spring-type terminals (main and control circuits) and are suitable for screw fixing and snap-on mounting onto TH 35 standard mounting rails.

Complete 3RA23 reversing contactor assemblies

The fully wired reversing contactor assemblies are suitable for use in any climate.

They are finger-safe according to IEC 60529.

The 3RA23 reversing contactor assemblies of size S00 to S3 each consist of two contactors with the same power, with one NC contact (S00) or one NO contact and one NC contact (S0 to S3) in the basic unit. The contactors are mechanically and electrically interlocked (NC contact interlock).

3RU2 overload relays (see from page 7/84 onwards) or 3RB3 overload relays (see from page 7/97 onwards) for contactor mounting or stand-alone installation, SIMOCODE pro 3UF7 motor management and control devices (from page 10/14 onwards) or 3RN thermistor motor protection evaluation units (page 10/164) can be used for motor protection.

Reversing contactor assemblies with voltage tap-off

The 3RA23 reversing contactor assemblies with voltage tap-off (see pages 3/162 to 3/165) are required for mounting the function modules for connection to the controller via the IO-Link or AS-Interface communication systems. The 3RA27 function modules must be ordered separately; see page 3/106.

For more information on IO-Link and AS-Interface see "Industrial Communication", from page 2/1 onwards.

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Sizes S00 to S3

Rated data AC-2 and AC-3 for 50 Hz 400 V AC		Size	Type		
Rating kW	Operational current I_e A		Contactor (See from page 3/51 onwards)	Assembly kit (See from page 3/109 onwards)	**Fully-wired and tested reversing contactor assemblies**
			Screw terminals		
3	7	S00	3RT2015-1…2	3RA2913-2AA1	**3RA2315-8XB30-1…**
4	9		3RT2016-1…2	3RA2913-2AA1	**3RA2316-8XB30-1…**
5.5	12		3RT2017-1…2	3RA2913-2AA1	**3RA2317-8XB30-1…**
7.5	16		3RT2018-1…2	3RA2913-2AA1	**3RA2318-8XB30-1…**
5.5	12	S0	3RT2024-1…0	3RA2923-2AA1	**3RA2324-8XB30-1…**
7.5	16		3RT2025-1…0	3RA2923-2AA1	**3RA2325-8XB30-1…**
11	25		3RT2026-1…0	3RA2923-2AA1	**3RA2326-8XB30-1…**
15	32		3RT2027-1…0	3RA2923-2AA1	**3RA2327-8XB30-1…**
18.5	38		3RT2028-1…0	3RA2923-2AA1	**3RA2328-8XB30-1…**
18.5	40	S2	3RT2035-1…0	3RA2933-2AA1	**3RA2335-8XB30-1…**
22	55		3RT2036-1…0	3RA2933-2AA1	**3RA2336-8XB30-1…**
30	65		3RT2037-1…0	3RA2933-2AA1	**3RA2337-8XB30-1…**
37	80		3RT2038-1…0	3RA2933-2AA1	**3RA2338-8XB30-1…**
37	80	S3	3RT2045-1…0	3RA2943-2AA1	**3RA2345-8XB30-1…**
45	90		3RT2046-1…0	3RA2943-2AA1	**3RA2346-8XB30-1…**
55	110		3RT2047-1…0	3RA2943-2AA1	**3RA2347-8XB30-1…**
			Spring-type terminals		
3	7	S00	3RT2015-2…2	3RA2913-2AA2	**3RA2315-8XB30-2…**
4	9		3RT2016-2…2	3RA2913-2AA2	**3RA2316-8XB30-2…**
5.5	12		3RT2017-2…2	3RA2913-2AA2	**3RA2317-8XB30-2…**
7.5	16		3RT2018-2…2	3RA2913-2AA2	**3RA2318-8XB30-2…**
5.5	12	S0	3RT2024-2…0	3RA2923-2AA2	**3RA2324-8XB30-2…**
7.5	16		3RT2025-2…0	3RA2923-2AA2	**3RA2325-8XB30-2…**
11	25		3RT2026-2…0	3RA2923-2AA2	**3RA2326-8XB30-2…**
15	32		3RT2027-2…0	3RA2923-2AA2	**3RA2327-8XB30-2…**
18.5	38		3RT2028-2…0	3RA2923-2AA2	**3RA2328-8XB30-2…**

Note:

The 3RA2934-2B mechanical interlock for sizes S2 and S3 must be ordered separately; see page 3/113.

Article No. scheme

Product versions		**Article number**
SIRIUS reversing contactor assembly		**3RA23** □ □ – □ □ □ □ □ – □ □ □ □
Size of the contactor	e. g. 4 = S3	□
Power dependent on size	e. g. 5 = 37 kW for size S3	□
Type of overload relay	e. g. 8X = without	□ □
Assembly	e.g. E = communication-capable installation	□
Interlocking	e. g. 3 = mechanical and electrical	□
Free auxiliary switches	e. g. 0 = S3: 2 NO total	□
Type of electrical connection	e. g. 1 = screw terminals (main and auxiliary circuits)	□
Operating range / solenoid coil circuit	e.g. A = AC standard / without coil circuit	□
Rated control supply voltage	e.g. L2 = 230 V AC, 50/60 Hz	□ □
Example		**3RA23 4 5 – 8 X E 3 0 – 1 A L 2**

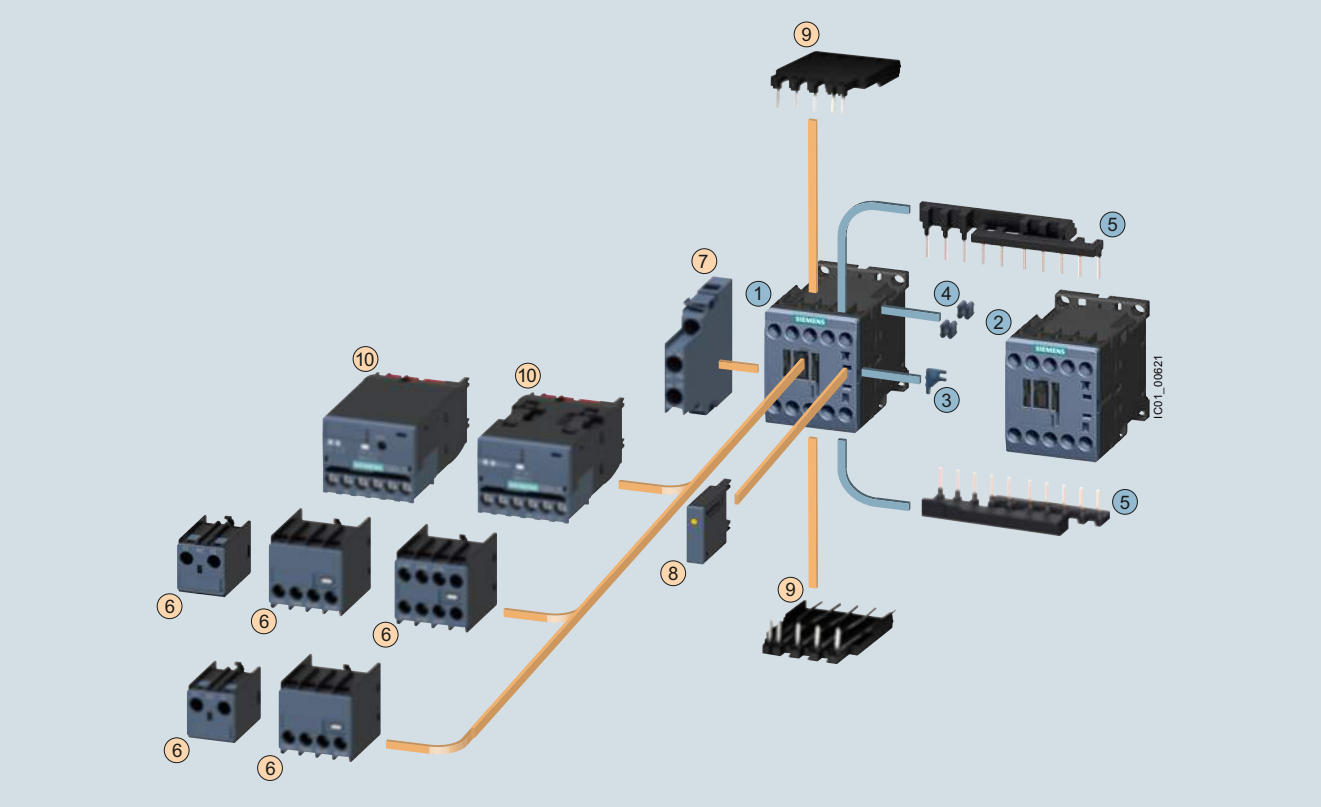
Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Fully wired and tested reversing contactor assemblies · Size S00 · Up to 7.5 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately		Type	Page
6	Auxiliary switch block, front[1]	3RH2911	3/93 ... 3/95
7	Auxiliary switch block, lateral	3RH2921	3/97
8	Surge suppressors	3RT2916	3/102, 3/103
9	Solder pin adapters	3RT1916-4KA1	3/115
10	Function module for connection to the control system	3RA271.-1BA00	3/106

Complete reversing contactor assembly

Individual parts		Type Q11	Type Q12	Page
1 2	Contactors, 3 kW	3RT2015	3RT2015	3/51, 3/59
1 2	Contactors, 4 kW	3RT2016	3RT2016	3/51, 3/59
1 2	Contactors, 5.5 kW	3RT2017	3RT2017	3/51, 3/59
1 2	Contactors, 7.5 kW	3RT2018	3RT2018	3/51, 3/59
3 ... 5	Assembly kit comprising:	3RA2913-2AA1		3/109
	3 Mechanical interlock[2]			
	4 Two connecting clips for two contactors[2]			
	5 Wiring modules on the top and bottom for connecting the main current circuits, electrical interlock included[3], interruptible (NC contact interlock)			

1) Auxiliary switch block according to EN 50005 must be used.

2) The parts 3 and 4 can only be ordered together as 3RA2912-2H mechanical connectors.

3) 3RT201. contactors with one NC contact in the basic unit are required for the electrical interlock. An additional NO contact is required for momentary-contact operation.

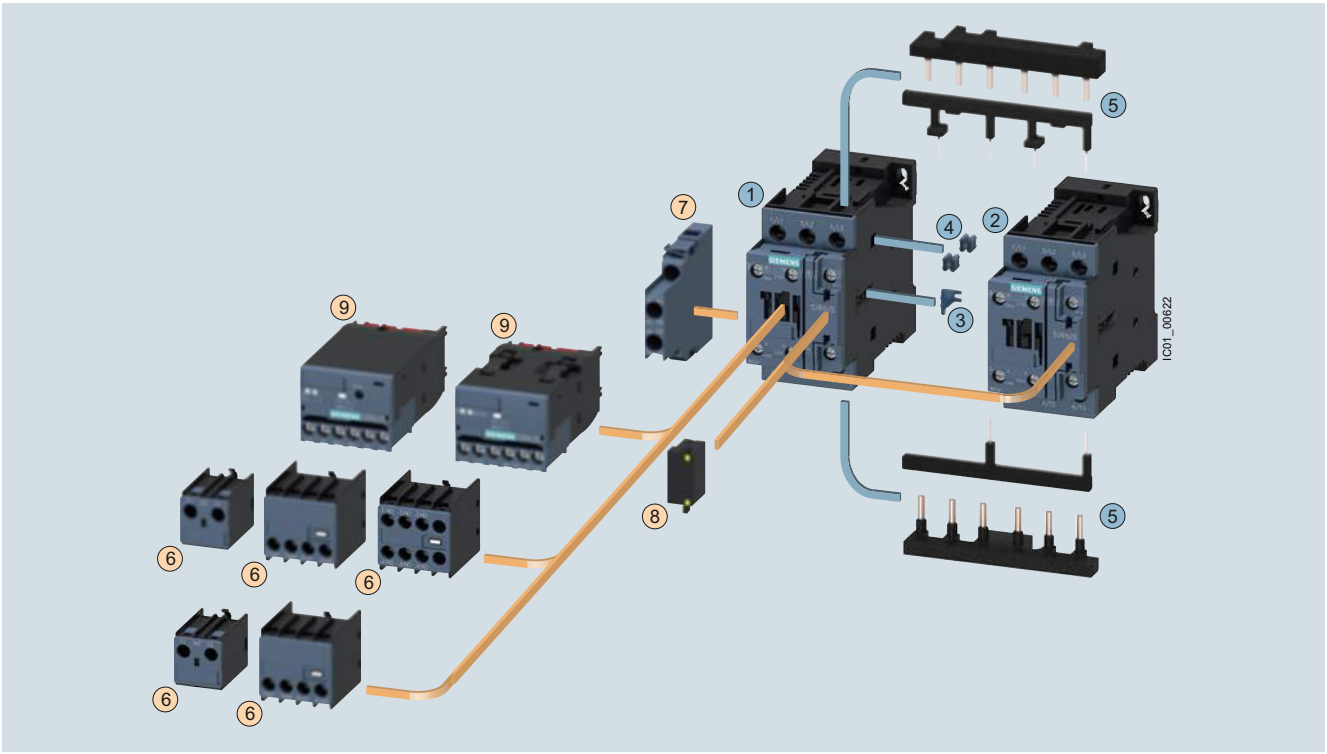
For complete reversing contactor assemblies, see page 3/162.

Reversing Contactor Assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Fully wired and tested reversing contactor assemblies · Size S0 · Up to 18.5 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately		Type	Page
6	Auxiliary switch block, front	3RH2911	3/93 ... 3/95
7	Auxiliary switch block, lateral	3RH2921	3/97
8	Surge suppressors	3RT2926	3/102, 3/103
9	Function module for connection to the control system	3RA271.-1BA00	3/106

[1] The parts 3 and 4 can only be ordered together as 3RA2922-2H mechanical connectors.

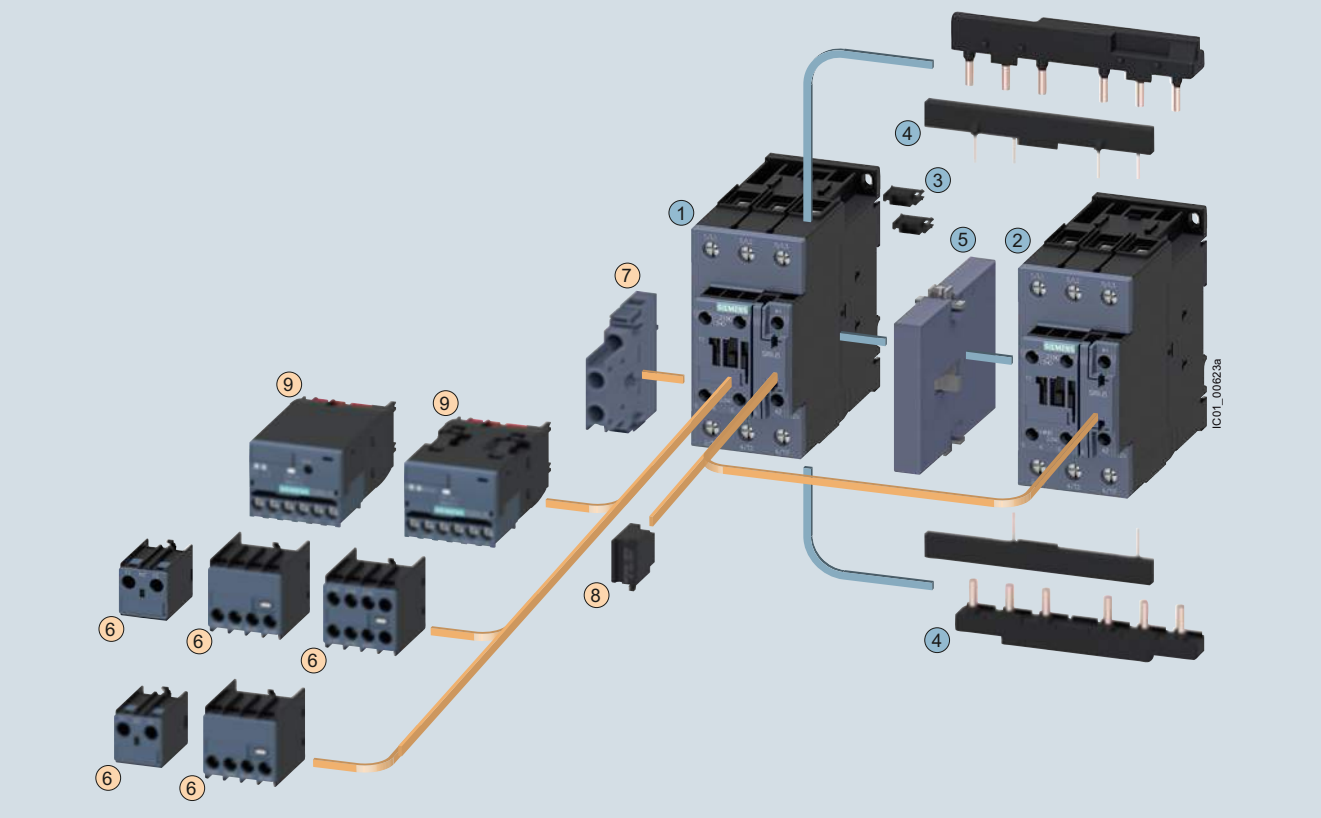
Complete reversing contactor assembly

Individual parts		Type Q11	Type Q12	Page
1 2	Contactors, 5.5 kW	3RT2024	3RT2024	3/53, 3/63
1 2	Contactors, 7.5 kW	3RT2025	3RT2025	3/53, 3/63
1 2	Contactors, 11 kW	3RT2026	3RT2026	3/53, 3/63
1 2	Contactors, 15 kW	3RT2027	3RT2027	3/53, 3/63
1 2	Contactors, 18.5 kW	3RT2028	3RT2028	3/53, 3/63
3 ... 5	Assembly kit comprising:	3RA2923-2AA1		3/109
	3 Mechanical interlock[1]			
	4 Two connecting clips for two contactors[1]			
	5 Wiring modules on the top and bottom for connecting the main current circuits, electrical interlock included (NC contact interlock)			

For complete reversing contactor assemblies, see page 3/163.

Fully wired and tested reversing contactor assemblies · Size S2 · Up to 37 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

	To be ordered separately	Type	Page
6	Auxiliary switch block, front	3RH2911	3/93 ... 3/95
7	Auxiliary switch block, lateral	3RH2921	3/97
8	Surge suppressors	3RT2936	3/102, 3/103
9	Function module for connection to the control system	3RA271.-1BA00	3/106

Complete reversing contactor assembly

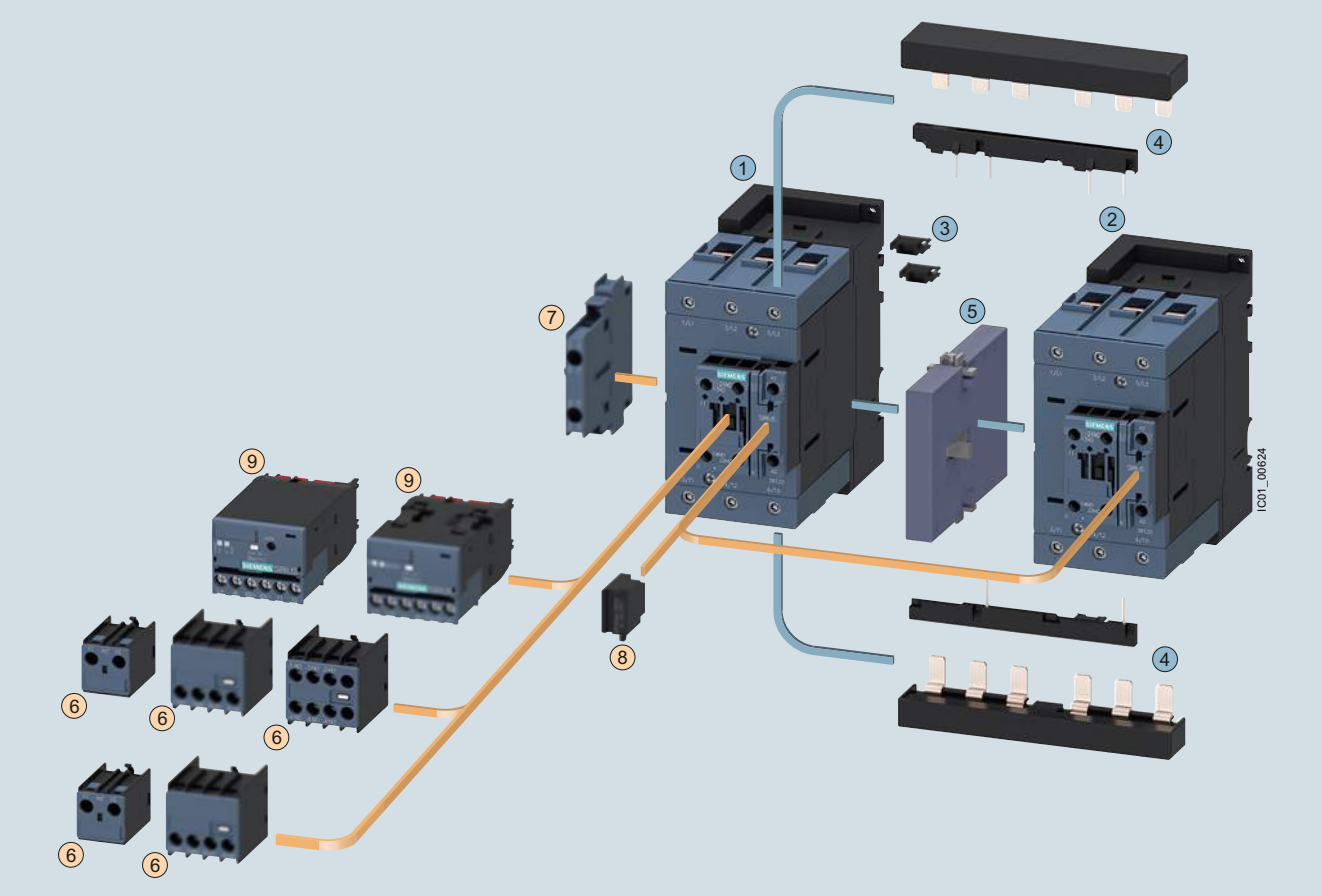
	Individual parts	Type Q11	Type Q12	Page
1 2	Contactors, 18.5 kW	3RT2035	3RT2035	3/55, 3/64
1 2	Contactors, 22 kW	3RT2036	3RT2036	3/55, 3/64
1 2	Contactors, 30 kW	3RT2037	3RT2037	3/55, 3/64
1 2	Contactors, 37 kW	3RT2038	3RT2038	3/55, 3/64
3 4	Assembly kit comprising:	3RA2933-2AA1		3/109
	3 Two connectors for two contactors			
	4 Wiring modules on the top and bottom for connecting the main and auxiliary current circuits, electrical interlock included (NC contact interlock)			
5	Mechanical interlock (must be ordered separately)	3RA2934-2B		3/113

For complete reversing contactor assemblies, see page 3/164.

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Fully wired and tested reversing contactor assemblies · Size S3 · Up to 55 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Type	Page
11 Auxiliary switch block, front	3RH2911	3/93 ... 3/95
12 Auxiliary switch block, lateral	3RH2921	3/97
13 Surge suppressors	3RT2936	3/102, 3/103
14 Function module for connection to the control system (the associated module connectors 3RA2711-0EE17 must be ordered separately; see page 3/107)	3RA271.-1BA00	3/106

Complete reversing contactor assembly

Individual parts	Type Q11	Type Q12	Page
1 2 Contactors, 37 kW	3RT2045	3RT2045	3/56, 3/64
1 2 Contactors, 45 kW	3RT2046	3RT2046	3/56, 3/64
1 2 Contactors, 55 kW	3RT2047	3RT2047	3/56, 3/64
3 4 Assembly kit comprising:	3RA2943-2AA1		3/109
3 Two connectors for two contactors			
4 Wiring modules on the top and bottom for connecting the main and auxiliary current circuits, electrical interlock included (NC contact interlock)			
5 Mechanical interlock (must be ordered separately)	3RA2934-2B		3/113

For complete reversing contactor assemblies, see page 3/165.

Benefits

Using wiring kits for reversing contactor assemblies has the following advantages:

- Notable reduction of wiring in the control circuit
- Integrated mechanical interlock for sizes S00 and S0
- Prevention of wiring errors in the main circuit

Connecting combs for screw terminals also result in:

- Prevention of wiring errors in the control circuit
- Reduction of testing costs
- Ready-jumpered actuation of the auxiliary switches and the frame (A2)
- Integrated electrical interlocking

Accessories

Selecting the auxiliary switches

The following points should be noted:

Size S00

- For maintained-contact operation:
  Use contactors with an NC contact in the basic unit for the electrical interlock.
- For momentary-contact operation:
  Use contactors with an NC contact in the basic unit for the electrical interlock; in addition, an auxiliary switch block with at least one NO contact for latching is required per contactor.

Sizes S0 to S3

- For maintained-contact operation:
  The contactors have two integrated auxiliary contacts (1 NO + 1 NC); the NC contact can be used for electrical interlocking.
- For momentary-contact operation:
  Electrical interlock as for maintained-contact operation; the NO contact in the basic unit can be used for the latching.

Surge suppression

Sizes S00 to S3

All reversing contactor assemblies can be fitted with RC elements or varistors for damping opening surges in the coil.

As with the individual contactors, the surge suppressors can either be plugged onto the top of the contactors (S00) or be plugged into the front of the contactors (S0 to S3).

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16146/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16146/faq	Manuals, see • System Manual "SIRIUS – System Overview", https://support.industry.siemens.com/cs/WW/en/view/60311318 • Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", https://support.industry.siemens.com/cs/WW/en/view/60306557 • Application Manual "SIRIUS Controls with IE3/IE4 motors: https://support.industry.siemens.com/cs/ww/en/view/94770820

The technical specifications are the same as for the individual contactors (see page 3/19 onwards).

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW *IE3/IE4 ready*

Selection and ordering data

***Fully wired and tested reversing contactor assemblies*[1] · Size S00 · Up to 7.5 kW**

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA231.-8XB30-1A.0

3RA231.-8XB30-2A.0

3RA231.-8XE30-1BB4

Rated data AC-2 and AC-3				Rated control supply voltage U_s[2]	SD	Screw terminals	SD	Spring-type terminals
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No. / Price per PU		Article No. / Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V	d		d	
AC operation, 50/60 Hz								
7	2.2	**3**	4	24 AC	5	**3RA2315-8XB30-1AB0**	5	**3RA2315-8XB30-2AB0**
				110 AC	5	**3RA2315-8XB30-1AF0**	5	**3RA2315-8XB30-2AF0**
				230 AC	2	**3RA2315-8XB30-1AP0**	2	**3RA2315-8XB30-2AP0**
9	3	**4**	5.5	24 AC	5	**3RA2316-8XB30-1AB0**	5	**3RA2316-8XB30-2AB0**
				110 AC	5	**3RA2316-8XB30-1AF0**	5	**3RA2316-8XB30-2AF0**
				230 AC	2	**3RA2316-8XB30-1AP0**	2	**3RA2316-8XB30-2AP0**
12	3	**5.5**	5.5	24 AC	5	**3RA2317-8XB30-1AB0**	5	**3RA2317-8XB30-2AB0**
				110 AC	5	**3RA2317-8XB30-1AF0**	5	**3RA2317-8XB30-2AF0**
				230 AC	2	**3RA2317-8XB30-1AP0**	2	**3RA2317-8XB30-2AP0**
16	4	**7.5**	7.5	24 AC	5	**3RA2318-8XB30-1AB0**	5	**3RA2318-8XB30-2AB0**
				110 AC	5	**3RA2318-8XB30-1AF0**	5	**3RA2318-8XB30-2AF0**
				230 AC	2	**3RA2318-8XB30-1AP0**	2	**3RA2318-8XB30-2AP0**
DC operation								
7	2.2	**3**	4	24 DC	2	**3RA2315-8XB30-1BB4**	2	**3RA2315-8XB30-2BB4**
9	3	**4**	5.5	24 DC	2	**3RA2316-8XB30-1BB4**	2	**3RA2316-8XB30-2BB4**
12	3	**5.5**	5.5	24 DC	2	**3RA2317-8XB30-1BB4**	2	**3RA2317-8XB30-2BB4**
16	4	**7.5**	7.5	24 DC	2	**3RA2318-8XB30-1BB4**	2	**3RA2318-8XB30-2BB4**
With voltage tap-off								
7	2.2	**3**	4	24 DC	2	**3RA2315-8XE30-1BB4**	5	**3RA2315-8XE30-2BB4**
9	3	**4**	5.5	24 DC	2	**3RA2316-8XE30-1BB4**	5	**3RA2316-8XE30-2BB4**
12	3	**5.5**	5.5	24 DC	2	**3RA2317-8XE30-1BB4**	2	**3RA2317-8XE30-2BB4**
16	4	**7.5**	7.5	24 DC	2	**3RA2318-8XE30-1BB4**	2	**3RA2318-8XE30-2BB4**

1) The contactors integrated in the reversing contactor assemblies have no unassigned auxiliary contacts. When used with a voltage tap-off and function module, the auxiliary contacts are unassigned.

2) Coil operating range
- at 50 Hz: 0.8 to 1.1 × U_s
- at 60 Hz: 0.85 to 1.1 × U_s.

Representation of the complete reversing contactor assemblies with optionally mountable accessories, see page 3/157.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

IE3/IE4 ready SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Fully wired and tested reversing contactor assemblies · Size S0 · Up to 18.5 kW

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA232.-8XB30-1A.2

3RA232.-8XB30-2A.2

3RA2324-8XE30-1BB4

Rated data AC-2 and AC-3				Rated control supply voltage U_s [1]	SD	Screw terminals	SD	Spring-type terminals
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No. / Price per PU		Article No. / Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V	d		d	
AC operation, 50/60 Hz								
12	3	**5.5**	7.5	24 AC	5	**3RA2324-8XB30-1AC2**	5	**3RA2324-8XB30-2AC2**
				110 AC	5	**3RA2324-8XB30-1AG2**	5	**3RA2324-8XB30-2AG2**
				230 AC	5	**3RA2324-8XB30-1AL2**	5	**3RA2324-8XB30-2AL2**
17	4	**7.5**	11	24 AC	5	**3RA2325-8XB30-1AC2**	5	**3RA2325-8XB30-2AC2**
				110 AC	5	**3RA2325-8XB30-1AG2**	5	**3RA2325-8XB30-2AG2**
				230 AC	5	**3RA2325-8XB30-1AL2**	5	**3RA2325-8XB30-2AL2**
25	5.5	**11**	11	24 AC	5	**3RA2326-8XB30-1AC2**	5	**3RA2326-8XB30-2AC2**
				110 AC	5	**3RA2326-8XB30-1AG2**	5	**3RA2326-8XB30-2AG2**
				230 AC	5	**3RA2326-8XB30-1AL2**	5	**3RA2326-8XB30-2AL2**
32	7.5	**15**	18.5	24 AC	5	**3RA2327-8XB30-1AC2**	5	**3RA2327-8XB30-2AC2**
				110 AC	5	**3RA2327-8XB30-1AG2**	5	**3RA2327-8XB30-2AG2**
				230 AC	5	**3RA2327-8XB30-1AL2**	5	**3RA2327-8XB30-2AL2**
38	11	**18.5**	18.5	24 AC	5	**3RA2328-8XB30-1AC2**	5	**3RA2328-8XB30-2AC2**
				110 AC	5	**3RA2328-8XB30-1AG2**	5	**3RA2328-8XB30-2AG2**
				230 AC	5	**3RA2328-8XB30-1AL2**	5	**3RA2328-8XB30-2AL2**
DC operation								
12	3	**5.5**	7.5	24 DC	2	**3RA2324-8XB30-1BB4**	2	**3RA2324-8XB30-2BB4**
17	4	**7.5**	11	24 DC	2	**3RA2325-8XB30-1BB4**	2	**3RA2325-8XB30-2BB4**
25	5.5	**11**	11	24 DC	2	**3RA2326-8XB30-1BB4**	2	**3RA2326-8XB30-2BB4**
32	7.5	**15**	18.5	24 DC	2	**3RA2327-8XB30-1BB4**	2	**3RA2327-8XB30-2BB4**
38	11	**18.5**	18.5	24 DC	2	**3RA2328-8XB30-1BB4**	2	**3RA2328-8XB30-2BB4**
With voltage tap-off								
12	3	**5.5**	7.5	24 DC	2	**3RA2324-8XE30-1BB4**	2	**3RA2324-8XE30-2BB4**
17	4	**7.5**	11	24 DC	2	**3RA2325-8XE30-1BB4**	5	**3RA2325-8XE30-2BB4**
25	5.5	**11**	11	24 DC	2	**3RA2326-8XE30-1BB4**	2	**3RA2326-8XE30-2BB4**
32	7.5	**15**	18.5	24 DC	5	**3RA2327-8XE30-1BB4**	2	**3RA2327-8XE30-2BB4**
38	11	**18.5**	18.5	24 DC	2	**3RA2328-8XE30-1BB4**	2	**3RA2328-8XE30-2BB4**

[1] Coil operating range
- at 50 Hz: 0.8 to 1.1 × U_s
- at 60 Hz: 0.85 to 1.1 × U_s.

Representation of the complete reversing contactor assemblies with optionally mountable accessories, see page 3/158.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW *IE3/IE4* ready

Fully wired and tested reversing contactor assemblies · Size S2 · Up to 37 kW

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA233.-8XB30-1A.2

3RA233.-8XE30-1NB3

Rated data AC-2 and AC-3				Rated control supply voltage U_s [1]	SD	Screw terminals		SD	Spring-type terminals	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No.	Price per PU		Article No.	Price per PU
400 V	230 V	**400 V**	690 V							
A	kW	**kW**	kW	V	d			d		
AC operation, 50/60 Hz										
40	11	**18.5**	22	110 AC	2	**3RA2335-8XB30-1AG2**			--	
				230 AC	2	**3RA2335-8XB30-1AL2**			--	
50	15	**22**	22	110 AC	5	**3RA2336-8XB30-1AG2**			--	
				230 AC	2	**3RA2336-8XB30-1AL2**			--	
65	18.5	**30**	45	110 AC	5	**3RA2337-8XB30-1AG2**			--	
				230 AC	2	**3RA2337-8XB30-1AL2**			--	
80	22	**37**	55	110 AC	5	**3RA2338-8XB30-1AG2**			--	
				230 AC	2	**3RA2338-8XB30-1AL2**			--	
AC/DC operation[2]										
40	11	**18.5**	22	20 ... 33 AC/DC	2	**3RA2335-8XB30-1NB3**			--	
50	15	**22**	22	20 ... 33 AC/DC	2	**3RA2336-8XB30-1NB3**			--	
65	18.5	**30**	45	20 ... 33 AC/DC	2	**3RA2337-8XB30-1NB3**			--	
80	22	**37**	55	20 ... 33 AC/DC	2	**3RA2338-8XB30-1NB3**			--	
With voltage tap-off										
40	11	**18.5**	22	20 ... 33 AC/DC	5	**3RA2335-8XE30-1NB3**			--	
50	15	**22**	22	20 ... 33 AC/DC	5	**3RA2336-8XE30-1NB3**			--	
65	18.5	**30**	45	20 ... 33 AC/DC	5	**3RA2337-8XE30-1NB3**			--	
80	22	**37**	55	20 ... 33 AC/DC	5	**3RA2338-8XE30-1NB3**			--	

[1] Operating range
- AC coil
  at 50 Hz: 0.8 to 1.1 × U_s,
  at 60 Hz: 0.85 to 1.1 × U_s;
- AC/DC coil 0.8 to 1.1 × U_s.

[2] With integrated coil circuit (varistor).

Representation of the complete reversing contactor assemblies with optionally mountable accessories, see page 3/159.

NEW **IE3/IE4 ready** **SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW**

Fully wired and tested reversing contactor assemblies · Size S3 · Up to 55 kW

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA234..-8XB30-1A.2

3RA234..-8XE30-1NB3

Rated data AC-2 and AC-3				Rated control supply voltage U_s [1]	SD	Screw terminals		SD	Spring-type terminals	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No.	Price pro PE		Article No.	Price per PU
400 V	230 V	**400 V**	690 V							
A	kW	**kW**	kW	V	d			d		
AC operation, 50/60 Hz										
80	22	**37**	55	110 AC	3	**3RA2345-8XB30-1AG2**			--	
				230 AC	3	**3RA2345-8XB30-1AL2**			--	
95	22	**45**	75	110 AC	3	**3RA2346-8XB30-1AG2**			--	
				230 AC	5	**3RA2346-8XB30-1AL2**			--	
110	30	**55**	75	110 AC	X	**3RA2347-8XB30-1AG2**			--	
				230 AC	X	**3RA2347-8XB30-1AL2**			--	
AC/DC operation [2]										
80	22	**37**	55	20 ... 33 AC/DC	X	**3RA2345-8XB30-1NB3**			--	
95	22	**45**	75	20 ... 33 AC/DC	X	**3RA2346-8XB30-1NB3**			--	
110	30	**55**	75	20 ... 33 AC/DC	X	**3RA2347-8XB30-1NB3**			--	
With voltage tap-off [3]										
80	22	**37**	55	20 ... 33 AC/DC	X	**3RA2345-8XE30-1NB3**			--	
95	22	**45**	75	20 ... 33 AC/DC	X	**3RA2346-8XE30-1NB3**			--	
110	30	**55**	75	20 ... 33 AC/DC	X	**3RA2347-8XE30-1NB3**			--	

1) Operating range
- AC coil
  at 50 Hz: 0.8 to 1.1 × U_s,
  at 60 Hz: 0.85 to 1.1 × U_s;
- AC/DC coil 0.8 to 1.1 × U_s.

2) With integrated coil circuit (varistor).

3) The associated module connectors 3RA2711-0EE17 for the 3RA271. function modules must be ordered separately, see page 3/107.

Representation of the complete reversing contactor assemblies with optionally mountable accessories, see page 3/160.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Reversing contactor assemblies consisting of SIRIUS 3RT1 contactors, up to 250 kW

Overview

The individual parts for the reversing contactor assemblies for customer assembly must be ordered separately.

- 3RT contactors: The operating times of the individual 3RT10 contactors are rated in such a way that no overlapping of the contact making and the arcing time between two contactors can occur on reversing, providing they are interlocked by way of their auxiliary switches (NC contact interlock) and the mechanical interlock.
  For assemblies with AC operation and 50/60 Hz, a dead interval of 50 ms must be provided when used with voltages over 500 V; a dead interval of 30 ms is recommended for use with voltages up to and including 400 V. These dead times do not apply to assemblies with DC operation.
  The operating times of the individual contactors are not affected by the mechanical interlock.
- Mechanical interlock
- Wiring kits consisting of link rails
- Base plate

Additional components

- for momentary-contact operation: auxiliary switch (NO contact) for self-locking
- 3RB2 overload relays (see from page 7/109 onwards), SIMOCODE pro 3UF7 motor management and control devices (from page 10/14 onwards) or 3RN thermistor motor protection evaluation units (page 10/164) can be used as overload protection.

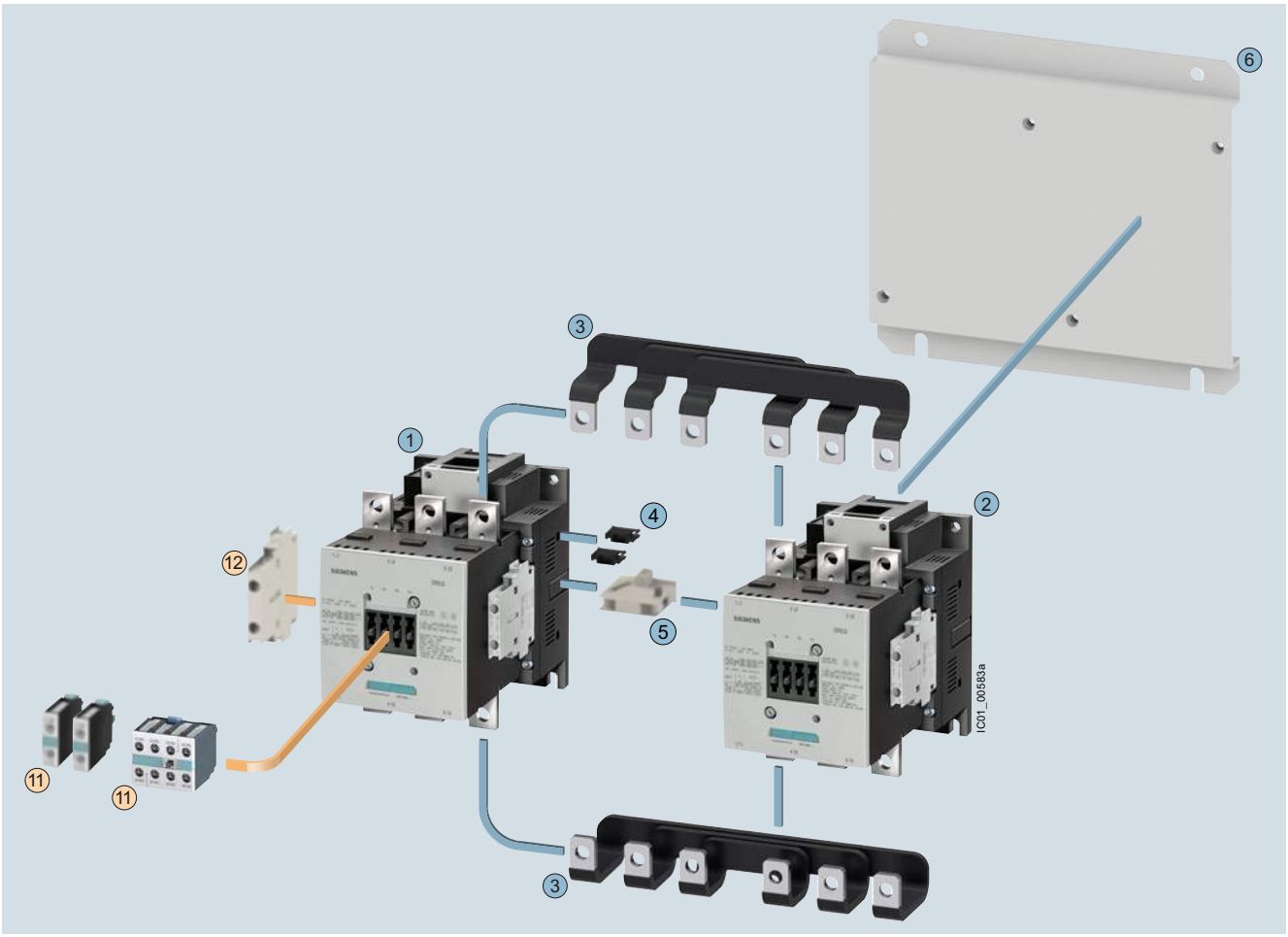
More information

Home page, see www.siemens.com/sirius

Industry Mall, see www.siemens.com/product?3RA23_3RT1

Reversing contactor assemblies consisting of SIRIUS 3RT1 contactors, up to 250 kW

Reversing contactor assemblies for customer assembly · Size S6 · Up to 90 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
11 Auxiliary switch block, front	3RH1921	3/96
12 Auxiliary switch block, lateral	3RH1921	3/98

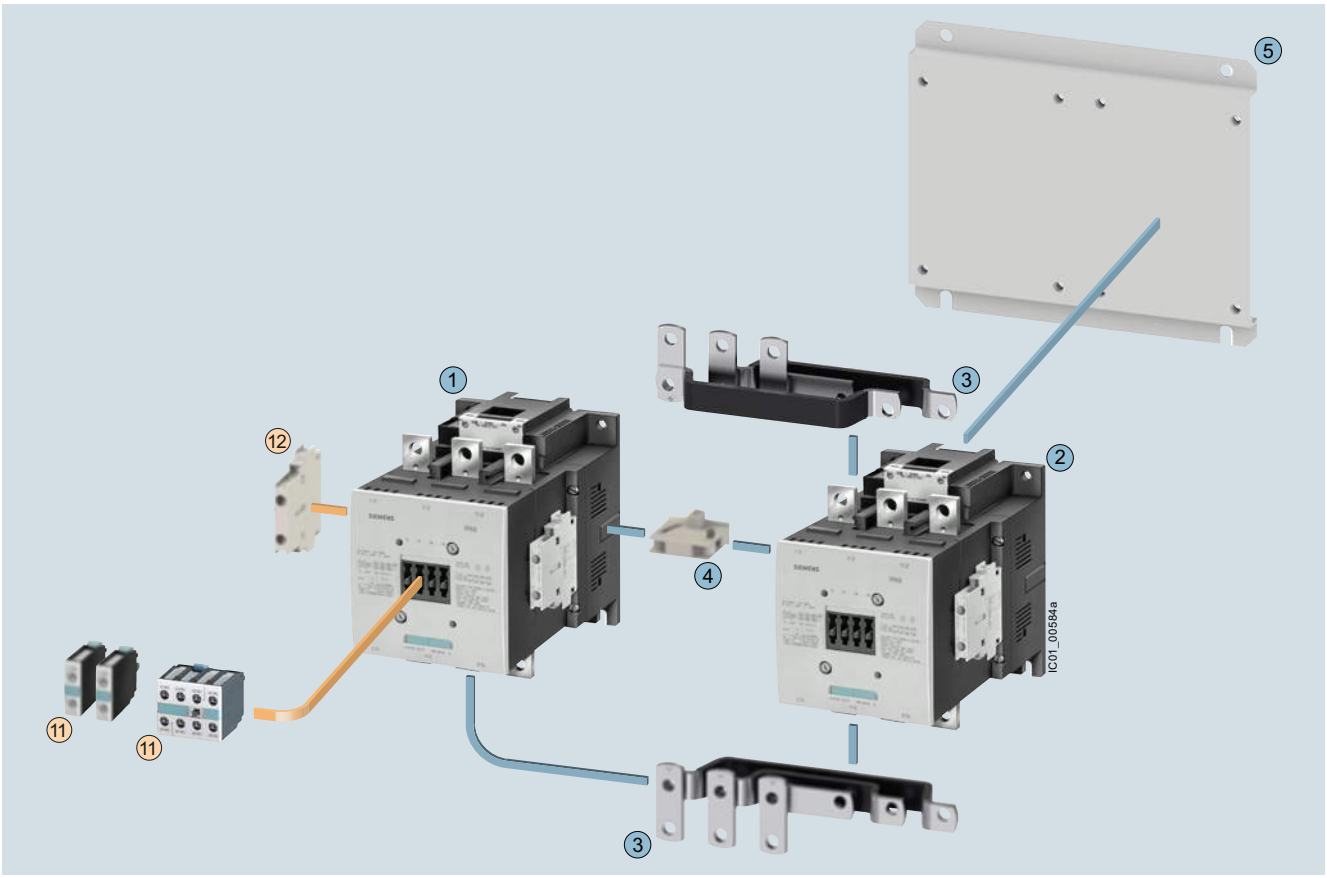
Reversing contactor assembly for customer assembly

Individual parts	Type Q11	Type Q12	Page
1 2 Contactors, 55 kW	3RT1054	3RT1054	3/70 ... 3/72
1 2 Contactors, 75 kW	3RT1055	3RT1055	3/70 ... 3/72
1 2 Contactors, 90 kW	3RT1056	3RT1056	3/70 ... 3/72
3 Assembly kit comprising: Wiring rails top and bottom for contactors without box terminals for connecting the main and auxiliary current circuits, electrical interlock included (NC contact interlock)	3RA1953-2A		3/109
4 Two connectors for two contactors	3RA1932-2D		3/113
5 Mechanical interlock (must be ordered separately)	3RA1954-2A		3/113
6 Base plate for reversing contactor assemblies	3RA1952-2A		3/117

Reversing Contactor Assemblies

Reversing contactor assemblies consisting of SIRIUS 3RT1 contactors, up to 250 kW

Reversing contactor assemblies for customer assembly · Size S10 · Up to 160 kW



Mountable accessories (optional)

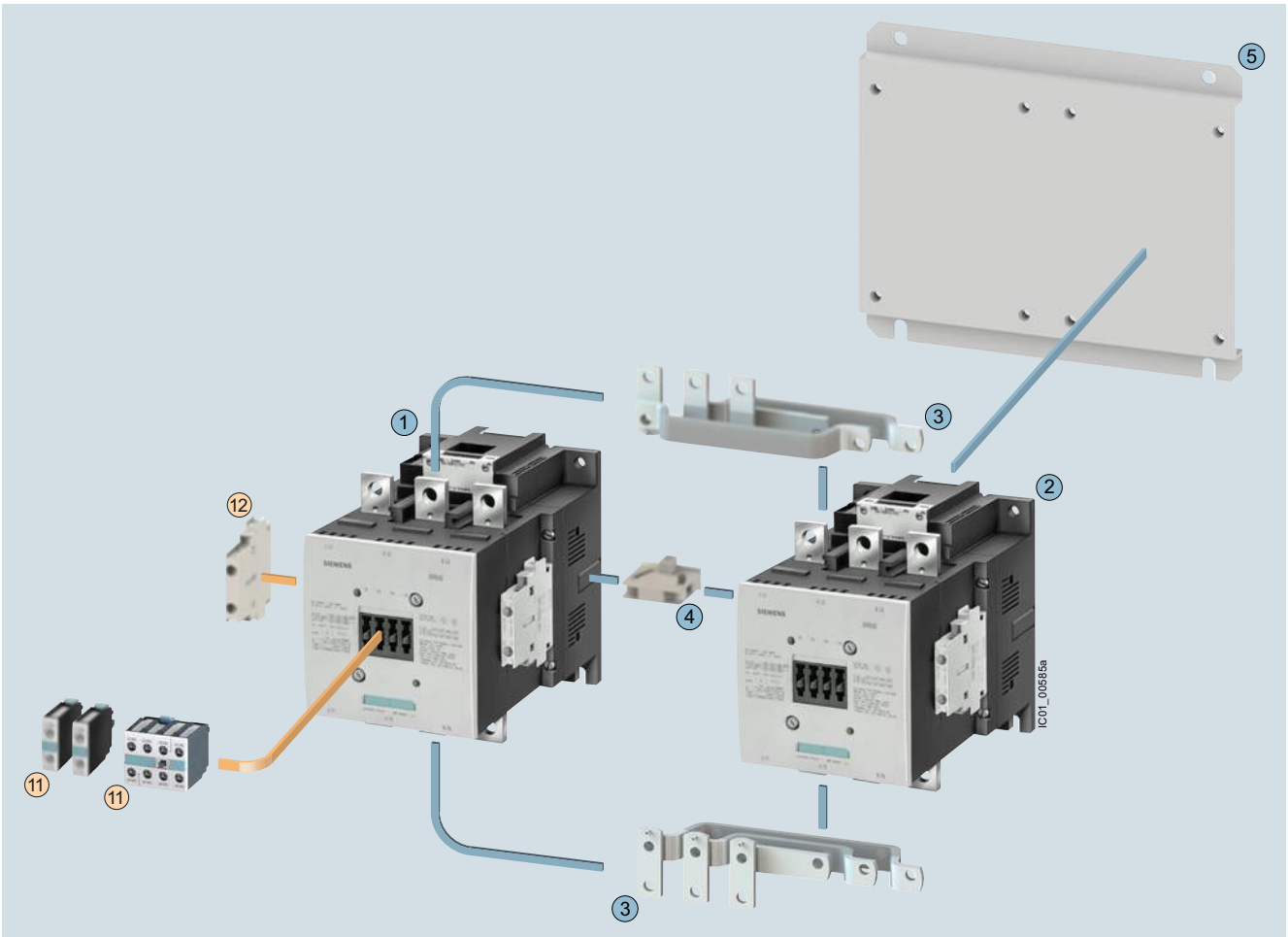
To be ordered separately	Type	Page
11 Auxiliary switch block, front	3RH1921	3/96
12 Auxiliary switch block, lateral	3RH1921	3/98

Reversing contactor assembly for customer assembly

Individual parts		Type Q11	Type Q12	Page
1 2	Contactors, 110 kW	3RT1.64	3RT1.64	3/70 ... 3/72
1 2	Contactors, 132 kW	3RT1.65	3RT1.65	3/70 ... 3/72
1 2	Contactors, 160 kW	3RT1.66	3RT1.66	3/70 ... 3/72
3	Assembly kit comprising: Wiring rails top and bottom for contactors without box terminals for connecting the main and auxiliary current circuits, electrical interlock included (NC contact interlock)	3RA1963-2A		3/109
4	Mechanical interlock (must be ordered separately)	3RA1954-2A		3/113
5	Base plate for reversing contactor assemblies	3RA1962-2A		3/117

Reversing contactor assemblies consisting of SIRIUS 3RT1 contactors, up to 250 kW

Reversing contactor assemblies for customer assembly · Size S12 · Up to 250 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
11 Auxiliary switch block, front	3RH1921	3/96
12 Auxiliary switch block, lateral	3RH1921	3/98

Reversing contactor assembly for customer assembly

Individual parts	Type Q11	Type Q12	Page
1 2 Contactors, 200 kW	3RT1.74	3RT1.74	3/70 ... 3/72
1 2 Contactors, 250 kW	3RT1.75	3RT1.75	3/70 ... 3/72
3 Assembly kit comprising: Wiring rails top and bottom for contactors without box terminals for connecting the main and auxiliary current circuits, electrical interlock included (NC contact interlock)	3RA1973-2A		3/109
4 Mechanical interlock (must be ordered separately)	3RA1954-2A		3/113
5 Base plate for reversing contactor assemblies	3RA1972-2A		3/117

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Overview

More information	
Home page, see www.siemens.com/sirius Industry Mall, see www.siemens.com/product?3RA24_3RT	Conversion tool, e.g. from 3RT10 to 3RT20, see www.siemens.com/sirius/conversion-tool Online configurator for 3RT2 contactors, see www.siemens.com/sirius/configurators

The 3RA24 contactor assemblies for star-delta (wye-delta) starting in sizes S00 to S3 can be ordered as follows:

- Fully wired and tested, with electrical and mechanical interlock; see page 3/179 onwards
- For all individual parts for customer assembly, see from page 3/75 onwards.

The 3RA24 contactor assemblies for star-delta (wye-delta) starting have screw or spring-type terminals and are suitable for screwing and snapping onto TH 35 standard mounting rails.

A base plate is also available for the size S2 and S3 assemblies.

A dead interval of 50 ms on reversing is already integrated in the 3RA28 function module for star-delta (wye-delta) starting.

With the fully wired and tested 3RA24 contactor assemblies for star-delta (wye-delta) starting, the auxiliary contacts included in the basic units are unassigned.

The 3RA24 contactor assemblies for star-delta (wye-delta) starting are designed for standard applications.

Note:

Contactor assemblies for star-delta (wye-delta) starting in special applications such as very heavy starting[1)] or star-delta (wye-delta) starting of special motors must be customized. Help with designing such special applications is available from our Technical Assistance,
Tel.: +49 (911) 895-5900
E-mail: technical-assistance@siemens.com

Surge suppression

Surge suppression (varistor) is included in the 3RA28 function modules for star-delta (wye-delta) starting.

Motor protection

3RU2 overload relays (see from page 7/84 onwards) or 3RB3 overload relays (see from page 7/97 onwards) for contactor mounting or stand-alone installation, SIMOCODE pro 3UF7 motor management and control devices (from page 10/14 onwards) or 3RN thermistor motor protection evaluation units (from page 10/164 onwards) can be used for motor protection.

The overload relay can be either mounted onto the line contactor or separately fitted. It must be set to 0.58 times the rated motor current.

SIRIUS 3RA28 function module for star-delta (wye-delta) starting

The 3RA2816-0EW20 star-delta (wye-delta) function module (see page 3/105) replaces the complete wiring in the control circuit and can be used in the voltage range from 24 to 240 V AC/DC. It is snapped onto the front of the contactor assembly for star-delta (wye-delta) starting size S00, S0, S2 or S3.

One function module comprises a complete module kit:

- Basic module with integrated control logic and time setting
- Two coupling modules with corresponding connecting cables

The scope of supply thus comprises a complete module kit for one contactor assembly for star-delta (wye-delta) starting in size S00, S0, S2 or S3, regardless of the connection method.

Data of the control circuit:

- Wide voltage range 24 to 240 V AC/DC
- Time setting range 0.5 to 60 s (3 selectable settings)
- Dead interval of 50 ms, non-adjustable

1) For effective support from Technical Assistance you must provide the following details:
- Rated motor voltage
- Rated motor current
- Service factor, operating values
- Motor starting current factor
- Starting time
- Ambient temperature.

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Complete units

Note:

The selection of contactor types refers to fused designs.

Rated data at 50 Hz 400 V AC			Size	Type		
Rating ***P*** **kW**	Operational current I_e A	Motor current A		Line/delta contactor	Star contactor	**Fully-wired and tested contactor assemblies for star-delta (wye-delta) starting**
				Screw terminals		
5.5	12	9.5 ... 13.8	**S00-S00-S00**	3RT2015-1....	3RT2015-1....	**3RA2415-8XF31-1...**
7.5	16	12.1 ... 17		3RT2017-1....	3RT2015-1....	**3RA2416-8XF31-1...**
11	25	19 ... 25		3RT2018-1....	3RT2016-1....	**3RA2417-8XF31-1...**
11	25	19 ... 25	**S0-S0-S0**	3RT2024-1...0	3RT2024-1...0	**3RA2423-8XF32-1...**
15	32	24.1 ... 34		3RT2026-1...0	3RT2024-1...0	**3RA2425-8XF32-1...**
18.5	40	34.5 ... 40		3RT2026-1...0	3RT2024-1...0	**3RA2425-8XF32-1...**
22	50	31 ... 43		3RT2027-1...0	3RT2026-1...0	**3RA2426-8XF32-1...**
22/30	50	31 ... 43	**S2-S2-S0**	3RT2035-1...0	3RT2026-1...0	**3RA2434-8XF32-1...**
37	80	62.1 ... 77.8		3RT2035-1...0	3RT2027-1...0	**3RA2435-8XF32-1...**
45	86	69 ... 86		3RT2036-1...0	3RT2028-1...0	**3RA2436-8XF32-1...**
55	115	77.6 ... 108.6	**S2-S2-S2**	3RT2037-1...0	3RT2035-1...0	**3RA2437-8XF32-1...**
55	115	77.6 ... 108.6	**S3-S3-S2**	3RT2045-1...0	3RT2035-1...0	**3RA2444-8XF32-1...**
75	150	120.7 ... 150		3RT2045-1...0	3RT2036-1...0	**3RA2445-8XF32-1...**
90	160	86 ... 160		3RT2046-1...0	3RT2037-1...0	**3RA2446-8XF32-1...**
				Spring-type terminals		
5.5	12	9.5 ... 13.8	**S00-S00-S00**	3RT2015-2....	3RT2015-2....	**3RA2415-8XF31-2...**
7.5	16	12.1 ... 17		3RT2017-2....	3RT2015-2....	**3RA2416-8XF31-2...**
11	25	19 ... 25		3RT2018-2....	3RT2016-2....	**3RA2417-8XF31-2...**
11	25	19 ... 25	**S0-S0-S0**	3RT2024-2...0	3RT2024-2...0	**3RA2423-8XF32-2...**
15	32	24.1 ... 34		3RT2026-2...0	3RT2024-2...0	**3RA2425-8XF32-2...**
18.5	40	34.5 ... 40		3RT2026-2...0	3RT2024-2...0	**3RA2425-8XF32-2...**
22	50	31 ... 43		3RT2027-2...0	3RT2026-2...0	**3RA2426-8XF32-2...**

Article No. scheme

Product versions		**Article number**
SIRIUS contactor assembly for star-delta (wye-delta) starting		**3RA24** □ □ – □ □ □ □ □ – □ □ □ □
Contactor size	e. g. 4 = S3	□
Power dependent on size	e. g. 5 = 75 kW for size S3	□
Type of overload relay	e.g. 8X = without	□ □
Assembly	e.g. F = ready-assembled with function modules	□
Interlock	e.g. 3 = mechanical and electrical	□
Free auxiliary switches	e. g. 2 = S3: 3 NO + 3 NC total	□
Type of electrical connection	e.g. 1 = screw terminals (main and auxiliary circuits)	□
Operating range / solenoid coil circuit	e.g. A = AC standard / without coil circuit	□
Rated control supply voltage	e.g. L2 = 230 V AC, 50/60 Hz	□ □
Example		**3RA24 4 5 – 8 X F 3 2 – 1 A L 2**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

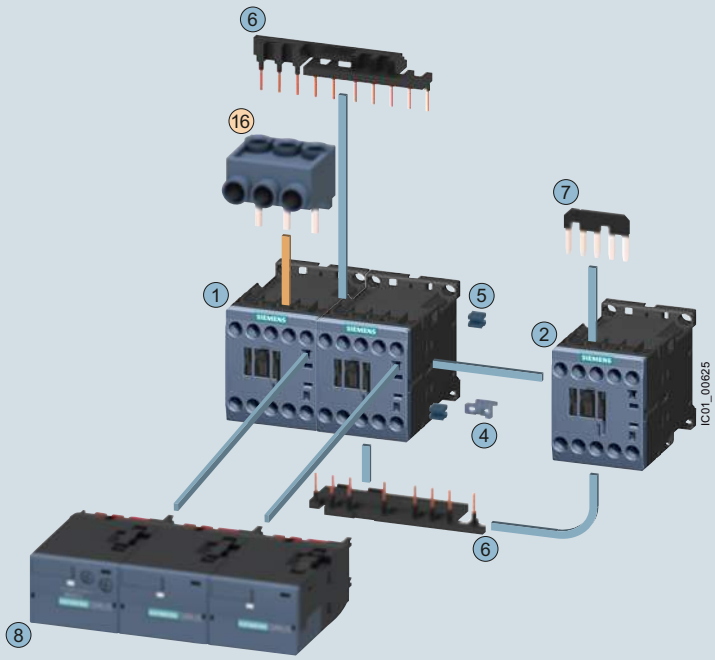
For your orders please use the article numbers quoted in the selection and ordering data.

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S00-S00-S00 · Up to 11 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Type	Page
16 Three-phase infeed terminal[1]	3RA2913-3K	3/114

Complete contactor assembly for star-delta (wye-delta) starting

Individual parts		Type Q11[2]	Q13	Q12	Page
1 2 3	Contactors, 5.5 kW	3RT2015	3RT2015	3RT2015	3/51, 3/59
1 2 3	Contactors, 7.5 kW	3RT2017	3RT2017	3RT2015	3/51, 3/59
1 2 3	Contactors, 11 kW	3RT2018	3RT2018	3RT2016	3/51, 3/59
4 ... 7	Assembly kit S00-S00-S00 comprising:	3RA2913-2BB1			3/110
	4 Mechanical interlock				
	5 Four connecting clips for three contactors				
	6 Wiring modules on the top and bottom for connecting the main and auxiliary circuits				
	7 Star jumper				
8	Function modules for star-delta (wye-delta) starting	3RA2816-0EW20			3/105

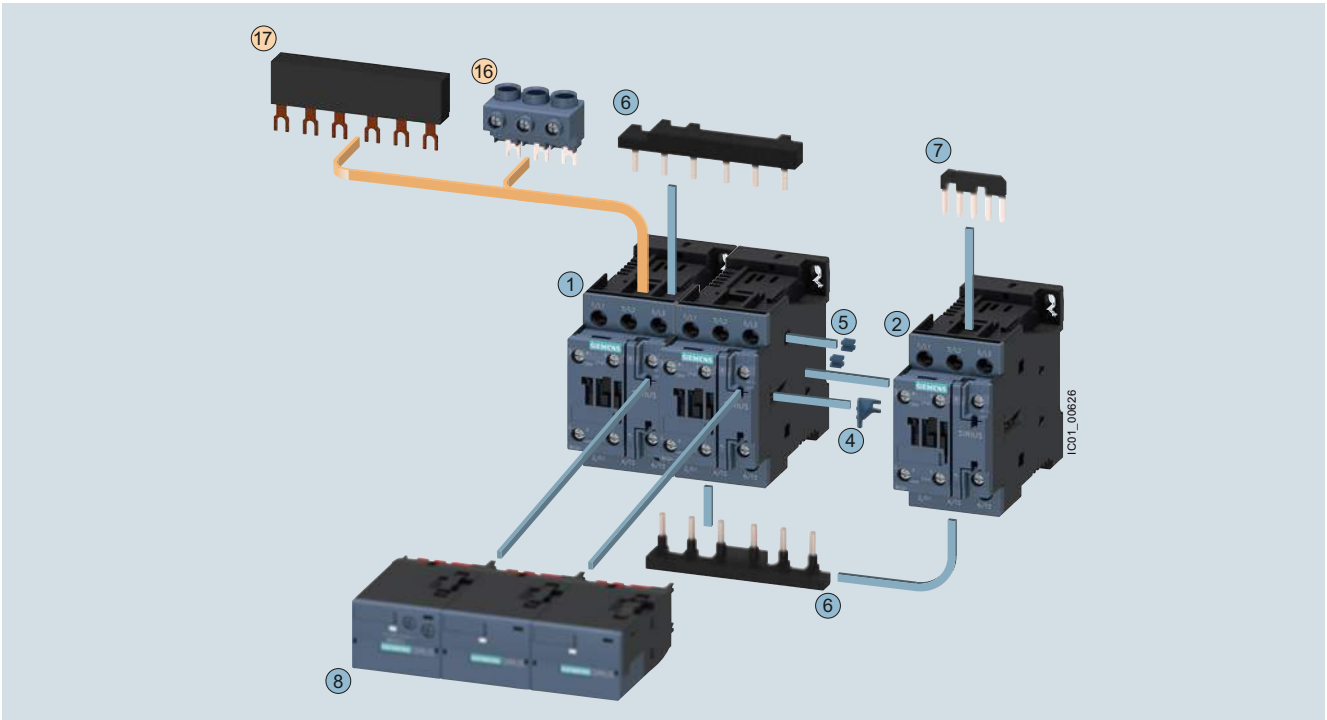
[1] Part 16 can only be mounted in the case of contactors with screw terminal.
[2] The version with 1 NO is required for momentary-contact operation.

Complete contactor assemblies for star-delta (wye-delta) starting see page 3/179.

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S0-S0-S0 · Up to 22 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Type	Page
16 Three-phase infeed terminal[1]	3RV2925-5AB	3/114
17 Three-phase busbar[1]	3RV1915-1AB	3/114

[1] The parts 16 and 17 can only be mounted with contactors with screw terminal.

Complete contactor assembly for star-delta (wye-delta) starting

Individual parts	Type			Page
	Q11	Q13	Q12	
1 2 3 Contactors, 11 kW	3RT2024	3RT2024	3RT2024	3/53, 3/63
1 2 3 Contactors, 15/18.5 kW	3RT2026	3RT2026	3RT2024	3/53, 3/63
1 2 3 Contactors, 22 kW	3RT2027	3RT2027	3RT2026	3/53, 3/63
4 ... 7 Assembly kit S0-S0-S0 comprising:	3RA2923-2BB1			3/110
4 Mechanical interlock				
5 Four connecting clips for three contactors				
6 Wiring modules on the top and bottom for connecting the main and auxiliary circuits				
7 Star jumper				
8 Function modules for star-delta (wye-delta) starting	3RA2816-0EW20			3/105

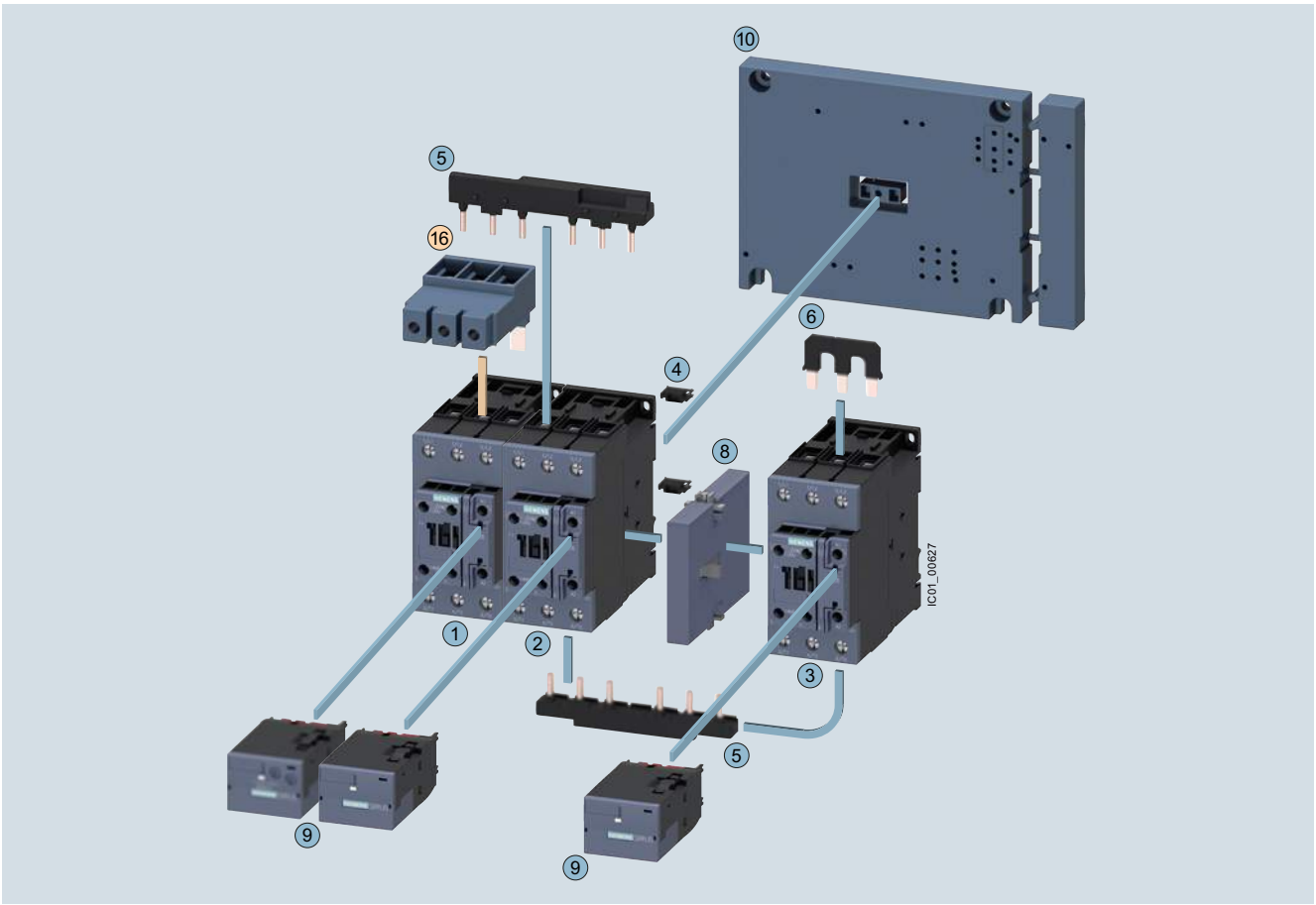
Complete contactor assemblies for star-delta (wye-delta) starting see page 3/180.

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size *S2-S2-S0*[1] · Up to 45 kW and S2-S2-S2 · 55 kW

The figure shows the version with screw terminals in S2-S2-S2



Mountable accessories (optional)

To be ordered separately	Type	Page
16 Three-phase infeed terminal	3RV2935-5A	3/114

Complete contactor assembly for star-delta (wye-delta) starting

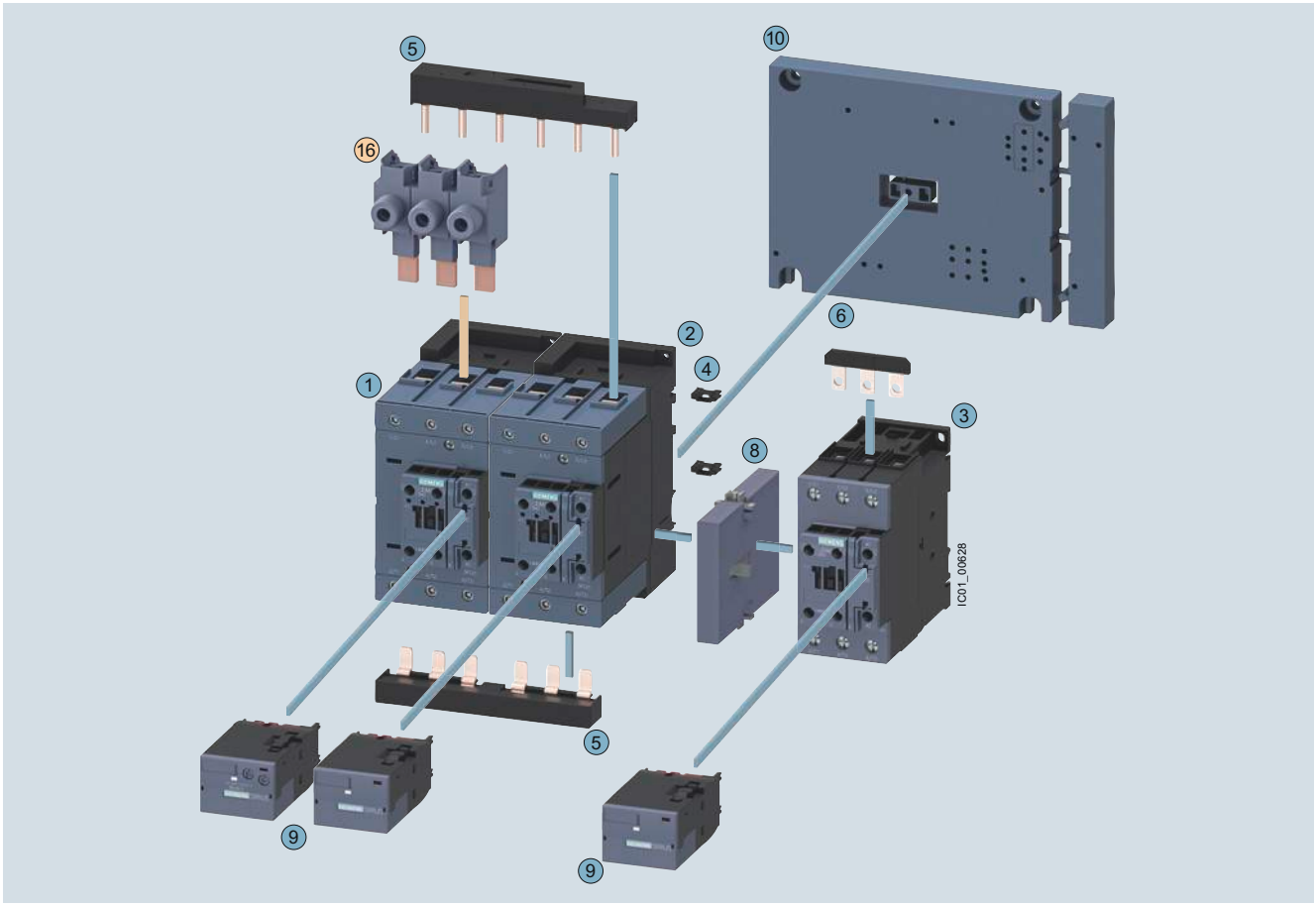
Individual parts	Type Q11	Q13	Q12	Page
1 2 3 Contactors, 22/30 kW	3RT2035	3RT2035	3RT2026	3/55, 3/64
1 2 3 Contactors, 37 kW	3RT2035	3RT2035	3RT2027	3/55, 3/64
1 2 3 Contactors, 45 kW	3RT2036	3RT2036	3RT2028	3/55, 3/64
1 2 3 Contactors, 55 kW	3RT2037	3RT2037	3RT2035	3/55, 3/64
4 ... 7 Assembly kit S2-S2-S2 comprising:	3RA2933-2BB1			3/110
4 Four connectors for three contactors (not required for fully pre-wired contactor assemblies for star-delta (wye-delta) starting)				
5 Wiring modules on the top and bottom for connecting the main and auxiliary circuits				
6 Star jumper S2				
7 Cable for connecting the A2 coil contact from the line contactor with the A2 coil contact of the delta contactor (not shown in the drawing)				
8 Mechanical interlock	3RA2934-2B			3/113
9 Function modules for star-delta (wye-delta) starting	3RA2816-0EW20			3/105
10 Base plate star-delta (wye-delta)	3RA2932-2F			3/117

[1] Complete contactor assembly for star-delta (wye-delta) starting in size S2-S2-S0 (not shown): The 3RA2933-2C assembly kit is to be used here, see page 3/110.

Complete contactor assemblies for star-delta (wye-delta) starting see page 3/181.

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S3-S3-S2[1] · Up to 90 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
16 Single-phase infeed terminal (3 units are required)	3RA2943-3L	3/114

Complete contactor assembly for star-delta (wye-delta) starting

Individual parts	Type Q11	Q13	Q12	Page
1 2 3 Contactors, 55 kW	3RT2045	3RT2045	3RT2035	3/56, 3/64
1 2 3 Contactors, 75 kW	3RT2045	3RT2045	3RT2036	3/56, 3/64
1 2 3 Contactors, 90 kW	3RT2046	3RT2046	3RT2037	3/56, 3/64
4 ... 7 Assembly kit S3-S3-S2 comprising:	3RA2943-2C			3/110
4 Two connectors for three contactors (not required for fully pre-wired contactor assemblies for star-delta (wye-delta) starting)				
5 Wiring modules on top and bottom (S3-S2) for connecting the main and auxiliary circuits and a cable set for the auxiliary circuit				
6 Star jumper S2				
7 Cable for connecting the A2 coil contact from the line contactor with the A2 coil contact of the delta contactor (not shown in the drawing)				
8 Mechanical interlock	3RA2934-2B			3/113
9 Function modules for star-delta (wye-delta) starting	3RA2816-0EW20			3/105
10 Base plate star-delta (wye-delta)	3RA2942-2F			3/117

[1] Contactor assembly for star-delta (wye-delta) starting for customer assembly in size S3-S3-S3 (not shown): The 3RA2943-2BB. assembly kit is to be used here, see page 3/110.

Complete contactor assemblies for star-delta (wye-delta) starting see page 3/182.

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Technical specifications

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16150/td

FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16150/faq

Manuals, see

- System Manual "SIRIUS – System Overview", https://support.industry.siemens.com/cs/WW/en/view/60311318
- Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", https://support.industry.siemens.com/cs/WW/en/view/60306557
- Application Manual "SIRIUS Controls with IE3/IE4 motors; https://support.industry.siemens.com/cs/ww/en/view/94770820

Unless otherwise indicated, the technical specifications correspond to those of the 3RT individual contactors (see from page 3/19 onwards) and 3RU2 overload relays (see from page 7/80 onwards).

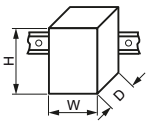
Type		3RA2415	3RA2416	3RA2417	3RA2423	3RA2425	3RA2426
Sizes		S00-S00-S00	S00-S00-S00	S00-S00-S00	S0-S0-S0	S0-S0-S0	S0-S0-S0
General data							
Dimensions (W x H x D) with function module							
• AC operation							
- Screw terminals	mm	135 x 68 x 145			135 x101 x 171		
- Spring-type terminals	mm	135 x 84 x 145			135 x114 x 171		
• DC operation							
- Screw terminals	mm	135 x 68 x 145			135 x101 x 181		
- Spring-type terminals	mm	135 x 84 x 145			135 x114 x 181		
Individual contactors							
• Q11 line contactor	Type	3RT2015	3RT2017	3RT2018	3RT2024	3RT2026	3RT2027
• Q13 delta contactor	Type	3RT2015	3RT2017	3RT2018	3RT2024	3RT2026	3RT2027
• Q12 star contactor	Type	3RT2015	3RT2015	3RT2016	3RT2024	3RT2024	3RT2026
Mechanical endurance	Operating cycles	3 million					
Unassigned auxiliary contacts of the individual contactors		For circuit diagrams of the control circuit, see Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", https://support.industry.siemens.com/cs/WW/en/view/60306557.					
Short-circuit protection							
Main circuit without overload relays							
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE with single or double infeed							
Greatest rated current of the fuse according to IEC 60947-4-1							
- Type of coordination "1"	A	35		63		100	125
- Type of coordination "2"	A	20		25		35	63
Auxiliary circuit							
Short-circuit test							
• With fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1	A A	10 6 (up to I_k < 0.5 kA; ≤ 260 V), If the auxiliary contact of the overload relay is connected in the contactor coil circuit.					
• With miniature circuit breaker, C characteristic with short-circuit current I_k = 400 A	A A	10 6 (up to I_k < 0.5 kA; ≤ 260 V), If the auxiliary contact of the overload relay is connected in the contactor coil circuit.					
Short-circuit protection with overload relay		See Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/39714188					

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Type			3RA2415	3RA2416	3RA2417	3RA2423	3RA2425	3RA2426
Sizes			S00-S00-S00	S00-S00-S00	S00-S00-S00	S0-S0-S0	S0-S0-S0	S0-S0-S0
Rated data of the main contacts								
Current-carrying capacity with reversing time up to 10 s								
• Rated operational current I_e	At 400 V	A	12	17	25		40	55
	690 V	A	6.9	9	20.8		22.5	35
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	3.3	4.7	7.2		12	16.6
	400 V	kW	5.8	8.2	12.5		21	30.1
	690 V	kW	5.8	7.5	18		20.4	33
• **Switching frequency** with overload relay		h^{-1}	15					
Current-carrying capacity with reversing time up to 15 s								
• Rated operational current I_e	At 400 V	A	12	17	25		31	44
	690 V	A	6.9	9	20.8		22.5	35
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	3.3	4.7	7.2		9.4	13.8
	400 V	kW	5.8	8.2	12.5		16.3	24
	690 V	kW	5.8	7.5	18		20.4	33
• **Switching frequency** with overload relay		h^{-1}	15					
Current-carrying capacity with reversing time up to 20 s								
• Rated operational current I_e	At 400 V	A	12	17	25		28	39
	690 V	A	6.9	9	20.8		22.5	35
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	3.3	4.7	7.2		8.5	12.2
	400 V	kW	5.8	8.2	12.5		14.7	21.3
	690 V	kW	5.8	7.5	18		20.4	33
• **Switching frequency** with overload relay		h^{-1}	15					

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Type			3RA2434	3RA2435	3RA2436	3RA2437	3RA2444	3RA2445	3RA2446
Sizes			S2-S2-S0	S2-S2-S0	S2-S2-S0	S2-S2-S2	S3-S3-S2	S3-S3-S2	S3-S3-S2
General data									
Dimensions (W x H x D) with function module									
• AC and DC operation									
- Screw terminals		mm	177.5 x 142 x 223				220 x 180 x 244		
Individual contactors									
• Q11 line contactor		Type	3RT2035	3RT2035	3RT2036	3RT2037	3RT2045	3RT2045	3RT2046
• Q13 delta contactor		Type	3RT2035	3RT2035	3RT2036	3RT2037	3RT2045	3RT2045	3RT2046
• Q12 star contactor		Type	3RT2026	3RT2027	3RT2028	3RT2035	3RT2035	3RT2036	3RT2037
Mechanical endurance		Operating cycles	1 million						
Unassigned auxiliary contacts of the individual contactors			For circuit diagrams of the control circuit, see Manual "SIRIUS - SIRIUS 3RT Contactors/Contactor assemblies", https://support.industry.siemens.com/cs/ww/en/view/60306557.						
Short-circuit protection									
Main circuit without overload relays									
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB NEOZED type 5SE with single or double infeed									
Greatest rated current of the fuse according to IEC 60947-4-1									
- Type of coordination "1"		A	160	200	250				
- Type of coordination "2"		A	80		125	160			
Auxiliary circuit									
Short-circuit test									
• With fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A A	10 6 (up to I_k < 0.5 kA; ≤ 260 V), If the auxiliary contact of the overload relay is connected in the contactor coil circuit.						
• With miniature circuit breaker, C characteristic with short-circuit current I_k = 400 A		A A	10 6 (up to I_k < 0.5 kA; ≤ 260 V), If the auxiliary contact of the overload relay is connected in the contactor coil circuit.						
Short-circuit protection with overload relay			See Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/39714188				On request		
Rated data of the main contacts									
Current-carrying capacity with reversing time up to 10 s									
• Rated operational current I_e	At 400 V	A	On request						
	690 V	A	On request						
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	On request						
	400 V	kW	On request						
	690 V	kW	On request						
• **Switching frequency** with overload relay		h^{-1}	15						
Current-carrying capacity with reversing time up to 15 s									
• Rated operational current I_e	At 400 V	A	On request						
	690 V	A	On request						
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	On request						
	400 V	kW	On request						
	690 V	kW	On request						
• **Switching frequency** with overload relay		h^{-1}	15						
Current-carrying capacity with reversing time up to 20 s									
• Rated operational current I_e	At 400 V	A	On request						
	690 V	A	On request						
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	On request						
	400 V	kW	On request						
	690 V	kW	On request						
• **Switching frequency** with overload relay		h^{-1}	15						

IE3/IE4 ready SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Selection and ordering data

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S00-S00-S00 · Up to 11 kW

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA241.-8XF31-1A.0

3RA241.-8XF31-2A.0

3RA241.-8XE31-1BB4

Rated data AC-3				Rated control supply voltage U_s [1]	SD	Screw terminals		SD	Spring-type terminals	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No.	Price per PU		Article No.	Price per PU
400 V	230 V	**400 V**	690 V							
A	kW	**kW**	kW	V	d			d		
AC operation, 50/60 Hz										
12	3.3	**5.5**	9.2	24 AC	2	**3RA2415-8XF31-1AB0**		2	**3RA2415-8XF31-2AB0**	
				110 AC	2	**3RA2415-8XF31-1AF0**		5	**3RA2415-8XF31-2AF0**	
				230 AC	2	**3RA2415-8XF31-1AP0**		2	**3RA2415-8XF31-2AP0**	
16	4.7	**7.5**	9.2	24 AC	2	**3RA2416-8XF31-1AB0**		5	**3RA2416-8XF31-2AB0**	
				110 AC	2	**3RA2416-8XF31-1AF0**		5	**3RA2416-8XF31-2AF0**	
				230 AC	2	**3RA2416-8XF31-1AP0**		2	**3RA2416-8XF31-2AP0**	
25	5.5	**11**	11	24 AC	2	**3RA2417-8XF31-1AB0**		5	**3RA2417-8XF31-2AB0**	
				110 AC	2	**3RA2417-8XF31-1AF0**		5	**3RA2417-8XF31-2AF0**	
				230 AC	2	**3RA2417-8XF31-1AP0**		2	**3RA2417-8XF31-2AP0**	
DC operation										
12	3.3	**5.5**	9.2	24 DC	2	**3RA2415-8XF31-1BB4**		2	**3RA2415-8XF31-2BB4**	
16	4.7	**7.5**	9.2	24 DC	2	**3RA2416-8XF31-1BB4**		2	**3RA2416-8XF31-2BB4**	
25	5.5	**11**	11	24 DC	2	**3RA2417-8XF31-1BB4**		2	**3RA2417-8XF31-2BB4**	
For IO-Link connection										
12	3.3	**5.5**	9.2	24 DC	2	**3RA2415-8XE31-1BB4**		2	**3RA2415-8XE31-2BB4**	
16	4.7	**7.5**	9.2	24 DC	2	**3RA2416-8XE31-1BB4**		2	**3RA2416-8XE31-2BB4**	
25	5.5	**11**	11	24 DC	2	**3RA2417-8XE31-1BB4**		2	**3RA2417-8XE31-2BB4**	
For AS-Interface connection										
12	3.3	**5.5**	9.2	24 DC	5	**3RA2415-8XH31-1BB4**		2	**3RA2415-8XH31-2BB4**	
16	4.7	**7.5**	9.2	24 DC	2	**3RA2416-8XH31-1BB4**		5	**3RA2416-8XH31-2BB4**	
25	5.5	**11**	11	24 DC	2	**3RA2417-8XH31-1BB4**		2	**3RA2417-8XH31-2BB4**	

[1] Coil operating range
- at 50 Hz: 0.8 to 1.1 × U_s
- at 60 Hz: 0.85 to 1.1 × U_s.

Representation of the complete contactor assemblies for star-delta (wye-delta) starting with optionally mountable accessories, see page 3/172.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW *IE3/IE4* ready

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S0-S0-S0 · Up to 22 kW

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA242..-8XF32-1A.2

3RA242..-8XF32-2A.2

3RA242..-8XE32-1BB4

Rated data AC-3				Rated control supply voltage U_s [1]	SD	Screw terminals	SD	Spring-type terminals
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No. / Price per PU		Article No. / Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V	d		d	
AC operation, 50/60 Hz								
25	7.1	**11**	19	24 AC	2	**3RA2423-8XF32-1AC2**	2	**3RA2423-8XF32-2AC2**
				110 AC	2	**3RA2423-8XF32-1AG2**	5	**3RA2423-8XF32-2AG2**
				230 AC	5	**3RA2423-8XF32-1AL2**	5	**3RA2423-8XF32-2AL2**
32/40	11.4	**15/18.5**	19	24 AC	2	**3RA2425-8XF32-1AC2**	2	**3RA2425-8XF32-2AC2**
				110 AC	2	**3RA2425-8XF32-1AG2**	5	**3RA2425-8XF32-2AG2**
				230 AC	5	**3RA2425-8XF32-1AL2**	5	**3RA2425-8XF32-2AL2**
50	--	**22**	19	24 AC	2	**3RA2426-8XF32-1AC2**	5	**3RA2426-8XF32-2AC2**
				110 AC	2	**3RA2426-8XF32-1AG2**	5	**3RA2426-8XF32-2AG2**
				230 AC	5	**3RA2426-8XF32-1AL2**	5	**3RA2426-8XF32-2AL2**
DC operation								
25	7.1	**11**	19	24 DC	2	**3RA2423-8XF32-1BB4**	2	**3RA2423-8XF32-2BB4**
32/40	11.4	**15/18.5**	19	24 DC	2	**3RA2425-8XF32-1BB4**	2	**3RA2425-8XF32-2BB4**
50	--	**22**	19	24 DC	2	**3RA2426-8XF32-1BB4**	2	**3RA2426-8XF32-2BB4**
For IO-Link connection								
25	7.1	**11**	19	24 DC	2	**3RA2423-8XE32-1BB4**	5	**3RA2423-8XE32-2BB4**
32/40	11.4	**15/18.5**	19	24 DC	2	**3RA2425-8XE32-1BB4**	5	**3RA2425-8XE32-2BB4**
50	--	**22**	19	24 DC	2	**3RA2426-8XE32-1BB4**	5	**3RA2426-8XE32-2BB4**
For AS-Interface connection								
25	7.1	**11**	19	24 DC	5	**3RA2423-8XH32-1BB4**	2	**3RA2423-8XH32-2BB4**
32/40	11.4	**15/18.5**	19	24 DC	5	**3RA2425-8XH32-1BB4**	5	**3RA2425-8XH32-2BB4**
50	--	**22**	19	24 DC	2	**3RA2426-8XH32-1BB4**	5	**3RA2426-8XH32-2BB4**

[1] Coil operating range
- at 50 Hz: 0.8 to 1.1 × U_s
- at 60 Hz: 0.85 to 1.1 × U_s.

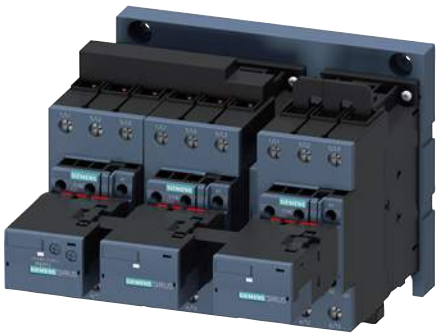
Representation of the complete contactor assemblies for star-delta (wye-delta) starting with optionally mountable accessories, see page 3/173.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

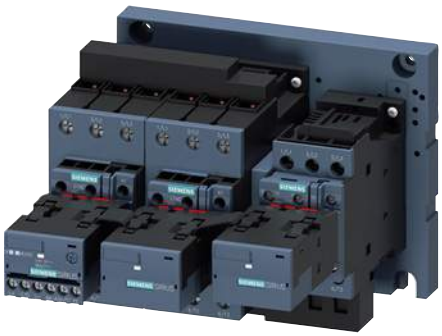
IE3/IE4 ready SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S2-S2-S0 · Up to 45 kW and S2-S2-S2 · 55 kW

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B



3RA2437-8XF32-1A.2



3RA243.-8XE32-1NB3

Rated data AC-3				Rated control supply voltage U_s [1]	SD	Screw terminals		SD	Spring-type terminals	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No.	Price per PU		Article No.	Price per PU
400 V	230 V	**400 V**	690 V							
A	kW	**kW**	kW	V	d			d		
AC operation, 50/60 Hz										
50/65	19.6	**22/30**	34	24 AC	5	**3RA2434-8XF32-1AC2**			--	
				110 AC	5	**3RA2434-8XF32-1AG2**			--	
				230 AC	▶	**3RA2434-8XF32-1AL2**			--	
80	25	**37**	63	24 AC	2	**3RA2435-8XF32-1AC2**			--	
				110 AC	2	**3RA2435-8XF32-1AG2**			--	
				230 AC	▶	**3RA2435-8XF32-1AL2**			--	
86	27	**45**	63	24 AC	2	**3RA2436-8XF32-1AC2**			--	
				110 AC	2	**3RA2436-8XF32-1AG2**			--	
				230 AC	▶	**3RA2436-8XF32-1AL2**			--	
115	37	**55**	93	24 AC	5	**3RA2437-8XF32-1AC2**			--	
				110 AC	5	**3RA2437-8XF32-1AG2**			--	
				230 AC	▶	**3RA2437-8XF32-1AL2**			--	
AC/DC operation										
50/65	19.6	**22/30**	34	24 ... 33 AC/DC	▶	**3RA2434-8XF32-1NB3**			--	
80	25	**37**	63	24 ... 33 AC/DC	2	**3RA2435-8XF32-1NB3**			--	
86	27	**45**	63	24 ... 33 AC/DC	2	**3RA2436-8XF32-1NB3**			--	
115	37	**55**	93	24 ... 33 AC/DC	5	**3RA2437-8XF32-1NB3**			--	
DC operation										
For IO-Link connection										
50/65	19.6	**22/30**	34	24 DC	5	**3RA2434-8XE32-1NB3**			--	
80	25	**37**	63	24 DC	5	**3RA2435-8XE32-1NB3**			--	
86	27	**45**	63	24 DC	5	**3RA2436-8XE32-1NB3**			--	
115	37	**55**	93	24 DC	5	**3RA2437-8XE32-1NB3**			--	
For AS-Interface connection										
50/65	19.6	**22/30**	34	24 DC	5	**3RA2434-8XH32-1NB3**			--	
80	25	**37**	63	24 DC	5	**3RA2435-8XH32-1NB3**			--	
86	27	**45**	63	24 DC	5	**3RA2436-8XH32-1NB3**			--	
115	37	**55**	93	24 DC	5	**3RA2437-8XH32-1NB3**			--	

[1] Operating range
- AC coil:
  at 50 Hz 0.8 to 1.1. x U_S,
  at 60 Hz 0.85 to 1.1 x U_S
- AC/DC coil: 0.8 to 1.1 x U_S
- DC coil: 0.8 to 1.1 x U_S.

Representation of the complete contactor assemblies for star-delta (wye-delta) starting with optionally mountable accessories, see page 3/174.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW IE3/IE4 ready NEW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S3-S3-S2 · Up to 90 kW

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA244.-8XF32-1A.2

3RA244.-8XE32-1NB3

3RA244.-8XH32-1NB3

Rated data AC-3				Rated control supply voltage U_s [1]	SD	Screw terminals		SD	Spring-type terminals	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No.	Price per PU		Article No.	Price per PU
400 V	230 V	**400 V**	690 V							
A	kW	**kW**	kW	V	d			d		
AC operation, 50/60 Hz										
115	30	**55**	90	24 AC	X	**3RA2444-8XF32-1AC2**			--	
				110 AC	X	**3RA2444-8XF32-1AG2**			--	
				230 AC	X	**3RA2444-8XF32-1AL2**			--	
150	37	**75**	110	24 AC	X	**3RA2445-8XF32-1AC2**			--	
				110 AC	X	**3RA2445-8XF32-1AG2**			--	
				230 AC	X	**3RA2445-8XF32-1AL2**			--	
160	45	**90**	132	24 AC	X	**3RA2446-8XF32-1AC2**			--	
				110 AC	X	**3RA2446-8XF32-1AG2**			--	
				230 AC	X	**3RA2446-8XF32-1AL2**			--	
AC/DC operation										
115	30	**55**	90	24 ... 33 AC/DC	X	**3RA2444-8XF32-1NB3**			--	
150	37	**75**	110	24 ... 33 AC/DC	X	**3RA2445-8XF32-1NB3**			--	
160	45	**90**	132	24 ... 33 AC/DC	X	**3RA2446-8XF32-1NB3**			--	
DC operation										
For IO-Link connection										
115	30	**55**	90	24 DC	X	**3RA2444-8XE32-1NB3**			--	
150	37	**75**	110	24 DC	X	**3RA2445-8XE32-1NB3**			--	
160	45	**90**	132	24 DC	X	**3RA2446-8XE32-1NB3**			--	
For AS-Interface connection										
115	30	**55**	90	24 DC	X	**3RA2444-8XH32-1NB3**			--	
150	37	**70**	110	24 DC	X	**3RA2445-8XH32-1NB3**			--	
160	45	**90**	132	24 DC	X	**3RA2446-8XH32-1NB3**			--	

[1] Operating range
- AC coil:
  at 50 Hz 0.8 to 1.1 x U_s,
  at 60 Hz 0.85 to 1.1 x U_s
- AC/DC coil: 0.8 to 1.1 x U_s
- DC coil: 0.8 to 1.1 x U_s.

Representation of the complete contactor assemblies for star-delta (wye-delta) starting with optionally mountable accessories, see page 3/175.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Overview

The individual parts for the contactor assemblies for star-delta (wye-delta) starting for customer assembly must be ordered separately.

- 3RT contactors: The operating times of the individual 3RT10 contactors are rated in such a way that no overlapping of the contact making and the arcing time between two contactors can occur on reversing, provided they are interlocked by way of their auxiliary switches (NC contact interlock) and the mechanical interlock.
  For assemblies with AC operation and 50/60 Hz, a dead interval of 50 ms must be provided when used with voltages over 500 V; a dead interval of 30 ms is recommended for use with voltages up to and including 400 V. These dead times do not apply to assemblies with DC operation.
  The operating times of the individual contactors are not affected by the mechanical interlock.
- Mechanical interlock
- Wiring kits: consisting of wiring modules or link rails and star jumpers
- Adapter for the mechanical interlock between S6 and S3
- Base plate

Additional components

- For momentary-contact operation: auxiliary switch (NO contact) for self-locking
- 3RB2 overload relays (see from page 7/109 onwards), SIMOCODE pro 3UF7 motor management and control devices (from page 10/14 onwards) or 3RN thermistor motor protection evaluation units (page 10/164) can be used for overload protection.
  The overload relay can be either mounted onto the line contactor or separately fitted. It must be set to 0.58 times the rated motor current.
- Optional surge suppression for the S3 contactors; the contactors in sizes S6 to S12 are wired as standard with varistors.

The contactor assemblies for star-delta (wye-delta) starting for customer assembly are designed for standard applications.

Note:

Contactor assemblies for star-delta (wye-delta) starting in special applications such as very heavy starting[1] or star-delta (wye-delta) starting of special motors must be customized.
Help with designing such special applications is available from our Technical Assistance,
Tel.: +49 (911) 895-5900
E-mail: technical-assistance@siemens.com.

More information

Home page, see www.siemens.com/sirius

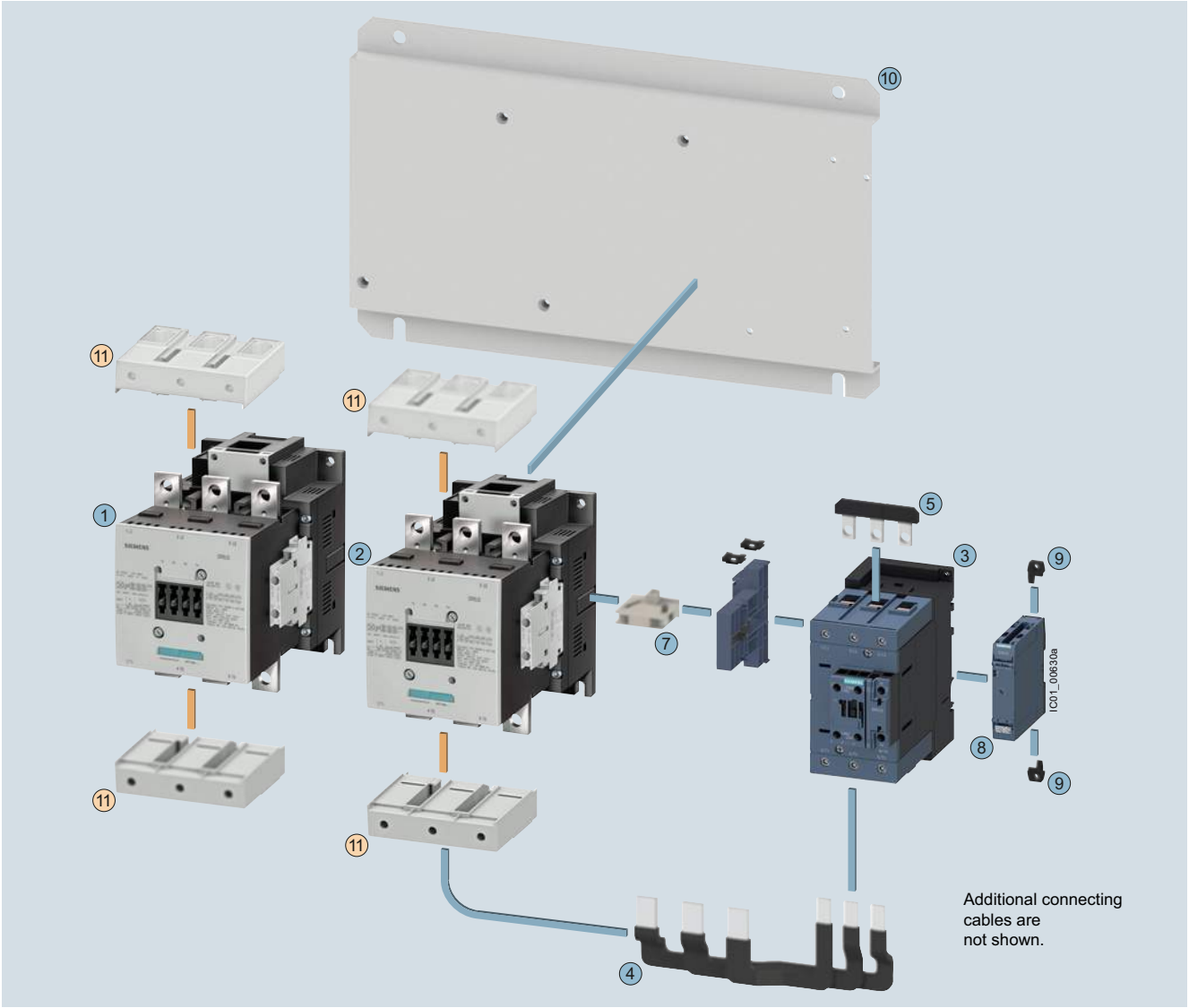
Industry Mall, see www.siemens.com/product?3RA24_3RT

[1] For effective support from Technical Assistance you must provide the following details:
- Rated motor voltage
- Rated motor current
- Service factor, operating values
- Motor starting current factor
- Starting time
- Ambient temperature.

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Sizes S6-S6-S3 · Up to 160 kW



Mountable accessories (optional)

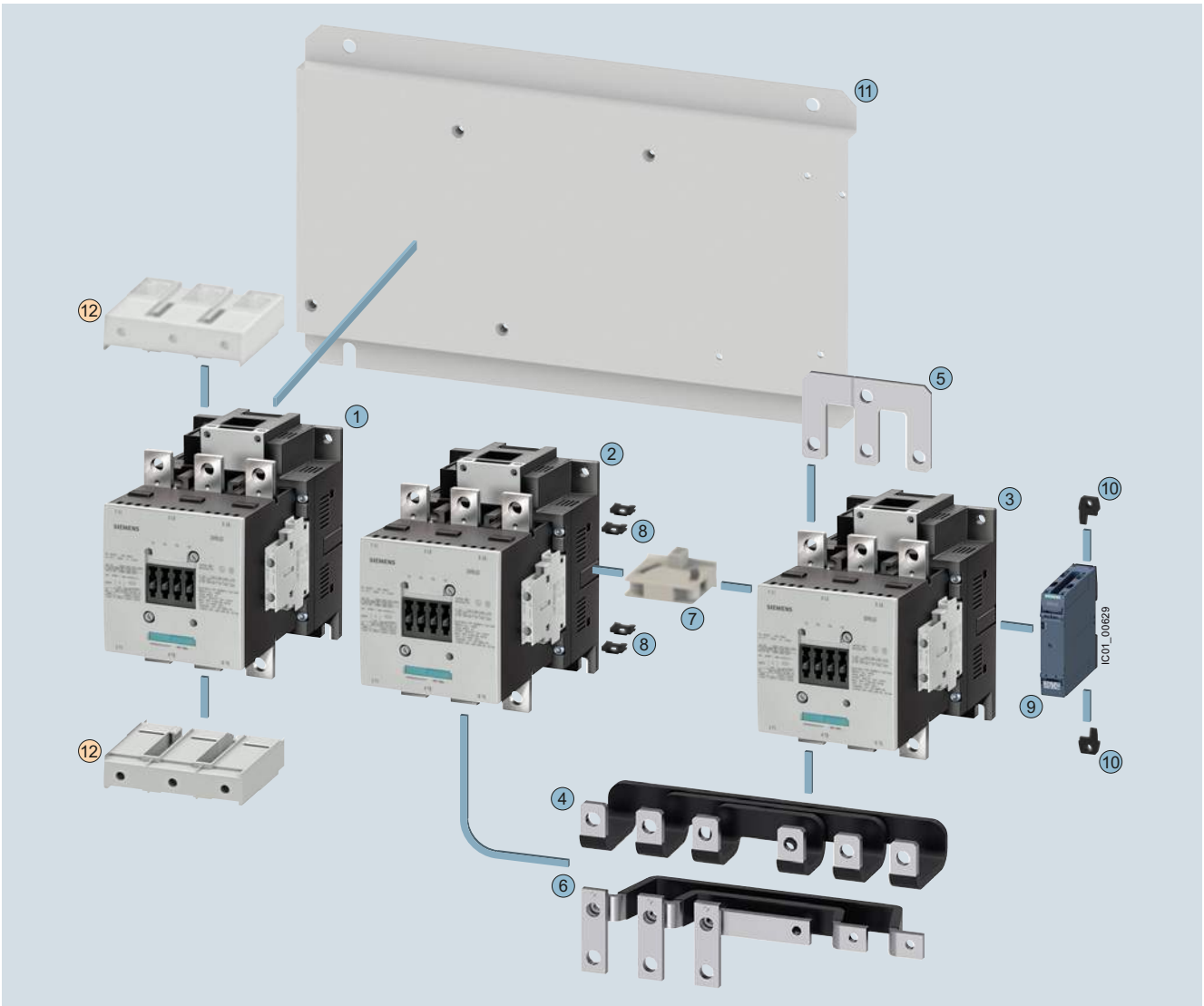
To be ordered separately	Type	Page
(11) Box terminal blocks	3RT1955-4G	3/114

Contactor assemblies for customer assembly

Individual parts		Type Q11	Q13	Q12	Page
(1)(2)(3)	Contactors, 110 kW	3RT1054	3RT1054	3RT2045	3/56, 3/64, 3/68 ... 3/72
(1)(2)(3)	Contactors, 132 kW	3RT1055	3RT1055	3RT2046	3/56, 3/64, 3/68 ... 3/72
(1)(2)(3)	Contactors, 160 kW	3RT1056	3RT1056	3RT2047	3/56, 3/64, 3/68 ... 3/72
(4)	Assembly kit S6-S6-S3 for contactors with box terminals comprising: Wiring modules, bottom	3RA1953-3G			3/111
(5)	Star jumper S3	3RT1946-4BA31			3/112
(6)	Adapter for the mechanical interlock between S6 and S3 (including two connectors)	3RA1954-2G			3/113
(7)	Mechanical interlock between S6 and S3	3RA1954-2A			3/113
(8)	Timing relay with star-delta (wye-delta) function	3RP257.			10/46
(9)	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/47
(10)	Base plate star-delta (wye-delta)	3RA1952-2E			3/117

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Sizes S6-S6-S6 · Up to 160 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
(12) Box terminal blocks	3RT1955-4G	3/114

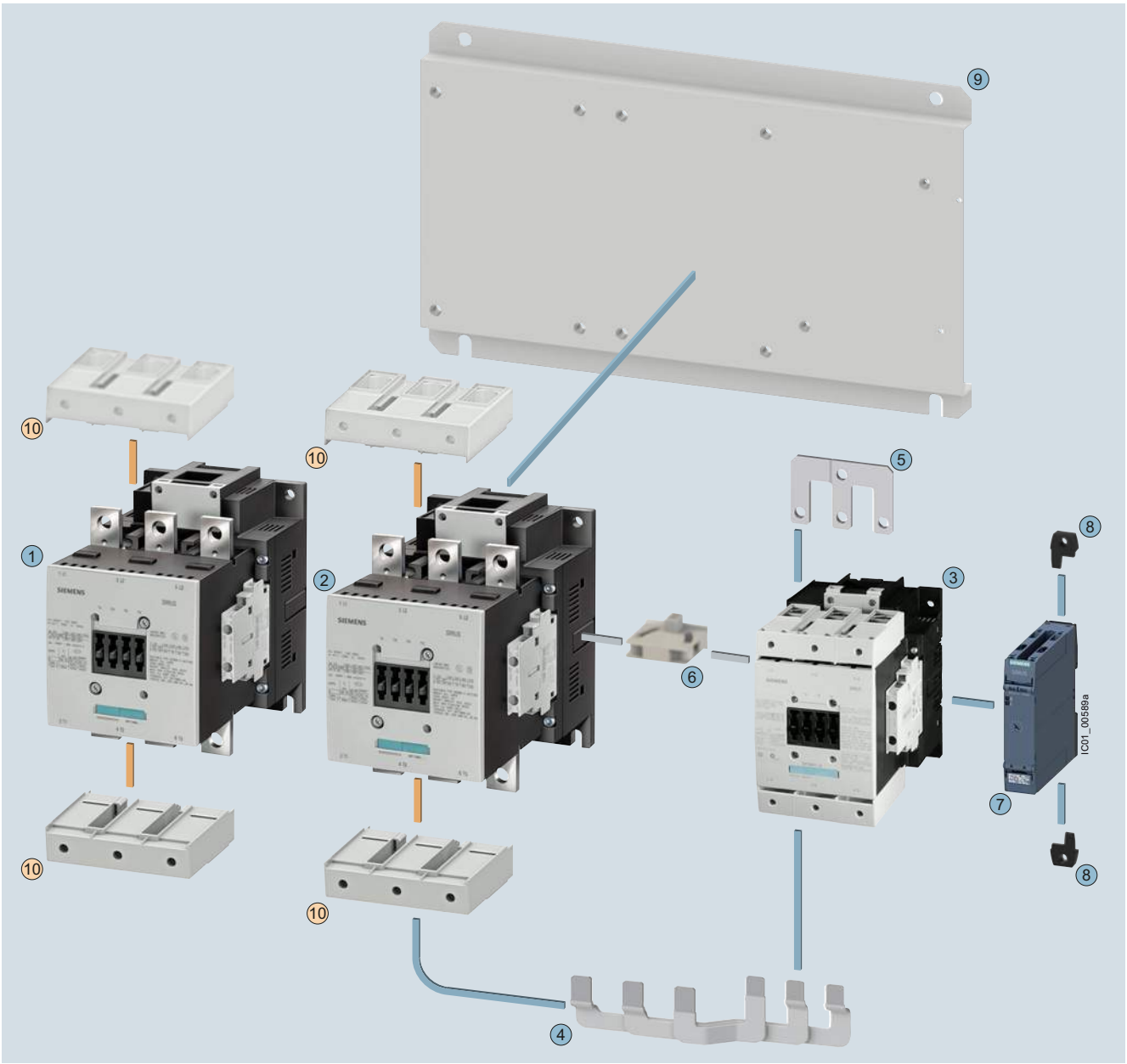
Contactor assemblies for customer assembly

Individual parts		Type Q11	Type Q13	Type Q12	Page
(1)(2)(3)	Contactors, 110 kW	3RT1054	3RT1054	3RT1054	3/70 ... 3/72
(1)(2)(3)	Contactors, 132 kW	3RT1055	3RT1055	3RT1055	3/70 ... 3/72
(1)(2)(3)	Contactors, 160 kW	3RT1056	3RT1056	3RT1056	3/70 ... 3/72
(4)(5)	Assembly kit S6-S6-S6 for contactors with box terminals comprising:	3RA1953-2B			3/111
	(4) Link rails, bottom				
	(5) Star jumper S6				
(5)(6)	Assembly kit S6-S6-S6 for contactors without box terminals comprising:	3RA1953-2N			3/111
	(6) Link rails, bottom				
	(5) Star jumper S6				
(7)	Mechanical interlock	3RA1954-2A			3/113
(8)	Four connectors	3RA1932-2D			3/113
(9)	Timing relay with star-delta (wye-delta) function	3RP257.			10/46
(10)	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/47
(11)	Base plate star-delta (wye-delta)	3RA1952-2F			3/117

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Sizes S10-S10-S6 · Up to 250 kW



Mountable accessories (optional)

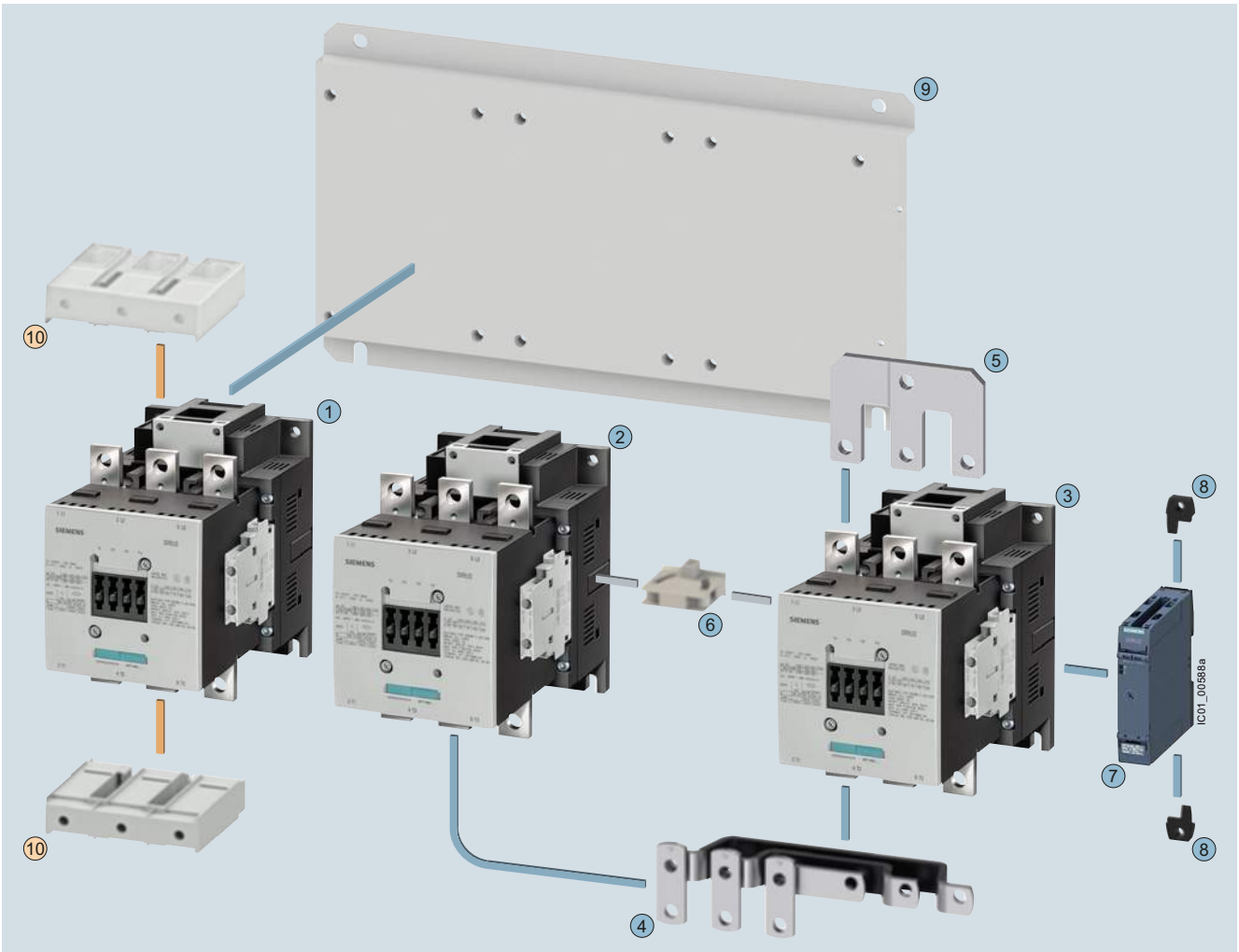
To be ordered separately	Type	Page
10 Box terminal blocks	3RT1966-4G	3/114

Contactor assemblies for customer assembly

Individual parts		Type			Page
		Q11	Q13	Q12	
1 2 3	Contactors, 200 kW	3RT1.64	3RT1.64	3RT1064	3/70 ... 3/72, 3/134
1 2 3	Contactors, 250 kW	3RT1.65	3RT1.65	3RT1055	3/70 ... 3/72, 3/134
4	Assembly kit S10-S10-S6 for contactors with box terminals comprising: Wiring modules, bottom	3RA1963-3E			3/111
5	Star jumper S6	3RT1956-4BA31			3/112
6	Mechanical interlock between S10 and S6	3RA1954-2A			3/113
7	Timing relay with star-delta (wye-delta) function	3RP257.			10/46
8	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/47
9	Base plate star-delta (wye-delta)	3RA1962-2E			3/117

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Sizes S10-S10-S10 · Up to 250 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
10 Box terminal blocks	3RT1966-4G	3/114

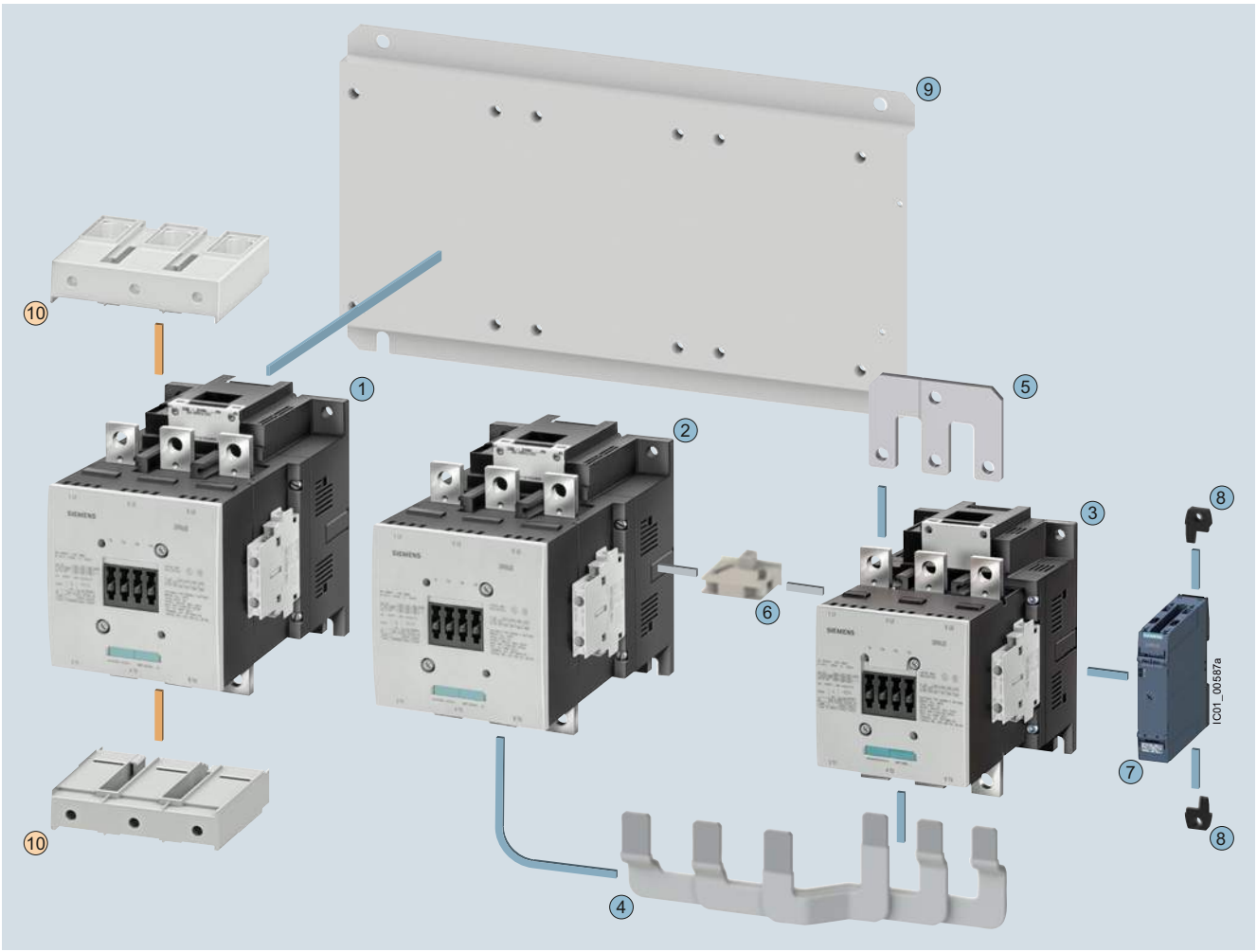
Contactor assemblies for customer assembly

Individual parts		Type Q11	Q13	Q12	Page
1 2 3	Contactors, 200 kW	3RT1.64	3RT1.64	3RT1.64	3/70 ... 3/72, 3/134
1 2 3	Contactors, 250 kW	3RT1.65	3RT1.65	3RT1.65	3/70 ... 3/72, 3/134
4 5	Assembly kit S10-S10-S10 for contactors without box terminals comprising:	3RA1963-2B			3/111
	4 Link rails, bottom				
	5 Star jumper S10				
6	Mechanical interlock	3RA1954-2A			3/113
7	Timing relay with star-delta (wye-delta) function	3RP257.			10/46
8	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/47
9	Base plate star-delta (wye-delta)	3RA1962-2F			3/117

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Sizes S12-S12-S10 · Up to 500 kW



Mountable accessories (optional)

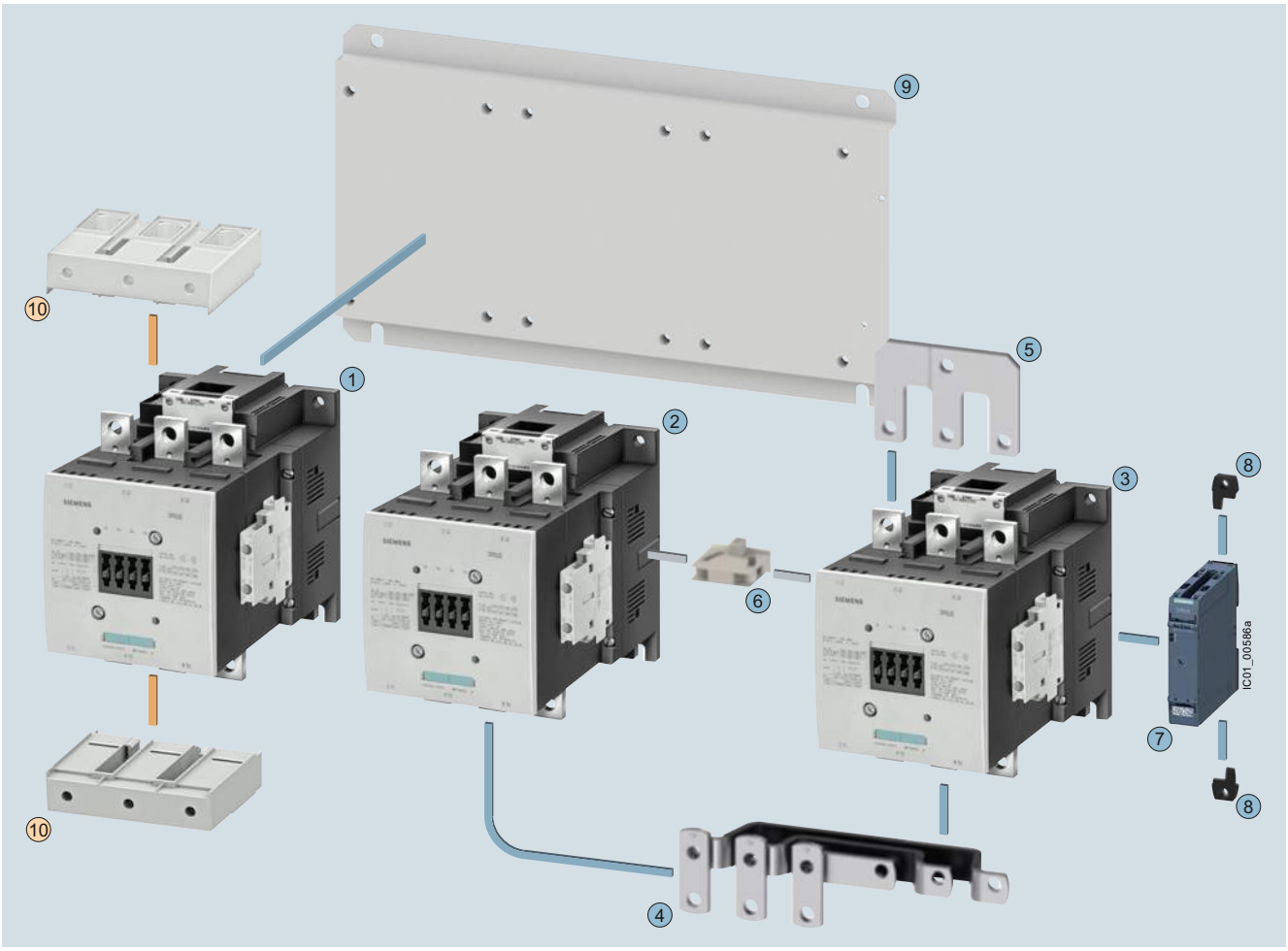
To be ordered separately	Type	Page
(10) Box terminal blocks	3RT1966-4G	3/114

Contactor assemblies for customer assembly

Individual parts		Type Q11	Q13	Q12	Page
(1)(2)(3)	Contactors, 355 kW	3RT1.75	3RT1.75	3RT1064	3/70 ... 3/72, 3/134
(1)(2)(3)	Contactors, 400 kW	3RT1.75	3RT1.75	3RT1.65	3/70 ... 3/72, 3/134
(1)(2)(3)	Contactors, 500 kW	3RT1.76	3RT1.76	3RT1.66	3/70 ... 3/72, 3/134
(4)	Assembly kit S12-S12-S10 for contactors with box terminals comprising: Wiring modules, bottom	3RA1973-3E			3/111
(5)	Star jumper S10	3RT1966-4BA31			3/112
(6)	Mechanical interlock between S12 and S10	3RA1954-2A			3/113
(7)	Timing relay with star-delta (wye-delta) function	3RP257.			10/46
(8)	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/47
(9)	Base plate star-delta (wye-delta)	3RA1972-2E			3/117

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Sizes S12-S12-S12 · Up to 500 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑩ Box terminal blocks	3RT1966-4G	3/114

Contactor assemblies for customer assembly

Individual parts		Type			Page
		Q11	Q13	Q12	
①②③	Contactors, 400 kW	3RT1.75	3RT1.75	3RT1.75	3/70 ... 3/72, 3/134
①②③	Contactors, 500 kW	3RT1.76	3RT1.76	3RT1.76	3/70 ... 3/72, 3/134
④⑤	Assembly kit S12-S12-S12 for contactors without box terminals comprising:	3RA1973-2B			3/111
	④ Link rails, bottom				
	⑤ Star jumper S12				
⑥	Mechanical interlock	3RA1954-2A			3/113
⑦	Timing relay with star-delta (wye-delta) function	3RP257.			10/46
⑧	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/47
⑨	Base plate star-delta (wye-delta)	3RA1972-2F			3/117

Notes

Note:

You will find 3RT1 contactors in sizes S00 to S12

- in the Catalog Add-On IC 10 AO · 2016 in the Information and Download Center
- in the interactive Catalog CA 01
- in the Industry Mall

Conversion tool
e. g. from 3RT13 to 3RT23: see www.siemens.com/sirius/conversion-tool

Introduction

Overview

More information	
Home page, see www.siemens.com/sirius Industry Mall, see www.siemens.com/product?3RT_3TK_3TC	Conversion tool e.g. from 3RT13 to 3RT23, see www.siemens.com/sirius/conversion-tool Online configurator for 3RT20 contactors, see www.siemens.com/sirius/configurators

Size			**S00**					**S0**			
Type			3RT231., 3RT251.					3RT232., 3RT2526			
4-pole 3RT23, 3RT25 contactors											
Type			**3RT2316**	**3RT2317**	**3RT2516**	**3RT2517**	**3RT2518**	**3RT2325**	**3RT2326**	**3RT2327**	**3RT2526**
Number of main contacts			4 NO		2 NO + 2 NC			4 NO			2 NO + 2 NC
AC, DC operation			(p. 4/17, 4/19)		(p. 4/23, 4/24)			(p. 4/17 ... 4/19)			(p. 4/23, 4/24)
AC-1											
I_e at 690 V [40 °C / 60 °C]		A	18 / 16	22 / 20	18 / 16	22 / 20	22 / 20	35 / 30	40 / 35	50 / 42	40 / 35
***P* at 400 V**	**40 °C**	**kW**	**11.5**	**14**	**11.5**	**14**	**14**	**23**	**26**	**33**	**26**
	60 °C	kW	10.5	13	10.5	13	13	20	23	28	23
AC-2 and AC-3											
I_e at 400 V	NO	A	9	12	9	12	16	15.5	15.5	15.5	25
	NC	A	--	--	9	9	9	--	--	--	25 (20)[1]
***P* at 400 V** (NC for DC operation)	**NO / NC**	**kW**	**4**	**5.5**	**4**	**5.5 / 4**	**7.5 / 4**	**7.5**	**7.5**	**7.5**	**11 (7.5)[1]**
At 230 V	NO / NC	kW	2.2	3	3	3 / 2.2	4 / 2.2	4	4	4	5.5
Accessories for contactors											
Auxiliary switch blocks			**3RH29, 3RA28**		(p. 3/93 ... 3/100)			**3RH29, 3RA28**		(p. 3/93 ... 3/100)	
Function modules (direct-on-line starting, star-delta (wye-delta) starting)			**3RA281.**		(p. 3/105)			**3RA281.**		(p. 3/105)	
Surge suppressors			**3RT2916**		(p. 3/102, 3/103)			**3RT2926**		(p. 3/102, 3/103)	

[1] The value in brackets applies to the NC for DC operation.

Note:

For safety characteristics for contactors, see "Standards and Approvals", from page 16/10 onwards.




Size			**S2**				**S3**		**S3**		**S6, S10, S12**		
Type			3RT233., 3RT253.				3RT2446, 3RT2448		3RT134.		3RT14.6		
4-pole 3RT23, 3RT25, 3RT13 contactors · 3-pole 3RT24, 3RT14 contactors													
Type			**3RT2336**	**3RT2337**	**3RT2535**	**3RT2536**	**3RT2446**	**3RT2448**	**3RT1344**	**3RT1346**	**3RT1456**	**3RT1466**	**3RT1476**
Number of main contacts			4 NO		2 NO + 2 NC		3 NO		4 NO		3 NO		
AC, DC operation			(p. 4/17, 4/18, 4/20)		(p. 4/23, 4/25)		(p. 4/11)		(p. 4/36)		(p. 4/12)		
AC-1 (≤ 690 V)													
***I*e**	**40 °C**	**A**	**60**	**110**	**60**	**70**	**140**	**160**	**110**	**140**	**275**	**400**	**690**
	60 °C	A	55	95	55	60	130	140	100	120	250	380	650
***P* at 400 V**	40 °C	**kW**	**36**	**63**	**36**	**39**	**92**	**105**	**72**	**92**	**180**	**263**	**454**
At 230 V	40 °C	kW	21	36	21	23	53	61	42	53	105	151	261
At 500 V	40 °C	kW	--	--	--	--	--	--	--	--	225	329	568
At 690 V	40 °C	kW	--	--	--	--	159	182	--	--	310	454	783
at 1 000 V	60 °C	kW	--	--	--	--	--	--	--	--	165	247	410
AC-2 and AC-3													
*I*e/400 V		A	--	--	35	41	44	44	--	--	97	138	170
***P* at 400 V**		**kW**	**--**	**--**	**18.5**	**22**	**22**	**22**	**--**	**--**	**55**	**75**	**90**
At 230 V		kW	--	--	11	11	12.7	12.7	--	--	30	37	55
At 500 V		kW	--	--	--	--	29.9	29.9	--	--	55	90	110
At 690 V		kW	--	--	--	--	38.2	38.2	--	--	90	132	160
Accessories for contactors													
Auxiliary switch blocks			**3RH29, 3RA28** (p. 3/93 ... 3/100)						**3RH19, 3RT1926** (p. 4/40 ... 4/44)		**3RH19** (p. 3/96, 3/98, 3/99) **3RT1926** (p. 3/101)		
Function modules (direct-on-line starting, star-delta (wye-delta) starting)			**3RA281.** (p. 3/105)						**--**		**--**		
Terminal covers			**3RT2936-4EA2** (p. 3/116)				**3RT2946-4EA2** (p. 3/116)		**3RT1946-4EA.** (p. 4/46)		**3RT1956-4EA.** (p. 3/116)		
Box terminal blocks			**--**						**--**		**3RT1955/56-4G** (p. 3/114)		
Surge suppressors			**3RT2936** (p. 3/102, 3/103)				**3RT2936**[1], **3RT2946** (p. 3/102, 3/103)		**3RT1926, 3RT1936** (p. 4/44)		**3RT1956-1C** (RC element) (p. 3/103)		

[1] As from product version E03, 3RT2936-1B/-1E surge suppressors can be used for 3RT2.4 contactors.

Note:

For safety characteristics for contactors, see "Standards and Approvals", from page 16/10 onwards.

Introduction

Size		--							**00**
Type		3TK1.							3TK20
4-pole 3TK contactors									
Type		**3TK10**	**3TK11**	**3TK12**	**3TK13**	**3TK14**	**3TK15**	**3TK17**	**3TK20**
Number of main contacts		4 NO							4
AC, DC operation		(p. 4/52)							(p. 4/60, 4/61)
AC-1 (40 °C, ≤ 690 V)									
I_e	**A**	**200**	**250**	**300**	**350**	**550**	**800**	**1 000**	**18**
***P* at 400 V**	**kW**	**132**	**165**	**197**	**230**	**362**	**527**	**658**	**10**
At 230 V	kW	76	95	114	132	308	303	378	6
At 500 V	kW	165	206	247	288	452	658	828	13
At 690 V	kW	227	284	341	397	624	908	1 135	17
AC-2 and AC-3									
I_e/400 V	A	120	145	210	210	400	550	700	8.4
***P* at 400 V**	**kW**	**55**	**75**	**110**	**110**	**200**	**280**	**370**	**4**
At 127 V	kW	--	--	--	--	--	--	--	1.4
At 230 V	kW	30	45	75	75	110	160	220	2.5
At 500 V	kW	--	--	--	--	--	--	--	4
At 690 V	kW	--	--	--	--	--	--	--	4

Accessories for contactors									
Auxiliary switch blocks	Lateral	**3TK1910**	(p. 4/53)						**--**
Terminal covers		**3TK1940**	(p. 4/53)	**3TK1942**	(p. 4/53)	**3TK1944**	(p. 4/53)	**3TK1946** (p. 4/53)	**--**
Surge suppressors		**3TK1930**	(p. 4/53)			**3TK1934**	(p. 4/53)		**3TX4490** (p. 3/150)

Note:

For safety characteristics for contactors, see "Standards and Approvals", from page 16/10 onwards.

Further contactors

- For SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole, see page 4/26
- For 3TC contactors for switching DC voltage, 1 and 2-pole, see page 4/75

Contactors for railway applications

- For SIRIUS 3RT contactors with extended operating range, 3-pole, see page 4/62
- For SIRIUS 3RH2 contactor relays with extended operating range, see page 4/68
- For 3TH4 contactor relays, 8-pole, see page 4/71
- For 3TC contactors for switching DC voltage, 2-pole, see page 4/73

Connection methods

The contactors are available with screw terminals (box terminals or flat connectors) or with spring-type terminals.

Devices of the 3TK2 series are also available for connection with flat connectors and solder pin connectors.

Screw terminals

Spring-type terminals

Flat connectors

Solder pin connections

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Use of 3RT contactors with IE3/IE4 motors

Note:

When using 3RT contactors (exception: 3RT26) in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring; see Application Manual "SIRIUS Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820.

For more information see Preface, page 7.

Overview

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1 (auxiliary switches)

The contactors are suitable for use in any climate.
They are finger-safe according to IEC 60529.

3RT.4 contactors are used for switching resistive loads (AC-1) or as contactors, that normally only have to carry the current, for example for variable-speed operating mechanisms.

The accessories and spare parts of the 3RT contactors can also be used here, see from page 3/75 onwards.

For a general description of 3RT contactors, sizes S3 to S12, see from page 3/15 onwards.

Size S3: AC or AC/DC operation

- Coil circuits (varistors, diodes, etc.) retrofittable
- Auxiliary switches can be retrofitted
- Main and control conductors: Screw terminals

Sizes S6 to S12: AC/DC operation (50/60 Hz AC and DC)

- Withdrawable coils with integrated coil circuit (varistor)
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections

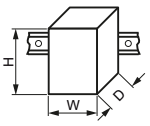
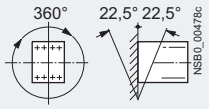
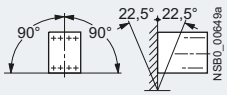
Operating mechanism types

Two types of solenoid operation are available:

- Conventional operating mechanisms
- Solid-state operating mechanism
  - The operating mechanism for the contactors features solid-state control of the contactor coil. Overvoltage damping of the operating mechanism coil is already integrated in the electronics. The operating mechanisms are powered via a supply voltage with an operating range from 0.7 to 1.25 x U_S, optionally also controlled depending on the chosen mode of operation. Alternatively, control is via the separate 24 V DC control signal input. Various rated voltage ranges for AC/DC control are available.
  - This version is additionally available with a 24 V DC PLC relay output and a remaining lifetime indicator (RLT).

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/24229/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/24229/faq	Manuals, see • System Manual "SIRIUS – System Overview", https://support.industry.siemens.com/cs/WW/en/view/60311318 • Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", https://support.industry.siemens.com/cs/WW/en/view/60306557 • Application Manual "SIRIUS Controls with IE3/IE4 Motors, https://support.industry.siemens.com/cs/ww/en/view/94770820

Type			3RT2446	3RT2448	3RT1456	3RT1466	3RT1476
Size			S3		S6	S10	S12
General data							
Dimensions (W x H x D)							
Basic units		mm					
- Screw/spring-type terminals			70 x 140 x 152		120 x 172 x 170	145 x 210 x 202	160 x 214 x 225
• With mounted auxiliary switch block							
- Screw terminals		mm	70 x 140 x 196		120 x 172 x 217	145 x 210 x 251	160 x 214 x 271
- Spring-type terminals		mm	70 x 140 x 200		--		
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch block							
- Screw/spring-type terminals		mm	70 x 140 x 226		--		
Permissible mounting position							
The contactors are designed for operation on a vertical mounting surface.							
Upright mounting position			 Special version required		--		
Mechanical endurance							
• Basic units and Basic units with mounted auxiliary switch block		Operating cycles	10 million				
• Basic units with solid-state compatible auxiliary switch block		Operating cycles	5 million		--		
Electrical endurance for utilization category AC-1, at I_e		Operating cycles	0.5 million				

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Type		3RT2446	3RT2448	3RT1456	3RT1466	3RT1476
Size		S3		S6	S10	S12
General data (continued)						
Rated insulation voltage U_i (Pollution degree 3)	V	1 000				
Rated impulse withstand voltage U_{imp}	kV	6		8		
Protective separation between coil and main contacts acc. to IEC 60947-1, Appendix N	V	400		690		
Mirror contacts acc. to IEC 60947-4-1, Appendix F A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.						
• Integrated auxiliary switches		Yes		--		
• Removable auxiliary switch block		--		Yes		
Permissible ambient temperature						
• During operation	°C	-25 ... +60				
• During storage	°C	-55 ... +80				
Degree of protection acc. to IEC 60529						
• On front		IP20		IP00 (IP20 with box terminal/cover)		
• Connecting terminal		IP00 (for higher degree of protection: use additional terminal covers)				
Touch protection acc. to IEC 60529		Finger-safe for vertical touching from the front		Finger-safe for vertical touching from the front with cover		
Shock resistance						
• Rectangular pulse						
- AC operation	*g*/ms	10.3/5 and 10.5/10		8.5/5 and 4.2/10		
- DC operation	*g*/ms	6.7/5 and 4.0/10		8.5/5 and 4.2/10		
• Sine pulse						
- AC operation	*g*/ms	16.3/5 and 10.5/10		13.4/5 and 6.5/10		
- DC operation	*g*/ms	10.6/5 and 6.3/10		13.4/5 and 6.5/10		
Short-circuit protection						
Main circuit						
• Fuse links, operational class gG: LV HRC, type 3NA						
- Type of coordination "1"	A	250		355	500	800
• Fuse links, operational class gR: SITOR, type 3NE						
- Type of coordination "2"	A	250		350	500	710
Auxiliary circuit						
Short-circuit test						
• With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1	A	10		10		
Short-circuit protection for contactors with overload relays		On request		See Configuration Manual "Configuring SIRIUS – Selection Data for Fuseless Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/40625241		
Short-circuit protection for fuseless load feeders		See 3RA2 load feeders, from page 8/4 onwards		See 3RA1 load feeders, www.siemens.com/product?3RA1		

Type			3RT244.-.A...	3RT244.-.N.3.	3RT1456	3RT1466	3RT1476
Size			S3		S6	S10	S12
Control							
Solenoid coil operating range (AC/DC)			0.8 ... 1.1 x U_s				
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)							
• AC operation, 50 Hz, standard version	Closing	VA	296	--	--		
	P.f.		0.61	--	--		
	Closed	VA	19	--	--		
	P.f.		0.38	--	--		
• AC operation, 50/60 Hz, standard version	Closing	VA	348/296	--	--		
	P.f.		0.62/0.55	--	--		
	Closed	VA	25/18	--	--		
	P.f.		0.35/0.41	--	--		
• AC operation, 50/60 Hz, for USA/Canada	Closing	VA	326/326	--	--		
	P.f.		0.62/0.55	--	--		
	Closed	VA	22/22	--	--		
	P.f.		0.38/0.4	--	--		
• AC/DC operation	Closing for AC operation	VA	--	163	--		
	P.f.		--	--	--		
	Closed for AC operation	VA	--	3.1	--		
	P.f.		--	--	--		
	Closing for DC operation	W	--	76[1]	--		
	Closed for DC operation	W	--	1.8	--		
Power consumption of the solenoid operating mechanism (for cold coil and rated range $U_{s\,min}$ ... $U_{s\,max}$)							
• Conventional operating mechanisms							
- AC operation	Closing for $U_{s\,min}/U_{s\,max}$	VA	--		250/300	490/590	700/830
	P.f.		--		0.9		
	Closed at $U_{s\,min}/U_{s\,max}$	VA	--		4.8/5.8	5.6/6.7	7.6/9.2
	P.f.		--		0.8	0.9	
- DC operation	Closing for $U_{s\,min}/U_{s\,max}$	W	--		300/360	540/650	770/920
	Closed at $U_{s\,min}/U_{s\,max}$	W	--		4.3/5.2	6.1/7.4	8.5/10
• Solid-state operating mechanism							
- AC operation	Closing for $U_{s\,min}/U_{s\,max}$	VA	--		190/280	400/530	560/750
	P.f.		--		0.8		
	Closed at $U_{s\,min}/U_{s\,max}$	VA	--		3.5/4.8	5.5/8.5	5.6/9
	P.f. at $U_{s\,min}/U_{s\,max}$		--		0.6/0.6	0.5/0.4	
- DC operation	Closing for $U_{s\,min}/U_{s\,max}$	W	--		250/320	440/580	600/800
	Closed at $U_{s\,min}/U_{s\,max}$	W	--		2.1/2.8	2.8/3.4	3/3.6
PLC control input (IEC 61131-2, type 2)		V DC	--		24, at ≤ 30 mA power consumption		
• Operating range		V DC	--		17 ... 30		
Operating times for 1.0 x U_s[2]							
• AC operation	Closing delay	ms	13 ... 50	50 ... 70	--		
	Opening delay	ms	10 ... 21	38 ... 57	--		
• DC operation	Closing delay	ms	--	50 ... 70	--		
	Opening delay	ms	--	38 ... 57	--		
Operating times (Total break time = Opening delay + Arcing time)							
• Conventional operating mechanisms							
- For $U_{s\,min}$ ... $U_{s\,max}$	Closing delay	ms	--		25 ... 50	35 ... 50	50 ... 70
	Opening delay	ms	--		40 ... 60	50 ... 80	70 ... 100
• Solid-state operating mechanism, actuated via A1/A2							
- For $U_{s\,min}$ ... $U_{s\,max}$	Closing delay	ms	--		100 ... 120	110 ... 130	125 ... 150
	Opening delay	ms	--		80 ... 100		
• Solid-state operating mechanism, actuated via PLC input							
- For $U_{s\,min}$ ... $U_{s\,max}$	Closing delay	ms	--		40 ... 60	50 ... 65	65 ... 80
	Opening delay	ms	--		80 ... 100		
• Arcing time		ms	--		10 ... 15		

[1] In the case of DC coils, increased starting currents (2.6 A on average) arise during the first 200 ms. For direct control from a PLC, we recommend special 3RT204.-.KB4. coupling contactors with adapted power consumption, suitable for a PLC output current of 2 A (see page 3/64).

[2] The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 to 5 ms, diode assembly: 2x to 6x).

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Type			3RT2446	3RT2448	3RT1456	3RT1466	3RT1476
Size			S3		S6	S10	S12
Rated data of the main contacts							
Load rating with AC							
Utilization category AC-1, switching resistive loads							
• Rated operational currents I_e	At 40 °C up to 690 V	A	140	160	275	400	690
	At 60 °C up to 690 V	A	130	140	250	380	650[1]
	at 1 000 V	A	60	80	100	150	250
• Rated power for AC loads[2] with p.f. = 0.95 (at 60 °C)	At 230 V	kW	49	53	95	145	245
	400 V	kW	86	92	165	250	430
	500 V	kW	107	115	205	315	535
	690 V	kW	148	159	285	430	740
	1 000 V	kW	98	131	165	247	410
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm^2	50	70	2 x 70	240	2 x 240
	At 60 °C	mm^2	50		120	240	2 x 240
Utilization categories AC-2 and AC-3 With an electrical endurance of 1.3 million operating cycles							
• Rated operational currents I_e	Up to 400 V	A	44		97	138	170
	Up to 690 V	A	44		97	138	170
• Rated power for slipring or squirrel-cage motors At 50 and 60 Hz	At 230 V	kW	12.7		30	37	55
	400 V	kW	22		55	75	90
	500 V	kW	29.9		55	90	110
	690 V	kW	38.2		90	132	160
Power loss per conducting path	At I_e/AC-1	W	--		20	27	55
Load rating with DC							
Utilization category DC-1, switching resistive load (*L/R* ≤ 1 ms)							
• Rated operational currents I_e (at 60 °C)							
- 1 conducting path	Up to 24 V	A	130	140	250	380	500
	60 V	A	80		250	380	500
	110 V	A	12		18	33	
	220 V	A	2.5		3.4	3.8	
	440 V	A	0.8		0.8	0.9	
	600 V	A	0.48		0.5	0.6	
- 2 conducting paths in series	Up to 24 V	A	130	140	250	380	500
	60 V	A	130	140	250	380	500
	110 V	A	130	140	250	380	500
	220 V	A	13		20	380	500
	440 V	A	2.4		3.2	4	
	600 V	A	1.3		1.6	2	
- 3 conducting paths in series	Up to 24 V	A	130	140	250	380	500
	60 V	A	130	140	250	380	500
	110 V	A	130	140	250	380	500
	220 V	A	130	140	250	380	500
	440 V	A	6		11.5	11	
	600 V	A	3.4		4	5.2	

[1] 600 A for 3RT1476-.N. contactor

[2] Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account)

Type				3RT2446	3RT2448	3RT1456	3RT1466	3RT1476
Size				S3		S6	S10	S12
Rated data of main contacts (continued)								
Load rating with DC								
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)								
• Rated operational currents I_e (at 60 °C)								
- 1 conducting path		Up to 24 V	A	6		250	380	500
		60 V	A	3		7.5	11	
		110 V	A	1.25		2.5	3	
		220 V	A	0.35		0.6		
		440 V	A	0.15		0.17	0.18	
		600 V	A	0.1		0.12	0.125	
- 2 conducting paths in series		Up to 24 V	A	130	140	250	380	500
		60 V	A	130	140	250	380	500
		110 V	A	130	140	250	380	500
		220 V	A	1.75		2.5		
		440 V	A	0.42		0.65		
		600 V	A	0.27		0.37		
- 3 conducting paths in series		Up to 24 V	A	130	140	250	380	500
		60 V	A	130	140	250	380	500
		110 V	A	130	140	250	380	500
		220 V	A	4		250	380	500
		440 V	A	0.8		1.4		
		600 V	A	0.45		0.75		
Switching frequency								
Switching frequency *z* in operating cycles/hour								
• Contactors without overload relays	No-load switching frequency AC		1/h	5 000	1 000	2 000		
	AC/DC no-load switching frequency		1/h	--	1 000	2 000		
• Rated operation	Acc. to AC-1 (AC/DC)		1/h	650		600		
	Acc. to AC-3 (AC/DC)		1/h	800		1 000		

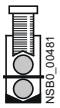
Dependence of the switching frequency z' on the operational current I' and operational voltage U':

$z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$

Type			3RT2446, 3RT2448
Size			S3
Conductor cross-sections			
Main conductors (1 or 2 conductors can be connected)			**Screw terminals**
• Solid		mm²	2 x (2.5 ... 16)[1]
• Stranded		mm²	2 x (6 ... 16)[1]; 2 x (10 ... 50)[1]; 1 x (10 ... 70)[1]
• Finely stranded with end sleeve (DIN 46228-1)		mm²	2 x (2.5 ... 35)[1]; 1 x (2.5 ... 50)[1]
• AWG cables, solid or stranded		AWG	2 x (10 ... 1/0)[1]; 1 x (10 ... 2/0)[1]
• Terminal screws			Hexagon socket, A/F 4
- Tightening torque		Nm	4.5 ... 6 (40 ... 53 lb.in)
Auxiliary and control conductors (1 or 2 conductors can be connected)			
• Solid or stranded		mm²	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• Finely stranded with end sleeve (DIN 46228-1)		mm²	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• AWG cables, solid or stranded		AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]
• Terminal screws			M3 (for Pozidriv size 2; ∅ 5 ... 6)
- Tightening torque		Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Type			3RT1456		3RT1466	3RT1476
Size			S6		S10	S12
Conductor cross-sections						
Main conductors (1 or 2 conductors can be connected)			Screw terminals			
With mounted box terminals		Type	3RT1955-4G	3RT1956-4G	3RT1966-4G	
Terminal screws			M10 (hexagon socket, A/F 4)	M10 (hexagon socket, A/F 4)	M12 (hexagon socket, A/F 5)	
• Tightening torque		Nm lb.in	10 ... 12 90 ... 110	10 ... 12 90 ... 110	20 ... 22 180 ... 195	
Front clamping point connected						
						
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	16 ... 70	16 ... 120	70 ... 240	
• Finely stranded without end sleeve		mm^2	16 ... 70	16 ... 120	70 ... 240	
• Stranded		mm^2	16 ... 70	16 ... 120	95 ... 300	
• AWG cables, solid or stranded		AWG	6 ... 2/0	6 ... 250 kcmil	3/0 ... 600 kcmil	
• Ribbon cable conductors (Number x Width x Thickness)		mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5	
Rear clamping point connected						
						
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	16 ... 70	16 ... 120	120 ... 185	
• Finely stranded without end sleeve		mm^2	16 ... 70	16 ... 120	120 ... 185	
• Stranded		mm^2	16 ... 70	16 ... 120	120 ... 240	
• AWG cables, solid or stranded		AWG	6 ... 2/0	6 ... 250 kcmil	250 ... 500 kcmil	
• Ribbon cable conductors (Number x Width x Thickness)		mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5	
Both clamping points connected (minimum cross-section 16 mm^2)						
						
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185	
• Finely stranded without end sleeve		mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185	
• Stranded		mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 70, max. 2 x 240	
• AWG cables, solid or stranded		AWG	Max. 2 x 1/0	Max. 2 x 3/0	Min. 2 x 2/0, max. 2 x 500 kcmil	
• Ribbon cable conductors (Number x Width x Thickness)		mm	Max. 2 x (6 x 15.5 x 0.8)	Max. 2 x (10 x 15.5 x 0.8)	Max. 2 x (20 x 24 x 0.5)	
Busbar connections						
• Connecting bar (max. width)		mm	17		25	
Cable lug connection			1)		2)	
• Finely stranded with cable lug		mm^2	16 ... 95		50 ... 240	
• Stranded with cable lug		mm^2	25 ... 120		70 ... 240	
• AWG cables, solid or stranded		AWG	4 ... 250 kcmil		2/0 ... 500 kcmil	
• Terminal screws			M8 x 25 (A/F 13)		M10 x 30 (A/F 17)	
- Tightening torque		Nm lb.in	10 ... 14 90 ... 124		14 ... 24 124 ... 210	
Auxiliary conductors (1 or 2 conductors can be connected)						
• Solid		mm^2	2 x (0.5 ... 1.5)[3], 2 x (0.75 ... 2.5)[3] acc. to IEC 60947; max. 2 x (0.75 ... 4)[3]			
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	2 x (0.5 ... 1.5)[3]; 2 x (0.75 ... 2.5)[3]			
• AWG cables, solid or stranded		AWG	2 x (18 ... 14)			
• Terminal screws			M3 (Pozidriv size 2)			
- Tightening torque		Nm lb.in	0.8 ... 1.2 7 ... 10.3			
Auxiliary conductors[4] (1 or 2 conductors can be connected)			Spring-type terminals			
• Operating tool[5]			3.0 x 0.5; 3.5 x 0.5			
• Solid		mm^2	2 x (0.25 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	2 x (0.25 ... 1.5)			
• Finely stranded without end sleeve		mm^2	2 x (0.25 ... 2.5)			
• AWG cables, solid or stranded		AWG	2 x (24 ... 14)			

1) 3RT1456: When connecting cable lugs according to EN 46235, use the 3RT1956-4EA1 terminal cover for conductor cross-sections from 95 mm^2 to keep the phase clearance; see page 3/116.

2) 3RT1466 and 3RT1476: When connecting cable lugs according to DIN 46234, the 3RT1966-4EA1 terminal cover must be used for conductor cross-sections of 240 mm^2 and more as well as DIN 46235 for conductor cross-sections of 185 mm^2 and more to keep the phase clearance; see page 3/116.

3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

4) Max. external diameter of the conductor insulation: 3.6 mm. An "insulation stop" must be used for conductor cross-sections ≤ 1 mm^2; see page 3/119.

5) Tool for opening the spring-type terminals: see page 3/119.

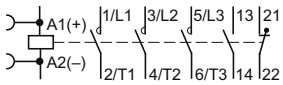
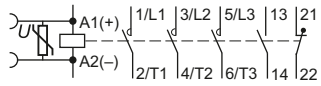
NEW SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Selection and ordering data

Size S3: AC or AC/DC operation

- Coil circuits (varistors, diodes, etc.) retrofittable
- Auxiliary switches can be retrofitted
- Main and control conductors: Screw terminals

3RT244.-1...0

Size	Rated data AC-1, t_u: 40 °C				Auxiliary contacts			Rated control supply voltage U_s	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	Operational current I_e	Ratings of AC loads (p.f. = 0.95) at 50 Hz and			Ident. No.	Version				Article No.	Price per PU			
	up to 690 V	230 V	400 V	690 V		NO	NC							
	A	kW	kW	kW				V	d					
For screw fixing and snap-on mounting onto TH 35 and TH 75 standard mounting rails														
AC operation														
														
S3	**140**	53	92	159	**11**	1	1	AC 24, 50 Hz	5	**3RT2446-1AB00**		1	1 unit	41B
								AC 110, 50 Hz	5	**3RT2446-1AF00**		1	1 unit	41B
								AC 230, 50 Hz	1	**3RT2446-1AP00**		1	1 unit	41B
	160	61	105	182	**11**	1	1	AC 24, 50 Hz	X	**3RT2448-1AB00**		1	1 unit	41B
								AC 110, 50 Hz	X	**3RT2448-1AF00**		1	1 unit	41B
								AC 230, 50 Hz	X	**3RT2448-1AP00**		1	1 unit	41B
AC/DC operation														
With integrated coil circuit (varistor)														
														
S3	**140**	53	92	159	**11**	1	1	AC 20 ... 33, 50 Hz	X	**3RT2446-1NB30**		1	1 unit	41B
								AC 84 ... 155, 50 Hz	X	**3RT2446-1NF30**		1	1 unit	41B
								AC 175 ... 280, 50 Hz	X	**3RT2446-1NP30**		1	1 unit	41B
	160	61	105	182	**11**	1	1	AC 20 ... 33, 50 Hz	X	**3RT2448-1NB30**		1	1 unit	41B
								AC 84 ... 155, 50 Hz	X	**3RT2448-1NF30**		1	1 unit	41B
								AC 175 ... 280, 50 Hz	X	**3RT2448-1NP30**		1	1 unit	41B

Other voltages according to page 4/49 on request.

For accessories and spare parts, see page 3/75 onwards.

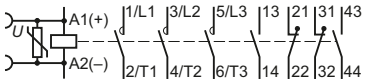
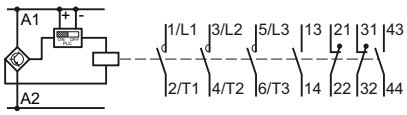
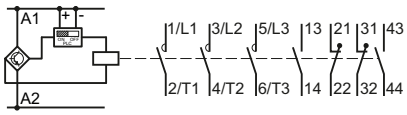
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Sizes S6 to S12: AC/DC operation (50/60 Hz AC and DC)

- Withdrawable coils with integrated coil circuit (varistor)
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections

3RT146.

Size	Rated data AC-1, t_u: 40 °C					Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	Operational current I_e	Ratings of AC loads (p f. = 0.95) at				Version				Article No.	Price per PU			
	up to 690 V	230 V	400 V	500 V	690 V	NO	NC	V AC/DC	d					
	A	kW	kW	kW	kW									
Conventional operating mechanisms														
														
S6	**275**	105	180	225	310	2	2	110 ... 127	▶	**3RT1456-6AF36**		1	1 unit	41B
								220 ... 240	▶	**3RT1456-6AP36**		1	1 unit	41B
S10	**400**	151	263	329	454	2	2	110 ... 127	▶	**3RT1466-6AF36**		1	1 unit	41B
								220 ... 240	▶	**3RT1466-6AP36**		1	1 unit	41B
S12	**690**	261	454	568	783	2	2	110 ... 127	2	**3RT1476-6AF36**		1	1 unit	41B
								220 ... 240	▶	**3RT1476-6AP36**		1	1 unit	41B
Solid-state operating mechanism														
With 24 V DC control signal input e. g. for control by PLC														
														
S6	**275**	105	180	225	310	2	2	96 ... 127	5	**3RT1456-6NF36**		1	1 unit	41B
								200 ... 277	2	**3RT1456-6NP36**		1	1 unit	41B
S10	**400**	151	263	329	454	2	2	96 ... 127	5	**3RT1466-6NF36**		1	1 unit	41B
								200 ... 277	2	**3RT1466-6NP36**		1	1 unit	41B
S12	**690**	261	454	568	783	2	2	96 ... 127	5	**3RT1476-6NF36**		1	1 unit	41B
								200 ... 277	2	**3RT1476-6NP36**		1	1 unit	41B
For 24 V DC control signal input · with indication of remaining lifetime (RLT) e.g. for control by PLC														
														
S6	**275**	105	180	225	310	1	1	96 ... 127	5	**3RT1456-6PF35**		1	1 unit	41B
								200 ... 277	5	**3RT1456-6PP35**		1	1 unit	41B
S10	**400**	151	263	329	454	1	1	200 ... 277	5	**3RT1466-6PP35**		1	1 unit	41B
S12	**690**	261	454	568	783	1	1	200 ... 277	5	**3RT1476-6PP35**		1	1 unit	41B

Other voltages according to page 4/49 on request.

For accessories and spare parts, see page 3/75 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1 (auxiliary switches)

The contactors are suitable for use in any climate.
They are finger-safe according to IEC 60529.

For accessories and spare parts, see page 3/75 onwards.

With sizes S0 and S2, two auxiliary contacts 1 NO + 1 NC are included in the basic version.

Mountable auxiliary contacts

Size S00

Four auxiliary contacts, including no more than three NC

Sizes S0 and S2

Four additional auxiliary contacts, including no more than two NC

Application

The contactors are suitable:

- For switching resistive loads
- For isolating systems with ungrounded or poorly grounded neutral conductors
- For system transfers when alternative AC power supplies are used
- For use as contactors which only carry current and do not have to switch in case of inductive loads – e.g. variable-speed operating mechanisms
- For switching mixed loads in distribution systems (e.g. for supplying heaters, lamps, motors, PC power supply units) with p.f. > 0.8 according to IEC 60947-4-1 test conditions for utilization category AC-1

For a general description of 3RT contactor, sizes S00 to S2, see from page 3/15 onwards.

Technical specifications

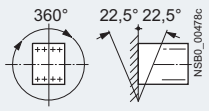
More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16165/td

FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16165/faq

Manuals, see

- System Manual "SIRIUS – System Overview", https://support.industry.siemens.com/cs/WW/en/view/60311318
- Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", https://support.industry.siemens.com/cs/WW/en/view/60306557
- Application Manual "SIRIUS Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820

Type		3RT2316, 3RT2317	3RT2325 ... 3RT2327	3RT2336, 3RT2337
Size		S00	S0	S2
General data				
Dimensions (W x H x D) AC or DC operation			(The values in brackets apply for DC operation)	
• Basic units				
- Screw terminals	mm	45 x 58 x 73	60 x 85 x 97 (107)	75 x 114 x 130
- Spring-type terminals	mm	45 x 70 x 73	61 x 102 x 97 (107)	--
• Basic unit with mounted auxiliary switch block				
- Screw terminals	mm	45 x 58 x 117	60 x 85 x 141 (151)	75 x 114 x 174
- Spring-type terminals	mm	45 x 70 x 121	61 x 102 x 145 (1 55)	--
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch block				
- Screw terminals	mm	45 x 58 x 147	60 x 85 x 171 (181)	75 x 114 x 204
- Spring-type terminals	mm	45 x 70 x 147	61 x 102 x 171 (181)	--
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.				
Upright mounting position		 Special version required		
Mechanical endurance	Operating cycles	30 million	10 million	
Electrical endurance at I_e/AC-1	Operating cycles	Approx. 0.5 million		
Rated insulation voltage U_i (Pollution degree 3)	V	690		
Permissible ambient temperature				
• During operation	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Degree of protection acc. to IEC 60529				
• On front		IP20 (screw terminals and spring-type terminals)		
• Connecting terminal		IP20 (screw terminals and spring-type terminals)		IP00 (for higher degree of protection, use additional terminal covers)
Touch protection acc. to IEC 60529		Finger-safe (screw terminals and spring-type terminals)		Finger-safe for vertical touching from the front

Type			3RT2316	3RT2317	3RT2325	3RT2326	3RT2326-…..-4AA0	3RT2327	3RT2336	3RT2337
Size			S00		S0				S2	
Short-circuit protection										
Main circuit										
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB, NEOZED, type 5SE acc. to IEC 60947-4-1/EN 60947-4-1										
• Type of coordination "1"		A	35		63		80	63	160	
• Type of coordination "2"		A	20				50	20	80	
• Weld-free		A	10		16				On request	
Control										
Solenoid coil operating range										
• AC operation	At 50 Hz At 60 Hz		0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s		0.8 ... 1.1 x U_s 0.8 ... 1.1 x U_s					
• DC operation	At 50 °C At 60 °C		0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s						-- --	
• AC/DC operation			--						0.8 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)										
• AC operation, 50 Hz, standard version										
- Closing		VA	--		77				190	
- P.f.			--		0.82				0.72	
- Closed		VA	--		9.8				16	
- P.f.			--		0.25				0.37	
• AC operation, 50/60 Hz, standard version										
- Closing		VA	27/24.3	37/33	81/79				210/188	
- P.f.			0.8/0.75	0.8/0.75	0.72/0.74				0.69/0.65	
- Closed		VA	4.2/3.3	5.7/4.4	10.5/8.5				17.2/16.5	
- P.f.			0.25/0.25	0.25/0.25	0.25/0.28				0.36/0.39	
• AC operation, 60 Hz, USA, Canada										
- Closing		VA	31.7	43	87				212	
- P.f.			0.77	0.77	0.76				0.67	
- Closed		VA	4.8	6.5	9.4				18.5	
- P.f.			0.25	0.25	0.28				0.37	
• AC/DC operation										
- Closing for AC operation		VA	--						40	
- P.f.			--						0.64/0.5	
- Closed for AC operation		VA	--						2	
- P.f.			--						1	
- Closing for DC operation		W	--						25	
- Closed for DC operation		W	--						1	
• DC operation (closing = closed)		W	4		5.9				--	
Operating times for 0.8 ... 1.1 x U_s[1] Total break time = Opening delay + Arcing time										
• AC operation										
- Closing delay		ms	8 ... 35	8 ... 33	9 ... 38	8 ... 40			10 ... 80	
- Opening delay		ms	3.5 ... 14	4 ... 15	4 ... 16	4 ... 16			10 ... 18	
• DC operation										
- Closing delay		ms	30 ... 100		50 ... 170				--	
- Opening delay		ms	7 ... 13		15 ... 17.5				--	
• AC/DC operation										
- Closing delay		ms	--						50 ... 110	
- Opening delay		ms	--						35 ... 55	
• Arcing time		ms	10 ... 15		10				10 ... 20	

[1] With size S00, DC operation: Operating times for 0.85 to 1.1 x U_s.

SIRIUS 3RT23 contactors, 4-pole

Type				3RT2316	3RT2317	3RT2325	3RT2326	3RT2326-.....-4AA0	3RT2327	3RT2336	3RT2336-.....-4AA0	3RT2337
Size				S00		S0				S2		
Rated data of the main contacts												
Load rating with AC												
Utilization category AC-1, switching resistive loads												
• Rated operational currents I_e	At 40 °C, up to 690 V		A	18	22	35	40		50	60		110
	At 60 °C, up to 690 V		A	16	20	30	35		42	55		95
• Rated power of AC loads P.f. = 0.95 (at 60 °C)	At 230 V		kW	6	7.5	11	13		16	21		36
	400 V		kW	10.5	13	20	23		28	36		63
• Minimum conductor cross-section for loads with I_e	At 40 °C		mm^2	2.5	4	10				16		35
	At 60 °C		mm^2	2.5		6	10			16		35
Utilization categories AC-2 and AC-3												
• Rated operational currents I_e	at 60 °C, at 400 V		A	9	12	15.5		32	15.5	--	50	--
	At 690 V		A	--		--		21	--	--	24	--
• Rated power of slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V		kW	2.2	3	4		7.5	4	--	15	--
	400 V		kW	4	5.5	7.5		15	7.5	--	22	--
	690 V		kW	--	--	--		18.5	--	--	22	--
Load rating with DC												
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)												
• Rated operational currents I_e (at 60 °C)												
- 1 conducting path	Up to 24 V		A	16	20	30	35		42	55		
	60 V		A	16	20	20				23		
	110 V		A	2.1		4.5						
	220 V		A	0.8		1						
	440 V		A	0.6		0.4						
- 2 conducting paths in series	Up to 24 V		A	16	20	30	35		42	55		
	60 V		A	16	20	30	35		42	55		
	110 V		A	12		30	35		42	45		
	220 V		A	1.6		1				5		
	440 V		A	0.8		1						
- 3 conducting paths in series	Up to 24 V		A	16	20	30	35		42	55		
	60 V		A	16	20	30	35		42	55		
	110 V		A	16	20	30	35		42	55		
	220 V		A	16	20	30	35		42	45		
	440 V		A	1.3		2.9						
- 4 conducting paths in series	Up to 24 V		A	16	20	30	35		42	55		65
	60 V		A	16	20	30	35		42	55		65
	110 V		A	16	20	30	35		42	55		
	220 V		A	16	20	30	35		42	45		55
	440 V		A	1.3		2.9						3.5
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)												
• Rated operational currents I_e (at 60 °C)												
- 1 conducting path	Up to 24 V		A	16	20					35		
	60 V		A	0.5		5						
	110 V		A	0.15		2.5						
	220 V		A	--		1						
	440 V		A	--		0.09				0.1		
- 2 conducting paths in series	Up to 24 V		A	16	20	30	35		42	55		
	60 V		A	5		30	35		42	45		
	110 V		A	0.35		15				25		
	220 V		A	--		3				5		
	440 V		A	--		0.27						
- 3 conducting paths in series	Up to 24 V		A	16	20	30	35		42	55		
	60 V		A	16	20	30	35		42	55		
	110 V		A	16	20	30	35		42	45		
	220 V		A	1.5		10				25		
	440 V		A	0.2		0.6						
- 4 conducting paths in series	Up to 24 V		A	16	20	30	35		42	55		65
	60 V		A	16	20	30	35		42	55		65
	110 V		A	16	20	30	35		42	45		55
	220 V		A	1.5		30	35		42	25		55
	440 V		A	0.2		0.6						0.8

Data for North America

For technical specifications of 3RT contactors, see from page 3/49 onwards.

Selection and ordering data

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

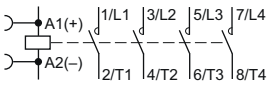
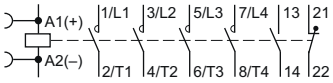
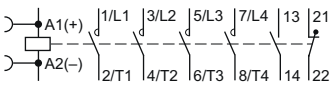
3RT231.-1A.00

3RT231.-2A.00

3RT232.-1A.00

3RT232.-2A.00

3RT233.-1A.00

Rated data AC-1, t_u: 40/60 °C		Auxiliary contacts			Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals	
Operational current I_e up to 690 V	Ratings of AC loads (p.f. = 0.95) at 50 Hz and **400 V**	Ident. No.	Version NO	Version NC			Article No.	Price per PU		Article No.	Price per PU
A	**kW**				V AC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail											
Size S00[1]											
											
18 / 16	**12 / 11**	**--**	--	--	24, 50/60 Hz	2	**3RT2316-1AB00**		5	**3RT2316-2AB00**	
					110, 50/60 Hz	5	**3RT2316-1AF00**		5	**3RT2316-2AF00**	
					230, 50/60 Hz	2	**3RT2316-1AP00**		2	**3RT2316-2AP00**	
22 / 20	**14.5 / 13**	**--**	--	--	24, 50/60 Hz	2	**3RT2317-1AB00**		5	**3RT2317-2AB00**	
					110, 50/60 Hz	5	**3RT2317-1AF00**		5	**3RT2317-2AF00**	
					230, 50/60 Hz	▶	**3RT2317-1AP00**		2	**3RT2317-2AP00**	
Size S0											
Auxiliary contacts 1 NO + 1 NC, Ident. No. **11**											
											
35 / 30[2]	**22 / 20**	**11**	1	1	24, 50 Hz	5	**3RT2325-1AB00**		5	**3RT2325-2AB00**	
					110, 50 Hz	5	**3RT2325-1AF00**		5	**3RT2325-2AF00**	
					230, 50 Hz	5	**3RT2325-1AP00**		2	**3RT2325-2AP00**	
40 / 35[2]	**26 / 23**	**11**	1	1	24, 50 Hz	5	**3RT2326-1AB00**		5	**3RT2326-2AB00**	
					110, 50 Hz	5	**3RT2326-1AF00**		5	**3RT2326-2AF00**	
					230, 50 Hz	2	**3RT2326-1AP00**		2	**3RT2326-2AP00**	
50[2]	**33 / 28**	**11**	1	1	24, 50 Hz	5	**3RT2327-1AB00**		5	**3RT2327-2AB00**	
					110, 50 Hz	5	**3RT2327-1AF00**		5	**3RT2327-2AF00**	
					230, 50 Hz	2	**3RT2327-1AP00**		2	**3RT2327-2AP00**	
Size S2											
Auxiliary contacts 1 NO + 1 NC, Ident. No. **11**											
											
60 / 55	**36**	**11**	1	1	24, 50 Hz	5	**3RT2336-1AB00**			--	
					110, 50 Hz	5	**3RT2336-1AF00**			--	
					230, 50 Hz	▶	**3RT2336-1AP00**			--	
110 / 95	**63**	**11**	1	1	24, 50 Hz	5	**3RT2337-1AB00**			--	
					110, 50 Hz	5	**3RT2337-1AF00**			--	
					230, 50 Hz	▶	**3RT2337-1AP00**			--	

[1] For size S00: Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s
- at 60 Hz: 0.85 to 1.1 x U_s.

[2] Minimum conductor cross-section 10 mm².

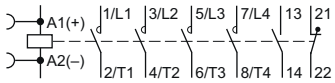
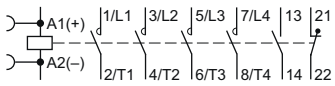
Other voltages according to page 4/49 on request.
For accessories and spare parts, see page 3/75 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RT23 contactors, 4-pole

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

Rated data			Auxiliary contacts			Rated control supply voltage U_s	SD	**Screw terminals**	SD	**Spring-type terminals** for auxiliary and control circuits
AC-2/AC-3, t_u: Up to 60 °C		AC-1, t_u: 40/60 °C	Ident. No.	Version				Article No. Price per PU		Article No. Price per PU
Operational current I_e At 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V		NO	NC					
A	**kW**	A				V AC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S0										
Version for AC-3 motor loads										
Auxiliary contacts 1 NO + 1 NC, Ident. No. **11**										
										
32	**15**	40/35	**11**	1	1	230, 50 Hz	5	**3RT2326-1AP00-4AA0**		**--**
Size S2										
Version for AC-3 motor loads										
Auxiliary contacts 1 NO + 1 NC, Ident. No. **11**										
										
50	**22**	60/55	**11**	1	1	230, 50 Hz	5	**3RT2336-1AP00-4AA0**		**--**

Other voltages according to page 4/49 on request.

For accessories and spare parts, see page 3/75 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

DC operation

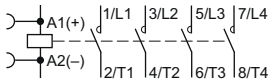
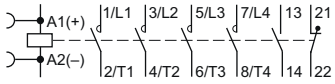
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT231.-1B.40

3RT231.-2B.40

3RT232.-1B.40

3RT232.-2B.40

Rated data AC-1, I_u: 40/60 °C		Auxiliary contacts			Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals	
Operational current I_e up to 690 V	Ratings of AC loads (p f. = 0.95) at 50 Hz and **400 V**	Ident. No.	Version NO	Version NC			Article No.	Price per PU		Article No.	Price per PU
A	**kW**				V DC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail											
Size S00											
											
18 / 16	**12 / 11**	--	--	--	24	2	**3RT2316-1BB40**		▶	**3RT2316-2BB40**	
					220	5	**3RT2316-1BM40**		5	**3RT2316-2BM40**	
22 / 20	**14.5 / 13**	--	--	--	24	▶	**3RT2317-1BB40**		▶	**3RT2317-2BB40**	
					220	5	**3RT2317-1BM40**		5	**3RT2317-2BM40**	
Size S0											
Auxiliary contacts 1 NO + 1 NC, Ident. No. 11											
											
35 / 30[1]	**22 / 20**	**11**	1	1	24	2	**3RT2325-1BB40**		2	**3RT2325-2BB40**	
					220	5	**3RT2325-1BM40**		5	**3RT2325-2BM40**	
40 / 35[1]	**26 / 23**	**11**	1	1	24	2	**3RT2326-1BB40**		2	**3RT2326-2BB40**	
					220	5	**3RT2326-1BM40**		5	**3RT2326-2BM40**	
50[1]	**33 / 28**	**11**	1	1	24	2	**3RT2327-1BB40**		2	**3RT2327-2BB40**	
					220	5	**3RT2327-1BM40**		5	**3RT2327-2BM40**	

[1] Minimum conductor cross-section 10 mm².

For accessories and spare parts, see page 3/75 onwards.

Other voltages according to page 4/49 on request.

SIRIUS 3RT23 contactors, 4-pole

AC/DC operation (50/60 Hz AC and DC)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT233.-1N.30

Rated data AC-1, t_u: 40/60 °C		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals for auxiliary and control circuits	
Operational current I_e up to 690 V	Ratings of AC loads (p f. = 0.95) at 50 Hz and 400 V	Ident. No.	Version			Article No.	Price per PU		Article No.	Price per PU
A	kW		NO NC	V AC/DC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S2										
With integrated coil circuit (varistor)										
Auxiliary contacts 1 NO + 1 NC, Ident. No. 11										
60 / 55	**36**	**11**	1 1	20 ... 33 175 ... 280	▶ 5	**3RT2336-1NB30** **3RT2336-1NP30**			**--** **--**	
110 / 95	**63**	**11**	1 1	20 ... 33 175 ... 280	5 5	**3RT2337-1NB30** **3RT2337-1NP30**			**--** **--**	

Other voltages according to page 4/49 on request.

For accessories and spare parts, see page 3/75 onwards.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

Rated data			Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals for auxiliary and control circuits	
AC-2/AC-3, t_u: Up to 60 °C		AC-1, t_u: 40/60 °C	Ident. No.	Version			Article No.	Price per PU		Article No.	Price per PU
Operational current I_e At 400 V	Ratings of three-phase motors at 50 Hz and 400 V	Operational current I_e up to 690 V									
A	kW	A		NO NC	V AC/DC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail											
Size S2											
Version for AC-3 motor loads											
With integrated coil circuit (varistor)											
Auxiliary contacts 1 NO + 1 NC, Ident. No. 11											
50	**22**	60/55	**11**	1 1	20 ... 33	5	**3RT2336-1NB30-4AA0**			**--**	

Other voltages according to page 4/49 on request.

For accessories and spare parts, see page 3/75 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1 (auxiliary switches)

The contactors are suitable for use in any climate.
They are finger-safe according to IEC 60529.

The accessories for the 3-pole SIRIUS 3RT2 contactors can also be used for the 4-pole versions, see from page 3/75 onwards.

With sizes S0 and S2, two auxiliary contacts 1 NO + 1 NC are included in the basic version.

Mountable auxiliary contacts

Size S00 to S2

Four additional auxiliary contacts, including no more than two NC.

For a general description of sizes S00 to S2 of 3RT2 contactors, see from page 3/15 onwards.

Application

The contactors are suitable:

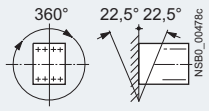
- For changing the polarity of hoisting gear motors
- For switching two separate loads

Note:

Single device for pole reversal; not suitable for reversing duty. 3RT25 contactors are not suitable for switching a load between two current sources.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16169/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16169/faq Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16169/man

Type		3RT2516 ... 3RT2518	3RT2526	3RT2535, 3RT2536	
Size		S00	S0	S2	
General data					
Dimensions (W x H x D)		See 3RT231., page 4/14	See 3RT232., page 4/14	See 3RT233., page 4/14	
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.					
Upright mounting position		 Special version required			
Mechanical endurance	Operating cycles	30 million	10 million		
Electrical endurance at I_e/AC-1	Operating cycles	Approx. 0.5 million			
Rated insulation voltage U_i (Pollution degree 3)	V	690			
Permissible ambient temperature					
• During operation	°C	-25 ... +60			
• During storage	°C	-55 ... +80			
Degree of protection acc. to IEC 60529					
• On front		IP20 (screw terminals and spring-type terminals)			
• Connecting terminal		IP20 (screw terminals and spring-type terminals)		IP00 (for higher degree of protection, use additional terminal covers)	
Touch protection acc. to IEC 60529		Finger-safe (screw terminals and spring-type terminals)		Finger-safe for vertical touching from the front	
Short-circuit protection					
Main circuit Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC 60947-4-1/EN 60947-4-1					
• Type of coordination "1"	A	35	63	125	160
• Type of coordination "2"	A	20	35	63	80
• Weld-free	A	10	16	--	--

SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

Type				3RT2516	3RT2517	3RT2518	3RT2526		3RT2535	3RT2536
Size				S00			S0		S2	
Control										
Solenoid coil operating range										
• AC operation	At 50 Hz			0.8 ... 1.1 x U_s						
	At 60 Hz			0.85 ... 1.1 x U_s			0.8 ... 1.1 x U_s			
• DC operation	Up to 50 °C			0.8 ... 1.1 x U_s					--	
	Up to 60° C			0.85 ... 1.1 x U_s					--	
• AC/DC operation				--					0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)				See 3RT2316, page 4/15	See 3RT2317, page 4/15		See 3RT2326, page 4/15		See 3RT233., page 4/15	
Operating times for 0.8 ... 1.1 x U_s Total break time = Opening delay + Arcing time				See 3RT2316, page 4/15	See 3RT2317, page 4/15		See 3RT2326, page 4/15		See 3RT233., page 4/15	
Rated data of the main contacts										
Load rating with AC										
Utilization category AC-1, switching resistive loads										
• Rated operational currents I_e	At 40 °C up to 690 V		A	18	22		40		60	70
	At 60 °C up to 690 V		A	16	20		35		55	60
• Rated power of AC loads P.f. = 0.95 (at 60 °C)	At 230 V		kW	6	7.5		13.3		21	23
	400 V		kW	10.5	13		23		36	39
• Minimum conductor cross-section for loads with I_e	At 40 °C		mm^2	2.5	4		10		16	25
Utilization categories AC-2 and AC-3							AC[1]	DC[1]		
• Rated operational currents I_e (at 60 °C)	NO up to 400 V		A	9	12	16	25		35	41
	NC up to 400 V		A	9			25	20	35	41
• Rated power of slipring or squirrel-cage motors At 50 and 60 Hz	NO at 230 V		kW	2.2	3	4	5.5		11	
	NC at 230 V		kW	2.2			5.5		11	
	NO at 400 V		kW	4	5.5	7.5	11		18.5	22
	NC at 400 V		kW	4			11	7.5	18.5	22
Load rating with DC										
Utilization category DC-1, switching resistive load ($L/R \leq 1$ ms)										
• Rated operational currents I_e (at 60 °C)										
- 1 conducting path	Up to 24 V		A	16	20		35		55	60
	60 V		A	16	20		20		23	
	110 V		A	2.1			4.5			
	220 V		A	0.8			1			
	440 V		A	0.6			0.4			
- 2 conducting paths in series	Up to 24 V		A	16	20		35		55	
	60 V		A	16	20		35		45	
	110 V		A	12			35		45	
	220 V		A	1.6			5			
	440 V		A	0.8			1			
Utilization category DC-3/DC-5[2], shunt-wound and series-wound motors ($L/R \leq 15$ ms)										
• Rated operational currents I_e (at 60 °C)										
- 1 conducting path	Up to 24 V		A	16	20		20		35	
	60 V		A	0.5			5		6	
	110 V		A	0.15			2.5			
	220 V		A	0.75			1			
	440 V		A	--			0.09		0.1	
- 2 conducting paths in series	Up to 24 V		A	16	20		35		55	
	60 V		A	5			35		45	
	110 V		A	0.35			15		25	
	220 V		A	--			3		5	
	440 V		A	--			0.27			

[1] Values for devices with AC and DC operation: For 3RT2526 with DC operation, different values apply to AC-2 and AC-3 for the NC.

[2] For U_s > 24 V, the rated operational currents I_e for the NC contact current paths are equal to 50 % of the values for the NO contact current paths.

Selection and ordering data

AC operation

Single device for pole reversal (not suitable for reversing duty)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

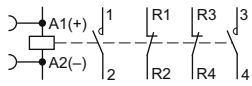
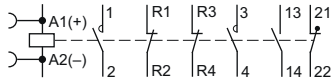
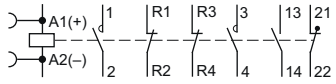

3RT251.-1A.00


3RT251.-2A.00


3RT252.-1A.00


3RT252.-2A.00


3RT253.-1A.00

Rated data			Auxiliary contacts			Rated control supply voltage U_s	SD	Screw terminals	SD	Spring-type terminals
AC-2/AC-3, I_u: Up to 60 °C		AC-1, I_u: 40/60 °C	Ident. No.	Version						
Operational current I_e At 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690		NO	NC			Article No. / Price per PU		Article No. / Price per PU
A	**kW**	A		NO	NC	V AC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S00[1]										
										
9	**4**	18 / 16	**--**	--	--	24, 50/60 Hz	5	**3RT2516-1AB00**	5	**3RT2516-2AB00**
						110, 50/60 Hz	5	**3RT2516-1AF00**	5	**3RT2516-2AF00**
						230, 50/60 Hz	2	**3RT2516-1AP00**	2	**3RT2516-2AP00**
12/9[2]	**5.5/4**[2]	22 / 20	**--**	--	--	24, 50/60 Hz	5	**3RT2517-1AB00**	5	**3RT2517-2AB00**
						110, 50/60 Hz	5	**3RT2517-1AF00**	5	**3RT2517-2AF00**
						230, 50/60 Hz	▶	**3RT2517-1AP00**	2	**3RT2517-2AP00**
16/9[2]	**7.5/4**[2]	22 / 20	**--**	--	--	24, 50/60 Hz	5	**3RT2518-1AB00**	5	**3RT2518-2AB00**
						110, 50/60 Hz	5	**3RT2518-1AF00**	5	**3RT2518-2AF00**
						230, 50/60 Hz	2	**3RT2518-1AP00**	5	**3RT2518-2AP00**
Size S0										
Auxiliary contacts 1 NO + 1 NC, Ident. No. **11**										
										
25	**11**	40 / 35	**11**	1	1	24, 50 Hz	5	**3RT2526-1AB00**	5	**3RT2526-2AB00**
						110, 50 Hz	5	**3RT2526-1AF00**	5	**3RT2526-2AF00**
						230, 50 Hz	2	**3RT2526-1AP00**	2	**3RT2526-2AP00**
Size S2										
Auxiliary contacts 1 NO + 1 NC, Ident. No. **11**										
										
35	**18.5**	60 / 55	**11**	1	1	24, 50 Hz	2	**3RT2535-1AB00**		--
						110, 50 Hz	2	**3RT2535-1AF00**		--
						230, 50 Hz	2	**3RT2535-1AP00**		--
41	**22**	70 / 60	**11**	1	1	24, 50 Hz	5	**3RT2536-1AB00**		--
						110, 50 Hz	5	**3RT2536-1AF00**		--
						230, 50 Hz	2	**3RT2536-1AP00**		--

[1] For size S00
- Coil operating range at 50 Hz: 0.8 to 1.1 x U_s
- Coil operating range at 60 Hz: 0.85 to 1.1 x U_s.

[2] Values for NO contact/NC contact. The NC contact can switch no more than 4 kW.

Other voltages according to page 4/49 on request.
For accessories and spare parts, see page 3/75 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

DC operation

Single device for pole reversal (not suitable for reversing duty)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

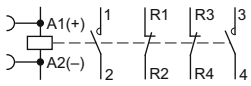

3RT251.-1B.40

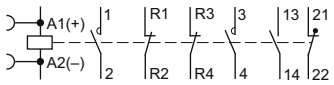

3RT251.-2B.40


3RT252.-1B.40


3RT252.-2B.40

Rated data			Auxiliary contacts			Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals	
AC-2/AC-3, t_u: Up to 60 °C		AC-1, t_u: 40/60 °C	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
Operational current I_e At 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690		NO	NC							
A	**kW**	A		NO	NC	V DC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S00												
9	**4**	18 / 16	**--**	--	--	24	▶	**3RT2516-1BB40**		2	**3RT2516-2BB40**	
						220		**3RT2516-1BM40**		5	**3RT2516-2BM40**	
12/9[1]	**5.5/4[1]**	22 / 20	**--**	--	--	24	2	**3RT2517-1BB40**		2	**3RT2517-2BB40**	
						220	5	**3RT2517-1BM40**		5	**3RT2517-2BM40**	
16/9[1]	**7.5/4[1]**	22 / 20	**--**	--	--	24	2	**3RT2518-1BB40**		2	**3RT2518-2BB40**	
						220	5	**3RT2518-1BM40**		5	**3RT2518-2BM40**	
Size S0												
Auxiliary contacts 1 NO + 1 NC, Ident. No. **11**												
25 (20)[2]	**11 (7.5)[2]**	40 / 35	**11**	1	1	24	2	**3RT2526-1BB40**		2	**3RT2526-2BB40**	
						220	5	**3RT2526-1BM40**		5	**3RT2526-2BM40**	





1) Values for NO contact/NC contact. The NC contact can switch no more than 4 kW.

2) Value in brackets for NC contact (the deviating value for the NC contact applies only for devices with DC operation).

Other voltages according to page 4/49 on request.

For accessories and spare parts, see page 3/75 onwards.

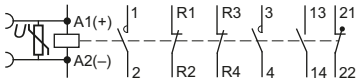
* You can order this quantity or a multiple thereof.
Illustrations are approximate.

AC/DC operation

Single device for pole reversal (not suitable for reversing duty)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT253.-1N.30

Rated data			Auxiliary contacts			Rated control supply voltage U_s	SD	**Screw terminals**	SD	**Spring-type terminals** for auxiliary and control circuits
AC-2/AC-3, t_u: Up to 60 °C		AC-1, t_u: 40/60 °C	Ident. No.	Version						
Operational current I_e	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to						Article No. Price per PU		Article No. Price per PU
At 400 V	**400 V**	690								
A	**kW**	A		NO	NC	V AC/DC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S2										
With integrated coil circuit (varistor)										
Auxiliary contacts 1 NO + 1 NC, Ident. No. **11** 										
35	**18.5**	60 / 55	**11**	1	1	20 ... 33	2	**3RT2535-1NB30**		**--**
						83 ... 155	5	**3RT2535-1NF30**		**--**
						175 ... 280	5	**3RT2535-1NP30**		**--**
41	**22**	70 / 60	**11**	1	1	20 ... 33	2	**3RT2536-1NB30**		**--**
						83 ... 155	5	**3RT2536-1NF30**		**--**
						175 ... 280	5	**3RT2536-1NP30**		**--**

Other voltages according to page 4/49 on request.

For accessories and spare parts, see page 3/75 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Overview

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1,
IEC 60831-1, EN 60831-1,
IEC 61921, EN 61921

The 3RT26 contactors are suitable for use in any climate. They are finger-safe according to IEC 60529.

Function

The 3RT26 contactors for capacitive loads (AC-6b) are special versions of the 3RT20 contactors size S00, S0 and S2 which are configured for switching banks of capacitors.

They are designed to convey the inrush current in such applications, and are weld-resistant in compliance with the technical specifications.

The 3RT26 contactors are suitable for choked and unchoked capacitors. Besides switching power capacitors in reactive-current compensation systems, they are also used to switch converters.

In the case of 3RT26 contactors, the precharging resistors are an integral component of the contactor. The precharging resistors are activated via leading auxiliary contacts before the main contacts close. During switching, after attenuation of the peak current, they are decoupled again. Attenuation of the inrush current peaks also reduces interfering harmonics in the supply.

Notes:

Only switching onto discharged capacitors is permitted with 3RT26 contactors.

Manual operation for function tests is not permitted. The series resistors must not be removed.

Auxiliary switches

The variance of unassigned auxiliary switches has been increased; for available versions, see "Selection and ordering data", page 4/31. Details of deviating versions are available on request.

In sizes S00 and S0, the auxiliary switch block which is snapped onto the capacitor contactor contains the three leading NO contacts and one unassigned auxiliary contact. In addition, another one (S00) or two (S0) unassigned auxiliary contacts are provided in the basic unit.

The fitting of auxiliary switches for 3RT26 contactors in sizes S00 and S0 of the respective version is not expandable. For size S2, unassigned auxiliary switches are implemented by means of lateral auxiliary switch blocks. More auxiliary switch blocks can be mounted laterally corresponding to the 3RT20 contactors.

Devices with 2 NC contacts are now consistently available in all power quantities.

Technical specifications

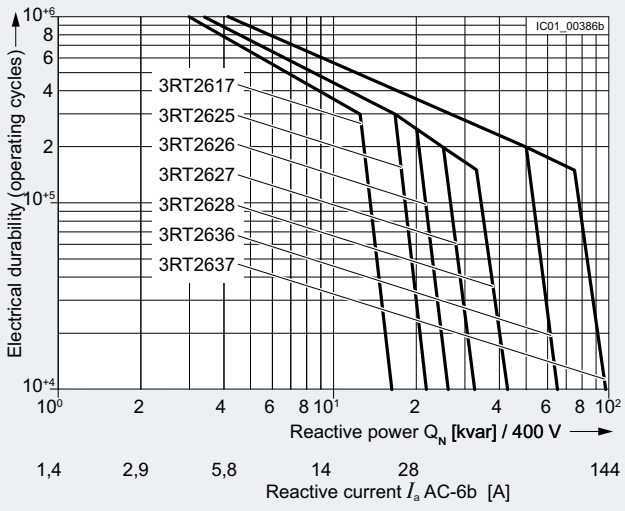
More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16171/td	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16171/man

Type	**3RT26**
Size	**S00 ... S2**

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching capacitive loads (AC-6b) depending on the reactive power Q_N and rated operational voltage.

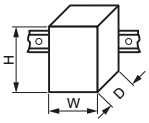
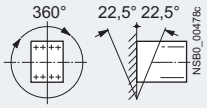
The rated operational current I_e in accordance with utilization category AC-6b (breaking of 1.35 times the rated operational current) is specified for a contact service life of approximately 150 000 to 200 000 operating cycles.



All technical specifications not mentioned in the table below are identical to those of the 3RT20 contactors:

- For size S00 as for the 3RT201 contactors
- For size S0 as for the 3RT202 contactors
- For size S2 as for the 3RT203 contactors

See page 3/19 onwards.

Type		3RT2617	3RT2625	3RT2626	3RT2627	3RT2628	3RT2636	3RT2637
Size		S00	S0				S2	
General data								
Dimensions (W x H x D) including auxiliary switches and connecting cables 								
• AC operation	mm	45 x 125 x 120	45 x 135 x 155			45 x 150 x 155	65 x 114 x 130	
• DC operation, AC/DC operation	mm	45 x 125 x 120	45 x 135 x 165			45 x 150 x 165	65 x 114 x 130	
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.								
Mechanical endurance								
• Basic units with mounted auxiliary switch block	Operating cycles	3 million						
Electrical endurance For apparent power at 400 V	kvar	12.5	16.7	20	25	33	50	75
	Operating cycles	300 000	200 000			150 000	200 000	150 000
Rated insulation voltage U_i (Pollution degree 3)	V	690						
Rated impulse withstand voltage U_{imp}	kV	6						
Protective separation between coil and main contacts According to IEC 60947-1, Appendix N	V	400						
Permissible ambient temperature								
• Mode[1]	°C	-25 ... +60						
• During storage	°C	-55 ... +80						
Degree of protection acc. to IEC 60529								
• On front		IP20						
• Connecting terminal		IP20					IP00 (for higher degree of protection, use additional terminal covers)	
Touch protection acc. to IEC 60529		Finger-safe					Finger-safe for vertical touching from the front	
Shock resistance								
• Rectangular pulse	g/ms	6.7/5 and 4.2/10	7.5/5 and 4.7/10	8.3/5 and 5.3/10			6.8/5 and 4/10	
• Sine pulse	g/ms	10.5/5 and 6.6/10	11.8/5 and 7.4/10	13.5/5 and 8.3/10			10.6/5 and 6.2/10	
Short-circuit protection								
Main circuit								
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC 60947-4-1/EN 60947-4-1								
- Type of coordination "1"	A	25 ... 40	32 ... 80	40 ... 80	50 ... 100	63 ... 100	100 ... 160	160 ... 200
Auxiliary circuit								
• With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1	A	10						
• With miniature circuit breaker with C characteristic With short-circuit current I_k = 400 A	A	10						

[1] A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Type			3RT2617 -1A, -1B	3RT2625 -1A, -1B	3RT2626 -1A, -1B	3RT2627 -1A, -1B	3RT2628 -1A, -1B	3RT2636 -1A	3RT2637 -1A
Size			S00	S0				S2	
Control									
Solenoid coil operating range									
• AC operation	50 Hz		0.8 ... 1.1 x U_s						
	60 Hz		0.85 ... 1.1 x U_s	0.8 ... 1.1 x U_s				--	
• DC operation	At 50 °C		0.8 ... 1.1 x U_s					--	
	At 60 °C		0.85 ... 1.1 x U_s					--	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)									
• AC operation, 50 Hz, standard version									
- Closing		VA	--	77				190	
- P.f.			--	0.82				0.72	
- Closed		VA	--	9.8				16	
- P.f.			--	0.25				0.37	
• AC operation, 50/60 Hz, standard version									
- Closing		VA	49	81/79				210/188	
- P.f.			0.8	0.72/0.74				0.69/0.65	
- Closed		VA	7.8	10.5/8.5				17.2/16.5	
- P.f.			0.25	0.25/0.28				0.36/0.39	
• DC operation									
- Closing		W	4	5.9				--	
- Closed		W	4	5.9				--	
Maximum permissible residual current of the electronics (with 0 signal)[1]									
• AC operation (230 V/U_s)		mA	4[1]	7				--	
• DC operation (24 V/U_s)		mA	10[1]	16				--	
Operating times for 0.8 ... 1.1 x U_s[2] Total break time = Opening delay + Arcing time									
• AC operation									
- Closing delay		ms	8 ... 33	9 ... 38	8 ... 40			10 ... 80	
- Opening delay		ms	4 ... 15	4 ... 16				10 ... 18	
• DC operation									
- Closing delay		ms	30 ... 100	55 ... 80	50 ... 170			--	
- Opening delay		ms	7 ... 13	16 ... 17	15 ... 18			--	
• Arcing time		ms	10 ... 15						

[1] Size S00: The 3RT2916-1GA00 additional load module is recommended for higher residual currents, see page 3/118.

[2] With size S00, DC operation: Operating times at 0.85 to 1.1 x U_s.

Type		3RT262.-1NB35	3RT262.-1NF35	3RT262.-1NP35	3RT263.-1N.35
Size		S0			S2
Control					
Solenoid coil operating range					
• AC/DC operation (50/60 Hz AC and DC)		--	0.7 ... 1.3 x U_s		0.8 ... 1.1 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)					
• AC operation, 50/60 Hz, standard version					
- Closing	VA	6.6/6.7	11.9/12.0	12.7/14.7	40
- P.f.		0.98/0.98			0.64/0.5
- Closed	VA	1.9/2.0	1.6/1.8	3.9/4.3	2
- P.f.		0.86/0.82	0.79/0.74	0.51/0.56	0.36/0.39
• DC operation					
- Closing	W	5.9	10.2	14.3	25
- Closed	W	1.4	1.3	1.9	1
Maximum permissible residual current of the electronics (with 0 signal)					
• AC operation (230 V/U_s)	mA	7			< 20
• DC operation (24 V/U_s)	mA	16			< 20
Operating times for 0.8 ... 1.1 x U_s Total break time = Opening delay + Arcing time					
• AC/DC operation					
- Closing delay	ms	50 ... 70			50 ... 100
- Opening delay	ms	35 ... 45			34 ... 62
• Arcing time	ms	10 ... 15			

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Type			3RT2617	3RT2625	3RT2626	3RT2627	3RT2628	3RT2636	3RT2637
Size			S00	S0				S2	
Auxiliary circuit									
Auxiliary contacts (unassigned)			1 NO + 1 NC, 2 NC	1 NO + 2 NC				1 NO + 1 NC, 2 NC	
Another auxiliary contact can be mounted laterally			--					No more than one lateral auxiliary switch block can be mounted.	
Technical specifications including CSA and UL rated data of the auxiliary contacts, see "3RT20 contactors", from page 3/19 onwards.									
Rated data of the main contacts									
Load rating with AC									
Utilization category AC-6b Switching of AC capacitors									
Rated operational current I_e for AC									
• At ambient temperature of 40 °C		A	18.9	25.3	30.2	37.8	50	75.8	113.4
• At ambient temperature of 60 °C		A	18	24	29	36	47.6	72.2	108
Rated operational reactive power at rated operational current	230 V, 50/60 Hz	kvar	0 ... 7.2	3 ... 9.6	4 ... 11.5	5 ... 14	6 ... 19	10 ... 29	14 ... 43
	400 V, 50/60 Hz	kvar	0 ... 12.5	6 ... 16.7	7 ... 20	8 ... 25	11 ... 33	17 ... 50	25 ... 75
	500 V, 50/60 Hz	kvar	0 ... 15	7 ... 21	8 ... 25	10 ... 31	14 ... 41	21 ... 63	31 ... 94
	690 V, 50/60 Hz	kvar	0 ... 21	10 ... 29	11 ... 34	14 ... 43	19 ... 57	29 ... 86	43 ... 129
Switching frequency									
No-load switching frequency	AC operation	1/h	500						
	DC operation	1/h	500						
Max. switching frequency *z* in operating cycles/hour									
• At I_e/AC-6b and at	230 V, 50/60 Hz	1/h	180		100				
	400 V, 50/60 Hz	1/h	180		100				100 / 80[1]
	480 V, 50/60 Hz	1/h	180		100		70	60	50
	500 V, 50/60 Hz	1/h	180		100		65	55	45
	600 V, 50/60 Hz	1/h	180		100		45	40	32
	690 V, 50/60 Hz	1/h	180	150	100	72	36	30	25
cULus and cULus rated data									
Rated insulation voltage		V AC	600						
Rated operational reactive power at AC-6b, three-phase, at operational voltage	110 ... 120 V	kvar	3.4	4.6	5.5	6.3	8.3	14	19
	200 ... 208 V	kvar	6.2	8.3	10	11	15	25	34
	220 ... 230 V	kvar	6.9	9.2	11	13	17	27	38
	460 ... 480 V	kvar	14	18	22	25	33	55	75
	575 ... 600 V	kvar	17	23	27	31	41	69	94
Short-circuit protection	At 600 V	kA	5					10	
Fuse for main circuit	Class RK5	A	40	80			100	250	

[1] Operating cycles/h: 100 with AC operation; 80 with AC/DC operation.

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Type		3RT2617-1....	3RT2625-1...., 3RT2626-1...., 3RT2627-1....	3RT2628-1....	3RT2636-1....	3RT2637-1....
Size		S00	S0[1]		S2[2]	
Conductor cross-sections						
Main conductors (1 or 2 conductors can be connected)		Screw terminals				
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[3]; 2 x (0.75 ... 2.5)[3]; max. 2 x 4	2 x (1 ... 2.5)[3]; 2 x (2.5 ... 10)[3]	1 x (2.5 ... 25)	2 x (2.5 ... 35); 1 x (2.5 ... 50)	
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[3]; 2 x (0.75 ... 2.5)[3]	2 x (1 ... 2.5)[3]; 2 x (2.5 ... 6)[3]; 1 x 10	1 x (2.5 ... 16)	2 x (1 ... 25); 1 x (1 ... 35)	--
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[3]; 2 x (18 ... 14)[3]; 2 x 12	2 x (16 ... 12)[3]; 2 x (14 ... 8)[3]	1 x (10 ... 4)	2 x (18 ... 2); 1 x (18 ... 0)	
• Terminal screw		M3 (for Pozidriv size 2; ∅ 5 ... 6)	M4 (for Pozidriv size 2; ∅ 5 ... 6)	M8	M6 (for Pozidriv size 2; ∅ 5 ... 6)	
• Tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3 ... 4	3 ... 4.5	
	lb.in	7 ... 10.3	18 ... 22	27 ... 36	27 ... 40	
Auxiliary conductors (1 or 2 conductors can be connected)						
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[3]; 2 x (0.75 ... 2.5)[3]; max. 2 x 4				
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[3]; 2 x (0.75 ... 2.5)[3]				
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[3]; 2 x (18 ... 14)[3]; 2 x 12				
• Terminal screw		M3 (for Pozidriv size 2; ∅ 5 ... 6)				
• Tightening torque	Nm	0.8 ... 1.2				
	lb.in	7 ... 10.3				

1) Three-phase infeed terminal 3RV2925-5AB available, see page 3/114. With 3RT2628, the three-phase infeed terminal is included in the scope of delivery.

2) Three-phase infeed terminal 3RV2935-5A available, see page 3/114.

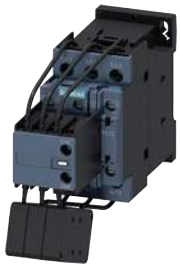
3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Selection and ordering data

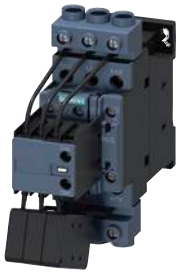
AC operation

Main, auxiliary and control conductors: Screw terminals

3RT2617-1A.05



3RT262.-1A.05



3RT2628-1A.05
with infeed terminal

3RT263.-1A.05

Utilization category AC-6b Switching of AC capacitors at an ambient temperature of 60 °C				Auxiliary contacts, unassigned Version		Rated control supply voltage U_s [1]		SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
Capacitor rating at operational voltage 50/60 Hz									Article No.	Price per PU			
At 230 V	**At 400 V**	At 500 V	At 690 V	NO	NC	V AC	Hz	d					
kvar	**kvar**	kvar	kvar										
For screw fixing and snap-on mounting onto TH 35 standard mounting rail													
Size S00													
0 ... 7.2	**0 ... 12.5**	0 ... 15	0 ... 21	1	1	24	50/60	5	**3RT2617-1AB03**		1	1 unit	41B
						110		5	**3RT2617-1AF03**		1	1 unit	41B
						230		5	**3RT2617-1AP03**		1	1 unit	41B
0 ... 7.2	**0 ... 12.5**	0 ... 15	0 ... 21	0	2	24	50/60	5	**3RT2617-1AB05**		1	1 unit	41B
						110		5	**3RT2617-1AF05**		1	1 unit	41B
						230		5	**3RT2617-1AP05**		1	1 unit	41B
Size S0 [2]													
3 ... 9.6	**6 ... 16.7**	7 ... 21	10 ... 29	1	2	24	50	5	**3RT2625-1AB05**		1	1 unit	41B
						110		5	**3RT2625-1AF05**		1	1 unit	41B
						230		5	**3RT2625-1AP05**		1	1 unit	41B
4 ... 11.5	**7 ... 20**	8 ... 25	11 ... 34	1	2	24	50	5	**3RT2626-1AB05**		1	1 unit	41B
						110		5	**3RT2626-1AF05**		1	1 unit	41B
						230		5	**3RT2626-1AP05**		1	1 unit	41B
5 ... 14	**8 ... 25**	10 ... 31	14 ... 43	1	2	24	50	5	**3RT2627-1AB05**		1	1 unit	41B
						110		5	**3RT2627-1AF05**		1	1 unit	41B
						230		5	**3RT2627-1AP05**		1	1 unit	41B
6 ... 19	**11 ... 33**	14 ... 41	19 ... 57	1	2	24	50	5	**3RT2628-1AB05**		1	1 unit	41B
						110		5	**3RT2628-1AF05**		1	1 unit	41B
						230		5	**3RT2628-1AP05**		1	1 unit	41B
Size S2 [3]													
10 ... 29	**17 ... 50**	21 ... 63	29 ... 86	1	1	24	50	5	**3RT2636-1AB03**		1	1 unit	41B
						110		5	**3RT2636-1AF03**		1	1 unit	41B
						230		5	**3RT2636-1AP03**		1	1 unit	41B
10 ... 29	**17 ... 50**	21 ... 63	29 ... 86	0	2	24	50	5	**3RT2636-1AB05**		1	1 unit	41B
						110		5	**3RT2636-1AF05**		1	1 unit	41B
						230		5	**3RT2636-1AP05**		1	1 unit	41B
14 ... 43	**25 ... 75**	31 ... 94	43 ... 129	1	1	24	50	5	**3RT2637-1AB03**		1	1 unit	41B
						110		5	**3RT2637-1AF03**		1	1 unit	41B
						230		5	**3RT2637-1AP03**		1	1 unit	41B
14 ... 43	**25 ... 75**	31 ... 94	43 ... 129	0	2	24	50	5	**3RT2637-1AB05**		1	1 unit	41B
						110		5	**3RT2637-1AF05**		1	1 unit	41B
						230		5	**3RT2637-1AP05**		1	1 unit	41B

[1] Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s
- at 60 Hz: 0.85 to 1.1 x U_s.

[2] Three-phase infeed terminal 3RV2925-5AB available, see page 3/114.
With 3RT2628, the three-phase infeed terminal is included in the scope of delivery.

[3] Three-phase infeed terminal 3RV2935-5A available, see page 3/114.

Other voltages according to page 4/49 on request.

For accessories and spare parts, see page 3/75 onwards.

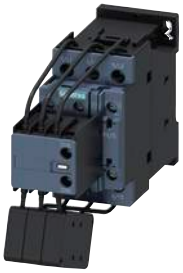
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

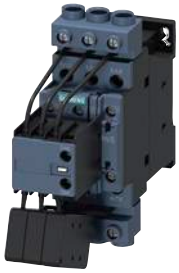
DC operation

Main, auxiliary and control conductors: Screw terminals

3RT2617-1B.45



3RT262.-1B.45



3RT2628-1N.35
with infeed terminal

Utilization category AC-6b Switching of AC capacitors at an ambient temperature of 60 °C				Auxiliary contacts, unassigned Version		Rated control supply voltage U_s [1]	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
Capacitor rating at operational voltage 50/60 Hz								Article No.	Price per PU			
At 230 V	**At 400 V**	At 500 V	At 690 V									
kvar	**kvar**	kvar	kvar	NO	NC	V DC	d					
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S00												
0 … 7.2	**0 … 12.5**	0 … 15	0 … 21	1	1	24	5	**3RT2617-1BB43**		1	1 unit	41B
						110	5	**3RT2617-1BF43**		1	1 unit	41B
0 … 7.2	**0 … 12.5**	0 … 15	0 … 21	0	2	24	5	**3RT2617-1BB45**		1	1 unit	41B
						110	5	**3RT2617-1BF45**		1	1 unit	41B
Size S0 [2]												
3 … 9.6	**6 … 16.7**	7 … 21	10 … 29	1	2	24	5	**3RT2625-1BB45**		1	1 unit	41B
						110	5	**3RT2625-1BF45**		1	1 unit	41B
4 … 11.5	**7 … 20**	8 … 25	11 … 34	1	2	24	5	**3RT2626-1BB45**		1	1 unit	41B
						110	5	**3RT2626-1BF45**		1	1 unit	41B
5 … 14	**8 … 25**	10 … 31	14 … 43	1	2	24	5	**3RT2627-1BB45**		1	1 unit	41B
						110	5	**3RT2627-1BF45**		1	1 unit	41B
6 … 19	**11 … 33**	14 … 41	19 … 57	1	2	24	5	**3RT2628-1BB45**		1	1 unit	41B
						110	5	**3RT2628-1BF45**		1	1 unit	41B

[1] Operating range: 0.8 to 1.1 x U_s

[2] Three-phase infeed terminal 3RV2925-5AB available, see page 3/114. With 3RT2628, the three-phase infeed terminal is included in the scope of delivery.

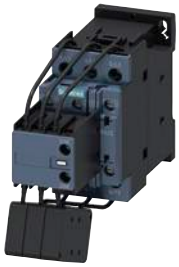
Other voltages according to page 4/49 on request.

For accessories and spare parts, see page 3/75 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

AC/DC operation (50/60 Hz AC and DC)

Main, auxiliary and control conductors: Screw terminals



3RT262.-1N.35

3RT2628-1N.35
with infeed terminal

3RT263.-1N.35

Utilization category AC-6b Switching of AC capacitors at an ambient temperature of 60 °C				Auxiliary contacts, unassigned Version		Rated control supply voltage U_s [1]		SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
Capacitor rating at operational voltage 50/60 Hz									Article No. Price per PU			
At 230 V	**At 400 V**	At 500 V	At 690 V									
kvar	**kvar**	kvar	kvar	NO	NC	V AC	V DC	d				
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S0 [2]												
3 ... 9.6	**6 ... 16.7**	7 ... 21	10 ... 29	1	2	21 ... 28	21 ... 28	5	**3RT2625-1NB35**	1	1 unit	41B
						95 ... 130	95 ... 130	5	**3RT2625-1NF35**	1	1 unit	41B
						200 ... 280	200 ... 280	5	**3RT2625-1NP35**	1	1 unit	41B
4 ... 11.5	**7 ... 20**	8 ... 25	11 ... 34	1	2	21 ... 28	21 ... 28	5	**3RT2626-1NB35**	1	1 unit	41B
						95 ... 130	95 ... 130	5	**3RT2626-1NF35**	1	1 unit	41B
						200 ... 280	200 ... 280	5	**3RT2626-1NP35**	1	1 unit	41B
5 ... 14	**8 ... 25**	10 ... 31	14 ... 43	1	2	21 ... 28	21 ... 28	5	**3RT2627-1NB35**	1	1 unit	41B
						95 ... 130	95 ... 130	5	**3RT2627-1NF35**	1	1 unit	41B
						200 ... 280	200 ... 280	5	**3RT2627-1NP35**	1	1 unit	41B
6 ... 19	**11 ... 33**	14 ... 41	19 ... 57	1	2	21 ... 28	21 ... 28	5	**3RT2628-1NB35**	1	1 unit	41B
						95 ... 130	95 ... 130	5	**3RT2628-1NF35**	1	1 unit	41B
						200 ... 280	200 ... 280	5	**3RT2628-1NP35**	1	1 unit	41B
Size S2 [3]												
10 ... 29	**17 ... 50**	21 ... 63	29 ... 86	0	2	20 ... 33	20 ... 33	5	**3RT2636-1NB35**	1	1 unit	41B
						83 ... 155	83 ... 155	5	**3RT2636-1NF35**	1	1 unit	41B
						175 ... 280	175 ... 280	5	**3RT2636-1NP35**	1	1 unit	41B
14 ... 43	**25 ... 75**	31 ... 94	43 ... 129	0	2	20 ... 33	20 ... 33	5	**3RT2637-1NB35**	1	1 unit	41B
						83 ... 155	83 ... 155	5	**3RT2637-1NF35**	1	1 unit	41B
						175 ... 280	175 ... 280	5	**3RT2637-1NP35**	1	1 unit	41B

[1] Coil operating range: 0.7 to 1.3 x U_s

[2] Three-phase infeed terminal 3RV2925-5AB available, see page 3/114. With 3RT2628, the three-phase infeed terminal is included in the scope of delivery.

[3] Three-phase infeed terminal 3RV2935-5A available, see page 3/114.

Other voltages according to page 4/49 on request.

For accessories and spare parts, see page 3/75 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Overview

Standards

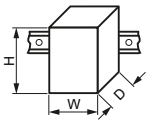
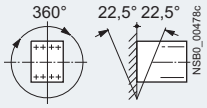
IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1 (auxiliary switches)

The contactors are suitable for use in any climate.
They are finger-safe according to IEC 60529.

The contactors are suitable for switching mixed loads in distribution systems (e.g. for supplying heaters, lamps, motors, PC power supply units) with p.f. > 0.8 according to IEC 60947-4-1 test conditions for utilization category AC-1.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16166/td	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16166/man

Type			**3RT1344**	**3RT1346**
Size			**S3**	
General data				
Dimensions (W x H x D)				
• AC operation		mm	92 x 140 x 134	
- With mounted auxiliary switch block		mm	92 x 140 x 183	
• DC operation		mm	92 x 140 x 147	
- With mounted auxiliary switch block		mm	92 x 140 x 196	
Permissible mounting position				
The contactors are designed for operation on a vertical mounting surface.				
For DC operation and up to 22.5° inclination in front, the coil operating range is reduced to 0.85 ... 1.1 x U_s.				
Upright mounting position			Special version required	
Mechanical endurance		Operating cycles	10 million	
Electrical endurance at I_e/AC-1		Operating cycles	Approx. 0.5 million	
Rated insulation voltage U_i (pollution degree 3)		V	690	
Permissible ambient temperature				
• During operation		°C	-25 ... +60	
• During storage		°C	-55 ... +80	
Degree of protection acc. to IEC 60529				
• On front			IP20 (with box terminal only)	
• Connecting terminal			IP00 (for higher degree of protection: use additional terminal covers)	
Touch protection acc. to IEC 60529			Finger-safe for vertical touching from the front	
Short-circuit protection				
Main circuit				
Fuse links, operational class gG: LV HRC, 3NA; DIAZED, 5SB; NEOZED, 5SE according to IEC 60947-4-1/EN 60947-4-1				
• Type of coordination "1"		A	250	
• Type of coordination "2"		A	125	160
• Weld-free		A	63	100
Control				
Solenoid coil operating range (AC/DC)			0.8 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)				
• AC operation, 50 Hz	- Closing	VA	270	
	- P.f.	VA	0.68	
	- Closed	VA	22	
	- P.f.	VA	0.27	
• AC operation, 50/60 Hz	- Closing	VA	298/274	
	- P.f.		0.72/0.62	
	- Closed	VA	27/20	
	- P.f.		0.29/0.31	
• DC operation	- Closing = Closed	W	15	
Operating times for 0.8 ... 1.1 x U_s				
Total break time = Opening delay + Arcing time				
• DC operation	- Closing delay	ms	110 ... 200	
	- Opening delay	ms	14 ... 20	
• AC operation	- Closing delay	ms	20 ... 50	
	- Opening delay	ms	10 ... 25	
• Arcing time		ms	10 ... 15	

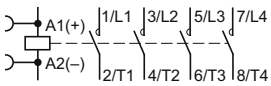
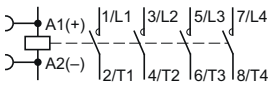
Type			3RT1344	3RT1346
Size			S3	
Rated data of the main contacts				
Load rating with AC				
Utilization category AC-1, switching resistive loads				
• Rated operational currents I_e	At 40 °C, up to 690 V	A	110	140
	At 60 °C, up to 690 V	A	100	120
• Rated power of AC loads P.f. = 0.95 (at 40 °C)	At 230 V	kW	42	53
	400 V	kW	72	92
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm^2	50	
	60 °C	mm^2	50	
Utilization categories AC-2 and AC-3				
• Rated operational currents I_e	at 60 °C, at 400 V	A	--	
• Rated power of slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	--	
	400 V	kW	--	
Maximum AC breaking current (e.g. for isolation of load distributions)				
• at 50 and 60 Hz	At 400 V	A	520	760
Load rating with DC				
Utilization category DC-1, switching resistive load (*L/R* ≤ 1 ms)				
• Rated operational currents I_e (at 40 °C)				
- 1 conducting path	Up to 24 V	A	70	80
	60 V	A	23	60
	110 V	A	4.5	9
	220 V	A	1	2
	440 V	A	0.4	0.6
- 2 conducting paths in series	Up to 24 V	A	70	80
	60 V	A	70	80
	110 V	A	70	80
	220 V	A	5	10
	440 V	A	1	1.8
- 3 conducting paths in series	Up to 24 V	A	70	80
	60 V	A	70	80
	110 V	A	70	80
	220 V	A	70	80
	440 V	A	2.9	4.5
- 4 conducting paths in series	Up to 24 V	A	70	80
	60 V	A	70	80
	110 V	A	70	80
	220 V	A	70	80
	440 V	A	2.9	4.5
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)				
• Rated operational currents I_e (at 40 °C)				
- 1 conducting path	Up to 24 V	A	20	
	60 V	A	6	6.5
	110 V	A	2.5	
	220 V	A	1	
	440 V	A	0.15	
- 2 conducting paths in series	Up to 24 V	A	70	80
	60 V	A	70	80
	110 V	A	70	80
	220 V	A	7	
	440 V	A	0.42	
- 3 conducting paths in series	Up to 24 V	A	70	80
	60 V	A	70	80
	110 V	A	70	80
	220 V	A	35	
	440 V	A	0.8	
- 4 conducting paths in series	Up to 24 V	A	70	80
	60 V	A	70	80
	110 V	A	70	80
	220 V	A	70	80
	440 V	A	0.8	

4

Selection and ordering data

Size S3: AC or DC operation, 4 NO

3RT134..-1...0

Rated data AC-1, t_u: 40/60 °C		Rated control supply voltage U_s	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
Operational current I_e up to	Ratings of AC loads (p f. = 0.95) at 50 Hz and			Article No. Price per PU			
690 V	**400 V**						
A	**kW**	V	d				
For screw fixing and snap-on mounting onto TH 35 standard mounting rail							
AC operation							
							
110 / 100	**72 / 66**	AC 24, 50 Hz	5	**3RT1344-1AB00**	1	1 unit	41B
		AC 110, 50 Hz	5	**3RT1344-1AF00**	1	1 unit	41B
		AC 230, 50 Hz	▶	**3RT1344-1AP00**	1	1 unit	41B
140 / 120	**92 / 79**	AC 24, 50 Hz	5	**3RT1346-1AB00**	1	1 unit	41B
		AC 110, 50 Hz	5	**3RT1346-1AF00**	1	1 unit	41B
		AC 230, 50 Hz	▶	**3RT1346-1AP00**	1	1 unit	41B
DC operation							
							
110 / 100	**72 / 66**	24 DC	5	**3RT1344-1BB40**	1	1 unit	41B
		220 DC	5	**3RT1344-1BM40**	1	1 unit	41B
140 / 120	**92 / 79**	24 DC	5	**3RT1346-1BB40**	1	1 unit	41B
		220 DC	5	**3RT1346-1BM40**	1	1 unit	41B

Other voltages according to page 4/49 on request.

For accessories, see page 4/37 onwards.

For spare parts, see page 4/48 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Auxiliary switches

See from page 4/40 onwards

The auxiliary switches can be designed as positively driven contacts in 3RH contactor relays or also as mirror contacts in the case of 3RT power contactors.

For more information on positively driven operation and mirror contacts, see Manuals → "More Information" on page 4/38.

Snap-on auxiliary switch blocks

A maximum of eight auxiliary contacts can be attached, please note the following:

- Of these eight auxiliary contacts, there must be no more than four NC contacts.
- Ensure the symmetry of laterally mounted auxiliary switch blocks

Surge suppressors without LED

See page 4/44

(also for spring-type terminals)

All 3RT13 contactors can be retrofitted with RC elements or varistors for damping opening surges in the coil. Diodes or diode assemblies (comprising noise suppression diodes and Zener diodes for short break times) can be used.

With these contactors, varistors, RC elements and diode assemblies can be plugged on directly at the coil terminals, either on the top or underneath.

The plug-in direction of the diodes and diode assemblies is determined by a coding device.

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assembly 2 to 6 times, varistor +2 to 5 ms).

Coupling links for control by PLC

See pages 4/39 and 4/45

- Operation with 24 V DC
- Operating range 17 to 30 V
- Low power consumption of 0.5 W
- An LED indicates the switching state.

The 3RH2924-1GP11 coupling link has an integrated surge suppressor (varistor) for the contactor coil being switched and is mounted onto the size S0 contactor coil via a coil connection module.

Sealable covers

See page 4/46

When contactors and contactor relays are used in safety-related applications, it must be ensured that it is impossible to operate the contactors manually.

For SIRIUS contactors there are sealable covers available for this purpose as accessories; these prevent accidental manual operation. These are transparent molded-plastic caps with a bracket that enables the contactor to be sealed.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16209/td	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16209/man

Type		Type		3RT1926-2C	3RT1926-2D	3RT1926-2E	3RT1926-2F	3RT1926-2G
Version				**Electronic timing relay blocks with semiconductor output**		**Solid-state time-delay auxiliary switch blocks**		
General data								
Dimensions (W x H x D)			mm	45 x 26 x 50				
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III according to IEC 60664-1			V AC	250				
Permissible ambient temperature								
• During operation			°C	-25 ... +60				
• During storage			°C	-40 ... +80				
Degree of protection acc. to IEC 60529								
• Terminals				IP20				
Shock resistance Half-sine acc. to IEC 60068-2-27			*g*/ms	15/11				
Vibration resistance								
According to IEC 60068-2-6			Hz/mm	10 ... 55/0.35				
Electromagnetic compatibility (EMC)				IEC 61812-1				
Permissible mounting position				Any (see page 4/34)				
Control								
Operating range of excitation				0.8 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency		0.85 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency		
Rated power			W	1		2		
• Power consumption at 230 V AC, 50 Hz			VA	1		4		
Overvoltage protection				Varistor integrated in timing relay		--		
Recovery time			ms	50		150		
Minimum ON period			ms	35		200 (with OFF-delay)		
Setting accuracy, typical referred to scale end value			%	± 15				
Repeat accuracy, max.			%	± 1				
Load side								
Rated operational currents I_e								
• Load current			A	0.3		--		
• AC-15, 230 V, 50 Hz			A	--		3		
• DC-13, 24 V			A	--		1		
• DC-13, 110 V			A	--		0.2		
• DC-13, 230 V			A	--		0.1		
Short-time loading capacity		Up to 10 ms	A	10		--		
Short-circuit protection								
• Fuse links, operational class gG: DIAZED, type 5SB			A	--		4		
Residual current, max.			mA	5		--		
Voltage drop, max. with conducting output			VA	3.5		--		
Mechanical endurance			Operating cycles	100×10^6		10×10^6		
Switching frequency for load								
• With I_e at 230 V AC			h^{-1}	2 500				
• With 3RT2016 contactor at 230 V AC			h^{-1}	2 500		5 000		
Conductor cross-sections								
Connection type (1 or 2 conductors can be connected)				**Screw terminals**				
• Solid			mm^2	2 x (0.5 ... 1.5), 2 x (0.75 ... 4)				
• Finely stranded with end sleeve			mm^2	2 x (0.5 ... 2.5)				
• AWG cables, solid or stranded			AWG	2 x (18 ... 14)				
• Terminal screws				M3				
• Tightening torque			Nm	0.8 ... 1.2				

Type			**3RH1924-1GP11**
Version			**Coupling links for control by PLC**
General data			
Rated insulation voltage U_i (pollution degree 3)		V	300
Protective separation between coil and contacts acc. to IEC 60947-1, Appendix N		V AC	Up to 300
Permissible ambient temperature			
• During operation		°C	-25 ... +60
• During storage		°C	-40 ... +80
Degree of protection acc. to IEC 60529			
• Connections			IP20
Conductor cross-sections			
• Solid		mm^2	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)
• Terminal screws			M3
Control side			
Rated control supply voltage U_s		V DC	24
Operating range		V DC	17 ... 30
Power consumption at U_s		W	0.5
Nominal current input		mA	20
Release voltage		V	≥ 4
Function display			Yellow LED
Protection circuit			Varistors
Load side			
Mechanical endurance		Operating cycles	20×10^6
Electrical endurance at I_e		Operating cycles	1×10^5
Switching frequency		Operating cycles/h	5 000
Make-time		ms	Approx. 7
Break-time		ms	Approx. 4
Bounce time		ms	Approx. 2
Contact material			AgSnO
Switching voltage	AC/DC	V	24 ... 250
Permissible residual current of the electronics (with 0 signal)		mA	2.5

4

Selection and ordering data

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH1921-1HA. .,
3RH1921-1FA. .

3RH1921-2HA. .,
3RH1921-2FA. .

For contactors	Auxiliary contacts						SD	Screw terminals		SD	Spring-type terminals	
	Ident. No.	Version						Article No.	Price per PU		Article No.	Price per PU
Type		NO	NC	NO	NC		d			d		
Auxiliary switch blocks for snapping onto the front												
Size S3												
	4-pole auxiliary switch blocks											
	• According to EN 50012											
3RT134.	**31**	3	1	--	--	13 21 33 43 / 14 22 34 44	▶	**3RH1921-1HA31**		▶	**3RH1921-2HA31**	
	22	2	2	--	--	13 21 31 43 / 14 22 32 44	▶	**3RH1921-1HA22**		▶	**3RH1921-2HA22**	
	13	1	3	--	--	13 21 31 41 / 14 22 32 42	▶	**3RH1921-1HA13**		▶	**3RH1921-2HA13**	
	22; Special version	2	2	--	--	53 61 71 83 / 54 62 72 84	5	**3RH1921-1XA22-0MA0**		20	**3RH1921-2XA22-0MA0**	
	• According to EN 50005											
3RT134.	**40**	4	--	--	--	13 23 33 43 / 14 24 34 44	▶	**3RH1921-1FA40**		▶	**3RH1921-2FA40**	
	31	3	1	--	--	13 23 33 41 / 14 24 34 42	▶	**3RH1921-1FA31**		▶	**3RH1921-2FA31**	
	22	2	2	--	--	13 23 31 41 / 14 24 32 42	▶	**3RH1921-1FA22**		▶	**3RH1921-2FA22**	
	04	--	4	--	--	11 21 31 41 / 12 22 32 42	▶	**3RH1921-1FA04**		2	**3RH1921-2FA04**	
	22 U	--	--	2	2	17 27 35 45 / 18 28 36 46	▶	**3RH1921-1FC22**		2	**3RH1921-2FC22**	

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B


3RH1921-1LA..


3RH1921-1MA..


3RH1921-1C..


3RH1921-2C..

For contactors Type	Auxiliary contacts Ident. No.	Version NO	NC	NO	NC		SD d	Screw terminals Article No.	Price per PU	SD d	Spring-type terminals Article No.	Price per PU
Auxiliary switch blocks for snapping onto the front according to EN 50005												
Size S3												
	2-pole auxiliary switch blocks with cable entry on one side according to EN 50005											
	• Cable entry from above											
3RT134.	**11**	1	1	--	--		▶	**3RH1921-1LA11**			**--**	
	20	2	--	--	--		▶	**3RH1921-1LA20**			**--**	
	02	--	2	--	--		▶	**3RH1921-1LA02**			**--**	
	• Cable entry from below											
3RT134.	**11**	1	1	--	--		▶	**3RH1921-1MA11**			**--**	
	20	2	--	--	--		▶	**3RH1921-1MA20**			**--**	
	02	--	2	--	--		▶	**3RH1921-1MA02**			**--**	
	1-pole auxiliary switch blocks according to EN 50005 and EN 50012											
3RT134.	**10**	1	--	--	--		▶	**3RH1921-1CA10**		▶	**3RH1921-2CA10**	
	01	--	1	--	--		▶	**3RH1921-1CA01**		▶	**3RH1921-2CA01**	
	10	--	--	1	--		▶	**3RH1921-1CD10**			**--**	
	01	--	--	--	1		▶	**3RH1921-1CD01**			**--**	

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Accessories

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH1921-1DA11,
3RH1921-1JA11,
3RH1921-1EA..,
3RH1921-1KA..

3RH1921-2DA11,
3RH1921-2JA11,
3RH1921-2EA..,
3RH1921-2KA..

For contactors	Auxiliary contacts			SD	Screw terminals		SD	Spring-type terminals	
	Version				Article No.	Price per PU		Article No.	Price per PU
Type	NO	NC		d			d		
Laterally mountable auxiliary switch blocks, mounting left or right, 2-pole									
Size S3			Left / Right						
	According to EN 50012								
	• First laterally mountable auxiliary switch block								
3RT134.	1	1	21 13 / 22 14 ; 31 43 / 32 44	▶	**3RH1921-1DA11**		▶	**3RH1921-2DA11**	
	• Second laterally mountable auxiliary switch block								
3RT134.	1	1	61 53 / 62 54 ; 71 83 / 72 84	▶	**3RH1921-1JA11**		▶	**3RH1921-2JA11**	
	According to EN 50005								
	• First laterally mountable auxiliary switch block								
3RT134.	2	--	53 63 / 54 64 ; 73 83 / 74 84	▶	**3RH1921-1EA20**		▶	**3RH1921-2EA20**	
	1	1	51 63 / 52 64 ; 71 83 / 72 84	▶	**3RH1921-1EA11**			**--**	
	--	2	51 61 / 52 62 ; 71 81 / 72 82	▶	**3RH1921-1EA02**		▶	**3RH1921-2EA02**	
	• Second laterally mountable auxiliary switch block								
3RT134.	2	--	153 163 / 154 164 ; 173 183 / 174 184	▶	**3RH1921-1KA20**		20	**3RH1921-2KA20**	
	1	1	151 163 / 152 164 ; 171 183 / 172 184	▶	**3RH1921-1KA11**			**--**	
	--	2	151 161 / 152 162 ; 171 181 / 172 182	▶	**3RH1921-1KA02**		20	**3RH1921-2KA02**	

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH1921-1FE22

3RH1921-2FE22

3RH1921-2DE11,
3RH1921-2JE11

For contactors	Contacts Version					SD	Screw terminals		SD	Spring-type terminals	
							Article No.	Price per PU		Article No.	Price per PU
Type	NO	NO[1]	NC[1]	NC		d			d		
Solid-state compatible auxiliary switch blocks											
• For operation in dusty atmospheres • For solid-state circuits with rated operational currents I_e/AC-14 and DC-13 of 1 ... 300 mA at 3 ... 60 V • Hard gold-plated contacts • Mirror contacts according to IEC 60947-4-1, Appendix F											
Auxiliary switch blocks for snapping onto the front according to EN 50005											
Size S3											
3RT134.	1	1	1	1	13 23 31 41 14 24 32 42	►	**3RH1921-1FE22**		5	**3RH1921-2FE22**	
Lateral auxiliary switch blocks, mountable on left or right, according to EN 50012											
Size S3					Left Right						
	First laterally mountable auxiliary switch block										
3RT134.	1	--	--	1	21 13 31 43 22 14 32 44		--		►	**3RH1921-2DE11**	
	Second laterally mountable auxiliary switch block										
3RT134.	1	--	--	1	61 53 71 83 62 54 72 84		--		►	**3RH1921-2JE11**	

[1] 1 NO + 1 NC standard auxiliary switches.

Accessories

Auxiliary switch blocks, delayed

For contactors	Auxiliary contacts	Rated control supply voltage U_s [1]	Time setting range *t*	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V	s	d					
Solid-state time-delay auxiliary switch blocks for snapping onto the front, terminal designations according to DIN 46199-5									
Size S3									
	ON-delay[2]								
3RT134.	1 NO + 1 NC	24 AC/DC	0.05 ... 1	10	**3RT1926-2EJ11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2EJ21**		1	1 unit	41H
			5 ... 100	2	**3RT1926-2EJ31**		1	1 unit	41H
		100 ... 127 AC	0.05 ... 1	15	**3RT1926-2EC11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2EC21**		1	1 unit	41H
			5 ... 100	10	**3RT1926-2EC31**		1	1 unit	41H
		200 ... 240 AC	0.05 ... 1	5	**3RT1926-2ED11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2ED21**		1	1 unit	41H
			5 ... 100	5	**3RT1926-2ED31**		1	1 unit	41H
	OFF-delay without control signal[2][3]								
3RT134.	1 NO + 1 NC	24 AC/DC	0.05 ... 1	▶	**3RT1926-2FJ11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2FJ21**		1	1 unit	41H
			5 ... 100	▶	**3RT1926-2FJ31**		1	1 unit	41H
		100 ... 127 AC/DC	0.05 ... 1	5	**3RT1926-2FK11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2FK21**		1	1 unit	41H
			5 ... 100	5	**3RT1926-2FK31**		1	1 unit	41H
		200 ... 240 AC/DC	0.05 ... 1	5	**3RT1926-2FL11**		1	1 unit	41H
			0.5 ... 10	2	**3RT1926-2FL21**		1	1 unit	41H
			5 ... 100	2	**3RT1926-2FL31**		1	1 unit	41H
	Star-delta (wye-delta) starting (varistor integrated)[2]								
3RT134.	1 NO delayed + 1 NO instantaneous, dead time 50 ms	24 AC/DC	1.5 ... 30	▶	**3RT1926-2GJ51**		1	1 unit	41H
		100 ... 127 AC	1.5 ... 30	▶	**3RT1926-2GC51**		1	1 unit	41H
		200 ... 240 AC	1.5 ... 30	▶	**3RT1926-2GD51**		1	1 unit	41H


3RT1926-2....

[1] The AC voltages are valid for 50 and 60 Hz.

[2] Terminals A1 and A2 for the control supply voltage of the solid-state time-delay auxiliary switch must be connected to the associated contactor by means of connecting cables.

[3] Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact change-over to the correct setting.

Surge suppressors

For contactors	Version	Rated control supply voltage U_s [1] AC operation	DC operation	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	V DC	d					
Surge suppressors without LED									
Size S3 (also for spring-type terminals)									
	For fitting onto the coil terminals at top or bottom								
3RT134.	**Varistors**	24 ... 48	24 ... 70	▶	**3RT1926-1BB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT1926-1BC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT1926-1BD00**		1	1 unit	41B
		240 ... 400	--	▶	**3RT1926-1BE00**		1	1 unit	41B
		400 ... 600		5	**3RT1926-1BF00**		1	1 unit	41B
3RT134.	**RC elements**	24 ... 48	24 ... 70	▶	**3RT1936-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT1936-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT1936-1CD00**		1	1 unit	41B
		240 ... 400	--	▶	**3RT1936-1CE00**		1	1 unit	41B
		400 ... 600	--	5	**3RT1936-1CF00**		1	1 unit	41B
3RT134.	**Diode assemblies** for DC operation								
	• Can be plugged in at top (e.g. for contactor with overload relay)	--	24	▶	**3RT1936-1ER00**		1	1 unit	41B
		--	30 ... 250	▶	**3RT1936-1ES00**		1	1 unit	41B
	• Can be plugged in at bottom (e.g. for fuseless load feeders)	--	24	▶	**3RT1936-1TR00**		1	1 unit	41B
		--	30 ... 250	5	**3RT1936-1TS00**		1	1 unit	41B


3RT1926-1B.00


3RT1936-1C.00

[1] Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Modules for contactor control

For contactors Type	Version V		SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coupling links for control by PLC								
Size S3								
	For mounting onto the coil terminals of the contactors With LED for the switching state and varistor for damping opening surges							
3RT134.	Operating range: 17 ... 30 V DC Power consumption: 0.5 W at 24 V DC Permissible residual current of the electronics (with "0" signal): 2.5 mA Rated operational current I_e: • AC-15/AC-14 at 230 V: 3 A • DC-13 at 230 V: 0.1 A		▶	**3RH1924-1GP11**		1	1 unit	41B


3RH1924-1GP11

Technical specifications, see page 4/39.

For contactors Type	Rated control supply voltage U_s [1] V	Time setting range t s	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Electronic timing relay blocks with semiconductor output								
Size S3								
	For mounting onto top-lying coil terminals, for contactors with screw terminals only							
	• ON-delay (varistor integrated)							
3RT134.[2]	24 ... 66 AC/DC	0.05 ... 1	5	**3RT1926-2CG11**		1	1 unit	41H
		0.5 ... 10	5	**3RT1926-2CG21**		1	1 unit	41H
		5 ... 100	5	**3RT1926-2CG31**		1	1 unit	41H
	90 ... 240 AC/DC	0.05 ... 1	▶	**3RT1926-2CH11**		1	1 unit	41H
		0.5 ... 10	▶	**3RT1926-2CH21**		1	1 unit	41H
		5 ... 100	▶	**3RT1926-2CH31**		1	1 unit	41H
	• OFF-delay with control signal (varistor integrated)							
3RT134.[2]	24 ... 66 AC/DC	0.05 ... 1	10	**3RT1926-2DG11**		1	1 unit	41H
		0.5 ... 10	5	**3RT1926-2DG21**		1	1 unit	41H
		5 ... 100	20	**3RT1926-2DG31**		1	1 unit	41H
	90 ... 240 AC/DC	0.05 ... 1	5	**3RT1926-2DH11**		1	1 unit	41H
		0.5 ... 10	5	**3RT1926-2DH21**		1	1 unit	41H
		5 ... 100	10	**3RT1926-2DH31**		1	1 unit	41H


3RT1926-2C...


3RT1926-2D...

[1] The AC voltages are valid for 50 and 60 Hz.
[2] In addition to these, no other auxiliary contacts are permitted.

Technical specifications, see page 4/38.

Accessories

Link modules

For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Assembly kits for contactor assemblies for star-delta (wye-delta) starting								
3RT134.	**S3-S3-S2**	The assembly kit contains: Star jumper, wiring module on the bottom (wiring module on the top is not included in the scope of supply. A double infeed between the line contactor and the delta contactor is recommended.)	▶	**3RA1943-2C**		1	1 unit	41B
3RT134.	**S3-S3-S3**		▶	**3RA1943-2B**		1	1 unit	41B

For contactors	Size	Contactor clearance	Interlocking	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		mm			d					
Mechanical interlocks										
3RT134.	**S3**	5	Laterally mountable[1]	With one auxiliary contact (1 NC) per contactor (can only be used to connect contactors that are not more than 1 size larger or smaller. The mounting depth of the smaller contactor has to be adapted)	▶	**3RA1924-2B**		1	1 unit	41B
Mechanical connectors										
3RT134.	**S3-S3**	0	Lateral	For 3-pole contactors (1 unit corresponds to 2 parts for 1 assembly)	▶	**3RA1932-2C**		1	10 units	41B
3RT134.	**S3-S3**	10	Lateral	For 3-pole contactors (1 unit corresponds to 2 parts for 1 assembly)	▶	**3RA1932-2D**		1	10 units	41B
3RT134.	**S3-S3**	10	Lateral	For 4-pole contactors (1 unit corresponds to 2 parts for 1 assembly)	5	**3RA1942-2G**		1	10 units	41B


3RA1932-2C


3RA1932-2D


3RA1942-2G

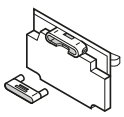
[1] Can also be used for 4-pole contactors with sizes S2 and S3.

Terminal modules/adapters

For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type			d					
Single-phase infeed terminals								
3RT134.	**S3**	Conductor cross-section: 95 mm^2	2	**3RA1943-3L**		1	1 unit	41B

Covers

For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type			d					
Terminal covers								
3RT134.	**S3**	Additional touch protection, to be fitted at the box terminals (2 units required per contactor)	5	**3RT1946-4EA4**		1	1 unit	41B
Sealable covers								
3RT134.[1]	**S3**	1 unit required per contactor	15	**3RT1926-4MA10**		1	5 units	41B

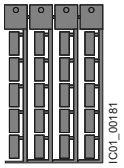

IC01_00162
3RT1926-4MA10

[1] Exception: Contactors with auxiliary switch block mounted onto the front.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Miscellaneous accessories

	For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Type			d					
Base plates for contactor assemblies for star-delta (wye-delta) starting									
			For customer assembly of contactor assemblies for star-delta (wye-delta) starting with a **laterally mounted** timing relay						
	3RT134.	**S3, S3, S2**	Side-by-side mounting	5	**3RA1942-2E**		1	1 unit	41B
			For customer assembly of contactor assemblies for star-delta (wye-delta) starting with a **front-mounted** timing relay						
	3RT134.	**S3, S3, S2**	10 mm distance between Q1, Q3 and Q2	5	**3RA1942-2B**		1	1 unit	41B
LED modules for displaying contactor operation									
 3RT1926-1QT00 mounted on contactor	3RT134.	**S3**	The connecting leads have to be extended. For snapping into the location hole of an inscription label on the front of a contactor either directly on the contactor or on the front auxiliary switch. The LED module is connected to coil terminals A1 and A2 of the contactor and indicates its energized state. Yellow LED. Rated voltage: 24 ... 240 V AC/DC with reverse polarity protection	5	**3RT1926-1QT00**		1	5 units	41B

	For contactors	Size	Version	SD	**Spring-type terminals**		PU (UNIT, SET, M)	PS*	PG
	Type			d	Article No.	Price per PU			
Insulation stop for securely holding back the conductor insulation on conductors up to 1 mm²									
 3RT1916-4JA02	3RT134.	**S3**	**Insulating stop strip**, can be inserted in cable entry of spring-type terminals (two strips per contactor required, can be removed in pairs) For all SIRIUS devices with spring-type terminals, up to 2.5 mm² conductor cross-section.	5	**3RT1916-4JA02**		1	20 units	41B
Tools for opening spring-type terminals									
 3RA2908-1A	3RT134.	**S3**	**Screwdrivers** for all SIRIUS devices with spring-type terminals Length: approx. 200 mm; 3.0 mm x 0.5 mm; titanium gray/black; partially insulated	2	**3RA2908-1A**		1	1 unit	41B
Blank labels									
 3RT1900-1SB20			**Unit labeling plates** for SIRIUS devices[1]						
	3RT134.	**S3**	• 10 mm × 7 mm, pastel turquoise	15	**3RT1900-1SB10**		100	816 units	41B
			• 20 mm × 7 mm, pastel turquoise	20	**3RT1900-1SB20**		100	340 units	41B
			Self-adhesive labels for SIRIUS devices						
	3RT134.	**S3**	• 19 mm × 6 mm, pastel turquoise	15	**3RT1900-1SB60**		100	3 060 units	41B
			• 19 mm × 6 mm, zinc/yellow	15	**3RT1900-1SD60**		100	3 060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/20).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Spare parts

Selection and ordering data

Solenoid coils

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B


3RT1945-5A.01


3RT1945-5A.02


3RT1944-5B.42

For contactors		Rated control supply voltage U_s AC			DC	SD	Screw terminals		SD	Spring-type terminals	
		50 Hz	50/60 Hz	60 Hz			Article No.	Price per PU		Article No.	Price per PU
Size	Type	V	V	V	V	d			d		
Solenoid coils · AC operation											
S3	3RT134.	24	--	--	--	5	**3RT1945-5AB01**		5	**3RT1945-5AB02**	
		42	--	--	--	5	**3RT1945-5AD01**		5	**3RT1945-5AD02**	
		48	--	--	--	5	**3RT1945-5AH01**		5	**3RT1945-5AH02**	
		110	--	--	--	5	**3RT1945-5AF01**		5	**3RT1945-5AF02**	
		230	--	--	--	5	**3RT1945-5AP01**		5	**3RT1945-5AP02**	
		400	--	--	--	5	**3RT1945-5AV01**		5	**3RT1945-5AV02**	
		--	24	--	--	5	**3RT1945-5AC21**		5	**3RT1945-5AC22**	
		--	42	--	--	5	**3RT1945-5AD21**		5	**3RT1945-5AD22**	
		--	48	--	--	5	**3RT1945-5AH21**		5	**3RT1945-5AH22**	
		--	110	--	--	5	**3RT1945-5AG21**		5	**3RT1945-5AG22**	
		--	220	--	--	5	**3RT1945-5AN21**		5	**3RT1945-5AN22**	
		--	230	--	--	5	**3RT1945-5AL21**		5	**3RT1945-5AL22**	
		110	--	120	--	5	**3RT1945-5AK61**		5	**3RT1945-5AK62**	
		220	--	240	--	5	**3RT1945-5AP61**		5	**3RT1945-5AP62**	
		--	100	110	--	5	**3RT1945-5AG61**		5	**3RT1945-5AG62**	
		--	200	220	--	5	**3RT1945-5AN61**		5	**3RT1945-5AN62**	
		--	400	440	--	5	**3RT1945-5AR61**		5	**3RT1945-5AR62**	
Solenoid coils · DC operation											
S3	3RT134.	--	--	--	24	5	**3RT1944-5BB41**		5	**3RT1944-5BB42**	
		--	--	--	42	5	**3RT1944-5BD41**		5	**3RT1944-5BD42**	
		--	--	--	48	5	**3RT1944-5BW41**		5	**3RT1944-5BW42**	
		--	--	--	60	5	**3RT1944-5BE41**		5	**3RT1944-5BE42**	
		--	--	--	110	5	**3RT1944-5BF41**		5	**3RT1944-5BF42**	
		--	--	--	125	5	**3RT1944-5BG41**		5	**3RT1944-5BG42**	
		--	--	--	220	5	**3RT1944-5BM41**		5	**3RT1944-5BM42**	
		--	--	--	230	5	**3RT1944-5BP41**		5	**3RT1944-5BP42**	

Note:

Contactors with AC and DC coils have different depths. It is only possible to replace AC coils with AC coils or DC coils with DC ones.

Contacts

For contactors		Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type		d					
Contacts with fixing parts								
		Main contacts (4 NO contacts) for utilization category AC-1						
S3	3RT1344	(1 set = 4 movable and 8 fixed switching elements	5	**3RT1944-6E**		1	1 unit	41B
	3RT1346	with fixing parts)	5	**3RT1946-6E**		1	1 unit	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Options

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type	3RT231, 3RT251	3RT232, 3RT252	3RT233, 3RT253	3RT244	3RT134	3RT2617, 3RT262, 3RT263
	Size	S00	S0	S2	S3		S00 to S2
Sizes S00 to S3							
AC operation[1]							
Solenoid coils for 50 Hz (exception: Size S00: 50 and 60 Hz[2])							
24 V AC		B0	B0	B0	B0	B0	B0
42 V AC		D0	D0	D0	D0	--	--
48 V AC		H0	--	--	H0	--	--
110 V AC		F0	F0	F0	F0	F0	F0
230 V AC		P0	P0	P0	P0	P0	P0
240 V AC		--	--	U0	U0	U0	--
400 V AC		V0	V0	V0	V0	V0	--
Solenoid coils for 50 and 60 Hz[2]							
24 V AC		B0	C2	C2	C2	C2	C2
42 V AC		D0	D2	D2	D2	--	--
48 V AC		H0	H2	H2	H2	H2	--
110 V AC		F0	G2	G2	G2	--	--
220 V AC		N2	N2	N2	N2	N2	N2
230 V AC		P0	L2	L2	L2	L2	L2
Solenoid coils (for USA and Canada[3]**)**							
50 Hz	**60 Hz**						
110 V AC	120 V AC	K6	K6	K6	K6	K6	--
220 V AC	240 V AC	P6	P6	P6	P6	--	--
Solenoid coils (for Japan)							
50/60 Hz[4]	**60 Hz**[5]						
100 V AC	110 V AC	G6	G6	G6	G6	--	G6
200 V AC	220 V AC	N6	N6	N6	N6	--	N6
400 V AC	440 V AC	R6	R6	R6	R6	--	R6
DC operation[1]							
12 V DC		A4	A4	--	--	--	--
24 V DC		B4	B4	--	--	B4	B4
42 V DC		D4	D4	--	--	D4	--
48 V DC		W4	W4	--	--	W4	--
60 V DC		--	--	--	--	E4	--
110 V DC		F4	F4	--	--	F4	F4
125 V DC		G4	G4	--	--	G4	--
220 V DC		M4	M4	--	--	M4	--
230 V DC		P4	--	--	--	--	--

Examples

AC operation	3RT2325-1A**P0**0	Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage of 230 V AC
	3RT2325-1A**G2**0	Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage of 110 V AC
DC operation	3RT2526-2B**B4**0	Contactor with spring-type terminals; for rated control supply voltage of 24 V DC
	3RT2526-2B**G4**0	Contactor with spring-type terminals; for rated control supply voltage of 125 V DC

1) For deviating coil voltages and operating ranges of sizes S00 and S0, a SITOP 24 V DC power supply with wide-range input can be used for the coil control, see page 15/1 onwards.

2) Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s; at 60 Hz: 0.85 to 1.1 x U_s.

3) Coil operating range
- Size S00: at 50 Hz: 0.85 to 1.1 x U_s; at 60 Hz: 0.8 to 1.1 x U_s
- Sizes S0 to S3: at 50 Hz and 60 Hz: 0.8 to 1.1 x U_s.

4) Coil operating range
- Size S00: at 50/60 Hz: 0.85 to 1.1 x U_s
- Sizes S0 to S3: at 50 Hz: 0.8 to 1.1 x U_s; at 60 Hz: 0.85 to 1.1 x U_s.

5) Coil operating range at 60 Hz: 0.8 to 1.1 x U_s.

Rated control supply voltage	Contactor type	3RT1456-6A, 3RT1466-6A, 3RT1476-6A	Rated control supply voltage	Contactor type	3RT1456-6N, 3RT1466-6N, 3RT1476-6N	3RT1456-6P, 3RT1466-6P, 3RT1476-6P.
$U_{s\,min}$ ... $U_{s\,max}$	Size	S6, S10, S12	$U_{s\,min}$ ... $U_{s\,max}$	Size	S6, S10, S12	S6, S10, S12
Sizes S6 to S12						
AC/DC operation (50/60 Hz AC, DC)						
Conventional operating mechanisms[1]			**Solid-state operating mechanisms**[2]			
23 ... 26 V AC/DC		B3	21 ... 27.3 V AC/DC		B3	--
42 ... 48 V AC/DC		D3	96 ... 127 V AC/DC		F3	F3
110 ... 127 V AC/DC		F3	200 ... 277 V AC/DC		P3	P3
200 ... 220 V AC/DC		M3				
220 ... 240 V AC/DC		P3				
240 ... 277 V AC/DC		U3				
380 ... 420 V AC/DC		V3				
440 ... 480 V AC/DC		R3				
500 ... 550 V AC/DC		S3				
575 ... 600 V AC/DC		T3				

1) Operating range: 0.8 x $U_{s\,min}$ to 1.1 x $U_{s\,max}$.

2) Operating range: 0.7 x $U_{s\,min}$ to 1.25 x $U_{s\,max}$.

3TK1 contactors for resistive loads (AC-1), 4-pole

Overview

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1 (auxiliary switches)

The contactors also comply with the requirements of the NFC 63-110 and NFC 20–040 standards.

The contactors are suitable for use in any climate. They are finger-safe according to IEC 60529. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

The contactors are used mainly for resistive loads (AC-1 and p.f. > 0.95). They are also suitable for switching mixed loads in distribution systems (e. g. for supplying heaters, lamps, motors, PC power supply units) with p.f. > 0.8 according to IEC 60947-4-1; test conditions for utilization category AC-1.

Control circuit

The solenoid coils of the 3TK10 to 3TK13 contactors (operating current up to 350 A) are designed as plug-in coils.

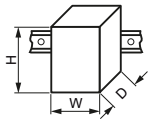
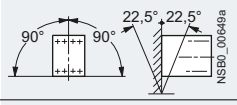
Surge suppression

The solenoid coils of the 3TK1 contactors can be connected at a later stage with RC circuits, (see Accessories, page 4/53).

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16167/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16167/faq	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16167/man

Type			3TK1
Rated data of the auxiliary contacts			
General data			
Standards			IEC 60947-5-1
Rated insulation voltage U_i (pollution degree 3)		V	690
Conventional thermal current I_{th} = rated operational current I_e/AC-12		A	10
Load rating with AC			
Rated operational current I_e/AC-15/AC-14			
• For rated operational voltage U_e	24 V	A	6
	110 V	A	6
	125 V	A	6
	220 V	A	6
	230 V	A	6
	380 V	A	4
	400 V	A	4
	500 V	A	1
	660 V	A	1
	690 V	A	1
Load rating with DC			
Rated operational current I_e/DC-12			--
Rated operational current I_e/DC-13			
• For rated operational voltage U_e	24 V	A	6
	60 V	A	6
	110 V	A	1.8
	125 V	A	--
	220 V	A	0.6
	440 V	A	--
	600 V	A	--
CSA and UL rated data of the auxiliary contacts			
Rated voltage, max.		V AC	600
Switching capacity			A 600, P 600

Type				3TK10	3TK11	3TK12	3TK13	3TK14	3TK15	3TK17
General data										
Dimensions (W x H x D)			mm	165 x 156 x 155	165 x 172 x 155	201 x 198 x 172		244 x 273 x 226		
Permissible mounting position Upright mounting position also permissible										
Mechanical endurance	Operating cycles		Mill.	10				5		
Electrical endurance at I_e/AC-1 at 55 °C	Operating cycles		Mill.	0.8			0.4	0.65	0.5	0.4
Rated insulation voltage U_i (pollution degree 3)			V	1 000						
Ambient temperature										
• During operation			°C	-25 ... +55						
• During storage			°C	-50 ... +70						
Degree of protection acc. to IEC 60529				IP00						
Touch protection acc. to IEC 60529				Finger-safe with terminal covers						
Shock resistance, sine pulse			*g*/ms	10/15						
Short-circuit protection										
Main circuit Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC 60947-4-1/EN 60947-4-1										
• Type of coordination "1"			A	250		355		630	1 000	
• Type of coordination "2"			A	250		315		630	850	
Auxiliary circuit Short circuit test with fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1			A	10						
Control										
Solenoid coil operating range				0.85 ... 1.1 x U_s						
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)										
• 50 Hz										
- Closing			VA	820		1 100		3 500		
- P.f.				0.4		0.35		0.26		
- Closed			VA	44		52		125		
- P.f.				0.34		0.35		0.4		
• 60 Hz										
- Closing			VA	990		1 200		4 000		
- P.f.				0.35		0.31		0.22		
- Closed			VA	52		65		140		
- P.f.				0.35		0.34		0.43		
Operating times at 1.0 x U_s										
• Closing delay			ms	20 ... 40				30 ... 60		
• Opening delay			ms	7 ... 15				10 ... 20		
• Arcing time			ms	10						
Rated data of the main contacts										
Load rating with AC										
Utilization category AC-1, switching resistive loads										
• Rated operational currents I_e	At 40 °C up to 690 V		A	200	250	300	350	550	800	1 000
	At 50 °C up to 690 V		A	180	230	270	310	470	650	850
• Rated power of AC loads with p.f. = 0.95 (at 40 °C)	At 230 V		kW	76	95	114	132	208	303	378
	400 V		kW	132	165	197	230	362	527	658
	500 V		kW	165	206	247	288	452	658	828
	690 V		kW	227	284	341	397	624	908	1 135
• Minimum conductor cross-section for loads with I_e	At 40 °C		mm^2	95	150	185	240	185	240	300
Utilization categories AC-2 and AC-3										
• Rated operational currents I_e	Up to 400 V		A	120	145	210		550		700
	Up to 690 V		A	120		210		550		--
• Rated power of squirrel-cage/ slipring motors at 50 Hz and 60 Hz	At 230 V		kW	30	45	75		110	160	220
	400 V		kW	55	75	110		200	280	370
• Short-time current at 40 °C in cold state up to 10 s			A	900	1 200	1 600		5 300		6 400
Switching frequency										
Switching frequency *z* in operating cycles/hour										
• Contactors without overload relays	No-load switching frequency		1/h	3 600						
• Rated operation for utilization category	AC-1		1/h	300						
	AC-3		1/h	300						
Dependence of the switching frequency z' on the operational current I' and operational voltage U': $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$										

3TK1 contactors for resistive loads (AC-1), 4-pole

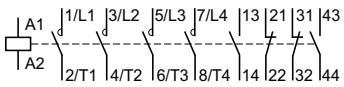
Type		3TK10	3TK11	3TK12	3TK13	3TK14	3TK15	3TK17
Conductor cross-sections								
Main conductors (1 or 2 conductors can be connected)		⊕ **Screw terminals**						
• Solid or stranded	mm^2	2 x 70	2 x 120			2 x 300		
• AWG cables, solid or stranded	AWG / MCM	2 x 00	2 x 250			2 x 600		
• Connecting bar (max. width)	mm	30		33		55		
• Terminal screw		M6	M10					
- Tightening torque	Nm	5 (42 lb.in)	16 (135 lb.in)					
Auxiliary conductors (1 or 2 conductors can be connected)								
• Solid	mm^2	2 x (0.5 ... 2.5)						
• Finely stranded with end sleeve	mm^2	2 x (0.5 ... 2.5)						
• AWG cables, solid or stranded	AWG	20 ... 14						
- Tightening torque	Nm	1.2 (10 lb.in)						

Selection and ordering data

AC operation, 4 NO contacts

3TK13

Rated data AC-1					Auxiliary contacts		Rated control supply voltage U_s	SD	**Screw terminals** ⊕		PU (UNIT, SET, M)	PS*	PG
Operational current I_e Up to 690 V (at 40 °C)	Rating of three-phase AC loads (p f. = 0.95) at				Version				Article No.	Price per PU			
	230 V	400 V	690 V	1 000 V	NO	NC							
A	kW	kW	kW	kW			V AC	d					
For screw fixing													
200	75	130	225	205	2	2	220 ... 230, 50 Hz	5	**3TK1042-0AP0**		1	1 unit	41B
							230 ... 240, 50 Hz	20	**3TK1042-0AU0**		1	1 unit	41B
							110/120, 50/60 Hz	15	**3TK1042-0AF0**		1	1 unit	41B
							24, 50 Hz	20	**3TK1042-0AB0**		1	1 unit	41B
250	90	165	280	200	2	2	220 ... 230, 50 Hz	5	**3TK1142-0AP0**		1	1 unit	41B
							230 ... 240, 50 Hz	30	**3TK1142-0AU0**		1	1 unit	41B
							110/120, 50/60 Hz	20	**3TK1142-0AF0**		1	1 unit	41B
							24, 50 Hz	20	**3TK1142-0AB0**		1	1 unit	41B
300	110	195	340	325	2	2	220 ... 230, 50 Hz	5	**3TK1242-0AP0**		1	1 unit	41B
							230 ... 240, 50 Hz	30	**3TK1242-0AU0**		1	1 unit	41B
							110/120, 50/60 Hz	20	**3TK1242-0AF0**		1	1 unit	41B
							24, 50 Hz	30	**3TK1242-0AB0**		1	1 unit	41B
350	130	230	395	370	2	2	220 ... 230, 50 Hz	5	**3TK1342-0AP0**		1	1 unit	41B
							230 ... 240, 50 Hz	20	**3TK1342-0AU0**		1	1 unit	41B
							110/120, 50/60 Hz	20	**3TK1342-0AF0**		1	1 unit	41B
							24, 50 Hz	30	**3TK1342-0AB0**		1	1 unit	41B
550	205	360	620	510	2	2	220 ... 230, 50 Hz[1)]	5	**3TK1442-0AP0**		1	1 unit	41B
							230 ... 240, 50 Hz	20	**3TK1442-0AU0**		1	1 unit	41B
							110/120, 50/60 Hz	15	**3TK1442-0AF0**		1	1 unit	41B
800	300	525	905	575	2	2	220 ... 230, 50 Hz[1)]	5	**3TK1542-0AP0**		1	1 unit	41B
							230 ... 240, 50 Hz	30	**3TK1542-0AU0**		1	1 unit	41B
							110/120, 50/60 Hz	15	**3TK1542-0AF0**		1	1 unit	41B
1 000	375	655	1 135	--	2	2	220 ... 230, 50 Hz[1)]	5	**3TK1742-0AP0**		1	1 unit	41B
							230 ... 240, 50 Hz	30	**3TK1742-0AU0**		1	1 unit	41B
							110/120, 50/60 Hz	20	**3TK1742-0AF0**		1	1 unit	41B



[1)] At 60 Hz: 240 V.

Other voltages according to page 4/53 on request.

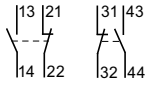
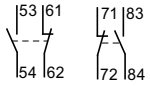
* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data

Accessories

For contactors	Version	Rated control supply voltage U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	d					
Surge suppressors								
3TK10 ... 3TK13	RC elements	24 ... 48	20	**3TK1930-0A**		1	1 unit	41B
		110 ... 415	5	**3TK1930-0B**		1	1 unit	41B
3TK14 ... 3TK17		48 ... 110	15	**3TK1934-0C**		1	1 unit	41B
		220 ... 600	5	**3TK1934-0D**		1	1 unit	41B
Terminal covers								
3TK10, 3TK11	For mounting onto contactors	--	5	**3TK1940-0A**		1	2 units	41B
3TK12, 3TK13			5	**3TK1942-0A**		1	2 units	41B
3TK14, 3TK15			5	**3TK1944-0A**		1	2 units	41B
3TK17			5	**3TK1946-0A**		1	2 units	41B
Mechanical interlocking of two identical contactors								
3TK10, 3TK11	Locking devices, auxiliary contacts 2 NC	--	5	**3TK1920-0A**		1	1 unit	41B
3TK12, 3TK13			5	**3TK1922-0A**		1	1 unit	41B
3TK14 ... 3TK17	Mechanical interlocks including mounting plate		5	**3TK1924-0A**		1	1 unit	41B

Spare parts

For contactors	Version	Auxiliary contacts Connections	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type			d					
Auxiliary switch blocks								
3TK1	For lateral mounting	Left Right						
	1st block 1 NO + 1 NC		5	**3TK1910-3A**		1	1 unit	41B
	2nd block 1 NO + 1 NC		5	**3TK1910-3B**		1	1 unit	41B
Contacts with fixing parts								
3TK10	4 moving and 8 fixed contacts	--	20	**3TK1960-0A**		1	1 unit	41B
3TK11			20	**3TK1961-0A**		1	1 unit	41B
3TK12			20	**3TK1962-0A**		1	1 unit	41B
3TK13			20	**3TK1963-0A**		1	1 unit	41B
3TK14			20	**3TK1964-0A**		1	1 unit	41B
3TK15			20	**3TK1965-0A**		1	1 unit	41B
3TK17			20	**3TK1967-0A**		1	1 unit	41B
Arc chutes								
3TK10	1 arc chute, 4-pole	--	30	**3TK1950-0A**		1	1 unit	41B
3TK11			30	**3TK1951-0A**		1	1 unit	41B
3TK12			30	**3TK1952-0A**		1	1 unit	41B
3TK13			30	**3TK1953-0A**		1	1 unit	41B
3TK14			30	**3TK1954-0A**		1	1 unit	41B
3TK15			30	**3TK1955-0A**		1	1 unit	41B
3TK17			30	**3TK1957-0A**		1	1 unit	41B
Solenoid coils								
3TK10, 3TK11	AC operation[1)]	--		**3TK1970-0A..**				
3TK12, 3TK13				**3TK1972-0A..**				
3TK14 ... 3TK17				**3TK1974-0A..**				

[1)] Rated control supply voltages, possible on request:
The 10th and 11th digits of the Article No. must be supplemented according to the table. Delivery time on request.

For contactor type		**3TK10 ... 3TK13**	**3TK14 ... 3TK17**
Solenoid coil type		**3TK1970-0A.., 3TK1972-0A..**	**3TK1974-0A..**
Rated control supply voltage U_s			
AC operation			
50 Hz	**60 Hz**		
24 V	--	B0	--
110 V	120 V	F0	F0
220 ... 230 V	240 V	P0	P0
230 ... 240 V	--	U0	U0

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

3TK20 miniature contactors for resistive loads (AC-1), 4-pole

Overview

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, DIN EN 60947-4-1

The 3TK20 miniature contactors are suitable for use in any climate. The miniature contactors with screw terminals are finger-safe according to IEC 60529.

Connection methods

The miniature contactors are available in versions with screw terminals, 6.3 mm plug-in terminals and solder pin connections for soldering to printed circuit boards.

3TK20 miniature contactors with 6.3 mm x 0.8 mm flat connectors are coded and can be used in the plug-in base with solder pin connections for printed circuit boards (see page 3/150).

Ratings of three-phase motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

The power rating specifications of the contactors in kW are guide values for 4-pole standard motors at 50 Hz AC and specified voltage (e.g. 400 V). The actual starting and rated data of the motor to be switched must be considered when selecting the units.

Application

Contactors with plug-in terminals

The main area of application for the 3TK20 miniature contactors with flat connectors is in household equipment. These contactors are also suitable for simple electric controllers.

No auxiliary switch blocks can be retrofitted.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16168/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16168/faq	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16168/man

Type	3TK20

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching inductive AC loads (AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The rated operational current I_e in accordance with utilization category AC-4 (breaking 6 times the rated operational current) is determined for a contact service life of approximately 200 000 operating cycles.

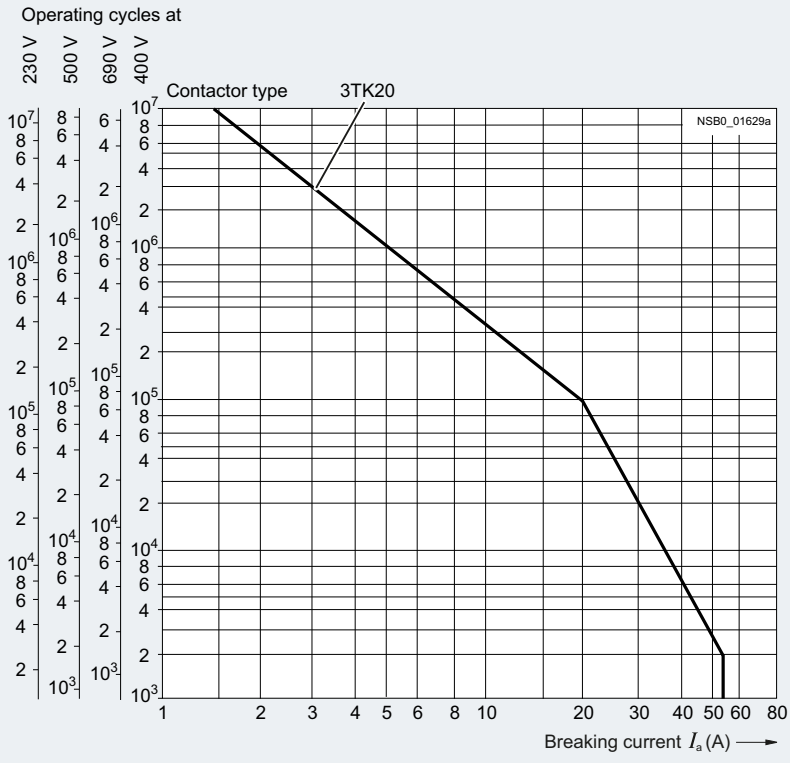
If a shorter contact service life is sufficient, the rated operational current I_e/AC-4 can be increased.

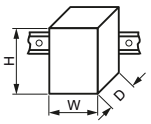
If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking the rated operational current several times according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching (I_a = multiple of I_e) in operating cycles
- C Inching operations as a percentage of total switching operations



Type			**3TK20**
Size			**00**
General data			
Dimensions (W x H x D)		mm	45 x 48 x 63
Permissible mounting position	AC and DC operation		Any
Mechanical endurance			
• AC operation		Operating cycles	10 million
• DC operation			30 million
• Auxiliary switch block			10 million
Rated insulation voltage U_i (Pollution degree 3)			
• Screw terminals		V	690
• Plug-type terminal 6.3 mm x 0.8 mm		V	500
• Solder pin connections		V	500
Rated impulse withstand voltage U_{imp} (Pollution degree 3)			
• Screw terminals		kV	6
• Plug-type terminal 6.3 mm x 0.8 mm		kV	6
• Solder pin connections		kV	6
Protective separation between coil and main contacts According to IEC 60947-1, Appendix N		V	Up to 300
Permissible ambient temperature[1]			
• During operation		°C	-25 ... +55
• During storage		°C	-55 ... +80
Degree of protection acc. to IEC 60529			
• On front			IP20 (with screw terminals)
• Connecting terminal			IP20 (with screw terminals)
Touch protection acc. to IEC 60529			Finger-safe (for screw terminals)
Shock resistance			
• Rectangular pulse			
- AC operation		*g*/ms	8.3/5 and 5.2/10
- DC operation		*g*/ms	11.3/5 and 9.2/10
• Sine pulse			
- AC operation		*g*/ms	13/5 and 8/10
- DC operation		*g*/ms	17.4/5 and 12.9/10
Short-circuit protection			
Main circuit[2]			
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC 60947-4-1/EN 60947-4-1			
- Type of coordination "1"		A	25
- Type of coordination "2"[3]		A	10
- Weld-free		A	10
• Miniature circuit breaker with C characteristic		A	10
Auxiliary circuit			
Short-circuit test			
• With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A	6

1) Applies to 50/60 Hz coil:
At 50 Hz, 1.1 x U_s, with side-by-side mounting and 100 % ON period the max. ambient temperature is +40 °C.

2) According to excerpt from IEC 60947-4-1:
- Type of coordination "1"
Destruction of the contactor and the overload relay is permissible. The contactor and/or overload relay can be replaced if necessary.
- Type of coordination "2"
The overload relay must not suffer any damage. Contact welding on the contactor is permissible, however, if the contacts can be easily separated.

3) A short-circuit current of $I_q \leq 6$ kA applies to type of coordination "2".

3TK20 miniature contactors for resistive loads (AC-1), 4-pole

Type		3TK20
Size		00
Control		
Solenoid coil operating range[1]		0.8 ... 1.1 x U_s
Solenoid coil power consumption (for cold coil and 1.0 x U_s)		
Standard version		
• AC operation, 50 Hz		
- Closing	VA	15
- P.f.		0.41
- Closed	VA	6.8
- P.f.		0.42
• AC operation, 60 Hz		
- Closing	VA	14.4
- P.f.		0.36
- Closed	VA	6.1
- P.f.		0.46
• AC operation, 50/60 Hz[1]		
- Closing	VA	16.5/13.2
- P.f.		0.43/0.38
- Closed	VA	8.0/5.4
- P.f.		0.48/0.42
For USA and Canada		
• AC operation, 50 Hz		
- Closing	VA	14.6
- P.f.		0.38
- Closed	VA	6.5
- P.f.		0.40
• AC operation, 60 Hz		
- Closing	VA	14.4
- P.f.		0.30
- Closed	VA	6.0
- P.f.		0.44
• DC operation (closing = closed)	W	3
Permissible residual current of the electronic circuit[2] (with 0 signal)		
• AC operation	mA	≤ 3 x (230 V/U_s)
• DC operation	mA	≤ 1 x (230 V/U_s)
Operating times at 1.0 x U_s		
• AC operation		
- Closing delay	ms	5 ... 18
- Opening delay	ms	3 ... 21
- Dead interval		To use the 3TK20 AC-operated contactor in reversing duty an additional dead interval of 50 ms is required along with an NC contact interlock.
• DC operation		
- Closing delay	ms	19 ... 31
- Opening delay	ms	3 ... 4
• Arcing time	ms	10 ... 15

[1] Applies to 50/60 Hz coil:
At 50 Hz, 1.1 x U_s, with side-by-side mounting and 100 % ON period the max. ambient temperature is +40 °C.

[2] The 3TX4490-1J additional load module is recommended for higher residual currents (see page 3/118).

Type			3TK20..-0...	3TK20..-3..., 3TK20..-6..., 3TK20..-7...
Size			00	
Main circuit				
Load rating with AC				
Utilization category AC-1, switching resistive loads				
• Rated operational current I_e (at 40 °C)	Up to 400/380 V	A	18	
	690/660 V	A	18	--
• Rated operational current I_e (at 55 °C)	400/380 V	A	16	
	690/660 V	A	16	--
• Rated power of AC loads with p.f. = 1	At 230/220 V	kW	6.0	
	400/380 V	kW	10	
	500 V	kW	13	
	690/660 V	kW	17	--
• Minimum conductor cross-section for loads with I_e		mm^2	2.5	
Utilization categories AC-2 and AC-3				
• Rated operational current I_e	Up to 220 V	A	9.0	
	230 V	A	9.0	
	380 V	A	9.0	
	400 V	A	8.4	
	500 V	A	6.5	
	660 V	A	5.2	--
	690 V	A	5.2	--
• Rated power for motors with slipring or squirrel cage At 50 and 60 Hz	At 110 V	kW	1.2	
	115 V	kW	1.2	
	120 V	kW	1.3	
	127 V	kW	1.4	
	200 V	kW	2.2	
	220 V	kW	2.4	
	230 V	kW	2.5	
	240 V	kW	2.6	
	380 V	kW	4.0	
	400 V	kW	4.0	
	415 V	kW	4.0	
	440 V	kW	4.0	
	460 V	kW	4.0	
	500 V	kW	4.0	
	575 V	kW	4.0	--
	660 V	kW	4.0	--
	690 V	kW	4.0	--
• Power loss per conducting path	At I_e/AC-3	W	0.3	
Utilization category AC-4				
(Contact endurance approx. 200 000 operating cycles at I_a = 6 x I_e)				
• Rated operational current I_e	Up to 400 V	A	2.6	
	690 V	A	1.8	--
• Rated power for motors with squirrel cage At 50 and 60 Hz	At 110 V	kW	0.32	
	115 V	kW	0.33	
	120 V	kW	0.35	
• Max. permissible rated operational current I_e/AC-4 ≙ I_e/AC-3 up to 500 V, for reduced contact endurance and reduced switching frequency.	127 V	kW	0.37	
	200 V	kW	0.58	
	220 V	kW	0.64	
	230 V	kW	0.67	
	240 V	kW	0.70	
	380 V	kW	1.10	
	400 V	kW	1.15	
	415 V	kW	1.20	
	440 V	kW	1.27	
	460 V	kW	1.33	
	500 V	kW	1.45	
	575 V	kW	1.30	--
	660 V	kW	1.10	--
	690 V	kW	1.15	--

3TK20 miniature contactors for resistive loads (AC-1), 4-pole

Type				3TK20..-0...	3TK20..-3..., 3TK20..-6..., 3TK20..-7...
Size				00	
Main circuit (continued)					
Load rating with DC					
Utilization category DC-1, switching resistive load (*L/R* ≤ 1 ms) (contact endurance 0.1 x 10^6 operating cycles)					
• Rated operational currents I_e (at 55 °C)					
- 1 conducting path	Up to 24 V	A		16	
	60 V	A		6	
	110 V	A		2	
	220/240 V	A		1	
- 2 conducting paths in series	Up to 24 V	A		16	
	60 V	A		16	
	110 V	A		6	
	220/240 V	A		2	
- 3 conducting paths in series	Up to 24 V	A		16	
	60 V	A		16	
	110 V	A		16	
	220/240 V	A		6	
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)					
• Rated operational currents I_e (at 55 °C)					
- 1 conducting path	Up to 24 V	A		6	
	60 V	A		3	
	110 V	A		0.5	
	220/240 V	A		0.1	
- 2 conducting paths in series	Up to 24 V	A		10	
	60 V	A		5	
	110 V	A		2	
	220/240 V	A		0.5	
- 3 conducting paths in series	Up to 24 V	A		16	
	60 V	A		16	
	110 V	A		16	
	220/240 V	A		2	
Switching frequency [1]					
Switching frequency *z* in operating cycles/hour					
• Contactors without overload relays	No-load switching frequency		h^{-1}	10 000	
	AC-1		h^{-1}	1 000	
	AC-2		h^{-1}	500	
	AC-3		h^{-1}	1 000	
• Contactors with overload relays (mean value)			h^{-1}	15	

[1] Dependence of the switching frequency z' on the operational current I' and operational voltage U': $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

Type			3TK20
Size			00
Conductor cross-sections			
Main and auxiliary conductors (1 or 2 conductors can be connected)			**Screw terminals**
• Solid		mm^2	2 x (0.5 ... 2.5), 1 x 4
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5), 1 x 2.5
• AWG cables, solid or stranded		AWG	2 x (20 ... 14), 1 x 12
• Pin-end connector (DIN 46231)		mm^2	1 x 1 ... 2.5
• Terminal screw			M3
• Prescribed tightening torque for terminal screws		Nm lb.in	0.8 ... 1.3 7 ... 11
			Flat connectors
• When using a plug-in sleeve 6.3 – 1		mm^2	0.5 ... 1
• Finely stranded with 6.3 – 2.5		mm^2	1 ... 2.5
			Solder pin connections (for printed circuit boards only)
• Solder pin cross-section	(does not apply to plug-in bases)	mm^2	0.8 x 1.2

Type			3TK20
Size			00
Auxiliary contacts			
General data			
Standards			IEC 60947-5-1
Rated insulation voltage U_i (Pollution degree 3)		V	690
Conventional thermal current I_{th} = Rated operational current I_e/AC-12		A	10
Load rating with AC			
Rated operational current I_e/AC-15/AC-14			
• For rated operational voltage U_e	24 ... 230 V	A	4
	380 ... 400 V	A	3
	500 V	A	2
	660 V	A	1
	690 V	A	1
Load rating with DC			
Rated operational current I_e/DC-12			
• For rated operational voltage U_e	24 V	A	4
	48 V	A	2.2
	110 V	A	1.1
	125 V	A	1.1
	220 V	A	0.5
	440 V	A	--
	600 V	A	--
Rated operational current I_e/DC-13			
• For rated operational voltage U_e	24 V	A	2.1
	48 V	A	1.1
	110 V	A	0.52
	125 V	A	0.52
	220 V	A	0.27
	440 V	A	--
	600 V	A	--

3TK20 miniature contactors for resistive loads (AC-1), 4-pole

Type			3TK20..-0...	3TK20..-3..., 3TK20..-6..., 3TK20..-7...
Size			00	
CSA and UL rated data of 3TK20 contactors				
Rated insulation voltage U_i		V AC	600	300
Uninterrupted current, open and enclosed		A	16	16 (10 for solder pin connection)
Maximum horsepower ratings (CSA and UL-approved values)				
• Rated power for three-phase motors at 60 Hz				
- Single-phase	At 115 V	hp	0.5	--
	200 V	hp	1	
	230 V	hp	1.5	1
	460/575 V	hp	--	
- Three-phase	At 115 V	hp	--	
	200 V	hp	3	3 (1 for 3TK20..-6)
	230 V	hp	3	3 (1 for 3TK20..-6)
	460/575 V	hp	5	--
CSA, UL and GL rated data of the auxiliary contacts				
Rated voltage, max.		V AC	600	
Auxiliary switch blocks, max.		V AC	300	
Switching capacity			A 600, Q 300	
Uninterrupted current at 240 V AC		A	10	

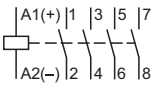
Selection and ordering data

Size 00
AC-1: Operational current I_e = 16 A (at 55 °C)

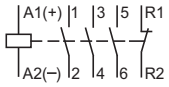
Rated data Utilization categories AC-2 and AC-3					Main contacts		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Ratings of three-phase motors at 50 Hz and				Version						
At 400/ 380 V	230/ 220 V	**400/ 380 V**	500 V	690/ 660 V				Article No.	Price per PU		
A	kW	**kW**	kW	kW	NO	NC	d				
Miniature contactors with screw terminals · For screw fixing and snap-on mounting onto TH 35 standard mounting rail											
AC operation, rated control supply voltage U_s = 50 Hz AC 230/220 V [1]											
9	2.4	**4**	4	4	4	--	20	**3TK2040-0AP0**	1	1 unit	41B
					3	1	20	**3TK2031-0AP0**	1	1 unit	41B
					2	2	15	**3TK2022-0AP0**	1	1 unit	41B
DC operation, rated control supply voltage U_s = 24 V DC											
9	2.4	**4**	4	4	4	--	20	**3TK2040-0BB4**	1	1 unit	41B
					3	1	20	**3TK2031-0BB4**	1	1 unit	41B
					2	2	20	**3TK2022-0BB4**	1	1 unit	41B

Terminal designations

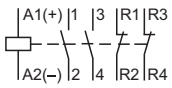
4 NO



3 NO + 1 NC



2 NO + 2 NC



3TK20..-0...

[1] Operating range at AC-1 and 220 V: 0.85 to 1.15 x U_s; lower operating range limit according to IEC 60947.

For accessories, see page 3/149 onwards.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

	Contactor type	3TK20
Rated control supply voltage U_s	Size	00
AC operation		
Solenoid coils for 50 and 60 Hz AC		
50 Hz	**60 Hz**	
24 V AC	29 V AC	B0
110 V AC	132 V AC	F0
230/220 V AC	276 V AC	P0[1]
DC operation		
24 V DC		B4

[1] Operating range at AC-1 and 220 V: 0.85 to 1.15 x U_s; lower operating range limit according to IEC 60947.

Other voltages and delivery time on request.

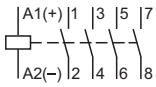
* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Size 00
AC-1: Operational current I_e = 16 A (at 55 °C)
(continued)

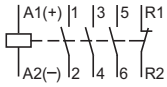
Rated data Utilization categories AC-2 and AC-3					Main contacts		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Ratings of three-phase motors at 50 Hz and				Version							
At 400/ 380 V	230/ 220 V	**400/ 380 V**	500 V	690/ 660 V	NO	NC	d					
A	kW	**kW**	kW	kW								

Terminal designations

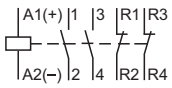
4 NO



3 NO + 1 NC



2 NO + 2 NC



Miniature contactors with 6.3 mm x 0.8 mm flat connectors For screw fixing and snap-on mounting onto TH 35 standard mounting rail

3TK20..-3...

Flat connectors

AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]

9	2.4	**4**	4	--	4	--	20	**3TK2040-3AP0**	1	1 unit	41B
					3	1	20	**3TK2031-3AP0**	1	1 unit	41B
					2	2	15	**3TK2022-3AP0**	1	1 unit	41B

DC operation, rated control supply voltage U_s = 24 V DC

9	2.4	**4**	4	--	4	--	20	**3TK2040-3BB4**	1	1 unit	41B
					3	1	20	**3TK2031-3BB4**	1	1 unit	41B
					2	2	20	**3TK2022-3BB4**	1	1 unit	41B

Miniature contactors with 6.3 mm x 0.8 mm flat connectors For screw fixing (diagonal)

3TK20..-7...

AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]

9	2.4	**4**	4	--	4	--	20	**3TK2040-7AP0**	1	1 unit	41B
					3	1	20	**3TK2031-7AP0**	1	1 unit	41B
					2	2	20	**3TK2022-7AP0**	1	1 unit	41B

DC operation, rated control supply voltage U_s = 24 V DC

9	2.4	**4**	4	--	4	--	2	**3TK2040-7BB4**	1	1 unit	41B
					3	1	20	**3TK2031-7BB4**	1	1 unit	41B
					2	2	20	**3TK2022-7BB4**	1	1 unit	41B

Miniature contactors with solder pin connections for printed circuit boards For screw fixing (diagonal)

3TK20..-6...

Solder pin connections

AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]

9	2.4	**4**	4	--	4	--	20	**3TK2040-6AP0**	1	1 unit	41B
					3	1	20	**3TK2031-6AP0**	1	1 unit	41B
					2	2	20	**3TK2022-6AP0**	1	1 unit	41B

DC operation, rated control supply voltage U_s = 24 V DC

9	2.4	**4**	4	--	4	--	15	**3TK2040-6BB4**	1	1 unit	41B
					3	1	5	**3TK2031-6BB4**	1	1 unit	41B
					2	2	20	**3TK2022-6BB4**	1	1 unit	41B

[1] Operating range at AC-1 and 220 V: 0.85 to 1.15 x U_s; lower operating range limit according to IEC 60947.

For accessories, see page 3/149 onwards.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

	Contactor type	3TK20
Rated control supply voltage U_s	Size	00
AC operation		
Solenoid coils for 50 and 60 Hz AC		
50 Hz	**60 Hz**	
24 V AC	29 V AC	B0
110 V AC	132 V AC	F0
230/220 V AC	276 V AC	P0[1]
DC operation		
24 V DC		B4

[1] Operating range at AC-1 and 220 V: 0.85 to 1.15 x U_s; lower operating range limit according to IEC 60947.

Other voltages and delivery time on request.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

4

Overview

Standards

IEC 60947-4-1, DIN EN 60947-4-1,
IEC 60077-2, DIN EN 60077-2

The contactors are finger-safe according to IEC 60529 (exception: S3 series resistor). The auxiliary conductor and coil terminals are all spring-type terminals.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full coil operating range) is -40 to +70 °C.

Performance range

3RT contactors are available in all sizes from S00 to S12 up to 250 kW or 500 A (AC-3 at 400 V).

Operating range of contactor operating mechanisms

Sizes S00 to S3

The solenoid coils of the 3RT2 contactors have an extended coil operating range from max. 0.7 to 1.25 x Us and are fitted as standard with surge suppressors. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Sizes S6 to S12

The operating mechanism for the 3RT10 contactors features solid-state control of the contactor coil. Overvoltage damping of the operating mechanism coil is already integrated in the electronics. The operating mechanisms are powered via a supply voltage with an operating range of 0.7 to 1.25 x U_S, optionally also controlled depending on the chosen mode of operation. Alternatively, control is via the separate 24 to 110 V DC control signal input.

Three rated voltage ranges are available as direct voltage (DC):

- 24 V DC
- 72 V DC
- 110 V DC

Application

Besides standard approval in compliance with IEC 60974-4-1, the contactors with an extended operating range are also approved in compliance with IEC 60077-2, thus fulfilling the requirement for use in railway applications.

Thus, their suitability for increased requirements such as an

- extended temperature range in comparison with the regular standard IEC 60497-4-1 or
- extended operating range of the solenoid coils or also
- increased resistance to mechanical oscillations and vibrations is warranted. The design of the terminals in the spring-type connection system also contributes toward vibration resistance.

3RT20 contactors with conventional coil

Control and auxiliary circuits

These contactors have an extended operating range from 0.7 to 1.25 x U_S; on size S00 the coils are fitted with suppressor diodes, on size S0 with varistors. An additional series resistor is not required.

Note:

An additional auxiliary switch block cannot be mounted.

Side-by-side mounting

A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C ≤ 70 °C.

3RT201 contactors with series resistor

Control and auxiliary circuits

The solenoid coils of these contactors have an extended coil operating range from 0.7 to 1.25 x U_S and are fitted as standard with a surge suppressor (suppressor diode or varistor as preferred).

The DC solenoid systems of the contactors are modified (to holding excitation) by means of a series resistor.

3RT201 to 3RT204 contactors with solid-state operating mechanism, extended operating range

Control and auxiliary circuits

The solenoid coils of these contactors have an extended coil operating range from 0.7 to 1.25 x U_S[1)] and are fitted as standard with varistors to provide protection against overvoltage.

The contactors are energized via upstream control electronics that ensure the coil operating range of 0.7 to 1.25 x U_S[1)] at an ambient temperature of 70 °C. They are supplied as complete units with integrated coil electronics. A varistor is integrated for damping opening surges in the coil.

The possibility of mounting auxiliary switches is the same as that for equivalent standard contactors for switching motors in the matching size (see overview diagrams of the 3RT20 contactors from page 3/7 onwards).

Side-by-side mounting

With these contactor versions in sizes S00 and S0, side-by-side mounting is permitted at ambient temperatures up to 70 °C.

1) Exception: 3RT204.-.X...-0LA2: 0.7 to 1.2 x U_S.

Technical specifications

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16177/td

FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16177/faq

Manuals, see
- System Manual "SIRIUS – System Overview", https://support.industry.siemens.com/cs/WW/en/view/60311318
- Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", https://support.industry.siemens.com/cs/WW/en/view/60306557
- Application Manual "SIRIUS Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820

Type			3RT2017	3RT201.-2XB4.-0LA2	3RT201.-2XF4.-0LA2	3RT202.	3RT202.-2XB40-0LA2	3RT202.-2XF40-0LA2
Size			S00			S0		
General data								
Upright mounting position								
• Contactors with series resistor			Special version (on request)					
• Contactors with conventional coil			Special version (on request)					
Ambient temperature								
• During operation		°C	-40 ... +70[1]	-40 ... +70				
• During storage		°C	-55 ... +80					
Control								
Solenoid coil operating range	DC		0.7 ... 1.25 x U_s					
Power consumption of the solenoid coils			For cold coil and 1.0 x U_s					
• Contactors with series resistor	Closing	W	13	--				
	Closed	W	4.0	--				
• Contactors with conventional operating mechanism	Closing	W	2.8	--		4.5	--	
	Closed	W	2.8	--		4.5	--	
• Contactors with solid-state operating mechanism	Closing	W	--	4.0	4.5	--	6.7	13.2
	Closed	W	--	0.7	0.75	--	0.8	1.56

1) 3RT20..-.K contactors without the article number suffix "-0LA2" are coupling contactors that are certified for the -25 to +60 °C temperature range. For railway applications, an additional certification approves these contactors with a minimum distance of 10 mm for the extended temperature range from -40 to +70 °C.

All details and technical specifications not mentioned here are identical to those of the basic units, see from page 3/19 onwards.

Type			3RT203.-3XB40-0LA2	3RT203.-3XF40-0LA2	3RT204.-3XB40-0LA2	3RT204.-3XF40-0LA2
Size			S2		S3	
General data						
Ambient temperature						
• During operation		°C	-40 ... +70[1]		-40 ... +70	
• During storage		°C	-55 ... +80			
Control						
Solenoid coil operating range	DC		0.7 ... 1.25 x U_s		0.7 ... 1.2 x U_s	
Power consumption of the solenoid coils			For cold coil and 1.0 x U_s			
• Contactors with solid-state operating mechanism	Closing	W	23		76	64
	Closed	W	1		1.8	1.0

1) 3RT20..-.K contactors without the article number suffix "-0LA2" are coupling contactors that are certified for the -25 to +60 °C temperature range. For railway applications, an additional certification approves these contactors with a minimum distance of 10 mm for the extended temperature range from -40 to +70 °C.

All details and technical specifications not mentioned here are identical to those of the basic units, see from page 3/19 onwards.

Type			3RT105.-2X.46-0LA2	3RT106.-2X.46-0LA2	3RT107.-2X.46-0LA2
Size			S6	S10	S12
General data					
Ambient temperature					
• During operation		°C	-40 ... +70		
• During storage		°C	-55 ... +80		
Control					
Supply voltage operating range			0.7 ... 1.25 x U_s		
Control voltage operating range		V DC	24 ... 110		
Power consumption of the solenoid coils					
• Contactors with solid-state operating mechanism	Closing	W	320	580	800
	Closed	W	2.8	3.4	3.6

For all specifications and technical specifications not mentioned here, see https://support.industry.siemens.com/cs/ww/en/ps/16177/td.

4

Selection and ordering data

DC operation
Spring-type terminals
For screw fixing and snap-on mounting onto standard mounting rails
Solenoid coil fitted with surge suppressor

3RT201.-2K.4.

3RT201.-2K.42-0LA0

Rated data according to IEC 60947-4-1 AC-2 and AC-3 t_u: 70 °C					Auxiliary contacts			Rated control supply voltage U_s	SD	Spring-type terminals		PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Rating of three-phase motors at				Ident. No.	Version				Article No.	Price per PU			
400 V	230 V	**400 V**	500 V	690 V		NO	NC							
A	kW	**kW**	kW	kW		NO	NC	V DC	d					
3RT20 contactors for switching motors														
Size S00														
With conventional coil, fitted with suppressor diode (coupling contactors)														
• 1 NO, Ident. No. **10**					• 1 NC, Ident. No. **01**									
12	3	**5.5**	5.5	5.5	**10**[1]	1	--	24	▶	**3RT2017-2KB41**		1	1 unit	41B
								110	5	**3RT2017-2KF41**		1	1 unit	41B
12	3	**5.5**	5.5	5.5	**01**[1]	--	1	24	▶	**3RT2017-2KB42**		1	1 unit	41B
								110	5	**3RT2017-2KF42**		1	1 unit	41B
With conventional coil, fitted with varistor														
• 1 NO, Ident. No. **10**					• 1 NC, Ident. No. **01**									
12	3	**5.5**	5.5	5.5	**10**[1]	1	--	24	5	**3RT2017-2LB41**		1	1 unit	41B
								110	5	**3RT2017-2LF41**		1	1 unit	41B
12	3	**5.5**	5.5	5.5	**01**[1]	--	1	24	5	**3RT2017-2LB42**		1	1 unit	41B
								110	5	**3RT2017-2LF42**		1	1 unit	41B
With series resistor, fitted with suppressor diode														
12	3	**5.5**	5.5	5.5	**--**[2]	--	1[3]	24	5	**3RT2017-2KB42-0LA0**		1	1 unit	41B
								110	5	**3RT2017-2KF42-0LA0**		1	1 unit	41B
16	4	**7.5**	10	11	**--**[2]	--	1[3]	24	5	**3RT2018-2KB42-0LA0**		1	1 unit	41B
								110	5	**3RT2018-2KF42-0LA0**		1	1 unit	41B
With series resistor, fitted with varistor														
12	3	**5.5**	5.5	5.5	**--**[2]	--	1[3]	24	5	**3RT2017-2LB42-0LA0**		1	1 unit	41B
								110	5	**3RT2017-2LF42-0LA0**		1	1 unit	41B
16	4	**7.5**	10	11	**--**[2]	--	1[3]	24	5	**3RT2018-2LB42-0LA0**		1	1 unit	41B
								110	5	**3RT2018-2LF42-0LA0**		1	1 unit	41B

1) It is not possible to mount an auxiliary switch block. A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.
2) One 4-pole auxiliary switch block according to EN 50005 can be mounted from -40 to 70 °C; no clearance required.
3) NC contact cannot be used because it is used for switching of the series resistor.

For accessories and spare parts, see page 3/75 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

DC operation
Spring-type terminals
For screw fixing and snap-on mounting onto standard mounting rails
Solenoid coil fitted with varistor

3RT201.-2X.41-0LA2

3RT201.-2X.42-0LA2

3RT202.-2K.40

3RT202.-2X.40-0LA2

Rated data according to IEC 60947-4-1 AC-2 and AC-3 I_u: 70 °C					Auxiliary contacts			Rated control supply voltage U_s	SD	**Spring-type terminals**	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Rating of three-phase motors at				Ident. No.	Version				Article No. Price per PU			
400 V	230 V	**400 V**	500 V	690 V		NO	NC						
A	kW	**kW**	kW	kW				V DC	d				
3RT20 contactors for switching motors													
Size S00													
With solid-state operating mechanism, with integrated varistor NEW													
• 1 NO, Ident. No. **10**					• 1 NC, Ident. No. **01**								
12	3	**5.5**	5.5	5.5	**10**[1]	1	--	24	5	**3RT2017-2XB41-0LA2**	1	1 unit	41B
								110	5	**3RT2017-2XF41-0LA2**	1	1 unit	41B
12	3	**5.5**	5.5	5.5	**01**[1]	--	1	24	5	**3RT2017-2XB42-0LA2**	1	1 unit	41B
								110	5	**3RT2017-2XF42-0LA2**	1	1 unit	41B
16	4	**7.5**	10	11	**10**[1]	1	--	24	5	**3RT2018-2XB41-0LA2**	1	1 unit	41B
								110	5	**3RT2018-2XF41-0LA2**	1	1 unit	41B
16	4	**7.5**	10	11	**01**[1]	--	1	24	5	**3RT2018-2XB42-0LA2**	1	1 unit	41B
								110	5	**3RT2018-2XF42-0LA2**	1	1 unit	41B
Size S0													
With conventional operating mechanism (coupling contactors)													
1 NO + 1 NC, Ident. No. **11**													
17	4	**7.5**	10	11	**11**	1	1	24	2	**3RT2025-2KB40**	1	1 unit	41B
								110	5	**3RT2025-2KF40**	1	1 unit	41B
25	5.5	**11**	11	11	**11**	1	1	24	2	**3RT2026-2KB40**	1	1 unit	41B
								110	5	**3RT2026-2KF40**	1	1 unit	41B
32	7.5	**15**	18.5	18.5	**11**	1	1	24	5	**3RT2027-2KB40**	1	1 unit	41B
								110	5	**3RT2027-2KF40**	1	1 unit	41B
With solid-state operating mechanism													
1 NO + 1 NC, Ident. No. **11**													
17	4	**7.5**	10	11	**11**	1	1	24	5	**3RT2025-2XB40-0LA2**	1	1 unit	41B
								110	5	**3RT2025-2XF40-0LA2**	1	1 unit	41B
25	5.5	**11**	11	11	**11**	1	1	24	5	**3RT2026-2XB40-0LA2**	1	1 unit	41B
								110	5	**3RT2026-2XF40-0LA2**	1	1 unit	41B
32	7.5	**15**	18.5	18.5	**11**	1	1	24	5	**3RT2027-2XB40-0LA2**	1	1 unit	41B
								110	5	**3RT2027-2XF40-0LA2**	1	1 unit	41B
38	7.5	**18.5**	18.5	18.5	**11**	1	1	24	5	**3RT2028-2XB40-0LA2**	1	1 unit	41B
								110	5	**3RT2028-2XF40-0LA2**	1	1 unit	41B

For accessories and spare parts, see page 3/75 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RT contactors with extended operating range, 3-pole *IE3/IE4* ready

DC operation
Spring-type terminals
For screw fixing and snap-on mounting onto standard mounting rails
Solenoid coil fitted with varistor

3RT203.-3X.40-0LA2

3RT204.-3X.40-0LA2

Rated data according to IEC 60947-4-1 AC-2 and AC-3 t_u: 70 °C					Auxiliary contacts			Rated control supply voltage U_s	SD	**Spring-type terminals** for auxiliary and control circuits		PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Rating of three-phase motors at				Ident. No.	Version				Article No.	Price per PU			
400 V	230 V	**400 V**	500 V	690 V		NO	NC							
A	kW	**kW**	kW	kW				V DC	d					
3RT20 contactors for switching motors														
Size S2														
With solid-state operating mechanism														
1 NO + 1 NC, Ident. No. 11														
40	11	**18.5**	22	22	**11**	1	1	24	5	**3RT2035-3XB40-0LA2**		1	1 unit	41B
								110	5	**3RT2035-3XF40-0LA2**		1	1 unit	41B
50	15	**22**	30	22	**11**	1	1	24	5	**3RT2036-3XB40-0LA2**		1	1 unit	41B
								110	5	**3RT2036-3XF40-0LA2**		1	1 unit	41B
65	18.5	**30**	37	37	**11**	1	1	24	5	**3RT2037-3XB40-0LA2**		1	1 unit	41B
								110	5	**3RT2037-3XF40-0LA2**		1	1 unit	41B
80	22	**37**	37	45	**11**	1	1	24	5	**3RT2038-3XB40-0LA2**		1	1 unit	41B
								110	5	**3RT2038-3XF40-0LA2**		1	1 unit	41B
Size S3 NEW														
With solid-state operating mechanism														
1 NO + 1 NC, Ident. No. 11														
80	22	**37**	45	55	**11**	1	1	24	5	**3RT2045-3XB40-0LA2**		1	1 unit	41B
								110	5	**3RT2045-3XF40-0LA2**		1	1 unit	41B
95	22	**45**	55	75	**11**	1	1	24	4	**3RT2046-3XB40-0LA2**		1	1 unit	41B
								110	5	**3RT2046-3XF40-0LA2**		1	1 unit	41B
110	30	**55**	75	75	**11**	1	1	24	X	**3RT2047-3XB40-0LA2**		1	1 unit	41B
								110	X	**3RT2047-3XF40-0LA2**		1	1 unit	41B

For accessories and spare parts, see page 3/75 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

NEW **IE3/IE4 ready** **SIRIUS 3RT contactors with extended operating range, 3-pole**

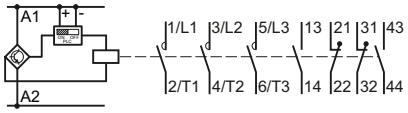
DC operation
Spring-type terminals
For screw fixing onto standard mounting rails
Withdrawable operating mechanisms with integrated circuit (varistor)

3RT1055 -2XB46-0LA2

3RT1064 -2XB46-0LA2

3RT1075 -2XB46-0LA2

Size	Rated data according to IEC 60947-4-1 AC-2 and AC-3, t_u: Up to 70 °C		Auxiliary contacts, lateral		Rated control supply voltage U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Operational current I_e 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Version								
	A	**kW**	NO	NC	V DC	d					
Solid-state operating mechanism · with 24 ... 110 V DC control signal input e. g. for control by PLC											
							Spring-type terminals for coil and auxiliary switch terminals				
S6	115	**55**	2	2	24	5	**3RT1054-2XB46-0LA2**		1	1 unit	41B
					72	5	**3RT1054-2XJ46-0LA2**		1	1 unit	41B
					110	5	**3RT1054-2XF46-0LA2**		1	1 unit	41B
	150	**75**	2	2	24	5	**3RT1055-2XB46-0LA2**		1	1 unit	41B
					72	5	**3RT1055-2XJ46-0LA2**		1	1 unit	41B
					110	5	**3RT1055-2XF46-0LA2**		1	1 unit	41B
	185	**90**	2	2	24	5	**3RT1056-2XB46-0LA2**		1	1 unit	41B
					72	5	**3RT1056-2XJ46-0LA2**		1	1 unit	41B
					110	5	**3RT1056-2XF46-0LA2**		1	1 unit	41B
S10	225	**110**	2	2	24	5	**3RT1064-2XB46-0LA2**		1	1 unit	41B
					72	5	**3RT1064-2XJ46-0LA2**		1	1 unit	41B
					110	5	**3RT1064-2XF46-0LA2**		1	1 unit	41B
	265	**132**	2	2	24	5	**3RT1065-2XB46-0LA2**		1	1 unit	41B
					72	5	**3RT1065-2XJ46-0LA2**		1	1 unit	41B
					110	5	**3RT1065-2XF46-0LA2**		1	1 unit	41B
	300	**160**	2	2	24	5	**3RT1066-2XB46-0LA2**		1	1 unit	41B
					72	5	**3RT1066-2XJ46-0LA2**		1	1 unit	41B
					110	5	**3RT1066-2XF46-0LA2**		1	1 unit	41B
S12	400	**200**	2	2	24	5	**3RT1075-2XB46-0LA2**		1	1 unit	41B
					72	5	**3RT1075-2XJ46-0LA2**		1	1 unit	41B
					110	5	**3RT1075-2XF46-0LA2**		1	1 unit	41B
	500	**250**	2	2	24	5	**3RT1076-2XB46-0LA2**		1	1 unit	41B
					72	5	**3RT1076-2XJ46-0LA2**		1	1 unit	41B
					110	5	**3RT1076-2XF46-0LA2**		1	1 unit	41B



For accessories and spare parts, see page 3/75 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RH2 contactor relays with extended operating range

Overview

DC operation

IEC 60947-4-1, EN 60947-4-1

The contactor relays are finger-safe according to IEC 60529. The size S00 contactor relays have spring-type connections for all terminals.

Ambient temperature

The permissible ambient temperature for operation of the contactor relays (across the full coil operating range) is -40 to +70 °C.

Uninterrupted duty at temperatures > +60 °C reduces the mechanical endurance, the current carrying capacity of the conducting paths and the switching frequency.

Control and auxiliary circuits

The solenoid coils of the contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with surge suppressors. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Application

For operation in installations that are subject both to considerable variations in the control voltage and to high ambient temperatures, e. g. railway applications under extreme climatic conditions, rolling mills, etc.

Also for control supply voltages with battery buffering to extend the operating time in the event of battery charge failure.

Contactor relays with conventional coil

Control and auxiliary circuits

These contactor relays have an extended operating range from 0.7 to 1.25 x U_s; the coils are fitted with suppressor diodes as standard. An additional series resistor is not required.

Note:

An additional auxiliary switch block cannot be mounted.

Side-by-side mounting

A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C ≤ 70 °C.

Contactor relays with series resistor

Control and auxiliary circuits

The DC solenoid systems of the contactor relays are modified (to holding excitation) by means of a series resistor.

The size S00 contactor relays are supplied prewired with a plug-on module containing the series resistor. A surge suppressor (a suppressor diode or varistor as preferred) is integrated.

A 4-pole auxiliary switch block (according to EN 50005) can be fitted additionally.

Side-by-side mounting

Side-by-side-side mounting is permissible at ambient temperatures up to 70 °C.

Contactor relays with solid-state operating mechanism

Control and auxiliary circuits

The solenoid coils of these contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage.

The contactor relays are energized via upstream control electronics which ensure the coil operating range of 0.7 to 1.25 x U_s at an ambient temperature of 70 °C. They are supplied as complete units with integrated coil electronics. A varistor is integrated for damping opening surges in the coil.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16174/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16174/faq Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16174/man

Contactor relays		Type	3RH21..-2K, -2L	3RH2122-2XB40-0LA2	3RH2122-2XF40-0LA2
General data					
Upright mounting position					
• Contactors with series resistor			Special version (on request)		
• Contactors with conventional coil			Special version (on request)		
Ambient temperature					
• During operation		°C	-40 ... +70[1]		
• During storage		°C	-55 ... +80		
Control					
Solenoid coil operating range	DC		0.7 ... 1.25 x U_s		
Power consumption of the solenoid coils			For cold coil and 1.0 x U_s		
• Contactors with series resistor	- Closing	W	13	--	--
	- Closed	W	4	--	--
• Contactors with conventional coil	- Closing	W	2.8	--	--
	- Closed	W	2.8	--	--
• Contactors with solid-state operating mechanism	- Closing	W	--	4	4.5
	- Closed	W	--	0.7	0.75

[1] 3RH21..-.K contactor relays without the article number suffix "-0LA." are coupling contactor relays that are certified for the temperature range -25 to +60 °C. For railway applications, an additional certification approves these contactors with a minimum distance of 10 mm for the extended temperature range from -40 to +70 °C.

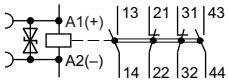
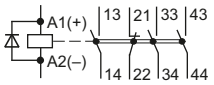
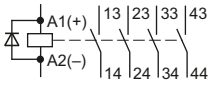
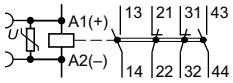
All details and technical specifications not mentioned here are identical to those of the 3RH2 basic units; see from page 5/5 onwards.

Selection and ordering data

DC operation
Spring-type terminals
For screw fixing and snap-on mounting onto standard mounting rails
Solenoid coil with surge suppression

3RH2122-2K.40

3RH2122-2K.40-0LA0

Rated operational current I_e/AC-15/AC-14 t_u: 70 °C at				Contacts		Rated control supply voltage U_s	SD	**Spring-type terminals**	PU (UNIT, SET, M)	PS*	PG
230 V	400 V	500 V	690 V	Version				Article No. Price per PU			
A	A	A	A	NO	NC	V DC	d				
3RH21 contactor relays											
Size S00											
With conventional coil, fitted with suppressor diode											
Terminal designations according to EN 50011											
2 NO + 2 NC, Ident. No. **22E** 											
10	3	2	1	2	2[1]	24	►	**3RH2122-2KB40**	1	1 unit	41A
						110	2	**3RH2122-2KF40**	1	1 unit	41A
				3	1[1]	24	►	**3RH2131-2KB40**	1	1 unit	41A
				4	0[1]	24	5	**3RH2140-2KB40**	1	1 unit	41A
3 NO + 1 NC, Ident. No. **31E** 											
10	3	2	1	3	1[1]	24	►	**3RH2131-2KB40**	1	1 unit	41A
				4	0[1]	24	5	**3RH2140-2KB40**	1	1 unit	41A
4 NO, Ident. No. **40E** 											
10	3	2	1	4	0[1]	24	5	**3RH2140-2KB40**	1	1 unit	41A
With conventional coil, fitted with varistor											
Terminal designations according to EN 50011											
2 NO + 2 NC, Ident. No. **22E** 											
10	3	2	1	2	2[1]	24	5	**3RH2122-2LB40**	1	1 unit	41A
						110	2	**3RH2122-2LF40**	1	1 unit	41A

[1] It is not possible to mount an auxiliary switch block.

For accessories, see page 3/75 onwards.

Other voltages according to page 3/73 on request.

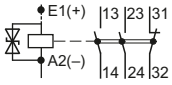
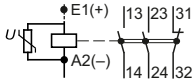
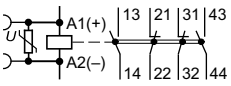
* You can order this quantity or a multiple thereof.
Illustrations are approximate.

SIRIUS 3RH2 contactor relays with extended operating range

DC operation
Spring-type terminals
For screw fixing and snap-on mounting onto standard mounting rails
Solenoid coil with surge suppression

3RH2122-2K.40

3RH2122-2K.40-0LA0

Rated operational current I_e/AC-15/AC-14 t_u: 70 °C at				Contacts		Rated control supply voltage U_s	SD	**Spring-type terminals**	PU (UNIT, SET, M)	PS*	PG
230 V	400 V	500 V	690 V	Version				Article No. Price per PU			
A	A	A	A	NO	NC	V DC	d				
3RH21 contactor relays											
Size S00											
With series resistor, fitted with suppressor diode											
Terminal designations according to EN 50011											
2 NO + 1 NC, Ident. No. **21X**											
											
10	3	2	1	2	1[1]	24	5	**3RH2122-2KB40-0LA0**	1	1 unit	41A
						110	5	**3RH2122-2KF40-0LA0**	1	1 unit	41A
With series resistor, fitted with varistor											
Terminal designations according to EN 50011											
2 NO + 1 NC, Ident. No. **21X**											
											
10	3	2	1	2	1[1]	24	2	**3RH2122-2LB40-0LA0**	1	1 unit	41A
						110	2	**3RH2122-2LF40-0LA0**	1	1 unit	41A
With solid-state operating mechanism, with integrated varistor NEW											
Terminal designations according to EN 50011											
2 NO + 2 NC, Ident. No. **22E**											
											
10	3	2	1	2	2[1]	24	5	**3RH2122-2XB40-0LA2**	1	1 unit	41A
						110	5	**3RH2122-2XF40-0LA2**	1	1 unit	41A

[1] 4-pole auxiliary switch block according to EN 50005 can be mounted.

For accessories, see page 3/75 onwards.

Other voltages according to page 3/73 on request.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Standards

IEC 60947-4-1, EN 60947-4-1

The contactor relays are finger-safe according to IEC 60529. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full coil operating range) is -50 to +70 °C. Uninterrupted duty at temperatures < -25 °C and > +55 °C reduces the mechanical endurance, the current carrying capacity of the conducting paths and the switching frequency.

A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 55 °C. There is no need to reduce the technical specifications.

Application

For operation in installations which are subject both to considerable variations in the control voltage and to high ambient temperatures, e.g. in railway applications.

Control and auxiliary circuits

The solenoid coils of the contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage.
The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16176/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16176/faq Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16176/man

Contactor relays		Type	3TH42
General data			
Permissible ambient temperature			
• During operation		°C	-50 ... +70[1)]
• During storage		°C	-55 ... +80
Control			
Solenoid coil operating range			0.7 ... 1.25 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s) For cold coil: Closing = Closed		W	5.2
Permissible residual current of the electronics (with 0 signal)			
• DC operation			≤ 10 mA x (24 V/U_s)
Operating times at 1.0 x U_s (Total break time = OFF-delay + Arcing time)			
• Closing	ON-delay (NO)	ms	45 ... 80
	OFF-delay (NC)	ms	30 ... 34
• Opening	OFF-delay (NO)	ms	20 ... 30
	ON-delay (NC)	ms	22 ... 32
• Arcing time		ms	10

1) Side-by-side mounting with 10 mm distance.

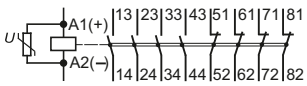
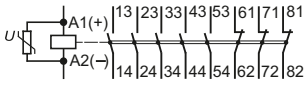
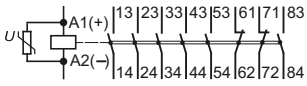
All details and technical specifications not mentioned here are identical to those of the 3TH4 basic units; see from page 5/17 onwards.

3TH4 contactor relays, 8-pole

Selection and ordering data

Solenoid coil fitted with varistor

3TH4244-0L..

Contacts	Rated operational current I_e/AC-15/AC-14				Contacts[1]			Rated control supply voltage U_s	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	230 V	400 V	500 V	690 V	Ident. No. acc. to EN 50011	Version				Article No.	Price per PU			
						NO	NC							
Number	**A**	A	A	A				V DC	d					
For screw fixing and snap-on mounting onto TH 35 standard mounting rail														
DC operation														
														
8	**10**	6	4	2	**44E**	4	4	24	▶	**3TH4244-0LB4**		1	1 unit	41A
								110	▶	**3TH4244-0LF4**		1	1 unit	41A
														
8	**10**	6	4	2	**53E**	5	3	24	▶	**3TH4253-0LB4**		1	1 unit	41A
								110	▶	**3TH4253-0LF4**		1	1 unit	41A
														
8	**10**	6	4	2	**62E**	6	2	24	▶	**3TH4262-0LB4**		1	1 unit	41A
								110	▶	**3TH4262-0LF4**		1	1 unit	41A

[1] Contacts not extendable.

Other voltages according to page 5/23 on request.

For accessories, see page 5/24.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Standards

IEC 60947-4-1, EN 60947-4-1

The contactors are finger-safe according to IEC 60529 (exception: series resistor). Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

All specifications and technical specifications not mentioned here are identical to those of the standard 3TC contactors, see page 4/75.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full coil operating range) is -50 to +70 °C. Uninterrupted duty at temperatures < -25 °C and > +55 °C reduces the mechanical endurance, the current carrying capacity of the conducting paths and the switching frequency.

At ambient temperatures > 55 °C, a clearance of 10 mm is required for side-by-side mounting of size 2 contactors. There is no need to reduce the technical specifications.

Ratings of three-phase motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

The power rating specifications of the contactors in kW are guide values for 4-pole standard motors at 50 Hz AC and specified voltage (e.g. 400 V). The actual starting and rated data of the motor to be switched must be considered when selecting the units.

Series resistor

The DC solenoid systems of the 3TC contactors must be modified (to hold-in coil) by means of a series resistor. This series resistor is supplied separately packed with the contactors.

With types 3TC48, the series resistor must be attached onto the right-hand side of the auxiliary switch block by means of the enclosed mounting parts and sets of links provided, while in the case of the 3TC44 it must be mounted and wired between the contactor poles. With types 3TC52 and 3TC56, the series resistor must be attached separately next to the contactors.

Auxiliary contacts

The contactors are equipped with two lateral auxiliary switch blocks each with 1 NO + 1 NC contact. Further auxiliary switch blocks cannot be fitted to the DC-operated contactors.

One NC contact is required for the series resistor function. Two NO contacts and one NC contact are thus freely available.

Reversing contactors

With the 3TC52 and 3TC56 contactors, the series resistor must be connected using an additional K2 reversing contactor (3RT1317-1F.40). This contactor is automatically included in the scope of supply in the same packaging as the contactor.

Dimensions

Attaching resistors and varistors increases the width of the contactors.

Application

For operation in installations which are subject both to considerable variations in the control voltage and to high ambient temperatures, e.g. in railway applications.

Control and auxiliary circuits

The solenoid coils of the contactors have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16180/td	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16180/man

Type		**3TC44**	**3TC48**	**3TC52**	**3TC56**
Size		**2**	**4**	**8**	**12**
General data					
Ambient temperature					
• During operation	°C	-40 ... +70			
Control					
Solenoid coil operating range		0.7 ... 1.25 x U_s			
Power consumption of the solenoid coils		For cold coil and 1.0 x U_s			
• Closing	W	48	26	40	130
• Closed	W	13	14	21	59

All details and technical specifications not mentioned here are identical to those of the basic units of the 3TC contactors, see page 4/75.

4

Selection and ordering data

3TC44: For screw fixing and snap-on mounting onto 35 mm standard mounting rail
3TC48 to 3TC56: For screw fixing
Solenoid coil fitted with varistor

3TC48

Size	Utilization category	Rated operational current I_e at 750 V	Rated power of loads at 220 V	440 V	600 V	750 V	Auxiliary contacts[1] Version NO	NC	Rated control supply voltage U_s	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		A	kW	kW	kW	kW			V DC	d					
Contactors for switching DC voltage DC operation															
Terminal designations according to EN 50012 and EN 50005															
2	DC-1	32	7	14	19.2	24	2	1[2]	24	5	**3TC4417-0LB4**		1	1 unit	41B
	DC-3/DC-5	7.5	5	9	9	4			110	10	**3TC4417-0LF4**		1	1 unit	41B
4	DC-1	75	16.5	33	45	56	2	1[2]	24	15	**3TC4817-0LB4**		1	1 unit	41B
	DC-3/DC-5	75	13	27	38	45			110	15	**3TC4817-0LF4**		1	1 unit	41B
8	DC-1	170	48	97	132	165	2	1[2]	24	15	**3TC5217-0LB4**		1	1 unit	41B
	DC-3/DC-5	170	41	82	110	110			110	15	**3TC5217-0LF4**		1	1 unit	41B
12	DC-1	400	88	176	240	300	2	1[2]	24	15	**3TC5617-0LB4**		1	1 unit	41B
	DC-3/DC-5	400	70	140	200	250			110	15	**3TC5617-0LF4**		1	1 unit	41B

1) The number of auxiliary contacts cannot be increased.
2) One NC contact used for series resistor.

Other rated control supply voltages according to page 4/82 on request.

Accessories

For accessories, see Basic units of the 3TC contactors, from page 4/82.

Spare parts

For contactors Size	Type	Remarks	Rated control supply voltage U_s V DC	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Arc chutes									
For contactors with extended operating range									
2	3TC4417-0L. .	With cutout for resistor mounting		5	**3TY2442-0B**		1	1 unit	41B
Solenoid coils									
For contactors with extended operating range									
2	3TC44	With series resistor, without varistor	24	15	**3TY6443-0LB4**		1	1 unit	41B
			110	15	**3TY6443-0LF4**		1	1 unit	41B
4	3TC48		24	15	**3TY6483-0LB4**		1	1 unit	41B
			110	15	**3TY6483-0LF4**		1	1 unit	41B

All spare parts not mentioned here are identical to those of the basic units of the 3TC contactors, see page 4/84.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Overview

3TC4 and 3TC5

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1 (auxiliary switches)

The contactors are finger-safe according to IEC 60529. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

The DC motor ratings given in the tables are applicable to the DC-3 and DC-5 utilization categories with two-pole switching of the load or with the two conducting paths of the contactor connected in series.

One contactor conducting path can switch full power up to 220 V. For voltages over 220 V, the two conducting paths are to be switched in series; see "Rated data of the main contacts", page 4/77.

Auxiliary contacts

The contactors are equipped with two lateral auxiliary switch blocks each with 1 NO + 1 NC contact. On the contactors 3TC48 to 3TC56 with AC operation, a second auxiliary switch block can be mounted on the right and left. On contactors with DC operation, expansion of the auxiliary contacts is not possible.

3TC7

IEC 60947-4-1, EN 60947-4-1

The contactors are suitable for use in any climate. They are suitable for switching and controlling DC motors as well as all other DC circuits.

The solenoid excitation is configured for a particularly large operating range. It is between 0.7 or 0.8 and 1.2 × U_s.

3TC74 contactors can be used at up to 750 V/400 A and 50 Hz in AC-1 operation.

For voltages over 750 V, the two conducting paths (3TC74: two contactors) are to be switched in series; see "Rated data of the main contacts", page 4/79.

Application

The contactors are suitable for switching and controlling DC motors as well as all other DC circuits.

A version with an especially large actuating voltage is available for operation in electrically driven vehicles and in switchgear with a particularly large coil operating range (see page 4/84).

Technical specifications

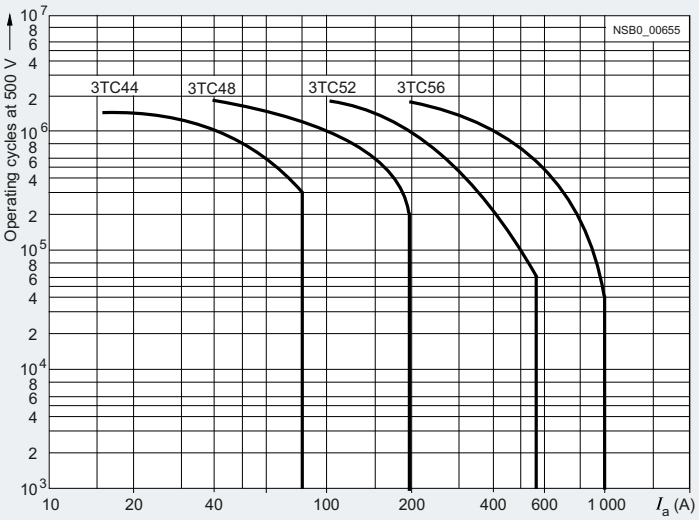
Type			3TC4 and 3TC7	3TC5
Rated data of the auxiliary contacts				
Rated insulation voltage U_i (pollution degree 3)		V	690	
Conventional thermal current I_{th} = rated operational current I_e/AC-12		A	10	10
AC load				
Rated operational current I_e/AC-15/AC-14				
• For rated operational voltage U_e	24 V	A	10	10
	110 V	A	10	10
	125 V	A	10	10
	220 V	A	6	6
	230 V	A	5.6	5.6
	380 V	A	4	4
	400 V	A	3.6	3.6
	500 V	A	2.5	2.5
	660 V	A	2.5	2.5
	690 V	A	--	--
DC load				
Rated operational current I_e/DC-12				
• For rated operational voltage U_e	24 V	A	10	10
	60 V	A	10	10
	110 V	A	3.2	8
	125 V	A	2.5	6
	220 V	A	0.9	2
	440 V	A	0.33	0.6
	600 V	A	0.22	0.4
Rated operational current I_e/DC-13				
• For rated operational voltage U_e	24 V	A	10	10
	48 V	A	5	5
	110 V	A	1.14	2.4
	125 V	A	0.98	2.1
	220 V	A	0.48	1.1
	440 V	A	0.13	0.32
	600 V	A	0.07	0.21

Type		3TC44 to 3TC56
cULus and cULus rated data of the auxiliary contacts		
Rated voltage, max.	V AC	600
Switching capacity		A 600, P 600

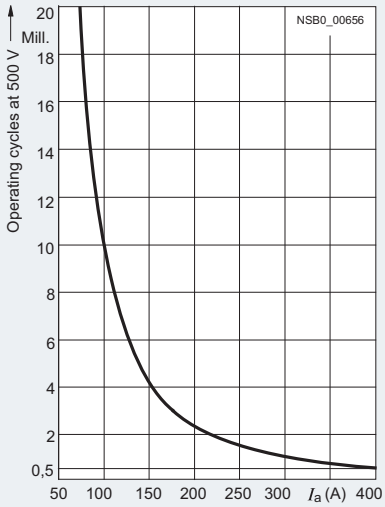
3TC contactors for switching DC voltage, 1-pole and 2-pole

Type	3TC44 to 3TC78

Contact endurance of the main contacts

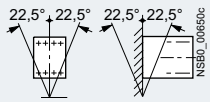


3TC44 to 3TC56 contactors



3TC74 and 3TC78 contactors

Legend for the diagrams:
I_a = breaking current

Contactor	Type	3TC44	3TC48	3TC52	3TC56
	Size	2	4	8	12
General data					
Dimensions (W x H x D)					
• DC operation	mm	70 x 85 x 141	100 x 183 x 180	135 x 238 x 232	160 x 279 x 310
• AC operation	mm	70 x 85 x 100	100 x 183 x 154	135 x 238 x 200	160 x 279 x 251
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.					
Mechanical endurance	Operating cycles	10 million			
Electrical endurance		See endurance diagram above			
Rated insulation voltage U_i (pollution degree 3)	V	800		1 000	
Protective separation between coil and main contacts acc. to IEC 60947-1, Appendix N	V	Up to 300		Up to 660	
Mirror contacts[1] A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.		Yes, acc. to IEC 60947-4-1, Appendix F			
Permissible ambient temperature					
• During operation	°C	-25 ... +55			
• During storage	°C	-50 ... +80			
Degree of protection acc. to IEC 60529					
• Connecting terminals		IP00			
Touch protection acc. to IEC 60529		Finger-safe with terminal covers			
Shock resistance	Rectangular pulse *g*/ms	7.5/5 and 3.4/10	10/5 and 5/10	12/5 and 5.5/10	12/5 and 5.6/10
Short-circuit protection					
Main circuit Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE					
• Type of coordination "1"	A	50	160	250	400
• Type of coordination "2"	A	35	63	80	250
Auxiliary circuit (short-circuit current $I_k \leq 1$ kA)					
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE	A	16			
• Miniature circuit breaker with C characteristic	A	10			

[1] For 3TC44, one NC contact each must be connected in series for the right and left auxiliary switch block respectively.

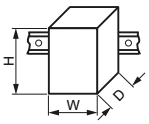
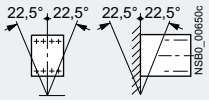
Rated data of the auxiliary contacts, see page 4/75.

Type			3TC44	3TC48	3TC52	3TC56
Size			2	4	8	12
Control						
Solenoid coil operating range			0.8 ... 1.1 x U_s			
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
• DC operation	- Closing = Closed	W	10	19	30	86
• AC operation, 50 Hz coil	- Closing	VA/p.f.	68/0.86	300/0.5	640/0.48	1780/0.3
	- Closed	VA/p.f.	10/0.29	26/0.24	46/0.23	121/0.22
• AC operation, 60 Hz coil	- Closing	VA/p.f.	95/0.79	365/0.45	730/0.38	2140/0.3
	- Closed	VA/p.f.	12/0.3	35/0.26	56/0.24	140/0.29
• AC operation, 50/60 Hz coil	- Closing at 50 Hz/60 Hz	VA/p.f.	79/73/0.83/0.78	--		
	- Closed at 50 Hz/60 Hz	VA/p.f.	11/9/0.28/0.27	--		
Operating times (at 0.8 ... 1.1 x U_s) Total break time = Opening delay + Arcing time			(The values apply up to and including 20 % undervoltage, 10 % overvoltage, as well as when the coil is cold and warm)			
• DC operation	- Closing delay	ms	35 ... 190	90 ... 380	120 ... 400	110 ... 400
	- Opening delay[1]	ms	10 ... 25	17 ... 28	22 ... 35	40 ... 110
• AC operation	- Closing delay	ms	10 ... 40	20 ... 50		
	- Opening delay[1]	ms	5 ... 25	5 ... 30	10 ... 30	
• Arcing time	- DC-1	ms	20			
	- DC-3/DC-5	ms	30			
Rated data of the main contacts						
Load rating with DC						
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)						
• Rated operational currents I_e (at 55 °C)	Up to U_e 750 V	A	32	75	220	400
• Minimum conductor cross-section		mm^2	6	25	95	240
• Rated power at U_e (≤ 220 V DC: one conducting path, > 220 V DC: two conducting paths in series)	At 220 V	kW	7	16.5	48	88
	440 V	kW	14	33	97	176
	600 V	kW	19.2	45	132	240
	750 V	kW	24	56	165	300
Utilization categories DC-3 and DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)						
• Rated operational currents I_e (at 55 °C)	Up to 220 V	A	32	75	220	400
	440 V	A	29	75	220	400
	600 V	A	21	75	220	400
	750 V	A	7.5	75	170	400
• Rated power at U_e (≤ 220 V DC: one conducting path, > 220 V DC: two conducting paths in series)	At 110 V	kW	2.5	6.5	20	35
	220 V	kW	5	13	41	70
	440 V	kW	9	27	82	140
	600 V	kW	9	38	110	200
	750 V	kW	4	45	110	250
Switching frequency						
Switching frequency *z* in operating cycles/hour						
AC/DC operation						
• With resistive load DC-1		h^{-1}	1 500	1 000		
• For inductive load DC-3/DC-5		h^{-1}	750	600		
Conductor cross-sections						
Main conductors (1 or 2 conductors can be connected)			**Screw terminals**			
• Solid		mm^2	2 x (2.5 ... 10)	2 x (6 ... 16)	--	
• Finely stranded with end sleeve		mm^2	2 x (1.5 ... 4)	--		
• Stranded with cable lug		mm^2	2 x 16	2 x 35	2 x 120	2 x 150
• Pin-end connector to DIN 46231		mm^2	2 x (1 ... 6)	--		
• Busbars		mm	--	15 x 2.5	25 x 4	2 x (25 x 3)
• Terminal screw			M5	M6	M10	
Auxiliary conductors (1 or 2 conductors can be connected)						
• Solid		mm^2	2 x (1 ... 2.5)			
• Finely stranded with end sleeve		mm^2	2 x (0.75 ... 1.5)			

[1] The opening delay times can increase if the contactor coils are damped against voltage peaks. The 3TC44 contactors are not allowed to be fitted with diodes.

Rated data of the auxiliary contacts, see page 4/75.

3TC contactors for switching DC voltage, 1-pole and 2-pole

Type			**3TC74**	**3TC78**
Design			**1-pole contactors**	**2-pole contactors**
General data				
Dimensions (H x W x D) 		mm	78 x 352 x 276	160 x 366 x 290
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.				
Mechanical endurance		Operating cycles	30 million	
Electrical endurance			See page 4/76	
Rated insulation voltage U_i (pollution degree 3)		V	1 500	
Rated impulse withstand voltage U_{imp}		kV	8	
Protective separation between coil and main contacts According to IEC 60947-1, Appendix N		V	630	
Permissible ambient temperature		°C	-25 ... +55	
Degree of protection acc. to IEC 60529				
• Connecting terminals			IP00	
Touch protection acc. to IEC 60529			Finger-safe with terminal covers	
Short-circuit protection				
Main circuit Fuse links, operational class gG: LV HRC, type 3NA				
• Type of coordination "1"		A	630	
• Type of coordination "2"		A	500	
Auxiliary circuit (short-circuit current $I_k \leq 1$ kA)				
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE		A	16	
• Miniature circuit breaker with C characteristic		A	10	
Control				
Solenoid coil operating range				
• DC operation	At U_c = 24 V		0.8 ... 1.2 x U_s	
	At U_c > 24 V		0.7 ... 1.2 x U_s	
• AC operation	At U_c = 24 V		0.7 ... 1.15 x U_s	
	At U_c > 24 V		0.7 ... 1.14 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)				
• DC operation	Closing = Closed	W	46	92
• AC operation, 50 Hz	Closing = Closed	VA P.f.	80 0.95	160 0.95
Operating times Total break time = Opening delay + Arcing time			(The values apply up to and including 15 % undervoltage, 10 % overvoltage, as well as when the coil is cold and warm)	
• AC and DC operation	Closing delay	ms	60 ... 100	
	Opening delay	ms	20 ... 35	
• Arcing time at 0.06 ... 4 x I_e		ms	40 ... 70	

Type			3TC74	3TC78
Design			1-pole contactors	2-pole contactors
Rated data of the main contacts				
Load rating with DC				
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)				
• Rated operational current I_e/DC-1 (at 55 °C)		A	500	
• Minimum conductor cross-section		mm^2	2 x 150	
• Rated power	At 220 V	kW	110	
(≤ 750 V DC: one conducting path,	440 V	kW	220	
> 750 V DC: two conducting paths in series)	600 V	kW	300	
	750 V	kW	375	
	1 200 V	kW	--	600
	1 500 V	kW	--	750
• Critical currents, without arc extinction	At 440 V	A	≤ 7	--
	600 V	A	≤ 13	--
	750 V	A	≤ 15	--
	≤ 800 V	A	--	≤ 7
	1 200 V	A	--	≤ 13
	1 500 V	A	--	≤ 15
Utilization categories DC-3 and DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)				
• Rated operational current I_e (at 55 °C)		A	400	
• Rated power at U_e	At 110 V	kW	35	
(≤ 220 V DC: one conducting path,	220 V	kW	70	
> 220 V DC: two conducting paths in series)	440 V	kW	140	
	600 V	kW	200	
	750 V	kW	250	
	1 200 V	kW	--	400
	1 500 V	kW	--	500
Permissible rated current for regenerative braking at 110 ... 600 V		A	400	
Switching frequency				
Switching frequency *z* in operating cycles/hour				
AC/DC operation				
• With resistive load DC-1		h^{-1}	750	1 000
• For inductive load DC-3/DC-5		h^{-1}	500	
Conductor cross-sections				
Main conductors (1 or 2 conductors can be connected)			**Screw terminals**	
• Stranded with cable lug		mm^2	2 x ... 150	
• Busbars		mm	2 x (30 x 4)	
Auxiliary conductors (1 or 2 conductors can be connected)				
• Solid		mm^2	1 ... 2.5	
• Finely stranded with end sleeve		mm^2	0.75 ... 1.5	

Rated data of the auxiliary contacts, see page 4/75.

Selection and ordering data

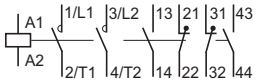
3TC44

3TC48

Size	Utilization category[1]	Operational current I_e[2]	Ratings of DC motors at 110 V	220 V	440 V	600 V	750 V	Auxiliary contacts[3] Version NO	NC	Rated control supply voltage U_s	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		A	kW	kW	kW	kW	kW			V	d					

3TC44 to 3TC56 2-pole contactors · Operational voltage up to 750 V

Terminal designations according to EN 50012



DC operation

Screw fixing and snap-on mounting onto TH 35 standard mounting rail

2	DC-3, DC-5	32	2.5	5	9	9	4	2	2	24 DC	▶	**3TC4417-0AB4**		1	1 unit	41B
										110 DC	▶	**3TC4417-0AF4**		1	1 unit	41B
										220 DC	▶	**3TC4417-0AM4**		1	1 unit	41B

Screw fixing

4	DC-3, DC-5	75	6.5	13	27	38	45	2	2	24 DC	2	**3TC4817-0AB4**		1	1 unit	41B
										110 DC	2	**3TC4817-0AF4**		1	1 unit	41B
										220 DC	2	**3TC4817-0AM4**		1	1 unit	41B
8	DC-3, DC-5	220[4]	20	41	82	110	110	2	2	24 DC	15	**3TC5217-0AB4**		1	1 unit	41B
										110 DC	15	**3TC5217-0AF4**		1	1 unit	41B
										220 DC	10	**3TC5217-0AM4**		1	1 unit	41B
12	DC-3, DC-5	400	35	70	140	200	250	2	2	24 DC	15	**3TC5617-0AB4**		1	1 unit	41B
										110 DC	15	**3TC5617-0AF4**		1	1 unit	41B
										220 DC	15	**3TC5617-0AM4**		1	1 unit	41B

AC operation, 50 Hz

Screw fixing and snap-on mounting onto TH 35 standard mounting rail

2	DC-3, DC-5	32	2.5	5	9	9	4	2	2	220 / 230 AC[5]	▶	**3TC4417-0BP0**		1	1 unit	41B
										110/110 AC	▶	**3TC4417-0BF0**		1	1 unit	41B

Screw fixing

4	DC-3, DC-5	75	6.5	13	27	38	45	2	2	220 / 230 AC[5]	2	**3TC4817-0BP0**		1	1 unit	41B
										110 AC	15	**3TC4817-0BF0**		1	1 unit	41B
8	DC-3, DC-5	220[4]	20	41	82	110	110	2	2	220 / 230 AC[5]	2	**3TC5217-0BP0**		1	1 unit	41B
										110 AC	10	**3TC5217-0BF0**		1	1 unit	41B
12	DC-3, DC-5	400	35	70	140	200	250	2	2	220 / 230 AC[5]	15	**3TC5617-0BP0**		1	1 unit	41B
										110 AC	15	**3TC5617-0BF0**		1	1 unit	41B

1) Permissible load for DC-1 utilization category:
see detailed technical specifications in the reference manual "Switching Devices – Contactors and Contactor Assemblies", https://support.industry.siemens.com/cs/ww/en/view/35554359.

2) The following rated operational currents are permitted for reversing duty with 3TC44 to 3TC56 contactors:

Contactor Type	Rated operating voltage 110 V, 220 V	440 V
3TC44	32 A	7 A
3TC48	75 A	75 A
3TC52	170 A	170 A
3TC56	400 A	400 A

3) The fitting of auxiliary switches cannot be altered on DC-operated contactors.

4) At > 600 V: I_e = 170 A.

5) Operating range at 220 V AC: 0.85 to 1.15 x U_s.

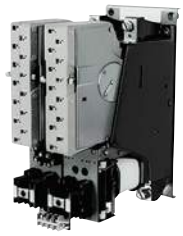
Other rated control supply voltages according to page 4/82 on request.

For accessories, see page 4/82.

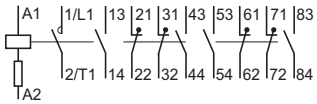
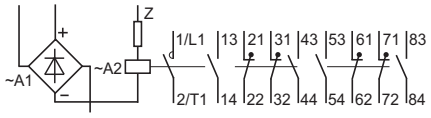
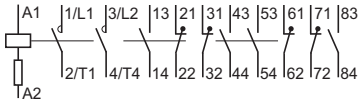
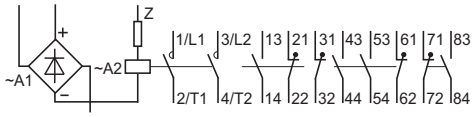
For spare parts, see page 4/84.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

3TC74



3TC78

Size	Utilization category[1]	Operational current I_e	Ratings of DC motors at 110 V	220 V	440 V	600 V	750 V	1 200 V	1 500 V	Auxiliary contacts[2] Version	NO	NC	Rated control supply voltage U_s	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		A	kW	kW	kW	kW	kW	kW	kW				V	d					
3TC74 1-pole contactors · Operational voltage up to 750 V																			
DC operation																			
Terminal designations acc. to EN 50005																			
																			
12	DC-3, DC-5	400	35	70	140	200	250	--	--	4	4	24 DC	15	**3TC7414-0EB**		1	1 unit	41B
												110 DC	15	**3TC7414-0EF**		1	1 unit	41B
AC operation, 50 Hz																			
Terminal designations acc. to EN 50005																			
																			
12	DC-3, DC-5	400	35	70	140	200	250	--	--	4	4	230/220 AC[3]	15	**3TC7414-1CM**		1	1 unit	41B
3TC78 2-pole contactors · Operational voltage up to 1 500 V																			
DC operation																			
Terminal designations acc. to EN 50005																			
																			
12	DC-3, DC-5	400	35	70	140	200	250	400	500	4	4	24 DC	15	**3TC7814-0EB**		1	1 unit	41B
												110 DC	15	**3TC7814-0EF**		1	1 unit	41B
AC operation, 50 Hz																			
Terminal designations acc. to EN 50005																			
																			
12	DC-3, DC-5	400	35	70	140	200	250	400	500	4	4	230/220 AC[3]	15	**3TC7814-1CM**		1	1 unit	41B

[1] Permissible load for DC-1 utilization category: see detailed technical specifications in the reference manual "Switching Devices – Contactors and Contactor Assemblies", https://support.industry.siemens.com/cs/ww/en/view/35554359.

[2] The fitting of auxiliary switches cannot be altered on DC-operated contactors.

[3] Upper operating range limit at 230 V AC: 1.14 x U_s.

Other rated control supply voltages according to page 4/82 on request.

For spare parts, see page 4/84.

Options

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type	3TC44	3TC48	3TC52/3TC56	3TC74/3TC78
AC operation					
Solenoid coils for 50 Hz					
24 V AC		B0	B0	--	--
110 V AC		F0	F0	F0	--
230/220 V AC		P0[1]	P0[1]	P0[1]	M[2]
240 V AC		U0	U0	--	--
Solenoid coils for 50/60 Hz					
24 V AC		C2	--	--	--
110 V AC		G2	--	--	--
120 V AC		K2	--	--	--
220 V AC		N2	--	--	--
230 V AC		L2	--	--	--
DC operation					
24 V DC		B4	B4	B4	B
48 V DC		W4	W4	--	--
60 V DC		E4	E4	--	--
110 V DC		F4	F4	F4	F
125 V DC		G4	G4	--	--
220 V DC		M4	M4	M4	M
230 V DC		P4	P4	--	--

[1] Operating range at 220 V AC: 0.85 to 1.15 × U_s; lower operating range limit according to IEC 60947.

[2] Upper operating range limit at 230 V AC: 1.14 × U_s.

Accessories

For contactors		Version	Auxiliary switch block		SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
		Auxiliary contacts	Left	Right		Article No.	Price per PU			
Size	Type	NO NC			d					
Second auxiliary switch blocks (for AC operation only)										
4	3TC48	2nd auxiliary switch block, left 1 1	--		20	**3TY6501-1K**		1	1 unit	41B
		2nd auxiliary switch block, right 1 1		--	20	**3TY6501-1L**		1	1 unit	41B
8 and 12	3TC52, 3TC56	2nd auxiliary switch block, left 1 1	--		20	**3TY6561-1K**		1	1 unit	41B
		2nd auxiliary switch block, right 1 1		--	20	**3TY6561-1L**		1	1 unit	41B
Solid-state compatible auxiliary switch blocks										
		For operation in dusty atmospheres and in solid-state circuits with rated operational currents I_e/AC-14 and DC-13 from 1 ... 300 mA at 3 ... 60 V								
2 and 4	3TC44, 3TC48	2nd auxiliary switch block, left or right (replacement for 3TY6561-1U, 3TY6561-1V) 1 CO contact			►	**3TY7561-1UA00**		1	1 unit	41B

5TY7561-1.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

	For contactors Size	Type	Version	Rated control supply voltage U_s V AC	V DC	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Surge suppressors · Varistors											
 3TX7402-3.	2	3TC44[1]	**Varistors[2]** With line spacer, for mounting onto the coil terminal	24 ... 48	24 ... 70	2	**3TX7402-3G**		1	1 unit	41B
				48 ... 127	70 ... 150	2	**3TX7402-3H**		1	1 unit	41B
				127 ... 240	150 ... 250	2	**3TX7402-3J**		1	1 unit	41B
				240 ... 400	--	15	**3TX7402-3K**		1	1 unit	41B
				400 ... 600	--	15	**3TX7402-3L**		1	1 unit	41B
 3TX7462-3.	4	3TC48	**Varistors[2]** For sticking onto the contactor base or for mounting separately	24 ... 48	24 ... 70	2	**3TX7462-3G**		1	1 unit	41B
				48 ... 127	70 ... 150	5	**3TX7462-3H**		1	1 unit	41B
				127 ... 240	150 ... 250	2	**3TX7462-3J**		1	1 unit	41B
				240 ... 400	--	5	**3TX7462-3K**		1	1 unit	41B
				400 ... 600	--	5	**3TX7462-3L**		1	1 unit	41B
	8 and 12	3TC52, 3TC56	**Varistors** For sticking onto the contactor base or for mounting separately	24 ... 48	--	2	**3TX7462-3G**		1	1 unit	41B
				48 ... 127	--	5	**3TX7462-3H**		1	1 unit	41B
				127 ... 240	--	2	**3TX7462-3J**		1	1 unit	41B
				240 ... 400	--	5	**3TX7462-3K**		1	1 unit	41B
				400 ... 600	--	5	**3TX7462-3L**		1	1 unit	41B
 3TX7522-3.	8 and 12	3TC52, 3TC56	**Varistors[2]** For separate screw fixing or snapping onto TH 35 standard mounting rail	--	24 ... 70	5	**3TX7522-3G**		1	1 unit	41B
				--	70 ... 150	5	**3TX7522-3H**		1	1 unit	41B
				--	150 ... 250	5	**3TX7522-3J**		1	1 unit	41B
Surge suppressors · RC elements											
 3TX7462-3., 3TX7522-3.	4	3TC48	**RC elements** For lateral snapping onto auxiliary switch or TH 35 standard mounting rail	24 ... 48	--	15	**3TX7462-3R**		1	1 unit	41B
				--	24 ... 70	5	**3TX7522-3R**		1	1 unit	41B
				48 ... 127	--	2	**3TX7462-3S**		1	1 unit	41B
				--	70 ... 150	5	**3TX7522-3S**		1	1 unit	41B
				127 ... 240	--	2	**3TX7462-3T**		1	1 unit	41B
				--	150 ... 250	5	**3TX7522-3T**		1	1 unit	41B
				240 ... 400	--	2	**3TX7462-3U**		1	1 unit	41B
				400 ... 600	--	5	**3TX7462-3V**		1	1 unit	41B
	8 and 12	3TC52, 3TC56	**RC elements** For lateral snapping onto auxiliary switch or TH 35 standard mounting rail	24 ... 48	--	5	**3TX7522-3R**		1	1 unit	41B
				48 ... 127	--	5	**3TX7522-3S**		1	1 unit	41B
				127 ... 240	--	5	**3TX7522-3T**		1	1 unit	41B
				240 ... 400	--	5	**3TX7522-3U**		1	1 unit	41B
				400 ... 600	--	5	**3TX7522-3V**		1	1 unit	41B
Surge suppressors · Diodes											
 3TX7462-3.	4 to 12	3TC48, 3TC52, 3TC56	**Diode assemblies[3]** (diode and Zener diode) for DC solenoid system, for sticking onto the contactor base or for mounting separately	--	24 ... 250	2	**3TX7462-3D**		1	1 unit	41B

[1] The connection piece for mounting the surge suppressor must be bent slightly.

[2] Includes the peak value of the alternating voltage on the DC side.

[3] Not for DC economy circuit.

	For contactors Size	Type	Version		SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal covers										
 3TX65.6-3B	6	3TC48	For protection against inadvertent contact with exposed busbar connections Can be screwed on free screw end; covers one busbar connection (1 set = 6 units)	M6	5	**3TX6506-3B**		1	1 unit	41B
	8 and 12	3TC52, 3TC56		M10	5	**3TX6546-3B**		1	1 unit	41B

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

3TC contactors for switching DC voltage, 1-pole and 2-pole

Spare parts

For contactors Size	Type	Version	Auxiliary contacts NO	NC	Auxiliary switch block Left	Right	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Auxiliary switch blocks												
For lateral mounting												
 3TY6561-1A												
2 and 4	3TC44, 3TC48	Auxiliary switch block (replacement for 3TY6 501-1A/-1B)	1	1	13 21 / 14 22	31 43 / 32 44	20	**3TY6501-1AA00**		1	1 unit	41B
8 and 12	3TC52, 3TC56	Auxiliary switch block, left	1	1	13 21 / 14 22	--	20	**3TY6561-1A**		1	1 unit	41B
		Auxiliary switch block, right	1	1	--	31 43 / 32 44	20	**3TY6561-1B**		1	1 unit	41B
12	3TC74	Auxiliary switch block	4	4	13 21 31 43 / 14 22 32 44	53 61 71 83 / 54 62 72 84	2	**3TY2741-2J**		1	1 unit	41B
12	3TC78	Auxiliary switch block, left	2	2	13 21 31 43 / 14 22 32 44	--	20	**3TY2781-2C**		1	1 unit	41B
		Auxiliary switch block, right	2	2	--	53 61 71 83 / 54 62 72 84	15	**3TY2781-2D**		1	1 unit	41B

For contactors Size	Type	Version	Rated control supply voltage U_s V AC/DC	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Surge suppressors · Varistors									
12	3TC7	For sticking onto the contactor base	24	15	**3TX2746-2F**		1	1 unit	41B
			110	10	**3TX2746-2G**		1	1 unit	41B

For contactors Size	Type	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solenoid coils								
DC operation [1]								
2	3TC44	--		**3TY6443-0B..**				
4	3TC48			**3TY6483-0B..**				
8	3TC52			**3TY6523-0B..**				
12	3TC56			**3TY6563-0B..**				
AC operation [1]								
2	3TC44	--		**3TY7403-0A..**				
4	3TC48			**3TY6483-0A..**				
8	3TC52			**3TY6523-0A..**				
12	3TC56			**3TY6566-0A..**				
Contacts with fixing parts								
 3TY2520-0A		To ensure reliable operation of the contactors, only **original replacement contacts** should be used.						
2	3TC44	(1 set = 2 moving and 4 fixed switching elements)	5	**3TY2440-0A**		1	1 unit	41B
4	3TC48		5	**3TY2480-0A**		1	1 unit	41B
8	3TC52		5	**3TY2520-0A**		1	1 unit	41B
12	3TC56		5	**3TY2560-0A**		1	1 unit	41B
12	3TC7	Main contacts (1 set) For 3TC78: 2 units required per contactor	5	**3TY2740-0E**		1	1 unit	41B
Arc chutes								
 3TY2482-0A								
2	3TC44	Arc chutes, 2-pole	15	**3TY2442-0A**		1	1 unit	41B
4	3TC48		15	**3TY2482-0A**		1	1 unit	41B
8	3TC52		15	**3TY2522-0A**		1	1 unit	41B
12	3TC56		15	**3TY2562-0A**		1	1 unit	41B
12	3TC7	For 3TC78: 2 units required per contactor	15	**3TY2742-0C**		1	1 unit	41B

[1] For rated control supply voltages, see page 4/82. The 10th and 11th digits of the article number must be supplemented accordingly.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Note:

3RH1 contactor relays can be found

- in the Catalog Add-On IC 10 AO · 2016 in the Information and Download Center
- in the interactive Catalog CA 01
- in the Industry Mall

Conversion tool
e. g. from 3RH11 to 3RH21: see www.siemens.com/sirius/conversion-tool

Introduction

Overview

More information	
Home page, see www.siemens.com/sirius Industry Mall, see www.siemens.com/product?3RH_3TH	Conversion tool, e.g. from 3RH11 to 3RH21, see www.siemens.com/sirius/conversion-tool

The advantages at a glance

Size Type	**S00** 3RH21	**S00** 3RH22	3TH42	3TH43	3TH2

		Article No.	Page
SIRIUS 3RH2 contactor relays			
4-pole	• Screw or spring-type terminals	**3RH21**	5/13, 5/14
8-pole		**3RH22**	5/13, 5/14
4-pole, latched		**3RH24**	5/13, 5/14
Coupling contactor relays	• Coils for control by PLC	**3RH21**	5/15, 5/16
Contactor relays for railway applications	• Coils with extended voltage range	**3RH21**	4/69
3TH4 contactor relays			
8-pole	• Screw terminals	**3TH42**	5/21
10-pole		**3TH43**	5/22
Contactor relays for railway applications	• Coils with extended voltage range	**3TH42**	4/72
3TH2 miniature contactor relays			
4-pole	• Screw terminals, flat connectors and solder pin connections	**3TH20**	5/29, 5/30
8-pole	• Screw terminals	**3TH22**	5/29
4-pole, latched	• Screw terminals	**3TH27**	5/29
Accessories for SIRIUS 3RH2 contactor relays			
Auxiliary switch blocks	• On front	**3RH29, 3RA281.**	from 3/87, 3/100
	• Lateral	**3RH29**	3/97
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	• On front	**3RA281., 3RA283.**	3/105
Surge suppressors	• On front	**3RT2916**	3/102, 3/103
Additional load modules	• On front	**3RT2916**	3/118

Note:

For safety characteristics for contactors, see "Standards and Approvals", from page 16/10 onwards.

More information	
Home page, see www.siemens.com/relays Industry Mall, see www.siemens.com/product?3RQ_3RS_LZ	Conversion tool, e.g. from 3TX7 to 3RQ3, see www.siemens.com/sirius/conversion-tool

The advantages at a glance

Type	3RQ3	3RS18	LZS/LZX

		Article No.	Page
SIRIUS 3RQ3 coupling relays, narrow design			
Coupling relays with relay output (not plug-in)	• Width 6.2 mm, 1 CO, versions with hard gold-plated contacts optionally available - Output coupling links - Input coupling links	**3RQ301** **3RQ303**	5/39 5/39
Coupling relays with plug-in relays	• Width 6.2 mm, 1 CO, versions with hard gold-plated contacts optionally available - Output coupling links	**3RQ311**	5/39
Coupling relays with semiconductor output (not plug-in)	• Width 6.2 mm, output 1 semiconductor, triac or transistor - Output coupling links - Input coupling links	**3RQ305, 3RQ306** **3RQ307**	5/39 5/39
SIRIUS 3RS18 coupling relays with industrial enclosure			
Coupling relays with relay output	• Protective separation up to 300 V between contacts and relay circuits • 1, 2 or 3 changeover contacts • Hard gold-plated contacts in combination and wide voltage range versions	**3RS18**	5/42
LZS coupling relays with plug-in relays			
Coupling relays with plug-in relays with 2, 3 or 4 changeover contacts	• Switching capacity 12 A/10 A/6 A • Width 27 mm • Base with or without logical separation	**LZS:PT, LZX:PT**	5/47 ... 5/49
Coupling relays with plug-in relays with 3 changeover contacts and circular base	• Switching capacity 10 A • 11-pole circular base • Width 38 mm	**LZS:MT, LZX:MT**	5/49
Coupling relays with plug-in relays with 1 or 2 changeover contacts	• Switching capacity 16 A/8 A • Width 15.5 mm • Base with or without logical separation	**LZS:RT, LZX:RT**	5/50

Introduction

Connection methods

The contactor relays and the relays are available with screw terminals (box terminals) or with spring-type terminals.

Devices of the 3TH2 series are also available with screw terminals, flat connectors and solder pin connectors.

The 3RQ3 coupling relays are supplied with screw terminals and spring-type (push-in) terminals. The plug-in bases for LZS/LZX coupling relays are also available with plug-in (push-in) terminals.

	Screw terminals
	Spring-type terminals, spring-type terminals (push-in)
	Flat connectors
	Solder pin connections
	Plug-in terminals (push-in)
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

3RQ coupling relays: Spring-type terminals (push-in) with TOP-wiring

Push-in connections are a form of spring-type terminals allowing fast wiring without tools for rigid conductors or conductors equipped with end sleeves.

As with other spring-type terminals, a screwdriver (with 3.0 x 0.5 mm blade) is required to disconnect the conductor. The same tool can also be used to wire finely-stranded or stranded conductors with no end finishing.

The advantages of the push-in terminals are found, as with all spring-type terminals, in speed of assembly and disassembly and vibration-proof connection. There is no need for the checking and tightening required with screw terminals.

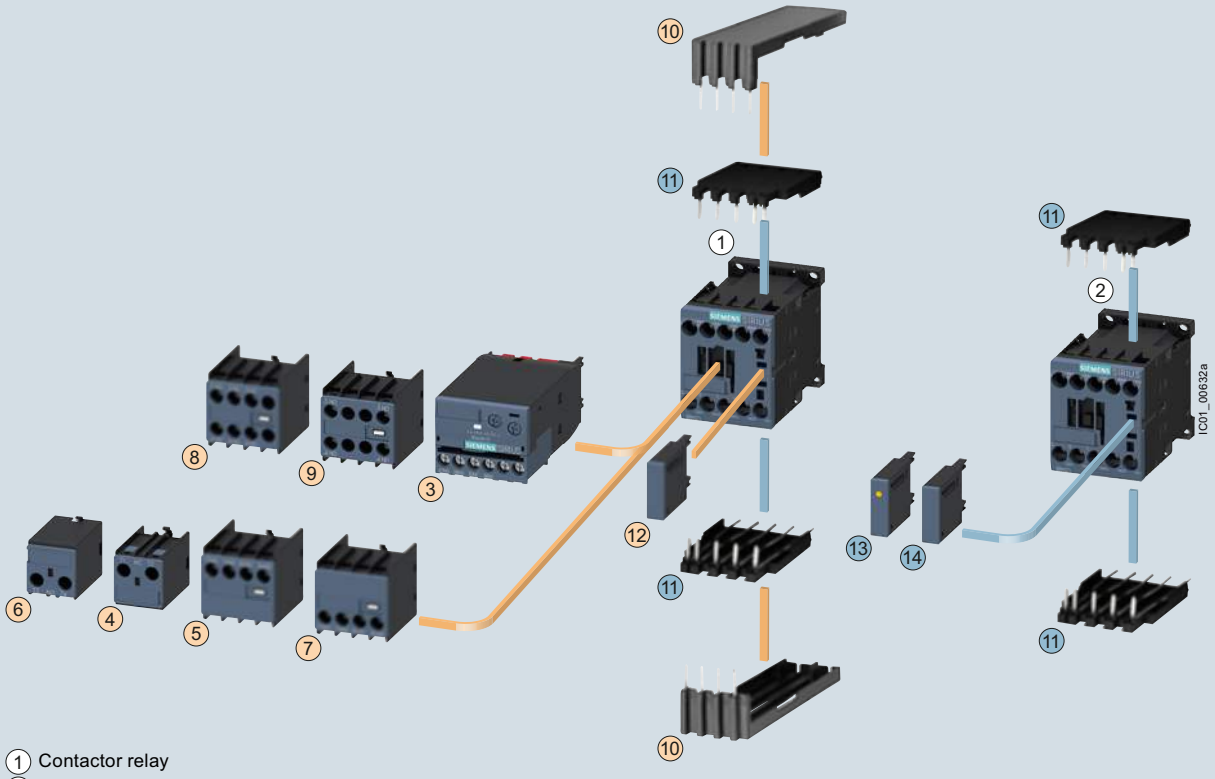
With the TOP wiring method, the wire inlet and terminals can be reached from the front. This helps to speed up the wiring process and eliminate wiring errors.

SUVA-certified safety contactors

We offer special safety contactors for use in safety-related applications. They have NC contacts with mirror contact function and they have SUVA certification. This means they have permanently fitted auxiliary switch blocks and cannot be operated manually. They thus comply with all requirements for use in safety applications.

Overview

Contactor relays
Size S00 with accessories



1 Contactor relay
2 Coupling contactor relay for auxiliary circuits

3 3RA28 function module
4 1-pole auxiliary switch block, cable entry from the top
5 2-pole auxiliary switch block, cable entry from the top
6 1-pole auxiliary switch block, cable entry from the bottom
7 2-pole auxiliary switch block, cable entry from the bottom
8 4-pole auxiliary switch block
(terminal designations according to EN 50011 or EN 50005)
9 2-pole auxiliary switch block, solid-state compatible version
(terminal designations according to EN 50005)

10 Solder pin adapter for contactor relays with 4-pole auxiliary switch block
11 Solder pin adapter
12 Additional load module for increasing the permissible residual current
13 Surge suppressor with LED
14 Surge suppressor without LED

For contactor relays
For increasing the permissible residual current

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1,
IEC 60947-5-1, EN 60947-5-1

The 3RH2 contactor relays are available with screw or spring-type terminals. The basic unit contains four contacts with terminal designations according to EN 50011.

The 3RH2 contactor relays are suitable for use in any climate. They are finger-safe according to IEC 60529.

The 3RH21 coupling contactor relays for switching auxiliary circuits are tailored to the special requirements of working with electronic controls.

Contact reliability

High contact stability at low voltages and currents, suitable for solid-state circuits with currents ≥ 1 mA at a voltage of ≥ 17 V.

Surge suppression

RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) can be plugged onto all 3RH2 contactor relays from the front for damping opening surges in the coil. The plug-in direction is determined by a coding device.

Coupling contactor relays have a low power consumption and an extended solenoid coil operating range.

Depending on the version, the solenoid coils of the coupling contactor relays are supplied without overvoltage damping (versions 3RH21..-.HB40 or 3RH21..-.MB40-0KT0) or with a diode or suppressor diode connected as standard.

Accessories

The accessories for the 3RT2 contactors in size S00 can also be used for the 3RH2 contactor relays (see from page 3/75 onwards).

Auxiliary switch blocks

The 3RH21 contactor relays (with the exception of coupling contactor relays) can be expanded by up to four contacts by the addition of mounted auxiliary switch blocks.

The auxiliary switch block can easily be snapped onto the front of the contactor relays. The auxiliary switch block has a centrally positioned release lever for disassembly.

The conventional front auxiliary contacts fulfill the characteristics of positively driven operation and are therefore suitable for safety applications.

Article No. scheme

Product versions		Article number
SIRIUS contactor relays		**3RH2** □ □ □ **–** □ □ □ □ **0 –** □ □ □ □
Device type	e. g. 1 = 4-pole motor contactor	□
Number of NO contacts	e. g. 2 = 2 NO	□
Number of NC contacts	e. g. 2 = 2 NC	□
Type of electrical connection	Screw terminals	**1**
	Spring-type terminals	**2**
Operating range/solenoid coil circuit	e.g. A = AC standard/without coil circuit	□
Rated control supply voltage	e.g. P0 = 50/60 Hz 230 V AC	□ □
Special version		□ □ □ □
Example		**3RH2 1 2 2 – 1 A P 0 0**

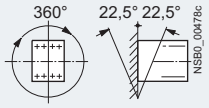
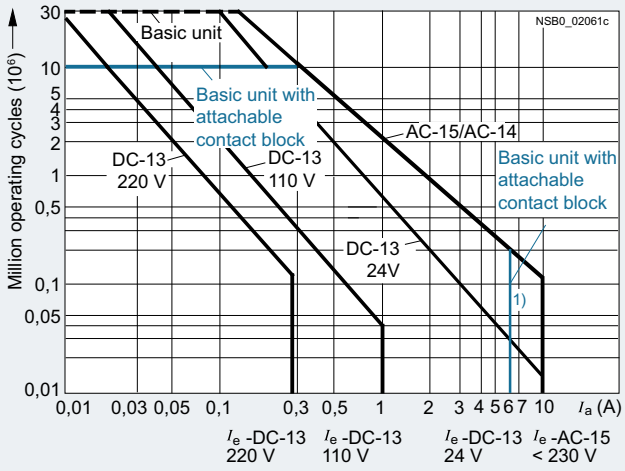
Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

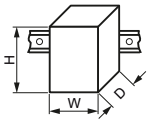
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16188/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16188/faq	Manuals, see • System Manual "SIRIUS – System Overview", https://support.industry.siemens.com/cs/ww/en/view/60311318 • Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", https://support.industry.siemens.com/cs/ww/en/view/60306557

	Contactor relays
Type	3RH2
Size	S00
Permissible mounting position	
The contactor relays are designed for operation on a vertical mounting surface.	
Upright mounting position	 Special version required (in the case of coupling contactor relays and contactor relays with extended operating range 3RH2122-2K.40 on request)
Positively-driven operation of contacts in contactor relays	
3RH2: **Yes,** in the basic unit and the auxiliary switch block as well as between the basic unit and the front-mounted auxiliary switch block (removable) acc. to: • ZH1/457 • IEC 60947-5-1, Appendix L **3RH22:** **Yes,** in the basic unit and the auxiliary switch block as well as between the basic unit and the mounted auxiliary switch block (permanently mounted) acc. to: • ZH1/457 • IEC 60947-5-1, Appendix L Note: 3RH2911-.NF. solid-state compatible auxiliary switch blocks have no positively-driven contacts.	Explanations: There is positively-driven operation if it is ensured that the NC and NO contacts cannot be closed at the same time. **ZH1/457** Safety Rules for Controls on Power-Operated Metalworking Presses. **IEC 60947-5-1, Appendix L** Standard on low-voltage switchgear and controlgear, Control circuit devices and switching elements; special requirements for positively-driven contacts
Contact reliability	
Contact reliability at 17 V, 1 mA acc. to IEC 60947-5-4	Frequency of contact faults $<10^{-8}$, i.e. < 1 fault per 100 million operating cycles
Contact endurance for AC-15/AC-14 and DC-13 utilization categories	
The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system. If magnetic circuits other than the contactor coil systems or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary, e.g. in the form of RC elements and freewheel diodes. The characteristic curves apply to • 3RH21/3RH22 contactor relays[1)] • 3RH24 latched contactor relays • 3RH2911 auxiliary switch blocks[1)] • Auxiliary switch blocks for snapping onto the front, max. 4-pole, and for mounting onto the side in size S00	 Diagram legend: I_a = Breaking current I_e = Rated operational current

[1)] 3RH22, 3RH2911: I_e = 6 A for AC-15/AC-14 and DC-13.

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Type			Contactor relays 3RH21	3RH22	3RH24
Size			S00		
General data					
Dimensions (W x H x D)					
• Basic units					
- Screw terminals		mm	45 x 58 x 73	--	90 x 58 x 73
- Spring-type terminals		mm	45 x 70 x 73	--	
• Basic unit with mounted auxiliary switch block					
- Screw terminals		mm	45 x 58 x 117		--
- Spring-type terminals		mm	45 x 70 x 121		--
• Basic unit with mounted function module or solid-state time-delay auxiliary switch block					
- Screw terminals		mm	45 x 58 x 147	--	
- Spring-type terminals		mm	45 x 70 x 147	--	
Mechanical endurance					
• Basic units		Operating cycles	30 million		5 million
• Basic unit with mounted auxiliary switch block		Operating cycles	10 million		5 million
• Solid-state compatible auxiliary switch block		Operating cycles	5 million		
Rated insulation voltage U_i (pollution degree 3)		V	690		
Rated impulse withstand voltage U_{imp}		kV	6		
Protective separation between coil and contacts in the basic unit, acc. to IEC 60947-1, Appendix N		V	400		
Permissible ambient temperature					
• During operation		°C	-25 ... +60		
• During storage		°C	-55 ... +80		
Degree of protection acc. to IEC 60529					
• On front			IP20 (screw terminals and spring-type terminals)		
• Connecting terminal			IP20 (screw terminals and spring-type terminals)		
Touch protection acc. to IEC 60529			Finger-safe (screw terminals and spring-type terminals)		
Shock resistance					
• Rectangular pulse					
- AC operation		*g*/ms	7.3/5 and 4.7/10		
- DC operation		*g*/ms	10/5 and 5/10		
• Sine pulse					
- AC operation		*g*/ms	11.4/5 and 7.3/10		
- DC operation		*g*/ms	15/5 and 8/10		
Short-circuit protection					
• Short-circuit test					
- With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE With short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A	10		
- With miniature circuit breaker with C characteristic with short-circuit current I_k = 400 A acc. to IEC 60947-5-1		A	6		

Type		Contactor relays 3RH21	3RH22	3RH24
Size		S00		
Conductor cross-sections				
Auxiliary conductors and coil terminals (1 or 2 conductors can be connected)		**Screw terminals**		
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1], max. 2 x 4		
• Finely stranded with end sleeve	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]		
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]		
• Terminal screw		M3 (for Pozidriv size 2, ∅ 5 ... 6 mm)		
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)		
Auxiliary conductors and coil terminals[2] (1 or 2 conductors can be connected)		**Spring-type terminals**		
• Operating devices[3]	mm	3.0 x 0.5; 3.5 x 0.5		
• Solid or stranded	mm^2	2 x (0.5 ... 4)		
• Finely stranded with end sleeve	mm^2	2 x (0.5 ... 2.5)		
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)		
• AWG cables, solid or stranded	AWG	2 x (20 ... 12)		
Auxiliary conductors for front and laterally mounted auxiliary switches[2]				
• Operating devices[3]	mm	3.0 x 0.5; 3.5 x 0.5		
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)		
• Finely stranded with end sleeve	mm^2	2 x (0.5 ... 1.5)		
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)		
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)		

1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

2) Max. external diameter of the conductor insulation: 3.6 mm. On spring-type terminals with conductor cross-sections ≤ 1 mm^2 an "insulation stop" must be used; see page 3/119.

3) Tool for opening the spring-type terminals: see page 3/119.

SIRIUS 3RH2 contactor relays, 4- and 8-pole

			Contactor relays
Type			3RH2
Size			S00
Control			
Solenoid coil operating range			
• AC operation	At 50 Hz		0.8 ... 1.1 x U_s
	At 60 Hz		0.85 ... 1.1 x U_s
• DC operation	At +50 °C		0.8 ... 1.1 x U_s
	At +60 °C		0.85 ... 1.1 x U_s
Power consumption of the solenoid coil (for cold coil and 1.0 x U_s)			
• AC operation, 50 Hz			
- Closing		VA/p.f.	37/0.8
- Closed		VA/p.f.	5.7/0.25
• AC operation, 60 Hz			
- Closing		VA/p.f.	33/0.75
- Closed		VA/p.f.	4.4/0.25
• DC operation Closing = Closed		W	4.0
Permissible residual current of the electronics (with 0 signal)			
• AC operation[1]			< 4 mA x (230 V/U_s)
• For DC operation			< 10 mA x (24 V/U_s)
Operating times for 1.0 x U_s[2]			
Total break time = OFF-delay + Arcing time			
Values apply with coil in cold state and at operating temperature for operating range			
AC operation			
• Closing			
- ON-delay of NO contact		ms	9 ... 22
3RH24 minimum operating time		ms	≥ 35
- OFF-delay of NC contact		ms	6.5 ... 19
• Opening			
- OFF-delay of NO contact		ms	4.5 ... 15
3RH24 minimum operating time		ms	≥ 30
- ON-delay of NC contact		ms	5 ... 15
DC operation			
• Closing			
- ON-delay of NO contact		ms	35 ... 50
3RH24 minimum operating time		ms	≥ 100
- OFF-delay of NC contact		ms	30 ... 45
• Opening			
- OFF-delay of NO contact		ms	7 ... 12
3RH24 minimum operating time		ms	≥ 30
- ON-delay of NC contact		ms	13 ... 18
• Arcing time		ms	10 ... 15

1) The additional load module 3RT2916-1GA00 is recommended for higher residual currents; see page 3/118.

2) The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

			Coupling contactor relays		
Type			**3RH21..-.HB40**	**3RH21..-.JB40**	**3RH21..-.KB40**
Size			**S00**		
Control					
Solenoid coil operating range			0.7 ... 1.25 x U_s		
Power consumption of the solenoid coil (for cold coil and 1.0 x U_s) Closing = Closed at U_s = 24 V		W	2.8		
Permissible residual current of the electronics for 0 signal			<10 mA x (24 V/U_s)		
Overvoltage configuration of the solenoid coil			No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times at 1.0 x U_s					
• Closing delay	ON-delay NO	ms	35 ... 60		
	OFF-delay NC	ms	25 ... 40		
• Opening delay	OFF-delay NO	ms	7 ... 20	38 ... 65	7 ... 20
	ON-delay NO	ms	10 ... 30	30 ... 90	10 ... 30
Upright mounting position			On request		

			Coupling contactor relays		
Type			**3RH21..-.MB40-0KT0**	**3RH21..-.VB40**	**3RH21..-.SB40**
Size			**S00**		
Control					
Solenoid coil operating range			0.85 ... 1.85 x U_s		
Power consumption of the solenoid coil (for cold coil and 1.0 x U_s) Closing = Closed at U_s = 24 V		W	1.6		
Permissible residual current of the electronics for 0 signal			< 8 mA x (24 V/U_s)		
Overvoltage configuration of the solenoid coil			No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times at 1.0 x U_s					
• Closing delay	ON-delay NO	ms	25 ... 90		
	OFF-delay NC	ms	15 ... 80		
• Opening delay	ON-delay NO	ms	5 ... 20	20 ... 80	5 ... 20
	OFF-delay NC	ms	10 ... 30	30 ... 90	10 ... 30
Upright mounting position			On request		

SIRIUS 3RH2 contactor relays, 4- and 8-pole

			Contactor relays
Type			**3RH2**
Size			**S00**
Rated data of the auxiliary contacts			
Load rating with AC			
Rated operational currents I_e			
AC-12		A	10
AC-15/AC-14 for rated operational voltage U_s			
	Up to 230 V	A	10[1]
	400 V	A	3
	500 V	A	2
	690 V	A	1
Load rating with DC			
Rated operational currents I_e			
DC-12 for rated operational voltage U_s			
• 1 conducting path	24 V	A	10
	60 V	A	6
	110 V	A	3
	220 V	A	1
	440 V	A	0.3
	600 V	A	0.15
• 2 conducting paths in series	24 V	A	10
	60 V	A	10
	110 V	A	4
	220 V	A	2
	440 V	A	1.3
	600 V	A	0.65
• 3 conducting paths in series	24 V	A	10
	60 V	A	10
	110 V	A	10
	220 V	A	3.6
	440 V	A	2.5
	600 V	A	1.8
DC-13 for rated operational voltage U_s			
• 1 conducting path	24 V	A	10[1]
	60 V	A	2
	110 V	A	1
	220 V	A	0.3
	440 V	A	0.14
	600 V	A	0.1
• 2 conducting paths in series	24 V	A	10
	60 V	A	3.5
	110 V	A	1.3
	220 V	A	0.9
	440 V	A	0.2
	600 V	A	0.1
• 3 conducting paths in series	24 V	A	10
	60 V	A	4.7
	110 V	A	3
	220 V	A	1.2
	440 V	A	0.5
	600 V	A	0.26
Switching frequency			
Switching frequency *z* in operating cycles/hour			
• Rated operation for utilization category	AC-12/DC-12	h^{-1}	1 000
	AC-15/AC-14	h^{-1}	1 000
Dependence of the switching frequency z' on the operational current I' and operational voltage U':	DC-13	h^{-1}	1 000
$z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$			
• No-load switching frequency		h^{-1}	10 000
cULus and cULus rated data			
Basic units and auxiliary switch blocks			
• Rated control supply voltage		V AC	max. 600
• Rated voltage		V AC	600
• Switching capacity			A 600, Q 600
• Uninterrupted current at 240 V AC		A	10

[1] 3RH22, 3RH29: I_e = 6 A for AC-15/AC-14 and DC-13.

Selection and ordering data

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41A

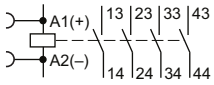
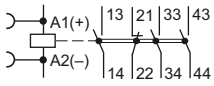
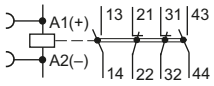
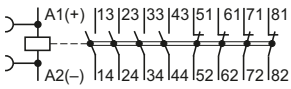
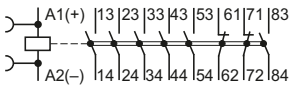
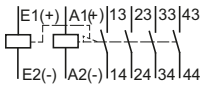
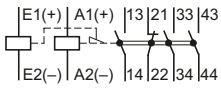
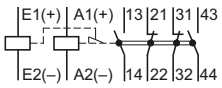
3RH2122-1A..0

3RH2122-2A..0

3RH2244-1A..0

3RH2244-2A..0

3RH2422-1A..0

Rated operational current I_e/AC-15/AC-14 at **230 V**	Contacts Ident. No.	Version	Rated control supply voltage U_s at 50/60 Hz[1]	SD	**Screw terminals**	SD	**Spring-type terminals**
					Article No. Price per PU		Article No. Price per PU
A		NO NC	V AC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail							
Size S00							
Terminal designations according to EN 50011							
4 NO, Ident. No. **40E** 							
10	**40E**	4	--	24	▶ **3RH2140-1AB00**	2	**3RH2140-2AB00**
				110	▶ **3RH2140-1AF00**	5	**3RH2140-2AF00**
				230	▶ **3RH2140-1AP00**	▶	**3RH2140-2AP00**
3 NO + 1 NC, Ident. No. **31E** 							
	31E	3	1	24	▶ **3RH2131-1AB00**	2	**3RH2131-2AB00**
				110	▶ **3RH2131-1AF00**	▶	**3RH2131-2AF00**
				230	▶ **3RH2131-1AP00**	▶	**3RH2131-2AP00**
2 NO + 2 NC, Ident. No. **22E** 							
	22E	2	2	24	▶ **3RH2122-1AB00**	2	**3RH2122-2AB00**
				110	▶ **3RH2122-1AF00**	▶	**3RH2122-2AF00**
				230	▶ **3RH2122-1AP00**	▶	**3RH2122-2AP00**
• With permanently mounted auxiliary switch block (SUVA-certified safety contactor)							
4 NO + 4 NC, Ident. No. **44E** 							
6	**44E**	4	4	230	▶ **3RH2244-1AP00**	2	**3RH2244-2AP00**
6 NO + 2 NC, Ident. No. **62E** 							
	62E	6	2	230	▶ **3RH2262-1AP00**	2	**3RH2262-2AP00**
• Latched							
No lateral auxiliary switch block can be mounted							
4 NO, Ident. No. **40E** 							
10	**40 E**	4	--	24	5 **3RH2440-1AB00**		--
				110	5 **3RH2440-1AF00**		--
				230	5 **3RH2440-1AP00**		--
3 NO + 1 NC, Ident. No. **31E** 							
	31 E	3	1	24	5 **3RH2431-1AB00**		--
				110	5 **3RH2431-1AF00**		--
				230	5 **3RH2431-1AP00**		--
2 NO + 2 NC, Ident. No. **22E** 							
	22 E	2	2	24	5 **3RH2422-1AB00**		--
				110	5 **3RH2422-1AF00**		--
				230	5 **3RH2422-1AP00**		--

[1] Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s
- at 60 Hz: 0.85 to 1.1 x U_s.

Other voltages according to page 3/73 on request.

For accessories, see from page 3/75 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RH2 contactor relays, 4- and 8-pole

DC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41A

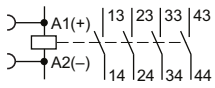
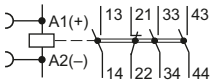
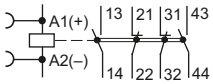
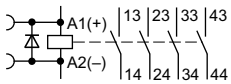
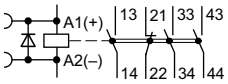
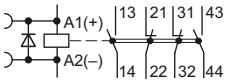
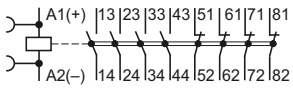
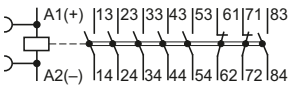
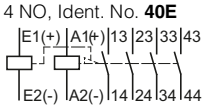
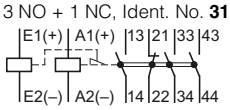
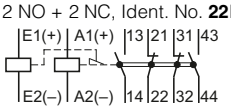

3RH2122-1B..0


3RH2122-2B..0


3RH2244-1B..0


3RH2244-2B..0


3RH2422-1B.40

Rated operational current I_e/AC-15/AC-14 at **230 V**	Contacts Ident. No.	Version		Rated control supply voltage U_s	SD	**Screw terminals**		SD	**Spring-type terminals**	
						Article No.	Price per PU		Article No.	Price per PU
A		NO	NC	V DC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S00										
Terminal designations according to EN 50011										
4 NO, Ident. No. **40E** 										
10	**40E**	4	--	24		**3RH2140-1BB40**			**3RH2140-2BB40**	
				220		**3RH2140-1BM40**		5	**3RH2140-2BM40**	
3 NO + 1 NC, Ident. No. **31E** 										
10	**31E**	3	1	24		**3RH2131-1BB40**			**3RH2131-2BB40**	
				220	2	**3RH2131-1BM40**		5	**3RH2131-2BM40**	
2 NO + 2 NC, Ident. No. **22E** 										
10	**22E**	2	2	24		**3RH2122-1BB40**			**3RH2122-2BB40**	
				220		**3RH2122-1BM40**		5	**3RH2122-2BM40**	
• With integrated diode										
4 NO, Ident. No. **40E** 										
10	**40E**	4	--	24		**3RH2140-1FB40**			**3RH2140-2FB40**	
3 NO + 1 NC, Ident. No. **31E** 										
10	**31E**	3	1	24		**3RH2131-1FB40**			**3RH2131-2FB40**	
2 NO + 2 NC, Ident. No. **22E** 										
10	**22E**	2	2	24		**3RH2122-1FB40**			**3RH2122-2FB40**	
• With permanently mounted auxiliary switch block (SUVA-certified safety contactor)										
4 NO + 4 NC, Ident. No. **44E** 										
6	**44E**	4	4	24		**3RH2244-1BB40**			**3RH2244-2BB40**	
6 NO + 2 NC, Ident. No. **62E** 										
	62E	6	2	24		**3RH2262-1BB40**			**3RH2262-2BB40**	
• Latched										
No lateral auxiliary switch block can be mounted										
4 NO, Ident. No. **40E** 										
10	**40E**	4	--	24	5	**3RH2440-1BB40**			**--**	
				110	5	**3RH2440-1BF40**			**--**	
				220	5	**3RH2440-1BM40**			**--**	
3 NO + 1 NC, Ident. No. **31E** 										
	31E	3	1	24	5	**3RH2431-1BB40**			**--**	
				110	5	**3RH2431-1BF40**			**--**	
				220	5	**3RH2431-1BM40**			**--**	
2 NO + 2 NC, Ident. No. **22E** 										
	22E	2	2	24	2	**3RH2422-1BB40**			**--**	
				110	5	**3RH2422-1BF40**			**--**	
				220	5	**3RH2422-1BM40**			**--**	

Other voltages according to page 3/73 on request.

For accessories, see from page 3/75 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

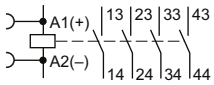
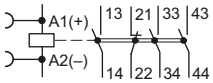
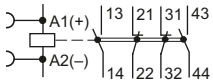
DC operation for direct control from the PLC

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switch blocks

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41A

3RH21..-1.B40

3RH21..-2.B40

Rated operational current I_e/AC-15/ AC-14 at **230 V**	Auxiliary contacts Ident. No. acc. to EN 50011	Version		SD	**Screw terminals**	SD	**Spring-type terminals**
					Article No. / Price per PU		Article No. / Price per PU
A		NO	NC	d		d	
For screw fixing and snap-on mounting onto TH 35 standard mounting rail							
Size S00							
Diode, varistor or RC element, attachable							
Terminal designations according to EN 50011 (auxiliary switch blocks cannot be mounted)							
4 NO, Ident. No. **40E** 							
3 NO + 1 NC, Ident. No. **31E** 							
2 NO + 2 NC, Ident. No. **22E** 							
Rated control supply voltage U_s = 24 V DC Operating range **0.7 to 1.25 x U_s** Power consumption of the solenoid coils **2.8 W** at 24 V							
10	**40E**	4	--	5	**3RH2140-1HB40**	5	**3RH2140-2HB40**
	31E	3	1	5	**3RH2131-1HB40**	5	**3RH2131-2HB40**
	22E	2	2	5	**3RH2122-1HB40**	5	**3RH2122-2HB40**
Rated control supply voltage U_s = 24 V DC Operating range **0.85 to 1.85 x U_s** Power consumption of the solenoid coils **1.6 W** at 24 V							
10	**40E**	4	--	5	**3RH2140-1MB40-0KT0**	5	**3RH2140-2MB40-0KT0**
	31E	3	1	2	**3RH2131-1MB40-0KT0**	5	**3RH2131-2MB40-0KT0**
	22E	2	2	5	**3RH2122-1MB40-0KT0**	5	**3RH2122-2MB40-0KT0**

Other voltages according to page 3/73 on request.

For accessories, see from page 3/75 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RH2 contactor relays, 4- and 8-pole

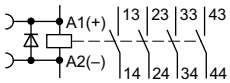
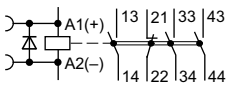
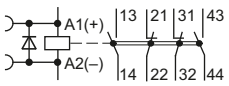
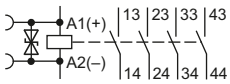
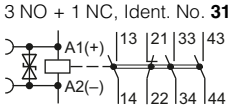
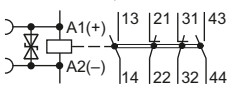
DC operation for direct control from the PLC

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switch blocks

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41A

3RH21..-1.B40

3RH21..-2.B40

Rated operational current I_e/AC-15/ AC-14 at **230 V**	Auxiliary contacts Ident. No. acc. to EN 50011	Version		SD	**Screw terminals**		SD	**Spring-type terminals**	
					Article No.	Price per PU		Article No.	Price per PU
A		NO	NC	d			d		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail									
Size S00									
With integrated coil circuit (diode)									
Terminal designations according to EN 50011 (auxiliary switch blocks cannot be mounted)									
4 NO, Ident. No. **40E** 									
3 NO + 1 NC, Ident. No. **31E** 									
2 NO + 2 NC, Ident. No. **22E** 									
Rated control supply voltage U_S = 24 V DC Operating range **0.7 to 1.25 x U_S** Power consumption of the solenoid coils **2.8 W** at 24 V									
10	**40E**	4	--	2	**3RH2140-1JB40**	▶	2	**3RH2140-2JB40**	
	31E	3	1	▶	**3RH2131-1JB40**	▶	2	**3RH2131-2JB40**	
	22E	2	2	▶	**3RH2122-1JB40**	▶	2	**3RH2122-2JB40**	
Rated control supply voltage U_S = 24 V DC Operating range **0.85 to 1.85 x U_S** Power consumption of the solenoid coils **1.6 W** at 24 V									
10	**40E**	4	--	5	**3RH2140-1VB40**		5	**3RH2140-2VB40**	
	31E	3	1	5	**3RH2131-1VB40**		5	**3RH2131-2VB40**	
	22E	2	2	5	**3RH2122-1VB40**		5	**3RH2122-2VB40**	
With integrated coil circuit (suppressor diode)									
Terminal designations according to EN 50011 (auxiliary switch blocks cannot be mounted)									
4 NO, Ident. No. **40E** 									
3 NO + 1 NC, Ident. No. **31E** 									
2 NO + 2 NC, Ident. No. **22E** 									
Rated control supply voltage U_S = 24 V DC Operating range **0.7 to 1.25 x U_S** Power consumption of the solenoid coils **2.8 W** at 24 V									
10	**40E**	4	--	5	**3RH2140-1KB40**		5	**3RH2140-2KB40**	
	31E	3	1	▶	**3RH2131-1KB40**	▶	▶	**3RH2131-2KB40**	
	22E	2	2	▶	**3RH2122-1KB40**	▶	▶	**3RH2122-2KB40**	
Rated control supply voltage U_S = 24 V DC Operating range **0.85 to 1.85 x U_S** Power consumption of the solenoid coils **1.6 W** at 24 V									
10	**40E**	4	--	5	**3RH2140-1SB40**		5	**3RH2140-2SB40**	
	31E	3	1	2	**3RH2131-1SB40**		5	**3RH2131-2SB40**	
	22E	2	2	2	**3RH2122-1SB40**		5	**3RH2122-2SB40**	

Other voltages according to page 3/73 on request.

For accessories, see from page 3/75 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-5-1, EN 60947-5-1

The 3TH42 and 3TH43 contactor relays are suitable for use in any climate. They are finger-safe according to IEC 60529.

Note:

The 3TH42 and 3TH43 contactor relays feature positively-driven operation in accordance with IEC 60947-5-1, Ed. 3.1.

Terminal designations according to EN 50011

In terms of their terminal designations, identification numbers and identification letters, the 3TH42 and 3TH43 contactor relays conform to the standard EN 50011 for Specific Contactor Relays.

Contact reliability

High contact stability at low voltages and currents as a result of double-break contacts, suitable for solid-state circuits with currents ≥ 1 mA at a voltage of ≥ 17 V.

Surge suppression

The 3TH42 and 3TH43 contactor relays can be equipped with RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) for damping opening surges. The surge suppressors can be mounted directly on the coil (see page 5/24).

Note:

The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

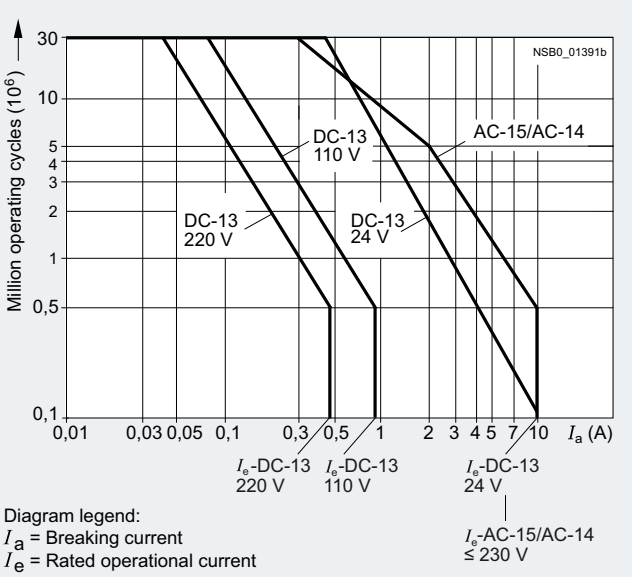
Mounting

Note:

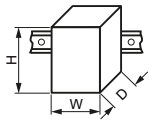
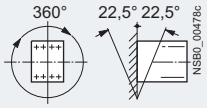
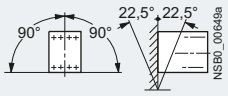
With 3TH4 contactor relays with AC operation, an overvoltage of 1.1 x U_S, an ambient temperature ≥ 45 °C and 100% ON-period of all contactors, a minimum clearance of 5 mm between the contactors shall be observed in the case of side-by-side mounting.

Technical specifications

Contactor relays	Type	3TH42, 3TH43
Contact endurance for AC-15/AC-14 and DC-13 utilization categories		
The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system. If magnetic circuits other than the contactor coil systems or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary. RC elements or freewheel diodes are suitable as protective measures for the circuits.		



3TH4 contactor relays, 8- and 10-pole

Contactor relays		Type	3TH42	3TH43
General data				
Dimensions (W x H x D)				
• AC operation		mm	45 x 78 x 97	55 x 78 x 97
• DC operation		mm	45 x 78 x 130	55 x 78 x 130
Permissible mounting position				
The contactor relays are designed for operation on a vertical mounting surface.				
• AC operation				
• DC operation				
Upright mounting position				
AC and DC operation			Special version required	
Mechanical endurance	Basic units	Operating cycles	30 million	
Rated insulation voltage U_i (pollution degree 3)		V	690	
Rated impulse withstand voltage U_{imp}		kV	8	
Protective separation between coil and main contacts acc. to IEC 60947-1, Appendix N		V	Up to 500	
Permissible ambient temperature				
• During operation		°C	-25 ... +55	
• During storage		°C	-55 ... +80	
Degree of protection acc. to IEC 60529				
• On front			IP20 (with screw terminals)	
• Connecting terminal			IP20 (with screw terminals)	
Touch protection acc. to IEC 60529			Finger-safe (for screw terminals)	
Shock resistance				
• Rectangular pulse				
- AC operation		g/ms	7.7/5 and 4.4/10	
- DC operation		g/ms	9.3/5 and 5.4/10	
• Sine pulse				
- AC operation		g/ms	12/5 and 6.8/10	
- DC operation		g/ms	14.7/5 and 8.5/10	
Short-circuit protection				
Short-circuit test				
• With fuse links of operational class gG: With short-circuit current I_k = 1 kA acc. to IEC 60947-5-1				
- LV HRC, type 3NA		A	16	
- DIAZED, type 5SB		A	16	
- NEOZED Type 5SE, quick		A	20	
• With miniature circuit breaker with short-circuit current I_k = 400 A acc. to IEC 60947-5-1				
- C Characteristic		A	16	
- B Characteristic		A	16	
cULus and CSA rated data				
Basic units				
Rated control supply voltage U_s			Max. 600 V AC, 230 V DC (acc. to UL 240 V DC)	
Rated voltage			600 V AC, 600 V DC	
Switching capacity			A 600, P 600	
Conductor cross-sections				
Auxiliary conductors and coil terminals (1 or 2 conductors can be connected)			**Screw terminals**	
• Solid or stranded		mm^2	2 x (0.5 ... 1)[1]; 2 x (1 ... 2.5)[1]; 1 x 4	
• Finely stranded with end sleeve		mm^2	2 x (0.75 ... 2.5)	
• Terminal screw			M3.5	

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Contactor relays	Type	3TH42, 3TH43
Control		
Solenoid coil operating range		
• AC operation		0.8 ... 1.1 x U_s [1]
• DC operation (except 24 V)		0.8 ... 1.1 x U_s
- At 24 V DC		0.8 ... 1.2 x U_s
Solenoid coil power consumption (for cold coil and 1.0 x U_s)		
• AC operation, 50 Hz, standard version		
- Closing	VA/p.f.	68/0.82
- Closed	VA/p.f.	10/0.29
• AC operation, 50/60 Hz, standard version		
- Closing, 50 Hz	VA/p.f.	77/0.81
- Closed, 50 Hz	VA/p.f.	11/0.28
- Closing, 60 Hz	VA/p.f.	71/0.75
- Closed, 60 Hz	VA/p.f.	9/0.27
• AC operation, 50 Hz, USA/Canada		
- Closing	VA/p.f.	68/0.82
- Closed	VA/p.f.	10/0.29
• AC operation, 60 Hz, USA/Canada		
- Closing	VA/p.f.	75/0.76
- Closed	VA/p.f.	9.4/0.29 ... 0.3
• AC operation, 50 Hz, standard version		
- Closing	VA/p.f.	80/0.8
- Closed	VA/p.f.	10.7/0.29
• AC operation, 60 Hz, standard version		
- Closing	VA/p.f.	75 ... 90/0.73
- Closed	VA/p.f.	8.5 ... 10.7/0.29 ... 0.3
• DC operation up to 250 V Closing = Closed	W	6.2
Permissible residual current of the electronics (with 0 signal)		
• For AC operation		≤ 8 mA x (220 V/U_s)
• For DC operation		≤ 1.25 mA x (220 V/U_s)
Operating times at 1.0 x U_s [2]		
AC operation		
• Closing		
- ON-delay NO	ms	10 ... 25
- OFF-delay NC	ms	7 ... 20
• Opening		
- OFF-delay NO	ms	5 ... 18
- ON-delay NC	ms	7 ... 20
DC operation		
• Closing		
- ON-delay NO	ms	30 ... 70
- OFF-delay NC	ms	28 ... 65
• Opening		
- OFF-delay NO	ms	10 ... 20
- ON-delay NC	ms	15 ... 25
Arcing time	ms	10

[1] Coils for USA, Canada and Japan: 0.85 to 1.1 x U_s at 60 Hz.

[2] The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 9x); diode assembly 2x to 6x; varistor +2 to 5 ms).

3TH4 contactor relays, 8- and 10-pole

Contactor relays	Type		3TH42, 3TH43
Rated data of the auxiliary contacts			
Load rating with AC			
Rated operational currents I_e			
• AC-12		A	16
• AC-15/AC-14, for rated operational voltage U_e			
	230 V	A	10
	400 V	A	6
	500 V	A	4
	690 V	A	2
Rated power of three-phase motors According to utilization categories AC-2 and AC-3, 50 Hz			
	230/220 V	kW	2.4
	400/380 V	kW	4
	500 V	kW	4
	690/660 V	kW	4
Load rating with DC			
Rated operational currents I_e			
DC-12, for rated operational voltage U_e			
• 1 conducting path			
	Up to 48 V	A	10
	110 V	A	2.1
	220 V	A	0.8
	440 V	A	0.6
• 2 conducting paths in series			
	Up to 48 V	A	10
	110 V	A	10
	220 V	A	1.6
	440 V	A	0.8
• 3 conducting paths in series			
	Up to 48 V	A	10
	110 V	A	10
	220 V	A	10
	440 V	A	1.3
DC-13, for rated operational voltage U_e			
• 1 conducting path			
	Up to 24 V	A	10
	48 V	A	5
	110 V	A	1
	220 V	A	0.45
	440 V	A	0.25
	600 V	A	0.2
• 2 conducting paths in series			
	Up to 24 V	A	10
	48 V	A	10
	110 V	A	2.5
	220 V	A	0.75
	440 V	A	0.5
	600 V	A	0.4
• 3 conducting paths in series			
	Up to 24 V	A	10
	48 V	A	10
	110 V	A	10
	220 V	A	2
	440 V	A	0.9
	600 V	A	0.8
Switching frequency			
Switching frequency z in operating cycles/hour			
• Rated operation for utilization category	AC-12/DC-12	h^{-1}	1 000
	AC-2	h^{-1}	500
	AC-3	h^{-1}	1 000
	AC-15/AC-14	h^{-1}	3 600
	DC-13	h^{-1}	3 600
Dependence of the switching frequency z' on the operational current I' and operational voltage U': $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$			
• No-load switching frequency		h^{-1}	10 000

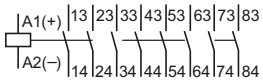
Selection and ordering data

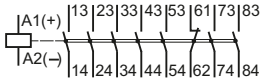
8-pole contactor relays

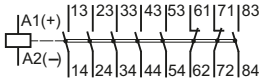
3TH4280-0AP0

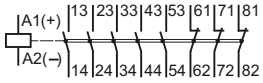
3TH4244-0BB4

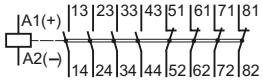
Contacts	Rated operational current I_e/AC-15/AC-14 at				Contacts					SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	230/ 220 V	400/ 380 V	500 V	690/ 660 V	Ident. No. acc. to EN 50011	Version								
											Article No.	Price per PU		
Number	A	A	A	A		NO	NC	NO	NC	d				
For screw fixing and snap-on mounting onto TH 35 standard mounting rail														
Terminal designations according to EN 50011														
8 NO, Ident. No. **80E**														
7 NO + 1 NC, Ident. No. **71E**														
6 NO + 2 NC, Ident. No. **62E**														
5 NO + 3 NC, Ident. No. **53E**														
4 NO + 4 NC, Ident. No. **44E**														
3 NO + 3 NC and 1 NO + 1 NC make-before-break, Ident. No. **44E, U**														
AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]														
8	**10**	6	4	2	**80E**	8	--	--	--	▶	**3TH4280-0AP0**	1	1 unit	41A
					71E	7	1	--	--	▶	**3TH4271-0AP0**	1	1 unit	41A
					62E	6	2	--	--	▶	**3TH4262-0AP0**	1	1 unit	41A
					53E	5	3	--	--	▶	**3TH4253-0AP0**	1	1 unit	41A
					44E	4	4	--	--	▶	**3TH4244-0AP0**	1	1 unit	41A
					44E, U	3	3	1	1	▶	**3TH4293-0AP0**	1	1 unit	41A
DC operation, rated control supply voltage U_s = 24 V DC														
8	**10**	6	4	2	**80E**	8	--	--	--	▶	**3TH4280-0BB4**	1	1 unit	41A
					71E	7	1	--	--	▶	**3TH4271-0BB4**	1	1 unit	41A
					62E	6	2	--	--	▶	**3TH4262-0BB4**	1	1 unit	41A
					53E	5	3	--	--	▶	**3TH4253-0BB4**	1	1 unit	41A
					44E	4	4	--	--	▶	**3TH4244-0BB4**	1	1 unit	41A
					44E, U	3	3	1	1	▶	**3TH4293-0BB4**	1	1 unit	41A

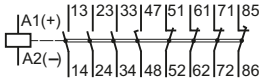












[1] Operating range at 220 V: 0.85 to 1.1 x U_s; lower operating range limit according to IEC 60947.

Other voltages according to page 5/23 on request.

For accessories, see page 5/24.

Note:

The solenoid coils of the 3TH42 contactor relays are available in various voltages as spare parts (on request).

- AC operation: 3TY7403-0A..
- DC operation: 3TY4803-0B..

The contacts cannot be replaced on 3TH42 contactor relays.

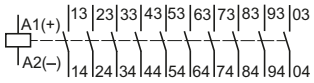
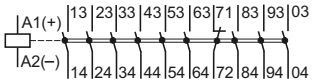
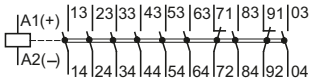
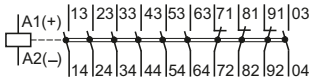
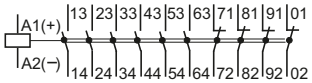
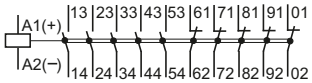
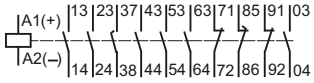
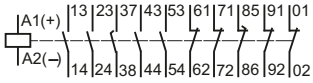
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

3TH4 contactor relays, 8- and 10-pole

10-pole contactor relays

3TH4355-0A..

3TH4355-0B..

Contacts	Rated operational current I_e/AC-15/AC-14 at				Contacts					SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	230 V	400 V	500 V	690 V	Ident. No. acc. to EN 50011	Version					Article No.	Price per PU			
Number	A	A	A	A		NO	NC	NO	NC	d					
For screw fixing and snap-on mounting onto TH 35 standard mounting rail															
Terminal designations according to EN 50011															
10 NO, Ident. No. **100E**															
															
9 NO + 1 NC, Ident. No. **91E**															
															
8 NO + 2 NC, Ident. No. **82E**															
															
7 NO + 3 NC, Ident. No. **73E**															
															
6 NO + 4 NC, Ident. No. **64E**															
															
5 NO + 5 NC, Ident. No. **55E**															
															
6 NO + 2 NC and 1 NO + 1 NC make-before-break, Ident. No. **73E, U**															
															
4 NO + 4 NC and 1 NO + 1 NC make-before-break, Ident. No. **55E, U**															
															
AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]															
10	**10**	6	4	2	**100E**	10	--	--	--	▶	**3TH4310-0AP0**		1	1 unit	41A
					91E	9	1	--	--	▶	**3TH4391-0AP0**		1	1 unit	41A
					82E	8	2	--	--	▶	**3TH4382-0AP0**		1	1 unit	41A
					73E	7	3	--	--	▶	**3TH4373-0AP0**		1	1 unit	41A
					73E, U	6	2	1	1	▶	**3TH4346-0AP0**		1	1 unit	41A
					64E	6	4	--	--	▶	**3TH4364-0AP0**		1	1 unit	41A
					55E	5	5	--	--	▶	**3TH4355-0AP0**		1	1 unit	41A
					55E, U	4	4	1	1	▶	**3TH4394-0AP0**		1	1 unit	41A
DC operation, rated control supply voltage U_s = 24 V DC															
10	**10**	6	4	2	**100E**	10	--	--	--	▶	**3TH4310-0BB4**		1	1 unit	41A
					91E	9	1	--	--	▶	**3TH4391-0BB4**		1	1 unit	41A
					82E	8	2	--	--	▶	**3TH4382-0BB4**		1	1 unit	41A
					73E	7	3	--	--	▶	**3TH4373-0BB4**		1	1 unit	41A
					73E, U	6	2	1	1	▶	**3TH4346-0BB4**		1	1 unit	41A
					64E	6	4	--	--	▶	**3TH4364-0BB4**		1	1 unit	41A
					55E	5	5	--	--	▶	**3TH4355-0BB4**		1	1 unit	41A
					55E, U	4	4	1	1	▶	**3TH4394-0BB4**		1	1 unit	41A

[1] Operating range at 220 V: 0.85 to 1.1 x U_s; lower operating range limit according to IEC 60947.

Other voltages according to page 5/23 on request.

For accessories, see page 5/24.

Note:

The solenoid coils of the 3TH43 contactor relays are available in various voltages as spare parts (on request).

- AC operation: 3TY7403-0A..
- DC operation: 3TY4803-0B..

The contacts cannot be replaced on 3TH43 contactor relays.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Options

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type Control supply voltage at	3TH42/3TH43
AC operation		
Solenoid coils for 50 Hz AC		
50 Hz	**60 Hz**	
24 V AC	29 V AC	B0
36 V AC	42 V AC	G0
42 V AC	50 V AC	D0
48 V AC	58 V AC	H0
60 V AC	72 V AC	E0
110 V AC	132 V AC	F0
125/127 V AC	150/152 V AC	L0
230/220 V AC	276 V AC	P0[1]
240 V AC	288 V AC	U0
400/380 V AC	480/460 V AC	V0[1]
415 V AC	500 V AC	R0
500 V AC	600 V AC	S0
For Japan		
100 V AC	100 ... 110 V AC	G6[2]
200 V AC	200 ... 220 V AC	N6[2]
For USA and Canada		
110 V AC	120 V AC	K6[2]
220 V AC	240 V AC	P6[2]
Solenoid coils for 50 and 60 Hz AC		
50/60 Hz		
24 V AC		C2
42 V AC		D2
110 V AC		G2
115 V AC		J2
120 V AC		K2
220 V AC		N2
230 V AC		L2
240 V AC		P2
440 V AC		R2

[1] Operating range at 220 V or 380 V: 0.85 to 1.1 x U_s.

[2] Operating range at 60 Hz: 0.85 to 1.1 x U_s.

Rated control supply voltage U_s	Contactor type	3TH42/3TH43
DC operation		
12 V DC		A4
24 V DC		B4
30 V DC		C4
36 V DC		V4
42 V DC		D4
48 V DC		W4
60 V DC		E4
110 V DC		F4
125 V DC		G4
220 V DC		M4
230 V DC		P4
240 V DC		Q4

Accessories for 3TH4 contactor relays

Selection and ordering data

Version	Rated control supply voltage U_s AC V	Rated control supply voltage U_s DC V	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Surge suppressors[1] for 3TH4 contactor relays								
 3TX7402-3. **Noise suppression diodes** With line spacer, for mounting onto the coil terminal	--	24 ... 250	2	**3TX7402-3A**		1	1 unit	41B
Diode assemblies (diode and Zener diode) with line spacer, DC operation, for mounting onto the coil terminal	--	24 ... 250	2	**3TX7402-3D**		1	1 unit	41B
Varistors[2] With line spacer, for mounting onto the coil terminal	24 ... 48	24 ... 70	2	**3TX7402-3G**		1	1 unit	41B
	48 ... 127	70 ... 150	2	**3TX7402-3H**		1	1 unit	41B
	127 ... 240	150 ... 250	2	**3TX7402-3J**		1	1 unit	41B
	240 ... 400	--	15	**3TX7402-3K**		1	1 unit	41B
	400 ... 600	--	15	**3TX7402-3L**		1	1 unit	41B
RC elements With line spacer, for mounting onto the coil terminal	24 ... 48	24 ... 70	2	**3TX7402-3R**		1	1 unit	41B
	48 ... 127	70 ... 150	2	**3TX7402-3S**		1	1 unit	41B
	127 ... 240	150 ... 250	2	**3TX7402-3T**		1	1 unit	41B
	240 ... 400	--	5	**3TX7402-3U**		1	1 unit	41B
	400 ... 600	--	15	**3TX7402-3V**		1	1 unit	41B
Covers for switch position indicator	--	--	X	**3TX4210-0P**		1	1 unit	41B

1) The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

2) Includes the peak value of the alternating voltage on the DC side.

For contactors Type	Version	Rated control supply voltage U_s 50/60 Hz AC V	Time setting range (minimum times) s	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
ON-delay devices									
 3TX4180-0A 3TH42, 3TH43	**NTC thermistors** Time tolerance +100 %, -50 %	220 ... 230	0.1	5	**3TX4180-0A**		1	1 unit	41B
Coupling links for control by PLC for 3TH4 contactor relays									
 3TX4090 Mounted on contactor 3TH42, 3TH43	Operating range: 17 ... 30 V DC Power consumption: 0.5 W at 24 V DC • for direct mounting on the contactor coil								
	- **Without** surge suppressor			15	**3TX4090-0C**		1	1 unit	41B
	- **With** surge suppressor			2	**3TX4090-0D**		1	1 unit	41B

For contactors Type	Rated control supply voltage U_s 50/60 Hz AC V	Rated control supply voltage U_s DC V	OFF-delay (minimum times) s	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
OFF-delay devices for contactors with DC operation									
Bridging of voltage interruptions up to 1.2 sec									
 3TX4701-0AN1 3TH42..-0BF4 3TH43..-0BF4	110	--	0.15 or 0.3	2	**3TX4701-0AN1**		1	1 unit	41B
3TH42..-0BM4 3TH43..-0BM4	220	--	0.6 or 1.2	2	**3TX4701-0AN1**		1	1 unit	41B
3TH42..-0BP4 3TH43..-0BP4	230	--	0.6 or 1.2	2	**3TX4701-0AN1**		1	1 unit	41B
3TH42..-0BB4 3TH43..-0BB4	--	24	0.4 or 0.8	15	**3TX4701-0BB4**		1	1 unit	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-5-1, EN 60947-5-1

The 3TH2 miniature contactor relays are suitable for use in any climate. The contactor relays with screw terminals are finger-safe according to IEC 60529.

The terminal designations comply with EN 50011.

Connections

The 3TH20 miniature contactor relays with four auxiliary contacts are available with SIGUT screw terminals, 6.3 mm x 0.8 mm flat connectors, and solder pin connections.

The miniature contactor relays with 6.3 mm x 0.8 mm flat connectors can be used in the plug-in base with solder pin connections for printed circuit boards. The miniature contactor relays are coded, and the plug-in base is codable in order to ensure non-interchangeability.

The 3TH22 miniature contactor relays with eight integrated contacts are available with screw terminals. The terminal designations comply with EN 50011.

Contact reliability

High contact stability at low voltages and currents, particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage of ≥ 17 V.

Latched 3TH27 miniature contactor relays

The contactor coil and the coil of the release solenoid are both designed for uninterrupted duty.

RC elements, varistors, diodes or diode assemblies can be fitted to both coils from the front for damping opening surges in the coil.

The contactor relay can also be switched on and released manually.

Accessories

Auxiliary switch blocks

The miniature contactor relays with four contacts with screw terminals can be expanded by up to four contacts by adding mountable auxiliary switch blocks (see page 5/31).

A cover (with unit labeling plate) must be removed from the front of the miniature contactor relays for this purpose. The auxiliary switch block is then easy to mount. The auxiliary switch blocks can be removed again by unlocking them with a laterally arranged slide.

The miniature contactor relays with screw terminals with four contacts according to EN 50011 with the identification number 40E can be expanded with 80E, 71E, 62E, 53E or 44E auxiliary switch blocks to a total of eight miniature contactor relays according to EN 50011. The identification numbers 80E, 71E, 62E, 53E or 44E on the coded auxiliary switch blocks apply to the complete contactors. They cannot be combined with miniature contactor relays with identification number 31E and 33E.

All miniature contactor relays with screw terminals with four contacts according to EN 50011, identification number 40E, 31E or 22E, can be expanded with auxiliary switch blocks with identification number 40, 31, 22, 20, 11 or 02 to miniature contactor relays with six or eight contacts according to EN 50005. The identification numbers on the auxiliary switch blocks apply only to the attached auxiliary switch blocks.

Surge suppression

RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode for short break times) can be plugged onto all contactors and auxiliary switch blocks with screw terminals from the front in order to dampen opening surges in the coil (see page 5/32).

The unit labeling plate must be removed for this purpose. It can be snapped onto the attached surge suppressor.

Additional load module

The 3TX4490-1J additional load module (see page 5/32) can be used by programmable logic controllers to increase permissible residual current, and to limit residual voltage in semiconductor outputs.

This module ensures the safe shut-down of 3TH2 contactor relays and 3TF2 contactors with direct control via 230 V AC semiconductor outputs. It is accommodated in the same enclosure as the 3TX4490-3. surge suppressors and can be plugged into the contactor.

3TH2 miniature contactor relays, 4- and 8-pole

Technical specifications

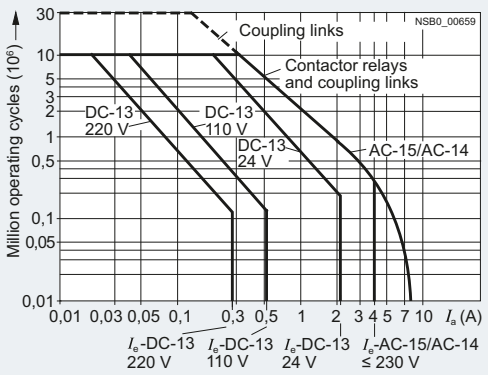
Contactor relays	Type	3TH2

Contact endurance for AC-15/AC-14 and DC-13 utilization categories

The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

If magnetic circuits other than the contactor coil systems or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary. RC elements or freewheel diodes are suitable as protective measures for the circuits.

Legend for the diagram:
I_e = Rated operational current
I_a = Breaking current



Positively-driven operation of contacts in miniature contactor relays

3TH20:
Yes, in the basic unit and the auxiliary switch block as well as between the basic unit and the mounted auxiliary switch block (removable) acc. to:
- ZH1/457
- IEC 60947-5-1, Appendix L

3TH22:
Yes, in the basic unit and the auxiliary switch block as well as between the basic unit and the mounted auxiliary switch block (permanently mounted) according to:
- ZH1/457
- IEC 60947-5-1, Appendix L
- SUVA

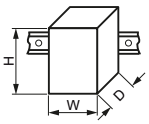
Explanations:

There is positively-driven operation if it is ensured that the NC and NO contacts cannot be closed at the same time.

ZH1/457
Safety Rules for Controls on Power-Operated Metalworking Presses.

IEC 60947-5-1, Appendix L
Standard for Low-Voltage Switchgear and Controlgear, Control Circuit Devices and Switching Elements.
Special requirements for positively-driven contacts

SUVA
Accident prevention regulations of "Schweizer Unfallverhütungsanstalt" (Swiss Institute for Accident Insurance)

Type			Miniature contactor relays 3TH20..-....	Miniature contactor relays 3TH22..-....	Auxiliary switch block 3TX4...-..
General data					
Dimensions (W x H x D)		mm	45 x 48 x 63	45 x 48 x 91	45 x 33 x 28
• With 3TX4490 surge suppressor		mm	45 x 48 x 88	45 x 48 x 116	--
Permissible mounting position	AC and DC operation		Any		
Mechanical endurance	• AC operation • DC operation	Operating cycles	10 million 30 million		
Rated insulation voltage U_i	(Pollution degree 3)				
• Screw terminals		V	690	500	
• Plug-type terminal 6.3 mm x 0.8 mm		V	500	--	
• Solder pin connections		V	500	--	
Rated impulse withstand voltage U_{imp}	(Pollution degree 3)				
• Screw terminals		kV	6, control circuit 4		
• Plug-type terminal 6.3 mm x 0.8 mm		kV	6	--	
• Solder pin connections		kV	6	--	
Protective separation between coil and contacts (according to IEC 60947-1, Appendix N)		V	Up to 300		
Permissible ambient temperature[1]	• During operation • During storage	°C °C	-25 ... +55 -55 ... +80		
Degree of protection acc. to IEC 60529					
• On front			IP20 (with screw terminals)		
• Connecting terminal			IP20 (with screw terminals)		
Touch protection acc. to IEC 60529			Finger-safe (for screw terminals)		
Shock resistance					
• Rectangular pulse	- AC operation - DC operation	*g*/ms *g*/ms	7/5 and 4/10 10/5 and 6/10		
• Sine pulse	- AC operation - DC operation	*g*/ms *g*/ms	9/5 and 6/10 13/5 and 8/10		

[1] Applies to 50/60 Hz coil:
Operating range at 60 Hz: 0.85 to 1.1 x U_s;
at 50 Hz, 1.1 x U_s, with side-by-side mounting and 100 % ON period the max. ambient temperature is +40 °C.

Contactor relays		Type	3TH2
Short-circuit protection			
Short-circuit test with fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A	6
Conductor cross-sections			
Auxiliary conductors (1 or 2 conductors can be connected)			**Screw terminals**
• Solid or stranded		mm^2	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)
• Terminal screw			M3
Auxiliary conductors (1 or 2 conductors can be connected)			**Flat connectors**
• Finely stranded When using a plug-in sleeve	- 6.3 ... 1 - 6.3 ... 2.5	mm^2 mm^2	0.5 ... 1 1 ... 2.5
			Solder pin connections (for printed circuit boards only)
• Solder pin cross-section	(does not apply to plug-in bases)	mm^2	0.8 x 1.2
Control			
Solenoid coil operating range[1]			0.8 ... 1.1 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)			
• AC operation, 50 Hz	Closing P.f. Closed P.f.	VA VA 	15 0.41 6.8 0.42
• AC operation, 60 Hz	Closing P.f. Closed P.f.	VA VA 	14.4 0.36 6.1 0.46
• AC operation, 50/60 Hz[1]	Closing P.f. Closed P.f.	VA VA 	16.5/13.2 0.43/0.38 8.0/5.4 0.48/0.42
• DC operation	Closing = Closed	W	3
Permissible residual current of the electronics (with 0 signal)	AC operation DC operation	mA mA	≤ 3 x (220 V/U_s) ≤ 1 x (220 V/U_s)
Operating times at 1.0 x U_s[2]			
• AC operation			
- Closing	ON-delay NO OFF-delay NC	ms ms	6 ... 17 5 ... 12
- Opening	OFF-delay NO ON-delay NC	ms ms	3 ... 24 5 ... 20
• DC operation			
- Closing	ON-delay NO OFF-delay NC	ms ms	18 ... 42 15 ... 26
- Opening	OFF-delay NO ON-delay NC	ms ms	3 ... 5 4 ... 10
• Arcing time		ms	10

1) Applies to 50/60 Hz coil:
Operating range at 60 Hz: 0.85 to 1.1 x U_s;
at 50 Hz, 1.1 x U_s, with side-by-side mounting and 100 % ON period the max. ambient temperature is +40 °C.

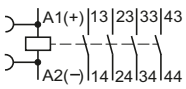
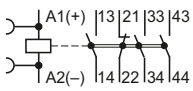
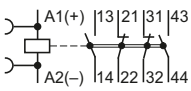
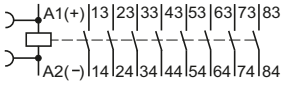
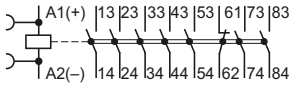
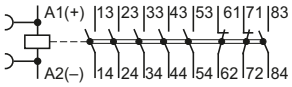
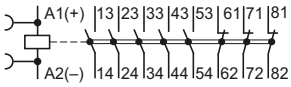
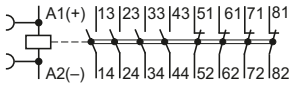
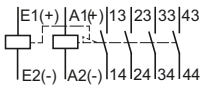
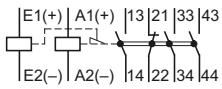
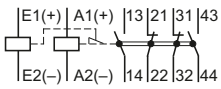
2) The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

3TH2 miniature contactor relays, 4- and 8-pole

Contactor relays		Type	3TH2
Rated data of the auxiliary contacts			
Load rating with AC			
Utilization category AC-12			
Rated operational current I_e (at 60 °C)		A	10
Utilization categories AC-15 and AC-14			
Rated operational current I_e			
For rated operational voltage U_e	230/220 V	A	4
	400/380 V	A	3
	500 V	A	2
	690/660 V	A	1
Rated power of three-phase motors			
According to utilization categories AC-2 and AC-3	110 V	kW	0.2
	230/220 V	kW	0.55
	400/380 V	kW	1.1
	500 V	kW	1.5
	690/660 V	kW	1.5
Load rating with DC			
Utilization category DC-12		A	10
Rated operational current I_e			
For rated operational voltage U_e			
• 1 conducting path[1)]	Up to 24 V	A	4
	60 V	A	2
	110 V	A	1.1
	240/220 V	A	0.5
• 2 conducting paths in series	Up to 24 V	A	10
	60 V	A	10
	110 V	A	4
	240/220 V	A	2
• 3 conducting paths in series	Up to 24 V	A	10
	60 V	A	10
	110 V	A	6
	240/220 V	A	2.5
Utilization category DC-13			
Rated operational current I_e			
For rated operational voltage U_e			
• 1 conducting path	Up to 24 V	A	2.1
	60 V	A	0.9
	110 V	A	0.52
	240/220 V	A	0.27
• 2 conducting paths in series	Up to 24 V	A	10
	60 V	A	3.5
	110 V	A	1.3
	240/220 V	A	0.9
• 3 conducting paths in series	Up to 24 V	A	10
	60 V	A	4.7
	110 V	A	3
	240/220 V	A	1.2
Switching frequency			
Switching frequency *z* in operating cycles/hour			
• Rated operation for utilization category	AC-12/DC-12	h^{-1}	1 000
	AC-2	h^{-1}	500
	AC-3	h^{-1}	1 000
	AC-15/AC-14	h^{-1}	1 200
	DC-13	h^{-1}	1 200
Dependence of the switching frequency z' on the operational current I' and operational voltage U': $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$			
• No-load switching frequency		h^{-1}	10 000

1) Contact endurance 0.1 x 10^6 operating cycles.

Selection and ordering data

Contacts	Rated operational current I_e/AC-15/AC-14 at				Contacts			SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	230/ 220 V	400/ 380 V	500 V	690/ 660 V	Ident. No. acc. to EN 50011	Version			Article No.	Price per PU			
Number	**A**	A	A	A		NO	NC	d					
For screw fixing and snap-on mounting onto TH 35 standard mounting rail													
Terminal designations according to EN 50011													
4 NO, Ident. No. **40E** 													
3 NO + 1 NC, Ident. No. **31E** 													
2 NO + 2 NC, Ident. No. **22E** 													
AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]													
4	**4**	3	2	1	**40E**	4	--	2	**3TH2040-0AP0**		1	1 unit	41A
					31E	3	1	2	**3TH2031-0AP0**		1	1 unit	41A
					22E	2	2	2	**3TH2022-0AP0**		1	1 unit	41A
DC operation, rated control supply voltage U_s = 24 V DC													
4	**4**	3	2	1	**40E**	4	--	2	**3TH2040-0BB4**		1	1 unit	41A
					31E	3	1	2	**3TH2031-0BB4**		1	1 unit	41A
					22E	2	2	2	**3TH2022-0BB4**		1	1 unit	41A
With permanently mounted auxiliary switch blocks · For screw fixing and snap-on mounting onto TH 35 standard mounting rail													
Terminal designations according to EN 50011													
8 NO, Ident. No. **80E** 													
7 NO + 1 NC, Ident. No. **71E** 													
6 NO + 2 NC, Ident. No. **62E** 													
5 NO + 3 NC, Ident. No. **53E** 													
4 NO + 4 NC, Ident. No. **44E** 													
AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]													
8	**4**	3	2	--	**80E**	8	0	20	**3TH2280-0AP0**		1	1 unit	41A
					71E	7	1	20	**3TH2271-0AP0**		1	1 unit	41A
					62E	6	2	2	**3TH2262-0AP0**		1	1 unit	41A
					53E	5	3	20	**3TH2253-0AP0**		1	1 unit	41A
					44E	4	4	2	**3TH2244-0AP0**		1	1 unit	41A
DC operation, rated control supply voltage U_s = 24 V DC													
8	**4**	3	2	--	**80E**	8	0	2	**3TH2280-0BB4**		1	1 unit	41A
					71E	7	1	2	**3TH2271-0BB4**		1	1 unit	41A
					62E	6	2	2	**3TH2262-0BB4**		1	1 unit	41A
					53E	5	3	2	**3TH2253-0BB4**		1	1 unit	41A
					44E	4	4	2	**3TH2244-0BB4**		1	1 unit	41A
Latched miniature contactor relays · For screw fixing and snap-on mounting onto TH 35 standard mounting rail													
Terminal designations according to EN 50011													
4 NO, Ident. No. **40E** 													
3 NO + 1 NC, Ident. No. **31E** 													
2 NO + 2 NC, Ident. No. **22E** 													
AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]													
4	**4**	3	2	1	**40E**	4	--	10	**3TH2740-0AP0**		1	1 unit	41A
					31E	3	1	20	**3TH2731-0AP0**		1	1 unit	41A
					22E	2	2	20	**3TH2722-0AP0**		1	1 unit	41A
DC operation, rated control supply voltage U_s = 24 V DC													
4	**4**	3	2	1	**40E**	4	--	5	**3TH2740-0BB4**		1	1 unit	41A
					31E	3	1	20	**3TH2731-0BB4**		1	1 unit	41A
					22E	2	2	20	**3TH2722-0BB4**		1	1 unit	41A

3TH20..-0A..

3TH22..-0A..

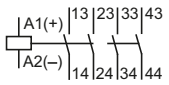
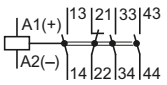
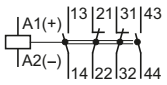
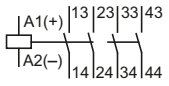
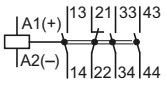
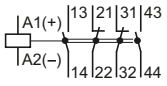
3TH27..-0...

[1] Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s; lower operating range limit according to IEC 60947.

For accessories, see pages 5/31 and 5/32.

Other voltages according to page 5/30 on request.

3TH2 miniature contactor relays, 4- and 8-pole

Contacts	Rated operational current I_e/AC-15/AC-14 at				Contacts			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	230/ 220 V	400/ 380 V	500 V	690/ 660 V	Ident. No. acc. to EN 50011	Version							
						NO	NC						
Number	**A**	A	A	A				d					
Miniature contactor relays with 6.3 mm x 0.8 mm flat connectors													
Terminal designations according to EN 50011									**Flat connectors**				
4 NO, Ident. No. **40E**													
													
3 NO + 1 NC, Ident. No. **31E**													
													
2 NO + 2 NC, Ident. No. **22E**													
													
AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]													
For screw fixing and snap-on mounting onto TH 35 standard mounting rail													
	**4**	**4**	3	2	--	**40E**	4	--	20	**3TH2040-3AP0**	1	1 unit	41A
						31E	3	1	15	**3TH2031-3AP0**	1	1 unit	41A
						22E	2	2	20	**3TH2022-3AP0**	1	1 unit	41A
3TH20..-3...	For screw fixing (diagonal)												
	4	**4**	3	2	--	**40E**	4	--	20	**3TH2040-7AP0**	1	1 unit	41A
						31E	3	1	20	**3TH2031-7AP0**	1	1 unit	41A
						22E	2	2	10	**3TH2022-7AP0**	1	1 unit	41A
DC operation, rated control supply voltage U_s = 24 V DC													
For screw fixing and snap-on mounting onto TH 35 standard mounting rail													
	**4**	**4**	3	2	--	**40E**	4	--	20	**3TH2040-3BB4**	1	1 unit	41A
						31E	3	1	20	**3TH2031-3BB4**	1	1 unit	41A
						22E	2	2	15	**3TH2022-3BB4**	1	1 unit	41A
3TH20..-7...	For screw fixing (diagonal)												
	4	**4**	3	2	--	**40E**	4	--	20	**3TH2040-7BB4**	1	1 unit	41A
						31E	3	1	20	**3TH2031-7BB4**	1	1 unit	41A
						22E	2	2	20	**3TH2022-7BB4**	1	1 unit	41A
Miniature contactor relays with solder pin connections for printed circuit boards													
Terminal designations according to EN 50011									**Solder pin connections**				
4 NO, Ident. No. **40E**													
													
3 NO + 1 NC, Ident. No. **31E**													
													
2 NO + 2 NC, Ident. No. **22E**													
													
AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC [1]													
For screw fixing (diagonal)													
	**4**	**4**	3	2	--	**40E**	4	--	20	**3TH2040-6AP0**	1	1 unit	41A
						31E	3	1	20	**3TH2031-6AP0**	1	1 unit	41A
						22E	2	2	20	**3TH2022-6AP0**	1	1 unit	41A
3TH20..-6...	***DC operation, rated control supply voltage U_s = 24 V DC***												
	For screw fixing (diagonal)												
	4	**4**	3	2	--	**40E**	4	--	20	**3TH2040-6BB4**	1	1 unit	41A
						31E	3	1	20	**3TH2031-6BB4**	1	1 unit	41A
						22E	2	2	20	**3TH2022-6BB4**	1	1 unit	41A

[1] Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s; lower operating range limit according to IEC 60947.

For accessories, see pages 5/31 and 5/32.

Options

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)
Delivery time on request

Contactor type	3TH20..-0...	3TH20..-3..., 3TH20..-6..., 3TH20..-7..., 3TH22, 3TH27
Rated control supply voltage U_s		
AC operation		
Solenoid coils for 50 and 60 Hz AC		
50 Hz / **60 Hz**		
24 V AC / 29 V AC	B0	--
110 V AC / 132 V AC	F0	--
230/220 V AC / 276 V AC	P0[1]	P0[1]

[1] Operating range at AC-1 and 220 V: 0.85 to 1.15 x U_s; lower operating range limit according to IEC 60947.

Contactor type	3TH20..-0...	3TH20..-3..., 3TH20..-6..., 3TH20..-7..., 3TH22, 3TH27
Rated control supply voltage U_s		
DC operation		
24 V DC	B4	B4
110 V DC	F4	--
220 V DC	M4	--

Please inquire about further voltages.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data

Rated operational current I_e/AC-15/AC-14 at			Contacts						SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
230/ 220 V	400/ 380 V	500 V	Ident. No.	Version						Article No.	Price per PU			
				NO	NC	NO	NC							
A	A	A		NO	NC	NO	NC		d					
Snap-on auxiliary switch blocks for 3TH20 miniature contactor relays														
			For expansion to 8 contacts according to EN 50011 Only for 3TH2040-0... (with 4 NO, Ident. No. 40E)											
4	3	2	**80E**	4	--	--	--		▶	**3TX4440-0A**		1	1 unit	41A
			71E	3	1	--	--		▶	**3TX4431-0A**		1	1 unit	41A
			62E	2	2	--	--		▶	**3TX4422-0A**		1	1 unit	41A
			53E	1	3	--	--		▶	**3TX4413-0A**		1	1 unit	41A
			44E	--	4	--	--		▶	**3TX4404-0A**		1	1 unit	41A
			For expansion to 6 or 8 contacts according to EN 50005											
4	3	2	**40E**	4	--	--	--	53 63 73 83 / 54 64 74 84	▶	**3TX4440-2A**		1	1 unit	41A
			31E	3	1	--	--	53 61 73 83 / 54 62 74 84	▶	**3TX4431-2A**		1	1 unit	41A
			22E	2	2	--	--	53 61 71 83 / 54 62 72 84	▶	**3TX4422-2A**		1	1 unit	41A
			22; 2U	--	--	2	2	57 67 75 85 / 58 68 76 86	5	**3TX4422-2G**		1	1 unit	41A
4	3	2	**20E**	2	--	--	--	53 63 / 54 64	▶	**3TX4420-2A**		1	1 unit	41A
			11E	1	1	--	--	53 61 / 54 62	▶	**3TX4411-2A**		1	1 unit	41A
			02E	--	2	--	--	51 61 / 52 62	20	**3TX4402-2A**		1	1 unit	41A
			11; U	--	--	1	1	57 65 / 58 66	20	**3TX4411-2G**		1	1 unit	41A

3TX4440-0A

For contactors	Rated control supply voltage U_s		OFF-delay (minimum times)	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	50/60 Hz AC	DC			Article No.	Price per PU			
Type	V	V	s	d					
OFF-delay devices for miniature contactor relays with DC operation									
Bridging of voltage interruptions up to 0.8 s									
3TH2...-0BB4	--	24	0.25 or 0.5	15	**3TX4490-1H**		1	1 unit	41B
3TH2...-0BF4	110	--	0.1 or 0.2	15	**3TX4490-1A**		1	1 unit	41B
3TH2...-0BM4, 3TH2...-0BP4	220/230	--	0.4 or 0.8	15	**3TX4490-1A**		1	1 unit	41B

3TX4490-1A

Accessories for 3TH2 miniature contactor relays

	For contactors	Rated control supply voltage U_s		Power consumption of LED at U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Type	V AC	V DC	mW	d					
Surge suppressors[1] **For plugging onto 3TH2 miniature contactor relays with and without auxiliary switch blocks**										
	Version without LED									
	RC elements									
	3TH2...-0...	24 ... 48	24 ... 70	--	5	**3TX4490-3R**		1	1 unit	41B
		48 ... 127	70 ... 150	--	5	**3TX4490-3S**		1	1 unit	41B
		127 ... 240	150 ... 250	--	5	**3TX4490-3T**		1	1 unit	41B
		240 ... 400	--	--	5	**3TX4490-3U**		1	1 unit	41B
		400 ... 600	--	--	5	**3TX4490-3V**		1	1 unit	41B
	Varistors									
	3TH2...-0...	≤ 48	24 ... 70	--	►	**3TX4490-3G**		1	1 unit	41B
		48 ... 127	70 ... 150	--	5	**3TX4490-3H**		1	1 unit	41B
		127 ... 240	150 ... 250	--	5	**3TX4490-3J**		1	1 unit	41B
		240 ... 400	--	--	5	**3TX4490-3K**		1	10 units	41B
		400 ... 600	--	--	5	**3TX4490-3L**		1	10 units	41B
 3TX4490-3A	**Noise suppression diode**									
	3TH2...-0...	--	12 ... 250	--	►	**3TX4490-3A**		1	1 unit	41B
	Diode assemblies (diode and Zener diode) For DC operation and short break times									
	3TH2...-0...	--	24 ... 250	--	5	**3TX4490-3B**		1	1 unit	41B
	Version with LED									
	Varistors									
	3TH2...-0...	24 ... 48	12 ... 24	10 ... 120	5	**3TX4490-4G**		1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	5	**3TX4490-4H**		1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	5	**3TX4490-4J**		1	1 unit	41B
		--	150 ... 250	160 ... 950	20	**3TX4490-4K**		1	1 unit	41B
	Noise suppression diodes									
	3TH2...-0...	--	24 ... 70	20 ... 470	5	**3TX4490-4A**		1	1 unit	41B
		--	70 ... 150	50 ... 700	5	**3TX4490-4B**		1	1 unit	41B
		--	150 ... 250	160 ... 950	5	**3TX4490-4C**		1	1 unit	41B
Additional load modules For plugging onto 3TH2 miniature contactor relays with and without auxiliary switch blocks										
 3TX4490-1J	For increasing the permissible residual current and for limiting the residual voltage of SIMATIC semiconductor outputs									
	3TH2...-0A..	230/220, 50 Hz		--	20	**3TX4490-1J**		1	1 unit	41B
		230, 60 Hz		--						
		230, 50/60 Hz		--						
		Operating range 0.8 ... 1.1 x U_s								
Plug-in bases with solder pin connections for printed circuit boards, width 45 mm										
 3TX4491-2A	For 3TH2 miniature contactor relays; with flat connectors 1 x 6.3 mm ... 0.8 mm Rated insulation voltage U_i: 400 V (with pollution degree 3); Rated impulse withstand voltage U_{imp}: 6 kV; Rated operational current I_e 6 A; cULus and CSA rated data: max. 300 V, 6 A									
	3TH20..-3..., 3TH20..-7...	--		--	20	**3TX4491-2A**		1	5 units	41A
Release tools										
	For releasing miniature contactor relays from 3TX4491-2A plug-in bases				20	**3TX4491-2K**		1	1 unit	41A
	3TH20..-7...	--		--						

[1] The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

SIRIUS 3RQ3 coupling relays

SIRIUS 3RQ3 coupling relays in narrow design are used for coupling control signals from and to a controller, and they are available in different versions:

- Coupling relays with relay output (not plug-in)
- Coupling relays with plug-in relays
- Coupling relays with semiconductor output (not plug-in)

Coupling relays with relay output (not plug-in)

AC and DC operation

IEC 60947-5-1, EN 60947-5-1

The input and output coupling relays differ with regard to the positioning of the terminals and the LEDs.

Coupling relays with plug-in relays

AC and DC operation

IEC 60947-1

The coupling relays are plug-in, so the relay can be replaced quickly at the end of its service life without detaching the wiring.

Coupling relays with semiconductor output (not plug-in)

AC and DC operation

IEC 60947-1, EN 60664-1 and EN 50005;
coupling relays with semiconductor output: EN 60747-5;
Programmable controllers: IEC 61131-2

The input and output coupling relays differ with regard to the positioning of the terminals and the LEDs.

The coupling relays with semiconductor output have extremely high contact reliability, so they are especially suitable for electronic systems.

For test purposes, versions are available with manual-0-automatic switches.

SIRIUS 3RQ3 coupling relays, narrow design

Article No. scheme

Product versions		Article number
Coupling relays with relay output (not plug-in)		**3RQ30 ☐ 8 – ☐ A ☐ 0 ☐**
Design and type of output	Output coupler, without manual/automatic switch	**1**
	Input coupler	**3**
Type of electrical connection	Screw terminals	**1**
	Spring-type terminals (push-in)	**2**
Control supply voltage	24 V AC/DC	**B**
	115 V AC/DC	**E**
	230 V AC/DC	**F**
Material of switching contacts	e. g.	
	0 = AgSnO2	☐
	1 = AgSnO2 hard gold-plated	☐
Example		**3RQ30 1 8 – 1 A B 0 1**

Product versions		Article number
Coupling relays with relay output (not plug-in)		**3RQ30 1 8 – 2 A ☐ 0 8 – 0 A A 0**
Railway version with extended operating range 0.7 ... 1.2 x U_s		
Control supply voltage	24 V DC	**M**
	110 V DC	**N**
Example		**3RQ30 1 8 – 2 A M 0 8 – 0 A A 0**

Product versions		Article number
Coupling relays with plug-in relays		**3RQ31 1 8 – ☐ A ☐ 0 ☐**
Type of electrical connection	Screw terminals	**1**
	Spring-type terminals (push-in)	**2**
Control supply voltage	24 V AC/DC	**B**
	115 V AC/DC	**E**
	230 V AC/DC	**F**
	24 V DC	**M**
Material of switching contacts	AgSnO2	**0**
	AgSnO2 hard gold-plated	**1**
Example		**3RQ31 1 8 – 1 A B 0 1**

Product versions		Article number		
Coupling relays with semiconductor output (not plug-in)		**3RQ30 ☐ ☐ – ☐ S ☐ ☐ 0**		
	Current carrying capacity of the semiconductor output		Control supply voltage	Switching voltage of the semiconductor output
Output coupler				
• Without manual/automatic switch	1 mA ... 0.5 A	**3RQ30 5 0 – ☐ S M 5 0**	11 ... 30 V DC	10 ... 60 V DC
	5 mA ... 2 A	**3RQ30 5 2 – ☐ S M 3 0**	11 ... 30 V DC	10 ... 30 V DC
	1 mA ... 2 A	**3RQ30 5 2 – ☐ S M 4 0**	11 ... 30 V DC	10 ... 60 V DC
	5 mA ... 2 A	**3RQ30 5 2 – ☐ S M 5 0**	11 ... 30 V DC	20 ... 264 V AC
	1 mA ... 3 A	**3RQ30 5 3 – ☐ S G 3 0**	110 ... 230 V AC/DC	10 ... 30 V DC
	5 mA ... 5 A	**3RQ30 5 5 – ☐ S M 3 0**	11 ... 30 V DC	10 ... 30 V DC
• With manual/automatic switch	5 mA ... 5 A	**3RQ30 6 5 – ☐ S M 3 0**	11 ... 30 V DC	10 ... 30 V DC
Input coupler	10 mA ... 0.5 A	**3RQ30 7 0 – ☐ S B 3 0**	11 ... 30 V AC/DC	10 ... 30 V DC
		3RQ30 7 0 – ☐ S G 3 0	110 ... 230 V AC/DC	10 ... 30 V DC
Type of electrical connection	Screw terminals	**1**		
	Spring-type terminals (push-in)	**2**		
Example		**3RQ30 7 0 – 1 S B 3 0**		

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

General

- All versions with screw terminals or spring-type terminals (push-in technology)
- TOP wiring with spring-type terminals (push-in) for quick and reliable wiring
- Low space requirements in the control cabinet thanks to a consistent width of 6.2 mm
- Reduced inventory due to fewer variants
- Clearly visible functional state of the coupling relay by green LED
- Integrated reverse polarity protection and EMC arc-suppression diode
- Standardized accessories across the entire 3RQ3 series
- Universal bridging option using connecting combs for all terminals
- Galvanic isolation plate for isolating different voltages for neighboring units
- Clip-on labels available as set for individual labeling

Coupling relays with relay output (not plug-in)

- Permanently soldered relay for enhanced contact reliability
- Device variants with hard gold-plated contacts, hence high contact reliability at low currents

Coupling relays with plug-in relays

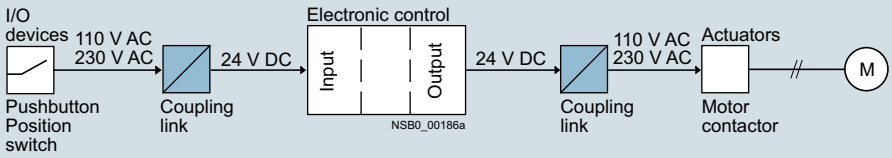
- Fast replacement of the relays with existing wiring
- Shorter installation times thanks to certified complete units
- Individual relays available as spare parts
- Device variants with hard gold-plated contacts, hence high contact reliability at low currents

Coupling relays with semiconductor output (not plug-in)

- Long service life since there is no mechanical wear
- High switching frequency thanks to short make-break times
- Vibration-resistant
- No contact bounce
- Extremely high contact reliability
- Noise-free switching
- Low control power required
- Switching of DC and capacitive loads

Application

- Electrical separation between the input and output circuit
- Adjustment of different signal levels
- Signal amplification

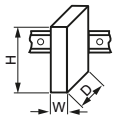


Application example motor controller

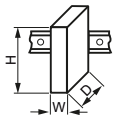
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16198/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16198/faq	Operating instructions, see https://support.industry.siemens.com/cs/ww/en/ps/16198/man

Coupling relays with relay output (not plug-in)

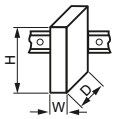
Article number		3RQ30.8-.AB00	3RQ30.8-.AB01	3RQ30.8-.AE00	3RQ30.8-.AE01	3RQ30.8-.AF00	3RQ30.8-.AF01	3RQ3018-2AM08-0AA0	3RQ3018-2AN08-0AA0
General technical specifications:									
Width x height x depth 	mm	6.2 x 93 x 72.5							
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3	V	300							
Max. permissible voltage for protective separation between control circuit and auxiliary circuit	V	300							
Ambient temperature									
• During operation	°C	-25 ... +60						-40 ... +70	
• During storage	°C	-40 ... +85							
IP degree of protection		IP20							
Version of the fuse link required for short-circuit protection of the auxiliary switch		Fuse gG: 4 A							
Operational current of the auxiliary contacts									
• At AC-15									
- At 24 V	A	3							
- At 250 V	A	3							
• At DC-13									
- At 24 V	A	1							
- At 125 V	A	0.2							
- At 250 V	A	0.1							
Contact reliability of the auxiliary contacts (one contact failure per 100 million)		17 V, 1 mA	5 V, 1 mA	17 V, 1 mA	5 V, 1 mA	17 V, 1 mA	5 V, 1 mA	17 V, 1 mA	
Mechanical endurance (operating cycles) typical		10 000 000							
Electrical endurance (operating cycles) for AC-15 at 230 V typical		100 000							
Operating range factor of the control supply voltage, rated value									
• At AC, at 50 Hz		0.8 ... 1.25		0.8 ... 1.1				--	
• At DC		0.8 ... 1.25		0.8 ... 1.1				0.7 ... 1.25	
Active power input	W	0.3		0.5		1		0.3	0.6
Thermal current	A	6							

Coupling relays with plug-in relay

Article number		3RQ3118-.AB00	3RQ3118-.AB01	3RQ3118-.AE00	3RQ3118-.AE01	3RQ3118-.AF00	3RQ3118-.AF01	3RQ3118-.AM00	3RQ3118-.AM01
General technical specifications:									
Width x height x depth 	mm	6.2 x 93 x 76							
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3	V	300							
Max. permissible voltage for protective separation between control circuit and auxiliary circuit	V	300							
Ambient temperature									
• During operation	°C	-25 ... +60							
• During storage	°C	-40 ... +85							
IP degree of protection		IP20							
Version of the fuse link required for short-circuit protection of the auxiliary switch		Fuse gG: 4 A							
Operational current of the auxiliary contacts									
• At AC-15									
- At 24 V	A	3							
- At 250 V	A	3							
• At DC-13									
- At 24 V	A	1							
- At 125 V	A	0.2							
- At 250 V	A	0.1							
Contact reliability of the auxiliary contacts (one contact failure per 100 million)		17 V, 1 mA	5 V, 1 mA	17 V, 1 mA	5 V, 1 mA	17 V, 1 mA	5 V, 1 mA	17 V, 1 mA	5 V, 1 mA
Mechanical endurance (operating cycles) typical		10 000 000							
Electrical endurance (operating cycles) for AC-15 at 230 V typical		100 000							
Operating range factor of the control supply voltage, rated value									
• At AC, at 50 Hz		0.8 ... 1.25		0.8 ... 1.1				--	
• At DC		0.8 ... 1.25		0.8 ... 1.1				0.8 ... 1.25	
Active power input	W	0.3		0.5		1		0.3	
Thermal current	A	6							

SIRIUS 3RQ3 coupling relays, narrow design

Coupling relays with semiconductor output (not plug-in)

Article number	3RQ3050-.SM50	3RQ3052-.SM30	3RQ3052-.SM40	3RQ3052-.SM50	3RQ3053-.SG30	3RQ30.5-.SM30	3RQ3070-.SB30	3RQ3070-.SG30
General technical specifications:								
Width x height x depth 	6.2 x 93 x 72.5							
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3	50 V			300 V		50 V		--
Ambient temperature								
• During operation	-25 ... +60 °C							
• During storage	-40 ... +85 °C							
IP degree of protection	IP20							
Switching voltage of the semiconductor output								
• At AC	--			20 ... 264 V	--			
• At DC	10 ... 60 V	10 ... 30 V	10 ... 60 V	--	10 ... 30 V			
Current carrying capacity of the semiconductor output								
• At AC	--			5 mA ... 2 A	--			
• At DC	1 mA ... 0.5 A	5 mA ... 2 A	1 mA ... 2 A	--	1 mA ... 3 A	5 mA ... 5 A	10 mA ... 0.5 A	
Operating range factor of the control supply voltage, rated value								
• At AC, at 50 Hz	--				1 ... 1	--	1 ... 1	
• At DC	1 ... 1							
Active power input	0.3 W			0.25 W	0.3 W		0.5 W	
Thermal current	0.5 A	2 A			3 A	5 A	0.5 A	

Article number	3RQ3...-1....	3RQ3...-2....
Type of electrical connection For auxiliary and control circuit	**Screw terminals**	**Spring-type terminals (push-in)**
Type of connectable conductor cross-sections		
• Solid	1x (0.25 ... 2.5) mm²	
• Finely stranded		
- Without end sleeves	--	1x (0.25 ... 2.5) mm²
- With end sleeves	1x (0.25 ... 1.5) mm²	
• Solid for AWG cables	1x (20 ... 14)	

Selection and ordering data

Type of voltage	Control supply voltage At AC At 50 Hz V	At AC At 60 Hz V	At DC V	Number of CO contacts for auxiliary contacts	Material of switching contacts	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coupling relays with relay output (not plug-in)											
Output coupling links											
AC/DC	24	24	24	1	AgSnO2	2	**3RQ3018-☐AB00**		1	5 units	41H
					AgSnO2 hard gold-plated	2	**3RQ3018-☐AB01**		1	5 units	41H
	115	115	115	1	AgSnO2	2	**3RQ3018-☐AE00**		1	5 units	41H
	230	230	230	1	AgSnO2	2	**3RQ3018-☐AF00**		1	5 units	41H
DC	--	--	24	1	AgSnO2	2	**3RQ3018-2AM08-0AA0**		1	5 units	41H
			110	1	AgSnO2	2	**3RQ3018-2AN08-0AA0**		1	5 units	41H
Input coupling links											
AC/DC	24	24	24	1	AgSnO2	2	**3RQ3038-☐AB00**		1	5 units	41H
					AgSnO2 hard gold-plated	2	**3RQ3038-☐AB01**		1	5 units	41H
	115	115	115	1	AgSnO2	2	**3RQ3038-☐AE00**		1	5 units	41H
					AgSnO2 hard gold-plated	2	**3RQ3038-☐AE01**		1	5 units	41H
	230	230	230	1	AgSnO2	2	**3RQ3038-☐AF00**		1	5 units	41H
					AgSnO2 hard gold-plated	2	**3RQ3038-☐AF01**		1	5 units	41H
Coupling relays with plug-in relay											
Output coupling links											
AC/DC	24	24	24	1	AgSnO2	2	**3RQ3118-☐AB00**		1	5 units	41H
					AgSnO2 hard gold-plated	2	**3RQ3118-☐AB01**		1	5 units	41H
	115	115	115	1	AgSnO2	2	**3RQ3118-☐AE00**		1	5 units	41H
					AgSnO2 hard gold-plated	2	**3RQ3118-☐AE01**		1	5 units	41H
	230	230	230	1	AgSnO2	2	**3RQ3118-☐AF00**		1	5 units	41H
					AgSnO2 hard gold-plated	2	**3RQ3118-☐AF01**		1	5 units	41H
DC	--	--	24	1	AgSnO2	2	**3RQ3118-☐AM00**		1	5 units	41H
					AgSnO2 hard gold-plated	2	**3RQ3118-☐AM01**		1	5 units	41H

3RQ30.8-2....

3RQ3118-2....

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

Type of voltage	Control supply voltage At AC At 50 Hz	At AC At 60 Hz	At DC	Current carrying capacity of the semiconductor output At AC	At DC	Operating mode selectable via switch position	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coupling relays with semiconductor output (not plug-in)												
Output coupling links												
DC	--	--	11 ... 30 V	--	1 mA ... 0.5 A	--	2	**3RQ3050-☐SM50**		1	5 units	41H
					5 mA ... 2 A	--	2	**3RQ3052-☐SM30**		1	5 units	41H
					1 mA ... 2 A	--	2	**3RQ3052-☐SM40**		1	5 units	41H
				5 mA ... 2 A	--	--	2	**3RQ3052-☐SM50**		1	5 units	41H
				--	5 mA ... 5 A	--	2	**3RQ3055-☐SM30**		1	5 units	41H
						Manual/ Off/ Automatic	2	**3RQ3065-☐SM30**		1	5 units	41H
AC/DC	110 ... 230 V	110 ... 230 V	110 ... 230 V	--	1 mA ... 3 A	--	2	**3RQ3053-☐SG30**		1	5 units	41H
Input coupling links												
AC/DC	11 ... 30 V	11 ... 30 V	11 ... 30 V	--	10 mA ... 0.5 A	--	2	**3RQ3070-☐SB30**		1	5 units	41H
	110 ... 230 V	110 ... 230 V	110 ... 230 V	--	10 mA ... 0.5 A	--	2	**3RQ3070-☐SG30**		1	5 units	41H

3RQ3050-2SM50

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RQ3 coupling relays, narrow design

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Galvanic isolation plates							
 3RQ3900-0A	For electrical separation of different potentials when devices of different types are installed side by side	2	**3RQ3900-0A**		1	10 units	41H
Connecting combs							
 3RQ3901-0B	For linking the same potentials, current carrying capacity for infeed max. 6 A						
	• 2-pole	2	**3RQ3901-0A**		1	10 units	41H
	• 4-pole	2	**3RQ3901-0B**		1	10 units	41H
	• 8-pole	2	**3RQ3901-0C**		1	10 units	41H
	• 16-pole	2	**3RQ3901-0D**		1	10 units	41H
Clip-on labels							
	For terminal marking and equipment labeling, white						
	• 5 x 5 mm	2	**3RQ3902-0A**		100	2 000 units	41H
	• 6 x 12 mm	2	**3RQ3902-0B**		100	1 200 units	41H
Tools for opening spring-type terminals							
			Spring-type terminals (push-in)				
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm; length approx. 200 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B

Coupling relays with plug-in relay	Control supply voltage	Material of switching contacts	Number of CO contacts For auxiliary contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	V			d					
Replacement modules for 3RQ3118 coupling relays with plug-in relay									
3RQ3118-.AM00	24 DC	AgSnO2	1	2	**3TX7014-7BM00**		1	20 units	41H
3RQ3118-.AM01		AgSnO2 hard gold-plated		2	**3TX7014-7BM02**		1	20 units	41H
3RQ3118-.AB00	24 AC/DC	AgSnO2	1	2	**3TX7014-7BQ00**		1	20 units	41H
3RQ3118-.AB01		AgSnO2 hard gold-plated		2	**3TX7014-7BQ02**		1	20 units	41H
3RQ3118-.AE00	115 AC/DC	AgSnO2	1	2	**3TX7014-7BP00**		1	20 units	41H
3RQ3118-.AF00	230 AC/DC	AgSnO2 hard gold-plated							
3RQ3118-.AE01	115 AC/DC	AgSnO2	1	2	**3TX7014-7BP02**		1	20 units	41H
3RQ3118-.AF01	230 AC/DC	AgSnO2 hard gold-plated							

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

3RS18 coupling relays in their proven 22.5 mm industrial enclosure serve to couple control signals from and to a controller.

The series comprises devices with up to 3 changeover contacts with screw terminals or spring-type terminals as combination voltage or wide voltage range versions.

The relay coils are protected internally with noise suppression diodes.

Versions:

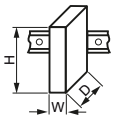
- Wide voltage range: One connection for a wide voltage range
- Combination voltage: Two connections for different voltage ranges
- Versions with solid-state compatible outputs (hard gold-plating)
- 1, 2 or 3 changeover contacts

Application

They can be used wherever solid-state-compatible contacts are required and where devices with a wide voltage range are used.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16203/td	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16203/man

Type			3RS1800-.A...	3RS1800-.B...	3RS1800-.H...
General data					
Dimensions (W x H x D)		mm	22.5 x 86 x 84	22.5 x 86 x 94	22.5 x 86 x 103
Rated insulation voltage U_i (pollution degree 3)		V	500		
Protective separation acc. to IEC 60947-1, Appendix N between the coil and the contacts and between the individual contacts.		V	300		
Permissible ambient temperature					
• During operation		°C	-25 ... +60		
• During storage		°C	-40 ... +80		
Degree of protection acc. to IEC 60529					
• Enclosure			IP20		
Short-circuit protection					
Short-circuit test with fuse links of operational class gG, With short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A	4		
Conductor cross-sections					
For 3RS1800-1:			**Screw terminals**		
• Solid		mm^2	1 x (0.5 ... 4); 2 x (0.5 ... 2.5)		
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 2.5)		
• AWG cables, solid or stranded		mm^2	2 x (20 ... 14)		
• Terminal screw - Corresponding opening tool			M3.5 Screwdriver, size 3.0 mm x 0.5 mm (3RA2908-1A)		
• Tightening torque		Nm	0.8 ... 1.2		
For 3RS1800-2:			**Spring-type terminals**		
• Solid		mm^2	2 x (0.25 ... 1.5)		
• Finely stranded without end sleeve		mm^2	2 x (0.25 ... 1.5)		
• Finely stranded with end sleeve		mm^2	2 x (0.25 ... 1)		
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)		
• Corresponding opening tool			Screwdriver, size 3.0 mm x 0.5 mm (3RA2908-1A)		

SIRIUS 3RS18 coupling relays with industrial enclosure

Type			3RS1800-.A...	3RS1800-.B...	3RS1800-.H...
Control side					
Operating range			0.85 ... 1.1 x U_s		
Power consumption, max.	AC or DC	VA/W	8 / 1		
Load side					
Conventional thermal current I_{th}		A	6		
Rated operational currents I_e					
• AC-15	At 24 ... 400 V	A	3		
• DC-13	At 24 V	A	1		
	At 110 V	A	0.2		
	At 230 V	A	0.1		
Switching current for resistive load					
• AC-12	At 24 ... 400 V	A	5		
• DC-12	At 24 V	A	5		
	At 115 V	A	0.2		
	At 230 V	A	0.2		
Switching voltage					
• Max. AC		V	400		
• Max. DC		V	250		
Min. contact load					
• Standard contacts			17 V DC, 5 mA with 1 ppm fault		
• Hard gold-plated contacts			5 V DC, 1 mA with 1 ppm fault		
Mechanical endurance		Operating cycles	10×10^6		
Electrical endurance at I_e		Operating cycles	1×10^5		

Selection and ordering data

Rated control supply voltage U_s (with AC: 50/60 Hz)	Connection U_s	Contacts Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V		CO	d					
Coupling relays in industrial enclosure, 22.5 mm								
				Screw terminals				
Wide voltage range								
24 ... 240 AC/DC	A1 - A2	2	2	**3RS1800-1BW00**		1	1 unit	41H
		3	2	**3RS1800-1HW00**		1	1 unit	41H
		3 [1]	2	**3RS1800-1HW01**		1	1 unit	41H
Combination voltage								
24 AC/DC and 110 ... 120 AC	A3 - A2 or A1 - A2	1	2	**3RS1800-1AQ00**		1	1 unit	41H
		2	2	**3RS1800-1BQ00**		1	1 unit	41H
		3	2	**3RS1800-1HQ00**		1	1 unit	41H
		3 [1]	5	**3RS1800-1HQ01**		1	1 unit	41H
24 AC/DC and 220 ... 240 AC	A3 - A2 or A1 - A2	1	2	**3RS1800-1AP00**		1	1 unit	41H
		2	2	**3RS1800-1BP00**		1	1 unit	41H
		3	2	**3RS1800-1HP00**		1	1 unit	41H
		3 [1]	2	**3RS1800-1HP01**		1	1 unit	41H
				Spring-type terminals				
Wide voltage range								
24 ... 240 AC/DC	A1 - A2	2	2	**3RS1800-2BW00**		1	1 unit	41H
		3	2	**3RS1800-2HW00**		1	1 unit	41H
		3 [1]	2	**3RS1800-2HW01**		1	1 unit	41H
Combination voltage								
24 AC/DC and 110 ... 120 AC	A3 - A2 or A1 - A2	1	5	**3RS1800-2AQ00**		1	1 unit	41H
		2	2	**3RS1800-2BQ00**		1	1 unit	41H
		3	5	**3RS1800-2HQ00**		1	1 unit	41H
		3 [1]	5	**3RS1800-2HQ01**		1	1 unit	41H
24 AC/DC and 220 ... 240 AC	A3 - A2 or A1 - A2	1	2	**3RS1800-2AP00**		1	1 unit	41H
		2	2	**3RS1800-2BP00**		1	1 unit	41H
		3	2	**3RS1800-2HP00**		1	1 unit	41H
		3 [1]	2	**3RS1800-2HP01**		1	1 unit	41H

3RS1800-1H...

3RS1800-2B...

[1] Hard gold-plated contacts.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Coupling relays with plug-in relays can be ordered as complete units or as individual modules for customer assembly.

Function

The coupling relays with semiconductor output have low power consumption and are therefore particularly well suited to solid-state systems. In the versions equipped with LEDs, these indicate the switching state. The LZS:PT/MT coupling relays have a test button. This can be used to force the relays into the switching state and to lock it without electrical control. This is indicated by a raised petrol-colored lever.

Control with solid-state output

In the case of solid-state outputs (e.g. proximity switch) with overload and short-circuit protection, you must make allowance during configuration for the temporarily flowing capacitor charging currents! This is possible, for example, by using a suitable LZS coupling relay with plug-in relay.

Surge suppression

The 24 V DC relays LZX:RT and LZX: PT with LEDs can be supplied with, all others without integral surge suppression (freewheel diode connected in parallel with A1/A2). The positive control supply voltage must be connected to coil terminal A1.

Mounting

The relays are plugged into the base and this is snapped onto a TH 35 standard mounting rail according to IEC 60715.

A fixing bracket can be ordered for the MT series that additionally fixes the relay into a plug-in base (under conditions of increased mechanical stress). For the RT and PT series, a combined fixing and ejection bracket is available which can be used to disassemble the relay where access is difficult, for example, when relays are mounted side-by-side.

They can be mounted as required.

Logical separation

The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for coil. Logical separation is not necessarily protective separation.

Protective separation

For protective separation, transfer of the voltage of one circuit to another circuit is prevented to a suitable degree of safety (requirements and tests are described in IEC 60947-1 in Appendix N).

Notes on the previous LZX series

The complete units and accessory parts of the LZX series are no longer listed in this catalog. The complete units of the LZS series are fully compatible with the corresponding units of the LZX series. Prices for the LZS series are lower than for the previous LZX series.

The LZX plug-in relays are available unchanged and are used accordingly in both the LZS and the LZX series.

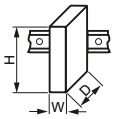
Note:

Due to differences in geometry, the LED modules, plug-in bases, fixing brackets and labels can be combined and/or used only in the respective series, LZS or LZX.

The LZS series offers not only service-proven screw connections but also versions with plug-in terminals (push-in).

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16204/td	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16204/man

Relay type			LZX:RT print relay, 8-pole, (12.7 mm) 1 CO / 2 CO				LZX:PT industrial relay, 8-, 11- and 14-pole, (22.5 mm) 2 CO / 3 CO / 4 CO			
General data										
Dimensions (W x H x D)										
• LZS:RT.A4 / LZS:PT.A5		mm	15.5 x 78 x 71				28 x 74 x 72			
• LZS:RT.B4 / LZS:PT.B5		mm	15.5 x 77 x 71				28 x 77 x 79			
• LZS:RT.D4 / LZS:PT.D5		mm	15.5 x 98 x 71				28 x 98 x 79			
Rated control supply voltage U_s [1]		V	24 DC	24 AC	115 AC	230 AC	24 DC	24 AC	115 AC	230 AC
Rated insulation voltage U_i (Pollution degree 3)		V	250							
Overvoltage category Acc. to IEC 60664-1			III							
Protective separation Between coil and contacts Acc. to IEC 60947-1, Appendix N			Up to 250 V (with plug-in base LZS:RT78726) No (for complete units with standard socket)				No			
Degree of protection										
• Relays			IP67				IP50			
• Bases			IP20							
Permissible ambient temperature										
• During operation		°C	-40 ... +70							
• During storage		°C	-40 ... +80							
Conductor cross-sections										
Connection type			**Screw terminals**							
• Solid		mm^2	2 x 2.5							
• Finely stranded with end sleeve		mm^2	2 x 1.5							
• Corresponding opening tool			Screwdriver, size 3.0 ... 3.5 mm x 0.5 mm (3RA2908-1A)							
Connection type			**Plug-in terminals (push-in)**							
• Solid		mm^2	1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5							
• Finely stranded without end sleeve		mm^2	1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5							
• Finely stranded with end sleeve		mm^2	1 x (0.75 ... 1.0), 2 x 0.75, 1 x1.5							

[1] AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10 %; the power loss will decrease slightly.

Relay type			LZX:RT print relay, 8-pole, (12.7 mm) 1 CO / 2 CO				LZX:PT industrial relay, 8-, 11- and 14-pole, (22.5 mm) 2 CO / 3 CO / 4 CO			
Control side										
Operating range at 20 °C		V	16.8 ... 52	18 ... 52	86.3 ... 127	172 ... 264	18 ... 40.8	19.2 ... 39.6	92 ... 190	184 ... 380
Power consumption at U_s										
• AC		VA	--	0.75			--	1		
• DC		W	0.4	--			0.75	--		
Release voltage		V	2.4	7.2	34.5	69	3.6	7.2	34.5	69
Protection circuit			Freewheel diode for complete unit	--			Freewheel diode in LED module	--		
Load side										
Switching voltage AC/DC		V	24 ... 250							
Rated currents[1]										
• Conventional thermal current I_{th}		A								
- 1 CO contact		A	16				--			
- 2 CO contacts		A	6				12			
- 3 CO contacts		A	--				10			
- 4 CO contacts		A	--				6			
• Rated operational current I_e /AC-15 acc. to utilization categories (IEC 60947-5-1)		A	RT3 (1 changeover contact): 6 RT4 (2 changeover contacts): 2.5				PT2 (2 changeover contacts): 5 PT3 (3 changeover contacts): 5 PT5 (4 changeover contacts): 4 (DC coils), 2 (AC coils)			
• Rated operational current I_e DC-13 with suppressor diode acc. to utilization categories (IEC 60947-5-1)		A	2 at 24 V, 0.27 at 230 V				PT2, PT3: 5 at 24 V PT5: 4 at 24 V 0.5 at 230 V			
Short-circuit protection										
Short-circuit test with fuse links of operational class gG With short-circuit current I_k = 1 kA acc. to IEC 60947-5-1										
• DIAZED, type 5SB		A	10				6			
Min. contact load (Reliability: 1 ppm)			Normal 17 V, 10 mA; hard gold-plated 17 V/0.1 mA				Normal 17 V, 10 mA; hard gold-plated 20 mV/1 mA			
Mechanical endurance	Operating cycles		30 x 10^6	10 x 10^6						
Electrical endurance (Resistive load at 250 V AC)	Operating cycles		1 x 10^5							

[1] Capacitive loads can result in micro-welding on the contacts.

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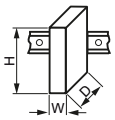
LZS coupling relays with plug-in relays

Relay type			LZS:MT industrial relay, 11-pole (35.5 mm) 3 CO			
General data						
Dimensions (W x H x D)		mm	36 x 69 x 36			
Rated control supply voltage U_s[1]		V	24 DC	24 AC	115 AC	230 AC
Rated insulation voltage U_i (Pollution degree 3)		V	250			
Overvoltage category Acc. to IEC 60664-1			III			
Protective separation Between coil and contacts Acc. to IEC 60947-1, Appendix N			No			
Degree of protection of relays/bases • Relays • Bases			 IP50 IP20			
Permissible ambient temperature • During operation • During storage		 °C °C	 -40 ... +60 -45 ... +80	 -45 ... +50		
Conductor cross-sections						
Connection type			**Screw terminals**			
• Solid • Finely stranded with or without end sleeve		mm^2 mm^2	2 x 2.5 2 x 1.5			
• Corresponding opening tool			Screwdriver, size 1 or Pozidriv 1			
Control side						
Operating range at 20 °C		V	18 ... 38	19.2 ... 38	92 ... 137	184 ... 264
Power consumption • AC • DC		 VA W	 -- 1.2	 2.3 --		
Release voltage		V	2.4	9.6	46	92
Protection circuit			--			
Load side						
Switching voltage • AC/DC		V	24 ... 250			
Rated currents[2]						
• Conventional thermal current I_{th}		A	10			
• Rated operational current I_e /DC-13 acc. to utilization categories (IEC 60947-5-1)		A	2 at 24 V, 0.27 at 230 V			
• Rated operational current I_e /AC-15 acc. to utilization categories (IEC 60947-5-1)		A	5 at 24 V and 230 V			
Short-circuit protection Short-circuit test with fuse links of operational class gG With short-circuit current I_k = 1 kA acc. to IEC 60947-5-1						
• DIAZED, type 5SB		A	10			
Min. contact load (Reliability: 1 ppm)			12 V DC/10 mA			
Mechanical endurance		Operating cycles	20×10^6			
Electrical endurance (Resistive load at 250 V AC)		Operating cycles	4×10^5			

1) AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10 %; the power loss will decrease slightly.

2) Capacitive loads can result in micro-welding on the contacts.

Selection and ordering data

Version	Rated control supply voltage U_s (with AC: 50/60 Hz)	Contacts, number of CO contacts	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm	d					
Complete units, 11- and 14-pole, PT series									
 LZS:PT3A5L24									
Complete units with plug-in base For snap-on mounting onto TH 35 standard mounting rail Comprising: • Coupling relays with plug-in relays • Standard plug-in base with screw terminals • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels					**Screw terminals**				
3 CO contacts	24 DC	3	28	2	**LZS:PT3A5L24**		1	5 units	41H
	24 AC			2	**LZS:PT3A5R24**		1	5 units	41H
	115 AC			2	**LZS:PT3A5S15**		1	5 units	41H
	230 AC			2	**LZS:PT3A5T30**		1	5 units	41H
4 CO contacts	24 DC	4	28	2	**LZS:PT5A5L24**		1	5 units	41H
	24 AC			2	**LZS:PT5A5R24**		1	5 units	41H
	115 AC			2	**LZS:PT5A5S15**		1	5 units	41H
	230 AC			2	**LZS:PT5A5T30**		1	5 units	41H
Complete units with plug-in base with logical separation For snap-on mounting onto TH 35 standard mounting rail Comprising: • Coupling relays with plug-in relays • Plug-in base with logical separation and screw terminals • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels									
4 CO contacts	24 DC	4	28	2	**LZS:PT5B5L24**		1	5 units	41H
	24 AC			2	**LZS:PT5B5R24**		1	5 units	41H
	115 AC			2	**LZS:PT5B5S15**		1	5 units	41H
	230 AC			2	**LZS:PT5B5T30**		1	5 units	41H
Complete units, 8- and 14-pole, PT series									
 LZS:PT5D5L24									
Complete units with plug-in base with logical separation For snap-on mounting onto TH 35 standard mounting rail Comprising: • Coupling relays with plug-in relays • Plug-in base with logical separation and plug-in terminals (push-in) • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels					**Plug-in terminals (push-in)**				
2 CO contacts	24 DC	2	28	2	**LZS:PT2D5L24**		1	5 units	41H
	230 AC			2	**LZS:PT2D5T30**		1	5 units	41H
4 CO contacts	24 DC	4	28	2	**LZS:PT5D5L24**		1	5 units	41H
	24 AC			2	**LZS:PT5D5R24**		1	5 units	41H
	115 AC			2	**LZS:PT5D5S15**		1	5 units	41H
	230 AC			2	**LZS:PT5D5T30**		1	5 units	41H

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

LZS coupling relays with plug-in relays

Individual modules for customer assembly, PT series

Industrial relays, 8-, 11-, and 14-pole

Mini industrial relays


LZX:PT370024

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm	d					
• With test bracket and mechanical switch position indicator, without LED[1]									
	24 DC	2	22.5	▶	**LZX:PT270024**		1	1 unit	41H
		3		▶	**LZX:PT370024**		1	1 unit	41H
		4		▶	**LZX:PT570024**		1	1 unit	41H
	24 AC	2	22.5	▶	**LZX:PT270524**		1	1 unit	41H
		3		2	**LZX:PT370524**		1	1 unit	41H
		4		▶	**LZX:PT570524**		1	1 unit	41H
	115 AC	2	22.5	15	**LZX:PT270615**		1	1 unit	41H
		3		2	**LZX:PT370615**		1	1 unit	41H
		4		▶	**LZX:PT570615**		1	1 unit	41H
	230 AC	2	22.5	▶	**LZX:PT270730**		1	1 unit	41H
		3		▶	**LZX:PT370730**		1	1 unit	41H
		4		▶	**LZX:PT570730**		1	1 unit	41H
• With hard gold-plating									
	24 DC	4	22.5	▶	**LZX:PT580024**		1	1 unit	41H
	230 AC			▶	**LZX:PT580730**		1	1 unit	41H
• Without test bracket									
	24 DC	4	22.5	▶	**LZX:PT520024**		1	1 unit	41H
	230 AC			15	**LZX:PT520730**		1	1 unit	41H

Plug-in bases for PT relays


LZS:PT78740

Standard plug-in bases
For mounting onto TH 35 standard mounting rail

Screw terminals

	--	2	28	▶	**LZS:PT78720**		1	1 unit	41H
		3		▶	**LZS:PT78730**		1	1 unit	41H
		4		▶	**LZS:PT78740**		1	1 unit	41H


LZS:PT78722

Plug-in bases with logical separation
For mounting onto TH 35 standard mounting rail

	--	2	28	▶	**LZS:PT78722**		1	1 unit	41H
		4		▶	**LZS:PT78742**		1	1 unit	41H


LZS:PT7874P

Plug-in bases with logical separation
For mounting onto TH 35 standard mounting rail

Plug-in terminals (push-in)

	--	2	28	▶	**LZS:PT7872P**		1	1 unit	41H
		4		▶	**LZS:PT7874P**		1	1 unit	41H

[1] The test bracket is designed to be non-latching. If the test bracket is pressed further until 90° has been reached, two small lugs break off and the test bracket can be latched in position.

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm	d					
Individual modules for customer assembly, PT series									
More individual modules									
LED modules									
• Red									
- With freewheel diode	24 DC	--	12.5	▶	**LZS:PTML0024**		1	1 unit	41H
- Without freewheel diode	24 AC/DC			▶	**LZS:PTML0524**		1	1 unit	41H
	110 … 230 AC/DC			▶	**LZS:PTML0730**		1	1 unit	41H
• Green									
- With freewheel diode	24 DC	--	12.5	▶	**LZS:PTMG0024**		1	1 unit	41H
- Without freewheel diode	24 AC/DC			▶	**LZS:PTMG0524**		1	1 unit	41H
	110 … 230 AC/DC			▶	**LZS:PTMG0730**		1	1 unit	41H
Fixing/ejection brackets for PT base with logical separation									
Screw terminals and plug-in terminals (push-in)	--	--	26	▶	**LZS:PT17021**		100	10 units	41H
Fixing/ejection brackets for standard plug-in base without logical separation									
Screw terminals	--	--	26	▶	**LZS:PT17024**		100	10 units	41H
Labels									
	--	--	26	▶	**LZS:PT17040**		100	10 units	41H
RC elements									
	6 ... 60 AC	--	26	▶	**LZS:PTMU0524**		1	1 unit	41H
	110 … 230 AC			▶	**LZS:PTMU0730**		1	1 unit	41H
Freewheel diodes with connection to A1									
	6 … 230 DC	--	26	▶	**LZS:PTMT00A0**		1	1 unit	41H
Connecting cables, 24-pole									
Current carrying capacity 12 A, with supply cable, blue				2	**3TX7004-8BA00**		1	1 unit	41H
Connecting combs for PT screw base									
6-pole, 10 A current carrying capacity, natural-colored				▶	**LZS:PT170R6**		1	10 units	41H
Connecting brackets for PT push-in base									
2-pole, current carrying capacity 10 A, natural-colored				▶	**LZS:PT170P1**		1	10 units	41H
Individual modules for customer assembly, MT series									
Industrial relays, 11-pole									
Industrial relays with test bracket									
Without LED	24 DC	3	35.5	2	**LZX:MT321024**		1	1 unit	41H
With LED				▶	**LZX:MT323024**		1	1 unit	41H
Without LED	24 AC	3	35.5	2	**LZX:MT326024**		1	1 unit	41H
With LED				15	**LZX:MT328024**		1	1 unit	41H
Without LED	115 AC	3	35.5	15	**LZX:MT326115**		1	1 unit	41H
With LED				15	**LZX:MT328115**		1	1 unit	41H
Without LED	230 AC	3	35.5	2	**LZX:MT326230**		1	1 unit	41H
With LED				2	**LZX:MT328230**		1	1 unit	41H
Plug-in bases For mounting onto TH 35 standard mounting rail					**Screw terminals**				
	--	--	38	▶	**LZS:MT78750**		1	1 unit	41H
Fixing brackets									
	--	--	38	▶	**LZS:MT28800**		1	1 unit	41H


LZS:PTML0024


LZS:PT17021


LZS:PT17024


LZS:PT17040


LZS:PTMU0730


3TX7004-8BA00


LZX:MT326024


LZS:MT78750

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

SITOP DC power supplies such as 6EP1331-5BA00 or 6EP1331-5BA10 can be used for unavailable coil voltages; see page 15/3.

LZS coupling relays with plug-in relays

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm	d					
Complete units, 8-pole, 5 mm pinning, RT series									
 LZS:RT4A4T30	**Complete units with standard plug-in base** For snap-on mounting onto TH 35 standard mounting rail Comprising: • Coupling relays with plug-in relays • Standard plug-in base with screw terminals • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels				**Screw terminals**				
	1 CO contact	24 DC	1	15.5	2	**LZS:RT3A4L24**		1 5 units	41H
		24 AC			2	**LZS:RT3A4R24**		1 5 units	41H
		115 AC			2	**LZS:RT3A4S15**		1 5 units	41H
		230 AC			2	**LZS:RT3A4T30**		1 5 units	41H
	2 CO contacts	24 DC	2	15.5	2	**LZS:RT4A4L24**		1 5 units	41H
		24 AC			2	**LZS:RT4A4R24**		1 5 units	41H
		115 AC			2	**LZS:RT4A4S15**		1 5 units	41H
		230 AC			2	**LZS:RT4A4T30**		1 5 units	41H
 LZS:RT4B4T30	**Complete units with plug-in base with logical separation** For snap-on mounting onto TH 35 standard mounting rail Comprising: • Coupling relays with plug-in relays • Plug-in base with logical separation and screw terminals • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels								
	1 CO contact	24 DC	1	15.5	2	**LZS:RT3B4L24**		1 5 units	41H
		24 AC			2	**LZS:RT3B4R24**		1 5 units	41H
		115 AC			2	**LZS:RT3B4S15**		1 5 units	41H
		230 AC			2	**LZS:RT3B4T30**		1 5 units	41H
	2 CO contacts	24 DC	2	15.5	2	**LZS:RT4B4L24**		1 5 units	41H
		24 AC			2	**LZS:RT4B4R24**		1 5 units	41H
		115 AC			2	**LZS:RT4B4S15**		1 5 units	41H
		230 AC			2	**LZS:RT4B4T30**		1 5 units	41H
 LZS:RT3D4L24	**Complete units with plug-in base with logical separation** For snap-on mounting onto TH 35 standard mounting rail Comprising: • Coupling relays with plug-in relays • Plug-in base with logical separation and plug-in terminals (push-in) • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels				**Plug-in terminals (push-in)**				
	1 CO contact	24 DC	1	15.5	2	**LZS:RT3D4L24**		1 5 units	41H
		24 AC			2	**LZS:RT3D4R24**		1 5 units	41H
		115 AC			2	**LZS:RT3D4S15**		1 5 units	41H
		230 AC			2	**LZS:RT3D4T30**		1 5 units	41H
	2 CO contacts	24 DC	2	15.5	2	**LZS:RT4D4L24**		1 5 units	41H
		24 AC			2	**LZS:RT4D4R24**		1 5 units	41H
		115 AC			2	**LZS:RT4D4S15**		1 5 units	41H
		230 AC			2	**LZS:RT4D4T30**		1 5 units	41H

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm	d					
Individual modules for customer assembly, RT series									
Print relays, 8-pole, 5 mm pinning									
 LZX:RT314024	**Print relays** With hard gold-plating								
	Version with 1 CO contact								
	24 DC	1	12.7	►	**LZX:RT315024**		1	1 unit	41H
	230 AC			15	**LZX:RT315730**		1	1 unit	41H
 LZS:RT78725	**Print relays**								
	Version with 1 CO contact								
	24 DC	1	12.7	►	**LZX:RT314024**		1	1 unit	41H
	24 AC			15	**LZX:RT314524**		1	1 unit	41H
	115 AC			15	**LZX:RT314615**		1	1 unit	41H
	230 AC			►	**LZX:RT314730**		1	1 unit	41H
	Version with 2 CO contacts								
	12 DC	2	12.7	15	**LZX:RT424012**		1	1 unit	41H
	24 DC			►	**LZX:RT424024**		1	1 unit	41H
	24 AC			►	**LZX:RT424524**		1	1 unit	41H
	115 AC			►	**LZX:RT424615**		1	1 unit	41H
	230 AC			►	**LZX:RT424730**		1	1 unit	41H
 LZS:RT78726	**Standard plug-in bases** For mounting onto TH 35 standard mounting rail				**Screw terminals**				
	--	--	15.5	►	**LZS:RT78725**		1	1 unit	41H
	Plug-in bases with logical separation For mounting onto TH 35 standard mounting rail								
	--	--	15.5	►	**LZS:RT78726**		1	1 unit	41H
 LZS:RT7872P	**Plug-in bases with logical separation** For mounting onto TH 35 standard mounting rail				**Plug-in terminals (push-in)**				
	--	--	15.5	►	**LZS:RT7872P**		1	1 unit	41H
	LED modules								
	• Red								
	With freewheel diode	24 DC	--	15.5	►	**LZS:PTML0024**		1	1 unit	41H
	Without freewheel diode	24 AC/DC	--		►	**LZS:PTML0524**		1	1 unit	41H
		110 ... 230 AC/DC	--		►	**LZS:PTML0730**		1	1 unit	41H
 LZS:PTML0024	• Green								
	With freewheel diode	24 DC	--	15.5	►	**LZS:PTMG0024**		1	1 unit	41H
	Without freewheel diode	24 AC/DC	--		►	**LZS:PTMG0524**		1	1 unit	41H
		110 ... 230 AC/DC	--		►	**LZS:PTMG0730**		1	1 unit	41H
 LZS:RT17016	**Fixing/ejection brackets** For RT base								
	--	--	15.5	►	**LZS:RT17016**		100	10 units	41H
	Labels								
	--	--	15.5	►	**LZS:RT17040**		100	10 units	41H
 LZS:RT17040	**RC elements**								
	6 ... 60 AC	--	15.5	►	**LZS:PTMU0524**		1	1 unit	41H
	110 ... 230 AC			►	**LZS:PTMU0730**		1	1 unit	41H
 LZS:PTMT0730	**Freewheel diodes with connection to A1**								
	6 ... 230 DC	--	15.5	►	**LZS:PTMT00A0**		1	1 unit	41H
	Connecting cables, 24-pole								
	Current carrying capacity 12 A, with supply cable, blue	--	--	--	2	**3TX7004-8BA00**		1	1 unit	41H
	Connecting combs for RT screw base								
	8-pole, current carrying capacity 10 A, natural-colored	--	--	--	►	**LZS:RT170R8**		1	10 units	41H
 3TX7004-8BA00	**Connecting brackets for push-in base**								
	2-pole, current carrying capacity 10 A, natural-colored	--	--	--	►	**LZS:RT170P1**		100	10 units	41H

Note:

SITOP DC power supplies such as 6EP1331-5BA00 or 6EP1331-5BA10 can be used for unavailable coil voltages; see page 15/3.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Notes

Introduction

Overview

More information	
Home page, see www.siemens.com/soft-starter	Online configurator, see www.siemens.com/sirius/configurators
Industry Mall, see www.siemens.com/product?3RW	Simulation Tool for Soft Starters (STS), see page 14/5 or https://support.industry.siemens.com/cs/ww/en/view/101494917

3RW30

3RW40

3RW44

		Article No.	Page
3RW soft starters			
3RW soft starters for standard applications			
3RW30 soft starters	• SIRIUS 3RW30 soft starters for soft starting of three-phase asynchronous motors • Current range of up to 106 A • Performance range of up to 55 kW (at 400 V), up to 75 hp (at 460 V)	**3RW30**	6/9
3RW40 soft starters	• SIRIUS 3RW40 soft starters with the integral functions - solid-state motor overload and intrinsic device protection and - adjustable current limiting for the soft starting and stopping of three-phase asynchronous motors • Current range of up to 432 A • Performance range of up to 250 kW (at 400 V), up to 300 hp (at 460 V)	**3RW40**	6/20
3RW soft starters for High Feature applications			
3RW44 soft starters	• In addition to soft starting and soft ramp-down, the solid-state SIRIUS 3RW44 soft starters provide numerous functions for higher-level requirements • Current range of up to 1 214 A • Performance range - in inline circuit: up to 710 kW (at 400 V), up to 950 hp (at 460 V) - in inside-delta circuit: up to 1 200 kW (at 400 V), up to 1 700 hp (at 460 V)	**3RW44**	6/35

SIRIUS 3RW soft starters

SIRIUS 3RW soft starters permit soft starting and soft ramp-down of three-phase asynchronous motors. Depending on the scope of functions required it is possible to choose between:

- Soft starters for standard applications
- Soft starters for High Feature applications

SIRIUS 3RW – Service-proven in many applications

Functions of the SIRIUS soft starters include:

- Soft starting and ramp-down
- Stepless starting
- Torque control and limitation

Cost-efficient operation

The advantages of SIRIUS soft starters at a glance:

- Reduction of current peaks
- Avoidance of mains voltage fluctuations during starting
- Reduced load on the power supply network
- Reduction of the mechanical load in the operating mechanism
- Considerable space savings and reduced wiring compared with conventional starters
- Maintenance-free switching
- Very easy handling
- Fit perfectly in the SIRIUS modular system (3RW30 and 3RW40)

Use of soft starters in conjunction with IE3/IE4 motors

Note:

When using 3RW soft starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see "Application Manual for SIRIUS Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820.

For more information see Preface, page 7.

More information	
Home page, see www.siemens.com/solid-state-switching-devices Industry Mall, see www.siemens.com/product?3RF	Online configurator, see www.siemens.com/sirius/configurators


3RF21


3RF20


3RF22


3RF23


3RF24


3RF29


3RF34 (motor)

		Article No.	Page
SIRIUS solid-state switching devices for switching resistive/inductive loads			
Solid-state relays			
Solid-state relays	• Widths of 22.5 mm and 45 mm • Compact and space-saving design • "Zero-point switching" version • Mounting onto existing heat sinks	**3RF21** **3RF20** **3RF22**	6/61 6/66 6/70
Solid-state contactors			
Solid-state contactors	• Complete units comprising a solid-state relay and an optimized heat sink, "ready to use" • Compact and space-saving design • Versions for resistive loads "zero-point switching" and for inductive loads "instantaneous switching" • Special versions "Low Noise" and "Short-Circuit Proof"	**3RF23** **3RF24**	6/74 6/84
Function modules	For extending the functionality of the 3RF21 solid-state relays and the 3RF23 solid-state contactors for many different applications:		
Converters	• Converters used for converting an analog input signal into an on/off ratio; can also be used on 3RF22 and 3RF24 three-phase switching devices	**3RF2900-0EA18**	6/96
Load monitoring	• For load monitoring of one or more loads (partial loads)	**3RF29..-0FA08,** **3RF29.0-0GA..**	6/97
Heating current monitoring	• For load monitoring of one or more loads (partial loads); remote teach	**3RF29..-0JA..**	6/98
Power controllers	• For setting the current by means of a solid-state switching device depending on a setpoint value set by the power controller. There is a choice of full-wave control and generalized phase control.	**3RF29..-0KA.**	6/99
Power regulators	• For regulating the current by means of a solid-state switching device, depending on a setpoint value set by the power regulator. Closed-loop control: full-wave control or generalized phase control	**3RF29.0-0HA..**	6/100
SIRIUS solid-state switching devices for switching motors			
Solid-state contactors			
Solid-state contactors, solid-state reversing contactors	• Complete units in the insulated enclosure with integrated heat sink, "ready to use" • Compact and space-saving design • Version for motors, "instantaneous switching"	**3RF34**	6/104, 6/108

Use of SIRIUS solid-state switching devices for switching motors in conjunction with IE3/IE4 motors

Note:

When using SIRIUS solid-state switching devices for switching motors in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see "Application Manual for SIRIUS Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820.

For more information see Preface, page 7.

Introduction

SIRIUS 3RF solid-state switching devices

Three-phase solid-state contactor and single-phase solid-state relay

The SIRIUS 3RF2 solid-state switching devices reliably switch a wide range of different loads with alternating voltages in 50 and 60 Hz systems.

SIRIUS 3RF2 solid-state switching devices for resistive loads:

- Solid-state relays
- Solid-state contactors
- Function modules

SIRIUS 3RF3 solid-state switching devices for switching motors:

- Solid-state contactors
- Solid-state reversing contactors

SIRIUS 3RF2 – for almost unending activity

Conventional electromechanical controlgear is often overtaxed by the rise in the number of switching operations. A high switching frequency results in frequent failure and short replacement cycles. However, this does not have to be the case, because with the latest generation of our SIRIUS 3RF2 solid-state switching devices we provide you with solid-state relays and contactors with a particularly long endurance – for almost unending activity even under the toughest conditions and under high mechanical load, but also in noise-sensitive areas.

Proved time and again in service

SIRIUS 3RF2 solid-state switching devices have firmly established in industrial applications. They are used above all in applications where loads are switched frequently – mainly with resistive load controllers, with the control of electrical heat or the control of valves and motors in conveyor systems. In addition to its use in areas with high switching frequencies, their silent switching means that SIRIUS is also ideally suited for use in noise-sensitive areas, such as offices or hospitals.

The most reliable solution for any application

Compared to mechanical controlgear, our SIRIUS 3RF2 solid-state switching devices stand out due to their considerably longer service life. Thanks to the high product quality, their switching is extremely precise, reliable and, above all, insusceptible to faults. With its variable connection methods and a wide spread of control voltages, the SIRIUS 3RF2 family is universally applicable. Depending on the individual requirements of the application, our modular controlgear can also be quite easily expanded by the addition of standardized function modules.

Ideal for operation with heating control systems

The 3RF2 solid-state switching devices can be used for example in the SIPLUS HCS300I heating control system. They are optimally connected to the digital output module of the HCS300I by means of preassembled cables. This saves considerable wiring outlay in the control circuit and shortens mounting time.

The HCS300I is a modular heating control system for the optimization of plastic processing machines. It enables individual solutions for many different heating control applications. With each basic unit it is possible to use up to four 6-channel digital outputs to control solid-state switching devices and four 4-channel temperature measuring modules. Current or current-and-voltage measuring modules can be used to monitor the loads. Communication with the higher-level control system is performed via PROFIBUS DP.

SIPLUS heating control system

Also for switching motors

In order to achieve higher productivity, the switching frequency is continuously increased. It is no problem for our SIRIUS solid-state contactors to switch motors. With three-phase motors up to 7.5 kW, they can reliably withstand even the highest switching frequencies. Even a continuous change in the direction of rotation is possible with the solid-state reversing contactors. Both versions can be perfectly combined with components from the SIRIUS modular system. Connecting with SIRIUS motor starter protectors or SIRIUS overload relay can be implemented without any further steps.

Always on the sunny side with SIRIUS

Because SIRIUS 3RF2 offers even more:

- The space-saving and compact side-by-side mounting ensures reliable operation up to an ambient temperature of +60 °C
- Thanks to fast configuration and the ease of mounting and start up, you save not only time but also expenses.

Connection methods

The solid-state switching devices are available with screw terminals (box terminals), spring-type terminals or ring terminal lugs.

	Screw terminals
	Spring-type terminals
	Ring terminal lug connection
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Overview




		SIRIUS 3RW30 Standard applications	SIRIUS 3RW40 Standard applications	SIRIUS 3RW44 High Feature applications
Rated current at 40 °C	***A***	***3 ... 106***	***12.5 ... 432***	***29 ... 1214***
Rated operational voltage	V	200 ... 480	200 ... 600	200 ... 690[1]
Motor rating at 400 V				
• Inline circuit	kW	1.5 ... 55	5.5 ... 250	15 ... 710
	hp	1.5 ... 75	7.5 ... 300	15 ... 950
• Inside-delta circuit	kW	--	--	22 ... 1200
	hp	--	--	30 ... 1700
Ambient temperature	°C	-25 ... +60	-25 ... +60	0 ...+60
Soft starting/ramp-down		✓[2]	✓	✓
Voltage ramp		✓	✓	✓
Starting/stopping voltage	%	40 ... 100	40 ... 100	20 ... 100
Starting and ramp-down time	s	0 ... 20[2]	0 ... 20	0 ... 360
Torque control		--	--	✓
Starting/stopping torque	%	--	--	20 ... 100
Torque limit	%	--	--	20 ... 200
Integral bypass contact system		✓	✓	✓
Intrinsic device protection		--	✓	✓
Motor overload protection		--	✓[3]	✓
Thermistor motor protection		--	✓[4]	✓
Integrated remote RESET		--	✓[5]	✓
Adjustable current limiting		--	✓	✓
Inside-delta circuit		--	--	✓
Breakaway pulse		--	--	✓
Creep speed in both directions of rotation		--	--	✓
Pump stop (torque control)		--	--	✓[6]
DC braking		--	--	✓[6] [7]
Combined braking		--	--	✓[6] [7]
Motor heating		--	--	✓
Communication		--	--	PROFIBUS/PROFINET (optional)
External display and operator module		--	--	(optional)
Operating measured value display		--	--	✓
Error logbook		--	--	✓
Event list		--	--	✓
Slave pointer function		--	--	✓
Trace function		--	--	✓[8]
Programmable control inputs and outputs		--	--	✓
Number of parameter sets		1	1	3
Parameterization software (Soft Starter ES)		--	--	✓
Power semiconductors (thyristors)		2 controlled phases	2 controlled phases	3 controlled phases
Screw terminals		✓	✓	✓
Spring-type terminals		✓	✓	✓
UL/CSA		✓	✓	✓
CE marking		✓	✓	✓
Soft starting under heavy starting conditions		--	--	✓[6]
Configuring support		Electronic selection slider, Simulation Tool for Soft Starters (STS): https://support.industry.siemens.com/cs/ww/en/view/101494917 Technical Assistance: Tel.: +49 (0) 911-895-5900, e-mail: technical-assistance@siemens.com		

✓ Function available, -- Function not available

1) In inside-delta circuit up to 600 V.

2) Only soft starting available for 3RW30.

3) When using the motor overload protection according to ATEX, an upstream contactor is required.

4) Optional up to size S3 (device version).

5) For 3RW402. to 3RW404.; for 3RW405. and 3RW407. optional.

6) Calculate soft starter and motor with size allowance where required.

7) Not possible in inside-delta circuit.

8) Trace function with Soft Starter ES software.

General data

Selection aid for soft starters



Application	SIRIUS 3RW30 Standard applications	SIRIUS 3RW40 Standard applications	SIRIUS 3RW44 High Feature applications
Normal starting (CLASS 10)			
Pumps	●	●	●
Pumps with special pump stop (to prevent water hammer)			●
Heat pumps	●	●	●
Hydraulic pumps	❍	●	●
Presses	❍	●	●
Conveyor belts	❍	●	●
Roller conveyors	❍	●	●
Screw conveyors	❍	●	●
Escalators		●	●
Piston compressors		●	●
Screw compressors		●	●
Small fans 1)		●	●
Centrifugal blowers		●	●
Bow thrusters		●	●
Heavy starting (CLASS 20)			
Stirrers		❍	●
Extruders		❍	●
Lathes		❍	●
Milling machines		❍	●
Very heavy starting (CLASS 30)			
Large fans 2)			●
Circular saws/bandsaws			●
Centrifuges			●
Mills			●
Crushers			●

● Recommended soft starter

❍ Possible soft starter

1) The mass inertia of the fan is <10 times the mass inertia of the motor.

2) The mass inertia of the fan is ≥10 times the mass inertia of the motor.

Boundary conditions

The motor ratings listed in the Selection and Ordering Data are rough guide values. The soft starter should always be designed on the basis of the required rated operational current of the motor. 3RW soft starters are designed for easy starting conditions.

For selection of soft starters in the Selection and ordering data, a current load of 300% was defined for all 3RW soft starters as the boundary condition for normal starting (CLASS 10). For 3RW30, a maximum number of 20 starts per hour for a maximum of 3 s starting time was defined as the boundary condition; for 3RW40 and 3RW44, a maximum number of 5 starts per hour for a maximum starting time of 10 s was defined.

In case of additional requirements, it may be necessary to choose a larger device. In some cases, however, the safety margins taken into account in the selection also permit the listed units to be used in boundary conditions which are slightly more demanding.

We generally recommend the Simulation Tool for Soft Starters (STS) for selection of 3RW soft starters see page 14/5.

Motor rating data in kW and hp is based on IEC 60947-4-1.

Article No. scheme

Product versions		Article number													
Device type	**Soft starters**	**3RW30**	☐	☐	–	☐	☐	☐	☐	☐	–	☐	☐	☐	☐	For standard applications
		3RW40	☐	☐	–	☐	☐	☐	☐	☐	–	☐	☐	☐	☐	For standard applications
		3RW44	☐	☐	–	☐	☐	☐	☐	☐	–	☐	☐	☐	☐	For High Feature applications
Size	e.g. 2 = S0 (for 3RW30/40)		☐													
Rated operational current I_e	e.g. 6 = 25 A (for 3RW30/40)			☐												
Connection type	e.g. 1 = screw terminal (for 3RW30)					☐										
Soft starter functionality	e.g. BB = with integrated bypass, two-phase controlled (for 3RW)						☐	☐								
Rated control supply voltage U_s	24 V AC/DC								**0**							Up to size S3 for 3RW30/40
	110 … 230 V AC/DC								**1**							Up to size S3 for 3RW30/40
	115 V AC								**3**							For 3RW40/44
	230 V AC								**4**							For 3RW40/44
	24 ... 230 V AC/DC								**5**							For 3RW3003
Rated operational voltage U_e	e.g. 4 = 200 ... 480 V (for 3RW30/40)									☐						
Special versions												☐	☐	☐	☐	
Example		**3RW40**	**2**	**6**	**–**	**1**	**B**	**B**	**1**	**4**						

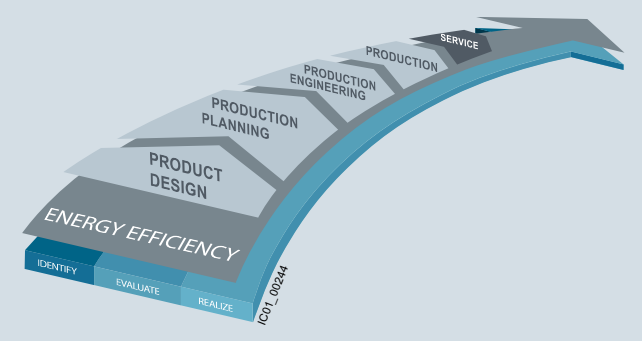
Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see www.siemens.com/sirius/energysaving).

The soft starters contribute to energy efficiency throughout the plant as follows:

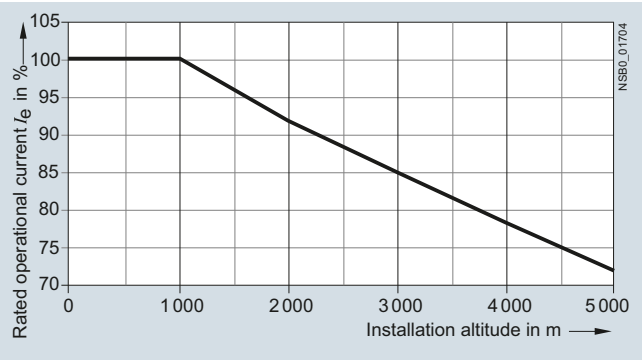
- Energy management
  Provision of energy data such as current, voltage and power (3RW44) by bus to higher-level systems
- Current management
  Avoidance of current peaks, thus reducing the load on the grid and the mechanical system
- Reduced heating of the control cabinet:
  - Technology-reduced inherent power loss as speed-controlled drive systems, resulting in lower cooling costs and a more compact design.
  - All sizes are equipped with bypass contactor, resulting in lower power losses after start up

Product advantages

- Soft starting and ramp-down (only soft starting available for 3RW30)
- Stepless starting
- Reduction of current peaks
- Avoidance of mains voltage fluctuations during starting
- Reduced load on the power supply network
- Reduction of the mechanical load in the operating mechanism
- Considerable space savings and reduced wiring compared with conventional starters
- Maintenance-free switching
- Very easy handling
- Seamless compatibility with the SIRIUS modular system.

Technical specifications

Permissible installation altitude



At an installation altitude above 2 000 m, max. permissible operational voltage is reduced to 460 V.

Overview

SIRIUS 3RW30 soft starters

The SIRIUS 3RW30 soft starters reduce the motor voltage through variable phase control and increase it in ramp-like mode from a selectable starting voltage up to mains voltage. During starting, these devices limit the torque as well as the current and prevent the shocks which arise during direct starts or wye-delta starts. In this way, mechanical loads and mains voltage dips can be reliably reduced.

Soft starting reduces the stress on the connected equipment and results in lower wear and therefore longer periods of trouble-free production. The selectable start value means that the soft starters can be adjusted individually to the requirements of the application in question and unlike wye-delta starters are not restricted to two-stage starting with fixed voltage ratios.

The SIRIUS 3RW30 soft starters are characterized above all by their small space requirements. Integrated bypass contacts mean that no power loss has to be taken into the bargain at the power semiconductors (thyristors) after the motor has started up. This cuts down on heat losses, enabling a more compact design and making external bypass circuits superfluous.

Various versions of the SIRIUS 3RW30 soft starters are available:

- Standard version for fixed-speed three-phase motors, sizes S00, S0, S2 and S3, with integrated bypass contact system
- Version for fixed-speed three-phase motors in a 22.5 mm enclosure without bypass

Soft starters rated up to 55 kW (at 400 V) for standard applications in three-phase networks are available. Extremely small sizes, low power losses and simple commissioning are just three of the many advantages of this soft starter.

Functionality

The space required by the compact SIRIUS 3RW30 soft starter is often only about one third of that required by a contactor assembly for wye-delta starting of comparable rating. This not only saves space in the control cabinet and on the standard mounting rail but also does away completely with the wiring work needed for wye-delta starters. This is notable in particular for higher motor ratings which are only rarely available as fully wired solutions.

At the same time the number of cables from the starter to the motor is reduced from six to three. Compact dimensions, short start-up times, easy wiring and fast commissioning make themselves felt as clear-cut cost advantages.

The bypass contacts of these soft starters are protected during operation by an integrated solid-state arc quenching system. This prevents damage to the bypass contacts in the event of a fault, e.g. brief disconnection of the control voltage, mechanical shocks or life-related component defects on the coil operating mechanism or main contact spring.

The series of devices comes with the "polarity balancing" control method, which is designed to prevent direct current components in two-phase controlled soft starters. On two-phase controlled soft starters the current resulting from superimposition of the two controlled phases flows in the uncontrolled phase. This results for physical reasons in an asymmetric distribution of the three phase currents during the motor ramp-up. This phenomenon cannot be influenced, but in most applications it is non-critical.

Controlling the power semiconductors results not only in this asymmetry, however, but also in the previously mentioned direct current components which can cause severe noise generation on the motor at starting voltages of less than 50 %. The control method used for these soft starters eliminates these direct current components during the ramp-up phase and prevents the braking torque which they can cause.

It creates a motor ramp-up that is uniform in speed, torque and current rise, thus permitting a particularly gentle, two-phase starting of the motors. At the same time the acoustic quality of the starting operation comes close to the quality of a three-phase controlled soft starter. This is made possible by the on-going dynamic harmonizing and balancing of current half-waves of different polarity during the motor ramp-up. Hence the name "polarity balancing".

- Soft starting with voltage ramp; setting range:
  - Starting voltage U_s from 40 % to 100 %
  - Ramp time t_R from 0 to 20 s
- Integrated bypass contact system to minimize power loss
- Setting with two potentiometers
- Simple mounting and commissioning
- Mains voltages 50/60 Hz, 200 to 480 V
- Two control voltage versions 24 V AC/DC and 110 to 230 V AC/DC
- Wide temperature range from -25 to +60 °C
- User-friendly control and possible further processing within the system (for status graphs, see page 6/19).

Application

The 3RW30 soft starters are suitable for soft starting of three-phase asynchronous motors.

Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire starting time. Due to continuous voltage influencing, the current and torque peaks which are unavoidable in the case of wye-delta starters for instance do not occur.

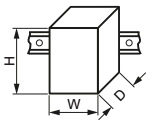
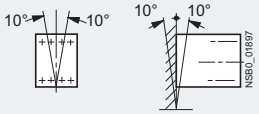
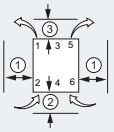
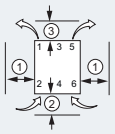
Application areas

See "Selection aid for soft starters", page 6/6.

General data

Technical specifications

More information	
Manual, see https://support.industry.siemens.com/cs/ww/en/view/38752095 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16213/faq	Catalog LV 10, see www.siemens.com/industry/infocenter

Type			3RW301.	3RW302.	3RW303.	3RW304.
Mechanics and environment						
Mounting dimensions (W x H x D) • Screw terminals • Spring-type terminals		mm mm	45 x 95 x 151 45 x 117 x 151	45 x 125 x 151 45 x 150 x 151	55 x 144 x 168 55 x 144 x 168	70 x 160 x 186 70 x 160 x 186
Permissible ambient temperature During operation During storage		°C °C	-25 ... +60; (derating from +40) -40 ... +80			
Weight		kg	0.58	0.69	1.20	1.71
Permissible mounting position[1] (auxiliary fan not available)						
Installation type[1]	Stand-alone installation		 ① ≥ 15 mm (≥ 0.59 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in)		 ① ≥ 30 mm (≥ 1.18 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in)	
Permissible installation altitude		m	5 000 (Derating from 1 000, see "Characteristic Curves", page 6/8); higher on request			
Degree of protection			IP20 for 3RW301. and 3RW302.; IP00 for 3RW303. and 3RW304.			

[1] In the case of deviations, please observe derating, see manual in the chapter "Configuring".

Type			3RW301., 3RW302.		3RW303., 3RW304.	
Control electronics						
Rated values Rated control supply voltage • Tolerance	Terminal A1/A2	V %	24 ± 20	110 ... 230 -15/+10	24 ± 20	110 ... 230 -15/+10
Rated frequency • Tolerance		Hz %	50/60 ± 10			

Type		3RW301.	3RW302.	3RW303.	3RW304.
Power electronics					
Rated operational voltage Tolerance	V AC %	200 ... 480 -15/+10			
Rated frequency Tolerance	Hz %	50/60 ± 10			
Uninterrupted duty at 40 °C (% of I_e)	%	115			
Minimum load (% of I_e)	%	10 (at least 1 A)			
Maximum cable length between soft starter and motor	m	300			

Type		3RW3013	3RW3014	3RW3016	3RW3017	3RW3018
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA[1], for individual mounting, AC-53a						
- At 40 °C	A	3.6	6.5	9	12.5	17.6
- At 50 °C	A	3.3	6	8	12	17
- At 60 °C	A	3	5.5	7	11	14
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	0.25	0.5	1	2	4
• During starting with 300 % I_M (40 °C)	W	24	52	80	80	116
Permissible rated motor current and starts per hour for normal starting (CLASS 10) at 40 °C / 50 °C						
- Rated motor current I_M[2], starting time 3 s	A	3.6/3.3	6.5/6.0	9/8	12.5/12.0	17.6/17.0
- Starts per hour[3]	1/h	200/150	87/60	50/50	85/70	62/46
- Rated motor current I_M[2], starting time 4 s	A	3.6/3.3	6.5/6.0	9/8	12.5/12.0	17.6/17.0
- Starts per hour[3]	1/h	150/100	64/46	35/35	62/47	45/32

1) Measurement at 60 °C according to UL/CSA not required.

2) At 300 % I_M, T_u = 40 °C / 50 °C.

3) For intermittent duty S4 with ON period = 30 %, T_u = 40 °C / 50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW3026	3RW3027	3RW3028
Power electronics				
Load rating with rated operational current I_e				
• According to IEC and UL/CSA[1], for individual mounting, AC-53a				
- At 40 °C	A	25.3	32.2	38
- At 50 °C	A	23	29	34
- At 60 °C	A	21	26	31
Power loss				
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	8	13	19
• During starting with 300 % I_M (40 °C)	W	188	220	256
Permissible rated motor current and starts per hour for normal starting (CLASS 10) at 40 °C / 50 °C				
- Rated motor current I_M[2], starting time 3 s	A	25/23	32/29	38/34
- Starts per hour[3]	1/h	23/23	23/23	19/19
- Rated motor current I_M[2], starting time 4 s	A	25/23	32/29	38/34
- Starts per hour[3]	1/h	15/15	16/16	12/12

1) Measurement at 60 °C according to UL/CSA not required.

2) At 300 % I_M, T_u = 40 °C / 50 °C.

3) For intermittent duty S4 with ON period = 30 %, T_u = 40 °C / 50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency with deviating mounting position, direct mounting, side-by-side mounting see manual in the chapter: "Configuring".

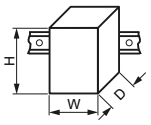
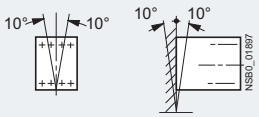
Type		3RW3036	3RW3037	3RW3038	3RW3046	3RW3047
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA[1], for individual mounting, AC-53a						
- At 40 °C	A	45	65	72	80	106
- At 50 °C	A	42	58	62.1	73	98
- At 60 °C	A	39	53	60	66	90
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	6	12	15	12	21
• During starting with 300 % I_M (40 °C)	W	316	444	500	576	768
Permissible rated motor current and starts per hour for normal starting (CLASS 10) at 40 °C / 50 °C						
- Rated motor current I_M[2], starting time 3 s	A	45/42	63/58	72/62	80/73	106/108
- Starts per hour[3]	1/h	38/38	23/23	22/22	22/22	15/15
- Rated motor current I_M[2], starting time 4 s	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour[3]	1/h	26/26	15/15	15/15	15/15	10/10

1) Measurement at 60 °C according to UL/CSA not required.

2) At 300 % I_M, T_u = 40 °C / 50 °C.

3) For intermittent duty S4 with ON period = 30 %, T_u = 40 °C / 50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

General data

Type		3RW3003-1CB54	3RW3003-2CB54
Mechanics and environment			
Mounting dimensions (W x H x D) 			
• Screw terminals	mm	22.5 x 100 x 120	--
• Spring-type terminals	mm	--	22.5 x 101.6 x 120
Permissible ambient temperature			
During operation	°C	-25 ... +60; (derating from +40)	
During storage	°C	-40 ... +80	
Weight	kg	0.207	0.188
Permissible mounting position 			
Permissible installation altitude	m	5 000 (Derating from 1 000, see "Characteristic Curves", page 6/8); higher on request	
Degree of protection acc. to IEC 60529		IP20 (IP00 terminal compartment)	
Control electronics			
Rated values			
Rated control supply voltage	V	24 ... 230 AC/DC	
• Tolerance	%	± 10	
Rated frequency at AC	Hz	50/60	
• Tolerance	%	± 10	
Power electronics			
Rated operational voltage	V AC	200 ... 400	
Tolerance	%	± 10	
Rated frequency	Hz	50/60	
Tolerance	%	± 10	
Uninterrupted duty (% of I_e)	%	100	
Minimum load[1] (% of I_e); at 40 °C	%	9	
Maximum conductor length between soft starter and motor	m	100[2]	
Load rating with rated operational current I_e			
• According to IEC and UL/CSA for individual mounting at 40 / 50 / 60 °C, AC-53a	A	3/2.6/2.2	
• According to IEC and UL/CSA for side-by-side-mounting at 40 / 50 / 60 °C, AC-53a	A	2.6/2.2/1.8	
Power loss			
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	6.5	
• At utilization of maximum switching frequency	W	3	
Permissible starts per hour (cannot be increased by using a fan)			
• For intermittent duty S4 T_u = 40 °C, stand-alone installation vertical	1/h	1 500	
• ON period = 70 % for 300 % I_e	1/s	0.2	
Dead time after uninterrupted duty with I_e before restart	s	0	

1) The rated motor current (specified on the motor's name plate) should at least amount to the specified percentage of the SIRIUS soft starter unit's rated operational current I_e.

2) If this value is exceeded, problems with line capacities may arise, which can result in false firing.

Motor feeders with soft starters

The type of coordination according to which the motor feeder with soft starter is mounted depends on the application-specific requirements. Normally, fuseless mounting (combination of motor starter protector and soft starter) is sufficient.

If type of coordination "2" is to be fulfilled, then semiconductor fuses must be fitted in the motor feeder.

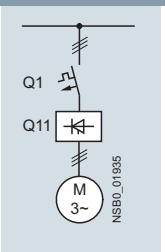
ToC 1 — Type of coordination 1 according to IEC 60947-4-1: After a short-circuit incident, the unit is defective and therefore unsuitable for further use (protection of persons and system guaranteed).

ToC 2 — Type of coordination 2 in according to IEC 60947-4-1: After a short-circuit incident the unit is suitable for further use (protection of persons and system guaranteed).

The type of coordination refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

The types of coordination are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Fuseless version

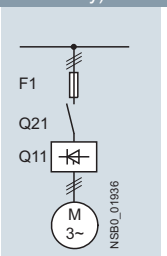


Soft starters		Motor starter protectors[1]		
ToC 1	Nominal current	400 V + 10 %		Rated current
Q11		Q1	$I_{q\ max}$	
Type	A	Type	kA	A
Type of coordination "1"				
3RW3003	3	3RV2011-1EA	50	4
3RW3013	3.6	3RV2011-1FA	5	5
3RW3014	6.5	3RV2011-1HA	5	8
3RW3016	9	3RV2011-1JA	5	10
3RW3017	12.5	3RV2011-1KA	5	12.5
3RW3018	17.6	3RV2021-4BA	5	20
3RW3026	25	3RV2021-4DA	55	25
3RW3027	32	3RV2021-4EA	55	32
3RW3028	38	3RV2021-4FA	55	40
3RW3036	45	3RV2031-4WA10	10	45
3RW3037	63	3RV2031-4JA10	10	63
3RW3038	72	3RV2031-4KA10	10	75
3RW3046	80	3RV1041-4LA10	11	90
3RW3047	106	3RV1041-4MA10	11	100

[1] The rated motor current must be considered when selecting the devices.

General data

Fused version (line protection only)



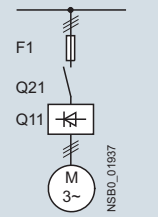
Soft starters ToC 1 Q11 Type	Nominal current A	Line protection, maximum F1 Type	Rated current A	Size	Line contactor (optional) Q21 Type
Type of coordination "1"[1]: I_q = 65 kA at 480 V + 10 %					
3RW3003[2]	3	3NA3805[3]	20	000	3RT2015
3RW3013	3.6	3NA3803-6	10	000	3RT2015
3RW3014	6.5	3NA3805-6	16	000	3RT2015
3RW3016	9	3NA3807-6	20	000	3RT2016
3RW3017	12.5	3NA3810-6	25	000	3RT2018
3RW3018	17.6	3NA3814-6	35	000	3RT2026
3RW3026	25	3NA3822-6	63	00	3RT2026
3RW3027	32	3NA3824-6	80	00	3RT2027
3RW3028	38	3NA3824-6	80	00	3RT2028
3RW3036	45	3NA3130-6	100	1	3RT2036
3RW3037	63	3NA3132-6	125	1	3RT2037
3RW3038	72	3NA3132-6	125	1	3RT2038
3RW3046	80	3NA3136-6	160	1	3RT2038
3RW3047	106	3NA3136-6	160	1	3RT2046

1) The type of coordination "1" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

2) I_q = 50 kA at 400 V.

3) 3NA3805-1 (NH00), 5SB261 (DIAZED), 5SE2201-6 (NEOZED).

Fused version with 3NE1 SITOR fuses (semiconductor and line protection)



For matching fuse bases, see Catalog LV 10 → "Switch Disconnectors" and Catalog LV 10 → "Fuse Systems" → "SITOR Semiconductor Fuses" or www.siemens.com/sitor.

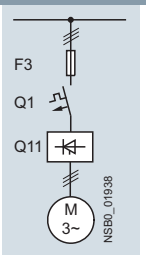
Soft starters ToC 2 Q11 Type	Nominal current A	All-range fuses F'1 Type	Rated current A	Size	Line contactor (optional) Q21 Type
Type of coordination "2"[1]: I_q = 65 kA at 480 V + 10 %					
3RW3003[2]	3	3NE1813-0[3]	16	000	3RT2015
3RW3013	3.6	3NE1813-0	16	000	3RT2015
3RW3014	6.5	3NE1813-0	16	000	3RT2015
3RW3016	9	3NE1813-0	16	000	3RT2016
3RW3017	12.5	3NE1813-0	16	000	3RT2018
3RW3018	17.6	3NE1814-0	20	000	3RT2026
3RW3026	25	3NE1803-0	35	000	3RT2026
3RW3027	32	3NE1020-2	80	00	3RT2027
3RW3028	38	3NE1020-2	80	00	3RT2028
3RW3036	45	3NE1020-2	80	00	3RT2036
3RW3037	63	3NE1820-0	80	000	3RT2037
3RW3038	72	3NE1820-0	80	000	3RT2038
3RW3046	80	3NE1021-0	100	00	3RT2038
3RW3047	106	3NE1022-0	125	00	3RT2046

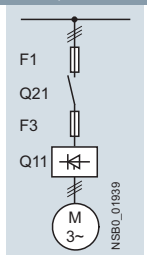
1) The type of coordination "2" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

2) I_q = 50 kA at 400 V.

3) No SITOR fuse required!
Alternatively: 3NA3803 (NH00), 5SB221 (DIAZED), 5SE2206 (NEOZED).

Fused version with 3NE3 SITOR fuses (semiconductor protection by fuse, line and overload protection by motor starter protector; alternatively, installation with contactor and overload relay possible)





For matching fuse bases, see Catalog LV 10 → "Switch Disconnectors" and Catalog LV 10 → "Fuse Systems" → "SITOR Semiconductor Fuses" or www.siemens.com/sitor.

Soft starters		Semiconductor fuses, minimum			Semiconductor fuses, minimum			Semiconductor fuses, minimum		
ToC 2	Nominal current		Rated current	Size		Rated current	Size		Rated current	Size
Q11 Type	A	F3 Type	A		F3 Type	A		F3 Type	A	
Type of coordination "2"[1]: I_q = 65 kA at 480 V + 10 %										
3RW3003[2]	3	--	--	--				3NE8015-1	25	00
3RW3013	3.6	--	--	--	3NE4101	32	0	3NE8015-1	25	00
3RW3014	6.5	--	--	--	3NE4101	32	0	3NE8015-1	25	00
3RW3016	9	--	--	--	3NE4101	32	0	3NE8015-1	25	00
3RW3017	12.5	--	--	--	3NE4101	32	0	3NE8015-1	25	00
3RW3018	17.6	--	--	--	3NE4101	32	0	3NE8003-1	35	00
3RW3026	25	--	--	--	3NE4102	40	0	3NE8017-1	50	00
3RW3027	32	--	--	--	3NE4118	63	0	3NE8018-1	63	00
3RW3028	38	--	--	--	3NE4118	63	0	3NE8020-1	80	00
3RW3036	45	--	--	--	3NE4120	80	0	3NE8020-1	80	00
3RW3037	63	--	--	--	3NE4121	100	0	3NE8021-1	100	00
3RW3038	72	3NE3221	100	1	--	--	--	3NE8022-1	125	00
3RW3046	80	3NE3222	125	1	--	--	--	3NE8022-1	125	00
3RW3047	106	3NE3224	160	1	--	--	--	3NE8024-1	160	00

Soft starters		Cylindrical fuses		Line contactor	Motor starter protectors		Line protection, maximum		
ToC 2	Nominal current		Rated current	(optional)	400 V + 10 %	Rated current		Rated current	Size
Q11 Type	A	F3 Type	A	Q21	Q1 Type	A	F1 Type	A	
Type of coordination "2"[1]: I_q = 65 kA at 480 V + 10 %									
3RW3003[2]	3	3NC1010	10	3RT2015	3RV2011-1EA	4	3NA3805[3]	20	000
3RW3013	3.6	3NC2220	20	3RT2015	3RV2011-1FA	5	3NA3803-6	10	000
3RW3014	6.5	3NC2220	20	3RT2015	3RV2011-1HA	8	3NA3805-6	16	000
3RW3016	9	3NC2220	20	3RT2016	3RV2011-1JA	10	3NA3807-6	20	000
3RW3017	12.5	3NC2250	50	3RT2018	3RV2011-1KA	12.5	3NA3810-6	25	000
3RW3018	17.6	3NC2263	63	3RT2026	3RV2021-4BA	20	3NA3814-6	35	000
3RW3026	25	3NC2263	63	3RT2026	3RV2021-4DA	25	3NA3822-6	63	00
3RW3027	32	3NC2280	80	3RT2027	3RV2021-4EA	32	3NA3824-6	80	00
3RW3028	38	3NC2280	80	3RT2028	3RV2021-4FA	40	3NA3824-6	80	00
3RW3036	45	3NC2280	80	3RT2036	3RV2031-4WA10	45	3NA3130-6	100	1
3RW3037	63	--	--	3RT2037	3RV2031-4JA10	63	3NA3132-6	125	1
3RW3038	72	--	--	3RT2038	3RV2031-4KA10	75	3NA3132-6	125	1
3RW3046	80	--	--	3RT2038	3RV1041-4LA10	90	3NA3136-6	160	1
3RW3047	106	--	--	3RT2046	3RV1041-4MA10	100	3NA3136-6	160	1

1) The type of coordination "2" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

2) I_q = 50 kA at 400 V.

3) 3NA3805-1 (NH00), 5SB261 (DIAZED).

SIRIUS 3RW30 for easy staring conditions ***IE3/IE4* ready**

Selection and ordering data


3RW301.


3RW302.


3RW303.


3RW304.


3RW3003-2CB54

3RW ambient temperature 40 °C Rated values of three-phase motors Operational current I_e	Rating at Operational voltage U_e 230 V	400 V	500 V	3RW ambient temperature 50 °C Rated values of three-phase motors Operational current I_e	Rating at Operational voltage U_e 200 V	230 V	460 V	575 V	Size	SD[1]	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	A	hp	hp	hp	hp		d					
Rated operational voltage U_e 200 ... 480 V															
3.6	0.75	**1.5**	--	3	0.5	0.5	**1.5**	--	**S00**	2	**3RW3013-□BB□4**		1	1 unit	42G
6.5	1.5	**3**	--	6	1	1	**3**	--	**S00**	2	**3RW3014-□BB□4**		1	1 unit	42G
9	2.2	**4**	--	8	2	2	**5**	--	**S00**	2	**3RW3016-□BB□4**		1	1 unit	42G
12.5	3	**5.5**	--	12	3	3	**7.5**	--	**S00**	2	**3RW3017-□BB□4**		1	1 unit	42G
17.6	4	**7.5**	--	17	3	3	**10**	--	**S00**	2	**3RW3018-□BB□4**		1	1 unit	42G
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	2	**3RW3026-□BB□4**		1	1 unit	42G
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	2	**3RW3027-□BB□4**		1	1 unit	42G
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	2	**3RW3028-□BB□4**		1	1 unit	42G
45	11	**22**	--	42	10	15	**30**	--	**S2**	2	**3RW3036-□BB□4**		1	1 unit	42G
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	2	**3RW3037-□BB□4**		1	1 unit	42G
72	22	**37**	--	62	20	20	**40**	--	**S2**	2	**3RW3038-□BB□4**		1	1 unit	42G
80	22	**45**	--	73	20	25	**50**	--	**S3**	2	**3RW3046-□BB□4**		1	1 unit	42G
106	30	**55**	--	98	30	30	**75**	--	**S3**	2	**3RW3047-□BB□4**		1	1 unit	42G

Article No. supplement for connection types

- With screw terminals — **1**
- With spring-type terminals[2] — **2**

Article No. supplement for rated control supply voltage U_s

- 24 V AC/DC — **0**
- 110 ... 230 V AC/DC — **1**

Soft starters for easy starting conditions and high switching frequency, rated operational voltage U_e 200 ... 400 V, rated control supply voltage U_s 24 ... 230 V AC/DC															
3	0.55	**1.1**	--	2.6	0.5	**0.5**	--	--	22.5 mm						
• With screw terminals										►	**3RW3003-1CB54**		1	1 unit	42G
• With spring-type terminals										►	**3RW3003-2CB54**		1	1 unit	42G

1) Soft starter U_e 200 to 480 V with screw terminals: standard delivery time SD = 1 day.

2) Main connection from size S2: screw terminals.

Note:

The listed motor ratings are rough guide values. The soft starter should always be designed on the basis of the required rated operational current of the motor.

The SIRIUS 3RW30 solid-state soft starters are designed for easy starting conditions. The selection and ordering data were determined for the following boundary conditions (see also the notes on page 6/6):

- Maximum starting time in *s*: 3
- Maximum starting current in % of motor current I_e: 300
- Maximum number of starts per hour in 1/h: 20
- Stand-alone installation (side-by-side, see manual)

For dimensioning soft starters under other boundary conditions, also for heavy starting up to CLASS 20, we recommend our Simulation Tool for Soft Starters (STS):

https://support.industry.siemens.com/cs/ww/en/view/101494917

or our Technical Assistance:
Tel.: +49 (0) 911-895-5900,
Email: technical-assistance@siemens.com.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Accessories

	Conductor cross-section: Solid or stranded	Conductor cross-section: Finely stranded with end sleeve	Conductor cross-section: AWG cables, solid or stranded	Tightening torque	For soft starter size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm²	mm²	AWG	Nm		d					
Three-phase infeed terminals											
 3RV2925-5AB	2.5 … 25	2.5 … 16	10 … 4	3 … 4	S00 (3RW301.) S0 (3RW302.)	▶	**3RV2925-5AB**		1	1 unit	41E

	For soft starters: Type	For soft starters: Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Auxiliary terminals								
 3RT2946-4F	**Auxiliary terminals, 3-pole**							
	3RW304.	**S3**	5	**3RT2946-4F**		1	1 unit	41B
Covers for soft starters								
 3RT2936-4EA2	**Terminal covers for box terminals** Additional touch protection to be fitted at the box terminals (2 units required per device)							
	3RW303.	**S2**	2	**3RT2936-4EA2**		1	1 unit	41B
	3RW304.	**S3**	▶	**3RT2946-4EA2**		1	1 unit	41B
 3RT1946-4EA1	**Terminal covers for cable lugs and busbar connections** For complying with the phase clearances and as touch protection if box terminal is removed (2 units required for each device)							
	3RW304.	**S3**	5	**3RT1946-4EA1**		1	1 unit	41B

	For motor starter protectors: Size	For soft starter: Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Mounting rails for mounting contactors for the customer assembly of 3RA21 load feeders with busbar adapters for 60 mm systems									
 8US1998-7CB45			For the discrete configuration of direct-on-line starters a further mounting rail is needed for the contactor in addition to the mounting rail existing on the busbar adapter.						
	--	**S0**	For pushing onto the busbar adapter, including fixing screws	2	**8US1998-7CB45**		1	10 units	14O
Standard mounting rail adapters									
 3RA2932-1CA00			For mechanical fixing of motor starter protector and soft starter; for snapping onto standard mounting rail or for screw fixing						
	S2	**S2**	**Single-unit packaging**	▶	**3RA2932-1CA00**		1	1 unit	41B
Manual for SIRIUS 3RW30/3RW40 soft starters[1]									
			The manual can be downloaded free of charge in PDF format from the Internet, see https://support.industry.siemens.com/cs/ww/en/view/38752095.						

[1] The 3RW30 Operating Instructions (3ZX1012-0RW30-2DA1) are included in the scope of supply of the soft starter, or are available (like the manual) as a PDF download in the Industry Online Support Portal, see https://support.industry.siemens.com/cs/ww/en/view/26378636.

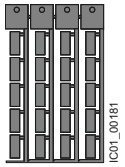
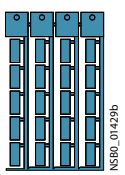
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Accessories

For soft starters Type	Size	Motor starter protectors Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Link modules to motor starter protectors[1]								
 3RA2921-1BA00								
• With screw terminals				**Screw terminals**				
3RW301.	**S00**	**S00**	2	**3RA2921-1BA00**		1	1 unit	41B
3RW302.	**S0**	**S00/S0**	2	**3RA2921-1BA00**		1	1 unit	41B
3RW3036.	**S2**	**S2**	▶	**3RA2931-1AA00**		1	1 unit	41B
3RW3046., 3RW3047.	**S3**	**S3**	▶	**3RA1941-1AA00**		1	1 unit	41B
 3RA2921-2GA00								
• With spring-type terminals				**Spring-type terminals**				
3RW301.	**S00**	**S00**	▶	**3RA2911-2GA00**		1	1 unit	41B
3RW302.	**S0**	**S0**	▶	**3RA2921-2GA00**		1	1 unit	41B

[1] Can be used in size S0 up to maximum 32 A
Can be used in size S2 up to maximum 65 A in combination with 3RA2932-1AC00 standard mounting rail adapter (specially for soft starters).
Can be used in size S3 on mounting plate only.

Version	Functionality Functions	Use	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Covers and push-in lugs (only for 3RW30 03)								
 3RP1902								
Sealable covers	For securing against unauthorized adjustment of setting knobs	For devices with 1 or 2 CO contacts	5	**3RP1902**		1	5 units	41H
 3RP1903								
Push-in lugs For screw fixing		For devices with 1 or 2 CO contacts	5	**3RP1903**		1	10 units	41H

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-type terminals in sizes S00 and S0						
 3RA2908-1A		**Spring-type terminals**				
Screwdrivers For all SIRIUS devices with spring-type terminals length approx. 200 mm, 3.0 mm x 0.5 mm titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B
Blank labels						
 3RT2900-1SB20						
Unit labeling plates[1] For SIRIUS devices						
• 20 mm x 7 mm, titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
 3RT1900-1SB20						
• 20 mm x 7 mm, pastel turquoise	20	**3RT1900-1SB20**		100	340 units	41B

[1] PC labeling system for the individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH see page 16/20.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

More information

Application examples for normal starting (CLASS 10)

Normal starting CLASS 10 (up to 20 s with 300% $I_{n\ Motor}$, one start per hour)
The soft starter rating can be selected to be as high as the rating of the motor used

Application		Conveyor belts	Roller conveyors	Compressors	Small fans [1]	Pumps	Hydraulic pumps
Starting parameters							
• Voltage ramp and current limiting							
- Starting voltage	%	70	60	50	40	40	40
- Starting time	s	10	10	20	20	10	10

[1] The mass inertia of the fan is <10 times the mass inertia of the motor.

Note:
These tables present sample set values and device dimensions. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during commissioning.
The soft starter dimensions should be checked where necessary with the help of Technical Assistance.

Configuration

The 3RW solid-state motor controllers are designed for easy starting conditions. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device.

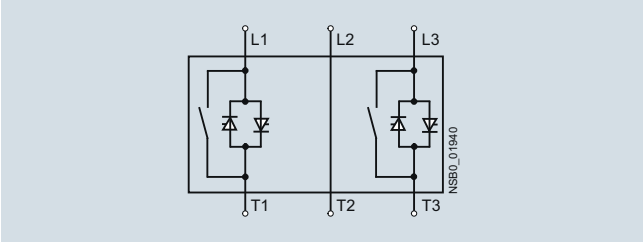
If necessary, an overload relay for heavy starting must be selected where long starting times are involved. PTC sensors are recommended.

No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e.g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses, controls and overload relays) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately. Please observe the maximum switching frequencies specified in the technical specifications.

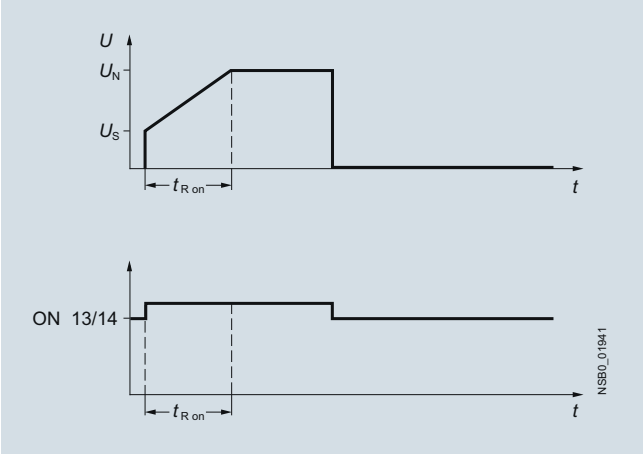
Note:
When three-phase motors are switched on, voltage drops occur as a rule on starters of all types (direct-on-line starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

Schematic circuit diagram of power electronics



A bypass contact system is already integrated in the 3RW30 soft starter and therefore does not have to be ordered separately.

Status graphs



Manual for SIRIUS 3RW30/40

In addition to relevant configuration, commissioning, and service information, the manual also contains example circuits and technical specifications for all devices, see https://support.industry.siemens.com/cs/ww/en/view/38752095.

Overview

SIRIUS 3RW40 soft starters

SIRIUS 3RW40 soft starters have all the same advantages as the 3RW30 soft starters.

The SIRIUS 3RW40 soft starters are characterized above all by their small space requirements. Integrated bypass contacts mean that no power loss has to be taken into the bargain at the power semiconductors (thyristors) after the motor has started up. This cuts down on heat losses, enabling a more compact design and making external bypass circuits superfluous.

At the same time this soft starter comes with additional integrated functions such as adjustable current limiting, motor overload and intrinsic device protection, and optional thermistor motor protection. The higher the motor rating, the more important these functions, because they make it unnecessary to purchase and install protection equipment such as overload relays.

Internal intrinsic device protection prevents the thermal overloading of the thyristors and the power section defects this can cause. As an option the thyristors can also be protected by semiconductor fuses from short-circuiting.

Thanks to integrated status monitoring and fault monitoring, this compact soft starter offers many different diagnostics options. Up to four LEDs and relay outputs permit differentiated monitoring and diagnostics of the operating mechanism by indicating the operating state as well as for example mains or phase failure, missing load, non-permissible tripping time/CLASS setting, thermal overloading or device faults.

Soft starters rated up to 250 kW (at 400 V) for standard applications in three-phase networks are available. Extremely small sizes, low power losses and simple start up are just three of the many advantages of the SIRIUS 3RW40 soft starters.

"Increased safety" type of protection EEx e according to ATEX directive 94/9/EC

The 3RW40 soft starter sizes S0 to S12 are suitable for the starting of explosion-proof motors with "increased safety" type of protection EEx e.

Functionality

The space required by the compact SIRIUS 3RW40 soft starter is often only about one third of that required by a contactor assembly for wye-delta starting of comparable rating. This not only saves space in the control cabinet and on the standard mounting rail but also does away completely with the wiring work needed for wye-delta starters.

This is notable in particular for higher motor ratings which are only rarely available as fully wired solutions.

At the same time the number of cables from the starter to the motor is reduced from six to three. Compact dimensions, short start-up times, easy wiring and fast commissioning make themselves felt as clear-cut cost advantages.

The bypass contacts of these soft starters are protected during operation by an integrated solid-state arc quenching system. This prevents damage to the bypass contacts in the event of a fault, e.g. brief disconnection of the control voltage, mechanical shocks or life-related component defects on the coil operating mechanism or main contact spring.

The starting current of particularly powerful operating mechanisms can place an unjustifiable load on the local supply system. Soft starters reduce this starting current by means of their voltage ramp. Thanks to the adjustable current limiting, the SIRIUS 3RW40 soft starter takes even more pressure off the supply system. It leaves the set start ramp during the ramp-up – the ramp gradient is fixed by the starting voltage and the ramp time – as soon as the selected current limit is reached.

From this moment the voltage of the soft starter is controlled so that the current supplied to the motor remains constant. This process is ended either by completion of the motor ramp-up or by tripping by the intrinsic device protection or the motor overload protection. As the result of this function the actual motor ramp-up can well take longer than the ramp time selected on the soft starter.

Thanks to the integrated motor overload protection according to IEC 60947-4-2, there is no need for an additional overload relay on the new soft starters. The rated motor current, the setting of the overload tripping time (CLASS times) and the reset of the motor overload protection function can be adjusted easily and quickly. Using a 4-step rotary potentiometer it is possible to set different overload tripping times on the soft starter. In addition to CLASS 10, 15 and 20 it is also possible to switch off the motor overload protection if a different motor management control device is to be used for this function, e.g. with connection to PROFIBUS.

Device versions with thermistor motor protection evaluation are available up to a rating of 55 kW (at 400 V). A "Thermoclick" measuring probe can be connected directly, as can a PTC of type A. Thermal overloading of the motor, open circuits and short circuits in the sensor circuit all result in the direct disconnection of the soft starter. And if ever the soft starter trips, various reset options are available the same as with intrinsic device protection and motor load protection: manually with the reset button, automatically or remotely through brief disconnection of the control voltage.

The series of devices comes with the "polarity balancing" control method, which is designed to prevent direct current components in two-phase controlled soft starters. On two-phase controlled soft starters the current resulting from superimposition of the two controlled phases flows in the uncontrolled phase. This results for physical reasons in an asymmetric distribution of the three phase currents during the motor ramp-up. This phenomenon cannot be influenced, but in most applications it is non-critical.

Controlling the power semiconductors results not only in this asymmetry, however, but also in the previously mentioned direct current components which can cause severe noise generation on the motor at starting voltages of less than 50 %.

The control method used for these soft starters eliminates these direct current components during the ramp-up phase and prevents the braking torque which they can cause. It creates a motor ramp-up that is uniform in speed, torque and current rise, thus permitting a particularly gentle, two-phase starting of the motors. At the same time the acoustic quality of the starting operation comes close to the quality of a three-phase controlled soft starter. This is made possible by the on-going dynamic harmonizing and balancing of current half-waves of different polarity during the motor ramp-up. Hence the name "polarity balancing".

Application

The SIRIUS 3RW40 solid-state soft starters are used for the soft starting and stopping of three-phase asynchronous motors.

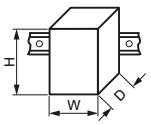
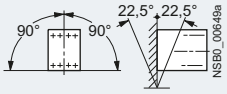
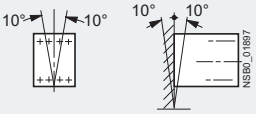
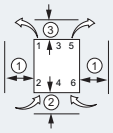
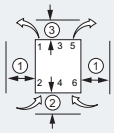
Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire starting time and disturbing direct current components are eliminated in addition. This not only enables the two-phase starting of motors up to 250 kW (at 400 V) but also avoids the current and torque peaks which occur e.g. with wye-delta starters.

Application areas

See "Selection aid for soft starters", on page 6/6.

Technical specifications

More information	
Manual, see https://support.industry.siemens.com/cs/ww/en/view/38752095 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16213/faq	Catalog LV 10, see www.siemens.com/industry/infocenter

Type			3RW402.	3RW403.	3RW404.	3RW405.	3RW407.
Mechanics and environment							
Mounting dimensions (W x H x D)							
• Screw terminals		mm	45 x 125 x 154	55 x 144 x 170	70 x 160 x 188	120 x 198 x 250	160 x 230 x 278
• Spring-type terminals		mm	45 x 150 x 154	55 x 144 x 170	70 x 160 x 188	120 x 198 x 250	160 x 230 x 278
Permissible ambient temperature							
During operation		°C	-25 ... +60; (derating from +40)				
During storage		°C	-40 ... +80				
Weight		kg	0.77	1.35	1.9	4.9 (3RW4055) 6.9 (3RW4056)	8.9
Permissible mounting position[1]							
• With auxiliary fan (for 3RW402. ... 3RW404.)							
• Without auxiliary fan (for 3RW402. ... 3RW404.)						-- (fan integrated in the soft starter)	
Installation type[1]	Stand-alone installation		3RW402.  ① ≥ 15 mm (≥ 0.59 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in) 3RW403., 3RW404.  ① ≥ 30 mm (≥ 1.18 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in)			3RW405., 3RW407. ① ≥ 5 mm (≥ 0.2 in) ② ≥ 75 mm (≥ 3 in) ③ ≥ 100 mm (≥ 4 in)	
Permissible installation altitude		m	5 000 (Derating from 1 000, see "Characteristic Curves", page 6/8); higher on request				
Degree of protection			IP20 for 3RW402.; all others IP00				

[1] In the case of deviations, please observe derating, see manual in the chapter "Configuring".

General data

Type			3RW402., 3RW403., 3RW404.		3RW405., 3RW407.	
Control electronics						
Rated values	Terminal					
Rated control supply voltage	A1/A2	V	24 DC/AC	110 ... 230 AC/DC	115 AC	230 AC
• Tolerance		%	± 20	-15/+10		
Rated frequency		Hz	50/60			
• Tolerance		%	± 10			

Type		3RW402.-..B.4, 3RW403.-..B.4, 3RW404.-..B.4	3RW402.-..B.5, 3RW403.-..B.5, 3RW404.-..B.5	3RW405.-.BB.4, 3RW407.-.BB.4	3RW405.-.BB.5, 3RW407.-.BB.5
Power electronics					
Rated operational voltage	V AC	200 ... 480	400 ... 600	200 ... 460	400 ... 600
Tolerance	%	-15/+10			
Maximum blocking voltage (thyristor)	V AC	1 600		1 400	1 800
Rated frequency	Hz	50/60			
Tolerance	%	± 10			
Uninterrupted duty at 40 °C (% of I_e)	%	115			
Minimum load (% of smallest adjustable rated motor current I_M)	%	20 (at least 2 A)			
Maximum cable length between soft starter and motor	m	300			

Type		3RW4024	3RW4026	3RW4027	3RW4028
Power electronics					
Load rating with rated operational current I_e					
• According to IEC and UL/CSA[1], for individual mounting, AC-53a					
- At 40 °C	A	12.5	25.3	32.2	38
- At 50 °C	A	11	23	29	34
- At 60 °C	A	10	21	26	31
Smallest adjustable rated motor current I_M					
For the motor overload protection	A	5	10	17	23
Power loss					
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	2	8	13	19
• During starting with current limit set to 300 % I_M (40 °C)	W	68	188	220	256
Permissible rated motor current and starts per hour at 40 °C / 50 °C					
• **For normal starting (CLASS 10)**					
- Rated motor current I_M[2], starting time 3 s	A	12.5/11	25/23	32/29	38/34
- Starts per hour[3]	1/h	50/50	23/23	23/23	19/19
- Rated motor current I_M[2], starting time 4 s	A	12.5/11	25/23	32/29	38/34
- Starts per hour[3]	1/h	36/36	15/15	16/16	12/12
• **For heavy starting (CLASS 15)**					
- Rated motor current I_M[2], ramp-up time 4.5 s	A	11/10	23/21	30/27	34/31
- Starts per hour[3]	1/h	49/49	21/21	18/18	18/18
- Rated motor current I_M[2], ramp-up time 6 s	A	11/10	23/21	30/27	34/31
- Starts per hour[3]	1/h	36/36	14/14	13/13	13/13
• **For heavy starting (CLASS 20)**					
- Rated motor current I_M[2], ramp-up time 6 s	A	10/9	21/19	27/24	31/28
- Starts per hour[3]	1/h	47/47	21/21	20/20	18/18
- Rated motor current I_M[2], ramp-up time 8 s	A	10/9	21/19	27/24	31/28
- Starts per hour[3]	1/h	34/34	15/15	14/14	13/13

1) Measurement at 60 °C according to UL/CSA not required.

2) Current limit on soft starter set to 300% I_M, T_u = 40 °C / 50 °C. Maximum adjustable rated motor current I_M dependent on CLASS setting.

3) For intermittent duty S4 with ON period = 30 %, T_u = 40 °C / 50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency in other mounting position, direct mounting, side-by-side mounting, and implementation of optional auxiliary fan, see manual in the chapter "Configuring".

Type		3RW4036	3RW4037	3RW4038	3RW4046	3RW4047
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA[1], for individual mounting, AC-53a						
- At 40 °C	A	45	63	72	80	106
- At 50 °C	A	42	58	62.1	73	98
- At 60 °C	A	39	53	60	66	90
Smallest adjustable rated motor current I_M						
For the motor overload protection	A	23	26	35	43	46
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	6	12	15	12	21
• During starting with current limit set to 300 % I_M (40 °C)	W	316	444	500	576	768
Permissible rated motor current and starts per hour at 40 °C / 50 °C						
• **For normal starting (CLASS 10)**						
- Rated motor current I_M[2], starting time 3 s	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour[3]	1/h	38/38	23/23	22/22	22/22	15/15
- Rated motor current I_M[2], starting time 4 s	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour[3]	1/h	26/26	15/15	15/15	15/15	10/10
• **For heavy starting (CLASS 15)**						
- Rated motor current I_M[2], ramp-up time 4.5 s	A	42/38	50/46	56/52	70/64	84/77
- Starts per hour[3]	1/h	30/30	34/34	34/34	24/24	23/23
- Rated motor current $I_{M2)}$, ramp-up time 6 s	A	42/38	50/46	56/52	70/64	84/ 77
- Starts per hour[3]	1/h	21/21	24/24	24/24	16/16	17/17
• **For heavy starting (CLASS 20)**						
- Rated motor current $I_{M2)}$, ramp-up time 6 s	A	38/34	46/42	50/46	64/58	77/70
- Starts per hour[3]	1/h	30/30	31/31	34/34	23/23	23/23
- Rated motor current $I_{M2)}$, ramp-up time 8 s	A	38/34	46/42	50/46	64/58	77/70
- Starts per hour[3]	1/h	21/21	22/22	24/24	16/16	16/16

[1] Measurement at 60 °C according to UL/CSA not required.

[2] Current limit on soft starter set to 300% I_M, T_u = 40 °C / 50 °C. Maximum adjustable rated motor current I_M dependent on CLASS setting.

[3] For intermittent duty S4 with ON period = 30 %, T_u = 40 °C / 50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency in other mounting position, direct mounting, side-by-side mounting, and implementation of optional auxiliary fan, see manual in the chapter "Configuring".

Type		3RW4055	3RW4056	3RW4073	3RW4074	3RW4075	3RW4076
Power electronics							
Load rating with rated operational current I_e							
• According to IEC and UL/CSA[1], for individual mounting, AC-53a							
- At 40 °C	A	134	162	230	280	356	432
- At 50 °C	A	117	145	205	248	315	385
- At 60 °C	A	100	125	180	215	280	335
Smallest adjustable rated motor current I_M							
For the motor overload protection	A	59	87	80	130	131	207
Power loss							
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	60	75		90	125	165
• During starting with current limit set to 350 %[2] I_M (40 °C)	W	1043	1355	2448	3257	3277	3600
Permissible rated motor current and starts per hour at 40 °C / 50 °C							
• **For normal starting (CLASS 10)**							
- Rated motor current $I_{M2)}$, ramp-up time 10 s	A	134/117	162/145	230/205	280/248	356/315	432/385
- Starts per hour[3]	1/h	20/20	8/8	14/14	20/20	16/16	17/17
- Rated motor current $I_{M2)}$, ramp-up time 20 s	A	134/117	162/145	230/205	280/248	356/315	432/385
- Starts per hour[3]	1/h	7/7	1.4/1.4	3/3	8/8	5/5	5/5
• **For heavy starting (CLASS 15)**							
- Rated motor current $I_{M2)}$, ramp-up time 15 s	A	134/117	152/140	210/200	250/220	341/315	402/385
- Starts per hour[3]	1/h	11/11	8/8	11/11	13/13	11/11	12/12
- Rated motor current $I_{M2)}$, ramp-up time 30 s	A	134/117	152/140	210/200	250/220	341/315	402/385
- Starts per hour[3]	1/h	1.2/1.2	1.7/1.7	1/1	6/6	2/2	2/2
• **For heavy starting (CLASS 20)**							
- Rated motor current $I_{M2)}$, ramp-up time 20 s	A	124/112	142/132	200/185	230/205	311/280	372/340
- Starts per hour[3]	1/h	12/12	9/9	10/10	10/10	10/10	10/10
- Rated motor current $I_{M2)}$, ramp-up time 40 s	A	124/112	142/132	200/185	230/205	311/280	372/340
- Starts per hour[3]	1/h	2/2	2/2	1/1	5/5	1/1	1/1

[1] Measurement at 60 °C according to UL/CSA not required.

[2] Current limit on soft starter set to 350% I_M, T_u = 40 °C / 50 °C. Maximum adjustable rated motor current I_M dependent on CLASS setting.

[3] For intermittent duty S4 with ON period = 70 %, T_u = 40 °C / 50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

General data

Motor feeders with soft starters

The type of coordination according to which the motor feeder with soft starter is mounted depends on the application-specific requirements. Normally, fuseless mounting (combination of motor starter protector and soft starter) is sufficient.

If type of coordination "2" is to be fulfilled, then semiconductor fuses must be fitted in the motor feeder.

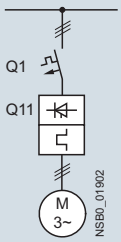
ToC 1 Type of coordination 1 according to IEC 60947-4-1: After a short-circuit incident, the unit is defective and therefore unsuitable for further use (protection of persons and system guaranteed).

ToC 2 Type of coordination 2 in according to IEC 60947-4-1: After a short-circuit incident the unit is suitable for further use (protection of persons and system guaranteed).

The type of coordination refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

The types of coordination are indicated in the corresponding tables by the symbols shown on orange backgrounds.

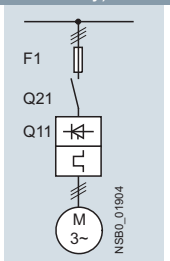
Fuseless version



Soft starters		Motor starter protectors[1]					
ToC 1	Nominal current	400 V + 10 %		Rated current	575 V + 10 %		Rated current
Q11		Q1	$I_{q\ max}$		Q1	$I_{q\ max}$	
Type	A	Type	kA	A	Type	kA	A
Type of coordination "1"							
3RW4024	12.5	3RV2021-4AA/ 3RV2011-4AA (in size S00)	55	16	--	--	--
3RW4026	25	3RV2021-4DA	55	25	--	--	--
3RW4027	32	3RV2021-4EA	55	32	--	--	--
3RW4028	38	3RV2021-4FA	55	40	--	--	--
3RW4036	45	3RV2031-4WA10	10	45	--	--	--
3RW4037	63	3RV2031-4JA10	10	63	--	--	--
3RW4038	72	3RV2031-4KA10	10	75	--	--	--
3RW4046	80	3RV1041-4LA10	11	90	--	--	--
3RW4047	106	3RV1041-4MA10	11	100	--	--	--
3RW4055	134	3VL3720-2DC36	35	200	3VL3720-1DC36	12	200
3RW4056	162	3VL3720-2DC36	35	200	3VL3720-1DC36	12	200
3RW4073	230	3VL4731-2DC36	65	315	3VL5731-3DC36	35	315
3RW4074	280	3VL4731-2DC36	65	315	3VL5731-3DC36	35	315
3RW4075	356	3VL4740-2DC36	65	400	3VL5740-3DC36	35	400
3RW4076	432	3VL5750-2DC36	65	500	3VL5750-3DC36	35	500

[1] The rated motor current must be considered when selecting the devices.

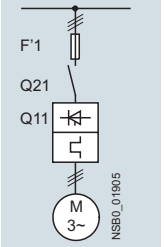
Fused version (line protection only)



Soft starters ToC 1 Q11 Type	Nominal current A	Line protection, maximum F1 Type	Rated current A	Size	Line contactor (optional) Q21 Type
Type of coordination "1"[1]: I_q = 65 kA at 600 V + 5 %					
3RW4024	12.5	3NA3820-6	50	00	3RT2025/ 3RT2018 (in size S00)
3RW4026	25	3NA3822-6	63	00	3RT2026
3RW4027	32	3NA3824-6	80	00	3RT2027
3RW4028	38	3NA3824-6	80	00	3RT2028
3RW4036	45	3NA3130-6	100	1	3RT2036
3RW4037	63	3NA3132-6	125	1	3RT2037
3RW4038	72	3NA3132-6	125	1	3RT2038
3RW4046	80	3NA3136-6	160	1	3RT2038
3RW4047	106	3NA3136-6	160	1	3RT2046
3RW4055	134	3NA3244-6	250	2	3RT1055-6A.36
3RW4056	162	3NA3244-6	250	2	3RT1056-6A.36
3RW4073	230	2 x 3NA3354-6	2 x 355	3	3RT1065-6A.36
3RW4074	280	2 x 3NA3354-6	2 x 355	3	3RT1066-6A.36
3RW4075	356	2 x 3NA3365-6	2 x 500	3	3RT1075-6A.36
3RW4076	432	2 x 3NA3365-6	2 x 500	3	3RT1076-6A.36

[1] The type of coordination "1" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

Fused version with 3NE1 SITOR fuses (semiconductor and line protection)



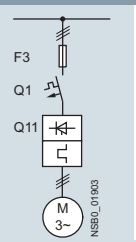
For matching fuse bases, see Catalog LV 10 → "Switch Disconnectors" and Catalog LV 10 → "Fuse Systems" → "SITOR Semiconductor Fuses" or www.siemens.com/sitor.

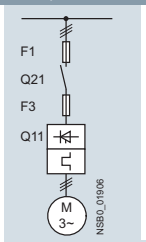
Soft starters ToC 2 Q11 Type	Nominal current A	All-range fuses F'1 Type	Rated current A	Size	Line contactor (optional) Q21 Type
Type of coordination "2"[1]: I_q = 65 kA at 600 V + 5 %					
3RW4024	12.5	3NE1814-0	20	000	3RT2025/ 3RT2018 (in size S00)
3RW4026	25	3NE1803-0	35	000	3RT2026
3RW4027	32	3NE1020-2	80	00	3RT2027
3RW4028	38	3NE1020-2	80	00	3RT2028
3RW4036	45	3NE1020-2	80	00	3RT2036
3RW4037	63	3NE1820-0	80	000	3RT2037
3RW4038	72	3NE1820-0	80	000	3RT2038
3RW4046	80	3NE1021-0	100	00	3RT2038
3RW4047	106	3NE1022-0	125	00	3RT2046
3RW4055	134	3NE1227-2	250	1	3RT1055-6A.36
3RW4056	162	3NE1227-2	250	1	3RT1056-6A.36
3RW4073	230	3NE1331-2	350	2	3RT1065-6A.36
3RW4074	280	3NE1333-2	450	2	3RT1066-6A.36
3RW4075	356	3NE1334-2	500	2	3RT1075-6A.36
3RW4076	432	3NE1435-2	560	3	3RT1076-6A.36

[1] The type of coordination "2" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

General data

Fused version with 3NE3 SITOR fuses (semiconductor protection by fuse, line and overload protection by motor starter protector; alternatively, installation with contactor and overload relay possible)





For matching fuse bases, see Catalog LV 10 → "Switch Disconnectors" and Catalog LV 10 → "Fuse Systems" → "SITOR Semiconductor Fuses" or www.siemens.com/sitor.

Soft starters		Semiconductor fuses, minimum			Semiconductor fuses, minimum			Semiconductor fuses, minimum		
ToC 2	Nominal current		Rated current	Size		Rated current	Size		Rated current	Size
Q11 Type	A	F3 Type	A		F3 Type	A		F3 Type	A	
Type of coordination "2"[1]: I_q = 65 kA at 600 V + 5 %										
3RW4024	12.5	--	--	--	3NE4101	32	0	3NE8015-1	25	00
3RW4026	25	--	--	--	3NE4102	40	0	3NE8017-1	50	00
3RW4027	32	--	--	--	3NE4118	63	0	3NE8018-1	63	00
3RW4028	38	--	--	--	3NE4118	63	0	3NE8020-1	80	00
3RW4036	45	--	--	--	3NE4120	80	0	3NE8020-1	80	00
3RW4037	63	--	--	--	3NE4121	100	0	3NE8021-1	100	00
3RW4038	72	3NE3221	100	1	--	--	--	3NE8022-1	125	00
3RW4046	80	3NE3222	125	1	--	--	--	3NE8022-1	125	00
3RW4047	106	3NE3224	160	1	--	--	--	3NE8024-1	160	00
3RW4055	134	3NE3227	250	1	--	--	--	--	--	--
3RW4056	162	3NE3227	250	1	--	--	--	--	--	--
3RW4073	230	3NE3232-0B	400	1	--	--	--	--	--	--
3RW4074	280	3NE3233	450	1	--	--	--	--	--	--
3RW4075	356	3NE3335	560	2	--	--	--	--	--	--
3RW4076	432	3NE3337-8	710	2	--	--	--	--	--	--

Soft starters		Cylindrical fuses		Line contactor	Motor starter protectors				Line protection, maximum		
ToC 2	Nominal current		Rated current	(optional)	400 V + 10 %	Rated current	575 V + 10 %	Rated current		Rated current	Size
Q11 Type	A	F3 Type	A	Q21 Type	Q1 Type	A	Q1 Type	A	F1 Type	A	
Type of coordination "2"[1]: I_q = 65 kA at 600 V + 5 %											
3RW4024	12.5	3NC2240	40	3RT2025/ 3RT2018 (in size S00)	3RV2021-4AA/ 3RV2011-4AA (in size S00)	16	--	--	3NA3820-6	50	00
3RW4026	25	3NC2263	63	3RT2026	3RV2021-4DA	25	--	--	3NA3822-6	63	00
3RW4027	32	3NC2280	80	3RT2027	3RV2021-4EA	32	--	--	3NA3824-6	80	00
3RW4028	38	3NC2280	80	3RT2028	3RV2021-4FA	40	--	--	3NA3824-6	80	00
3RW4036	45	3NC2280	80	3RT2036	3RV2031-4WA10	45	--	--	3NA3130-6	100	1
3RW4037	63	--	--	3RT2037	3RV2031-4JA10	63	--	--	3NA3132-6	125	1
3RW4038	72	--	--	3RT2038	3RV2031-4KA10	75	--	--	3NA3132-6	125	1
3RW4046	80	--	--	3RT2038	3RV1041-4LA10	90	--	--	3NA3136-6	160	1
3RW4047	106	--	--	3RT2046	3RV1041-4MA10	100	--	--	3NA3136-6	160	1
3RW4055	134	--	--	3RT1055-6A.36	3VL3720	200	3VL3720	200	3NA3244-6	250	2
3RW4056	162	--	--	3RT1056-6A.36	3VL3720	200	3VL3720	200	3NA3244-6	250	2
3RW4073	230	--	--	3RT1065-6A.36	3VL4731	315	3VL5731	315	2 x 3NA3354-6	2 x 355	3
3RW4074	280	--	--	3RT1066-6A.36	3VL4731	315	3VL5731	315	2 x 3NA3354-6	2 x 355	3
3RW4075	356	--	--	3RT1075-6A.36	3VL4740	400	3VL5740	400	2 x 3NA3365-6	2 x 500	3
3RW4076	432	--	--	3RT1076-6A.36	3VL5750	500	3VL5750	500	2 x 3NA3365-6	2 x 500	3

[1] The type of coordination "2" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

Selection and ordering data


3RW402.


3RW403.


3RW404.

3RW ambient temperature 40 °C Rated values of three-phase motors				3RW ambient temperature 50 °C Rated values of three-phase motors					Size	SD[1]	**Normal starting (CLASS 10)**	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Rating at operational voltage U_e 230 V	400 V	500 V	Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V			Article No. / Price per PU			
A	kW	kW	kW	A	hp	hp	hp	hp		d				
Rated operational voltage U_e 200 ... 480 V														
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S0**	2	**3RW4024-□BB□4**	1	1 unit	42G
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	2	**3RW4026-□BB□4**	1	1 unit	42G
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	2	**3RW4027-□BB□4**	1	1 unit	42G
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	2	**3RW4028-□BB□4**	1	1 unit	42G
45	11	**22**	--	42	10	15	**30**	--	**S2**	2	**3RW4036-□BB□4**	1	1 unit	42G
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	2	**3RW4037-□BB□4**	1	1 unit	42G
72	22	**37**	--	62	20	20	**40**	--	**S2**	2	**3RW4038-□BB□4**	1	1 unit	42G
80	22	**45**	--	73	20	25	**50**	--	**S3**	2	**3RW4046-□BB□4**	1	1 unit	42G
106	30	**55**	--	98	30	30	**75**	--	**S3**	2	**3RW4047-□BB□4**	1	1 unit	42G
Rated operational voltage U_e 400 ... 600 V														
12.5	--	5.5	**7.5**	11	--	--	7.5	**10**	**S0**	5	**3RW4024-□BB□5**	1	1 unit	42G
25	--	11	**15**	23	--	--	15	**20**	**S0**	5	**3RW4026-□BB□5**	1	1 unit	42G
32	--	15	**18.5**	29	--	--	20	**25**	**S0**	5	**3RW4027-□BB□5**	1	1 unit	42G
38	--	18.5	**22**	34	--	--	25	**30**	**S0**	5	**3RW4028-□BB□5**	1	1 unit	42G
45	--	22	**30**	42	--	--	30	**40**	**S2**	5	**3RW4036-□BB□5**	1	1 unit	42G
63	--	30	**37**	58	--	--	40	**50**	**S2**	5	**3RW4037-□BB□5**	1	1 unit	42G
72	--	37	**45**	62	--	--	40	**60**	**S2**	5	**3RW4038-□BB□5**	1	1 unit	42G
80	--	45	**55**	73	--	--	50	**60**	**S3**	5	**3RW4046-□BB□5**	1	1 unit	42G
106	--	55	**75**	98	--	--	75	**75**	**S3**	5	**3RW4047-□BB□5**	1	1 unit	42G

Article No. supplement for connection types

- With screw terminals **1**
- With spring-type terminals[2] **2**

Article No. supplement for rated control supply voltage U_s

- 24 V AC/DC **0**
- 110 ... 230 V AC/DC **1**

[1] Soft starter U_e 200 to 480 V with screw terminals: standard delivery time SD = 1 day

[2] Main connection from size S2: screw terminals.

Note:

The listed motor ratings are rough guide values. The soft starter should always be designed on the basis of the required rated operational current of the motor.

The 3RW40 soft starters are designed for easy starting conditions. The selection and ordering data were determined for the following boundary conditions (see also the notes on page 6/6):

- Maximum starting time in s: 10
- Maximum starting current in % of motor current I_e: 300
- Maximum number of starts per hour in 1/h: 5
- Stand-alone installation without auxiliary fan (side-by-side, see manual, increased switching frequency possible using auxiliary fans)

For dimensioning soft starters under other boundary conditions, also for heavy starting up to CLASS 20, we recommend our Simulation Tool for Soft Starters (STS):

https://support.industry.siemens.com/cs/ww/en/view/101494917

or our Technical Assistance:
Tel.: +49 (0) 911-895-5900,
Email: technical-assistance@siemens.com.

SIRIUS 3RW40 for normal starting (CLASS 10) *IE3/IE4* ready


3RW402.


3RW403.


3RW404.

3RW ambient temperature 40 °C Rated values of three-phase motors Operational current I_e	Rating at operational voltage U_e 230 V	400 V	500 V	3RW ambient temperature 50 °C Rated values of three-phase motors Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V	Size	SD[1]	Normal starting (CLASS 10) Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	A	hp	hp	hp	hp		d					
Rated operational voltage U_e 200 ... 480 V, with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC															
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S0**	5	**3RW4024-□TB04**		1	1 unit	42G
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	5	**3RW4026-□TB04**		1	1 unit	42G
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	5	**3RW4027-□TB04**		1	1 unit	42G
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	5	**3RW4028-□TB04**		1	1 unit	42G
45	11	**22**	--	42	10	15	**30**	--	**S2**	5	**3RW4036-□TB04**		1	1 unit	42G
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	5	**3RW4037-□TB04**		1	1 unit	42G
72	22	**37**	--	62	20	20	**40**	--	**S2**	5	**3RW4038-□TB04**		1	1 unit	42G
80	22	**45**	--	73	20	25	**50**	--	**S3**	5	**3RW4046-□TB04**		1	1 unit	42G
106	30	**55**	--	98	30	30	**75**	--	**S3**	5	**3RW4047-□TB04**		1	1 unit	42G
Rated operational voltage U_e 400 ... 600 V, with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC															
12.5	--	5.5	**7.5**	11	--	--	7.5	**10**	**S0**	5	**3RW4024-□TB05**		1	1 unit	42G
25	--	11	**15**	23	--	--	15	**20**	**S0**	5	**3RW4026-□TB05**		1	1 unit	42G
32	--	15	**18.5**	29	--	--	20	**25**	**S0**	5	**3RW4027-□TB05**		1	1 unit	42G
38	--	18.5	**22**	34	--	--	25	**30**	**S0**	5	**3RW4028-□TB05**		1	1 unit	42G
45	--	22	**30**	42	--	--	30	**40**	**S2**	5	**3RW4036-□TB05**		1	1 unit	42G
63	--	30	**37**	58	--	--	40	**50**	**S2**	5	**3RW4037-□TB05**		1	1 unit	42G
72	--	37	**45**	62	--	--	40	**60**	**S2**	5	**3RW4038-□TB05**		1	1 unit	42G
80	--	45	**55**	73	--	--	50	**60**	**S3**	5	**3RW4046-□TB05**		1	1 unit	42G
106	--	55	**75**	98	--	--	75	**75**	**S3**	5	**3RW4047-□TB05**		1	1 unit	42G

Article No. supplement for connection types

- With screw terminals **1**
- With spring-type terminals[2] **2**

[1] Soft starter U_e 200 to 480 V with screw terminals: standard delivery time SD = 1 day

[2] Main connection from size S2: screw terminals.

Note:

The listed motor ratings are rough guide values. The soft starter should always be designed on the basis of the required rated operational current of the motor.

The 3RW40 soft starters are designed for easy starting conditions. The selection and ordering data were determined for the following boundary conditions (see also the notes on page 6/6):

- Maximum starting time in s: 10
- Maximum starting current in % of motor current I_e: 300
- Maximum number of starts per hour in 1/h: 5
- Stand-alone installation without auxiliary fan (side-by-side, see manual, increased switching frequency possible using auxiliary fans)

For dimensioning soft starters under other boundary conditions, also for heavy starting up to CLASS 20, we recommend our Simulation Tool for Soft Starters (STS):

https://support.industry.siemens.com/cs/ww/en/view/101494917

or our Technical Assistance:
Tel.: +49 (0) 911-895-5900,
Email: technical-assistance@siemens.com.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

3RW405.

3RW407.

3RW ambient temperature 40 °C Rated values of three-phase motors				3RW ambient temperature 50 °C Rated values of three-phase motors					Size	SD[1]	**Normal starting (CLASS 10)**	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Rating at operational voltage U_e 230 V	400 V	500 V	Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V			Article No. / Price per PU			
A	kW	kW	kW	A	hp	hp	hp	hp		d				
Rated operational voltage U_e 200 ... 460 V														
134	37	**75**	--	117	30	40	**75**	--	**S6**	5	**3RW4055-□BB□4**	1	1 unit	42G
162	45	**90**	--	145	40	50	**100**	--		5	**3RW4056-□BB□4**	1	1 unit	42G
230	75	**132**	--	205	60	75	**150**	--	**S12**	5	**3RW4073-□BB□4**	1	1 unit	42G
280	90	**160**	--	248	75	100	**200**	--		5	**3RW4074-□BB□4**	1	1 unit	42G
356	110	**200**	--	315	100	125	**250**	--		5	**3RW4075-□BB□4**	1	1 unit	42G
432	132	**250**	--	385	125	150	**300**	--		5	**3RW4076-□BB□4**	1	1 unit	42G
Rated operational voltage U_e 400 ... 600 V														
134	--	75	**90**	117	--	--	75	**100**	**S6**	5	**3RW4055-□BB□5**	1	1 unit	42G
162	--	90	**110**	145	--	--	100	**150**		5	**3RW4056-□BB□5**	1	1 unit	42G
230	--	132	**160**	205	--	--	150	**200**	**S12**	5	**3RW4073-□BB□5**	1	1 unit	42G
280	--	160	**200**	248	--	--	200	**250**		5	**3RW4074-□BB□5**	1	1 unit	42G
356	--	200	**250**	315	--	--	250	**300**		5	**3RW4075-□BB□5**	1	1 unit	42G
432	--	250	**315**	385	--	--	300	**400**		5	**3RW4076-□BB□5**	1	1 unit	42G

Article No. supplement for connection type[2]

- With spring-type terminals **2 6**
- With screw terminals

Article No. supplement for rated control supply voltage U_s[3]

- 115 V AC **3 4**
- 230 V AC

1) Soft starter U_e 200 to 460 V with screw terminals:
Standard delivery time SD = 1 day
Soft starter U_e 400 to 600 V with screw terminals:
Standard delivery time RL = 2 days

2) Main circuit connection: busbar connection.

3) Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

The listed motor ratings are rough guide values. The soft starter should always be designed on the basis of the required rated operational current of the motor.

The 3RW40 soft starters are designed for easy starting conditions. The selection and ordering data were determined for the following boundary conditions (see also the notes on page 6/6):

- Maximum starting time in s: 10
- Maximum starting current in % of motor current I_e: 300
- Maximum number of starts per hour in 1/h: 5
- Stand-alone installation (side-by-side, see manual)

In case of additional requirements, it may be necessary to choose a larger device. In some cases, however, the safety margins taken into account in the selection also permit the listed units to be used in boundary conditions which are slightly more demanding. Detailed technical information for a configuration which is tailored exactly to the application, see manual.

For dimensioning soft starters under other boundary conditions, also for heavy starting up to CLASS 20, we recommend our Simulation Tool for Soft Starters (STS):

https://support.industry.siemens.com/cs/ww/en/view/101494917

or our Technical Assistance:
Tel.: +49 (0) 911-895-5900,
Email: technical-assistance@siemens.com.

Accessories

Selection and ordering data

	Conductor cross-section			Tightening torque	For soft starter size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded								
	mm²	mm²	AWG	Nm		d					
Three-phase infeed terminals											
 3RV2925-5AB	2.5 … 25	2.5 … 16	10 … 4	3 … 4	**S0** (3RW402.)	▶	**3RV2925-5AB**		1	1 unit	41E

	For soft starters Type	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Box terminal blocks for soft starters									
 3RT1955-4G, 3RT1956-4G	**For round and ribbon cables** (2 units required for each device)								
	3RW405.	**S6**	• Up to 70 mm²	▶	**3RT1955-4G**		1	1 unit	41B
			• Up to 120 mm²	▶	**3RT1956-4G**		1	1 unit	41B
			Auxiliary conductor connection for box terminals	5	**3TX7500-0A**		1	1 unit	41B
	3RW407.	**S12**	• Up to 240 mm² (with auxiliary conductor connection)	▶	**3RT1966-4G**		1	1 unit	41B
Auxiliary terminals									
 3RT2946-4F	**Auxiliary terminals, 3-pole**								
	3RW404.	**S3**		5	**3RT2946-4F**		1	1 unit	41B
Covers for soft starters									
 3RT1936-4EA2	**Terminal covers for box terminals** Additional touch protection to be fitted at the box terminals (2 units required per device)								
	3RW403.	**S2**		2	**3RT2936-4EA2**		1	1 unit	41B
	3RW404.	**S3**		▶	**3RT2946-4EA2**		1	1 unit	41B
	3RW405.	**S6**		▶	**3RT1956-4EA2**		1	1 unit	41B
	3RW407.	**S12**		▶	**3RT1966-4EA2**		1	1 unit	41B
 3RT1946-4EA1, 3RT1966-4EA1	**Terminal covers for cable lugs and busbar connections**								
	3RW404.	**S3**	For complying with the phase clearances and as touch protection if box terminal is removed (2 units required for each device)	5	**3RT1946-4EA1**		1	1 unit	41B
	3RW405.	**S6**		▶	**3RT1956-4EA1**		1	1 unit	41B
	3RW407.	**S12**		▶	**3RT1966-4EA1**		1	1 unit	41B
	Also fits in case of S6 and S12 on mounted box terminals								
 3RW4900-0PB00	**Sealing covers**								
	3RW402. to 3RW404.	**S0, S2, S3**		▶	**3RW4900-0PB10**		1	1 unit	42G
	3RW405. and 3RW407.	**S6, S12**		▶	**3RW4900-0PB00**		1	1 unit	42G

* You can order this quantity or a multiple thereof.
Illustrations are approximate

For motor starter protectors Size	For soft starter Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Standard mounting rail adapters								
 3RA2932-1CA00								
S2	**S2**	For mechanical fixing of motor starter protector and soft starter; for snapping onto standard mounting rail or for screw fixing **Single-unit packaging**	▶	**3RA2932-1CA00**		1	1 unit	41B

For soft starters Type	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Modules for RESET[1]								
 3RU1900-2A.71		**Modules for remote RESET, electrical** Operating range 0.85 ... 1.1 x U_s, power consumption 80 VA AC, 70 W DC, ON period 0.2 s ... 4 s, switching frequency 60/h						
3RW405. and 3RW407.	**S6, S12**	• 24 ... 30 V AC/DC	2	**3RU1900-2AB71**		1	1 unit	41F
		• 110 ... 127 V AC/DC	2	**3RU1900-2AF71**		1	1 unit	41F
		• 220 ... 250 V AC/DC	2	**3RU1900-2AM71**		1	1 unit	41F
 Mechanical RESET		**Mechanical RESET comprising**						
3RW405. and 3RW407.	**S6, S12**	• Resetting plungers, holders and formers	▶	**3RU1900-1A**		1	1 unit	41F
		• Matching pushbutton IP65, Ø 22 mm, 12 mm stroke	5	**3SB3000-0EA11**		1	1 unit	41J
		• Extension plungers	2	**3SX1335**		1	1 unit	41J
 3RU1900-1B, 3RU1900-1C		**Cable releases with holder for RESET** For ∅ 6.5 mm holes in the control panel; max. control panel thickness 8 mm						
3RW405. and 3RW407.	**S6, S12**	• Length 400 mm	▶	**3RU1900-1B**		1	1 unit	41F
		• Length 600 mm	▶	**3RU1900-1C**		1	1 unit	41F

[1] Remote RESET already integrated in the 3RW402. to 3RW404. soft starters.

For soft starters Type	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fans (to increase switching frequency and for device mounting in positions different to the standard position)							
 3RW4928-8VB00, 3RW4947-8VB00							
3RW402.	**S0**	▶	**3RW4928-8VB00**		1	1 unit	42G
3RW403., 3RW404.	**S2, S3**	▶	**3RW4947-8VB00**		1	1 unit	42G
Manual for SIRIUS 3RW30/3RW40 soft starters[1]							
The manual can be downloaded free of charge from the Internet, see https://support.industry.siemens.com/cs/ww/en/view/38752095.							

[1] The respective Operating Instructions 3RW402./3./4. (3ZX1012-0RW40-2DA1) or 3RW405./7. (3ZX1012-0RW40-1AA1) are included in the scope of supply of the soft starter or are available (like the manual) – as a PDF download in the Industry Online Support Portal, see https://support.industry.siemens.com/cs/ww/en/view/25900502

Accessories

Link modules to motor starter protectors[1)]

For soft starters Type	Size	Motor starter protectors Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
• With screw terminals								
3RW402.	**S0**	**S00/S0**	2	**3RA2921-1BA00**		1	1 unit	41B
3RW4036.	**S2**	**S2**	▶	**3RA2931-1AA00**		1	1 unit	41B
3RW4046., 3RW4047.	**S3**	**S3**	▶	**3RA1941-1AA00**		1	1 unit	41B


3RA2921-1BA00

• With spring-type terminals								
3RW402.	**S0**	**S0**	▶	**3RA2921-2GA00**		1	1 unit	41B


3RA2921-2GA00

1) Can be used in size S0 up to maximum 32 A.
Can be used in size S2 up to maximum 65 A in combination with 3RA2932-1AC00 standard mounting rail adapter (specially for soft starters).
Can be used in size S3 with mounting plate only.

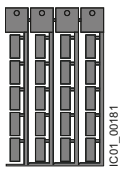
Tools for opening spring-type terminals in sizes S00 and S0:

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		Spring-type terminals				
Screwdrivers For all SIRIUS devices with spring-type terminals length approx. 200 mm, 3.0 mm x 0.5 mm titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B

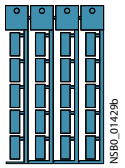

3RA2908-1A

Blank labels

Unit labeling plates[1)] For SIRIUS devices							
• 20 mm x 7 mm, titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
• 20 mm x 7 mm, pastel turquoise	20	**3RT1900-1SB20**		100	340 units	41B



3RT2900-1SB20



3RT1900-1SB20

1) PC labeling system for the individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH see page 16/20.

Spare parts

Fans

For soft starters Type	Size	Version Rated control supply voltage U_s	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fans								
3RW405.-.BB3.	**S6**	115 V AC	▶	**3RW4936-8VX30**		1	1 unit	42G
3RW405.-.BB4.	**S6**	230 V AC	▶	**3RW4936-8VX40**		1	1 unit	42G
3RW407.-.BB3.	**S12**	115 V AC	▶	**3RW4947-8VX30**		1	1 unit	42G
3RW407.-.BB4.	**S12**	230 V AC	▶	**3RW4947-8VX40**		1	1 unit	42G


3RW4936/4947-8VX.0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

More information

Application examples for normal starting (CLASS 10)

Normal starting CLASS 10 (up to 20 s with 350 % $I_{n\ Motor}$, one start per hour)
The soft starter rating can be selected to be as high as the rating of the motor used.

Application		Conveyor belts	Roller conveyors	Compressors	Small fans [1]	Pumps	Hydraulic pumps
Starting parameters							
• Voltage ramp and current limiting							
- Starting voltage	%	70	60	50	40	40	40
- Starting time	s	10	10	10	10	10	10
- Current limiting value		5 x I_M	5 x I_M	4 x I_M	4 x I_M	4 x I_M	4 x I_M
Stopping time	s	5	5	0	0	10	0

[1] The mass inertia of the fan is <10 times the mass inertia of the motor.

Application examples for heavy starting (CLASS 20)

Heavy starting CLASS 20 (up to 40 s with 350 % $I_{n\ Motor}$, one start per hour)
The soft starter has to be selected at least one performance class higher than the motor used.

Application		Stirrers	Centrifuges
Starting parameters			
• Voltage ramp and current limiting			
- Starting voltage	%	40	40
- Starting time	s	20	20
- Current limiting value		4 x I_M	4 x I_M
Stopping time		0	0

Note:

These tables present sample set values and device dimensions. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during commissioning.

For dimensioning soft starters under other boundary conditions, also for heavy starting up to CLASS 20, we recommend our Simulation Tool for Soft Starters (STS):

https://support.industry.siemens.com/cs/ww/en/view/101494917

or our Technical Assistance:
Tel.: +49 (0) 911-895-5900,
Email: technical-assistance@siemens.com.

Accessories

Configuration

The solid-state 3RW soft starters are designed for easy starting conditions. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device.

Where long starting times are involved, the integrated electronic overload relay for heavy starting should not be disconnected. PTC sensors are recommended. This also applies for the soft ramp-down because during the ramp down time an additional current loading applies in contrast to coasting down.

In the case of high switching frequencies in S4 mode, Siemens recommends the use of PTC sensors. For corresponding device versions with integrated thermistor motor protection or separate thermistor evaluation devices, see page 10/157.

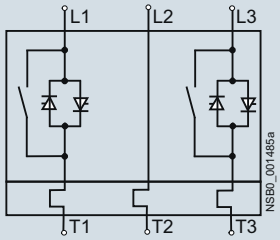
No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e.g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses and controls) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately. Please observe the maximum switching frequencies specified in the technical specifications.

Note:

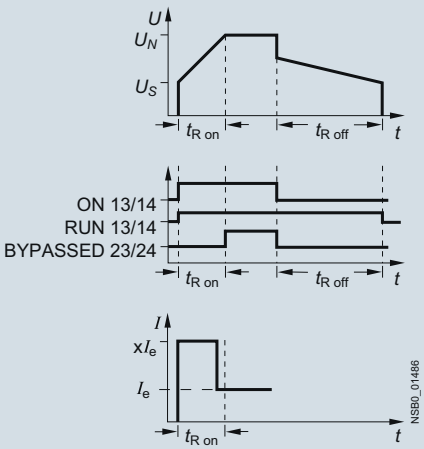
When three-phase motors are switched on, voltage drops occur as a rule on starters of all types (direct-on-line starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

Schematic circuit diagram of power electronics



A bypass contact system and electronic overload relay are already integrated in the 3RW40 soft starter and therefore do not have to be ordered separately.

Status graphs



Manual for SIRIUS 3RW30/40

In addition to relevant configuration, commissioning, and service information, the manual also contains example circuits and technical specifications for all devices, see https://support.industry.siemens.com/cs/ww/en/view/38752095.

Overview

3RW44 soft starter with PROFINET communication module

In addition to soft starting and soft ramp-down, the solid-state SIRIUS 3RW44 soft starters provide numerous functions for higher-level requirements. They cover a performance range up to 710 kW (at 400 V) in the inline circuit and up to 1 200 kW (at 400 V) in the inside-delta circuit.

The 3RW44 soft starters are characterized by a compact design for space-saving and clearly arranged control cabinet layouts. For optimized motor starting and stopping the innovative SIRIUS 3RW44 soft starters are an attractive alternative with considerable savings potential compared to applications with a frequency converter. The new torque control and adjustable current limiting enable the High Feature soft starters to be used in nearly every conceivable task. They guarantee the reliable avoidance of sudden torque applications and current peaks during motor starting and stopping. This creates savings potential when calculating the size of the switchgear and when servicing the machinery installed. Be it for inline circuits or inside-delta circuits – the SIRIUS 3RW44 soft starter offers savings especially in terms of size and equipment costs.

The bypass contacts already integrated in the soft starter bypass the thyristors after a motor ramp-up is detected. This results in a further great reduction in the heat loss occurring during operation of the soft starter at rated value.

Combinations of various starting, operating and ramp-down possibilities ensure an optimum adaptation to the application-specific requirements. Operation and commissioning can be performed with the menu-controlled keypad and a menu-prompted, multi-line graphic display with background lighting. The optimized motor ramp-up and ramp-down can be effected quickly, easily and reliably by means of just a few settings with a previously selected language. Four-key operation and plain-text displays for each menu point guarantee full clarity at every moment of the parameterization and operation.

Applicable standards

- IEC 60947-4-2
- UL/CSA

Functionality

Equipped with modern, ergonomic user prompting the 3RW44 soft starters can be commissioned quickly and easily using a keypad and a menu-prompted, multi-line graphic display with background lighting. The optimized motor ramp-up and ramp-down can be effected quickly, easily and reliably by means of just a few settings with a selectable language. Four-key operation and plain-text displays for each menu point guarantee full clarity at every moment of the parameterization and operation. During operation and when control voltage is applied, the display field continuously presents measured values and operating values as well as warnings and fault messages. An external display and operator module can be connected by means of a connection cable to the soft starter, thus enabling active indications and the like to be read directly from the control cabinet door.

The SIRIUS 3RW44 soft starters are equipped with optimum functionality. An integral bypass contact system reduces the power loss of the soft starter during operation.
This reliably prevents heating of the switchgear environment. The SIRIUS 3RW44 soft starters have internal intrinsic device protection. This prevents thermal overloading of the power section's thyristors, e.g. due to unacceptably high closing operations.

Wiring outlay for installing an additional motor overload relay is no longer needed as the SIRIUS 3RW44 soft starters perform this function too. In addition they offer adjustable trip classes and a thermistor motor protection function. As an option the thyristors can also be protected by SITOR semiconductor fuses from short-circuiting so that the soft starter is still functional after a short circuit (type of coordination "2"). And even inrush current peaks are reliably avoided thanks to adjustable current limiting.

Optionally, SIRIUS 3RW44 soft starters can be upgraded with a PROFIBUS DP or PROFINET module. Thanks to their communication capability and their programmable control inputs and relay outputs the SIRIUS 3RW44 soft starters can be very easily and quickly integrated in higher-level controllers.

In addition a creep speed function is available for positioning and setting jobs. With this function the motor can be controlled in both directions of rotation with reduced torque and an adjustable, low speed.

On the other hand the SIRIUS 3RW44 soft starters offer a new, combined DC braking function for the fast stopping of driving loads.

General data

Highlights

- Soft starting with breakaway pulse, torque control or voltage ramp, adjustable torque or current limiting as well as any combination of these, depending on load type
- Integrated bypass contact system to minimize power loss
- Various setting options for the starting parameters such as starting torque, starting voltage, ramp-up and ramp-down time, and much more in three separate parameter sets
- Start-up detection
- Inside-delta circuit for savings in terms of size and equipment costs
- Various ramp-down modes selectable: coasting down and torque-controlled ramp-down, pump stop, combined DC braking
- Solid-state motor overload and intrinsic device protection
- Thermistor motor protection
- Keypad with a menu-prompted, multi-line graphic display with background lighting
- Interface for communication with the PC for more accurate setting of the parameters as well as for control and monitoring
- Simple integration to the motor feeder
- Simple mounting and commissioning
- Display of operating states and fault messages
- Connection to PROFIBUS and PROFINET with optional PROFIBUS DP or PROFINET module
- External display and operator module
- Mains voltages from 200 to 690 V, 50 to 60 Hz
- Can be used up to 60 °C (derating from 40 °C)

Soft Starter ES software program

The Soft Starter ES software is used for the parameterization, monitoring and service diagnostics of SIRIUS 3RW44 High Feature soft starters, see page 14/9.

SIRIUS 3RW44 soft starter block library for SIMATIC PCS 7

The SIRIUS 3RW44 soft starter PCS 7 block library can be used for simple and easy integration of SIRIUS 3RW44 soft starters into the SIMATIC PCS 7 process control system, see page 14/12.

Application

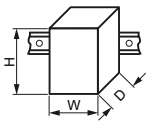
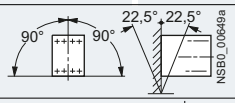
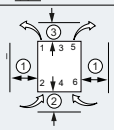
The SIRIUS 3RW44 solid-state soft starters are suitable for the torque-controlled soft starting and ramp-down as well as braking of three-phase asynchronous motors.

Application areas

See "Selection aid for soft starters", on page 6/6.

Technical specifications

More information	
Manual, see https://support.industry.siemens.com/cs/ww/en/view/21772518	Catalog LV 10, see www.siemens.com/industry/infocenter
FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16214/faq	

Type		3RW442.	3RW443.	3RW444.	3RW445.	3RW446.
Mechanics and environment						
Mounting dimensions (WxHxD) 						
• Screw terminals	mm	170 x 184 x 270	170 x 198 x 270	210 x 230 x 298	510 x 638.5 x 290	576 x 667 x 290
• Spring-type terminals	mm	170 x 184 x 270	170 x 198 x 270	210 x 230 x 298	510 x 638.5 x 290	576 x 667 x 290
Permissible ambient temperature						
During operation	°C	0 ... +60; (derating from +40)				
During storage	°C	-25 ... +80				
Weight	kg	6.5	7.9	11.5	50	78
Permissible mounting position						
Installation type		Stand-alone installation  ① ≥ 5 mm (≥ 0.2 in) ② ≥ 75 mm (≥ 3 in) ③ ≥ 100 mm (≥ 4 in)				
Permissible installation altitude	m	5 000 (derating from 1 000, see "Characteristic Curves", page 6/8); higher on request				
Degree of protection		IP00				

Type	Terminal		3RW44..-.BC3.	3RW44..-.BC4.
Control electronics				
Rated values				
Rated control supply voltage	A1/A2/PE	V	115 AC	230 AC
• Tolerance		%	-15/+10	
Rated frequency		Hz	50 ... 60	
• Tolerance		%	± 10	

Type		3RW44..-.BC.4	3RW44..-.BC.5	3RW44..-.BC.6
Power electronics				
Rated operational voltage for inline circuit [1]	V AC	200 ... 460	400 ... 600	400 ... 690
Tolerance	%	-15/+10		
Maximum blocking voltage (thyristor)	V AC	1 400	1 800	
Rated operational voltage for inside-delta circuit	V AC	200 ... 460	400 ... 600	
Tolerance	%	-15/+10		
Rated frequency	Hz	50 ... 60		
Tolerance	%	± 10		
Uninterrupted duty at 40 °C (% of I_e)	%	115		
Minimum load (% of set motor current I_M)	%	8		
Maximum cable length between soft starter and motor	m	500 [2]		

1) 3RW44 soft starters may be used in isolated supply networks (IT systems) up to 600 V AC.

2) At the project configuration stage, it is important to make allowance for the voltage drop on the motor cable up to the motor connection. If necessary, higher values for the rated operational voltage or current must be calculated accordingly for the soft starter.

General data

Type		3RW4422	3RW4423	3RW4424	3RW4425	3RW4426	3RW4427
Power electronics							
Rated operational current I_e	A	29	36	47	57	77	93
Load rating with rated operational current I_e							
• according to IEC and UL/CSA[1], for individual mounting, AC-53a							
- At 40 / 50 / 60 °C	A	29/26/23	36/32/29	47/42/37	57/51/45	77/68/59	93/82/72
Smallest adjustable rated motor current I_M For the motor overload protection	A	5	7	9	11	15	18
Power loss							
• In operation after completed starting with uninterrupted rated operational current (40 / 50 / 60 °C) approx.	W	8/7.5/7	10/9/8.5	32/31/29	36/34/31	45/41/37	55/51/47
• During starting with current limit set to 350% I_M (40 / 50 / 60 °C)	W	400/345/290	470/410/355	600/515/440	725/630/525	940/790/660	1160/980/830
Permissible rated motor current and starts per hour at 40 °C / 50 °C / 60 °C							
• For normal starting (CLASS 5)							
- Rated motor current I_M[2], ramp-up time 5 s	A	29/26/23	36/32.5/29	47/42/37	57/51/45	77/68/59	93/82/72
- Starts per hour[3]	1/h	41	34	41	41	41	41
- Rated motor current I_M[2], ramp-up time 10 s	A	29/26/23	36/32.5/29	47/42/37	57/51/45	77/68/59	93/82/72
- Starts per hour[3]	1/h	20	15	20	20	20	20
• For normal starting (CLASS 10)							
- Rated motor current I_M[2], ramp-up time 10 s	A	29/26/23	36/32.5/29	47/42/37	57/51/45	77/68/59	93/82/72
- Starts per hour[3]	1/h	20	15	20	20	20	20
- Rated motor current I_M[2], ramp-up time 20 s	A	29/26/23	36/32.5/29	47/42/37	57/51/45	77/68/59	93/82/72
- Starts per hour[3]	1/h	10	6	10	10	8	8
• For normal starting (CLASS 15)							
- Rated motor current I_M[2], ramp-up time 15 s	A	29/26/23	36/32.5/29	47/42/37	57/51/45	77/68/59	93/82/72
- Starts per hour[3]	1/h	13	9	13	13	13	13
- Rated motor current I_M[2], ramp-up time 30 s	A	29/26/23	36/32.5/29	47/42/37	57/51/45	77/68/59	93/82/72
- Starts per hour[3]	1/h	6	4	6	6	6	6
• For heavy starting (CLASS 20)							
- Rated motor current I_M[2], ramp-up time 20 s	A	29/26 /23	36/32.5/29	47/42/37	57/51/45	77/68/59	88/80/72
- Starts per hour[3]	1/h	10	6	10	10	10	10
- Rated motor current I_M[2], ramp-up time 40 s	A	29/26/23	36/32.5/29	47/42/37	57/51/45	77/68/59	88/80/72
- Starts per hour[3]	1/h	4	2	4	5	1.8	0.8
• For very heavy starting (CLASS 30)							
- Rated motor current I_M[2], ramp-up time 30 s	A	29/26/23	36/32.5/29	47/42/37	57/51/45	65/60/54	77/70/63
- Starts per hour[3]	1/h	6	4	6	6	6	6
- Rated motor current I_M[2], ramp-up time 60 s	A	29/26/23	36/32.5/29	47/42/37	57/51/45	65/60/54	77/70/63
- Starts per hour[3]	1/h	1.8	0.8	3.3	1.5	2	1

[1] Measurement at 60 °C according to UL/CSA not required.

[2] Current limit on soft starter set to 350 % I_M, ON period = 70 %. Maximum adjustable rated motor current I_M dependent on CLASS setting.

[3] For intermittent duty S4 with ON period = 70 %, T_u = 40 / 50 / 60 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW4434	3RW4435	3RW4436
Power electronics				
Rated operational current I_e	A	113	134	162
Load rating with rated operational current I_e				
• According to IEC and UL/CSA[1], for individual mounting, AC-53a				
- At 40 / 50 / 60 °C	A	113/100/88	134/117/100	162/145/125
Smallest adjustable rated motor current I_M For the motor overload protection	A	22	26	32
Power loss				
• In operation after completed starting with uninterrupted rated operational current (40 / 50 / 60 °C) approx.	W	64/58/53	76/67/58	95/83/71
• During starting with current limit set to 350% I_M (40 / 50 / 60 °C)	W	1 350/1 140/970	1 700/1 400/1 140	2 460/1 980/1 620
Permissible rated motor current and starts per hour at 40 °C / 50 °C / 60 °C				
• **For normal starting (CLASS 5)**				
- Rated motor current I_M[2], ramp-up time 5 s	A	113/100/88	134/117/100	162/145/125
- Starts per hour[3]	1/h	41	39	41
- Rated motor current I_M[2], ramp-up time 10 s	A	113/100/88	134/117/100	162/145/125
- Starts per hour[3]	1/h	20	15	20
• **For normal starting (CLASS 10)**				
- Rated motor current I_M[2], ramp-up time 10 s	A	113/100/88	134/117/100	162/145/125
- Starts per hour[3]	1/h	20	15	20
- Rated motor current I_M[2], ramp-up time 20 s	A	113/100/88	134/117/100	162/145/125
- Starts per hour[3]	1/h	9	6	7
• **For normal starting (CLASS 15)**				
- Rated motor current I_M[2], ramp-up time 15 s	A	113/100/88	134/117/100	162/145/125
- Starts per hour[3]	1/h	13	9	12
- Rated motor current I_M[2], ramp-up time 30 s	A	113/100/88	134/117/100	162/145/125
- Starts per hour[3]	1/h	6	6	1
• **For heavy starting (CLASS 20)**				
- Rated motor current I_M[2], ramp-up time 20 s	A	106/97/88	125/113/100	147/134/122
- Starts per hour[3]	1/h	9	9	10
- Rated motor current I_M[2], ramp-up time 40 s	A	106/97/88	125/113/100	147/134/122
- Starts per hour[3]	1/h	1.5	2	1
• **For very heavy starting (CLASS 30)**				
- Rated motor current I_M[2], ramp-up time 30 s	A	91/84/76	110/100/90	120/110/100
- Starts per hour[3]	1/h	6	6	6
- Rated motor current I_M[2], ramp-up time 60 s	A	91/84/76	110/100/90	120/110/100
- Starts per hour[3]	1/h	2	2	2

1) Measurement at 60 °C according to UL/CSA not required.

2) Current limit on soft starter set to 350 % I_M, ON period = 70 %. Maximum adjustable rated motor current I_M dependent on CLASS setting.

3) For intermittent duty S4 with ON period = 70 %, T_u = 40 / 50 / 60 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

General data

Type		3RW4443	3RW4444	3RW4445	3RW4446	3RW4447
Power electronics						
Rated operational current I_e	A	203	250	313	356	432
Load rating with rated operational current I_e						
• According to IEC and UL/CSA[1], for individual mounting, AC-53a						
- At 40 / 50 / 60 °C	A	203/180/156	250/215/185	313/280/250	356/315/280	432/385/335
Smallest adjustable rated motor current I_M	A	40	50	62	71	86
For the motor overload protection						
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 / 50 / 60 °C) approx.	W	89/81/73	110/94/83	145/126/110	174/147/126	232/194/159
• During starting with current limit set to 350% I_M (40 / 50 / 60 °C)	W	3350/2600/2150	4000/2900/2350	4470/4000/3400	5350/4050/3500	5860/5020/4200
Permissible rated motor current and starts per hour at 40 °C / 50 °C / 60 °C						
• **For normal starting (CLASS 5)**						
- Rated motor current I_M[2], ramp-up time 5 s	A	203/180/156	250/215/185	313/280/250	356/315/280	432/385/335
- Starts per hour[3]	1/h	41	41	41	41	39
- Rated motor current I_M[2], ramp-up time 10 s	A	203/180/156	250/215/185	313/280/250	356/315/280	432/385/335
- Starts per hour[3]	1/h	20	20	19	17	16
• **For normal starting (CLASS 10)**						
- Rated motor current I_M[2], ramp-up time 10 s	A	203/180/156	250/215/185	313/280/250	356/315/280	432/385/335
- Starts per hour[3]	1/h	20	20	19	17	16
- Rated motor current I_M[2], ramp-up time 20 s	A	203/180/156	250/215/185	313/280/250	356/315/280	432/385/335
- Starts per hour[3]	1/h	9	10	6	4	5
• **For normal starting (CLASS 15)**						
- Rated motor current I_M[2], ramp-up time 15 s	A	203/180/156	240/215/185	313/280/250	325/295/265	402/385/335
- Starts per hour[3]	1/h	13	13	10	13	11
- Rated motor current I_M[2], ramp-up time 30 s	A	203/180/156	240/215/185	313/280/250	325/295/265	402/385/335
- Starts per hour[3]	1/h	3	6	1	2	1
• **For heavy starting (CLASS 20)**						
- Rated motor current I_M[2], ramp-up time 20 s	A	195/175/155	215/195/180	275/243/221	285/263/240	356/326/295
- Starts per hour[3]	1/h	10	10	10	10	10
- Rated motor current I_M[2], ramp-up time 40 s	A	195/175/155	215/195/180	275/243/221	285/263/240	356/326/295
- Starts per hour[3]	1/h	1	5	1	3	1
• **For very heavy starting (CLASS 30)**						
- Rated motor current I_M[2], ramp-up time 30 s	A	162/148/134	180/165/150	220/201/182	240/223/202	285/260/235
- Starts per hour[3]	1/h	6	6	6	6	6
- Rated motor current I_M[2], ramp-up time 60 s	A	162/148/134	180/165/150	220/201/182	240/223/202	285/260/235
- Starts per hour[3]	1/h	3	3	3	2	1

[1] Measurement at 60 °C according to UL/CSA not required.

[2] Current limit on soft starter set to 350 % I_M, ON period = 70 %.
Maximum adjustable rated motor current I_M dependent on CLASS setting.

[3] For intermittent duty S4 with ON period = 70 %, T_u = 40 / 50 / 60 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW4453	3RW4454	3RW4455	3RW4456	3RW4457	3RW4458	3RW4465	3RW4466
Power electronics									
Rated operational current I_e	A	551	615	693	780	880	970	1076	1214
Load rating with rated operational current I_e									
• According to IEC and UL/CSA[1], for individual mounting, AC-53a									
- At 40 / 50 / 60 °C	A	551/494/438	615/551/489	693/615/551	780/693/615	880/780/693	970/850/760	1076/970/880	1214/1076/970
Smallest adjustable rated motor current I_M For the motor overload protection	A	110	123	138	156	176	194	215	242
Power loss									
• In operation after completed starting with uninterrupted rated operational current (40 / 50 / 60 °C) approx.	W	159/135/113	186/156/130	220/181/152	214/176/146	250/204/168	270/215/179	510/420/360	630/510/420
• During starting with current limit set to 350 % I_M									
- At 40 °C	W	7 020	8 100	9 500	11 100	13 100	15 000	15 000	17 500
- At 50 °C	W	6 111	7 020	8 100	9 500	11 000	12 500	13 000	15 000
- At 60 °C	W	5 263	5 996	7 020	8 100	8 100	10 700	11 500	13 000
Permissible rated motor current and starts per hour at 40 °C / 50 °C / 60 °C									
• **For normal starting (CLASS 5)**									
- Rated motor current I_M[2], ramp-up time 5 s	A	551/494/438	615/551/489	693/615/551	780/693/615	880/780/693	970/850/760	1076/970/880	1214/1076/970
- Starts per hour[3]	1/h	41	41	37	33	22	17	30	20
- Rated motor current I_M[2], ramp-up time 10 s	A	551/494/438	615/551/489	693/615/551	780/693/615	880/780/693	970/850/760	1076/970/880	1214/1076/970
- Starts per hour[3]	1/h	20	20	16	13	8	5	10	6
• **For normal starting (CLASS 10)**									
- Rated motor current I_M[2], ramp-up time 10 s	A	551/494/438	615/551/489	693/615/551	780/693/615	880/780/693	970/850/760	1076/970/880	1214/1076/970
- Starts per hour[3]	1/h	20	20	16	13	8	5	11	6
- Rated motor current I_M[2], ramp-up time 20 s	A	551/494/438	615/551/489	693/615/551	780/693/615	880/780/693	970/850/760	1076/970/880	1214/1076/970
- Starts per hour[3]	1/h	10	9	6	4	0.3	0.3	3	0.5
• **For normal starting (CLASS 15)**									
- Rated motor current I_M[2], ramp-up time 15 s	A	551/494/438	615/551/489	666/615/551	723/693/615	780/710/650	821/755/693	1020/950/850	1090/1000/920
- Starts per hour[3]	1/h	13	13	11	9	8	8	7	5
- Rated motor current I_M[2], ramp-up time 30 s	A	551/494/438	615/551/489	666/615/551	723/693/615	780/710/650	821/755/693	1020/950/850	1090/1000/920
- Starts per hour[3]	1/h	6	4	3	1	0.4	0.5	1	1
• **For heavy starting (CLASS 20)**									
- Rated motor current I_M[2], ramp-up time 20 s	A	551/494/438	591/551/489	633/615/551	670/634/576	710/650/590	740/685/630	970/880/810	1030/940/860
- Starts per hour[3]	1/h	10	10	7	8	8	9	7	5
- Rated motor current I_M[2], ramp-up time 40 s	A	551/494/438	591/551/489	633/615/551	670/634/576	710/650/590	740/685/630	970/880/810	1030/940/860
- Starts per hour[3]	1/h	4	2	1	1	0.4	1	1	1
• **For very heavy starting (CLASS 30)**									
- Rated motor current I_M[2], ramp-up time 30 s	A	500/480/438	525/489/455	551/520/480	575/540/490	600/550/500	630/580/530	880/810/740	920/850/780
- Starts per hour[3]	1/h	6	6	6	6	6	6	6	6
- Rated motor current I_M[2], ramp-up time 60 s	A	500/480/438	525/489/455	551/520/480	575/540/490	600/550/500	630/580/530	880/810/740	920/850/780
- Starts per hour[3]	1/h	2	1	1	1	1.5	1	1	1

1) Measurement at 60 °C according to UL/CSA not required.

2) Current limit on soft starter set to 350 % I_M, ON period = 70 %. Maximum adjustable rated motor current I_M dependent on CLASS setting.

3) For intermittent duty S4 with ON period = 70 %, T_U = 40 / 50 / 60 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

General data

Motor feeders with soft starters

The type of coordination according to which the motor feeder with soft starter is mounted depends on the application-specific requirements. Normally, fuseless mounting (combination of motor starter protector and soft starter) is sufficient.

If type of coordination "2" is to be fulfilled, then semiconductor fuses must be fitted in the motor feeder.

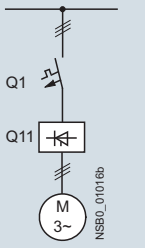
ToC 1 Type of coordination 1 according to IEC 60947-4-1: After a short-circuit incident, the unit is defective and therefore unsuitable for further use (protection of persons and system guaranteed).

ToC 2 Type of coordination 2 in according to IEC 60947-4-1: After a short-circuit incident the unit is suitable for further use (protection of persons and system guaranteed).

The type of coordination refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

The types of coordination are indicated in the corresponding tables by the symbols shown on orange backgrounds.

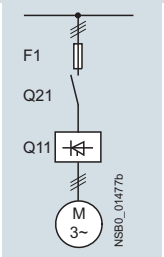
Inline circuit fuseless version



Soft starters		Motor starter protectors[1]	
ToC 1	Nominal current	400 V +10 %	Rated current
Q11 Type	A	Q1 Type	A
Type of coordination "1" 3RW4422 and 3RW4423: I_q = 42 kA; 3RW4424 ... 3RW4427: I_q = 32 kA; 3RW4434 and 3RW4435: I_q = 16 kA; 3RW4436 ... 3RW4466: I_q = 65 kA			
3RW4422	29	3RV2021-4EA10	32
3RW4423	36	3RV2021-4FA10	40
3RW4424	47	3RV2031-4WA10	52
3RW4425	57	3RV2031-4JA10	65
3RW4426	77	3RV2031-4RA10	80
3RW4427	93	3RV1042-4MA10	100
3RW4434	113	3VL1716-2DD36	160
3RW4435	134	3VL1716-2DD36	160
3RW4436	162	3VL3725-2DC36	250
3RW4443	203	3VL4731-3DC36	315
3RW4444	250	3VL4731-3DC36	315
3RW4445	313	3VL4740-3DC36	400
3RW4446	356	3VL4740-3DC36	400
3RW4447	432	3VL5750-3DC36	500
3RW4453	551	3VL6780-3SB36	800
3RW4454	615	3VL6780-3SB36	800
3RW4455	693	3VL6780-3SB36	800
3RW4456	780	3VL7710-3SB36	1 000
3RW4457	880	3VL7710-3SB36	1 000
3RW4458	970	3VL7712-3SB36	1 250
3RW4465	1 076	3VL7712-3SB36	1 250
3RW4466	1 214	3VL7712-3SB36	1 250

[1] The rated motor current must be considered when selecting the devices.

Inline circuit fused version (line protection only)



Soft starters		Line protection, maximum			Line contactors up to 400 V	Braking contactors[1)2)]	
ToC 1	Nominal current	690 V +5 %	Rated current	Size	(optional)	(example circuit see manual 3RW44)	
Q11 Type	A	F1 Type	A		Q21 Type	Q91 Type	Q92 Type
Type of coordination "1"[3)]: I_q = 65 kA							
3RW4422	29	3NA3820-6	50	00	3RT2027	3RT2526	--
3RW4423	36	3NA3822-6	63	00	3RT2028	3RT2526	--
3RW4424	47	3NA3824-6	80	00	3RT2036	3RT2535	--
3RW4425	57	3NA3830-6	100	00	3RT2037	3RT2535	--
3RW4426	77	3NA3132-6	125	1	3RT2038	3RT2024	3RT2035
3RW4427	93	3NA3136-6	160	1	3RT2046	3RT2025	3RT2036
3RW4434	113	3NA3244-6	250	2	3RT1054	3RT2027	3RT2037
3RW4435	134	3NA3244-6	250	2	3RT1055	3RT2036	3RT2038
3RW4436	162	3NA3365-6	500	3	3RT1056	3RT2037	3RT2038
3RW4443	203	2 x 3NA3354-6	2 x 355	3	3RT1064	3RT2037	3RT1054
3RW4444	250	2 x 3NA3354-6	2 x 355	3	3RT1065	3RT2037	3RT1055
3RW4445	313	2 x 3NA3365-6	2 x 500	3	3RT1075	3RT1054	3RT1056
3RW4446	356	2 x 3NA3365-6	2 x 500	3	3RT1075	3RT1054	3RT1056
3RW4447	432	2 x 3NA3365-6	2 x 500	3	3RT1076	3RT1055	3RT1064
3RW4453	551	2 x 3NA3365-6	2 x 500	3	3TF68	3RT1064	3RT1066
3RW4454	615	2 x 3NA3365-6	2 x 500	3	3TF68	3RT1064	3RT1075
3RW4455	693	2 x 3NA3365-6	2 x 500	3	3TF69	3RT1065	3RT1075
3RW4456	780	2 x 3NA3365-6	2 x 500	3	3TF69	3RT1065	3RT1075
3RW4457	880	2 x 3NA3365-6	2 x 500	3		3RT1075	3RT1076
3RW4458	970	3 x 3NA3365-6	3 x 500	3		3RT1075	3RT1076
3RW4465	1 076	3 x 3NA3365-6	3 x 500	3		3RT1075	3TF68
3RW4466	1 214	3 x 3NA3365-6	3 x 500	3		3RT1076	3TF68

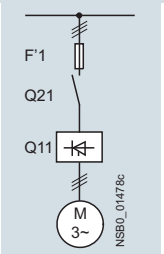
1) If the ramp-down function "Combined braking" is selected, no braking contactor is required.
A braking contactor must be additionally used if the "DC braking" function is selected (for type, see table).
For applications with greater centrifugal mass ($J_{Load} > J_{Motor}$), the function "DC braking" is recommended.

2) Additional auxiliary relay K4:
LZS:RT4A4T30
(3RW44 soft starter with rated control supply voltage 230 V AC),
LZS:RT4A4S15
(3RW44 soft starter with rated control supply voltage 115 V AC),

3) The type of coordination "1" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

General data

Inline circuit fused version with 3NE1 SITOR all-range fuse (semiconductor and line protection)



For matching fuse bases, see Catalog LV 10 → "Switch Disconnectors" and Catalog LV 10 → "Fuse Systems" → "SITOR Semiconductor Fuses" or www.siemens.com/sitor.

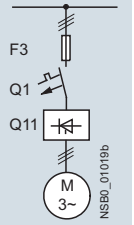
Soft starters		All-range fuses				Line contactors up to 400 V	Braking contactors[1)2)]	
ToC 2	Nominal current		Rated current	Voltage	Size	(optional)	(example circuit see manual 3RW44)	
Q11 Type	A	F'1 Type	A	V		Q21 Type	Q91 Type	Q92 Type
Type of coordination "2"[3)]: I_q = 65 kA								
3RW4422	29	3NE1020-2	80	690 +5 %	00	3RT2027	3RT2526	--
3RW4423	36	3NE1020-2	80	690 +5 %	00	3RT2028	3RT2526	--
3RW4424	47	3NE1021-2	100	690 +5 %	00	3RT2036	3RT2535	--
3RW4425	57	3NE1022-2	125	690 +5 %	00	3RT2037	3RT2535	--
3RW4426	77	3NE1022-2	125	690 +5 %	00	3RT2038	3RT2024	3RT2035
3RW4427	93	3NE1224-2	160	690 +5 %	1	3RT2046	3RT2025	3RT2036
3RW4434	113	3NE1225-2	200	690 +5 %	1	3RT1054	3RT2027	3RT2037
3RW4435	134	3NE1227-2	250	690 +5 %	1	3RT1055	3RT2036	3RT2038
3RW4436	162	3NE1227-2	250	690 +5 %	1	3RT1056	3RT2037	3RT2038
3RW4443	203	3NE1230-2	315	600 +10 %	1	3RT1064	3RT2037	3RT1054
3RW4444	250	3NE1331-2	350	460 +10 %	2	3RT1065	3RT2037	3RT1055
3RW4445	313	3NE1333-2	450	690 +5 %	2	3RT1075	3RT1054	3RT1056
3RW4446	356	3NE1334-2	500	690 +5 %	2	3RT1075	3RT1054	3RT1056
3RW4447	432	3NE1435-2	560	690 +5 %	3	3RT1076	3RT1055	3RT1064
3RW4453	551	2 x 3NE1334-2	500	690 +10 %	2	3TF68	3RT1064	3RT1066
3RW4454	615	2 x 3NE1334-2	500	690 +10 %	2	3TF68	3RT1064	3RT1075
3RW4455	693	2 x 3NE1334-2	500	690 +10 %	2	3TF69	3RT1065	3RT1075
3RW4456	780	2 x 3NE1435-2	560	690 +10 %	3	3TF69	3RT1065	3RT1075
3RW4457	880	2 x 3NE1435-2	560	690 +10 %	3		3RT1075	3RT1076
3RW4458	970	2 x 3NE1435-2	560	690 +10 %	3		3RT1075	3RT1076
3RW4465	1 076	3 x 3NE1334-2	500	690 +10 %	2		3RT1075	3TF68
3RW4466	1 214	3 x 3NE1435-2	560	690 +10 %	3		3RT1076	3TF68

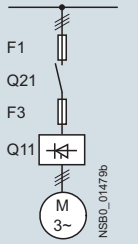
1) If the ramp-down function "Combined braking" is selected, no braking contactor is required.
A braking contactor must be additionally used if the "DC braking" function is selected (for type, see table).
For applications with greater centrifugal mass ($J_{Load} > J_{Motor}$), the function "DC braking" is recommended.

2) Additional auxiliary relay K4:
LZS:RT4A4T30
(3RW44 soft starter with rated control supply voltage 230 V AC),
LZS:RT4A4S15
(3RW44 soft starter with rated control supply voltage 115 V AC),

3) The type of coordination "2" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

Inline circuit fused version with 3NE or 3NC SITOR semiconductor fuse
(semiconductor protection by fuse, line and overload protection by motor starter protector)





For matching fuse bases, see Catalog LV 10 → "Switch Disconnectors" and Catalog LV 10 → "Fuse Systems" → "SITOR Semiconductor Fuses" or www.siemens.com/sitor.

Soft starters		Semiconductor fuses, minimum			Semiconductor fuses (cylinder)		
Q11 ToC 2 Type	Nominal current A	690 V +10 % F3 Type	Rated current A	Size	F3 Type	Rated current A	Size
Type of coordination 2[1]: I_q = 65 kA							
3RW4422	29	3NE4120	80	0	3NC2280	80	22 x 58
3RW4423	36	3NE4121	100	0	3NC2200	100	22 x 58
3RW4424	47	3NE4121	100	0	3NC2200	100	22 x 58
3RW4425	57	3NE4122	125	0			
3RW4426	77	3NE4124	160	0			
3RW4427	93	3NE3224	160	1			
3RW4434	113	3NE3225	200	1			
3RW4435	134	3NE3225	200	1			
3RW4436	162	3NE3227	250	1			
3RW4443	203	3NE3230-0B	315	1			
3RW4444	250	3NE3230-0B	315	1			
3RW4445	313	3NE3233	450	1			
3RW4446	356	3NE3333	450	2			
3RW4447	432	3NE3335	560	2			
3RW4453	551	2 x 3NE3335	560	2			
3RW4454	615	2 x 3NE3335	560	2			
3RW4455	693	2 x 3NE3335	560	2			
3RW4456	780	2 x 3NE3336	630	2			
3RW4457	880	2 x 3NE3336	630	2			
3RW4458	970	2 x 3NE3336	630	2			
3RW4465	1 076	2 x 3NE3340-8	900	2			
3RW4466	1 214	2 x 3NE3340-8	900	2			

Soft starters		Line contactors up to 400 V	Braking contactors[2][3]		Motor starter protectors		Line protection, maximum		
Q11 ToC 2 Type	Nominal current A	(optional) Q21 Type	(example circuit see manual 3RW44) Q91 Type	Q92 Type	400 V +10 % Q1 Type	Rated current A	690 V +5 % F1 Type	Rated current A	Size
Type of coordination 2[1]: I_q = 65 kA									
3RW4422	29	3RT2027	3RT2526	--	3RV2021-4EA10	32	3NA3820-6	50	00
3RW4423	36	3RT2028	3RT2526	--	3RV2021-4FA10	40	3NA3822-6	63	00
3RW4424	47	3RT2036	3RT2535	--	3RV2031-4WA10	52	3NA3824-6	80	00
3RW4425	57	3RT2037	3RT2535	--	3RV2031-4JA10	65	3NA3830-6	100	00
3RW4426	77	3RT2038	3RT2024	3RT2035	3RV2031-4RA10	80	3NA3132-6	125	1
3RW4427	93	3RT2046	3RT2025	3RT2036	3RV1042-4MA10	100	3NA3136-6	160	1
3RW4434	113	3RT1054	3RT2027	3RT2037	3VL1716	160	3NA3244-6	250	2
3RW4435	134	3RT1055	3RT2036	3RT2038	3VL1716	160	3NA3244-6	250	2
3RW4436	162	3RT1056	3RT2037	3RT2038	3VL3725	250	3NA3365-6	500	3
3RW4443	203	3RT1064	3RT2037	3RT1054	3VL4731	315	2 x 3NA3354-6	2 x 355	3
3RW4444	250	3RT1065	3RT2037	3RT1055	3VL4731	315	2 x 3NA3354-6	2 x 355	3
3RW4445	313	3RT1075	3RT1054	3RT1056	3VL4740	400	2 x 3NA3365-6	2 x 500	3
3RW4446	356	3RT1075	3RT1054	3RT1056	3VL4740	400	2 x 3NA3365-6	2 x 500	3
3RW4447	432	3RT1076	3RT1055	3RT1064	3VL5750	500	2 x 3NA3365-6	2 x 500	3
3RW4453	551	3TF68	3RT1064	3RT1066	3VL6780	800	2 x 3NA3365-6	2 x 500	3
3RW4454	615	3TF68	3RT1064	3RT1075	3VL6780	800	2 x 3NA3365-6	2 x 500	3
3RW4455	693	3TF69	3RT1065	3RT1075	3VL6780	800	2 x 3NA3365-6	2 x 500	3
3RW4456	780	3TF69	3RT1065	3RT1075	3VL7710	1 000	2 x 3NA3365-6	2 x 500	3
3RW4457	880	--	3RT1075	3RT1076	3VL7710	1 000	2 x 3NA3365-6	2 x 500	3
3RW4458	970	--	3RT1075	3RT1076	3VL7712	1 250	3 x 3NA3365-6	3 x 500	3
3RW4465	1 076	--	3RT1075	3TF68	3VL7712	1 250	3 x 3NA3365-6	3 x 500	3
3RW4466	1 214	--	3RT1076	3TF68	3VL7712	1 250	3 x 3NA3365-6	3 x 500	3

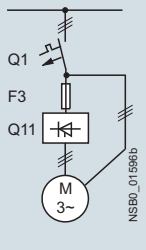
[1] The type of coordination "2" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

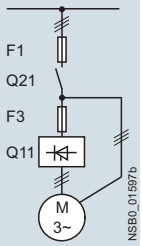
[2] If the ramp-down function "Combined braking" is selected, no braking contactor is required. A braking contactor must be additionally used if the "DC braking" function is selected (for type, see table).
For applications with greater centrifugal mass ($J_{Load} > J_{Motor}$), the function "DC braking" is recommended.

[3] Additional auxiliary relay K4:
LZS:RT4A4T30
(3RW44 soft starter with rated control supply voltage 230 V AC),
LZS:RT4A4S15
(3RW44 soft starter with rated control supply voltage 115 V AC).

General data

Inside-delta circuit fused version with 3NE or 3NC SITOR fuses
(semiconductor protection by fuse, line and overload protection by motor starter protector)





For matching fuse bases, see Catalog LV 10 → "Switch Disconnectors" and Catalog LV 10 → "Fuse Systems" → "SITOR Semiconductor Fuses" or www.siemens.com/sitor.

Soft starters		Semiconductor fuses, minimum			Semiconductor fuses (cylinder)		
Q11 ToC 2 Type	Nominal current A	690 V +10 % F3 Type	Rated current A	Size	F3 Type	Rated current A	Size
Type of coordination 2[1]							
3RW4422	50	3NE4120	80	0	3NC2280	80	22 x 58
3RW4423	62	3NE4121	100	0	3NC2200	100	22 x 58
3RW4424	81	3NE4121	100	0	3NC2200	100	22 x 58
3RW4425	99	3NE4122	125	0			
3RW4426	133	3NE4124	160	0			
3RW4427	161	3NE3224	160	1			
3RW4434	196	3NE3225	200	1			
3RW4435	232	3NE3225	200	1			
3RW4436	281	3NE3227	250	1			
3RW4443	352	3NE3230-0B	315	1			
3RW4444	433	3NE3230-0B	315	1			
3RW4445	542	3NE3233	450	1			
3RW4446	617	3NE3333	450	2			
3RW4447	748	3NE3335	560	2			
3RW4453	954	2 x 3NE3335	560	2			
3RW4454	1 065	2 x 3NE3335	560	2			
3RW4455	1 200	2 x 3NE3335	560	2			
3RW4456	1 351	2 x 3NE3336	630	2			
3RW4457	1 524	2 x 3NE3336	630	2			
3RW4458	1 680	2 x 3NE3336	630	2			
3RW4465	1 864	2 x 3NE3340-8	900	2			
3RW4466	2 103	2 x 3NE3340-8	900	2			

Soft starters		Line contactors up to 400 V	Motor starter protectors		Line protection, maximum		
Q11 ToC 2 Type	Nominal current A	(optional) Q21 Type	400 V +10 % Q1 Type	Rated current A	690 V +5 % F1 Type	Rated current A	Size
Type of coordination 2[1]							
3RW4422	50	3RT2036-1AP04	3RV1042-4KA10	75	3NA3824-6	80	00
3RW4423	62	3RT2037-1AP04	3RV1042-4LA10	90	3NA3830-6	100	00
3RW4424	81	3RT2038-1AP04	3RV1042-4MA10	100	3NA3132-6	125	1
3RW4425	99	3RT1054-1AP36	3VL2716	160	3NA3136-6	160	1
3RW4426	133	3RT1055-6AP36	3VL2716	160	3NA3240-6	200	2
3RW4427	161	3RT1056-6AP36	3VL3720	200	3NA3244-6	250	2
3RW4434	196	3RT1064-6AP36	3VL3725	250	3NA3360-6	400	3
3RW4435	232	3RT1065-6AP36	3VL4731	315	3NA3360-6	400	3
3RW4436	281	3RT1066-6AP36	3VL4740	400	2 x 3NA3360-6	2 x 400	3
3RW4443	352	3RT1075-6AP36	3VL4740	400	2 x 3NA3365-6	2 x 500	3
3RW4444	433	3RT1076-6AP36	3VL5750	500	2 x 3NA3365-6	2 x 500	3
3RW4445	542	3TF6844-0CM7	3VL5763	630	3 x 3NA3365-6	3 x 500	3
3RW4446	617	3TF6844-0CM7	3VL6780	800	3 x 3NA3365-6	3 x 500	3
3RW4447	748	3TF69	3VL6780	800	3 x 3NA3365-6	3 x 500	3
3RW4453	954		3VL7710	1 000	3 x 3NA3365-6	3 x 500	3
3RW4454	1 065		3VL7712	1 250	3 x 3NA3365-6	3 x 500	3
3RW4455	1 200		3VL8716	1 600	3 x 3NA3365-6	3 x 500	3
3RW4456	1 351		3VL8716	1 600	3 x 3NA3372	3 x 630	3
3RW4457	1 524		3VL8716	1 600	3 x 3NA3372	3 x 630	3
3RW4458	1 680		3WL1220	2 000	2 x 3NA3480	2 x 1000	4
3RW4465	1 864		3WL1225	2 500	2 x 3NA3482	2 x 1250	4
3RW4466	2 103		3WL1225	2 500	2 x 3NA3482	2 x 1250	4

[1] The type of coordination "2" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.
If the F3 semiconductor fuse is not used, the type of coordination "2" is reduced to type of coordination "1" for soft starters in combination with the stipulated protective device.

Selection and ordering data


3RW442.


3RW443.


3RW444.


3RW445.


3RW446.

3RW ambient temperature 40 °C Rated values of three-phase motors Operational current I_e	Rating at operational voltage U_e 230 V	400 V	500 V	690 V	3RW ambient temperature 50 °C Rated values of three-phase motors Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V	SD[1]	Normal starting (CLASS 10) In inline circuit Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Inline circuit, rated operational voltage 200 ... 460 V															
29	5.5	**15**	--	--	26	7.5	7.5	**15**	--	5	**3RW4422-□BC□4**		1	1 unit	42H
36	7.5	**18.5**	--	--	32	10	10	**20**	--	5	**3RW4423-□BC□4**		1	1 unit	42H
47	11	**22**	--	--	42	10	15	**25**	--	5	**3RW4424-□BC□4**		1	1 unit	42H
57	15	**30**	--	--	51	15	15	**30**	--	5	**3RW4425-□BC□4**		1	1 unit	42H
77	18.5	**37**	--	--	68	20	20	**50**	--	5	**3RW4426-□BC□4**		1	1 unit	42H
93	22	**45**	--	--	82	25	25	**60**	--	5	**3RW4427-□BC□4**		1	1 unit	42H
Article No. supplement for connection types • With screw terminals • With spring-type terminals											**1** **3**				
113	30	**55**	--	--	100	30	30	**75**	--	5	**3RW4434-□BC□4**		1	1 unit	42H
134	37	**75**	--	--	117	30	40	**75**	--	5	**3RW4435-□BC□4**		1	1 unit	42H
162	45	**90**	--	--	145	40	50	**100**	--	5	**3RW4436-□BC□4**		1	1 unit	42H
203	55	**110**	--	--	180	50	60	**125**	--	5	**3RW4443-□BC□4**		1	1 unit	42H
250	75	**132**	--	--	215	60	75	**150**	--	5	**3RW4444-□BC□4**		1	1 unit	42H
313	90	**160**	--	--	280	75	100	**200**	--	5	**3RW4445-□BC□4**		1	1 unit	42H
356	110	**200**	--	--	315	100	125	**250**	--	5	**3RW4446-□BC□4**		1	1 unit	42H
432	132	**250**	--	--	385	125	150	**300**	--	5	**3RW4447-□BC□4**		1	1 unit	42H
551	160	**315**	--	--	494	150	200	**400**	--	15	**3RW4453-□BC□4**		1	1 unit	42H
615	200	**355**	--	--	551	150	200	**450**	--	15	**3RW4454-□BC□4**		1	1 unit	42H
693	200	**400**	--	--	615	200	250	**500**	--	15	**3RW4455-□BC□4**		1	1 unit	42H
780	250	**450**	--	--	693	200	250	**600**	--	15	**3RW4456-□BC□4**		1	1 unit	42H
880	250	**500**	--	--	780	250	300	**700**	--	15	**3RW4457-□BC□4**		1	1 unit	42H
970	315	**560**	--	--	850	300	350	**750**	--	15	**3RW4458-□BC□4**		1	1 unit	42H
1 076	355	**630**	--	--	970	350	400	**850**	--	15	**3RW4465-□BC□4**		1	1 unit	42H
1 214	400	**710**	--	--	1 076	350	450	**950**	--	15	**3RW4466-□BC□4**		1	1 unit	42H
Article No. supplement for connection types • With spring-type terminals • With screw terminals											**2** **6**				
Article No. supplement for rated control supply voltage U_s[2] • 115 V AC • 230 V AC											**3** **4**				

[1] 3RW442. to 3RW444. soft starters with screw terminals: standard delivery time SD = 1 day.

[2] Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

The listed motor ratings are rough guide values. The soft starter should always be designed on the basis of the required rated operational current of the motor. The SIRIUS 3RW44 solid-state soft starters are designed for easy starting conditions. The selection and ordering data were determined for the following boundary conditions (see also the notes on 6/6):

- Maximum starting time in s: 10
- Maximum starting current in % of motor current I_e: 300
- Maximum number of starts per hour in 1/h: 5

In case of additional requirements, it may be necessary to choose a larger device. In some cases, however, the safety margins taken into account in the selection also permit the listed units to be used in boundary conditions which are slightly more demanding. Detailed technical information for a configuration which is tailored exactly to the application, see manual.

For dimensioning soft starters under other boundary conditions, also for heavy starting up to CLASS 30, we recommend our Simulation Tool for Soft Starters (STS):

https://support.industry.siemens.com/cs/ww/en/view/101494917

or our Technical Assistance:
Tel.: +49 (0) 911-895-5900,
Email: technical-assistance@siemens.com.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

SIRIUS 3RW44 for normal starting (CLASS 10) in inline circuit *IE3/IE4* ready

3RW ambient temperature 40 °C Rated values of three-phase motors Operational current I_e	Rating at operational voltage U_e 230 V	400 V	500 V	690 V	3RW ambient temperature 50 °C Rated values of three-phase motors Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V	SD[1]	Normal starting (CLASS 10) In inline circuit Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Inline circuit, rated operational voltage 400 ... 600 V															
29	--	15	**18.5**	--	26	--	--	15	**20**	5	**3RW4422-□BC□5**		1	1 unit	42H
36	--	18.5	**22**	--	32	--	--	20	**25**	5	**3RW4423-□BC□5**		1	1 unit	42H
47	--	22	**30**	--	42	--	--	25	**30**	5	**3RW4424-□BC□5**		1	1 unit	42H
57	--	30	**37**	--	51	--	--	30	**40**	5	**3RW4425-□BC□5**		1	1 unit	42H
77	--	37	**45**	--	68	--	--	50	**50**	5	**3RW4426-□BC□5**		1	1 unit	42H
93	--	45	**55**	--	82	--	--	60	**75**	5	**3RW4427-□BC□5**		1	1 unit	42H
113	--	55	**75**	--	100	--	--	75	**75**	5	**3RW4434-□BC□5**		1	1 unit	42H
134	--	75	**90**	--	117	--	--	75	**100**	5	**3RW4435-□BC□5**		1	1 unit	42H
162	--	90	**110**	--	145	--	--	100	**125**	5	**3RW4436-□BC□5**		1	1 unit	42H
203	--	110	**132**	--	180	--	--	125	**150**	5	**3RW4443-□BC□5**		1	1 unit	42H
250	--	132	**160**	--	215	--	--	150	**200**	5	**3RW4444-□BC□5**		1	1 unit	42H
313	--	160	**200**	--	280	--	--	200	**250**	5	**3RW4445-□BC□5**		1	1 unit	42H
356	--	200	**250**	--	315	--	--	250	**300**	5	**3RW4446-□BC□5**		1	1 unit	42H
432	--	250	**315**	--	385	--	--	300	**400**	5	**3RW4447-□BC□5**		1	1 unit	42H
551	--	315	**355**	--	494	--	--	400	**500**	15	**3RW4453-□BC□5**		1	1 unit	42H
615	--	355	**400**	--	551	--	--	450	**600**	15	**3RW4454-□BC□5**		1	1 unit	42H
693	--	400	**500**	--	615	--	--	500	**700**	15	**3RW4455-□BC□5**		1	1 unit	42H
780	--	450	**560**	--	693	--	--	600	**750**	15	**3RW4456-□BC□5**		1	1 unit	42H
880	--	500	**630**	--	780	--	--	700	**850**	15	**3RW4457-□BC□5**		1	1 unit	42H
970	--	560	**710**	--	850	--	--	750	**900**	15	**3RW4458-□BC□5**		1	1 unit	42H
1076	--	630	**800**	--	970	--	--	850	**1 100**	15	**3RW4465-□BC□5**		1	1 unit	42H
1 214	--	710	**900**	--	1076	--	--	950	**1 200**	15	**3RW4466-□BC□5**		1	1 unit	42H

Article No. supplement for connection types

- With screw terminals
- With spring-type terminals

1
3

Article No. supplement for connection types

- With spring-type terminals
- With screw terminals

2
6

Article No. supplement for rated control supply voltage U_s[2]

- 115 V AC
- 230 V AC

3
4

[1] Soft starter with screw terminals:
3RW442. to 3RW444. Standard delivery time RL = 2 days,
3RW445. to 3RW446. Standard delivery time RL = 5 days.

[2] Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

The listed motor ratings are rough guide values. The soft starter should always be designed on the basis of the required rated operational current of the motor.

The solid-state SIRIUS 3RW44 soft starters are designed for easy starting conditions. The selection and ordering data were determined for the following boundary conditions (see also the notes on page 6/6):

- Maximum starting time in s: 10
- Maximum starting current in % of motor current I_e: 300
- Maximum number of starts per hour in 1/h: 5

In case of additional requirements, it may be necessary to choose a larger device. In some cases, however, the safety margins taken into account in the selection also permit the listed units to be used in boundary conditions which are slightly more demanding. Detailed technical information for a configuration which is tailored exactly to the application, see manual.

For dimensioning soft starters under other boundary conditions, also for heavy starting up to CLASS 30, we recommend our Simulation Tool for Soft Starters (STS):

https://support.industry.siemens.com/cs/ww/en/view/101494917

or our Technical Assistance:
Tel.: +49 (0) 911-895-5900,
Email: technical-assistance@siemens.com.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

IE3/IE4 ready **SIRIUS 3RW44 for normal starting (CLASS 10) in inline circuit**

3RW ambient temperature 40 °C Rated values of three-phase motors					3RW ambient temperature 50 °C Rated values of three-phase motors					SD	**Normal starting (CLASS 10) In inline circuit**	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Rating at operational voltage U_e 230 V	400 V	500 V	690 V	Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V		Article No. / Price per PU			
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d				
Inline circuit, rated operational voltage 400 ... 690 V														
29	--	15	18.5	**30**	26	--	--	15	**20**	5	**3RW4422-☐BC☐6**	1	1 unit	42H
36	--	18.5	22	**37**	32	--	--	20	**25**	5	**3RW4423-☐BC☐6**	1	1 unit	42H
47	--	22	30	**45**	42	--	--	25	**30**	5	**3RW4424-☐BC☐6**	1	1 unit	42H
57	--	30	37	**55**	51	--	--	30	**40**	5	**3RW4425-☐BC☐6**	1	1 unit	42H
77	--	37	45	**75**	68	--	--	50	**50**	5	**3RW4426-☐BC☐6**	1	1 unit	42H
93	--	45	55	**90**	82	--	--	60	**75**	5	**3RW4427-☐BC☐6**	1	1 unit	42H
113	--	55	75	**110**	100	--	--	75	**75**	5	**3RW4434-☐BC☐6**	1	1 unit	42H
134	--	75	90	**132**	117	--	--	75	**100**	5	**3RW4435-☐BC☐6**	1	1 unit	42H
162	--	90	110	**160**	145	--	--	100	**125**	5	**3RW4436-☐BC☐6**	1	1 unit	42H
203	--	110	132	**200**	180	--	--	125	**150**	5	**3RW4443-☐BC☐6**	1	1 unit	42H
250	--	132	160	**250**	215	--	--	150	**200**	5	**3RW4444-☐BC☐6**	1	1 unit	42H
313	--	160	200	**315**	280	--	--	200	**250**	5	**3RW4445-☐BC☐6**	1	1 unit	42H
356	--	200	250	**355**	315	--	--	250	**300**	5	**3RW4446-☐BC☐6**	1	1 unit	42H
432	--	250	315	**400**	385	--	--	300	**400**	5	**3RW4447-☐BC☐6**	1	1 unit	42H
551	--	315	355	**560**	494	--	--	400	**500**	15	**3RW4453-☐BC☐6**	1	1 unit	42H
615	--	355	400	**630**	551	--	--	450	**600**	15	**3RW4454-☐BC☐6**	1	1 unit	42H
693	--	400	500	**710**	615	--	--	500	**700**	15	**3RW4455-☐BC☐6**	1	1 unit	42H
780	--	450	560	**800**	693	--	--	600	**750**	15	**3RW4456-☐BC☐6**	1	1 unit	42H
880	--	500	630	**900**	780	--	--	700	**850**	15	**3RW4457-☐BC☐6**	1	1 unit	42H
970	--	560	710	**1 000**	850	--	--	750	**900**	15	**3RW4458-☐BC☐6**	1	1 unit	42H
1 076	--	630	800	**1 100**	970	--	--	850	**1 100**	15	**3RW4465-☐BC☐6**	1	1 unit	42H
1 214	--	710	900	**1 200**	1 076	--	--	950	**1 200**	15	**3RW4466-☐BC☐6**	1	1 unit	42H

Article No. supplement for connection types

- With screw terminals **1**
- With spring-type terminals **3**

Article No. supplement for connection types

- With spring-type terminals **2**
- With screw terminals **6**

Article No. supplement for rated control supply voltage U_s [1)]

- 115 V AC **3**
- 230 V AC **4**

1) Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

3RW44 soft starters may be used in isolated supply networks (IT systems) up to 600 V AC.

The listed motor ratings are rough guide values. The soft starter should always be designed on the basis of the required rated operational current of the motor.

The solid-state SIRIUS 3RW44 soft starters are designed for easy starting conditions. The selection and ordering data were determined for the following boundary conditions (see also the notes on page 6/6):

- Maximum starting time in s: 10
- Maximum starting current in % of motor current I_e: 300
- Maximum number of starts per hour in 1/h: 5

In case of additional requirements, it may be necessary to choose a larger device. In some cases, however, the safety margins taken into account in the selection also permit the listed units to be used in boundary conditions which are slightly more demanding. Detailed technical information for a configuration which is tailored exactly to the application, see manual.

For dimensioning soft starters under other boundary conditions, also for heavy starting up to CLASS 30, we recommend our Simulation Tool for Soft Starters (STS):

https://support.industry.siemens.com/cs/ww/en/view/101494917

or our Technical Assistance:
Tel.: +49 (0) 911-895-5900,
Email: technical-assistance@siemens.com.

SIRIUS 3RW44 for normal starting (CLASS 10) in inside-delta circuit *IE3/IE4* ready

Selection and ordering data


3RW442.


3RW443.


3RW444.


3RW445.


3RW446.

3RW ambient temperature 40 °C, Rated values of three-phase motors: Operational current I_e	Rating at operational voltage U_e 230 V	400 V	500 V	690 V	3RW ambient temperature 50 °C, Rated values of three-phase motors: Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V	SD[1]	Normal starting (CLASS 10) In inside-delta circuit: Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Inside-delta circuit, rated operational voltage 200 ... 460 V															
50	15	**22**	--	--	45	10	15	**30**	--	5	**3RW4422-□BC□4**		1	1 unit	42H
62	18.5	**30**	--	--	55	15	20	**40**	--	5	**3RW4423-□BC□4**		1	1 unit	42H
81	22	**45**	--	--	73	20	25	**50**	--	5	**3RW4424-□BC□4**		1	1 unit	42H
99	30	**55**	--	--	88	25	30	**60**	--	5	**3RW4425-□BC□4**		1	1 unit	42H
133	37	**75**	--	--	118	30	40	**75**	--	5	**3RW4426-□BC□4**		1	1 unit	42H
161	45	**90**	--	--	142	40	50	**100**	--	5	**3RW4427-□BC□4**		1	1 unit	42H
Article No. supplement for connection types															
• With screw terminals											**1**				
• With spring-type terminals											**3**				
196	55	**110**	--	--	173	50	60	**125**	--	5	**3RW4434-□BC□4**		1	1 unit	42H
232	75	**132**	--	--	203	60	75	**150**	--	5	**3RW4435-□BC□4**		1	1 unit	42H
281	90	**160**	--	--	251	75	100	**200**	--	5	**3RW4436-□BC□4**		1	1 unit	42H
352	110	**200**	--	--	312	100	125	**250**	--	5	**3RW4443-□BC□4**		1	1 unit	42H
433	132	**250**	--	--	372	125	150	**300**	--	5	**3RW4444-□BC□4**		1	1 unit	42H
542	160	**315**	--	--	485	150	200	**400**	--	5	**3RW4445-□BC□4**		1	1 unit	42H
617	200	**355**	--	--	546	150	200	**450**	--	5	**3RW4446-□BC□4**		1	1 unit	42H
748	250	**400**	--	--	667	200	250	**600**	--	5	**3RW4447-□BC□4**		1	1 unit	42H
954	315	**560**	--	--	856	300	350	**750**	--	15	**3RW4453-□BC□4**		1	1 unit	42H
1 065	355	**630**	--	--	954	350	400	**850**	--	15	**3RW4454-□BC□4**		1	1 unit	42H
1 200	400	**710**	--	--	1 065	350	450	**950**	--	15	**3RW4455-□BC□4**		1	1 unit	42H
1 351	450	**800**	--	--	1 200	450	500	**1 050**	--	15	**3RW4456-□BC□4**		1	1 unit	42H
1 524	500	**900**	--	--	1 351	450	600	**1 200**	--	15	**3RW4457-□BC□4**		1	1 unit	42H
1 680	560	**1 000**	--	--	1 472	550	650	**1 300**	--	15	**3RW4458-□BC□4**		1	1 unit	42H
1 864	630	**1 100**	--	--	1 680	650	750	**1 500**	--	15	**3RW4465-□BC□4**		1	1 unit	42H
2 103	710	**1 200**	--	--	1 864	700	850	**1 700**	--	15	**3RW4466-□BC□4**		1	1 unit	42H
Article No. supplement for connection types															
• With spring-type terminals											**2**				
• With screw terminals											**6**				
Article No. supplement for rated control supply voltage U_s[2]															
• 115 V AC											**3**				
• 230 V AC											**4**				

[1] 3RW442. to 3RW444. soft starters with screw terminals: Standard delivery time SD = 1 day.

[2] Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

The listed motor ratings are rough guide values. The soft starter should always be designed on the basis of the required rated operational current of the motor.

The solid-state SIRIUS 3RW44 soft starters are designed for easy starting conditions. The selection and ordering data were determined for the following boundary conditions (see also the notes on page 6/6):

- Maximum starting time in s: 10
- Maximum starting current in % of motor current I_e: 300
- Maximum number of starts per hour in 1/h: 5

In the selection table, the unit rated current I_e in the inside-delta circuit refers to the three-phase motor's rated operational current. The actual current of the device is approx. 58 % of this value.

In case of additional requirements, it may be necessary to choose a larger device. In some cases, however, the safety margins taken into account in the selection also permit the listed units to be used in boundary conditions which are slightly more demanding. Detailed technical information for a configuration which is tailored exactly to the application, see manual.

For dimensioning soft starters under other boundary conditions, also for heavy starting up to CLASS 30, we recommend our Simulation Tool for Soft Starters (STS):

https://support.industry.siemens.com/cs/ww/en/view/101494917

or our Technical Assistance: Tel.: +49 (0) 911-895-5900, Email: technical-assistance@siemens.com.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

IE3/IE4 ready **SIRIUS 3RW44 for normal starting (CLASS 10) in inside-delta circuit**

3RW ambient temperature 40 °C, Rated values of three-phase motors					3RW ambient temperature 50 °C, Rated values of three-phase motors					SD[1]	Normal starting (CLASS 10) In inside-delta circuit	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Rating at operational voltage U_e 230 V	400 V	500 V	690 V	Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V		Article No. / Price per PU			
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d				
Inside-delta circuit, rated operational voltage 400 ... 600 V														
50	--	22	**30**	--	45	--	--	30	**40**	5	**3RW4422-☐BC☐5**	1	1 unit	42H
62	--	30	**37**	--	55	--	--	40	**50**	5	**3RW4423-☐BC☐5**	1	1 unit	42H
81	--	45	**45**	--	73	--	--	50	**60**	5	**3RW4424-☐BC☐5**	1	1 unit	42H
99	--	55	**55**	--	88	--	--	60	**75**	5	**3RW4425-☐BC☐5**	1	1 unit	42H
133	--	75	**90**	--	118	--	--	75	**100**	5	**3RW4426-☐BC☐5**	1	1 unit	42H
161	--	90	**110**	--	142	--	--	100	**125**	5	**3RW4427-☐BC☐5**	1	1 unit	42H
Article No. supplement for connection types • With screw terminals → **1** • With spring-type terminals → **3**														
196	--	110	**132**	--	173	--	--	125	**150**	5	**3RW4434-☐BC☐5**	1	1 unit	42H
232	--	132	**160**	--	203	--	--	150	**200**	5	**3RW4435-☐BC☐5**	1	1 unit	42H
281	--	160	**200**	--	251	--	--	200	**250**	5	**3RW4436-☐BC☐5**	1	1 unit	42H
352	--	200	**250**	--	312	--	--	250	**300**	5	**3RW4443-☐BC☐5**	1	1 unit	42H
433	--	250	**315**	--	372	--	--	300	**350**	5	**3RW4444-☐BC☐5**	1	1 unit	42H
542	--	315	**355**	--	485	--	--	400	**500**	5	**3RW4445-☐BC☐5**	1	1 unit	42H
617	--	355	**450**	--	546	--	--	450	**600**	5	**3RW4446-☐BC☐5**	1	1 unit	42H
748	--	400	**500**	--	667	--	--	600	**750**	5	**3RW4447-☐BC☐5**	1	1 unit	42H
954	--	560	**630**	--	856	--	--	750	**950**	15	**3RW4453-☐BC☐5**	1	1 unit	42H
1 065	--	630	**710**	--	954	--	--	850	**1 050**	15	**3RW4454-☐BC☐5**	1	1 unit	42H
1 200	--	710	**800**	--	1 065	--	--	950	**1 200**	15	**3RW4455-☐BC☐5**	1	1 unit	42H
1 351	--	800	**900**	--	1 200	--	--	1 050	**1 350**	15	**3RW4456-☐BC☐5**	1	1 unit	42H
1 524	--	900	**1 000**	--	1 351	--	--	1 200	**1 500**	15	**3RW4457-☐BC☐5**	1	1 unit	42H
1 680	--	1 000	**1 200**	--	1 472	--	--	1 300	**1 650**	15	**3RW4458-☐BC☐5**	1	1 unit	42H
1 864	--	1 100	**1 350**	--	1 680	--	--	1 500	**1 900**	15	**3RW4465-☐BC☐5**	1	1 unit	42H
2 103	--	1 200	**1 500**	--	1 864	--	--	1 700	**2 100**	15	**3RW4466-☐BC☐5**	1	1 unit	42H
Article No. supplement for connection types • With spring-type terminals → **2** • With screw terminals → **6** **Article No. supplement for rated control supply voltage U_s[2]** • 115 V AC → **3** • 230 V AC → **4**														

[1] Soft starter with screw terminals:
3RW442. to 3RW444. Standard delivery time RL = 2 days,
3RW445. to 3RW446. Standard delivery time RL = 5 days.

[2] Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

The listed motor ratings are rough guide values. The soft starter should always be designed on the basis of the required rated operational current of the motor.

The solid-state SIRIUS 3RW44 soft starters are designed for easy starting conditions. The selection and ordering data were determined for the following boundary conditions (see also the notes on page 6/6):

- Maximum starting time in s: 10
- Maximum starting current in % of motor current I_e: 300
- Maximum number of starts per hour in 1/h: 5

In the selection table, the unit rated current I_e in the inside-delta circuit refers to the three-phase motor's rated operational current. The actual current of the device is approx. 58 % of this value.

In case of additional requirements, it may be necessary to choose a larger device. In some cases, however, the safety margins taken into account in the selection also permit the listed units to be used in boundary conditions which are slightly more demanding. Detailed technical information for a configuration which is tailored exactly to the application, see manual.

For dimensioning soft starters under other boundary conditions, also for heavy starting up to CLASS 30, we recommend our Simulation Tool for Soft Starters (STS):

https://support.industry.siemens.com/cs/ww/en/view/101494917

or our Technical Assistance:
Tel.: +49 (0) 911-895-5900,
Email: technical-assistance@siemens.com.

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Software							
 3ZS1313-4CC10-0YA5	**Soft Starter ES** Parameterization and service software for SIRIUS 3RW44 High Feature soft starters, see page 14/9.						
 3ZS1633-1XX00-0YA0	**Block library for SIMATIC PCS 7** Using the block library with its integrated AS-blocks and faceplates, the SIRIUS 3RW44 High Feature soft starters can be integrated simply and conveniently into the SIMATIC PCS 7 process control system, see page 14/31.						

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
USB PC cables							
 3UF7941-0AA00-0	**For PC/PG communication with SIRIUS 3RW44 soft starters** Through the system interface, for connecting to the USB interface of the PC/PG	►	**3UF7941-0AA00-0**		1	1 unit	42J
Communication modules							
 3RW4900-0KC00	**PROFIBUS communication module** For 3RW44 soft starter integration in the PROFIBUS network with DPV1 slave functionality. With firmware version E04 and higher (or date of manufacture 01.05.2009 and later) of the module, DPV1 operation of the soft starter on a Y-link is also possible (only DPV0 operation possible with < E04).	►	**3RW4900-0KC00**		1	1 unit	42H
 3RW4900-0NC00	**PROFINET communication module** For 3RW44 soft starter integration in the PROFINET network, suitable for devices with firmware version E12 or higher	►	**3RW4900-0NC00**		1	1 unit	42H
External display and operator module							
 3RW4900-0AC00	For indicating and operating the functions provided by the soft starter using an externally mounted display and operator module in degree of protection IP54 (e.g. in the cabinet door)	►	**3RW4900-0AC00**		1	1 unit	42H
	Connection cables From the device interface (serial) of the 3RW44 soft starter to the external display and operator module						
	• Length 0.5 m, flat	►	**3UF7932-0AA00-0**		1	1 unit	42J
	• Length 0.5 m, round	►	**3UF7932-0BA00-0**		1	1 unit	42J
	• Length 1.0 m, round	►	**3UF7937-0BA00-0**		1	1 unit	42J
	• Length 2.5 m, round	►	**3UF7933-0BA00-0**		1	1 unit	42J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Accessories

For soft starters	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		d					
Box terminal blocks for soft starters							
 3RT1955-4G, 3RT1956-4G	**Box terminal block** (2 units required for each device)						
3RW442.	Included in the scope of supply						
3RW443.	• Up to 70 mm²	▶	**3RT1955-4G**		1	1 unit	41B
	• Up to 120 mm²	▶	**3RT1956-4G**		1	1 unit	41B
	Auxiliary conductor connection for box terminals	5	**3TX7500-0A**		1	1 unit	41B
3RW444.	• Up to 240 mm² (with auxiliary conductor connection)	▶	**3RT1966-4G**		1	1 unit	41B
Covers for soft starters							
	Terminal covers for box terminals Additional touch protection to be fitted at the box terminals (2 units required per device)						
3RW442. and 3RW443.		▶	**3RT1956-4EA2**		1	1 unit	41B
3RW444.		▶	**3RT1966-4EA2**		1	1 unit	41B
 3RT1956-4EA1	**Terminal covers for cable lugs and busbar connections**						
3RW442. and 3RW443.	For complying with the voltage clearances and as touch protection (2 units required per device) Also fits on mounted box terminals.	▶	**3RT1956-4EA1**		1	1 unit	41B
3RW444.		▶	**3RT1966-4EA1**		1	1 unit	41B
Manual for SIRIUS 3RW44 soft starters[1]							
	The manual can be downloaded free of charge in PDF format from the Internet, see https://support.industry.siemens.com/cs/ww/en/view/21772518.						

[1] The Operating Instructions 3RW44 (3ZX1012-0RW44-0AA0) are included in the scope of supply of the soft starter, or are available (like the manual) as a PDF download in the Industry Online Support Portal, see https://support.industry.siemens.com/cs/ww/en/view/21189750.

Spare parts

For soft starter	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		d					
Fans							
 3RW4957-8VX.0, 3RW4966-8VX.0	**Fans**						
3RW442.[1] and 3RW443.	115 V AC	▶	**3RW4936-8VX30**		1	1 unit	42G
	230 V AC	▶	**3RW4936-8VX40**		1	1 unit	42G
3RW444.	115 V AC	▶	**3RW4947-8VX30**		1	1 unit	42G
	230 V AC	▶	**3RW4947-8VX40**		1	1 unit	42G
3RW445. and 3RW446.[2]	115 V AC	▶	**3RW4957-8VX30**		1	1 unit	42H
	230 V AC	▶	**3RW4957-8VX40**		1	1 unit	42H
3RW446.[3]	115 V AC	▶	**3RW4966-8VX30**		1	1 unit	42H
	230 V AC	▶	**3RW4966-8VX40**		1	1 unit	42H

[1] The 3RW4422 and 3RW4423 soft starters do not need fans. These devices are adequately designed for natural convection.
[2] 3RW446. mounting on output side.
[3] For mounting on front side.

More information

Application examples for normal starting (CLASS 10)

Normal starting CLASS 10 (up to 20 s with 350 % $I_{n\ Motor}$, one start per hour)
The soft starter rating can be selected to be as high as the rating of the motor used

Application		Conveyor belts	Roller conveyors	Compressors	Small fans [1]	Pumps	Hydraulic pumps
Starting parameters							
• Voltage ramp and current limiting							
- Starting voltage	%	70	60	50	30	30	30
- Starting time	s	10	10	10	10	10	10
- Current limiting value		Deactivated	Deactivated	4 x I_M	4 x I_M	Deactivated	Deactivated
• Torque ramp							
- Start torque	%	60	50	40	20	10	10
- Final torque	%	150	150	150	150	150	150
- Starting time	s	10	10	10	10	10	10
• Breakaway pulse		Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)
Ramp-down mode		Soft stop	Soft stop	Free ramp-down	Free ramp-down	Pump stop	Free ramp-down

[1] The mass inertia of the fan is 10 times the mass inertia of the motor.

Application examples for heavy starting (CLASS 20)

Heavy starting CLASS 20 (up to 40 s with 350 % $I_{n\ Motor}$, one start per hour)
The soft starter has to be selected one performance class higher than the motor used

Application		Stirrers	Centrifuges	Milling machines
Starting parameters				
• Voltage ramp and current limiting				
- Starting voltage	%	30	30	30
- Starting time	s	30	30	30
- Current limiting value		4 x I_M	4 x I_M	4 x I_M
• Torque ramp				
- Start torque	%	30	30	30
- Final torque	%	150	150	150
- Starting time	s	30	30	30
• Breakaway pulse		Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)
Ramp-down mode		Free ramp-down	Free ramp-down	Free ramp-down or DC braking

Application examples for very heavy starting (CLASS 30)

Very heavy starting CLASS 30 (up to 60 s with 350 % $I_{n\ Motor}$, one start per hour)
The soft starter has to be selected two performance classes higher than the motor used

Application		Large fans [1]	Mills	Crushers	Circular saws/bandsaws
Starting parameters					
• Voltage ramp and current limiting					
- Starting voltage	%	30	50	50	30
- Starting time	s	60	60	60	60
- Current limiting value		4 x I_M	4 x I_M	4 x I_M	4 x I_M
• Torque ramp					
- Start torque	%	20	50	50	20
- Final torque	%	150	150	150	150
- Starting time	s	60	60	60	60
• Breakaway pulse		Deactivated (0 ms)	80 %, 300 ms	80 %, 300 ms	Deactivated (0 ms)
Ramp-down mode		Free ramp-down	Free ramp-down	Free ramp-down	Free ramp-down

[1] The mass inertia of the fan is ≥10 times the mass inertia of the motor.

Note:

These tables present sample set values and device dimensions. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during commissioning.

For dimensioning soft starters under other boundary conditions, also for heavy starting up to CLASS 30, we recommend our Simulation Tool for Soft Starters (STS):

https://support.industry.siemens.com/cs/ww/en/view/101494917

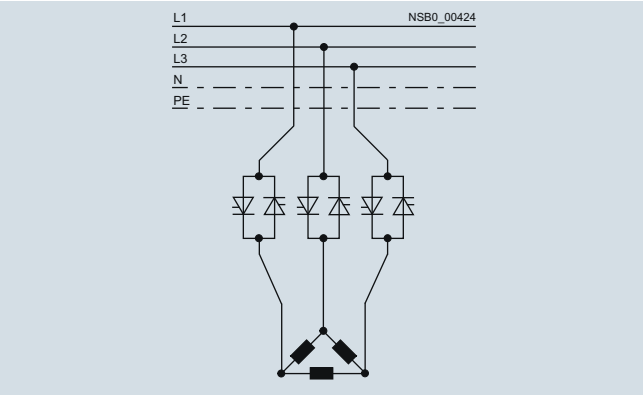
or our Technical Assistance:
Tel.: +49 (0) 911-895-5900,
Email: technical-assistance@siemens.com.

Circuit concept

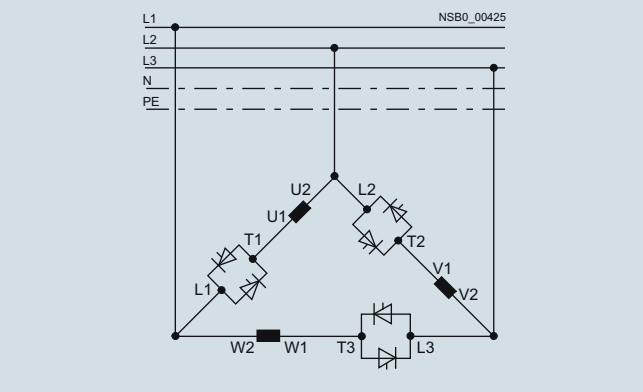
The SIRIUS 3RW44 soft starters can be operated in two different types of circuit:

- Inline circuit:
  The controls for isolating and protecting the motor are simply connected in series with the soft starter. The motor is connected to the soft starter with three leads.
- Inside-delta circuit:
  The wiring is similar to that of wye-delta starters. The phases of the soft starter are connected in series with the individual motor windings. The soft starter then only has to carry the phase current, amounting to about 58 % of the rated motor current (conductor current).

Comparison of the types of circuit:



Inline circuit:
Rated current I_e corresponds to the rated motor current I_n, three cables to the motor



Inside-delta circuit:
Rated current I_e corresponds to approx. 58 % of the rated motor current I_n, six cables to motor (as for wye-delta starters)

Which circuit?

Using the inline circuit involves the lowest wiring outlay. If the soft starter to motor connections are long, this circuit is preferable.

The wiring complexity is twice as high when using the inside-delta circuit, but a smaller device can be used with the same rating. Thanks to the choice of operating mode between the inline circuit and inside-delta circuit, it is always possible to select the most favorable solution.

The braking function is possible only in the inline circuit.

Configuration

The solid-state 3RW44 soft starters are designed for normal starting. In case of heavy starting or increased starting frequency, a larger device must be selected.

3RW44 soft starters may be used in isolated supply networks (IT systems) up to 600 V AC.

For long starting times it is recommended to have a PTC sensor in the motor. This also applies for the ramp-down modes torque control, pump stop and DC braking, because during the ramp-down time in these modes, an additional current loading applies in contrast to free ramp-down.

No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e.g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses and controls) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately.

A bypass contact system and electronic overload relay are already integrated in the 3RW44 soft starter and therefore do not have to be ordered separately.

The harmonic component load for starting currents must be taken into consideration for the selection of motor starter protectors (selection of release).

Note:

When three-phase motors are switched on, voltage drops occur as a rule on starters of all types (direct-on-line starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

For dimensioning soft starters, we recommend our Simulation Tool for Soft Starters (STS):
https://support.industry.siemens.com/cs/ww/en/view/101494917
or our Technical Assistance: Tel.: +49 (0) 911-895-5900,
e-mail: technical-assistance@siemens.com.

Device interface, PROFIBUS DP/PROFINET communication module, Soft Starter ES parameterizing and operating software

The solid-state 3RW44 soft starters have a PC interface for communicating with the Soft Starter ES software or for connecting the external display and operator module. If the optional PROFIBUS/PROFINET communication module is used, the 3RW44 soft starter can be integrated in the PROFIBUS/PROFINET network and communicate using the GSD file or Soft Starter ES Premium software.

SIRIUS 3RW44 soft starter block library for SIMATIC PCS 7

The SIRIUS 3RW44 Soft Starter PCS 7 block library can be used for simple and easy integration of SIRIUS 3RW44 soft starters into the SIMATIC PCS 7 process control system. The SIRIUS 3RW44 soft starter PCS 7 block library contains the diagnostics and driver blocks corresponding with the SIMATIC PCS 7 diagnostics and driver concept as well as the elements (symbols and faceplates) required for operator control and process monitoring.

Manual for SIRIUS 3RW44

In addition to relevant configuration, commissioning, and service information, the manual also contains example circuits and technical specifications for all devices:
https://support.industry.siemens.com/cs/ww/en/view/21772518.

Overview

Type	Solid-state relays			Solid-state contactors		Function modules					
	Single-phase		3-phase	Single-phase	3-phase	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
	22.5 mm	45 mm	45 mm				Basic	Extended			
Usage											
Simple use of existing solid-state relays	❑	✓	❑	❑	❑	--	--	--	--	--	--
Complete unit "Ready to use"	❑	❑	❑	✓	✓	--	--	--	--	--	--
Space-saving	✓	--	✓	✓	✓	✓	✓	--	--	--	--
Can be extended with modular function modules	✓	--	[1]	✓	[1]	--	--	--	--	--	--
Frequent switching and monitoring of loads and solid-state relays/solid-state contactors	--	--	--	--	--	--	✓	✓	✓	✓	✓
Monitoring of up to 6 partial loads	--	--	--	--	--	--	✓	--	✓	✓	--
Monitoring of more than 6 partial loads	--	--	--	--	--	--	--	✓	--	--	--
Control of the heating power through an analog input	--	--	--	--	--	✓	--	--	--	✓	✓
Power control	--	--	--	--	--	--	--	--	--	--	✓
Startup											
Easy setting of setpoint values with "Teach" button	--	--	--	--	--	--	✓	✓	--	✓	✓
"Remote Teach" input for setting setpoints	--	--	--	--	--	--	--	--	✓	--	--
Mounting											
Mounting onto mounting rails or mounting plates	--	--	--	✓	✓	--	--	--	--	--	--
Can be snapped directly onto a solid-state relay or contactor	--	--	--	--	--	✓	✓	✓	✓	✓	✓
For use with "Coolplate" heat sink	✓	✓	✓	--	--	--	--	--	--	--	--
Cable routing											
Connection of load circuit as for controlgear	✓	--	✓	✓	✓	--	✓	✓	✓	✓	✓
Connection of load circuit from above	--	✓	--	--	--	--	--	--	--	--	--

✓ Function available

❑ Function possible

-- Function not possible

[1] The converter can also be used with three-phase devices.

General data

Article No. scheme

Product versions		Article number									
Solid-state switching devices for resistive/inductive loads	**Solid-state relays**	**3RF20**	□	□	–	□	□	□	□	□	1-phase, 45-mm width
		3RF21	□	□	–	□	□	□	□	□	1-phase, 22.5-mm width
		3RF22	□	□	–	□	□	□	□	□	3-phase, 45-mm width
	Solid-state contactors	**3RF23**	□	□	–	□	□	□	□	□	Single-phase
		3RF24	□	□	–	□	□	□	□	□	Three-phase
Type current	e.g. 20 = 20 A		□	□							
Connection type	Screw terminals					**1**					
	Spring-type terminals					**2**					
	Ring terminal lug connection					**3**					
Switching function	Zero-point switching						**A**				
	Instantaneous switching						**B**				
	Zero-point switching						**C**				Low Noise
	Zero-point switching						**D**				Short-circuit-proof with B MCB
Single-phase or number of controlled phases	Single-phase							**A**			
	2-phase							**B**			
	Three-phase							**C**			
	Reversing contactor							**D**			
Rated control supply voltage U_s	24 V DC								**0**		
	24 V AC/DC								**1**		
	110 ... 230 V AC								**2**		
	110 V AC								**3**		
	4 ... 30 V DC								**4**		
	230 V AC								**5**		
Rated operational voltage U_e	24 ... 230 V AC									**2**	
	48 ... 460 V AC									**4**	
	48 ... 600 V AC									**5**	
	48 ... 600 V AC									**6**	Blocking voltage 1600 V
Example		**3RF21**	**2**	**0**	–	**1**	**A**	**A**	**0**	**6**	

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

Features

- Considerable space savings thanks to a width of only 22.5 mm
- Variety of connection methods: Screw terminal, spring-type connection or ring terminal lug, there is no problem – they are all finger-safe
- Flexible for all applications with function modules for retrofitting
- Possibility of fuseless short-circuit proof design

Benefits

- Saves time and costs with fast mounting and commissioning, short start up times and easy wiring
- Extremely long life, low maintenance, rugged and reliable
- Space-saving and safe thanks to side-by-side mounting up to an ambient temperature of +60 °C
- Modular design: Standardized function modules and heat sinks can be used in conjunction with solid-state relays to satisfy individual requirements
- Safety due to lifelong, vibration-resistant and shock-resistant spring-type terminal connection method even under tough conditions

Application

Applications

Example: Plastics processing industry

Thanks to their high switching endurance SIRIUS 3RF2 solid-state switching devices are ideal for controlling electrical heat. This is because the more precise the temperature regulation process has to be, the higher the switching frequency. The accurate regulation of electrical heat is used for example in many processes in the plastics processing industry:

- Band heaters heat the extrudate to the correct temperature in plastic extruders
- Heat emitters heat plastic blanks to the correct temperature
- Heat drums dry plastic granules
- Heating channels keep molds at the correct temperature in order to manufacture different plastic parts without defects

The powerful SIRIUS 3RF2 solid-state relays and contactors can be used for the simultaneous control of several heating loads. By using a load monitoring module the individual partial loads can easily be monitored, and in the event of a failure a signal is generated to be sent to the controller.

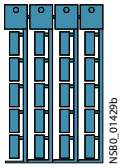
Use in fuseless load feeders

Compared with the fused configuration of load feeders, short circuit and line protection using miniature circuit breakers is easy to achieve with SIRIUS 3RF2 solid-state relays and contactors.

A special version of the solid-state contactors can be protected against damage in the case of a short circuit with a miniature circuit breaker with type B tripping characteristic. This allows the low-cost and simple design of fuseless load feeders with full protection of the switchgear.

Selection and ordering data

Inscription labels for 3RF2 series

	Designation	Labeling area (W x H)	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm x mm		d					
Blank labels									
 3RT19 00-1SB20 (1 frame = 20 units)	**Unit labeling plates for SIRIUS**[1]	10 x 7	Pastel turquoise	15	**3RT1900-1SB10**		100	816 units	41B
		20 x 7	Pastel turquoise	20	**3RT1900-1SB20**		100	340 units	41B
	Adhesive labels for SIRIUS	19 x 6	Pastel turquoise	15	**3RT1900-1SB60**		100	3 060 units	41B
		19 x 6	Zinc yellow	15	**3RT1900-1SD60**		100	3 060 units	41B

[1] PC labeling system for the individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH see page 16/20.

More information

Notes on integration in the load feeders

The SIRIUS solid-state switching devices are very easy to integrate into the load feeders thanks to their industrial connection method and design.

Particular attention must however be paid to the circumstances of the installation and ambient conditions, as the performance of the solid-state switching devices is largely dependent on these. Depending on the version, certain restrictions must be observed. Detailed information in relation to solid-state contactors, e.g. on minimum spacing, and in relation to solid-state relays on the choice of heat sink can be found in the technical specifications and in the product data sheets, see https://support.industry.siemens.com/cs/ww/en/ps/16222.

Short-circuit and overload protection

Despite the rugged power semiconductors that are used, solid-state switching devices respond more sensitively to short circuits in the load feeder. Consequently, special precautions have to be taken against destruction, depending on the type of design.

Siemens generally recommends using SITOR semiconductor protection fuses. These fuses also provide protection against destruction in the event of a short circuit even when the solid-state contactors and solid-state relays are fully utilized.

Alternatively, if there is lower loading, protection can also be provided by standard fuses or miniature circuit breakers. This protection is achieved by overdimensioning the solid-state switching devices accordingly. The technical specifications and the product data sheets contain details both about the solid-state fuse protection itself and about use of the devices with conventional protection equipment.

Electromagnetic compatibility (EMC)

The solid-state switching devices are suitable for interference-free operation in industrial networks without further measures. If they are used in public networks, it may be necessary for conducted interference to be reduced by means of filters.

This does not include the solid-state contactors for resistive loads of the special type 3RF23..-.CA.. "Low Noise". These comply with the class B limit values up to a rated current of 16 A. If other versions are used, and at currents of over 16 A, standard filters can be used in order to comply with the limit values. The decisive factors when it comes to selecting the filters are essentially the current loading and the other parameters (operational voltage, design type, etc.) in the load feeder.

Suitable filters can be ordered from EPCOS AG. For more information see www.epcos.com.

Product information and technical specifications

For product data sheets with detailed technical specifications, dimensional drawings and characteristic curves see https://support.industry.siemens.com/cs/ww/en/ps/16222.

For additional information, please enter the article number of the required device under the tab "Product List".

Overview

Solid-state relays (without heat sink)

SIRIUS solid-state relays are suitable for surface mounting on existing cooling surfaces. Mounting is quick and easy, involving just two screws. The special technology of the power semiconductor ensures there is excellent thermal contact with the heat sink. Depending on the nature of the heat sink, the capacity reaches up to 88 A on resistive loads.

The solid-state relays are available in three different versions:

- 3RF21 single-phase solid-state relay with a width of 22.5 mm
- 3RF20 single-phase solid-state relay with a width of 45 mm
- 3RF22 three-phase solid-state relay with a width of 45 mm

The 3RF21 and 3RF22 solid-state relays can be expanded with various function modules to adapt them to individual applications.

Version for resistive loads "zero-point switching"

This standard version is often used for switching space heaters on and off.

Version for inductive loads "instantaneous switching"

In this version the solid-state relay is specifically matched to inductive loads. Whether it is a matter of frequent actuation of the valves in a filling plant or starting and stopping small operating mechanisms in packet distribution systems, operation is carried out safely and noiselessly.

Special "Low noise" version

Thanks to a special control circuit, this special version can be used in public networks up to 16 A without any additional measures such as interference suppressor filters. As a result, in terms of emitted interference, it conforms to limit value curve class B according to IEC 60947-4-3.

Single-phase solid-state relays with a width of 22.5 mm

With its compact design and a width of just 22.5 mm, which is not exceeded even for currents of up to 88 A, the 3RF21 solid-state relay offers an ultra-small footprint. The logical connection method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

Single-phase solid-state relays with a width of 45 mm

The solid-state relays with a width of 45 mm provide for connection of the power supply lead and the load from above. This makes it easy to replace existing solid-state relays in existing arrangements. The connection of the control cable is as space-saving as the 22.5 mm design, as it is simply plugged on.

Three-phase solid-state relays with a width of 45 mm

With its compact design and a width of just 45 m, which stays the same even at currents of up to 55 A, the 3RF22 solid-state relay offers an ultra small footprint. The logical connection method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

The three-phase solid-state relays are available with

- Two-phase control (suitable in particular for circuits without connection to the neutral conductor) and
- Three-phase control (suitable for star circuits with connection to the neutral conductor or for applications in which the system requires all phases to be switched)

Selection notes

When selecting solid-state relays, in addition to information about the network, the load and the ambient conditions it is also necessary to know details of the planned design. The solid-state relays can only conform to their specific technical specifications if they are mounted with appropriate care on an adequately dimensioned heat sink.

Mounting solid-state relays directly on a mounting plate made of sheet steel is inadequate in terms of heat dissipation.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select the relay design and choose a solid-state relay with higher rated current than the load
- Determine the thermal resistance of the proposed heat sink
- Check the correct relay size with the aid of the diagrams

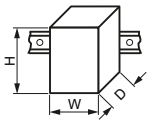
Overview

Single-phase solid-state relays (without heat sink) with a width of 22.5 mm

With its compact design and a width of just 22.5 mm, which is not exceeded even for currents of up to 88 A, the 3RF21 solid-state relay offers an ultra-small footprint. The logical connection method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

Technical specifications

More information	
System Manual and Manual, see https://support.industry.siemens.com/cs/ww/en/view/60311318 https://support.industry.siemens.com/cs/ww/en/view/60298187	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16224/faq

Type			**3RF21..-1....**	**3RF21..-2....**	**3RF21..-3....**
Dimensions (W x H x D)		mm	22.5 x 85 x 48 mm	22.5 x 85 x 48 mm	22.5 x 85 x 48 mm
General data					
Ambient temperature					
• During operation, derating from 40 °C		°C	-25 ... + 60		
• During storage		°C	-55 ... + 80		
Installation altitude		m	0 ... 1 000; derating from 1 000		
Shock resistance acc. to IEC 60068-2-27		*g*/ms	15/11		
Vibration resistance acc. to IEC 60068-2-6		*g*	2		
Degree of protection			IP20		IP00 (IP20 when using the terminal cover 3RA2900-3PA88)
Electromagnetic compatibility (EMC)					
• Emitted interference					
- Conducted interference voltage acc. to IEC 60947-4-3			Class A for industrial applications		
- Emitted, high-frequency interference voltage acc. to IEC 60947-4-3			Class B for residential, business and commercial applications		
• Interference immunity					
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)		kV	Contact discharge 4; air discharge 8; behavior criterion 2		
- Induced RF fields acc. to IEC 61000-4-6		MHz	0.15 ... 80; 140 dBµV; behavior criterion 1		
- Burst acc. to IEC 61000-4-4		kV	2/5.0 kHz; behavior criterion 2		
- Surge acc. to IEC 61000-4-5		kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2		
Mounting					
• Screws (not included in the scope of supply)			2 x M4		
• Tightening torque		Nm	1.5		
Connection type			**Screw terminals**	**Spring-type terminals**	**Ring terminal lug connection**
Connection, main contacts					
• Conductor cross-sections					
- Solid		mm^2	2 x (1.5 ... 2.5)[1], 2 x (2.5 ... 6)[1]	2 x (0.5 ... 2.5)	--
- Finely stranded with end sleeve		mm^2	2 x (1 ... 2.5)[1]; 2 x (2.5 ... 6)[1] 1 x 10	2 x (0.5 ... 1.5)	--
- Finely stranded without end sleeve		mm^2	--	2 x (0.5 ... 2.5)	--
- Solid or stranded, AWG cables			2 x (AWG 14 ... 10)	2 x (AWG 18 ... 14)	--
• Terminal screws			M4	--	M5
• Tightening torques		Nm lb.in	2 ... 2.5 7 ... 10.3	-- --	2.5 ... 2 10.3 ... 7
• Cable lugs			--	--	
- According to DIN 46234					5-2.5, 5-6, 5-10, 5-16, 5-25
- According to JIS C 2805					R 2-5, R 5.5-5, R 8-5, R 14-5
- Width, maximum		mm			12
Connection, auxiliary/control contacts					
• Conductor cross-sections		mm AWG	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) 20 ... 12	0.5 ... 2.5 20 ... 12	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) 20 ... 12
• Stripped length		mm	7	10	7
• Terminal screw			M3	--	M3
• Tightening torques		Nm lb.in	0.5 ... 0.6 4.5 ... 5.3	-- --	0.5 ... 0.6 4.5 ... 5.3

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

Type	I_{max} [1] at R_{thha}/T_u = 40 °C		I_e acc. to IEC 60947-4-3 at R_{thha}/T_u = 40 °C		I_e acc. to UL/CSA at R_{thha}/T_u = 50 °C		Power loss at I_{max}	Minimum load current	Off-state current
	A	K/W	A	K/W	A	K/W	W	A	mA
Main circuit									
3RF2120-.....	20	2.0	20	1.7	20	1.3	28.6	0.1	10
3RF2130-1....	30	1.1	30	0.79	30	0.56	44.2	0.5	10
3RF2150-1....	50	0.68	50	0.48	50	0.33	66	0.5	10
3RF2150-2....	50	0.68	20	2.6	20	2.9	66	0.5	10
3RF2150-3....	50	0.68	50	0.48	50	0.33	66	0.5	10
3RF2170-1....	70	0.40	50	0.77	50	0.6	94	0.5	10
3RF2190-1....	88	0.33	50	0.94	50	0.85	118	0.5	10
3RF2190-2....	88	0.33	20	2.8	20	3.5	118	0.5	10
3RF2190-3....	88	0.33	88	0.22	83	0.19	118	0.5	10

1) The current I_{max} provides information about the performance of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Note:

The required heat sinks for the corresponding load currents can be determined from the characteristic curves (see page 6/59, "More Information"). The minimum thickness values for the mounting surface must be observed.

Type	Rated peak withstand current I_{tsm}	I^2t value
	A	A^2s
Main circuit		
3RF2120-.....	200	200
3RF2130-..A.2	300	450
3RF2130-..A.4	300	450
3RF2130-..A.5	300	450
3RF2130-..A.6	400	800
3RF2150-.....	600	1 800
3RF2170-..A.2	1 200	7 200
3RF2170-..A.4	1 200	7 200
3RF2170-..A.5	1 200	7 200
3RF2170-..A.6	1 150	6 600
3RF2190-.....	1 150	6 600

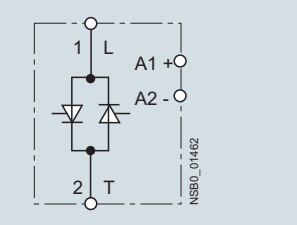
Type		3RF21..-....2	3RF21..-....4	3RF21..-....5	3RF21..-....6
Main circuit					
Rated operational voltage U_e	V AC	24 ... 230	48 ... 460		
• Operating range	V AC	20 ... 253	40 ... 506	40 ... 660	
• Rated frequency	Hz	50/60 ± 10 %			
Rated insulation voltage U_i	V	600			
Blocking voltage	V	800	1 200		1 600
Rate of voltage rise	V/µs	1 000			

Type		3RF21..-...0.	3RF21..-...1.		3RF21..-...2.	3RF21..-...4.
Control circuit						
Method of operation		DC operation	AC/DC operation		AC operation	DC operation
Rated control supply voltage U_s	V	24	24 AC	24 DC	110 ... 230	4 ... 30
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10%	--	50/60 ± 10 %	--
Control supply voltage, max.	V	30	26.5 AC	30 DC	253	30
Typical actuating current	mA	20 / Low Power: 6.5[1]	20		15	20
Response voltage	V	15	14 AC	15 DC	90	4
Drop-out voltage	V	5	5 AC	5 DC	40	1
Operating times						
• ON-delay	ms	1 + max. one half-wave[2]	10 + max. one half-wave[2]		40 + max. one half-wave[2]	1 + max. one half-wave[2]
• OFF-delay	ms	1 + max. one Half-wave	15 + max. one Half-wave		40 + max. one Half-wave	1 + max. one Half-wave

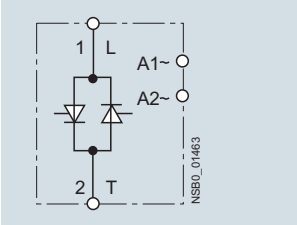
1) Applies to the "Low Power" version 3RF21..-.AA..-**0KN0**.
2) Only for zero-point switching devices.

Circuit diagrams

DC control supply voltage



AC control supply voltage



Selection and ordering data

Single-phase solid-state relays (without heat sink) with a width of 22.5 mm

	Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	Screw terminals[2]		PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU			
	A	V	d					
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC								
 3RF2120-1AA02	20	24 DC	2	**3RF2120-1AA02**		1	1 unit	41C
	30		2	**3RF2130-1AA02**		1	1 unit	41C
	50		2	**3RF2150-1AA02**		1	1 unit	41C
	70		2	**3RF2170-1AA02**		1	1 unit	41C
	90		5	**3RF2190-1AA02**		1	1 unit	41C
	20	110 ... 230 AC	2	**3RF2120-1AA22**		1	1 unit	41C
	30		2	**3RF2130-1AA22**		1	1 unit	41C
	50		5	**3RF2150-1AA22**		1	1 unit	41C
	70		5	**3RF2170-1AA22**		1	1 unit	41C
	90		5	**3RF2190-1AA22**		1	1 unit	41C
	20	4 ... 30 DC	2	**3RF2120-1AA42**		1	1 unit	41C
	30		2	**3RF2130-1AA42**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC								
	20	24 DC	2	**3RF2120-1AA04**		1	1 unit	41C
	30		2	**3RF2130-1AA04**		1	1 unit	41C
	50		2	**3RF2150-1AA04**		1	1 unit	41C
	70		2	**3RF2170-1AA04**		1	1 unit	41C
	90		2	**3RF2190-1AA04**		1	1 unit	41C
	20	24 AC/DC	5	**3RF2150-1AA14**		1	1 unit	41C
	20	110 ... 230 AC	2	**3RF2120-1AA24**		1	1 unit	41C
	30		2	**3RF2130-1AA24**		1	1 unit	41C
	50		5	**3RF2150-1AA24**		1	1 unit	41C
	70		2	**3RF2170-1AA24**		1	1 unit	41C
	90		5	**3RF2190-1AA24**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC								
	70	24 DC Low Power	5	**3RF2170-1AA05-0KN0**		1	1 unit	41C
	20	4 ... 30 DC	5	**3RF2120-1AA45**		1	1 unit	41C
	30		5	**3RF2130-1AA45**		1	1 unit	41C
	50		5	**3RF2150-1AA45**		1	1 unit	41C
	70		2	**3RF2170-1AA45**		1	1 unit	41C
	90		5	**3RF2190-1AA45**		1	1 unit	41C
Zero-point switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC								
	30	24 DC	2	**3RF2130-1AA06**		1	1 unit	41C
	50		2	**3RF2150-1AA06**		1	1 unit	41C
	70		5	**3RF2170-1AA06**		1	1 unit	41C
	90		5	**3RF2190-1AA06**		1	1 unit	41C
	30	110 ... 230 AC	5	**3RF2130-1AA26**		1	1 unit	41C
	50		5	**3RF2150-1AA26**		1	1 unit	41C
	70		5	**3RF2170-1AA26**		1	1 unit	41C
	90		5	**3RF2190-1AA26**		1	1 unit	41C

[1] The type current provides information about the performance capacity of the solid-state relay.
The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

[2] Please note that this version can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm^2.

Other rated control supply voltages on request.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	Screw terminals[2] Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Instantaneous switching, rated operational voltage U_e 24 ... 230 V AC							
50	110 ... 230 AC	5	**3RF2150-1BA22**		1	1 unit	41C
Instantaneous switching, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	5	**3RF2120-1BA04**		1	1 unit	41C
30		5	**3RF2130-1BA04**		1	1 unit	41C
50		5	**3RF2150-1BA04**		1	1 unit	41C
70		5	**3RF2170-1BA04**		1	1 unit	41C
90		5	**3RF2190-1BA04**		1	1 unit	41C
Instantaneous switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC							
50	24 DC	5	**3RF2150-1BA06**		1	1 unit	41C
Low Noise[3] · Zero-point switching, rated operational voltage U_e 48 ... 460 V AC							
70	24 DC	5	**3RF2170-1CA04**		1	1 unit	41C

1) The type current provides information about the performance capacity of the solid-state relay.
The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

2) Please note that this version can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm^2.

3) See page 6/60.

Other rated control supply voltages on request.

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	Spring-type terminals[2] Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC							
20	24 DC	2	**3RF2120-2AA02**		1	1 unit	41C
50		5	**3RF2150-2AA02**		1	1 unit	41C
90		5	**3RF2190-2AA02**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2120-2AA22**		1	1 unit	41C
50		5	**3RF2150-2AA22**		1	1 unit	41C
90		5	**3RF2190-2AA22**		1	1 unit	41C
20	4 ... 30 DC	5	**3RF2120-2AA42**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	2	**3RF2120-2AA04**		1	1 unit	41C
50		5	**3RF2150-2AA04**		1	1 unit	41C
90		5	**3RF2190-2AA04**		1	1 unit	41C
50	24 AC/DC	5	**3RF2150-2AA14**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2120-2AA24**		1	1 unit	41C
50		5	**3RF2150-2AA24**		1	1 unit	41C
90		5	**3RF2190-2AA24**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC							
20	4 ... 30 DC	5	**3RF2120-2AA45**		1	1 unit	41C
Zero-point switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC							
50	24 DC	5	**3RF2150-2AA06**		1	1 unit	41C
90		5	**3RF2190-2AA06**		1	1 unit	41C
50	110 ... 230 AC	5	**3RF2150-2AA26**		1	1 unit	41C
90		5	**3RF2190-2AA26**		1	1 unit	41C

3RF2120-2AA02

1) The type current provides information about the performance capacity of the solid-state relay.
The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

2) Please note that the version with spring-type terminals can only be used for a rated current of up to approx. 20 A and a conductor cross-section of 2.5 mm^2. Higher currents can be achieved by connecting two conductors per terminal.

Other rated control supply voltages on request.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	Ring terminal lug connection Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC							
20	24 DC	5	**3RF2120-3AA02**		1	1 unit	41C
50		5	**3RF2150-3AA02**		1	1 unit	41C
90		5	**3RF2190-3AA02**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2120-3AA22**		1	1 unit	41C
50		5	**3RF2150-3AA22**		1	1 unit	41C
90		5	**3RF2190-3AA22**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	5	**3RF2120-3AA04**		1	1 unit	41C
50		5	**3RF2150-3AA04**		1	1 unit	41C
90		5	**3RF2190-3AA04**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2120-3AA24**		1	1 unit	41C
50		5	**3RF2150-3AA24**		1	1 unit	41C
90		5	**3RF2190-3AA24**		1	1 unit	41C
90	4 ... 30 DC	5	**3RF2190-3AA44**		1	1 unit	41C
Zero-point switching · Blocking voltage 1600 V, rated operational voltage U_e 48 ... 600 V AC							
50	24 DC	5	**3RF2150-3AA06**		1	1 unit	41C
90		5	**3RF2190-3AA06**		1	1 unit	41C
50	110 ... 230 AC	5	**3RF2150-3AA26**		1	1 unit	41C
90		5	**3RF2190-3AA26**		1	1 unit	41C


3RF2120-3AA02

[1] The type current provides information about the performance capacity of the solid-state relay.
The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Other rated control supply voltages on request.

Accessories

Version	SD	Article No. Price per PU	PU (UNIT, SET, M)	PS*	PG
	d				
Optional accessories					
		Spring-type terminals			
Screwdrivers For all SIRIUS devices with spring-type terminals length approx. 200 mm, 3.0 mm x 0.5 mm titanium gray/black, partially insulated	2	**3RA2908-1A**	1	1 unit	41B
		Ring terminal lug connection			
Terminal covers For 3RF21 solid-state relays and 3RF23 solid-state contactors with ring terminal lug connection (With this terminal cover, degree of protection IP20 can be achieved in the terminal compartment in the case of ring terminal lug connections. It can also be used for screw terminals after simple adaptation)	2	**3RF2900-3PA88**	1	10 units	41C
Control connector					
		Screw terminals			
Replacement control connector For 3RF20/21/22 and 3RF23/24 Screw terminals	5	**3RF2900-1TA88**	1	50 units	41C
		Spring-type terminals			
Replacement control connector For 3RF20/21/22 and 3RF23/24 Spring-type terminals	5	**3RF2900-2TA88**	1	50 units	41C
Control connector For 3RF20/21/22 and 3RF23/24 Spring-type terminals with two clamping points per contact	5	**3RF2900-2TB88**	1	10 units	41C


3RA2908-1A


3RF2900-3PA88

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

SIRIUS 3RF20 solid-state relays, single-phase, 45 mm

Overview

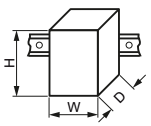
Single-phase solid-state relays (without heat sink) with a width of 45 mm

The solid-state relays with a width of 45 mm provide for connection of the power supply lead and the load from above. This makes it easy to replace existing solid-state relays in existing arrangements.

The connection of the control cable is as space-saving as the 22.5 mm design, as it is simply plugged on.

Technical specifications

More information	
System Manual and Manual, see https://support.industry.siemens.com/cs/ww/en/view/60311318 https://support.industry.siemens.com/cs/ww/en/view/60298187	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16225/faq

Type			**3RF20..-1....**	**3RF20..-4....**
Dimensions (W x H x D)		mm	45 x 58 x 48	45 x 58 x 48
General data				
Ambient temperature				
• During operation, derating from 40 °C		°C	-25 ... +60	
• During storage		°C	-55 ... +80	
Installation altitude		m	0 ... 1 000; derating from 1 000	
Shock resistance acc. to IEC 60068-2-27		*g*/ms	15 /11	
Vibration resistance acc. to IEC 60068-2-6		*g*	2	
Degree of protection			IP20	
Electromagnetic compatibility (EMC)				
• Emitted interference				
- Conducted interference voltage acc. to IEC 60947-4-3			Class A for industrial applications	
- Emitted, high-frequency interference voltage acc. to IEC 60947-4-3			Class B for residential, business and commercial applications	
• Interference immunity				
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)		kV	Contact discharge 4; air discharge 8; behavior criterion 2	
- Induced RF fields acc. to IEC 61000-4-6		MHz	0.15 ... 80; 140 dBµV; behavior criterion 1	
- Burst acc. to IEC 61000-4-4		kV	2/5.0 kHz; behavior criterion 2	
- Surge acc. to IEC 61000-4-5		kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2	
Mounting				
• Screws (not included in the scope of supply)			2 x M4	
• Tightening torques		Nm	1.5	
Connection type			**Screw terminals**	**Spring-type terminals**
Connection, main contacts				
• Conductor cross-sections				
- Solid		mm^2	2 x (1.5 ... 2.5)[1], 2 x (2.5 ... 6)[1]	--
- Finely stranded with end sleeve		mm^2	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1], 1 x 10	--
- Solid or stranded, AWG cables			2 x (AWG 14 ... 10)	--
• Terminal screw			M4	--
• Tightening torque		Nm lb.in	2 ... 2.5 7 ... 10.3	-- --
Connection, auxiliary/control contacts				
• Conductor cross-sections		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0), AWG 20 ... 12	0.5 ... 2.5 AWG 20 ... 12
• Stripped length		mm	7	10
• Terminal screw			M3	--
• Tightening torque		Nm lb.in	0.5 ... 0.6 4.5 ... 5.3	-- --

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Type	I_{max} [1] at R_{thha}/T_u = 40 °C		I_e acc. to IEC 60947-4-3 at R_{thha}/T_u = 40 °C		I_e acc. to UL/CSA at R_{thha}/T_u = 50 °C		Power loss at I_{max}	Minimum load current	Off-state current
	A	K/W	A	K/W	A	K/W	W	A	mA
Main circuit									
3RF2020-1.A..	20	2.0	20	1.7	20	1.3	28.6	0.1	10
3RF2030-1.A..	30	1.1	30	0.79	30	0.56	44.2	0.5	10
3RF2050-1.A..	50	0.68	50	0.48	50	0.33	66	0.5	10
3RF2070-1.A..	70	0.40	50	0.77	50	0.6	94	0.5	10
3RF2090-1.A..	88	0.33	50	0.94	50	0.85	118	0.5	10

[1] The current I_{max} provides information about the performance of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Note:

The required heat sinks for the corresponding load currents can be determined from the characteristic curves (see page 6/59, "More Information"). The minimum thickness values for the mounting surface must be observed.

Type	Rated peak withstand current I_{tsm}	I^2t value
	A	A^2s
Main circuit		
3RF2020-1.A..	200	200
3RF2030-1.A.2	300	450
3RF2030-1.A.4	300	450
3RF2030-1.A.6	400	800
3RF2050-1.A..	600	1 800
3RF2070-1.A.2	1 200	7 200
3RF2070-1.A.4	1 200	7 200
3RF2070-1.A.5	1 200	7 200
3RF2070-1.A.6	1 150	6 600
3RF2090-1.A..	1 150	6 600

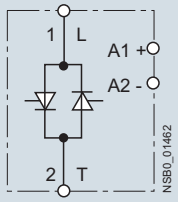
Type		3RF20.0-1.A.2	3RF20.0-1.A.4	3RF20.0-1.A.5	3RF20.0-1.A.6
Main circuit					
Rated operational voltage U_e	V AC	24 ... 230	48 ... 460	48 ... 600	
• Operating range	V AC	20 ... 253	40 ... 506	40 ... 660	
• Rated frequency	Hz	50/60 ± 10 %			
Rated insulation voltage U_i	V	600			
Blocking voltage	V	800	1 200		1 600
Rate of voltage rise	V/µs	1 000			

Type		3RF20.0-1.A0.	3RF20.0-1.A2.	3RF20.0-1.A4.
Control circuit				
Method of operation		DC operation	AC operation	DC operation
Rated control supply voltage U_S	V	24	110 ... 230	4 ... 30
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10 %	--
Control supply voltage, max.	V	30	253	30
Typical actuating current	mA	20	15	20
Response voltage	V	15	90	4
Drop-out voltage	V	5	40	1
Operating times				
• ON-delay	ms	1 + max. one half-wave[1]	40 + max. one half-wave[1]	1 + max. one half-wave[1]
• OFF-delay	ms	1 + max. one half-wave	40 + max. one half-wave	1 + max. one half-wave

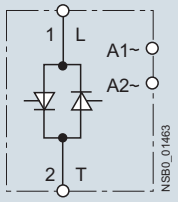
[1] Only for zero-point switching devices.

Circuit diagrams

DC control supply voltage



AC control supply voltage



SIRIUS 3RF20 solid-state relays, single-phase, 45 mm

Selection and ordering data

Single-phase solid-state relays (without heat sink) with a width of 45 mm

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	Screw terminals[2] Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC							
20	24 DC	2	**3RF2020-1AA02**		1	1 unit	41C
30		2	**3RF2030-1AA02**		1	1 unit	41C
50		2	**3RF2050-1AA02**		1	1 unit	41C
70		2	**3RF2070-1AA02**		1	1 unit	41C
90		2	**3RF2090-1AA02**		1	1 unit	41C
20	110 ... 230 AC	2	**3RF2020-1AA22**		1	1 unit	41C
30		2	**3RF2030-1AA22**		1	1 unit	41C
50		5	**3RF2050-1AA22**		1	1 unit	41C
70		5	**3RF2070-1AA22**		1	1 unit	41C
90		5	**3RF2090-1AA22**		1	1 unit	41C
20	4 ... 30 DC	5	**3RF2020-1AA42**		1	1 unit	41C
30		5	**3RF2030-1AA42**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	2	**3RF2020-1AA04**		1	1 unit	41C
30		2	**3RF2030-1AA04**		1	1 unit	41C
50		2	**3RF2050-1AA04**		1	1 unit	41C
70		2	**3RF2070-1AA04**		1	1 unit	41C
90		2	**3RF2090-1AA04**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2020-1AA24**		1	1 unit	41C
30		5	**3RF2030-1AA24**		1	1 unit	41C
50		5	**3RF2050-1AA24**		1	1 unit	41C
70		5	**3RF2070-1AA24**		1	1 unit	41C
90		5	**3RF2090-1AA24**		1	1 unit	41C
50	4 ... 30 DC	2	**3RF2050-1AA44**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC							
20	4 ... 30 DC	5	**3RF2020-1AA45**		1	1 unit	41C
50		5	**3RF2050-1AA45**		1	1 unit	41C
70		2	**3RF2070-1AA45**		1	1 unit	41C
90		5	**3RF2090-1AA45**		1	1 unit	41C
Zero-point switching · Blocking voltage 1600 V, rated operational voltage U_e 48 ... 600 V AC							
30	24 DC	5	**3RF2030-1AA06**		1	1 unit	41C
50		5	**3RF2050-1AA06**		1	1 unit	41C
70		5	**3RF2070-1AA06**		1	1 unit	41C
90		5	**3RF2090-1AA06**		1	1 unit	41C
30	110 ... 230 AC	5	**3RF2030-1AA26**		1	1 unit	41C
50		5	**3RF2050-1AA26**		1	1 unit	41C
70		5	**3RF2070-1AA26**		1	1 unit	41C
90		5	**3RF2090-1AA26**		1	1 unit	41C
Instantaneous switching rated operational voltage U_e 48 ... 460 V AC							
30	24 DC	5	**3RF2030-1BA04**		1	1 unit	41C

3RF2020-1AA02

1) The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

2) Please note that this version can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm^2.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS 3RF20 solid-state relays, single-phase, 45 mm

	Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	**Screw terminals + spring-type terminals** (control current side)	PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No. / Price per PU			
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC							
 3RF2050-4AA02	50	24 DC	5	**3RF2050-4AA02**	1	1 unit	41C

[1] The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Overview

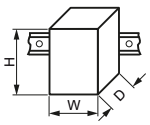
Three-phase solid-state relays (without heat sink) with a width of 45 mm

With its compact design and a width of just 45 m, which stays the same even at currents of up to 55 A, the 3RF22 solid-state relay offers an ultra small footprint. The logical connection method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

Important features:
- LED display
- Variety of connection methods
- Plug-in control connection
- Degree of protection IP20 (with ring terminal lug connection IP00)
- Zero-point switching, two- or three-phase controlled

Technical specifications

More information	
System Manual and Manual, see https://support.industry.siemens.com/cs/ww/en/view/60311318 https://support.industry.siemens.com/cs/ww/en/view/60298187	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16226/faq

Type		**3RF22..-1....**	**3RF22..-2....**	**3RF22..-3....**
Dimensions (W x H x D)	 mm	45 x 95 x 47	45 x 95 x 47	45 x 95 x 47
General data				
Ambient temperature				
• During operation, derating from 40 °C	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Installation altitude	m	0 ... 1 000; > 1 000 ask Technical Assistance		
Shock resistance acc. to IEC 60068-2-27	*g*/ms	15/11		
Vibration resistance acc. to IEC 60068-2-6	*g*	2		
Degree of protection		IP20		IP00
Insulation strength at 50/60 Hz (main/control circuit to ground)	V rms	4 000		
Electromagnetic compatibility (EMC)				
• Emitted interference - Conducted interference voltage acc. to IEC 60947-4-3		Class A for industrial applications[1]		
• Interference immunity - Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2		
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1		
- Burst acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge acc. to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2		
Mounting				
• Screws (not included in the scope of supply)		2 x M4		
• Tightening torques	Nm	1.5		
Connection type		**Screw terminals**	**Spring-type terminals**	**Ring terminal lug connection**
Connection, main contacts				
• Conductor cross-sections				
- Solid	mm^2	2 x (1.5 ... 2.5)[2], 2 x (2.5 ... 6)[2]	2 x (0.5 ... 2.5)	--
- Finely stranded with end sleeve	mm^2	2 x (1 ... 2.5)[2]; 2 x (2.5 ... 6)[2] 1 x 10	2 x (0.5 ... 1.5)	--
- Finely stranded without end sleeve	mm^2	--	2 x (0.5 ... 2.5)	--
- Solid or stranded, AWG cables		2 x (AWG 14 ... 10)	2 x (AWG 18 ... 14)	--
• Stripped length	mm	10	10	--
• Terminal screws		M4	--	M5
- Tightening torque, ∅ 5 ... 6 mm, PZ 2	Nm lb.in	2 ... 2.5 18 ... 22		2.5 ... 2 18 ... 22
• Cable lugs		--	--	
- According to DIN 46234				5-2.5 ... 5-25
- According to JIS C 2805				R 2-5 ... R 14-5
- Width, maximum	mm			12
Connection, auxiliary/control contacts				
• Conductor cross-sections with or without end sleeve	mm AWG	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) 20 ... 12	0.5 ... 2.5 20 ... 12	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) 20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw		M3	--	M3
- Tightening torque, ∅ 3.5, PZ 1	Nm lb.in	0.5 ... 0.6 4.5 ... 5.3		0.5 ... 0.6 4.5 ... 5.3

[1] These products were built as Class A devices. The use of these devices in residential areas could result in lead in radio interference. In this case these may be required to introduce additional interference suppression measures.

[2] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Type	I_{max} [1] at R_{thha}/T_u = 40 °C		I_e acc. to IEC 60947-4-3 at R_{thha}/T_u = 40 °C		I_e acc. to UL/CSA at R_{thha}/T_u = 50 °C		Power loss at I_{max}	Minimum load current	Max. off-state current
	A	K/W	A	K/W	A	K/W	W	A	mA
Main circuit									
3RF2230-1AB..	30	0.57	30	0.57	30	0.44	81	0.5	10
3RF2230-2AB..			20	1.36	20	1.15			
3RF2230-3AB..			30	0.57	30	0.44			
3RF2255-1AB..	55	0.18	50	0.27	50	0.19	151	0.5	10
3RF2255-2AB..			20	1.83	20	1.58			
3RF2255-3AB..			50	0.27	50	0.19			
3RF2230-1AC..	30	0.33	30	0.33	30	0.25	122	0.5	10
3RF2230-2AC..			20	0.86	20	0.72			
3RF2230-3AC..			30	0.33	30	0.25			
3RF2255-1AC..	55	0.09	50	0.15	50	0.1	226	0.5	10
3RF2255-2AC..			20	1.19	20	1.02			
3RF2255-3AC..			50	0.15	50	0.1			

[1] The current I_{max} provides information about the performance of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Note:

The required heat sinks for the corresponding load currents can be determined from the characteristic curves (see page 6/59, "More Information"). The minimum thickness values for the mounting surface must be observed.

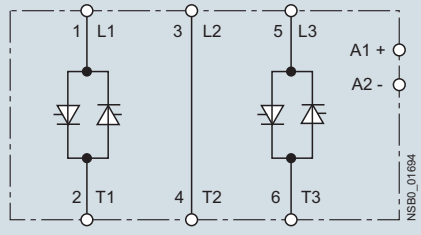
Type	Rated peak withstand current I_{tsm}	I^2t value
	A	A^2s
Main circuit		
3RF2230-....5	300	450
3RF2255-....5	600	1800

Type		3RF22..-.AB.5	3RF22..-.AC.5
Main circuit			
Controlled phases		2-phase	3-phase
Rated operational voltage U_e	V AC	48 ... 600	
• Operating range	V AC	40 ... 660	
• Rated frequency	Hz	50/60 ± 10 %	
Rated insulation voltage U_i	V	600	
Rated impulse withstand voltage U_{imp}	kV	6	
Blocking voltage	V	1200	
Rate of voltage rise	V/µs	1000	

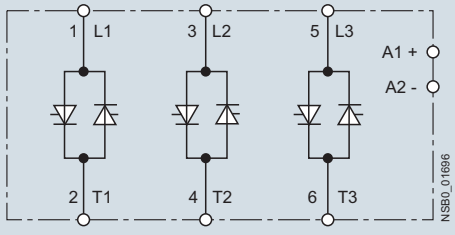
Type		3RF22..-.A.3.	3RF22..-.A.4.
Control circuit			
Method of operation		AC operation	DC operation
Rated control supply voltage U_s	V	110	4 ... 30
Rated frequency of the control supply voltage	Hz	50/60 ± 10 %	--
Control supply voltage, max.	V	121	30
Typical actuating current	mA	15	30
Response voltage	V	90	4
Drop-out voltage	V	< 40	1
Operating times			
• ON-delay	ms	40 + max. one half-wave	1 + max. one half-wave
• OFF-delay	ms	40 + max. one half-wave	1 + max. one half-wave

Circuit diagrams

Two-phase controlled,
DC control supply voltage



Three-phase controlled,
DC control supply voltage



SIRIUS 3RF22 solid-state relays, three-phase, 45 mm

Selection and ordering data

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	**Screw terminals**[2] Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching Rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
30	110 AC	5	**3RF2230-1AB35**		1	1 unit	41C
55		5	**3RF2255-1AB35**		1	1 unit	41C
30	4 ... 30 DC	5	**3RF2230-1AB45**		1	1 unit	41C
55		5	**3RF2255-1AB45**		1	1 unit	41C
Three-phase controlled							
30	110 AC	5	**3RF2230-1AC35**		1	1 unit	41C
55		5	**3RF2255-1AC35**		1	1 unit	41C
30	4 ... 30 DC	2	**3RF2230-1AC45**		1	1 unit	41C
55		5	**3RF2255-1AC45**		1	1 unit	41C


3RF2230-1AB45

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	**Spring-type terminals**[3] Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching Rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
30	4 ... 30 DC	5	**3RF2230-2AB45**		1	1 unit	41C
55		5	**3RF2255-2AB45**		1	1 unit	41C
Three-phase controlled							
30	4 ... 30 DC	5	**3RF2230-2AC45**		1	1 unit	41C
55		5	**3RF2255-2AC45**		1	1 unit	41C


3RF2230-2AB45

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	**Ring terminal lug connection** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching Rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
30	4 ... 30 DC	5	**3RF2230-3AB45**		1	1 unit	41C
55		5	**3RF2255-3AB45**		1	1 unit	41C
Three-phase controlled							
30	4 ... 30 DC	5	**3RF2230-3AC45**		1	1 unit	41C
55		5	**3RF2255-3AC45**		1	1 unit	41C


3RF2230-3AB45

1) The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

2) Please note that the version with an M4 screw connection can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm^2.

3) Please note that the version with spring-type terminals can only be used for a rated current of up to approx. 20 A and a conductor cross-section of 2.5 mm^2. Higher currents can be achieved by connecting two conductors per terminal.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Solid-state contactors (with integrated heat sink)

The complete units consist of a solid-state relay plus optimized heat sink, and are therefore ready to use. They offer defined rated currents to make selection as easy as possible. Depending on the version, current intensities of up to 70 A are achieved. Like all of our solid-state switching devices, one of their particular advantages is their compact and space-saving design.

With their insulated mounting foot they can easily be snapped onto a standard mounting rail, or they can be mounted on support plates with fixing screws. This insulation enables them to be used in circuits with protective extra-low voltage (PELV) or safety extra-low voltage (SELV) in building management systems. For other applications, such as for extended personal safety, the heat sink can be grounded through a screw terminal.

The solid-state contactors are available in 2 different versions:

- 3RF23 single-phase solid-state contactors
- 3RF24 three-phase solid-state contactors

Single-phase versions

The 3RF23 solid-state contactors can be expanded with various function modules to adapt them to individual applications.

Version for resistive loads "zero-point switching"

This standard version is often used for switching space heaters on and off.

Version for inductive loads "instantaneous switching"

In this version the solid-state contactor is specifically matched to inductive loads. Whether it is a matter of frequent actuation of the valves in a filling plant or starting and stopping small operating mechanisms in packet distribution systems, operation is carried out safely and noiselessly.

Special "Low noise" version

Thanks to a special control circuit, this special version can be used in public networks up to 16 A without any additional measures such as interference suppressor filters. As a result, in terms of emitted interference, it conforms to limit value curve class B according to IEC 60947-4-3.

Special "Short-circuit proof" version

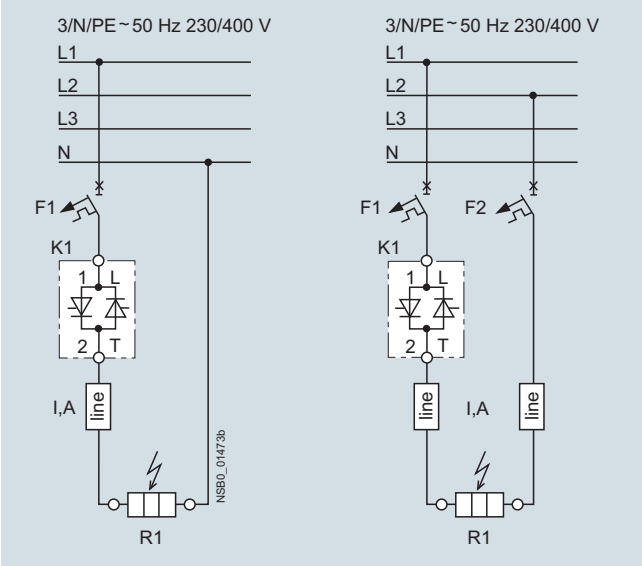
Skillful matching of the power semiconductor with the performance capacity of the solid-state contactor means that "short-circuit strength" can be achieved with a standard miniature circuit breaker. In combination with a B-type MCB or a conventional line protection fuse, the result is a short-circuit proof feeder.

In order to achieve problem-free short-circuit protection by means of miniature circuit breakers, however, certain boundary conditions must be observed. As the magnitude and duration of the short-circuit current are determined not only by the short-circuit breaking response of the miniature circuit breaker but also the properties of the wiring system, such as the internal resistance of the input to the network and damping by controls and cables, particular attention must also be paid to these parameters. The necessary cable lengths are therefore shown for the main factor, the line resistance, in the table below.

The following miniature circuit breakers with a B characteristic and 10 kA or 6 kA breaking capacity protect the 3RF23..-.DA.. solid-state contactors in the event of short circuits on the load and the specified conductor cross-sections and lengths:

Rated current of the miniature circuit breaker	Example of type[1)]	Max. conductor cross section	Minimum cable length from contactor to load
6 A	5SY4106-6	1 mm^2	5 m
10 A	5SY4110-6	1.5 mm^2	8 m
16 A	5SY4116-6	1.5 mm^2	12 m
		2.5 mm^2	20 m
20 A	5SY4120-6	2.5 mm^2	20 m
25 A	5SY4125-6	2.5 mm^2	26 m

1) The miniature circuit breakers can be used up to a maximum rated voltage of 480 V!



Solid-state contactor protection

The setup and installation above can also be used for the solid-state relays with an I^2t value of at least 6600 A^{2}s.

3-phase versions

The three-phase solid-state contactors for resistive loads up to 50 A are available with

- Two-phase control (suitable in particular for circuits without connection to the neutral conductor) and
- Three-phase control (suitable for star circuits with connection to the neutral conductor or for applications in which the system requires all phases to be switched)

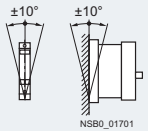
The converter function module can be snapped onto both versions for the simple power control of AC loads by means of analog signals.

- Check the correct contactor size with the aid of the rated current diagram, taking account of the installation conditions

Technical specifications

More information	
System Manual and Manual, see https://support.industry.siemens.com/cs/ww/en/view/60311318 https://support.industry.siemens.com/cs/ww/en/view/60298187	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16228/faq

Type		3RF23..-.A...	3RF23..-.B...	3RF23..-.C...	3RF23..-.D...
Dimensions (W x H x D)		See page 6/75			
General data					
Ambient temperature					
• During operation, derating from 40 °C	°C	-25 ... +60			
• During storage	°C	-55 ... +80			
Installation altitude	m	0 ... 1 000; derating from 1 000			
Shock resistance acc. to IEC 60068-2-27	*g*/ms	15/11			
Vibration resistance acc. to IEC 60068-2-6	*g*	2			
Degree of protection		IP20 (for ring terminal lug connection when using the terminal cover 3RA2900-3PA88, otherwise IP00)			
Electromagnetic compatibility (EMC)					
• Emitted interference according to IEC 60947-4-3					
- Conducted interference voltage		Class A for industrial applications		Class A for industrial applications; Class B for residential, business and commercial applications up to 16 A, AC-51 Low Noise	Class A for industrial applications
- Emitted, high-frequency interference voltage		Class B for residential, business and commercial applications			
• Interference immunity					
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2			
- Induced RF fields acc. to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1			
- Burst acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2			
- Surge acc. to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2			

Type		3RF23..-1....	3RF23..-2....	3RF23..-3....
General data				
Connection type		**Screw terminals**	**Spring-type terminals**	**Ring terminal lug connection**
Connection, main contacts				
• Conductor cross-section				
- Solid	mm^2	2 x (1.5 ... 2.5)[1], 2 x (2.5 ... 6)[1]	2 x (0.5 ... 2.5)	--
- Finely stranded with end sleeve	mm^2	2 x (1 ... 2.5)[1]; 2 x (2.5 ... 6)[1] 1 x 10	2 x (0.5 ... 1.5)	--
- Finely stranded without end sleeve	mm^2	--	2 x (0.5 ... 2.5)	--
- Solid or stranded, AWG cables		2 x (AWG 14 ... 10)	2 x (AWG 18 ... 14)	--
• Terminal screws		M4	--	M5
• Tightening torque	Nm lb.in	2 ... 2.5 7 ... 10.3	-- --	2 ... 2.5 7 ... 10.3
• Cable lugs		--	--	
- According to DIN 46234				5-2.5, 5-6, 5-10, 5-16, 5-25
- According to JIS C 2805				R 2-5, R 5.5-5, R 8-5, R 14-5
- Width, maximum	mm			12
Connection, auxiliary/control contacts				
• Conductor cross-section	mm AWG	1 x (0.5 ... 2.5)[1], 2 x (0.5 ... 1.0) AWG 20 ... 12	0.5 ... 2.5 AWG 20 ... 12	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) AWG 20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw		M3	--	M3
• Tightening torque	Nm lb.in	0.5 ... 0.6 4.5 ... 5.3	-- --	0.5 ... 0.6 4.5 ... 5.3
Grounding stud (not included in the scope of supply)				
• Size (standard screw)		M5		
Permissible mounting position				

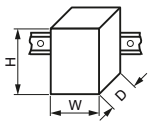
[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Type		3RF23..-....2	3RF23..-....4	3RF23..-....5	3RF23..-....6
Main circuit					
Rated operational voltage U_e	V AC	24 ... 230	48 ... 460	48 ... 600	
• Operating range	V AC	20 ... 253	40 ... 506	40 ... 660	
• Rated frequency	Hz	50/60 ± 10 %			
Rated insulation voltage U_i	V	600			
Blocking voltage	V	800	1 200		1 600
Rate of voltage rise	V/µs	1 000			

Type		3RF23..-...0.	3RF23..-...1.		3RF23..-...2.	3RF23..-...4.
Control circuit						
Method of operation		DC operation	AC/DC operation		AC operation	DC operation
Rated control supply voltage U_s	V	24 DC	24 AC	24 DC	110 ... 230 AC	4 ... 30 DC
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10%	--	50/60 ± 10 %	--
Actuating voltage, max.	V	30	26.5 AC	30 DC	253	30
Typical actuating current	mA	20 / Low Power: <10[1]	20	20	15	20
Response voltage	V	15	14 AC	15 DC	90	4
Drop-out voltage	V	5	5 AC	5 DC	40	1
Operating times						
• ON-delay	ms	1 + max. one half-wave[2]	10 + max. one half-wave[2]		40 + max. one half-wave[2]	1 + max. one half-wave[2]
• OFF-delay	ms	1 + max. one Half-wave	15 + max. one Half-wave		40 + max. one Half-wave	1 + max. one Half-wave

[1] Applies to the "Low Power" version 3RF23..-.AA..-**0KN0**.
[2] Only for zero-point switching devices.

Type	**Type current/ performance capacity**[1] I_{AC-51}	**Dimensions (W x H x D)** (including heat sink)
	A	mm
Main circuit		
3RF2310-.AA..	10.5	22.5 x 100 x 89
3RF2320-.AA.. **3RF2320-.CA..** **3RF2320-.DA..**	20	22.5 x 100 x 135.5
3RF2330-.AA.. **3RF2330-.CA..**	30	45 x 100 x 151
3RF2330-.DA..		22.5 x 100 x 135.5
3RF2340-.AA..	40	67.5 x 100 x 151
3RF2350-.AA..	50	67.5 x 100 x 151
3RF2370-.AA..[2]	70	135 x 100 x 153.5



[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.
[2] No standard rail mounting possible.

SIRIUS 3RF23 solid-state contactors, single-phase

Type	Type current AC-51/performance capacity[1] at I_{max} at 40 °C	Acc. to IEC 60947-4-3 at 40 °C	Acc. to UL/CSA at 50 °C	Power loss at I_{max}	Minimum load current	Off-state current	Rated peak withstand current I_{tsm}	I^2t value
	A	A	A	W	A	mA	A	A^2s
Main circuit								
3RF2310-.AA.2 3RF2310-.AA.4 3RF2310-.AA.5	10.5	7.5	9.6	11	0.1	10	200	200
3RF2310-.AA.6							400	800
3RF2320-.AA.2 3RF2320-.AA.4 3RF2320-.AA.5 3RF2320-.AA.6	20	13.2	17.6	20	0.5	10	600	1 800
3RF2320-.CA.2 3RF2320-.CA.4						25	600	1 800
3RF2320-.DA.2 3RF2320-.DA.4						10	1 150	6 600
3RF2330-.AA.2 3RF2330-.AA.4 3RF2330-.AA.5 3RF2330-.AA.6	30	22	27	33	0.5	10	600	1 800
3RF2330-.CA.2						25	600	1 800
3RF2330-.DA.4		18.5	26	33	0.5	10	1 150	6 600
3RF2340-.AA.2 3RF2340-.AA.4 3RF2340-.AA.5	40	33	36	44	0.5	10	1 200	7 200
3RF2340-.AA.6							1 150	6 600
3RF2350-.AA.2 3RF2350-.AA.4 3RF2350-.AA.5 3RF2350-.AA.6	50	36	45	54	0.5	10	1 150	6 600
3RF2370-.AA.2 3RF2370-.AA.4 3RF2370-.AA.5 3RF2370-.AA.6	70	70	62	83	0.5	10	1 150	6 600

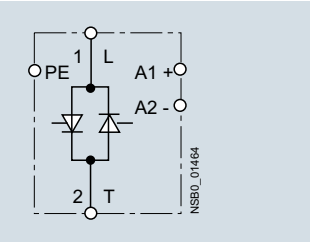
[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.

Type	Type current AC-51/performance capacity[1] at I_{max} at 40 °C	Acc. to IEC 60947-4-3 at 40 °C	Acc. to UL/CSA at 50 °C	Type current AC-15/ performance capacity[1] 10 x I_e for 60 ms	Parameters	Power loss at I_{max}	Minimum load current	Off-state current	Rated peak withstand current I_{tsm}	I^2t value
	A	A	A	A		W	A	mA	A	A^2s
Main circuit										
3RF2310-.BA.2 3RF2310-.BA.4	10.5	7.5	9.6	6	1200 1/h 50% ED	11	0.1	10	200	200
3RF2310-.BA.6									400	800
3RF2320-.BA.2 3RF2320-.BA.4 3RF2320-.BA.6	20	13.2	17.6	12	1200 1/h 50% ED	20	0.5	10	600	1 800
3RF2330-.BA.2 3RF2330-.BA.4 3RF2330-.BA.6	30	22	27	15	1200 1/h 50% ED	33	0.5	10	600	1 800
3RF2340-.BA.2 3RF2340-.BA.4	40	33	36	20	1200 1/h 50% ED	44	0.5	10	1 200	7 200
3RF2340-.BA.6									1 150	6 600
3RF2350-.BA.2 3RF2350-.BA.4 3RF2350-.BA.6	50	36	45	25	1200 1/h 50% ED	54	0.5	10	1 150	6 600
3RF2370-.BA.2 3RF2370-.BA.4 3RF2370-.BA.6	70	70	62	27.5	1200 1/h 50% ED	83	0.5	10	1 150	6 600

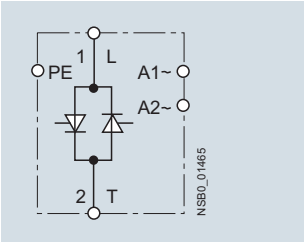
[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.

Circuit diagrams

DC control supply voltage



AC control supply voltage



Selection and ordering data

Selection notes

The solid-state contactors are selected on the basis of details of the network, the load and the ambient conditions. As the solid-state contactors are already equipped with an optimally matched heat sink, the selection process is considerably simpler than that for solid-state relays.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select a solid-state contactor with the same or higher rated current than the load

	Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU			
	A	V	d					
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC								
 3RF2310-1	10.5	24 DC	2	**3RF2310-1AA02**		1	1 unit	41C
	20		2	**3RF2320-1AA02**		1	1 unit	41C
	30		2	**3RF2330-1AA02**		1	1 unit	41C
	40		2	**3RF2340-1AA02**		1	1 unit	41C
	50		2	**3RF2350-1AA02**		1	1 unit	41C
	20	24 DC Low Power	2	**3RF2320-1AA02-0KN0**		1	1 unit	41C
	10.5	24 AC/DC	2	**3RF2310-1AA12**		1	1 unit	41C
	10.5	110 ... 230 AC	2	**3RF2310-1AA22**		1	1 unit	41C
	20		2	**3RF2320-1AA22**		1	1 unit	41C
	30		2	**3RF2330-1AA22**		1	1 unit	41C
	40		5	**3RF2340-1AA22**		1	1 unit	41C
	50		2	**3RF2350-1AA22**		1	1 unit	41C
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC								
 3RF2320-1	10.5	24 DC	2	**3RF2310-1AA04**		1	1 unit	41C
	20		2	**3RF2320-1AA04**		1	1 unit	41C
	30		2	**3RF2330-1AA04**		1	1 unit	41C
	40		2	**3RF2340-1AA04**		1	1 unit	41C
	50		2	**3RF2350-1AA04**		1	1 unit	41C
	10.5	24 DC Low Power	2	**3RF2310-1AA04-0KN0**		1	1 unit	41C
	10.5	24 AC/DC	2	**3RF2310-1AA14**		1	1 unit	41C
	20		5	**3RF2320-1AA14**		1	1 unit	41C
	30		2	**3RF2330-1AA14**		1	1 unit	41C
	40		5	**3RF2340-1AA14**		1	1 unit	41C
	50		5	**3RF2350-1AA14**		1	1 unit	41C
	10.5	110 ... 230 AC	2	**3RF2310-1AA24**		1	1 unit	41C
	20		2	**3RF2320-1AA24**		1	1 unit	41C
	30		2	**3RF2330-1AA24**		1	1 unit	41C
	40		2	**3RF2340-1AA24**		1	1 unit	41C
	50		2	**3RF2350-1AA24**		1	1 unit	41C
	10.5	4 ... 30 DC	2	**3RF2310-1AA44**		1	1 unit	41C
	20		2	**3RF2320-1AA44**		1	1 unit	41C
	30		2	**3RF2330-1AA44**		1	1 unit	41C

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/59, "More information".

Other rated control supply voltages on request.

SIRIUS 3RF23 solid-state contactors, single-phase

Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC							
30	110 ... 230 AC	5	**3RF2330-1AA25**		1	1 unit	41C
10.5	4 ... 30 DC	5	**3RF2310-1AA45**		1	1 unit	41C
20		2	**3RF2320-1AA45**		1	1 unit	41C
30		2	**3RF2330-1AA45**		1	1 unit	41C
40		2	**3RF2340-1AA45**		1	1 unit	41C
50		2	**3RF2350-1AA45**		1	1 unit	41C
Zero-point switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC							
10.5	24 DC	5	**3RF2310-1AA06**		1	1 unit	41C
20		2	**3RF2320-1AA06**		1	1 unit	41C
30		2	**3RF2330-1AA06**		1	1 unit	41C
40		5	**3RF2340-1AA06**		1	1 unit	41C
50		5	**3RF2350-1AA06**		1	1 unit	41C
10.5	110 ... 230 AC	5	**3RF2310-1AA26**		1	1 unit	41C
20		5	**3RF2320-1AA26**		1	1 unit	41C
30		5	**3RF2330-1AA26**		1	1 unit	41C
40		5	**3RF2340-1AA26**		1	1 unit	41C
50		5	**3RF2350-1AA26**		1	1 unit	41C

3RF2340-1

Low Noise[2], zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
20	24 DC	5	**3RF2320-1CA02**		1	1 unit	41C
30		5	**3RF2330-1CA02**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2320-1CA22**		1	1 unit	41C

3RF2320-1

Low Noise[2], zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	5	**3RF2320-1CA04**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2320-1CA24**		1	1 unit	41C
20	4 ... 30 DC	2	**3RF2320-1CA44**		1	1 unit	41C
Short-circuit-proof with B MCB · Zero-point switching · Integrated heat sink, Rated operational voltage U_e 24 ... 230 V AC							
20	24 DC	2	**3RF2320-1DA02**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2320-1DA22**		1	1 unit	41C
Short-circuit-proof with B MCB · Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	2	**3RF2320-1DA04**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2320-1DA24**		1	1 unit	41C
20	4 ... 30 DC	2	**3RF2320-1DA44**		1	1 unit	41C
30		2	**3RF2330-1DA44**		1	1 unit	41C

3RF2320-1

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/59, "More information".

[2] See page 6/73.

Other rated control supply voltages on request.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS 3RF23 solid-state contactors, single-phase

	Type current/ performance capacity[1] I_{max}	Operational current I_e/AC-15[2]	Rated control supply voltage U_s	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
					Article No. / Price per PU			
	A	A	V	d				
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC								
 3RF2310-1	10.5	6	24 DC	2	**3RF2310-1BA02**	1	1 unit	41C
	20	12		2	**3RF2320-1BA02**	1	1 unit	41C
	30	15		5	**3RF2330-1BA02**	1	1 unit	41C
	40	20		5	**3RF2340-1BA02**	1	1 unit	41C
	50	25		5	**3RF2350-1BA02**	1	1 unit	41C
	50	27.5		5	**3RF2370-1BA02**	1	1 unit	41C
	10.5	6	110 ... 230 AC	5	**3RF2310-1BA22**	1	1 unit	41C
	20	12		5	**3RF2320-1BA22**	1	1 unit	41C
	30	15		5	**3RF2330-1BA22**	1	1 unit	41C
	40	20		5	**3RF2340-1BA22**	1	1 unit	41C
	50	25		5	**3RF2350-1BA22**	1	1 unit	41C
	50	27.5		5	**3RF2370-1BA22**	1	1 unit	41C
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC								
 3RF2320-1	10.5	6	24 DC	2	**3RF2310-1BA04**	1	1 unit	41C
	20	12		2	**3RF2320-1BA04**	1	1 unit	41C
	30	15		2	**3RF2330-1BA04**	1	1 unit	41C
	40	20		5	**3RF2340-1BA04**	1	1 unit	41C
	50	25		5	**3RF2350-1BA04**	1	1 unit	41C
	50	27.5		5	**3RF2370-1BA04**	1	1 unit	41C
	10.5	6	110 ... 230 AC	5	**3RF2310-1BA24**	1	1 unit	41C
	20	12		5	**3RF2320-1BA24**	1	1 unit	41C
	30	15		5	**3RF2330-1BA24**	1	1 unit	41C
	40	20		5	**3RF2340-1BA24**	1	1 unit	41C
	50	25		5	**3RF2350-1BA24**	1	1 unit	41C
	50	27.5		5	**3RF2370-1BA24**	1	1 unit	41C
	20	12	4 ... 30 DC	5	**3RF2320-1BA44**	1	1 unit	41C
	30	15		5	**3RF2330-1BA44**	1	1 unit	41C
	50	25		5	**3RF2350-1BA44**	1	1 unit	41C
Instantaneous switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC								
 3RF2340-1	10.5	6	24 DC	5	**3RF2310-1BA06**	1	1 unit	41C
	20	12		2	**3RF2320-1BA06**	1	1 unit	41C
	30	15		5	**3RF2330-1BA06**	1	1 unit	41C
	40	20		5	**3RF2340-1BA06**	1	1 unit	41C
	50	25		5	**3RF2350-1BA06**	1	1 unit	41C
	50	27.5		5	**3RF2370-1BA06**	1	1 unit	41C
	10.5	6	110 ... 230 AC	5	**3RF2310-1BA26**	1	1 unit	41C
	20	12		5	**3RF2320-1BA26**	1	1 unit	41C
	30	15		5	**3RF2330-1BA26**	1	1 unit	41C
	40	20		5	**3RF2340-1BA26**	1	1 unit	41C
	50	25		5	**3RF2350-1BA26**	1	1 unit	41C
	50	27.5		5	**3RF2370-1BA26**	1	1 unit	41C

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/59, "More information".

[2] Utilization category AC-15:
Electromagnetic loads, e.g. valves according to IEC 60947-5-1.
Parameters: max. 1 200 1/h, 50 % ON period, 10-times inrush current for 60 ms.

Other rated control supply voltages on request.

SIRIUS 3RF23 solid-state contactors, single-phase


3RF2320-2

Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	Spring-type terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
10.5	24 DC	5	**3RF2310-2AA02**		1	1 unit	41C
20		2	**3RF2320-2AA02**		1	1 unit	41C
10.5	110 ... 230 AC	5	**3RF2310-2AA22**		1	1 unit	41C
20		5	**3RF2320-2AA22**		1	1 unit	41C
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
10.5	24 DC	2	**3RF2310-2AA04**		1	1 unit	41C
20		2	**3RF2320-2AA04**		1	1 unit	41C
10.5	110 ... 230 AC	5	**3RF2310-2AA24**		1	1 unit	41C
20		5	**3RF2320-2AA24**		1	1 unit	41C
Zero-point switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC							
10.5	24 DC	5	**3RF2310-2AA06**		1	1 unit	41C
20		2	**3RF2320-2AA06**		1	1 unit	41C
10.5	110 ... 230 AC	5	**3RF2310-2AA26**		1	1 unit	41C
20		5	**3RF2320-2AA26**		1	1 unit	41C
Low Noise[2], zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
20	24 DC	5	**3RF2320-2CA02**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2320-2CA22**		1	1 unit	41C
Low Noise[2], zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	5	**3RF2320-2CA04**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2320-2CA24**		1	1 unit	41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
20	110 ... 230 AC	5	**3RF2320-2DA22**		1	1 unit	41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	5	**3RF2320-2DA04**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2320-2DA24**		1	1 unit	41C

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/59, "More information".

[2] See page 6/73.

Other rated control supply voltages on request.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	Ring terminal lug connection		PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU			
	A	V	d					
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC								
 3RF2350-3	10.5	24 DC	5	**3RF2310-3AA02**		1	1 unit	41C
	20		5	**3RF2320-3AA02**		1	1 unit	41C
	30		5	**3RF2330-3AA02**		1	1 unit	41C
	40		5	**3RF2340-3AA02**		1	1 unit	41C
	50		5	**3RF2350-3AA02**		1	1 unit	41C
	70		2	**3RF2370-3AA02**		1	1 unit	41C
	10.5	110 ... 230 AC	5	**3RF2310-3AA22**		1	1 unit	41C
	20		5	**3RF2320-3AA22**		1	1 unit	41C
	30		5	**3RF2330-3AA22**		1	1 unit	41C
	40		5	**3RF2340-3AA22**		1	1 unit	41C
	50		5	**3RF2350-3AA22**		1	1 unit	41C
	70		5	**3RF2370-3AA22**		1	1 unit	41C
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC								
 3RF2330-3, covers optional	10.5	24 DC	5	**3RF2310-3AA04**		1	1 unit	41C
	20		5	**3RF2320-3AA04**		1	1 unit	41C
	30		2	**3RF2330-3AA04**		1	1 unit	41C
	40		5	**3RF2340-3AA04**		1	1 unit	41C
	50		2	**3RF2350-3AA04**		1	1 unit	41C
	70		2	**3RF2370-3AA04**		1	1 unit	41C
	10.5	110 ... 230 AC	5	**3RF2310-3AA24**		1	1 unit	41C
	20		5	**3RF2320-3AA24**		1	1 unit	41C
	30		5	**3RF2330-3AA24**		1	1 unit	41C
	40		5	**3RF2340-3AA24**		1	1 unit	41C
	50		5	**3RF2350-3AA24**		1	1 unit	41C
	70		5	**3RF2370-3AA24**		1	1 unit	41C
	20	4 ... 30 DC	5	**3RF2320-3AA44**		1	1 unit	41C
	30		5	**3RF2330-3AA44**		1	1 unit	41C
	50		5	**3RF2350-3AA44**		1	1 unit	41C
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC								
	40	4 ... 30 DC	5	**3RF2340-3AA45**		1	1 unit	41C
	70		2	**3RF2370-3AA45**		1	1 unit	41C
Zero-point switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC								
	10.5	24 DC	5	**3RF2310-3AA06**		1	1 unit	41C
	20		5	**3RF2320-3AA06**		1	1 unit	41C
	30		5	**3RF2330-3AA06**		1	1 unit	41C
	40		5	**3RF2340-3AA06**		1	1 unit	41C
	50		5	**3RF2350-3AA06**		1	1 unit	41C
	70		5	**3RF2370-3AA06**		1	1 unit	41C
	10.5	110 ... 230 AC	5	**3RF2310-3AA26**		1	1 unit	41C
	20		5	**3RF2320-3AA26**		1	1 unit	41C
	30		5	**3RF2330-3AA26**		1	1 unit	41C
	40		5	**3RF2340-3AA26**		1	1 unit	41C
	50		5	**3RF2350-3AA26**		1	1 unit	41C
	70		5	**3RF2370-3AA26**		1	1 unit	41C

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/59, "More information".

Other rated control supply voltages on request.

SIRIUS 3RF23 solid-state contactors, single-phase

Type current/ performance capacity[1] I_{max}	Operational current I_e/AC-15[2]	Rated control supply voltage U_s	SD	**Ring terminal lug connection** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	A	V	d					
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC								
70	27.5	24 DC	5	**3RF2370-3BA02**		1	1 unit	41C
70	27.5	110 ... 230 AC	5	**3RF2370-3BA22**		1	1 unit	41C
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC								
70	27.5	24 DC	5	**3RF2370-3BA04**		1	1 unit	41C
70	27.5	110 ... 230 AC	5	**3RF2370-3BA24**		1	1 unit	41C
Instantaneous switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC								
70	27.5	24 DC	5	**3RF2370-3BA06**		1	1 unit	41C
70	27.5	110 ... 230 AC	5	**3RF2370-3BA26**		1	1 unit	41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC								
20	--	24 DC	5	**3RF2320-3DA02**		1	1 unit	41C
20	--	110 ... 230 AC	5	**3RF2320-3DA22**		1	1 unit	41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC								
20	--	24 DC	5	**3RF2320-3DA04**		1	1 unit	41C
20	--	110 ... 230 AC	5	**3RF2320-3DA24**		1	1 unit	41C

Other rated control supply voltages on request.

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/59, "More information".

[2] Utilization category AC-15:
Electromagnetic loads, e.g. valves according to IEC 60947-5-1.
Parameters: max. 1 200 1/h, 50 % ON period, 10-times inrush current for 60 ms.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

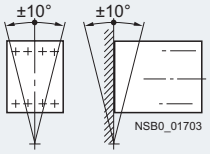
	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories							
			Spring-type terminals				
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals length approx. 200 mm, 3.0 mm x 0.5 mm titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B
			Ring terminal lug connection				
 3RF2900-3PA88	**Terminal covers** For 3RF21 solid-state relays and 3RF23 solid-state contactors in ring terminal lug connection (With this terminal cover, degree of protection IP20 can be achieved in the terminal compartment in the case of ring terminal lug connections. It can also be used for screw terminals after simple adaptation)	2	**3RF2900-3PA88**		1	10 units	41C
	Control connector						
			Screw terminals				
	Replacement control connector For 3RF20/21/22 and 3RF23/24 Screw terminals	5	**3RF2900-1TA88**		1	50 units	41C
			Spring-type terminals				
	Replacement control connector For 3RF20/21/22 and 3RF23/24 Spring-type terminals	5	**3RF2900-2TA88**		1	50 units	41C
	Control connector For 3RF20/21/22 and 3RF23/24 Spring-type terminals with two clamping points per contact	5	**3RF2900-2TB88**		1	10 units	41C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS 3RF24 solid-state contactors, three-phase

Technical specifications

More information	
System Manual and Manual, see https://support.industry.siemens.com/cs/ww/en/view/60311318 https://support.industry.siemens.com/cs/ww/en/view/60298187	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16230/faq

Type		3RF24..-1....	3RF24..-2....	3RF24..-3....
Dimensions (W x H x D)		See page 6/85		
General data				
Ambient temperature				
• During operation, derating from 40 °C	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Installation altitude	m	0 ... 1 000; derating from 1 000		
Shock resistance acc. to IEC 60068-2-27	*g*/ms	15/11		
Vibration resistance acc. to IEC 60068-2-6	*g*	2		
Degree of protection		IP20		IP00
Insulation strength at 50/60 Hz (main/control circuit to ground)	V rms	4000		
Electromagnetic compatibility (EMC)				
• Emitted interference according to IEC 60947-4-3 - Conducted interference voltage		Class A for industrial applications[1]		
• Interference immunity - Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2		
- Induced RF fields acc. to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1		
- Burst acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge acc. to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2		
Connection type		**Screw terminals**	**Spring-type terminals**	**Ring terminal lug connection**
Connection, main contacts				
• Conductor cross-section - Solid	mm^2	2 x (1.5 ... 2.5)[2], 2 x (2.5 ... 6)[2]	2 x (0.5 ... 2.5)	--
- Finely stranded with end sleeve	mm^2	2 x (1 ... 2.5)[2], 2 x (2.5 ... 6)[2] 1 x 10	2 x (0.5 ... 1.5)	--
- Finely stranded without end sleeve	mm^2	--	2 x (0.5 ... 2.5)	--
- Solid or stranded, AWG cables		2 x (AWG 14 ... 10)	2 x (AWG 18 ... 14)	--
• Stripped length	mm	10	10	--
• Terminal screws - Tightening torque	 Nm lb.in	M4 2 ... 2.5 18 ... 22	--	M5 2 ... 2.5 18 ... 22
• Cable lugs - According to DIN 46234 - According to JIS C 2805 - Width, maximum	 mm	--	--	 5-2.5 ... 5-25 R 2-5 ... R 14-5 12
Connection, auxiliary/control contacts				
• Conductor cross-section	mm AWG	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) AWG 20 ... 12	0.5 ... 2.5 AWG 20 ... 12	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) AWG 20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw - Tightening torque, ∅ 3.5, PZ 1	 Nm lb.in	M3 0.5 ... 0.6 4.5 ... 5.3	--	M3 0.5 ... 0.6 4.5 ... 5.3
Grounding stud (not included in the scope of supply)				
• Size (standard screw)		M5		
Permissible mounting position				

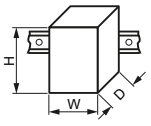
[1] These products were built as Class A devices. The use of these devices in residential areas could result in lead in radio interference. In this case these may be required to introduce additional interference suppression measures. The versions 3RF24..-1AC55 comply with Class B for residential, business and commercial applications.

[2] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

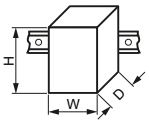
Type	Type current/ performance capacity[1] I_{AC-51} at 40 °C	Rated operational current I_e Acc. to IEC 60947-4-3 at 40 °C	Rated operational current I_e Acc. to UL/CSA at 50 °C	Power loss at I_{AC-51}	Minimum load current	Max. off-state current	Rated peak withstand current I_{tsm}	I^2t value
	A	A	A	W	A	mA	A	A^2s
Main circuit								
3RF2410-.AB.5	10.5	7		23	0.1	10	200	200
3RF2420-.AB.5	22	15		44	0.5	10	600	1800
3RF2430-.AB.5	30	22		61	0.5	10	1200	7200
3RF2440-.AB.5	40	30		80	0.5	10	1150	6600
3RF2450-.AB.5	50	38		107	0.5	10	1150	6600
3RF2410-.AC.5	10.5	7		31	0.5	10	300	450
3RF2420-.AC.5	22	15		66	0.5	10	600	1800
3RF2430-.AC.5	30	22		91	0.5	10	1200	7200
3RF2440-.AC.5	40	30		121	0.5	10	1150	6600
3RF2450-.AC.5	50	38		160	0.5	10	1150	6600

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.

Type	Type current I_{AC-51}	Dimensions (W x H x D) (including heat sink)
	A	mm
Main circuit		
3RF2410-.AB..	10.5	45 x 100 x 105
3RF2410-.AC..		
3RF2420-.AB..	22	67 x 100 x 112.5
3RF2420-.AC..	22	89.5 x 100 x 112.5
3RF2430-.AB..	30	



Type	Type current I_{AC-51}	Dimensions (W x H x D) (including heat sink)
	A	mm
Main circuit		
3RF2430-.AC..	30	113.5 x 100 x 121
3RF2440-.AB..	40	
3RF2440-.AC..	40	157.5 x 100 x 121
3RF2450-.AB..	50	
3RF2450-.AC..	50	157.5 x 180 x 121



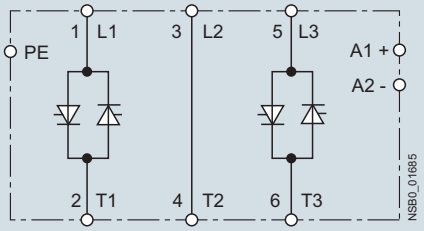
Type		3RF24..-.AB.5	3RF24..-.AC.5
Main circuit			
Controlled phases		2-phase	3-phase
Rated operational voltage U_e	V AC	48 ... 600	
• Operating range	V AC	40 ... 660	
• Rated frequency	Hz	50/60 ± 10 %	
Rated insulation voltage U_i	V	600	
Rated impulse withstand voltage Uimp	kV	6	
Blocking voltage	V	1200	
Rate of voltage rise	V/µs	1000	

Type		3RF24..-...3.	3RF24..-...4.	3RF24..-...5.
Control circuit				
Method of operation		AC operation	DC operation	AC operation
Rated control supply voltage U_s	V	110	4 ... 30	190 ... 230
Rated frequency of the control supply voltage	Hz	50/60 ± 10 %	--	50/60 ± 10 %
Actuating voltage, max.	V	121	30	253
Typical actuating current	mA	15	30	15
Response voltage	V	90	4	180
Drop-out voltage	V	< 40	< 1	< 40
Operating times				
• ON-delay	ms	40 + max. one half-wave	1 + max. one half-wave	40 + max. one half-wave
• OFF-delay	ms	40 + max. one half-wave	1 + max. one half-wave	40 + max. one half-wave

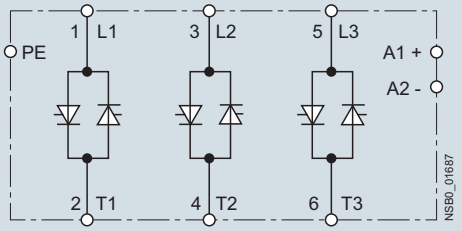
SIRIUS 3RF24 solid-state contactors, three-phase

Circuit diagrams

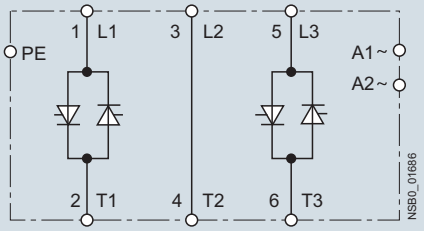
Two-phase controlled,
DC control supply voltage



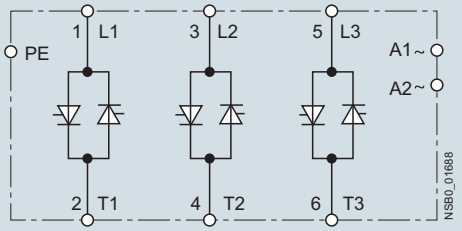
Three-phase controlled,
DC control supply voltage



Two-phase controlled,
AC control supply voltage



Three-phase controlled,
AC control supply voltage



Selection and ordering data

Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	Screw terminals — Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
10.5	4 ... 30 DC	2	**3RF2410-1AB45**		1	1 unit	41C
20		2	**3RF2420-1AB45**		1	1 unit	41C
30		2	**3RF2430-1AB45**		1	1 unit	41C
40		5	**3RF2440-1AB45**		1	1 unit	41C
50		2	**3RF2450-1AB45**		1	1 unit	41C
10.5	110 AC	5	**3RF2410-1AB35**		1	1 unit	41C
20		5	**3RF2420-1AB35**		1	1 unit	41C
30		5	**3RF2430-1AB35**		1	1 unit	41C
40		5	**3RF2440-1AB35**		1	1 unit	41C
50		5	**3RF2450-1AB35**		1	1 unit	41C
10.5	230 AC	5	**3RF2410-1AB55**		1	1 unit	41C
20		5	**3RF2420-1AB55**		1	1 unit	41C
30		2	**3RF2430-1AB55**		1	1 unit	41C
40		5	**3RF2440-1AB55**		1	1 unit	41C
50		5	**3RF2450-1AB55**		1	1 unit	41C
Three-phase controlled							
10.5	4 ... 30 DC	2	**3RF2410-1AC45**		1	1 unit	41C
20		2	**3RF2420-1AC45**		1	1 unit	41C
30		2	**3RF2430-1AC45**		1	1 unit	41C
40		2	**3RF2440-1AC45**		1	1 unit	41C
50		2	**3RF2450-1AC45**		1	1 unit	41C
10.5	110 AC	5	**3RF2410-1AC35**		1	1 unit	41C
20		5	**3RF2420-1AC35**		1	1 unit	41C
30		5	**3RF2430-1AC35**		1	1 unit	41C
40		5	**3RF2440-1AC35**		1	1 unit	41C
50		5	**3RF2450-1AC35**		1	1 unit	41C
10.5	230 AC	5	**3RF2410-1AC55**		1	1 unit	41C
20		5	**3RF2420-1AC55**		1	1 unit	41C
30		5	**3RF2430-1AC55**		1	1 unit	41C
40		5	**3RF2440-1AC55**		1	1 unit	41C
50		5	**3RF2450-1AC55**		1	1 unit	41C

3RF2420-1AB45

3RF2410-1AC45

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/59, "More information".

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

SIRIUS 3RF24 solid-state contactors, three-phase


3RF2410-2AB45

Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No. / Price per PU			
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC						
Two-phase controlled						
10	4 ... 30 DC	5	**3RF2410-2AB45**	1	1 unit	41C
20		5	**3RF2420-2AB45**	1	1 unit	41C
10	230 AC	5	**3RF2410-2AB55**	1	1 unit	41C
20		5	**3RF2420-2AB55**	1	1 unit	41C
Three-phase controlled						
10	4 ... 30 DC	5	**3RF2410-2AC45**	1	1 unit	41C
20		5	**3RF2420-2AC45**	1	1 unit	41C
10	230 AC	5	**3RF2410-2AC55**	1	1 unit	41C
20		5	**3RF2420-2AC55**	1	1 unit	41C

Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	Ring terminal lug connection	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No. / Price per PU			
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC						
Two-phase controlled						
50	4 ... 30 DC	5	**3RF2450-3AB45**	1	1 unit	41C
50	230 AC	5	**3RF2450-3AB55**	1	1 unit	41C
Three-phase controlled						
50	4 ... 30 DC	5	**3RF2450-3AC45**	1	1 unit	41C
50	230 AC	5	**3RF2450-3AC55**	1	1 unit	41C

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/59, "More information".

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Function modules for SIRIUS 3RF2 solid-state switching devices

A great variety of applications demand an expanded range of functionality. With our function modules, these requirements can be met really easily. The modules are mounted simply by clicking them into place; straight away the necessary connections are made with the solid-state relay or contactor.

The plug-in connection to control the solid-state switching devices can simply remain in use. The external connections have screw terminals.

The following function modules are available:

- Converters
- Load monitoring
- Heating current monitoring
- Power controllers
- Power regulators

With the exception of the converter, the function modules can be used only with single-phase solid-state switching devices.

Recommended assignment of the function modules to the 3RF21 single-phase solid-state relays

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring[1]	Power controllers[1]	Power regulators[1]
		Basic	Extended[1]			
Type current = 20 A						
3RF2120-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-1A.22	--	--	3RF2920-0GA33	--	--	--
3RF2120-1A.24	--	--	3RF2920-0GA36	--	--	--
3RF2120-1A.42	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2120-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2120-2A.22	--	--	--	--	--	--
3RF2120-2A.24	--	--	--	--	--	--
3RF2120-2A.42	3RF2900-0EA18	--	--	--	--	--
3RF2120-2A.45	3RF2900-0EA18	--	--	--	--	--
3RF2120-3A.02	3RF2900-0EA18	--	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-3A.04	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-3A.22	--	--	3RF2920-0GA33	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-3A.24	--	--	3RF2920-0GA36	--	3RF2920-0KA16	3RF2920-0HA16
Type current = 30 A						
3RF2130-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2130-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2130-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2130-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2130-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2130-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2130-1A.42	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2130-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2130-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
Type current = 50 A						
3RF2150-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2150-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2150-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2150-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2150-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1B.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2150-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.14	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.22	--	--	--	--	--	--
3RF2150-2A.24	--	--	--	--	--	--
3RF2150-2A.26	--	--	--	--	--	--
3RF2150-3A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2150-3A.04	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-3A.06	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-3A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2150-3A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2150-3A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36

[1] For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state relays (3RF21..-....4 , -....5 or -....6).

General data

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring[1]	Power controllers[1]	Power regulators[1]
		Basic	Extended[1]			
Type current = 70 A						
3RF2170-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2170-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1A.05	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2170-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2170-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2170-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1C.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
Type current = 90 A						
3RF2190-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2190-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2190-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2190-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2190-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2190-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2190-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2190-2A.22	--	--	--	--	--	--
3RF2190-2A.24	--	--	--	--	--	--
3RF2190-2A.26	--	--	--	--	--	--
3RF2190-3A.02	3RF2900-0EA18	--	3RF2990-0GA13	--	3RF2990-0KA13	3RF2990-0HA13
3RF2190-3A.04	3RF2900-0EA18	--	3RF2990-0GA16	3RF2932-0JA16	3RF2990-0KA16	3RF2990-0HA16
3RF2190-3A.06	3RF2900-0EA18	--	3RF2990-0GA16	3RF2932-0JA16	3RF2990-0KA16	3RF2990-0HA16
3RF2190-3A.22	--	--	3RF2990-0GA33	--	--	3RF2990-0HA33
3RF2190-3A.24	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2190-3A.26	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2190-3A.44	3RF2900-0EA18	--	3RF2990-0GA16	3RF2932-0JA16	3RF2990-0KA16	3RF2990-0HA16

[1] For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state relays (3RF21..-....4 , -....5 or -....6).

Recommended assignment of the function modules to the 3RF22 three-phase solid-state relays

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
		Basic	Extended			
Type current up to 55 A						
3RF22..-1A...	3RF2900-0EA18	--	--	--	--	--
3RF22..-2A...	3RF2900-0EA18	--	--	--	--	--
3RF22..-3A...	3RF2900-0EA18	--	--	--	--	--

Recommended assignment of the function modules to the 3RF23 single-phase solid-state contactors

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring[1]	Power controllers[1]	Power regulators[1]
		Basic	Extended[1]			
Type current I_e = 10.5 A						
3RF2310-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.12	3RF2900-0EA18	--	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-1A.14	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2310-1A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-1A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-1A.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16

[1] For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23..-....4 , -....5 or -....6).

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring[1]	Power controllers[1]	Power regulators[1]
		Basic	Extended[1]			
Type current I_e = 10.5 A						
3RF2310-1B.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1B.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1B.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2310-1B.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-1B.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2310-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2310-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2310-2A.22	--	--	--	--	--	--
3RF2310-2A.24	--	--	--	--	--	--
3RF2310-2A.26	--	--	--	--	--	--
3RF2310-3A.02	3RF2900-0EA18	--	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-3A.04	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-3A.06	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-3A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2310-3A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-3A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
Type current I_e = 20 A						
3RF2320-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.14	3RF2900-0EA18	--	3RF2920-0GA16	--	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1A.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1B.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1B.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1B.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1B.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1B.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1B.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1C.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1C.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1C.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1C.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1C.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1D.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1D.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1D.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1D.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1D.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2320-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2320-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2320-2A.22	--	--	--	--	--	--
3RF2320-2A.24	--	--	--	--	--	--
3RF2320-2A.26	--	--	--	--	--	--
3RF2320-2C.02	3RF2900-0EA18	--	--	--	--	--
3RF2320-2C.04	3RF2900-0EA18	--	--	--	--	--
3RF2320-2C.22	--	--	--	--	--	--
3RF2320-2C.24	--	--	--	--	--	--
3RF2320-2D.22	--	--	--	--	--	--
3RF2320-2D.24	--	--	--	--	--	--
3RF2320-3A.02	3RF2900-0EA18	--	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-3A.04	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-3A.06	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-3A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-3A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-3A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-3A.44	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16

[1] For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23..-....4 , -....5 or -....6).

General data

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring[2]	Power controllers[2]	Power regulators[2]
		Basis[1]	Extended[2]			
Type current I_e = 20 A						
3RF2320-3D.02	3RF2900-0EA18	--	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-3D.04	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-3D.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-3D.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
Type current I_e = 30 A						
3RF2330-1A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2330-1A.04	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.06	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.14	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2330-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1A.25	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1A.44	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.45	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1B.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2330-1B.04	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1B.06	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2330-1B.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1B.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1B.44	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1C.02	3RF2900-0EA18	--	3RF2950-0GA13	--	--	3RF2950-0HA13
3RF2330-1D.44	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-3A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2330-3A.04	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-3A.06	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-3A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2330-3A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-3A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-3A.44	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
Type current I_e = 40 A						
3RF2340-1A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2340-1A.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1A.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1A.14	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2340-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-1A.45	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1B.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2340-1B.04	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1B.06	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2340-1B.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-1B.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-3A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2340-3A.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-3A.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-3A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2340-3A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-3A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-3A.45	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
Type current I_e = 50 A						
3RF2350-1A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2350-1A.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1A.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1A.14	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2350-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1A.45	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16

1) The technical specifications must be taken into account when selecting the function modules. More combinations may be possible if the solid-state relays and contactors are not fully loaded, e.g. a load monitor for 20 A can also be operated with a solid-state contactor for 30 A if the load current during operation does not exceed 20 A.

2) For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23..-....4 , -....5 or -....6).

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring[1]	Power controllers[1]	Power regulators[1]
		Basic	Extended[1]			
Type current I_e = 50 A						
3RF2350-1B.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2350-1B.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1B.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2350-1B.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1B.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1B.44	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-3A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2350-3A.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-3A.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-3A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2350-3A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-3A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-3A.44	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
Type current I_e = 70 A						
3RF2370-1B.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2370-1B.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2370-1B.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2370-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2370-1B.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2370-1B.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2370-3A.02	3RF2900-0EA18	--	3RF2990-0GA13	--	3RF2990-0KA13	3RF2990-0HA13
3RF2370-3A.04	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3A.06	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3A.22	--	--	3RF2990-0GA33	--	--	3RF2990-0HA33
3RF2370-3A.24	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2370-3A.26	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2370-3A.45	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3B.02	3RF2900-0EA18	--	3RF2990-0GA13	--	3RF2990-0KA13	3RF2990-0HA13
3RF2370-3B.04	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3B.06	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3B.22	--	--	3RF2990-0GA33	--	--	3RF2990-0HA33
3RF2370-3B.24	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2370-3B.26	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36

[1] For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23..-....4 , -....5 or -....6).

Recommended assignment of the function modules to the 3RF24 three-phase solid-state contactors

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
		Basic	Extended			
Type current up to 50 A						
3RF24..-1..4.	3RF2900-0EA18	--	--	--	--	--
3RF24..-2..4.	--	--	--	--	--	--
3RF24..-3..4.	3RF2900-0EA18	--	--	--	--	--
3RF24..- ...5.	--	--	--	--	--	--

General data

Technical specifications

More information	
System Manual and Manual, see https://support.industry.siemens.com/cs/ww/en/view/60311318 https://support.industry.siemens.com/cs/ww/en/view/60298187	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16231/faq

Type		3RF29..-0EA..	3RF29..-0FA..	3RF29..-0GA..	3RF29..-0HA..	3RF29..-0JA..	3RF29..-0KA..
Dimensions (W x H x D)	mm	22.5 x 84 x 38	22.5 x 102 x 39	45 x 112 x 44	45 x 112 x 44	45 x 112 x 44	45 x 112 x 44
General data							
Ambient temperature							
• During operation, derating from 40 °C	°C	-25 ... +60					
• During storage	°C	-55 ... +80					
Installation altitude	m	0 ... 1 000; derating from 1 000					
Shock resistance acc. to IEC 60068-2-27	*g*/ms	15/11					
Vibration resistance acc. to IEC 60068-2-6	*g*	2					
Degree of protection		IP20					
Electromagnetic compatibility (EMC)							
• Emitted interference							
- Conducted interference voltage Acc. to IEC 60947-4-3		Class A for industrial applications[1]					
- Emitted, high-frequency interference voltage according to IEC 60947-4-3		Class B for residential, business and commercial applications					
• Interference immunity							
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2					
- Induced RF fields acc. to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1					
- Burst acc. to IEC 61000-4-4		2 kV/5.0 kHz; behavior criterion 2					
- Surge acc. to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2					
Connection type Auxiliary/control contacts		**Screw terminals**					
• Conductor cross-section	mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0), 1 x (AWG 20 ... 12)					
• Stripped length	mm	7					
• Terminal screw		M3					
• Tightening torque	Nm lb.in	0.5 ... 0.6 4.5 ... 5.3					
Connection type Converters		**Straight-through transformers**					
• Diameter	mm	--	7	17			

[1] Note limitations for power controller function modules. These modules were built as Class A devices. The use of these devices in residential areas could result in lead in radio interference. In this case these may be required to introduce additional interference suppression measures.

Type		3RF29..-0EA18	3RF29..-0FA08	3RF29..-0GA.3	3RF29..-0GA.6
Main circuit					
Rated operational voltage U_e	V AC	--[1]		110 ... 230	400 ... 600
• Operating range	V AC	--		93.5 ... 253	340 ... 660
• Rated frequency	Hz	--		50/60	
Rated insulation voltage U_i	V	--		600	
Voltage measuring					
• Measuring range	V	--		93.5 ... 253	340 ... 660
Mains voltage, fluctuation compensation	%	--		20	

[1] Versions are independent of the main circuit.

Type		3RF29..-0HA.3 3RF29..-0KA.3	3RF29..-0HA.6 3RF29..-0KA.6	3RF29..-0JA.3	3RF29..-0JA.6
Main circuit					
Rated operational voltage U_e	V AC	110 ... 230	400 ... 600	110 ... 230	400 ... 600
• Operating range	V AC	93.5 ... 253	340 ... 660	93.5 ... 253	340 ... 660
• Rated frequency	Hz	50/60			
Rated insulation voltage U_i	V	600			
Voltage measuring					
• Measuring range	V	93.5 ... 253	340 ... 660	93.5 ... 253	340 ... 660
Mains voltage, fluctuation compensation	%	20			

Type		3RF29..-...0.	3RF29..-...1.	3RF29..-...3.
Control circuit				
Method of operation		DC operation	AC/DC operation	AC operation
Rated control supply voltage U_s	V	24		110
Rated control current	mA	15		
Rated frequency of the control supply voltage	Hz	--	50/60	
Actuating voltage, max.	V	30		121
Rated control current at maximum voltage	mA	15		
Response voltage	V	15		90
• For operating current	mA	2		
Drop-out voltage	V	5		15

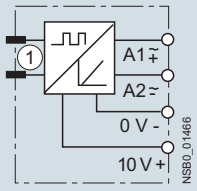
Type		3RF2906-0FA08	3RF2920-0FA08	3RF2920-0GA..	3RF2950-0GA..	3RF2990-0GA..
Current measurement						
Rated operational current I_e	A	6	20		50	90
Current measurement						
• Teach range	A	0.25 ... 6	0.65 ... 20	0.56 ... 20	1.62 ... 50	2.93 ... 90
• Measuring range	A	0 ... 6.6	0 ... 22		0 ... 55	0 ... 99
• Minimum partial load current	A	0.25	0.65		1.6	2.9
Number of partial loads		1 ... 6		1 ... 12		

Type		3RF2920-0HA..	3RF2950-0HA..	3RF2990-0HA..	3RF2916-0JA..	3RF2932-0JA..
Current measurement						
Rated operational current I_e	A	20	50	90	16	32
Current measurement						
• Teach range	A	4 ... 20	10 ... 50	18 ... 90	0.42 ... 16	0.8 ... 32
• Measuring range	A	0 ... 22	0 ... 55	4 ... 99	0 ... 16	0 ... 32
• Minimum partial load current	A	--			0.42	0.8
Number of partial loads		--			1 ... 6	

Type		3RF2904-0KA..	3RF2920-0KA..	3RF2950-0KA..	3RF2990-0KA..
Current measurement					
Rated operational current I_e	A	4	20	50	90
Current measurement					
• Teach range	A	0.15 ... 4	0.65 ... 20	1.6 ... 50	2.9 ... 90
• Measuring range	A	0 ... 4	0 ... 22	0 ... 55	0 ... 99
• Minimum partial load current	A	--	0.65	1.6	2.9
Number of partial loads		--	1 ... 6		

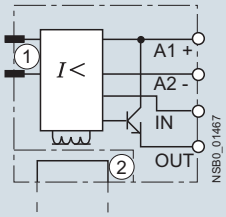
Circuit diagrams

Converters



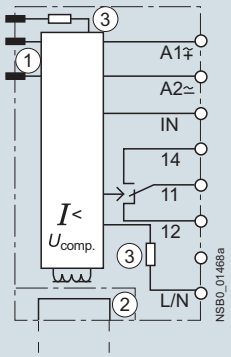
1 Internal connection

Basic load monitoring



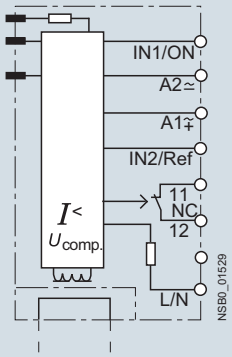
1 Internal connection
2 Straight-through transformer

Extended load monitoring



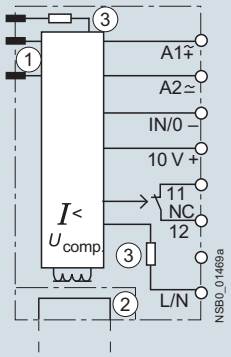
1 Internal connection
2 Straight-through transformer
3 Voltage detection not electrically isolated (3 MΩ per path)

Heating current monitoring



1 Internal connection
2 Straight-through transformer
3 Voltage detection not electrically isolated (3 MΩ per path)

Power controller and regulator



1 Internal connection
2 Straight-through transformer
3 Voltage detection not electrically isolated (3 MΩ per path)

Overview

Converters for 3RF2 solid-state switching devices

These modules are used to convert analog control signals, such as those output from many temperature controllers for example, into a pulse-width-modulated digital signal. The connected solid-state contactors and relays can therefore regulate the output of a load as a percentage.

Application

This function module is used for conversions from an analog input signal to an on/off ratio with time basis 1 s. The module can only be used in conjunction with 3RF21 and 3RF23 single-phase solid-state switching devices or 3RF22 and 3RF24 three-phase devices. It can be used on versions with 24 V DC and 24 V AC/DC control supply voltage.

Note:

The use of single-pole solid-state switching devices with converters, power controllers or power regulators on AC loads in full-wave control mode is not recommended. As mutual synchronization of the function modules is not possible, fluctuations in the heating power are possible; there is no optimum settling in particular with setpoint values < 50 %.

Selection and ordering data

	Rated operational current I_e	Rated operational voltage U_e	SD	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU			
	A	V	d					
Converters								
	Rated control supply voltage 24 V AC/DC							
 3RF2900-0EA18	--	--	2	**3RF2900-0EA18**		1	1 unit	41C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Load monitoring for 3RF2 single-phase solid-state switching devices

Many faults can be quickly detected by monitoring a load circuit connected to the solid-state switching device, as made possible with this module. Examples include the failure of load elements (up to 6 in the basic version or up to 12 in the extended version), alloyed power semiconductors, a lack of voltage or a break in a load circuit. A fault is indicated by one or more LEDs and reported to the controller by way of a PLC-compatible output.

The principle of operation is based on permanent monitoring of the current intensity. This figure is continuously compared with the reference value stored once during start up by the simple press of a button. In order to detect the failure of one of several loads, the current difference must be 1/6 (in the basic version) or 1/12 (in the extended version) of the reference value. In the event of a fault, an output is actuated and one or more LEDs indicate the fault.

Application

The device is used for monitoring one or more loads (partial loads). The function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor. The devices with spring-type connections in the load circuit are not suitable.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No. / Price per PU			
Basic load monitoring						
Rated control supply voltage 24 V DC						
6	--	2	**3RF2906-0FA08**	1	1 unit	41C
20	--	2	**3RF2920-0FA08**	1	1 unit	41C
• With mounted 3RF2900-0RA88 cover						
6	--	2	**3RF2906-0FA08-0KH0**	1	1 unit	41C
20	--	2	**3RF2920-0FA08-0KH0**	1	1 unit	41C
Extended load monitoring						
Rated control supply voltage 24 V AC/DC						
20	110 ... 230	2	**3RF2920-0GA13**	1	1 unit	41C
20	400 ... 600	2	**3RF2920-0GA16**	1	1 unit	41C
50	110 ... 230	2	**3RF2950-0GA13**	1	1 unit	41C
50	400 ... 600	2	**3RF2950-0GA16**	1	1 unit	41C
90	110 ... 230	2	**3RF2990-0GA13**	1	1 unit	41C
90	400 ... 600	2	**3RF2990-0GA16**	1	1 unit	41C
Rated control supply voltage 110 V AC						
20	110 ... 230	2	**3RF2920-0GA33**	1	1 unit	41C
20	400 ... 600	2	**3RF2920-0GA36**	1	1 unit	41C
50	110 ... 230	2	**3RF2950-0GA33**	1	1 unit	41C
50	400 ... 600	2	**3RF2950-0GA36**	1	1 unit	41C
90	110 ... 230	2	**3RF2990-0GA33**	1	1 unit	41C
90	400 ... 600	2	**3RF2990-0GA36**	1	1 unit	41C


3RF2920-0FA08


3RF2920-0GA13

Accessories

Version	SD	Article No. / Price per PU	PU (UNIT, SET, M)	PS*	PG
	d				
Optional accessories					
Sealable covers for function modules (not for converters)	5	**3RF2900-0RA88**	1	10 units	41C


3RF2900-0RA88

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS heating current monitoring for 3RF2

Overview

Heating current monitoring for 3RF2 single-phase solid-state switching devices

Many faults can be quickly detected by monitoring a load circuit connected to the solid-state switching device, as made possible with this module. Examples include the failure of up to six load elements, alloyed power semiconductors, a lack of voltage, or a break in the load circuit. A fault is indicated by LEDs and reported to the controller via relay output (NC).

The principle of operation is based on permanent monitoring of the current intensity. This figure is continuously compared with the reference value stored once during start up. In order to detect the failure of one of several loads, the current difference must be 1/6 of the reference value. In the event of a fault, an output is actuated and the LEDs indicate the fault.

The heating current monitoring has a teach input and therefore differs from the load monitoring. This remote teaching function enables simple adjustment to changing loads without manual intervention.

Special version:
Deviations from the standard version

3RF29..-0JA1.-1KK0

If the current is below 50 % of the lower teach current during the teach routine, the device will go into "Standby" mode; the LOAD LED will flicker. The device thus detects a non-connected load, e.g. channels not required for tool heaters, and does not signal a fault. This mode can be reset by re-teaching.

Application

The device is used for monitoring one or more loads (partial loads). The function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor. The devices with spring-type connections in the load circuit are not suitable.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
			Article No.	Price per PU			
A	V	d					
Heating current monitoring[1]							
Rated control supply voltage 24 V AC/DC							
16	110 ... 230	2	**3RF2916-0JA13**		1	1 unit	41C
16	110 ... 230	5	**3RF2916-0JA13-1KK0**		1	1 unit	41C
16	400 ... 600	2	**3RF2916-0JA16-1KK0**		1	1 unit	41C
32	110 ... 230	2	**3RF2932-0JA13-1KK0**		1	1 unit	41C
32	400 ... 600	2	**3RF2932-0JA16**		1	1 unit	41C
32	400 ... 600	2	**3RF2932-0JA16-1KK0**		1	1 unit	41C

3RF2932-0JA13

[1] Supplied without control connector. The control connector can be purchased from Phoenix Contact by quoting Article No. 1982 790 (2.5 HC/6-ST-5.08).

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
Sealable covers for function modules (not for converters)	5	**3RF2900-0RA88**		1	10 units	41C

3RF2900-0RA88

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Power controllers for 3RF2 single-phase solid-state switching devices

The power controller is a function module for the autonomous power control of complex heating systems and inductive loads.

The following functions have been integrated:

- Power controller:
  for adjusting the power of the connected load. The setpoint value is selected via a rotary knob on the module as a percentage of the 100 % power value stored.
- Inrush current limitation:
  With the aid of an adjustable voltage ramp, the inrush current is limited by means of phase control. This is useful above all with loads such as lamps or infrared lamps which have an inrush transient current.
- Load circuit monitoring:
  for detecting load failure, partial load faults, alloyed power semiconductors, lack of voltage or a break in the load circuit.

Note:

With the phase control operating mode, a partial load fault is detected by cyclic "scanning" of the load; the exact mode of operation is described in the data sheets!

Special version:
Deviations from the standard version

3RF2904-0KA13-0KC0

During the teach routine, the connected solid-state relay or contactor is not activated; i.e. no current will flow. No current reference value is stored. No part-load monitoring!

3RF29..-0KA1.-0KT0

No part-load monitoring!

Application

The power controller can be used for:

- Complex heating systems
- Inductive loads
- Loads with temperature-dependent resistor
- Loads with ageing after long-time service
- Simple indirect control of temperature

Power control

The power controller adjusts the power in the connected load by means of a solid-state switching device depending on the setpoint selection. It does not compensate for changes in the mains voltage or load resistance. The setpoint value can be predefined externally as a 0 to 10 V signal or internally by means of a potentiometer. Depending on the setting of the potentiometer (t_R), it is controlled according to the principle of full-wave control or generalized phase control.

Note:

In the case of ohmic loads, the power is set linear to the setpoint value. During operation of inductive loads, the power control is no longer proportional and linear due to the phase shift between current and voltage.

Full-wave control

In this operating mode the output is adjusted to the required setpoint value by changing the on-to-off period. The period duration is predefined at one second.

See note about AC loads on page 6/96.

Generalized phase control

In this operating mode the output is adjusted to the required setpoint value by changing the current flow angle. In order to observe the limit values of the conducted interference voltage for industrial networks, the load circuit must include a reactor with a rating of at least 200 µH.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Power controllers							
Rated control supply voltage 24 V AC/DC							
4	110 ... 230	2	**3RF2904-0KA13-0KC0**		1	1 unit	41C
4		2	**3RF2904-0KA13-0KT0**		1	1 unit	41C
20		2	**3RF2920-0KA13**		1	1 unit	41C
50		2	**3RF2950-0KA13**		1	1 unit	41C
90		2	**3RF2990-0KA13**		1	1 unit	41C
20	400 ... 600	2	**3RF2920-0KA16**		1	1 unit	41C
50		2	**3RF2950-0KA16**		1	1 unit	41C
50		2	**3RF2950-0KA16-0KT0**		1	1 unit	41C
90		2	**3RF2990-0KA16**		1	1 unit	41C

3RF2920-0KA13

Version	SD	Article No. Price per PU	PU (UNIT, SET, M)	PS*	PG
	d				
Optional accessories					
Sealable covers for function modules (not for converters)	5	**3RF2900-0RA88**	1	10 units	41C

3RF2900-0RA88

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Power regulators for 3RF2 single-phase solid-state switching devices

The power regulator is a function module for the autonomous power control of complex heating systems.

The following functions have been integrated:

- Power controller with P-control:
  for adjusting the power of the connected load. The setpoint value is selected via a rotary knob on the module as a percentage of the 100 % power value stored. Changes in the mains voltage or in the load resistance are compensated in this case.
- Inrush current limitation:
  With the aid of an adjustable voltage ramp, the inrush current is limited by means of phase control. This is useful above all with loads such as lamps which have an inrush transient current.
- Load circuit monitoring:
  for detecting load failure, alloyed power semiconductors, lack of voltage or a break in the load circuit. Partial load monitoring is not possible. Load fluctuations are compensated.

Application

The power regulator can be used for:

- Complex heating systems
- Heating elements with temperature-dependent resistor
- Heating elements with ageing after long-time service
- Simple indirect control of temperature

Power control

The power regulator adjusts the power in the connected load by means of a solid-state switching device depending on the taught power and the selected setpoint. Changes in the mains voltage or in the load resistance are thus compensated by the power regulator. The setpoint value can be predefined externally as a 0 to 10 V signal or internally by means of a potentiometer. Depending on the setting of the potentiometer (t_R), the adjustment is carried out according to the principle of full-wave control or generalized phase control.

Note:

In the case of ohmic loads, the power is set linear to the setpoint value. During operation of inductive loads, the power control is no longer proportional and linear due to the phase shift between current and voltage.

Full-wave control

In this operating mode the output is adjusted to the required setpoint value by changing the on-to-off period. The period duration is predefined at one second.

See note about AC loads on page 6/96.

Generalized phase control

In this operating mode the output is adjusted to the required setpoint value by changing the current flow angle. In order to observe the limit values of the conducted interference voltage for industrial networks, the load circuit must include a reactor with a rating of at least 200 µH.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals ⏚ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Power regulators							
Rated control supply voltage 24 V AC/DC							
20	110 ... 230	2	**3RF2920-0HA13**		1	1 unit	41C
20	400 ... 600	2	**3RF2920-0HA16**		1	1 unit	41C
50	110 ... 230	2	**3RF2950-0HA13**		1	1 unit	41C
50	400 ... 600	2	**3RF2950-0HA16**		1	1 unit	41C
90	110 ... 230	2	**3RF2990-0HA13**		1	1 unit	41C
90	400 ... 600	2	**3RF2990-0HA16**		1	1 unit	41C
Rated control supply voltage 110 V AC							
20	110 ... 230	2	**3RF2920-0HA33**		1	1 unit	41C
20	400 ... 600	2	**3RF2920-0HA36**		1	1 unit	41C
50	110 ... 230	2	**3RF2950-0HA33**		1	1 unit	41C
50	400 ... 600	2	**3RF2950-0HA36**		1	1 unit	41C
90	110 ... 230	2	**3RF2990-0HA33**		1	1 unit	41C
90	400 ... 600	2	**3RF2990-0HA36**		1	1 unit	41C

3RF2920-0HA13

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
Sealable covers for function modules (not for converters)	5	**3RF2900-0RA88**		1	10 units	41C

3RF2900-0RA88

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Solid-state contactors for switching motors

Solid-state contactor for direct-on-line starting

The solid-state contactors for switching motors are intended for frequently switching on and off AC drives up to 7.5 kW and reversing up to 3.0 kW. The devices are constructed with complete insulation and can be mounted directly on SIRIUS motor starter protectors, overload relays and current monitoring relays, resulting in a very simple integration into motor feeders.

These three-phase solid-state contactors are equipped with a two-phase control which is particularly suitable for typical motor current circuits without connecting to the neutral conductor.

Important features:

- Insulated enclosure with integrated heat sink
- Degree of protection IP20
- Integrated mounting foot to snap on a standard mounting rail or for assembly onto a support plate
- Variety of connection methods
- Plug-in control connection
- Display via LEDs
- Wide voltage range for AC control supply voltage

Switching functions

The solid-state contactors for switching motors are "Instantaneous switching", because this method is particularly suited for inductive loads. By distributing the ON point over the entire sine curve of the mains voltage, disturbances are reduced to a minimum.

Connection methods

You can choose between the following connection methods for the solid-state contactors for switching motors:

Screw connection

The screw connection system is the standard among industrial controls. Open terminals and a plus-minus screw are just two features of this technology. Two conductors of up to 6 mm^2 can be connected in just one terminal.

Spring-type connection

This innovative technology manages without any screw connection. This means that very high vibration resistance is achieved. Two conductors of up to 2.5 mm^2 can be connected to each terminal.

Motor feeders

The devices can use a link module to directly connect to a motor starter protector. Also possible is the mounting of a 3RB30/3RB31 electronic overload relay (see page 7/90) or a 3RR2 current monitoring relay (see pages 10/62 and 10/70) using a link adapter. The simultaneous mounting of a motor starter protector and an overload or current monitoring relay is not recommend for space and heat development reasons.

Rapid-switching fuseless and fuse motor feeders can thereby be implemented in a time-saving manner.

Selecting solid-state contactors

The solid-state contactors are selected on the basis of details of the network, the load and the ambient conditions.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select a solid-state contactor with the same or higher rated current than the load
- Testing of the maximum permissible switching frequency based on the characteristic curves (see "More Information" → "Product Information"). To do this, the starting current, the starting time and the motor loaded in in the operating phase must be known.
- If the permissible switching frequency is under the desired frequency, it is possible to achieve an increase only by overdimensioning the motor and the solid-state contactor!

Alternatively, the tool for "Selection of solid-state contactors for switching motors" can be used. The correct device size can be determined by entering the network and motor data along with the application and ambient conditions, see www.siemens.com/solid-state-switching-devices.

Short-circuit protection

Despite the rugged power semiconductors that are used, solid-state switching devices respond more sensitively to short circuits in the load feeder. Consequently, special precautions have to be taken against destruction, depending on the type of design.

Siemens generally recommends using SITOR semiconductor fuses. These fuses also provide protection against destruction in the event of a short circuit even when the solid-state contactors and solid-state relays are fully utilized.

Alternatively, if there is lower loading, protection can also be provided by standard fuses or miniature circuit breakers. This protection is achieved by overdimensioning the solid-state switching devices accordingly.

More information

For additional information, see the system manual "SIRIUS Innovations - System Overview" and the manual "SIRIUS Innovations - 3RF34 Solid-State Switching Devices":

https://support.industry.siemens.com/cs/ww/en/view/60311318,

https://support.industry.siemens.com/cs/ww/en/view/60298187.

Product information and technical specifications

For product data sheets with detailed technical specifications, dimensional drawings and characteristic curves see https://support.industry.siemens.com/cs/ww/en/ps/16237.

For additional information, please enter the article number of the required device under the tab "Product List".

General data

Article No. scheme

Product versions		Article number									
Solid-state switching devices for switching motors	Solid-state contactors	**3RF34**	☐	☐	–	☐	☐	☐	☐	☐	Three-phase
Rated operational current	3.8 A		**0**	**3**							Only for reversing contactor
	5.2 A (5.4 A for reversing contactor)		**0**	**5**							
	9.2 A (7.4 A for reversing contactor)		**1**	**0**							
	12.5 A		**1**	**2**							Only for solid-state contactor
	16 A		**1**	**6**							Only for solid-state contactor
Connection type	Screw terminals					**1**					
	Spring-type connection					**2**					
Switching function	Instantaneous switching						**B**				
Number of controlled phases	2-phase							**B**			
	Reversing contactor							**D**			
Rated control supply voltage U_s	24 V DC								**0**		
	110 ... 230 V AC								**2**		
Rated operational voltage U_e	48 ... 460 V AC									**4**	
	48 ... 600 V AC									**6**	Blocking voltage 1600 V, only for solid-state contactor
Example		**3RF34**	**1**	**0**	**–**	**1**	**B**	**B**	**0**	**4**	

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

- Units with integrated heat sink, "ready to use"
- Compact and space-saving design
- Reversing contactors with integrated interlocking

Application

Use in load feeders

There is no typical design of a load feeder with solid-state relays or solid-state contactors; instead, the great variety of connection methods and control voltages offers universal application opportunities. SIRIUS solid-state relays and solid-state contactors can be installed in fuseless or fused feeders, as required.

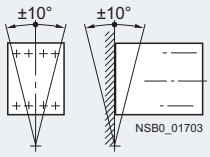
See Configuration Manual "Configuring SIRIUS – Selection Data for Fuseless and Fused Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/39714188.

Standards and approvals

- IEC 60947-4-2
- UL 508, CSA for North America1)
- CE marking for Europe
- C-Tick approval for Australia
- CCC approval for China

1) Please note: Use overvoltage protection device; max. cut-off-voltage 6 000 V; min. energy handling capability 100 J.

Technical specifications

Type		3RF3405-1BB.. 3RF3403-1BD.., 3RF3405-1BD..	3RF3410-1BB.., 3RF3412-1BB.., 3RF3416-1BB.. 3RF3410-1BD..	3RF3405-2BB..	3RF3410-2BB.., 3RF3412-2BB.., 3RF3416-2BB..
Dimensions (W x H x D)					
• 3RF34..-1BB..	mm	45 x 95 x 96.5	90 x 95 x 96.5	45 x 95 x 96.5	90 x 95 x 96.5
• 3RF34..-1BD..	mm	45 x 95 x 108.5	90 x 95 x 108.5	--	--
General technical specifications					
Ambient temperature					
• During operation, derating from 40 °C	°C	-25 ... +60			
• During storage	°C	-55 ... +80			
Installation altitude	m	0 ... 1 000; derating over 1 000 m on request			
Shock resistance acc. to IEC 60068-2-27	*g*/ms	15/11			
Vibration resistance acc. to IEC 60068-2-6	*g*	2			
Degree of protection		IP20			
Insulation strength at 50/60 Hz (main/control circuit to ground)	V rms	4 000			
Electromagnetic compatibility (EMC)					
• Emitted interference according to IEC 60947-4-2					
- Conducted interference voltage		Class A for industrial applications[1]			
- Emitted, high-frequency interference voltage		Class A for industrial applications			
• Interference immunity					
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge: 4; air discharge: 8; Behavior criterion 2			
- Induced RF fields acc. to IEC 61000-4-6	MHz	0.15 ... 80 140 dBµV; behavior criterion 1			
- Burst acc. to IEC 61000-4-4	kV	2; at 5 kHz; behavior criterion 2			
- Surge acc. to IEC 61000-4-5[2]	kV	Conductor - Ground: 2; Conductor - Conductor: 1; Behavior criterion 2			
Connection type		**Screw terminals**		**Spring-type terminals**	
Operating devices		Standard screwdriver size 2 and Pozidriv 2		3.0 x 0.5 and 3.5 x 0.5	
Conductor cross-sections, main contacts					
• Solid	mm^2	2 x (1.5 ... 2.5)[3], 2 x (2.5 ... 6)[3]		2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve	mm^2	2 x (1 ... 2.5)[3], 2 x (2.5 ... 6)[3], 1 x 10		2 x (0.5 ... 1.5)	
• Finely stranded without end sleeve	mm^2	--		2 x (0.5 ... 2.5)	
• AWG cables, solid or stranded		2 x (AWG 14 ... 10)		2 x (AWG 18 ... 14)	
Conductor cross-sections, auxiliary/control contacts					
• With/without end sleeve	mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)		0.5 ... 2.5	
• AWG cables, solid or stranded		AWG 20 ... 12		AWG 20 ... 12	
Permissible mounting position					

1) These products were built as Class A devices. The use of these devices in residential areas could result in lead in radio interference. In this case these may be required to introduce additional interference suppression measures.

2) The following applies for reversing contactors: To maintain the values, a 3TX7462-3L surge suppressor should be used between phases L1 and L3 as close as possible to the reversing contactor.

3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

3RF34 solid-state contactors, three-phase

Overview

These 2-phase controlled, instantaneous switching solid-state contactors in the insulating enclosure are offered in width 45 mm up to 5.2 A – and in width 90 mm up to 16 A. They allow the operation of motors up to 7.5 kW.[1)]

1) In accordance with the product standard IEC 60947-4-2, the motor contactors are designed for motors with maximum starting current conditions of $I/I_e \leq 8$.
For configuring motors with higher starting current conditions (typically $I/I_e \geq 8$) the data in the "SIRIUS 3RF34 Solid-State Switching Devices" manual must be taken into account.

Technical specifications

More information	
System Manual and Manual, see https://support.industry.siemens.com/cs/ww/en/view/60311318 https://support.industry.siemens.com/cs/ww/en/view/60298187	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16239/faq

Type		3RF3405-.BB..	3RF3410-.BB..	3RF3412-.BB..	3RF3416-.BB..
Fuseless design with 3RV2 motor starter protector, CLASS 10					
Rated operational current I_{AC-53a} [1)] acc. to IEC 60947-4-2					
• At 40 °C	A	5.2 (4.5)	9.2	12.5	16
• UL/CSA, at 50 °C	A	4.6 (4.0)	8.4	11.5	14
• At 60 °C	A	4.2 (3.5)	7.6	10.5	12.5
Power loss at I_{AC-53a}					
• At 40 °C	W	10 (8)	16	22	28
Short-circuit protection with type of coordination "1" at operational voltage U_e up to 440 V					
• Motor starter protector, type		3RV2011-1GA10	3RV2011-1JA10	3RV2011-1KA10	3RV2011-4AA10
• Current I_q	kA	50	5		3

1) The reduced values in brackets apply to a directly mounted circuit breaker and simultaneous side-by-side mounting.

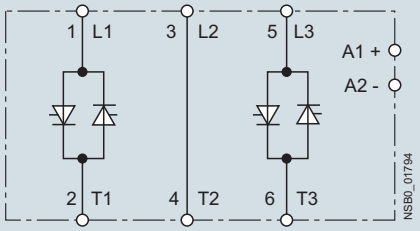
Type		3RF3405-.BB.4	3RF3405-.BB.6	3RF3410-.BB..	3RF3412-.BB.4	3RF3412-.BB.6	3RF3416-.BB..
Fused design with directly connected 3RB3 overload relay							
Rated operational current I_{AC-53a} acc. to IEC 60947-4-2							
• At 40 °C	A	4		7.8	9.5		11
• UL/CSA, at 50 °C	A	3.6		7	8.5		10
• At 60 °C	A	3.2		6.2	7.6		9
Power loss at I_{AC-53a}							
• At 40 °C	W	7		13	16		18
Minimum load current	A	0.1	0.5				
Max. off-state current	mA	10					
Rated peak withstand current I_{tsm}	A	200	600		1 200	1 150	
I^2t value	A^2s	200	1 800		7 200	6 600	

Type		3RF34..-.BB.4	3RF34..-.BB.6
Main circuit			
Controlled phases		2-phase	2-phase
Rated operational voltage U_e	V AC	48 ... 480	48 ... 600
• Operating range	V AC	40 ... 506	40 ... 660
• Rated frequency	Hz	50/60 ± 10 %	
Rated insulation voltage U_i	V	600	
Rated impulse withstand voltage U_{imp}	kV	6	
Blocking voltage	V	1 200	1 600
Rate of voltage rise	V/µs	1 000	

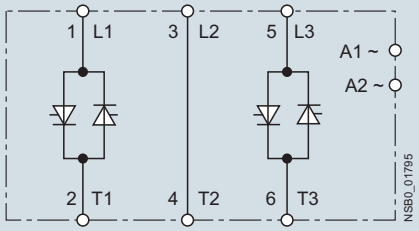
Type		3RF34..-.BB0.	3RF34..-.BB2.
Control circuit			
Method of operation		DC operation	AC operation
Rated control supply voltage U_s	V	24	110 ... 230
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10 %
Control supply voltage, max.	V	30	253
Typical actuating current	mA	20	15
Response voltage	V	15	90
Drop-out voltage	V	5	< 40
Operating times			
• ON-delay	ms	1	5
• OFF-delay	ms	1 + max. one half-wave	30 + max. one half-wave

Circuit diagrams

DC control supply voltage



AC control supply voltage



3RF34 solid-state contactors, three-phase *IE3/IE4* ready

Selection and ordering data

Motor contactors · Instantaneous switching · Two-phase controlled

Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
A	400 V kW	V	d	Article No.			
Rated operational voltage U_e 48 ... 480 V AC							
5.2	**2.2**	24 DC	2	**3RF3405-1BB04**	1	1 unit	41C
9.2	**4.0**		5	**3RF3410-1BB04**	1	1 unit	41C
12.5	**5.5**		5	**3RF3412-1BB04**	1	1 unit	41C
16	**7.5**		5	**3RF3416-1BB04**	1	1 unit	41C
5.2	**2.2**	110 ... 230 AC	5	**3RF3405-1BB24**	1	1 unit	41C
9.2	**4.0**		5	**3RF3410-1BB24**	1	1 unit	41C
12.5	**5.5**		5	**3RF3412-1BB24**	1	1 unit	41C
16	**7.5**		5	**3RF3416-1BB24**	1	1 unit	41C


3RF3405-1BB

Rated operational voltage U_e 48 ... 600 V AC, blocking voltage 1 600 V							
5.2	**2.2**	24 DC	5	**3RF3405-1BB06**	1	1 unit	41C
9.2	**4.0**		5	**3RF3410-1BB06**	1	1 unit	41C
12.5	**5.5**		5	**3RF3412-1BB06**	1	1 unit	41C
16	**7.5**		5	**3RF3416-1BB06**	1	1 unit	41C
5.2	**2.2**	110 ... 230 AC	5	**3RF3405-1BB26**	1	1 unit	41C
9.2	**4.0**		5	**3RF3410-1BB26**	1	1 unit	41C
12.5	**5.5**		5	**3RF3412-1BB26**	1	1 unit	41C
16	**7.5**		5	**3RF3416-1BB26**	1	1 unit	41C


3RF3410-1BB

Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	SD	**Spring-type terminals**	PU (UNIT, SET, M)	PS*	PG
A	400 V kW	V	d	Article No.			
Rated operational voltage U_e 48 ... 480 V AC							
5.2	**2.2**	24 DC	5	**3RF3405-2BB04**	1	1 unit	41C
9.2	**4.0**		5	**3RF3410-2BB04**	1	1 unit	41C
12.5	**5.5**		5	**3RF3412-2BB04**	1	1 unit	41C
16	**7.5**		5	**3RF3416-2BB04**	1	1 unit	41C
5.2	**2.2**	110 ... 230 AC	5	**3RF3405-2BB24**	1	1 unit	41C
9.2	**4.0**		5	**3RF3410-2BB24**	1	1 unit	41C
12.5	**5.5**		5	**3RF3412-2BB24**	1	1 unit	41C
16	**7.5**		5	**3RF3416-2BB24**	1	1 unit	41C

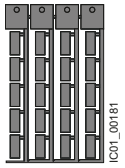

3RF3405-2BB

Rated operational voltage U_e 48 ... 600 V AC, blocking voltage 1 600 V							
5.2	**2.2**	24 DC	5	**3RF3405-2BB06**	1	1 unit	41C
9.2	**4.0**		5	**3RF3410-2BB06**	1	1 unit	41C
12.5	**5.5**		5	**3RF3412-2BB06**	1	1 unit	41C
16	**7.5**		5	**3RF3416-2BB06**	1	1 unit	41C
5.2	**2.2**	110 ... 230 AC	5	**3RF3405-2BB26**	1	1 unit	41C
9.2	**4.0**		5	**3RF3410-2BB26**	1	1 unit	41C
12.5	**5.5**		5	**3RF3412-2BB26**	1	1 unit	41C
16	**7.5**		5	**3RF3416-2BB26**	1	1 unit	41C


3RF3410-2BB

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Link modules between solid-state contactor and motor starter protector							
 3RA2921-1BA00	**Link modules** Between solid-state contactor and motor starter protector with screw terminals		**Screw terminals**				
	For 3RV2 motor starter protectors size S00/S0	2	**3RA2921-1BA00**		1	1 unit	41B
Link adapters between solid-state contactor and overload relay							
 3RF3900-0QA88	**Link adapters** For direct mounting of 3RB3 overload relays or 3RR2 current monitoring relays to the solid-state contactor with screw terminals.						
	The adapter is snapped onto the enclosure of the 3RF34 contactor and accommodates the fixing hooks of the 3RB3 overload relays or the 3RR2 current monitoring relays for direct mounting.	2	**3RF3900-0QA88**		1	1 unit	41C
Insulation stop for securely holding back the conductor insulation on conductors up to 1 mm²							
 3RT2916-4JA02	**Insulation stop strip** For all SIRIUS devices with spring-type terminals		**Spring-type terminals**				
	Can be inserted in cable entry of spring-type terminal (no more than 2 strips per contactor required, removable in pairs) For terminals with conductor cross-section up to 2.5 mm²	5	**3RT2916-4JA02**		1	20 units	41B
Tools for opening spring-type terminals							
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals						
	length approx. 200 mm, 3.0 mm x 0.5 mm titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B
Blank labels							
 3SB2900-1SB20	**Unit labeling plates** For SIRIUS devices1)						
	• 10 mm × 7 mm, titanium gray	20	**3RT2900-1SB10**		100	816 units	41B
	• 20 mm × 7 mm, titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels For SIRIUS devices						
	• 19 mm × 6 mm, titanium gray	5	**3RT2900-1SB60**		100	3 060 units	41B
"SIRIUS" Manuals							
	System Manual "SIRIUS – System Overview" The system manual can be downloaded free of charge in PDF format from the Internet, see https://support.industry.siemens.com/cs/ww/en/view/60311318.						
	Manual – SIRIUS 3RF34 Solid-State Switching Devices The manual can be downloaded free of charge in PDF format from the Internet, see https://support.industry.siemens.com/cs/ww/en/view/60298187.						

1) PC labeling system for the individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH see page 16/20.

3RF34 solid-state reversing contactors, three-phase

Overview

The integration of four conducting paths to a reverse switch, combined in one enclosure makes this device a particularly compact solution. Compared to conventional systems, for which two contactors are required, it is possible to save up to 50 % width with the three-phase reversing contactors. Devices with a width of 45 mm cover motors up to 2.2 kW – and those with a width of 90 mm cover motors up to 3 kW.[1)]

[1)] In accordance with the product standard IEC 60947-4-2, the motor contactors are designed for motors with maximum starting current conditions of $I/I_e \leq 8$.
For configuring motors with higher starting current conditions (typically $I/I_e \geq 8$) the data in the "SIRIUS 3RF34 Solid-State Switching Devices" manual must be taken into account.

Technical specifications

More information	
System Manual and Manual, see https://support.industry.siemens.com/cs/ww/en/view/60311318 https://support.industry.siemens.com/cs/ww/en/view/60298187	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16241/faq

Type		3RF3403-.BD.4	3RF3405-.BD.4	3RF3410-.BD.4
Fuseless design with 3RV2 motor starter protector, CLASS 10				
Rated operational current I_{AC-53a} [1)] acc. to IEC 60947-4-2				
• At 40 °C	A	3.8 (3.4)	5.4 (4.8)	7.4
• UL/CSA, at 50 °C	A	3.5 (3.1)	5 (4.3)	6.8
• At 60 °C	A	3.2 (2.8)	4.6 (3.8)	6.2
Power loss at I_{AC-53a}				
• At 40 °C	W	7 (6)	9 (8)	13
Short-circuit protection with type of coordination "1" at operational voltage U_e up to 440 V				
• Motor starter protector, type		3RV2011-1FA10	3RV2011-1GA10	3RV2011-1JA10
• Current I_q	kA	50		10

[1)] The reduced values in brackets apply to a directly mounted circuit breaker and simultaneous side-by-side mounting.

Type		3RF3403-.BD.4	3RF3405-.BD.4	3RF3410-.BD.4
Fused design with directly connected 3RB3 overload relay				
Rated operational current I_{AC-53a} acc. to IEC 60947-4-2				
• At 40 °C	A	3.8	5.4	7.4
• UL/CSA, at 50 °C	A	3.5	5	6.8
• At 60 °C	A	3.2	4.6	6.2
Power loss at I_{AC-53a}				
• At 40 °C	W	6	8	16
Minimum load current	A	0.5		
Max. off-state current	mA	10		
Rated peak withstand current I_{tsm}	A	200	600	
I^2t value	A^2s	200	1 800	

Type		3RF34..-.BD.4
Main circuit		
Controlled phases		2-phase
Rated operational voltage U_e [1)]	V AC	48 ... 480
• Operating range	V AC	40 ... 506
• Rated frequency	Hz	50/60 ± 10 %
Rated insulation voltage U_i	V	600
Rated impulse withstand voltage U_{imp}	kV	6
Blocking voltage	V	1 200
Rate of voltage rise	V/µs	1 000

[1)] To reduce the risk of a phase short circuit due to overvoltage, we recommend using a varistor type 3TX7462-3L between the phases L1 and L3 as close as possible to the switchgear.

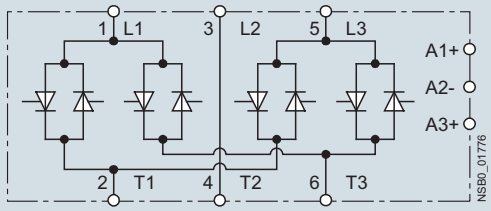
We recommend a design with semiconductor protection as short-circuit protection.

Type		3RF34..-.BD0.	3RF34..-.BD2.
Control circuit			
Method of operation		DC operation	AC operation
Rated control supply voltage U_s	V	24	110 ... 230
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10 %
Control supply voltage, maximum	V	30	253
Typical actuating current	mA	15	10
Response voltage	V	15	90
Drop-out voltage	V	5	< 40
Operating times[1]			
• ON-delay	ms	5	20
• OFF-delay	ms	5 + max. one half-wave	10 + max. one half-wave
• Interlocking time	ms	60 ... 100	50 ... 100

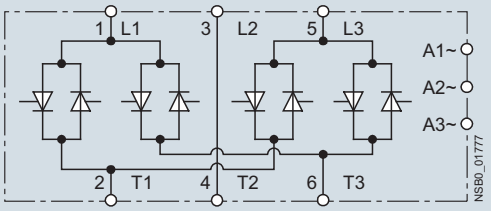
[1] Caution! Risk of phase short circuit in automatic mode.
The control inputs must not be actuated until a delay of 40 ms has expired after the main voltage is applied.

Circuit diagrams

DC control supply voltage



AC control supply voltage



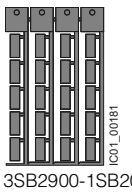
3RF34 solid-state reversing contactors, three-phase *IE3/IE4 ready*

Selection and ordering data

Reversing contactors · Instantaneous switching · Two-phase controlled

	Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	A	400 V kW	V	d	Article No. Price per PU			
Rated operational voltage U_e 48 ... 480 V AC								
 3RF3403-1BD	3.8	**1.5**	24 DC	2	**3RF3403-1BD04**	1	1 unit	41C
	5.4	**2.2**		5	**3RF3405-1BD04**	1	1 unit	41C
	7.4	**3.0**		5	**3RF3410-1BD04**	1	1 unit	41C
 3RF3410-1BD	3.8	**1.5**	110 ... 230 AC	5	**3RF3403-1BD24**	1	1 unit	41C
	5.4	**2.2**		5	**3RF3405-1BD24**	1	1 unit	41C
	7.4	**3.0**		5	**3RF3410-1BD24**	1	1 unit	41C

Accessories

	Version	SD	Article No. Price per PU	PU (UNIT, SET, M)	PS*	PG
		d				
Link modules between solid-state contactor and motor starter protector						
 3RA2921-1BA00	**Link modules** Between solid-state reversing contactor and motor starter protector with screw terminals		**Screw terminals**			
	For 3RV2 motor starter protectors, size S00/S0	2	**3RA2921-1BA00**	1	1 unit	41B
Link adapters between solid-state contactor and overload relay						
 3RF3900-0QA88	**Link adapters** For direct mounting of 3RB3 overload relays or 3RR2 current monitoring relays to the solid-state contactor with screw terminals.					
	The adapter is snapped onto the enclosure of the 3RF34 contactor and accommodates the fixing hooks of the 3RB3 overload relays or the 3RR2 current monitoring relays for direct mounting.	2	**3RF3900-0QA88**	1	1 unit	41C
Blank labels						
 3SB2900-1SB20	**Unit labeling plates** For SIRIUS devices1)					
	• 10 mm × 7 mm, titanium gray	20	**3RT2900-1SB10**	100	816 units	41B
	• 20 mm × 7 mm, titanium gray	20	**3RT2900-1SB20**	100	340 units	41B
	Adhesive labels For SIRIUS devices					
	• 19 mm × 6 mm, titanium gray	5	**3RT2900-1SB60**	100	3060 units	41B
"SIRIUS" Manuals						
	System Manual "SIRIUS – System Overview" The manual can be downloaded free of charge in PDF format from the Internet, see https://support.industry.siemens.com/cs/ww/en/view/60311318.					
	Manual – SIRIUS 3RF34 Solid-State Switching Devices The manual can be downloaded free of charge in PDF format from the Internet, see https://support.industry.siemens.com/cs/ww/en/view/60298187.					

1) PC labeling system for the individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH see page 16/20.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Note:

The 3RV1, 3RU1 and 3RB2 devices (sizes S00/S0 to S12) can be found

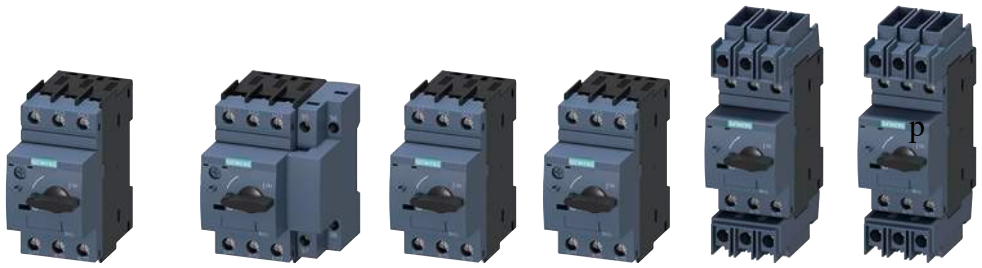
- in the Catalog Add-On IC 10 AO · 2016 at the Information and Download Center
- in the interactive Catalog CA 01
- in the Industry Mall

Conversion tool, e.g. from

- 3RV1 to 3RV2
- 3RU11 to 3RU21
- 3RB20/3RB21 to 3RB30/3RB31

see www.siemens.com/sirius/conversion-tool

Overview



Type		3RV20	3RV21	3RV23	3RV24	3RV27	3RV28
SIRIUS 3RV2 motor starter protectors/circuit breakers							
Applications							
• System protection		✓[1]	✓[1]	--	--	✓	✓
• Motor protection		✓	--	--	--	--	--
• Motor protection with overload relay function		--	✓	--	--	--	--
• Starter combinations		--	--	✓	--	--	--
• Transformer protection		--	--	--	✓	✓	✓
Size		S00, S0, S2, S3	S00, S0, S2, S3	S00, S0, S2, S3	S00, S0, S2	S00, S0, S3	S00, S0
Rated current I_n							
• Size S00	A	Up to 16	Up to 16	Up to 16	Up to 16	Up to 15	Up to 15
• Size S0	A	Up to 40	Up to 32	Up to 40	Up to 25	Up to 22	Up to 22
• Size S2	A	Up to 80	Up to 80	Up to 80	Up to 65	--	--
• Size S3	A	Up to 100	Up to 100	Up to 100	--	Up to 70	--
Rated operational voltage U_e acc. to IEC	V	690 AC[2]	690 AC[2]	690 AC[2]	690 AC[2]	690 AC	690 AC
Rated frequency	Hz	50/60	50/60	50/60	50/60	50/60	50/60
Trip class		CLASS 10 (S00 ... S3), CLASS 20 (S2, S3)	CLASS 10	--	CLASS 10	--	--
Thermal overload releases	A A	0.11 ... 0.16 to 80 ... 100	0.11 ... 0.16 to 80 ... 100	None[3]	0.11 ... 0.16 to 54 ... 65	0.16 ... 70 Non-adjustable	0.16 ... 22 Non-adjustable
Electronic releases A multiple of the rated current		13 times	13 times	13 times	20 times	13 times	20 times
Short-circuit breaking capacity I_{cu} at 400 V AC	kA	20/55/65/100	55/65/100	20/55/65/100	55/65/100	[4]	[4]
Pages		7/26 ... 7/28	7/30	7/32, 7/33	7/34	7/35	7/36

Accessories																				
For sizes	S00	S0	S2	S3	S00	S0	S2	S3	S00	S0	S2	S3	S00	S0	S2	S00	S0	S3	S00	S0
Auxiliary switches	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Signaling switches	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--
Undervoltage releases	✓	✓	✓	✓	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shunt releases	✓	✓	✓	✓	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Isolator modules	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	--	--	--	--
Insulated three-phase busbar system	✓	✓	✓	--	--	--	--	--	✓	✓	✓	--	✓	✓	✓	--	--	--	--	--
Busbar adapters	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--
Door-coupling rotary operating mechanisms	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Link modules	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--
Enclosures for surface mounting	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	--	--	--	--
Enclosures for flush mounting	✓	✓	--	--	✓	✓	--	--	✓	✓	--	--	✓	✓	--	--	--	--	--	--
Front plates	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--
Infeed system	✓	✓	--	--	--	--	--	--	✓	✓	--	--	✓	✓	--	--	--	--	--	--
Sealable scale covers for setting knobs	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	✓	✓	✓	--	--	--	--	--
Remote motorized operating mechanisms	--	--	--	✓	--	--	--	✓	--	--	--	✓	--	--	--	--	--	--	--	--
Pages	7/37 ... 7/59																			

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

[1] For symmetrical loading of the three phases.

[2] With molded-plastic enclosure 500 V AC. For DC applications, see "Technical Specifications" → "DC Short-Circuit Breaking Capacity", page 7/17.

[3] For overload protection of the motors, appropriate overload relays must be used.

[4] According to UL 489 at 480 Y/277 V AC: 65 kA or 50 kA.

Type	3RV1611-0BD10	3RV1611-1.G14
SIRIUS 3RV1 motor starter protectors/circuit breakers		
Applications		
• System protection	--	--
• Motor protection	--	--
• Motor protection with overload relay function	--	--
• Starter combinations	--	--
• Transformer protection	--	--
• Fuse monitoring	✓	--
• Voltage transformer circuit breakers for distance protection	--	✓
Size	S00	S00
Rated current I_n		
• Size S00	0.2	Up to 3
Rated operational voltage U_e acc. to IEC	690 AC[1)]	400 AC
Rated frequency	50/60	$16^2/_3$ ... 60
Trip class	--	--
Thermal overload releases	0.2	1.4 ... 3
Electronic releases A multiple of the rated current	6 times	4 ... 7 times
Short-circuit breaking capacity I_{cu} at 400 V AC	100	50
Pages	7/60	7/61
Accessories		
For sizes	S00	S00
Pages	7/60, 7/61	

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

[1)] With molded-plastic enclosure 500 V AC. For DC applications, see "Technical Specifications" → "DC Short-Circuit Breaking Capacity", page 7/18.

Type		3RV10			3RV13					
SIRIUS 3RV1 molded case motor starter protectors										
Applications										
• Motor protection		✓			--					
• Starter combinations		--			✓					
Switching capacity		Standard switching capacity			Standard switching capacity				Increased switching capacity	
Type		3RV1063	3RV1073	3RV1083	3RV1353	3RV1363	3RV1373	3RV1383	3RV1364	3RV1374
Rated current I_n	A	100 ... 200	400	630	1 ... 32	100 ... 250	400, 630	630, 800	100 ... 250	400
Rated operational voltage U_e acc. to IEC	V	690 AC			690 AC					
Rated frequency	Hz	50/60			50/60					
Trip class		CLASS 10A, 10, 20, 30			--[1]					
Thermal overload releases	A A	40 ... 100 to 252 ... 630			Without[1]					
Electronic releases A multiple of the rated current		Adjustable, 6 ... 13 times			Non-adjustable 1 ... 12.5 A: 13 times; Adjustable 20 A, 32 A: 6 ... 12 times	1 ... 10 times				
Short-circuit breaking capacity I_{cu} at 400 V AC	kA	120	120	100	85	120	120	100	200	200
Trip unit (release)		TU 4			TU 1: 1 ... 12.5 A; TU 2: 20 A, 32 A	TU 3				
Pages		7/67			7/68					
Accessories										
For molded case motor starter protectors		3RV1063	3RV1073	3RV1083	3RV1353	3RV1363	3RV1373	3RV1383	3RV1364	3RV1374
Auxiliary switches		✓	✓	✓	✓	✓	✓	✓	✓	✓
Undervoltage releases		✓	✓	✓	✓	✓	✓	✓	✓	✓
Shunt releases		✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotary operating mechanisms		✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection methods • Extended terminals on the front • Cable terminals on the front • Rear terminals		 ✓ ✓ ✓	 ✓ ✓ ✓	 -- ✓ ✓	 ✓ ✓ ✓	 ✓ ✓ ✓	 ✓ ✓ ✓	 -- ✓ ✓	 ✓ ✓ ✓	 ✓ ✓ ✓
Pages		7/69, 7/70								

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

[1] For overload protection of the motors, appropriate overload relays must be used.

Type		Thermal overload relays for standard applications 3RU21				Electronic overload relays for standard applications 3RB30				3RB31			
SIRIUS overload relays													
Applications													
• System protection		✓[1]				✓[1]				✓[1]			
• Motor protection		✓				✓				✓			
• Alternating current, three-phase		✓				✓				✓			
• Alternating current, single-phase		✓				--				--			
• Direct current		✓				--				--			
Size contactor		S00, S0, S2, S3				S00, S0, S2, S3				S00, S0, S2, S3			
Rated operational current I_e													
• Size S00	A	Up to 16				Up to 16				Up to 16			
• Size S0	A	Up to 40				Up to 40				Up to 40			
• Size S2	A	Up to 80				Up to 80				Up to 80			
• Size S3	A	Up to 100				Up to 115				Up to 115			
Rated operational voltage U_e	V	690 AC				690 AC				690 AC			
Rated frequency	Hz	50/60				50/60				50/60			
Trip class		CLASS 10, 10A				CLASS 10E, 20E				CLASS 5E, 10E, 20E, 30E (adjustable)			
Thermal overload releases	A A	0.11 ... 0.16 to 80 ... 100				--				--			
Electronic overload releases	A A	--				0.1 ... 0.4 to 32 ... 115				0.1 ... 0.4 to 32 ... 115			
Pages		7/84 ... 7/87				7/97, 7/98				7/99			
Accessories													
For sizes		S00	S0	S2	S3	S00	S0	S2	S3	S00	S0	S2	S3
Terminal supports for stand-alone installation		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical RESET		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cable releases for RESET		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electrical remote RESET		✓	✓	✓	✓	--	--	--	--	Integrated in the unit			
Terminal covers													
• For box terminals		--	--	✓	✓	--	--	✓	✓	--	--	✓	✓
Sealable covers for setting knobs		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pages		7/88, 7/89				7/100, 7/101				7/100, 7/101			

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

[1] The units are responsible in the main circuit for overload protection of the assigned electrical loads (e.g. motors), feeder cable, and other switching and protection devices in the respective load feeder.

Introduction




Type	Electronic overload relays For standard applications 3RB20	 3RB21	 For high-feature applications 3RB22, 3RB23	Electronic overload relays for IO-Link For high-feature applications 3RB24
SIRIUS overload relays				
Applications				
• System protection	✓[1]	✓[1]	✓[1]	
• Motor protection	✓	✓	✓	
• Alternating current, three-phase	✓	✓	✓	
• Alternating current, single-phase	--	--	✓	
• Direct current	--	--	--	
Size contactor	S3 ... S12	S3 ... S12	S00 ... S12	
Rated operational current I_e				
• Sizes S00 and S0	--	--	Up to 25 and 45 mm width with current measuring modules 3RB2906-2BG1/3RB2906-2DG1	
• Size S2	--	--	Up to 100 and 55 mm width with current measuring module 3RB2906-2JG1	
• Size S3	--	--		
• Size S6	Up to 200	Up to 200	Up to 200 and 120 mm width with current measuring modules 3RB2956-2TH2/3RB2956-2TG2	
• Size S10/S12	Up to 630	Up to 630	Up to 630 and 145 mm width with current measuring module 3RB2966-2WH2	
• Size 14 (3TF68/3TF69)	Up to 630	Up to 630	Up to 820 with current measuring module 3RB2906-2BG1 and transformer 3UF1868-3GA00	
Rated operational voltage U_e	690/1 000 AC	690/1 000 AC	690/1 000 AC[2]	
Rated frequency	50/60	50/60	50/60	
Trip class	CLASS 10, 20	CLASS 5, 10, 20, 30 adjustable	CLASS 5, 10, 20, 30 adjustable	
Thermal overload releases	--	--	--	
Electronic overload releases	50 ... 200 to 160 ... 630	50 ... 200 to 160 ... 630	0.3 ... 3 to 63 ... 630	
Pages	7/109, 7/110	7/111	7/120, 7/121, 7/132	7/128, 7/132

Accessories										
For sizes	S6	S10/S12	S6	S10/S12	S00	S0	S2	S3	S6	S10/S12
Terminal supports for stand-alone installation	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
Mechanical RESET	✓	✓	✓	✓	--	--	--	--	--	--
Cable releases for RESET	✓	✓	✓	✓	--	--	--	--	--	--
Electrical remote RESET	--	--	Integrated in the unit		Integrated in the unit					
Terminal covers	✓	✓	✓	✓	--	--	--	✓	✓	✓
Sealable covers for setting knobs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operator panel for 3RB24 evaluation module	--	--	--	--	✓	✓	✓	✓	✓	✓
Pages	7/112, 7/113		7/112, 7/113		7/132 ... 7/134					

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

[1] The units are responsible in the main circuit for overload protection of the assigned electrical loads (e.g. motors), feeder cable, and other switching and protection devices in the respective load feeder.

[2] With reference to the 3RB29.6 current measuring modules.

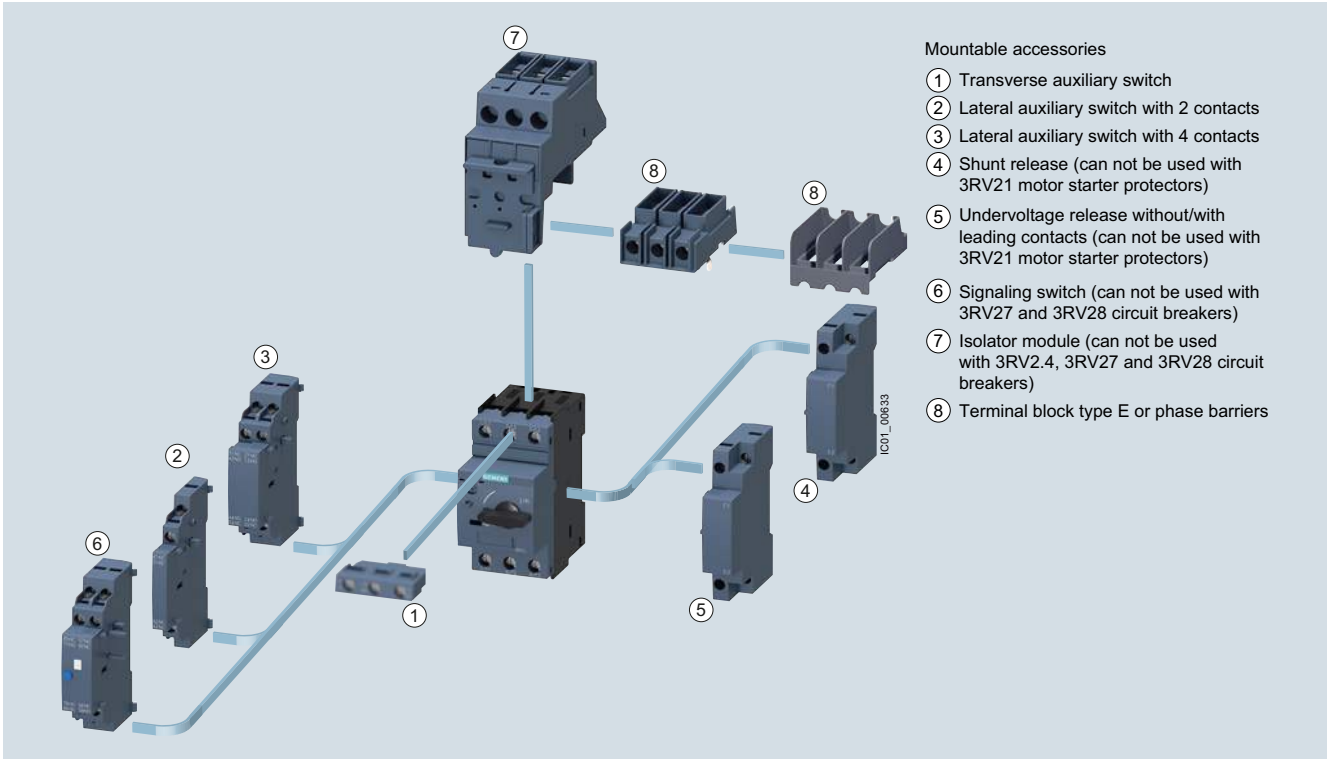
[3] Stand-alone installation without accessories is possible.

Overview

More information	
Home page, see www.siemens.com/sirius-circuit-breaker	Application Manual "SIRIUS Controls with IE3/IE4 Motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820
Industry Mall, see www.siemens.com/product?3RV2	System Manual "SIRIUS – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318
Conversion tool, e.g. from 3RV1 to 3RV2, see www.siemens.com/sirius/conversion-tool	Manual "SIRIUS – SIRIUS 3RV2 Motor Starter Protectors", see https://support.industry.siemens.com/cs/ww/en/view/60279172
	Certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16245/cert

The following illustration shows 3RV2 motor starter protectors/circuit breakers with the accessories which can be mounted for the sizes S00 to S3, see also "Introduction" → "Overview", page 7/2.

Accessories, see page 7/37 onwards.



Mountable accessories for SIRIUS 3RV2 motor starter protectors/circuit breakers

SIRIUS motor starter protector with spring-type terminals, size S0 (left) and SIRIUS motor starter protector with screw terminals, size S00 (right)

The SIRIUS 3RV2 motor starter protectors/circuit breakers are compact, current limiting motor starter protectors/circuit breakers which are optimized for load feeders. The motor starter protectors/circuit breakers are used for switching and protecting three-phase motors of up to 55/45 kW at 400 V AC and for other loads with rated currents of up to 100 A.

The new 3RV2 motor starter protectors/circuit breakers are usually approved according to IEC and UL/CSA. According to UL 508/UL 60947-4-1, the 3RV2 motor starter protectors/circuit breakers in sizes S00 to S3 are approved as:

- "Manual Motor Controllers"
- "Manual Motor Controllers" for "Group Installations"
- "Manual Motor Controllers Suitable for Tab Conductor Protection in Group Installations"
- "Self-Protected Combination Motor Controllers (Type E)" Please note that for this approval the 3RV20 motor starter protectors must be equipped with additional infeed terminals or phase barriers. For more information, see "Accessories" on page 7/45.

Corresponding short-circuit values, see pages 7/10 to 7/16.

The 3RV27 and 3RV28 are approved as circuit breakers according to UL 489; they are a special version of the 3RV2 motor starter protectors.

General data

Type of construction

The 3RV2 motor starter protectors are available in four sizes:

- Size S00 – width 45 mm,
  max. rated current 16 A,
  at 400 V AC suitable for three-phase motors up to 7.5 kW
- Size S0 – width 45 mm,
  max. rated current 40 A,
  at 400 V AC suitable for three-phase motors up to 18.5 kW
- Size S2 – width 55 mm,
  max. rated current 80 A,
  at 400 V AC suitable for three-phase motors up to 37 kW
- Size S3 – width 70 mm,
  max. rated current 100 A,
  at 400 V AC suitable for three-phase motors up to 45/55 kW

Circuit breakers acc. to UL 489

The 3RV27 and 3RV28 circuit breakers are available in two or three sizes:

- Size S00 – width 45 mm,
  max. rated current 15 A, at 480 Y/277 V AC
- Size S0 – width 45 mm,
  max. rated current 22 A, at 480 Y/277 V AC
- Size S3 – width 70 mm,
  max. rated current 70 A, at 480 Y/277 V AC

Connection methods

The 3RV2 motor starter protectors/circuit breakers can be supplied with screw terminals and spring-type terminals.

	Screw terminals
	Spring-type terminals
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Use in hazardous areas

The 3RV20 motor starter protectors for motor protection in sizes S00 and S0 have certification in accordance with both the European explosion protection directive ATEX and the international explosion protection standard (IECEx). Size S3 available on request.

In accordance with the European directive (ATEX), the 3RV20 are able to switch and protect explosion-proof motors of type of protection "Increased Safety EEx e".

In accordance with the international guideline (IECEx), the 3RV20 are able to switch and protect motors of the types "Increased Safety Ex e" or "Flameproof enclosure Ex d"

Article No. scheme

Product versions		Article number
Motor starter protectors/circuit breakers		**3RV2** □ □ □ – □ □ □ □ □ – □ □ □ □
Type of motor starter protector/ circuit breaker	e. g. 0 = for motor protection/system protection	□
Size	e. g. 1 = 16 A (7.5 kW) for size S00	□
Breaking capacity	e. g. 1 = standard switching capacity	□
Setting range for overload release	e. g. 1A = 1.1 ... 1.6 A	□ □
Trip class (CLASS)	e.g. A = a (adjustable CLASS 10) / n (13 or 20 x I_n)	□
Connection methods	e. g. 1 = screw terminals	□
With or without auxiliary switch	e. g. 0 = without	□
Special versions		□ □ □ □
Example		**3RV2 0 1 1 – 1 A A 1 0**

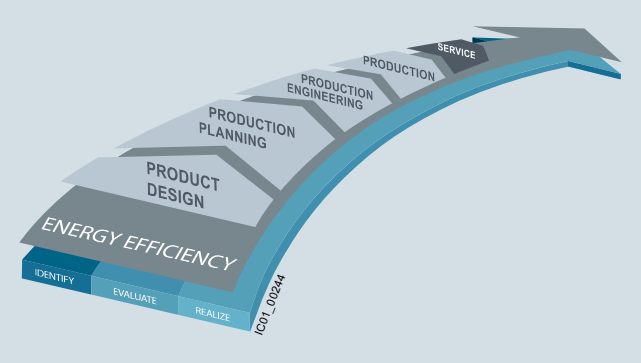
Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see www.siemens.com/sirius/energysaving).

3RV2 motor starter protectors/circuit breaker contribute to energy efficiency throughout the plant as follows:

- Minimization of energy losses through optimization of the bimetal trip units
- Reduction of inherent power loss
- Less heating of the control cabinet
- Smaller control cabinet air conditioners can be used

Application

Operating conditions

3RV2 motor starter protectors/circuit breakers are suitable for use in any climate. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. When installed in dusty and damp areas, suitable enclosures must be provided.

3RV2 motor starter protectors/circuit breakers can optionally be fed from the top or from below.

The permissible ambient temperatures, the maximum switching capacities, the tripping currents and other boundary conditions can be found in the technical specifications and tripping characteristics, see Manual.

3RV2 motor starter protectors/circuit breakers are suitable for operation in IT systems (IT networks). In this case, the different short-circuit breaking capacity in the IT system must be taken into account, see page 7/12.

Since operational currents, starting currents and current peaks are different even for motors with identical power ratings due to the inrush current, the motor ratings in the selection tables are only guide values. The specific rated and startup data of the motor to be protected is always paramount to the choice of the most suitable motor starter protector/circuit breaker. This also applies to motor starter protectors for transformer protection.

Possible uses

The 3RV motor starter protectors/circuit breakers can be used:

- For short-circuit protection
- For motor protection (also with overload relay function)
- For system protection
- For short-circuit protection for starter combinations
- For transformer protection
- As main and EMERGENCY-STOP switches
- For operation in IT systems (IT networks)
- For switching of DC currents
- In areas subject to explosion hazard (ATEX)
- As circuit breakers according to UL 489 (3RV27 and 3RV28)
- For fuse monitoring
- For distance protection

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RV2 motor starter protectors/circuit breakers in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see Preface on page 7.

Technical specifications

More information

System Manual "SIRIUS – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318

Configuration manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", see https://support.industry.siemens.com/cs/ww/en/view/39714188

Manual "SIRIUS – SIRIUS 3RV2 Motor Starter Protectors", see https://support.industry.siemens.com/cs/ww/en/view/60279172

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16245/td

UL reports of the individual devices, see www.siemens.com/sirius/manuals

Short-circuit breaking capacity I_{cu}, I_{cs} according to IEC 60947-2

The table shows the rated ultimate short-circuit breaking capacity I_{cu} and the rated service short-circuit breaking capacity I_{cs} of the 3RV2 motor starter protectors/circuit breakers with different operating voltages dependent on the rated current I_n of the motor starter protectors/circuit breakers.

Power can be supplied to the motor starter protectors/circuit breakers via the terminals at the top or at the bottom without restricting the rated data. If the short-circuit current at the place of installation exceeds the rated short-circuit breaking capacity of the motor starter protector/circuit breaker as specified in the table, a back-up fuse is required. It is also possible to install an upstream motor starter protector/circuit breaker with a limiter function.

The maximum rated current of this back-up fuse is indicated in the tables. The rated ultimate short-circuit breaking capacity then applies as specified on the fuse.

Fuseless design

Motor starter protector/contactor assemblies for short-circuit currents up to 150 kA can be ordered as 3RA2 fuseless load feeders, see page 8/4 onwards.

Motor starter protectors / circuit breakers	Rated current I_n	Up to 240 V AC[1]			Up to 400 V AC[1]/ 415 V AC[2]			Up to 440 V AC[1]/ 460 V AC[2]			Up to 500 V AC[1]/ 525 V AC[2]			Up to 690 V AC[1]		
		I_{cu}	I_{cs}	Max. fuse (gG)	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3][4]
Type	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
Size S00																
3RV2.11	0.16 ... 1.6	100	100	--	100	100	--	100	100	--	100	100	--	100	100	--
	2; 2.5	100	100	--	100	100	--	100	100	--	100	100	--	10	10	25
	3.2	100	100	--	100	100	--	100	100	--	100	100	--	10	10	32
	4; 5	100	100	--	100	100	--	100	100	--	100	100	--	6	4	32
	6.3	100	100	--	100	100	--	100	100	--	100	100	--	6	4	50
	8	100	100	--	100	100	--	50	50	63	42	42	63	6	4	50
	10	100	100	--	100	100	--	50	50	80	42	42	63	6	4	50
	12.5	100	100	--	100	100	--	50	50	80	42	42	80	6	4	63
	16	100	100	--	55	30	100	50	12.5	80	10	5	80	4	4	63
3RV1611-0BD10	0.2	100	100	--	100	100	--	100	100	--	100	100	--	100	100	--
Size S0																
3RV2.21	0.16 ... 1.6	100	100	--	100	100	--	100	100	--	100	100	--	100	100	--
	2; 2.5	100	100	--	100	100	--	100	100	--	100	100	--	10	10	25
	3.2	100	100	--	100	100	--	100	100	--	100	100	--	10	10	32
	4; 5	100	100	--	100	100	--	100	100	--	100	100	--	6	4	32
	6.3	100	100	--	100	100	--	100	100	--	100	100	--	6	4	50
	8	100	100	--	100	100	--	50	50	63	42	42	63	6	4	50
	10	100	100	--	100	100	--	50	50	80	42	42	63	6	4	50
	12.5	100	100	--	100	100	--	50	50	80	42	42	80	6	4	63
	16	100	100	--	55	25	100	50	12.5	80	10	5	80	4	2	63
	20	100	100	--	55	25	125	50	10	80	10	5	80	4	2	63
	22; 25	100	100	--	55	25	125	50	10	100	10	5	80	4	2	63
	28; 32	100	100	--	55	25	125	30	10	125	10	5	100	4	2	100
	36; 40	100	100	--	20	10	125	12	8	125	6	3	100	3	2	100

-- No back-up fuse required, since short-circuit resistant up to 100 kA

1) 10 % overvoltage.

2) 5 % overvoltage.

3) Back-up fuse only required if short-circuit current at the place of installation is > I_{cu}.

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

Motor starter protectors/ circuit breakers	Rated current I_n	Up to 240 V AC[1]			Up to 400 V AC[1]/ 415 V AC[2]			Up to 440 V AC[1]/ 460 V AC[2]			Up to 500 V AC[1]/ 525 V AC[2]			Up to 690 V AC[1]		
		I_{cu}	I_{cs}	Max. fuse (gG)	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3][4]
Type	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
Size S2																
3RV2.31	14; 17	100	100	--	65	30	100	50	25	100	12	6	63	5	3	63
	20	100	100	--	65	30	100	50	25	100	12	6	80	5	3	80
	25	100	100	--	65	30	100	50	15	100	12	6	80	5	3	80
	32; 36	100	100	--	65	30	125	50	15	125	10	5	100	4	2	100
	40; 45	100	100	--	65	30	160	50	15	125	10	5	100	4	2	100
	52	100	100	--	65	30	160	50	15	125	10	5	125	4	2	125
	59; 65	100	100	--	65	30	160	50	15	160	8	4	125	4	2	125
	73; 80	100	100	--	65	30	200	50	15	200	8	4	160	4	2	125
Size S2, with increased switching capacity																
3RV2.32	14; 17	100	100	--	100	50	--	65	30	100	18	10	63	8	5	63
	20; 25	100	100	--	100	50	--	65	30	100	18	10	80	8	5	80
	32 ... 45	100	100	--	100	50	--	65	30	125	15	8	100	6	4	100
	52	100	100	--	100	50	--	65	30	125	15	8	125	6	4	125
	59; 65	100	100	--	100	50	--	50	15	160	10	5	125	6	4	125
	73; 80	100	100	--	100	50	--	50	15	200	10	5	160	6	4	125
Size S3																
3RV2.41	40 ... 100	On request														
Size S3, with increased switching capacity																
3RV2.42/ 3RV2742[5]	40 ... 100	On request														

-- No back-up fuse required, since short-circuit resistant up to 100 kA

1) 10 % overvoltage.

2) 5 % overvoltage.

3) Back-up fuse only required if short-circuit current at the place of installation is > I_{cu}.

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

5) The values for the 3RV2742 circuit breakers have been tested only up to 400 V/415 V AC.

General data

Short-circuit breaking capacity I_{cuIT} in the IT system (IT network) according to *IEC 60947-2*

3RV2 motor starter protectors/circuit breakers are suitable for use in IT systems. The values of I_{cu} and I_{cs} apply for the three-pole short circuit. In the case of a double ground fault in different phases at the input and output side of a motor starter protector/circuit breaker, the special short-circuit breaking capacity I_{cuIT} applies. The specifications in the table below apply to 3RV2 motor starter protectors/circuit breakers.

If the short-circuit current at the place of installation exceeds the motor starter protector/circuit breaker's specified rated short-circuit breaking capacity, you will need to use a back-up fuse. The maximum rated current of this back-up fuse is indicated in the tables. The rated short-circuit breaking capacity then applies as specified on the fuse.

Motor starter protectors/ circuit breakers	Rated current I_n	Up to 240 V AC[1]		Up to 400 V AC[1]/ 415 V AC[2]		Up to 440 V AC[1]/ 460 V AC[2]		Up to 500 V AC[1]/ 525 V AC[2]		Up to 690 V AC[1][5]	
		I_{cuIT}	Max. fuse (gG)[3]	I_{cuIT}	Max. fuse (gG)[3][4]	I_{cuIT}	Max. fuse (gG)[3]	I_{cuIT}	Max. fuse (gG)[3]	I_{cuIT}	Max. fuse (gG)[3]
Type	A	kA	A	kA	A	kA	A	kA	A	kA	A
Size S00											
3RV2.11	0.16 ... 0.4	100	--	100	--	100	--	100	--	100	--
	0.5	100	--	100	--	100	--	100	--	0.5	4
	0.63; 0.8	100	--	100	--	100	--	100	--	0.5	6
	1	100	--	100	--	2	10	2	10	1.5	10
	1.25	100	--	100	--	2	16	2	16	1.5	16
	1.6	100	--	100	--	2	20	2	20	1.5	16
	2; 2.5	100	--	8	25	2	25	2	25	1.5	20
	3.2	100	--	8	32	2	32	2	32	1.5	25
	4; 5	100	--	4	32	1.5	32	1.5	32	1.5	25
	6.3; 8	100	--	4	50	1	40	1	40	1	35
	10	100	--	4	50	1	40	1	40	1	40
	12.5	100	--	4	63	1	50	1	50	1	40
	16	55	80	4	63	1	50	1	50	1	40
3RV1611-0BD10	0.2	100	--	100	--	--	--	100	--	100	--
Size S0											
3RV2.21	0.16 ... 0.4	100	--	100	--	100	--	100	--	100	--
	0.5	100	--	100	--	100	--	100	--	0.5	4
	0.63; 0.8	100	--	100	--	100	--	100	--	0.5	6
	1	100	--	100	--	2	10	2	10	1.5	10
	1.25	100	--	100	--	2	16	2	16	1.5	16
	1.6	100	--	100	--	2	20	2	20	1.5	16
	2; 2.5	100	--	8	25	2	25	2	25	1.5	20
	3.2	100	--	8	32	2	32	2	32	1.5	25
	4; 5	100	--	4	32	1.5	32	1.5	32	1.5	25
	6.3; 8	100	--	4	50	1	40	1	40	1	35
	10	100	--	4	50	1	40	1	40	1	40
	12.5	100	--	4	63	1	50	1	50	1	40
	16	55	80	4	63	1	50	1	50	1	40
	20 ... 25	55	80	4	63	1	50	1	50	1	50
	28; 32	55	80	2	63	1	63	1	63	1	63
	36; 40	20	80	2	63	1	63	1	63	1	63

-- No back-up fuse required, since short-circuit resistant up to 100 kA

1) 5 % overvoltage.

2) Without overvoltage.

3) Back-up fuse only required if short-circuit current at installation location is > I_{cuIT}.

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

5) Overvoltage category II applies for applications in IT systems > 600 V.

Motor starter protectors/ circuit breakers	Rated current I_n	Up to 240 V AC[1]		Up to 400 V AC[1]/ 415 V AC[2]		Up to 440 V AC[1]/ 460 V AC[2]		Up to 500 V AC[1]/ 525 V AC[2]		Up to 690 V AC[1][5]	
		I_{cuIT}	Max. fuse (gG)[3]	I_{cuIT}	Max. fuse (gG)[3][4]	I_{cuIT}	Max. fuse (gG)[3]	I_{cuIT}	Max. fuse (gG)[3]	I_{cuIT}	Max. fuse (gG)[3]
Type	A	kA	A	kA	A	kA	A	kA	A	kA	A
Size S2											
3RV2031, 3RV2131, 3RV2331	14 ... 25	100	--	8	100	6	80	6	80	4	63
	32 ... 45	100	--	6	125	4	100	4	100	3	80
	52 ... 80	100	--	4	160	3	125	3	125	2	100
Size S2, with increased switching capacity											
3RV2032, 3RV2332	14 ... 25	100	--	8	100	6	80	6	80	4	63
	32 ... 45	100	--	6	125	6	100	6	100	4	80
	52	100	--	6	160	6	125	6	125	4	100
	59 ... 80	100	--	6	160	4	125	4	125	4	100
Size S3											
3RV2.41	40 ... 100	On request									
Size S3, with increased switching capacity											
3RV2.42	40 ... 100	On request									

-- No back-up fuse required, since short-circuit resistant up to 100 kA

1) 10 % overvoltage.

2) 5 % overvoltage.

3) Back-up fuse only required if short-circuit current at installation location is > I_{cuIT}.

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

5) Overvoltage category II applies for applications in IT systems > 600 V.

Limiter function with standard devices for 500 V AC and 690 V AC according to IEC 60947-2

The table shows the rated ultimate short-circuit breaking capacity I_{cu} and the rated service short-circuit breaking capacity I_{cs} with an upstream standard motor starter protector/circuit breaker that fulfills the limiter function at voltages 500 V AC and 690 V AC.

The short-circuit breaking capacity can be increased significantly with an upstream standard motor starter protector/circuit breaker with limiter function. The motor starter protector/circuit breaker which is connected downstream must be set to the rated current of the load.

With motor starter protector/circuit breaker assemblies, note the clearance to grounded parts and between the motor starter protectors/circuit breaker. Short-circuit proof wiring between the motor starter protectors/circuit breaker must be ensured. The motor starter protectors/circuit breakers can be mounted side by side in a modular arrangement.

Standard motor starter protectors/circuit breakers		Rated current I_n	Up to 500 V AC[1]/525 V AC[2]		Up to 690 V AC[1]	
	With limiter Rated current I_n		I_{cu}	I_{cs}	I_{cu}	I_{cs}
Type	Type	A	kA	kA	kA	kA
Size S00						
3RV2011	**Size S0: 3RV2321-4EC10**	2 ... 6.3	--	--	50	25
		8	100	50	20	10
	I_n = 32 A	10 ... 16	100	50	20[3]	10[3]
	Size S2: 3RV2331-4WC10	10 ... 16	--	--	50	25
	I_n = 52 A					
Size S0						
3RV2021	**Size S0: 3RV2321-4EC10**	16 ... 32	100	50	20[3]	10[3]
	I_n = 32 A					
	Size S2: 3RV2331-4WC10	16 ... 32	--	--	50	20
	I_n = 52 A					
Size S2, with increased switching capacity						
3RV2032	**Size S2: 3RV2332-4RC10**	14 ... 80	100	50	70	35
	I_n = 80 A					
Size S3, with increased switching capacity						
3RV2042		40 ... 100	On request			

-- No limiter required

1) 10 % overvoltage.

2) 5 % overvoltage.

3) Infeed to the limiter is always on the side 1L1/3L2/5L3.

General data

Permissible rated data of devices approved for North America (UL/CSA)

Motor starter protectors of the 3RV2 series are approved for UL/CSA, and according to UL 508/UL 60947-4-1 and CSA C22.2 No. 14/CSA C22.2 No. 60947-4-1 they can be used on their own or as load feeders in combination with a contactor.

These motor starter protectors/circuit breakers can be used as "Manual Motor Controllers" for "Group Installations", as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" and as "Self-Protected Combination Motor Controllers" (Type E).

3RV2 motor starter protectors as "Manual Motor Controllers"

If used as a "Manual Motor Controller", the motor starter protector is always operated in combination with an upstream short-circuit protection device. Approved fuses or a circuit breaker according to UL 489/CSA C22.2 No. 5 may be used for this purpose. These devices must be dimensioned according to the National Electrical Code (UL) or Canadian Electrical Code (CSA).

The file numbers for the approval of the 3RV2 as a Manual Motor Controller are as follows:

- UL File No. 47705, CCN: NLRV
- CSA Master Contract 165071, Product Class: 3211

Motor starter protectors/ circuit breakers		**hp rating[1] for FLA[2] max.**		**Rated current I_n**	**240 V AC**		**480 V AC**		**600 V AC**	
					UL I_{bc}[3]	CSA I_{bc}[3]	UL I_{bc}[3]	CSA I_{bc}[3]	UL I_{bc}[3]	CSA I_{bc}[3]
Type	V	Single-phase	3-phase	A	kA	kA	kA	kA	kA	kA
Size S00										
3RV2011, 3RV2111, 3RV2311, 3RV2411				0.16 ... 12.5	65	65	65	65	30	30
				16	65	65	65	65	--	--
FLA[2] max.	115	1	2							
16 A, 480 V	200	2	3							
12.5 A, 600 V	230	2	5							
	460	--	10							
	575/600	--	10							
3RV1611-0BD10				0.2	65	65	65	65	10	10
Size S0										
3RV2021, 3RV2121, 3RV2321, 3RV2421				0.16 ... 12.5	65	65	65	65	30	30
				16 ... 25	65	65	65	65	--/(30)[4]	--/(30)[4]
FLA[2] max.	115	3	5	28, 32	65	65	50	50	--	--
40 A, 480 V	200	5	10	36, 40	65	65	12	12	--	--
12.5 A, 600 V	230	7 1/2	10							
	460	--	30							
	575/600	--	--							
Size S2										
3RV2031, 3RV2331				14 ... 36	65	65	65	65	25	25
				40 ... 52	65	65	65	65	22	22
FLA[2] max.	115/120	7.5	10	59 ... 65	65	65	65[5]	65[5]	20[5]	20[5]
80 A, 600 V	200/208	15	25	73 ... 80	65	65	65[5]	65[5]	20[5]	20[5]
	230/240	15	30							
	460/480	--	60							
	575/600	--	75							
Size S2, with increased switching capacity										
3RV2032, 3RV2332				14 ... 36	100	100	100	100	25	25
				40 ... 52	100	100	100	100	22	22
FLA[2] max.	115/120	7.5	10	59 ... 65	100	100	100[5]	100[5]	25[5]	25[5]
80 A, 600 V	200/208	15	25	73 ... 80	100	100	100[5]	100[5]	25[5]	25[5]
	230/240	15	30							
	460/480	--	60							
	575/600	--	75							
Size S3 available on request										

-- No approval

1) hp rating = Power rating in horse power (maximum motor rating).

2) FLA = Full Load Amps/motor full load current.

3) Corresponds to "short-circuit breaking capacity" according to UL/CSA.

4) Values in brackets only apply to 3RV2.23 motor starter protectors.

5) With Class J fuse.

3RV20 motor starter protectors (up to 100 A) as "Manual Motor Controller Suitable for Tap Conductor Protection in Group Installations"

The application as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" is only available for UL. CSA does not recognize this approval! When the motor starter protector is used as a "Manual Motor Controller Suitable for Tap Conductor Protection in Group Installations", it must always be combined with upstream short-circuit protection. Approved fuses or a circuit breaker according to UL 489 may be used for this purpose. These devices must be dimensioned according to the National Electrical Code.

The 3RV20 motor starter protectors are approved as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" under the following file number:

- UL File No. 47705, CCN: NLRV

Motor starter protectors/ circuit breakers		**hp rating[1] for FLA[2] max.**		**Rated current I_n**	**240 V AC** UL I_{bc}[3]	**480 Y/277 V AC** UL I_{bc}[3]	**600 Y/347 V AC** UL I_{bc}[3]
Type	V	Single-phase	3-phase	A	kA	kA	kA
Size S00							
3RV2011				0.16 ... 12.5	65	65	30
				16	65	65	--
FLA[2] max.	115	1	2				
16 A, 480 V	200	2	3				
12.5 A, 600 V	230	2	5				
	460	--	10				
	575/600	--	10				
Size S0							
3RV2021				0.16 ... 12.5	65	65	30
				16 ... 25	65	65	--
FLA[2] max.	115	2	5	28; 32	50	50	--
32 A, 480 V	200	3	7.5				
12.5 A, 600 V	230	5	10				
	460	--	20				
	575/600	--	--				
Size S2							
3RV2031				14 ... 36	65	65	25
				40 ... 52	65	65	22
FLA[2] max.	115/120	7.5	10	59 ... 65	65	30	--
80 A, 480 V	200/208	15	25	73	65	20	--
52 A, 600 V	230/240	15	30	80	65	10	--
	460/480	--	60				
	575/600	--	75				
Size S2, with increased switching capacity							
3RV2032				14 ... 36	100	100	25
				40 ... 52	100	100	22
FLA[2] max.	115/120	7.5	10	59 ... 65	100	42	--
80 A, 480 V	200/208	15	25	73	100	30	--
52 A, 600 V	230/240	15	30	80	100	10	--
	460/480	--	60				
	575/600	--	75				
Size S3 available on request							

-- No approval

1) hp rating = Power rating in horse power (maximum motor rating).

2) FLA = Full Load Amps/motor full load current.

3) Corresponds to "short-circuit breaking capacity" according to UL.

General data

3RV20 motor starter protectors (up to 100 A) as "Self-Protected Combination Motor Controller (Type E)"

UL 508/UL 60947-4-1 approval demands 1-inch through air spacing and 2-inch over surface spacing at line side for "Self-Protected Combination Motor Controller Type E".

Therefore, 3RV20 motor starter protectors of sizes S00 to S3 are approved according to UL 508/UL 60947-4-1 in combination with the terminal blocks listed below.

CSA does not require these extended clearances. According to CSA, these terminal blocks can be omitted when the device is used as a "Self-Protected Combination Motor Controller".

The 3RV20 motor starter protectors are approved as "Self-Protected Combination Motor Controllers" under the following file numbers:

- UL File No. E156943, CCN: NKJH
- CSA Master Contract 165071, Product Class: 3211 08

Motor starter protectors/ circuit breakers		hp rating[1] for FLA[2] max.		Rated current I_n	Up to 240 V AC		Up to 480 Y/277 V AC		Up to 600 Y/347 V AC	
					UL	CSA	UL	CSA	UL	CSA
		Single-phase	3-phase		I_{bc}[3]	I_{bc}[3]	I_{bc}[3]	I_{bc}[3]	I_{bc}[3]	I_{bc}[3]
Type	V			A	kA	kA	kA	kA	kA	kA
Size S00										
3RV2011 + 3RV2928-1H[4][5]				0.16 ... 12.5	65	65	65	65	30	30
				16	65	65	65	65	--	--
FLA[2] max.	115	1	2							
16 A, 480 V;	200	2	3							
12.5 A, 600 V	230	2	5							
	460	--	10							
	575/600	--	10							
Size S0										
3RV2021 + 3RV2928-1H[4][5]				0.16 ... 12.5	65	65	65	65	30	30
				16 ... 25	65	65	65	65	--	--
FLA[2] max.	115	2	5	28; 32	50	50	50	50	--	--
32 A, 480 V	200	3	7.5							
12.5 A, 600 V	230	5	10							
	460	--	20							
	575/600	--	--							
Size S2										
3RV2031+ 3RV2938-1K4				14 ... 36	65	65	65	65	25	25
				40 ... 52	65	65	65	65	22	22
FLA[2] max.	115/120	7.5	10	59 ... 73	65	65	20	20	--	--
73 A, 480 V	200/208	15	25							
52 A, 600 V	230/240	15	30							
	460/480	--	60							
	575/600	--	75							
Size S2, with increased switching capacity										
3RV2032 + 3RV2938-1K[4]				14 ... 36	100	100	100	100	25	25
				40 ... 52	100	100	100	100	22	22
FLA[2] max.	115/120	7.5	10	59 ... 73	100	100	30	30	--	--
73 A, 480 V	200/208	15	25							
52 A, 600 V	230/240	15	30							
	460/480	--	60							
	575/600	--	75							
Size S3 available on request										

-- No approval

1) hp rating = Power rating in horse power (maximum motor rating).

2) FLA = Full Load Amps/motor full load current.

3) Corresponds to "short-circuit breaking capacity" according to UL/CSA.

4) Not required for CSA.

5) Alternatively phase barrier 3RV2928-1K can be used.

3RV27 and 3RV28 motor starter protectors as "circuit breakers"

These motor starter protectors are approved as circuit breakers according to UL 489 and CSA C22.2 No. 5. They can be used therefore as upstream short-circuit protective devices for "Manual Motor Controllers" and "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations".

3RV27 and 3RV28 motor starter protectors are approved as "circuit breakers" under the following file numbers:

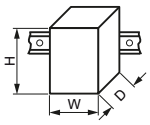
- UL File No. E235044, CCN: DIVQ
- CSA Master Contract 165071, Product Class: 1432 01

Motor starter protectors/ circuit breakers	Rated current I_n	240 V AC		480 Y/277 V AC		480 V AC		600 Y/347 V AC	
		UL	CSA	UL	CSA	UL	CSA	UL	CSA
		I_{bc1})	I_{bc1})	I_{bc1})	I_{bc1})	I_{bc1})	I_{bc1})	I_{bc1})	I_{bc1})
Type	A	kA	kA	kA	kA	kA	kA	kA	kA
Size S00									
3RV2711	0.16 ... 12.5	65	65	65	65	--	--	10	10
	15	65	65	65	65	--	--	--	--
3RV2811	0.16 ... 12.5	65	65	65	65	--	--	10	10
	15	65	65	65	65	--	--	--	--
Size S0									
3RV2721	20; 22	50	50	50	50	--	--	--	--
3RV2821	20; 22	50	50	50	50	--	--	--	--
Size S3 available on request									

-- No approval

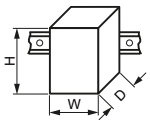
1) Corresponds to "short-circuit breaking capacity" according to UL.

General data

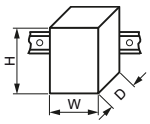
Type			**3RV2.1.**	**3RV2.2.**	**3RV2.3.**	**3RV2.4.**	**3RV27, 3RV28**
Size			S00	S0	S2	S3	S00, S0
Dimensions (W x H x D)							
• Screw terminals		mm	45 x 97 x 91	45 x 97 x 91	55 x 140 x 149	70 x 165 x 169	45 x 144 x 92
• Spring-type terminals		mm	45 x 106 x 91	45 x 119 x 91	--	--	--
Standards							
• IEC 60947-1, EN 60947-1 (VDE 0660 Part 100)			Yes				
• IEC 60947-2, EN 60947-2 (VDE 0660 Part 101)			Yes				
• IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)			Yes	Yes	Yes	Yes	--
• UL 508/UL 60947-4-1, CSA C22.2 No. 14/CSA C22.2 No. 60947-4-1			Yes	Yes	Yes	Yes	--
• UL 489, CSA C22.2 No. 5			--	--	--	--	Yes
Number of poles			3				
Max. rated current $I_{n\,max}$ (= max. rated operational current I_e)		A	16	40	80	100	22
Permissible ambient temperature							
• Storage/transport		°C	–50 ... +80				
• Operation	I_n: 0.16 ... 32 A	°C	–20 ... +70 (current reduction above +60 °C)		--	--	--
	I_n: 36 ... 40 A	°C	--	–20 ... +40 (The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. Lateral clearance = 9 mm)	--	--	--
	I_n: 14 ... 80 A	°C	--		–20 ... +70 (current reduction above +60 °C)	--	--
	I_n: 40 ... 100 A	°C	--		--	–20 ... +70 (current reduction above +60 °C)	--
Permissible rated current at inside temperature of control cabinet							
• +60 °C		%	100				
• +70 °C		%	87				
Permissible rated current at ambient temperature of enclosure (applies to motor starter protector/circuit breaker inside enclosure): S00/S0 ≤ 32 A, S2 ≤ 52 A)							
• +35 °C		%	100		100	100	
• +60 °C		%	87		--	87	
Rated operational voltage U_e							
• Acc. to IEC		V AC	690 (when a molded-plastic enclosure is used only 500 V)				
• Acc. to UL/CSA		V AC	600				
Rated frequency		Hz	50/60				
Rated insulation voltage U_i		V	690			1 000	690
Rated impulse withstand voltage U_{imp}		kV	6			8	6
Utilization category							
• IEC 60947-2 (motor starter protector/circuit breaker)			A				
• IEC 60947-4-1 (motor starter)			AC-3				
Trip class CLASS	Acc. to IEC 60947-4-1		10		10/20		--
DC short-circuit breaking capacity (time constant t = 5 ms)							
• 1 conducting path 150 V DC		kA	10		On		10
• 2 conducting paths in series 300 V DC		kA	10		request		10
• 3 conducting paths in series 450 V DC		kA	10				10
Power loss P_v for each motor starter protector/circuit breaker	I_n: 0.16 ... 0.63 A	W	5		--		5
	I_n: 0.8 ... 6.3 A	W	6		--		6
	I_n: 8 ... 16 A	W	7		--		7
Dependent on rated current I_n (upper setting range)	I_n: 14 ... 16 A	W	--	7	10	--	7
$R_{per\ conducting\ path} = \frac{P}{I^2 \times 3}$	I_n: 17 ... 25 A	W	--	8	12	--	8
	I_n: 28 ... 32 A	W	--	11	14	--	--
	I_n: 36 ... 40 A	W	--	14	15	--	--
	I_n: 45 ... 52 A	W	--	--	17	--	--
	I_n: 59 ... 65 A	W	--	--	19	--	--
	I_n: 73 ... 80 A	W	--	--	21	--	--
	I_n: 40 ... 50 A	W	--	--	--	21	--
	I_n: 63 ... 75 A	W	--	--	--	21	--
	I_n: 84 ... 93 A	W	--	--	--	32	--
	I_n: 100 A	W	--	--	--	38	--
Shock resistance	Acc. to IEC 60068-2-27	*g*/ms	25/11 (square and sine pulse)				

General data

General data (continued)

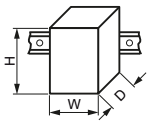
Type			**3RV2.1.**	**3RV2.2.**	**3RV2.3.**	**3RV2.4.**	**3RV27, 3RV28**
Size			S00	S0	S2	S3	S00, S0
Dimensions (W x H x D)							
• Screw terminals		mm	45 x 97 x 91	45 x 97 x 91	55 x 140 x 149	70 x 165 x 169	45 x 144 x 92
• Spring-type terminals		mm	45 x 106 x 91	45 x 119 x 91	--	--	--
Degree of protection	Acc. to IEC 60529		IP20		- IP20 (front side) - Terminal IP00 (use additional terminal covers for higher degree of protection)		
Touch protection	Acc. to IEC 60529		Finger-safe		Finger-safe, for vertical contact from the front		
Temperature compensation	Acc. to IEC 60947-4-1	°C	–20 ... +60				
Phase failure sensitivity	Acc. to IEC 60947-4-1		Yes (not for 3RV23 motor starter protectors)				No
Protection of motors in hazardous environments			Yes (only for 3RV20 motor starter protectors)			On request	No
• EC type-examination certificate number according to European Directive 2014/34/EU (ATEX)			DMT 02 ATEX F 001 Ex II (2) GD			On request	No
• according to international standard IECEx			IECEx BVS1.0102 [Ex]			On request	No
Isolating function	Acc. to IEC 60947-2		Yes				
Main and EMERGENCY-STOP switch characteristics (with corresponding accessories)	Acc. to EN 60204-1 VDE 0113		Yes				
Protective separation between main and auxiliary circuits required for PELV-applications	Acc. to IEC 60947-1						
• Up to 400 V + 10 %			Yes				
• Up to 415 V + 5 % (higher voltages on request)			Yes				
Permissible mounting position			Any, acc. to IEC 60447 start command "I" right-hand side or top				
Mechanical endurance (operating cycles)			100 000		52 A: 50 000, 80 A: 20 000	On request	100 000
Electrical endurance (operating cycles)			100 000		52 A: 50 000, 80 A: 20 000	25 000	100 000
Max. switching frequency per hour (motor starts)		1/h	15				

General data

Type			**3RV2742**	**3RV1611-0BD10**[1]
Size			S3	S00
Dimensions (W x H x D)		mm	70 x 168 x 169	45 x 90 x 70
Standards				
• IEC 60947-1, EN 60947-1 (VDE 0660 Part 100)			Yes	
• IEC 60947-2, EN 60947-2 (VDE 0660 Part 101)			Yes	
• UL 508/UL 60947-4-1, CSA C22.2 No.14/CSA 60947-4-1			No	Yes
• UL 489, CSA C22.2 No.5			Yes	No
Number of poles			3	
Max. rated current $I_{n\,max}$ (= max. rated operational current I_e)		A	70	0.2
Permissible ambient temperature				
• Storage/transport		°C	–50 ... +80	
• Operation		°C	–20 ... +70 (current reduction above +60 °C)	
Permissible rated current at inside temperature of control cabinet				
• +60 °C		%	100	
• +70 °C		%	87	
Permissible rated current at enclosure ambient temperature (applies for motor starter protector inside enclosure)				
• +35 °C		%	100	
• +60 °C		%	87	
Rated operational voltage U_e				
• Acc. to IEC		V AC	690 (with molded-plastic enclosure 500 V)	
• Acc. to UL/CSA		V AC	600	
Rated frequency		Hz	50/60	
Rated insulation voltage U_i		V	1 000	690
Rated impulse withstand voltage U_{imp}		kV	8	6
Utilization category				
• IEC 60947-2 (motor starter protector/circuit breaker)			A	
DC short-circuit breaking capacity (time constant t = 5 ms)				
• 1 conducting path 150 V DC		kA	On request	
• 2 conducting paths in series 300 V DC		kA		
• 3 conducting paths in series 450 V DC		kA		

[1] "Technical Specifications" for 3RV1611 voltage transformer circuit breakers, see page 7/23.

General data (continued)

Type			**3RV2742**	**3RV1611-0BD10**[1]
Size			S3	S00
Dimensions (W x H x D)		mm	70 x 168 x 169	45 x 90 x 70
Power loss P_v for each motor starter protector/circuit breaker Dependent on rated current I_n (upper setting range) $R_{\text{per conducting path}} = \frac{P}{I^2 \times 3}$	I_n: 0.2 A	W	--	5
	I_n: 10 A	W	8	--
	I_n: 15 ... 35 A	W	12	--
	I_n: 40 ... 70 A	W	20	--
Shock resistance	Acc. to IEC 60068-2-27	*g*/ms	25/11 (square and sine pulse)	
Degree of protection	Acc. to IEC 60529		- IP20 (front side) - Connecting terminal IP00	IP20
Touch protection	Acc. to IEC 60529		Finger-safe, for vertical contact from the front	Finger-safe
Temperature compensation	Acc. to IEC 60947-4-1	°C	–20 ... +60	
Phase failure sensitivity	Acc. to IEC 60947-4-1		No	Yes
Explosion protection – Safe operation of motors with "increased safety" type of protection EC type-examination certificate number according to directive 2014/34/EU (ATEX)			No	No
Isolating function	Acc. to IEC 60947-2		Yes	
Main and EMERGENCY-STOP switch characteristics (with corresponding accessories)	Acc. to EN 60204-1		Yes	
Protective separation between main and auxiliary circuits required for PELV applications	Acc. to IEC 60947-1			
• Up to 400 V + 10 %			Yes	
• Up to 415 V + 5 % (higher voltages on request)			Yes	
Permissible mounting position			Any, acc. to IEC 60447 start command "I" right-hand side or top	
Mechanical endurance		Operating cycles	On request	100 000
Electrical endurance		Operating cycles	25 000	100 000
Max. switching frequency per hour (motor starts)		1/h	15	

[1] "Technical Specifications" for 3RV1611 voltage transformer circuit breakers, see page 7/23.

Rated data of the auxiliary switches and signaling switches

		Lateral auxiliary switch with 1 NO + 1 NC, 2 NO, 2 NC, 2 NO + 2 NC	**Signaling switch**	**Transverse auxiliary switch with**	
				1 CO	**1 NO + 1 NC, 2 NO**
Max. rated voltage					
• Acc. to NEMA (UL)	V AC	600			250
• Acc. to NEMA (CSA)	V AC	600			250
Uninterrupted current	A	10		5	2.5
Switching capacity		1 NO + 1 NC, 2 NO, 2 NC: A600, Q300; 2 NO + 2 NC: A300, Q300	A600, Q300	B600, R300	C300, R300

General data

Front transverse auxiliary switches

		Switching capacity for different voltages	
		1 CO	**1 NO + 1 NC, 2 NO**
Rated operational current I_e			
• At AC-15, alternating voltage			
- 24 V	A	4	2
- 230 V	A	3	0.5
• At AC-12 = I_{th}, alternating voltage			
- 24 V	A	10	2.5
- 230 V	A	10	2.5
• At DC-13, direct voltage *L/R* 200 ms			
- 24 V	A	1	1
- 48 V	A	--	0.3
- 60 V	A	--	0.15
- 110 V	A	0.22	--
- 220 V	A	0.1	--
Minimum load capacity	V	17	
	mA	1	

Front transverse solid-state compatible auxiliary switches

			Switching capacity for different voltages
			1 CO
Rated operational voltage U_e	Alternating voltage	V	125
Rated operational current I_e /AC-14	At U_e = 125 V	A	0.1
Rated operational voltage U_e	Direct voltage *L/R* 200 ms	V	60
Rated operational current I_e /DC-13	At U_e = 60 V	A	0.3
Minimum load capacity		V	5
		mA	1

Lateral auxiliary switches with signaling switch

		Switching capacity for different voltages: Lateral auxiliary switch with 1 NO + 1 NC, 2 NO, 2 NC, 2 NO + 2 NC; Signaling switch
Rated operational current I_e		
• At AC-15, alternating voltage		
- 24 V	A	6
- 230 V	A	4
- 400 V	A	3
- 690 V	A	1
• At AC-12 = I_{th}, alternating voltage		
- 24 V	A	10
- 230 V	A	10
- 400 V	A	10
- 690 V	A	10
• At DC-13, direct voltage *L/R* 200 ms		
- 24 V	A	2
- 110 V	A	0.5
- 220 V	A	0.25
- 440 V	A	0.1
Minimum load capacity	V	17
	mA	1

Auxiliary releases

		Undervoltage releases	Shunt releases
Power consumption			
• During pick-up			
- AC voltages	VA/W	20.2/13	20.2/13
- DC voltages	W	20	13 ... 80
• During uninterrupted duty			
- AC voltages	VA/W	7.2/2.4	--
- DC voltages	W	2.1	--
Response voltage			
• Tripping	V	0.35 ... 0.7 x U_s	0.7 ... 1.1 x U_s
• Pick-up	V	0.85 ... 1.1 x U_s	--
Opening time maximum	ms	20	

Short-circuit protection for auxiliary and control circuits

Melting fuses operational class gG	A	10
Miniature circuit breakers C characteristic	A	6 (prospective short-circuit current < 0.4 kA)

Conductor cross-sections of main circuit

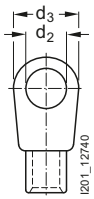
Type		**3RV2.11**	**3RV2.21**	**3RV2.31-4B.1., 3RV2.31-4D.1., 3RV2.31-4E.1., 3RV2.31-4P.1., 3RV2.31-4S.1., 3RV2.31-4T.1., 3RV2.31-4U.1., 3RV2.31-4V.1.**	**3RV2.31-4J.1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.31-4W.1., 3RV2.31-4X.1., 3RV2431-4VA1., 3RV2.32**	**3RV27, 3RV28**
Size		S00	S0	S2		S00, S0
Connection type		**Screw terminals**				
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2		M4, Pozidriv size 2
Operating devices	mm	⌀ 5 ... 6	⌀ 5 ... 6	⌀ 5 ... 6		⌀ 5 ... 6
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3.0 ... 4.5		2.5 ... 3
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected						
• Solid or stranded	mm^2	2 x (0.75 ... 2.5)[1], 2 x 4	2 x (1 ... 2.5)[1], 2 x (2.5 ... 10)[1]	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	2 x (1 ... 35)[1], 1 x (1 ... 50)[1]	2 x (1 ... 10)[1], max.. 1 x 25
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1], 1 x 10	2 x (1 ... 16)[1], 1 x (1 ... 25)[1]	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	1 x (1 ... 16), max. 6 + 16
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1], 2 x (18 ... 12)[1]	2 x (18 ... 12)[1], 2 x (14 ... 8)[1]	2 x (18 ... 3)[1], 1 x (18 ... 2)[1]	2 x (18 ... 2)[1], 1 x (18 ... 1)[1]	2 x (14 ... 10)
Connection type		**Spring-type terminals**				
Operating devices	mm	3.0 x 0.5				
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected						
• Solid or stranded	mm^2	2 x (0.5 ... 4)	2 x (1 ... 10)	--		
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--		
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--		
• AWG cables, solid or stranded	AWG	2 x (20 ... 12)	2 x (18 ... 8)	--		
Max. external diameter of the conductor insulation	mm	3.6	6.4	--		

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

General data

Conductor cross-sections of main circuit (continued)

Type		3RV2.4./ 3RV2742	3RV1611-0BD10[1]
Size		S3	S00
Connection type		**Screw terminals with box terminal**	**Screw terminals**
Terminal screw		M6	Pozidriv size 2
Prescribed tightening torque	Nm	4.5 ... 6	
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected			
• Solid or stranded	mm^2	2 x (2.5 ... 16)[2], 2 x (10 ... 50)[2], 1 x (10 ... 70)[2]	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (2.5 ... 35)[2], 1 x (2.5 ... 50)[2]	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]
• AWG cables, solid or stranded	AWG	2 x (10 ... 1/0)[2], 1 x (10 ... 2/0)[2]	2 x (18 ... 14)
Ribbon cable conductors (Number x Width x Thickness)	mm	2 x (6 x 9 x 0.8)	--
Removable box terminals[3]			
• With copper bars[4]	mm	2 x 12 x 4	--
• With cable lugs[5]			
- Terminal screw		M6	
- Prescribed tightening torque	Nm	4.5 ... 6	
- Usable ring terminal lugs	mm mm	d_2 = min. 6.3 d_3 = max. 19	



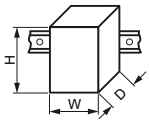
1) "Technical Specifications" for 3RV16 voltage transformer circuit breakers, see page 7/23.
2) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.
3) Cable lug and busbar connection possible after removing the box terminals.
4) If bars larger than 12 mm x 10 mm are connected, a 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/47.
5) When conductors larger than 25 mm^2 are connected, the 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/47.

Conductor cross-sections for auxiliary and control circuits

Type		3RV2.11	3RV1611-0BD10[1]	3RV2.21	3RV2.3	3RV2.4	3RV27, 3RV28
Size		S00		S0	S2	S3	S00, S0, S3
Connection type		**Screw terminals**					
Terminal screw		M3, Pozidriv size 2					
Operating devices	mm	⌀ 5 ... 6					
Prescribed tightening torque	Nm	0.8 ... 1.2					
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected							
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]					
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]					
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)[2], 2 x (20 ... 16)[2]					
Connection type		**Spring-type terminals**					
Operating devices	mm	3.0 x 0.5					
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected							
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)					
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)					
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)					
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)					
Max. external diameter of the conductor insulation	mm	3.6					

1) "Technical Specifications" for 3RV16 voltage transformer circuit breakers, see page 7/23.
2) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Voltage transformer circuit breakers

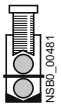
General data					
Type			**3RV1611-1AG14**	**3RV1611-1CG14**	**3RV1611-1DG14**
Size			S00	S00	S00
Dimensions (W x H x D)		mm	45 x 90 x 70	45 x 90 x 70	45 x 90 x 70
Rated current I_n		A	1.4	2.5	3
Ambient temperature					
• During storage/transport		°C	–50 ... +80		
• During operation		°C	–20 ... +60 (up to +70 °C possible with current reduction)		
Rated operational voltage U_e		V	400		
Rated frequency		Hz	16.66 ... 60		
Rated insulation voltage U_i		V	690		
Short-circuit breaking capacity I_{cu} at 400 V AC		kA	50		
Set value of the thermal overload release		A	1.4	2.5	3
Response value of the instantaneous overcurrent release		A	6 ± 20 %	10.5 ± 20 %	20 ± 20 %
Tripping time of the instantaneous overcurrent release		ms	Approx. 6 at 12 A	Approx. 6 at 20 A	Approx. 6 at 40 A
Internal resistance					
• In cold state		Ω	> 0.25 ± 6.5 %		
• In heated state		Ω	> 0.30 ± 6.5 %		
Shock resistance acc. to IEC 60068-2-27		*g*/ms	15		
Degree of protection acc. to IEC 60529			IP20		
Touch protection acc. to EN 50274			Finger-safe for vertical contact from the front		
Endurance					
• Mechanical	Operating cycles		10 000		
• Electrical	Operating cycles		10 000		
Permissible mounting position			Any		

Type			**3RV1611-1AG14**	**3RV1611-1CG14**	**3RV1611-1DG14**
Conductor cross-sections, main circuit, 1 or 2 conductors					
Connection type			**Screw terminals**		
Terminal screw			Pozidriv size 2		
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded		mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1], 2 x (1 ... 4)		
• Finely stranded with end sleeve (DIN 46228-1)		mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]		
Auxiliary switches for blocking the distance protection					
With defined lateral assignment for blocking distance protection			1 CO (for use as 1 NO or 1 NC)		
Rated operational voltage U_e	Alternating voltage	V	125		
Rated operational current I_e /AC-14	At U_e = 125 V	A	0.1		
Rated operational voltage U_e	Direct voltage *L/R* 200 ms	V	60		
Rated operational current I_e /DC-13	At U_e = 60 V	A	0.3		
Minimum load capacity		V mA	5 1		
Short-circuit protection for auxiliary circuit					
Melting fuse		A	250 V type FF 2A (prospective short-circuit current < 1.1 kA)		

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

General data

Terminals for "Self-Protected Combination Motor Controllers (Type E) according to UL 508/UL 60947-4-1"

Type			3RV2928-1H
Prescribed tightening torque		Nm	2.5 ... 3
Conductor cross-sections			
• Front clamping point connected			
	- Solid	mm^2	1 ... 10
	- Finely stranded with end sleeve	mm^2	1 ... 16
	- Stranded	mm^2	2.5 ... 25
	- AWG cables, solid or stranded	AWG	14 ... 3
	- Terminal screw		M4
• Rear clamping point connected			
	- Solid	mm^2	1 ... 10
	- Finely stranded with end sleeve	mm^2	1 ... 16
	- Stranded	mm^2	1.5 ... 25
	- AWG cables, solid or stranded	AWG	14 ... 6
	- Terminal screw		M4
• Both clamping points connected			
	- Front clamping point:		
	Solid	mm^2	1 ... 10
	Finely stranded with end sleeve	mm^2	1 ... 10[1], 1 ... 6[1]
	Stranded	mm^2	2.5 ... 10
	AWG cables, solid or stranded	AWG	14 ... 6
	Terminal screw		M4
	- Rear clamping point:		
	Solid	mm^2	1 ... 10
	Finely stranded with end sleeve	mm^2	1 ... 10[1], 1 ... 16[1]
	Stranded	mm^2	2.5 ... 10
	AWG cables, solid or stranded	AWG	16 ... 3
	Terminal screw		M4

1) The following connections are possible when both clamping points are connected:
- front 1 ... 10 mm^2 and rear 1 ... 10 mm^2,
- front 1 ... 6 mm^2 and rear 1 ... 16 mm^2.

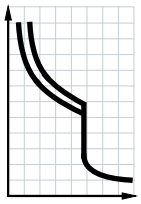
Motor feeder connectors for motor starter protectors/ circuit breakers with screw terminals				
Version	Type		**3RT1900-4RE01** **Motor feeder connector S0**	**3RT1926-4RD01** **Adapter S0**
General data				
Rated insulation voltage U_i (pollution degree 3)		V	690	
Rated impulse withstand voltage U_{imp} (pollution degree 3)		kV	6	
Rated operational voltage U_e		V	440	
Rated frequency f For AC operation		Hz	50/60	
Rated operational current I_e AC-3 at 400 V		A	25	
Mechanical endurance	Operating cycles		10 million	
Electrical endurance at I_e	Operating cycles		1 million	
Protective separation according to IEC 60947-1 (pollution degree 3)		V	400	
Permissible ambient temperature				
• During operation		°C	-25 ... +60	
• During storage		°C	-50 ... +80	
Degree of protection acc. to IEC 60529			IP20 (front side)	
Conductor cross-sections				
Connection type			**Screw terminals**	
• Solid		mm^2	1 x (0.5 ... 6)	
• Finely stranded without/with end sleeve		mm^2	1 x (0.5 ... 6)	
• Stranded		mm^2	1 x (0.5 ... 6)	
• AWG cables, solid or stranded		AWG	1 x (20 ... 10)	
• Tightening torque		Nm	0.6 ... 0.8	
• Corresponding opening tool			Cross-tip screwdriver PZ2	
cULus and cULus rated data				
Rated operational voltage U_e		V	480	
Rated insulation voltage U_i		V	600	
Uninterrupted current, at 40 °C		A	25	
Short-circuit protection[1)]				
• At 600 V		kA	5	
• CLASS RK5 fuse		A	100	
• Circuit breaker with overload protection acc. to UL 489		A	100	
Combination motor controllers type E according to UL 508				
	At 480 V	Type	3RV202	
		A	22	
		kA	65	
	At 600 V	Type	3RV202	
		A	22	
		kA	10	

1) For more information about short-circuit values, e.g. for protection against high short-circuit currents, see the UL reports of the individual devices, www.siemens.com/sirius/manuals.

Selection and ordering data

CLASS 10, without auxiliary switches

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2011-0AA10

3RV2011-0EA20

3RV2021-4AA10

3RV2021-4AA20

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous overcurrent release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	SD	Spring-type terminals
						Article No. Price per PU		Article No. Price per PU
I_n			$I >$	I_{cu}				
A	kW	A	A	kA	d		d	
Size S00								
0.16	0.04	0.11 ... 0.16	2.1	100	▶	**3RV2011-0AA10**	▶	**3RV2011-0AA20**
0.2	0.06	0.14 ... 0.2	2.6	100	▶	**3RV2011-0BA10**	▶	**3RV2011-0BA20**
0.25	0.06	0.18 ... 0.25	3.3	100	▶	**3RV2011-0CA10**	▶	**3RV2011-0CA20**
0.32	0.09	0.22 ... 0.32	4.2	100	▶	**3RV2011-0DA10**	▶	**3RV2011-0DA20**
0.4	0.09	0.28 ... 0.4	5.2	100	▶	**3RV2011-0EA10**	▶	**3RV2011-0EA20**
0.5	0.12	0.35 ... 0.5	6.5	100	▶	**3RV2011-0FA10**	▶	**3RV2011-0FA20**
0.63	0.18	0.45 ... 0.63	8.2	100	▶	**3RV2011-0GA10**	▶	**3RV2011-0GA20**
0.8	0.18	0.55 ... 0.8	10	100	▶	**3RV2011-0HA10**	▶	**3RV2011-0HA20**
1	0.25	0.7 ... 1	13	100	▶	**3RV2011-0JA10**	▶	**3RV2011-0JA20**
1.25	0.37	0.9 ... 1.25	16	100	▶	**3RV2011-0KA10**	▶	**3RV2011-0KA20**
1.6	0.55	1.1 ... 1.6	21	100	▶	**3RV2011-1AA10**	▶	**3RV2011-1AA20**
2	0.75	1.4 ... 2	26	100	▶	**3RV2011-1BA10**	▶	**3RV2011-1BA20**
2.5	0.75	1.8 ... 2.5	33	100	▶	**3RV2011-1CA10**	▶	**3RV2011-1CA20**
3.2	1.1	2.2 ... 3.2	42	100	▶	**3RV2011-1DA10**	▶	**3RV2011-1DA20**
4	1.5	2.8 ... 4	52	100	▶	**3RV2011-1EA10**	▶	**3RV2011-1EA20**
5	1.5	3.5 ... 5	65	100	▶	**3RV2011-1FA10**	▶	**3RV2011-1FA20**
6.3	2.2	4.5 ... 6.3	82	100	▶	**3RV2011-1GA10**	▶	**3RV2011-1GA20**
8	3	5.5 ... 8	104	100	▶	**3RV2011-1HA10**	▶	**3RV2011-1HA20**
10	4	7 ... 10	130	100	▶	**3RV2011-1JA10**	▶	**3RV2011-1JA20**
12.5	5.5	9 ... 12.5	163	100	▶	**3RV2011-1KA10**	▶	**3RV2011-1KA20**
16	7.5	10[2] ... 16	208	55	▶	**3RV2011-4AA10**	▶	**3RV2011-4AA20**
Size S0								
0.63	0.18	0.45 ... 0.63	8.2	100	5	**3RV2021-0GA10**	5	**3RV2021-0GA20**
0.8	0.18	0.55 ... 0.8	10	100	5	**3RV2021-0HA10**	5	**3RV2021-0HA20**
1	0.25	0.7 ... 1	13	100	5	**3RV2021-0JA10**	5	**3RV2021-0JA20**
1.25	0.37	0.9 ... 1.25	16	100	5	**3RV2021-0KA10**	5	**3RV2021-0KA20**
1.6	0.55	1.1 ... 1.6	21	100	5	**3RV2021-1AA10**	5	**3RV2021-1AA20**
2	0.75	1.4 ... 2	26	100	5	**3RV2021-1BA10**	5	**3RV2021-1BA20**
2.5	0.75	1.8 ... 2.5	33	100	5	**3RV2021-1CA10**	5	**3RV2021-1CA20**
3.2	1.1	2.2 ... 3.2	42	100	5	**3RV2021-1DA10**	5	**3RV2021-1DA20**
4	1.5	2.8 ... 4	52	100	5	**3RV2021-1EA10**	5	**3RV2021-1EA20**
5	1.5	3.5 ... 5	65	100	5	**3RV2021-1FA10**	5	**3RV2021-1FA20**
6.3	2.2	4.5 ... 6.3	82	100	5	**3RV2021-1GA10**	5	**3RV2021-1GA20**
8	3	5.5 ... 8	104	100	5	**3RV2021-1HA10**	5	**3RV2021-1HA20**
10	4	7 ... 10	130	100	5	**3RV2021-1JA10**	5	**3RV2021-1JA20**
12.5	5.5	9 ... 12.5	163	100	5	**3RV2021-1KA10**	5	**3RV2021-1KA20**
16	7.5	10[2] ... 16	208	55	▶	**3RV2021-4AA10**	▶	**3RV2021-4AA20**
20	7.5	13[2] ... 20	260	55	▶	**3RV2021-4BA10**	▶	**3RV2021-4BA20**
22	11	16[2] ... 22	286	55	▶	**3RV2021-4CA10**	▶	**3RV2021-4CA20**
25	11	18[2] ... 25	325	55	▶	**3RV2021-4DA10**	▶	**3RV2021-4DA20**
28	15	23 ... 28	364	55	▶	**3RV2021-4NA10**	▶	**3RV2021-4NA20**
32[3]	15	27 ... 32	400	55	▶	**3RV2021-4EA10**	▶	**3RV2021-4EA20**
36[4]	18.5	30 ... 36	432	20	▶	**3RV2021-4PA10**		**–**
40[4]	18.5	34 ... 40	480	20	▶	**3RV2021-4FA10**		**–**

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] The setting range of the thermal overload releases has been extended.

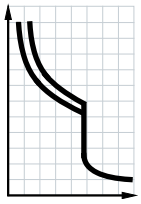
[3] Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

[4] The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required. For use with IE3/IE4 motors we recommend using 3RV2 motor starter protectors size S2.

Auxiliary switches and other accessories can be ordered separately (see "Accessories" page 7/38 onwards).

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

CLASS 10, without auxiliary switches



3RV2031-4SA10

3RV2032-4RA10

3RV2042-4MA10

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous overcurrent release	Short-circuit breaking capacity at 400 V AC	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}		Article No. Price per PU			
A	kW	A	A	kA	d				
Size S2									
14	5.5	9.5 ... 14	208	65	▶	**3RV2031-4SA10**	1	1 unit	41E
17	7.5	12 ... 17	260	65	▶	**3RV2031-4TA10**	1	1 unit	41E
20	7.5	14 ... 20	260	65	▶	**3RV2031-4BA10**	1	1 unit	41E
25	11	18 ... 25	325	65	▶	**3RV2031-4DA10**	1	1 unit	41E
32	15	22 ... 32	416	65	▶	**3RV2031-4EA10**	1	1 unit	41E
36	18.5	28 ... 36	520	65	▶	**3RV2031-4PA10**	1	1 unit	41E
40	18.5	32 ... 40	585	65	▶	**3RV2031-4UA10**	1	1 unit	41E
45	22	35 ... 45	650	65	▶	**3RV2031-4VA10**	1	1 unit	41E
52	22	42 ... 52	741	65	▶	**3RV2031-4WA10**	1	1 unit	41E
59	30	49 ... 59	845	65	▶	**3RV2031-4XA10**	1	1 unit	41E
65	30	54 ... 65	845	65	▶	**3RV2031-4JA10**	1	1 unit	41E
73	37	62 ... 73	949	65	▶	**3RV2031-4KA10**	1	1 unit	41E
80[2]	37	70 ... 80	1 040	65	▶	**3RV2031-4RA10**	1	1 unit	41E
Size S2, with increased switching capacity									
14	5.5	9.5 ... 14	208	100	▶	**3RV2032-4SA10**	1	1 unit	41E
17	7.5	12 ... 17	260	100	▶	**3RV2032-4TA10**	1	1 unit	41E
20	7.5	14 ... 20	260	100	▶	**3RV2032-4BA10**	1	1 unit	41E
25	11	18 ... 25	325	100	▶	**3RV2032-4DA10**	1	1 unit	41E
32	15	22 ... 32	416	100	▶	**3RV2032-4EA10**	1	1 unit	41E
36	18.5	28 ... 36	520	100	▶	**3RV2032-4PA10**	1	1 unit	41E
40	18.5	32 ... 40	585	100	▶	**3RV2032-4UA10**	1	1 unit	41E
45	22	35 ... 45	650	100	▶	**3RV2032-4VA10**	1	1 unit	41E
52	22	42 ... 52	741	100	▶	**3RV2032-4WA10**	1	1 unit	41E
59	30	49 ... 59	845	100	▶	**3RV2032-4XA10**	1	1 unit	41E
65	30	54 ... 65	845	100	▶	**3RV2032-4JA10**	1	1 unit	41E
73	37	62 ... 73	949	100	▶	**3RV2032-4KA10**	1	1 unit	41E
80[2]	37	70 ... 80	1 040	100	▶	**3RV2032-4RA10**	1	1 unit	41E
Size S3 NEW									
40	18.5	28 ... 40	520	65	1	**3RV2041-4FA10**	1	1 unit	41E
50	22	36 ... 50	650	65	1	**3RV2041-4HA10**	1	1 unit	41E
63	30	45 ... 63	819	65	1	**3RV2041-4JA10**	1	1 unit	41E
75	37	57 ... 75	975	65	1	**3RV2041-4KA10**	1	1 unit	41E
84	45	65 ... 84	1 170	65	1	**3RV2041-4RA10**	1	1 unit	41E
93	45	75 ... 93	1 300	65	1	**3RV2041-4YA10**	1	1 unit	41E
100	45, 55	80 ... 100	1 300	65	1	**3RV2041-4MA10**	1	1 unit	41E
Size S3, with increased switching capacity NEW									
40	18.5	28 ... 40	520	100	1	**3RV2042-4FA10**	1	1 unit	41E
50	22	36 ... 50	650	100	1	**3RV2042-4HA10**	1	1 unit	41E
63	30	45 ... 63	819	100	1	**3RV2042-4JA10**	1	1 unit	41E
75	37	57 ... 75	975	100	1	**3RV2042-4KA10**	1	1 unit	41E
84	45	65 ... 84	1 170	100	1	**3RV2042-4RA10**	1	1 unit	41E
93	45	75 ... 93	1 300	100	1	**3RV2042-4YA10**	1	1 unit	41E
100	45, 55	80 ... 100	1 300	100	1	**3RV2042-4MA10**	1	1 unit	41E

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] Suitable for use with IE3/IE4 motors up to a starting current of 720 A. For higher starting currents we recommend using motor starter protectors size S3.

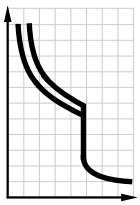
Auxiliary switches and other accessories can be ordered separately (see "Accessories" page 7/38 onwards).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

For motor protection *IE3/IE4 ready*

CLASS 10, with transverse auxiliary switch (1 NO + 1 NC)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2011-4AA15
with integrated transverse auxiliary switch

3RV2011-0EA25
with integrated transverse auxiliary switch

3RV2021-4AA15
with integrated transverse auxiliary switch

3RV2021-4AA25
with integrated transverse auxiliary switch

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous overcurrent release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals		SD	Spring-type terminals	
I_n			$I >$	I_{cu}		Article No.	Price per PU		Article No.	Price per PU
A	kW	A	A	kA	d			d		
Size S00										
0.16	0.04	0.11 ... 0.16	2.1	100	▶	**3RV2011-0AA15**		▶	**3RV2011-0AA25**	
0.2	0.06	0.14 ... 0.2	2.6	100	▶	**3RV2011-0BA15**		▶	**3RV2011-0BA25**	
0.25	0.06	0.18 ... 0.25	3.3	100	▶	**3RV2011-0CA15**		▶	**3RV2011-0CA25**	
0.32	0.09	0.22 ... 0.32	4.2	100	▶	**3RV2011-0DA15**		▶	**3RV2011-0DA25**	
0.4	0.09	0.28 ... 0.4	5.2	100	▶	**3RV2011-0EA15**		▶	**3RV2011-0EA25**	
0.5	0.12	0.35 ... 0.5	6.5	100	▶	**3RV2011-0FA15**		▶	**3RV2011-0FA25**	
0.63	0.18	0.45 ... 0.63	8.2	100	▶	**3RV2011-0GA15**		▶	**3RV2011-0GA25**	
0.8	0.18	0.55 ... 0.8	10	100	▶	**3RV2011-0HA15**		▶	**3RV2011-0HA25**	
1	0.25	0.7 ... 1	13	100	▶	**3RV2011-0JA15**		▶	**3RV2011-0JA25**	
1.25	0.37	0.9 ... 1.25	16	100	▶	**3RV2011-0KA15**		▶	**3RV2011-0KA25**	
1.6	0.55	1.1 ... 1.6	21	100	▶	**3RV2011-1AA15**		▶	**3RV2011-1AA25**	
2	0.75	1.4 ... 2	26	100	▶	**3RV2011-1BA15**		▶	**3RV2011-1BA25**	
2.5	0.75	1.8 ... 2.5	33	100	▶	**3RV2011-1CA15**		▶	**3RV2011-1CA25**	
3.2	1.1	2.2 ... 3.2	42	100	▶	**3RV2011-1DA15**		▶	**3RV2011-1DA25**	
4	1.5	2.8 ... 4	52	100	▶	**3RV2011-1EA15**		▶	**3RV2011-1EA25**	
5	1.5	3.5 ... 5	65	100	▶	**3RV2011-1FA15**		▶	**3RV2011-1FA25**	
6.3	2.2	4.5 ... 6.3	82	100	▶	**3RV2011-1GA15**		▶	**3RV2011-1GA25**	
8	3	5.5 ... 8	104	100	▶	**3RV2011-1HA15**		▶	**3RV2011-1HA25**	
10	4	7 ... 10	130	100	▶	**3RV2011-1JA15**		▶	**3RV2011-1JA25**	
12.5	5.5	9 ... 12.5	163	100	▶	**3RV2011-1KA15**		▶	**3RV2011-1KA25**	
16	7.5	10[2] ... 16	208	55	▶	**3RV2011-4AA15**		▶	**3RV2011-4AA25**	
Size S0										
16	7.5	10[2] ... 16	208	55	▶	**3RV2021-4AA15**		▶	**3RV2021-4AA25**	
20	7.5	13[2] ... 20	260	55	▶	**3RV2021-4BA15**		▶	**3RV2021-4BA25**	
22	11	16[2] ... 22	286	55	▶	**3RV2021-4CA15**		▶	**3RV2021-4CA25**	
25	11	18[2] ... 25	325	55	▶	**3RV2021-4DA15**		▶	**3RV2021-4DA25**	
28	15	23 ... 28	364	55	▶	**3RV2021-4NA15**		▶	**3RV2021-4NA25**	
32[3]	15	27 ... 32	400	55	▶	**3RV2021-4EA15**		▶	**3RV2021-4EA25**	
36[4]	18.5	30 ... 36	432	20	▶	**3RV2021-4PA15**			--	
40[4]	18.5	34 ... 40	480	20	▶	**3RV2021-4FA15**			--	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) The setting range of the thermal overload releases has been extended.

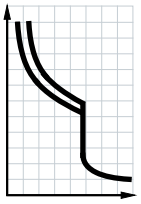
3) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

4) The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required. For use with IE3/IE4 motors we recommend using 3RV2 motor starter protectors size S2.

Auxiliary switches and other accessories can be ordered separately (see "Accessories" page 7/38 onwards).

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

CLASS 20, without auxiliary switches



3RV2031-4SB10

3RV2031-4WB10

3RV2042-4FB10

3RV2042-4KB10

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous overcurrent release	Short-circuit breaking capacity at 400 V AC	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
I_n		⊏	$I >$	I_{cu}		Article No. Price per PU			
A	kW	A	A	kA	d				
Size S2									
14	5.5	9.5 ... 14	208	65	2	**3RV2031-4SB10**	1	1 unit	41E
17	7.5	12 ... 17	260	65	2	**3RV2031-4TB10**	1	1 unit	41E
20	7.5	14 ... 20	260	65	2	**3RV2031-4BB10**	1	1 unit	41E
25	11	18 ... 25	325	65	2	**3RV2031-4DB10**	1	1 unit	41E
32	15	22 ... 32	416	65	2	**3RV2031-4EB10**	1	1 unit	41E
36	18.5	28 ... 36	520	65	2	**3RV2031-4PB10**	1	1 unit	41E
40	18.5	32 ... 40	585	65	2	**3RV2031-4UB10**	1	1 unit	41E
45	22	35 ... 45	650	65	2	**3RV2031-4VB10**	1	1 unit	41E
52	22	42 ... 52	741	65	2	**3RV2031-4WB10**	1	1 unit	41E
59	30	49 ... 59	845	65	▶	**3RV2031-4XB10**	1	1 unit	41E
65	30	54 ... 65	845	65	▶	**3RV2031-4JB10**	1	1 unit	41E
Size S3, with increased switching capacity NEW									
40	18.5	28 ... 40	520	100	2	**3RV2042-4FB10**	1	1 unit	41E
50	22	36 ... 50	650	100	2	**3RV2042-4HB10**	1	1 unit	41E
63	30	45 ... 63	819	100	2	**3RV2042-4JB10**	1	1 unit	41E
75	37	57 ... 75	975	100	2	**3RV2042-4KB10**	1	1 unit	41E
84	45	65 ... 84	1 170	100	2	**3RV2042-4RB10**	1	1 unit	41E
93	45	75 ... 93	1 300	100	2	**3RV2042-4YB10**	1	1 unit	41E
100	45, 55	80 ... 100	1 300	100	2	**3RV2042-4MB10**	1	1 unit	41E

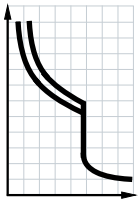
[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

Auxiliary switches and other accessories can be ordered separately (see "Accessories" page 7/38 onwards).

For motor protection with overload relay function ***IE3/IE4* ready**

Selection and ordering data

CLASS 10, with overload relay function (automatic RESET), without auxiliary switches



3RV2111-4FA10

3RV2111-0BA10

3RV2131-4WB10

3RV2142-4FA10

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous overcurrent release	Short-circuit breaking capacity at 400 V AC	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
I_n		⊏	$I >$	I_{cu}		Article No. Price per PU			
A	kW	A	A	kA	d				
Size S00[2]									
0.16	0.04	0.11 ... 0.16	2.1	100	2	**3RV2111-0AA10**	1	1 unit	41E
0.2	0.06	0.14 ... 0.2	2.6	100	2	**3RV2111-0BA10**	1	1 unit	41E
0.25	0.06	0.18 ... 0.25	3.3	100	2	**3RV2111-0CA10**	1	1 unit	41E
0.32	0.09	0.22 ... 0.32	4.2	100	2	**3RV2111-0DA10**	1	1 unit	41E
0.4	0.09	0.28 ... 0.4	5.2	100	2	**3RV2111-0EA10**	1	1 unit	41E
0.5	0.12	0.35 ... 0.5	6.5	100	2	**3RV2111-0FA10**	1	1 unit	41E
0.63	0.18	0.45 ... 0.63	8.2	100	2	**3RV2111-0GA10**	1	1 unit	41E
0.8	0.18	0.55 ... 0.8	10	100	2	**3RV2111-0HA10**	1	1 unit	41E
1	0.25	0.7 ... 1	13	100	2	**3RV2111-0JA10**	1	1 unit	41E
1.25	0.37	0.9 ... 1.25	16	100	2	**3RV2111-0KA10**	1	1 unit	41E
1.6	0.55	1.1 ... 1.6	21	100	2	**3RV2111-1AA10**	1	1 unit	41E
2	0.75	1.4 ... 2	26	100	2	**3RV2111-1BA10**	1	1 unit	41E
2.5	0.75	1.8 ... 2.5	33	100	2	**3RV2111-1CA10**	1	1 unit	41E
3.2	1.1	2.2 ... 3.2	42	100	2	**3RV2111-1DA10**	1	1 unit	41E
4	1.5	2.8 ... 4	52	100	2	**3RV2111-1EA10**	1	1 unit	41E
5	1.5	3.5 ... 5	65	100	2	**3RV2111-1FA10**	1	1 unit	41E
6.3	2.2	4.5 ... 6.3	82	100	2	**3RV2111-1GA10**	1	1 unit	41E
8	3	5.5 ... 8	104	100	2	**3RV2111-1HA10**	1	1 unit	41E
10	4	7 ... 10	130	100	2	**3RV2111-1JA10**	1	1 unit	41E
12.5	5.5	9 ... 12.5	163	100	2	**3RV2111-1KA10**	1	1 unit	41E
16	7.5	10[3] ... 16	208	55	2	**3RV2111-4AA10**	1	1 unit	41E
Size S0[2]									
16	7.5	10[3] ... 16	208	55	2	**3RV2121-4AA10**	1	1 unit	41E
20	7.5	13[3] ... 20	260	55	2	**3RV2121-4BA10**	1	1 unit	41E
22	11	16[3] ... 22	286	55	2	**3RV2121-4CA10**	1	1 unit	41E
25	11	18[3] ... 25	325	55	2	**3RV2121-4DA10**	1	1 unit	41E
28	15	23 ... 28	364	55	2	**3RV2121-4NA10**	1	1 unit	41E
32[4]	15	27 ... 32	400	55	2	**3RV2121-4EA10**	1	1 unit	41E
Size S2[2]									
14	5.5	9.5 ... 14	208	65	2	**3RV2131-4SA10**	1	1 unit	41E
17	7.5	12 ... 17	260	65	2	**3RV2131-4TA10**	1	1 unit	41E
20	7.5	14 ... 20	260	65	2	**3RV2131-4BA10**	1	1 unit	41E
25	11	18 ... 25	325	65	2	**3RV2131-4DA10**	1	1 unit	41E
32	15	22 ... 32	416	65	2	**3RV2131-4EA10**	1	1 unit	41E
36	18.5	28 ... 36	520	65	2	**3RV2131-4PA10**	1	1 unit	41E
40	18.5	32 ... 40	585	65	2	**3RV2131-4UA10**	1	1 unit	41E
45	22	35 ... 45	650	65	2	**3RV2131-4VA10**	1	1 unit	41E
52	32	42 ... 52	741	65	2	**3RV2131-4WA10**	1	1 unit	41E
59	30	49 ... 59	845	65	2	**3RV2131-4XA10**	1	1 unit	41E
65	30	54 ... 65	845	65	2	**3RV2131-4JA10**	1	1 unit	41E
73	37	62 ... 73	949	65	2	**3RV2131-4KA10**	1	1 unit	41E
80[5]	37	70 ... 80	1 040	65	2	**3RV2131-4RA10**	1	1 unit	41E

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Accessories for mounting on the right and 3RV2915 three-phase busbars cannot be used.

3) The setting range of the thermal overload releases has been extended.

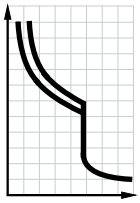
4) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

5) Suitable for use with IE3/IE4 motors up to a starting current of 720 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S3.

Auxiliary switches and other accessories can be ordered separately (see "Accessories" page 7/38 onwards).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

CLASS 10, with overload relay function (automatic RESET), without auxiliary switches (continued)



3RV2111-4FA10

3RV2111-0BA10

3RV2131-4WB10

3RV2142-4FA10

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous overcurrent release	Short-circuit breaking capacity at 400 V AC	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
I_n		⊏	$I >$	I_{cu}		Article No. Price per PU			
A	kW	A	A	kA	d				
Size S3, with increased switching capacity[2] NEW									
40	18.5	28 ... 40	520	100	2	**3RV2142-4FA10**	1	1 unit	41E
50	22	36 ... 50	650	100	2	**3RV2142-4HA10**	1	1 unit	41E
63	30	45 ... 63	819	100	2	**3RV2142-4JA10**	1	1 unit	41E
75	37	57 ... 75	975	100	2	**3RV2142-4KA10**	1	1 unit	41E
84	45	65 ... 84	1 170	100	2	**3RV2142-4RA10**	1	1 unit	41E
93	45	75 ... 93	1 300	100	2	**3RV2142-4YA10**	1	1 unit	41E
100	45, 55	80 ... 100	1 300	100	2	**3RV2142-4MA10**	1	1 unit	41E

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

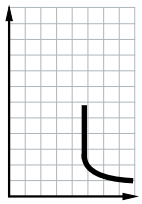
2) Accessories for mounting on the right and 3RV2915 three-phase busbars cannot be used.

Auxiliary switches and other accessories can be ordered separately (see "Accessories" page 7/38 onwards).

Selection and ordering data

Without auxiliary switches

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2311-4AC10

3RV2311-0JC20

3RV2321-4AC10

3RV2321-4AC20

Rated current	Suitable for three-phase motors[1] with *P*	Thermal overload releases[2]	Instanta-neous overcurrent release	Short-circuit breaking capacity at 400 V AC	SD	**Screw terminals**	SD	**Spring-type terminals**
I_n			$I >$	I_{cu}		Article No. Price per PU		Article No. Price per PU
A	kW	A	A	kA	d		d	
Size S00								
0.16	0.04	Without	2.1	100	5	**3RV2311-0AC10**	5	**3RV2311-0AC20**
0.2	0.06	Without	2.6	100	5	**3RV2311-0BC10**	5	**3RV2311-0BC20**
0.25	0.06	Without	3.3	100	5	**3RV2311-0CC10**	5	**3RV2311-0CC20**
0.32	0.09	Without	4.2	100	5	**3RV2311-0DC10**	5	**3RV2311-0DC20**
0.4	0.09	Without	5.2	100	5	**3RV2311-0EC10**	5	**3RV2311-0EC20**
0.5	0.12	Without	6.5	100	5	**3RV2311-0FC10**	5	**3RV2311-0FC20**
0.63	0.18	Without	8.2	100	5	**3RV2311-0GC10**	5	**3RV2311-0GC20**
0.8	0.18	Without	10	100	5	**3RV2311-0HC10**	5	**3RV2311-0HC20**
1	0.25	Without	13	100	5	**3RV2311-0JC10**	5	**3RV2311-0JC20**
1.25	0.37	Without	16	100	5	**3RV2311-0KC10**	5	**3RV2311-0KC20**
1.6	0.55	Without	21	100	5	**3RV2311-1AC10**	5	**3RV2311-1AC20**
2	0.75	Without	26	100	5	**3RV2311-1BC10**	5	**3RV2311-1BC20**
2.5	0.75	Without	33	100	5	**3RV2311-1CC10**	5	**3RV2311-1CC20**
3.2	1.1	Without	42	100	5	**3RV2311-1DC10**	5	**3RV2311-1DC20**
4	1.5	Without	52	100	5	**3RV2311-1EC10**	5	**3RV2311-1EC20**
5	1.5	Without	65	100	5	**3RV2311-1FC10**	5	**3RV2311-1FC20**
6.3	2.2	Without	82	100	5	**3RV2311-1GC10**	5	**3RV2311-1GC20**
8	3	Without	104	100	5	**3RV2311-1HC10**	5	**3RV2311-1HC20**
10	4	Without	130	100	5	**3RV2311-1JC10**	5	**3RV2311-1JC20**
12.5	5.5	Without	163	100	5	**3RV2311-1KC10**	5	**3RV2311-1KC20**
16	7.5	Without	208	55	5	**3RV2311-4AC10**	5	**3RV2311-4AC20**
Size S0								
1.6	0.55	Without	21	100	5	**3RV2321-1AC10**	5	**3RV2321-1AC20**
2	0.75	Without	26	100	5	**3RV2321-1BC10**	5	**3RV2321-1BC20**
2.5	0.75	Without	33	100	5	**3RV2321-1CC10**	5	**3RV2321-1CC20**
3.2	1.1	Without	42	100	5	**3RV2321-1DC10**	5	**3RV2321-1DC20**
4	1.5	Without	52	100	5	**3RV2321-1EC10**	5	**3RV2321-1EC20**
5	1.5	Without	65	100	5	**3RV2321-1FC10**	5	**3RV2321-1FC20**
6.3	2.2	Without	82	100	5	**3RV2321-1GC10**	5	**3RV2321-1GC20**
8	3	Without	104	100	5	**3RV2321-1HC10**	5	**3RV2321-1HC20**
10	4	Without	130	100	5	**3RV2321-1JC10**	5	**3RV2321-1JC20**
12.5	5.5	Without	163	100	5	**3RV2321-1KC10**	5	**3RV2321-1KC20**
16	7.5	Without	208	55	5	**3RV2321-4AC10**	5	**3RV2321-4AC20**
20	7.5	Without	260	55	5	**3RV2321-4BC10**	5	**3RV2321-4BC20**
22	11	Without	286	55	5	**3RV2321-4CC10**	5	**3RV2321-4CC20**
25	11	Without	325	55	5	**3RV2321-4DC10**	5	**3RV2321-4DC20**
28	15	Without	364	55	5	**3RV2321-4NC10**	5	**3RV2321-4NC20**
32[3]	15	Without	400	55	5	**3RV2321-4EC10**	5	**3RV2321-4EC20**
36[4]	18.5	Without	432	20	5	**3RV2321-4PC10**		–
40[4]	18.5	Without	480	20	5	**3RV2321-4FC10**		–

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) For overload protection of the motors, appropriate overload relays must be used.

3) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

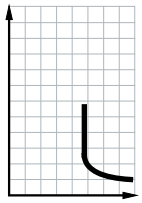
4) The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required. For use with IE3/IE4 motors we recommend using 3RV2 motor starter protectors size S2.

Sizes S2 and S3 see page 7/33.

Auxiliary switches and other accessories can be ordered separately (see "Accessories" page 7/38 onwards).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Without auxiliary switches (continued)



3RV2331-4SC10

3RV2331-4WC10

3RV2332-4SC10

3RV2332-4WC10

3RV2341-4FC10

Rated current	Suitable for three-phase motors[1] with *P*	Thermal overload releases[2]	Instantaneous overcurrent release	Short-circuit breaking capacity at 400 V AC	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}		Article No. Price per PU			
A	kW	A	A	kA	d				
Size S2									
14	5.5	Without	208	65	2	**3RV2331-4SC10**	1	1 unit	41E
17	7.5	Without	260	65	2	**3RV2331-4TC10**	1	1 unit	41E
20	7.5	Without	260	65	2	**3RV2331-4BC10**	1	1 unit	41E
25	11	Without	325	65	2	**3RV2331-4DC10**	1	1 unit	41E
32	15	Without	416	65	2	**3RV2331-4EC10**	1	1 unit	41E
36	18.5	Without	520	65	2	**3RV2331-4PC10**	1	1 unit	41E
40	18.5	Without	585	65	2	**3RV2331-4UC10**	1	1 unit	41E
45	22	Without	650	65	2	**3RV2331-4VC10**	1	1 unit	41E
52	22	Without	741	65	2	**3RV2331-4WC10**	1	1 unit	41E
59	30	Without	845	65	2	**3RV2331-4XC10**	1	1 unit	41E
65	30	Without	845	65	2	**3RV2331-4JC10**	1	1 unit	41E
73	37	Without	949	65	2	**3RV2331-4KC10**	1	1 unit	41E
80[3]	37	Without	1 040	65	2	**3RV2331-4RC10**	1	1 unit	41E
Size S2, with increased switching capacity									
14	5.5	Without	208	100	2	**3RV2332-4SC10**	1	1 unit	41E
17	7.5	Without	260	100	2	**3RV2332-4TC10**	1	1 unit	41E
20	7.5	Without	260	100	2	**3RV2332-4BC10**	1	1 unit	41E
25	11	Without	325	100	2	**3RV2332-4DC10**	1	1 unit	41E
32	15	Without	416	100	2	**3RV2332-4EC10**	1	1 unit	41E
36	18.5	Without	520	100	2	**3RV2332-4PC10**	1	1 unit	41E
40	18.5	Without	585	100	2	**3RV2332-4UC10**	1	1 unit	41E
45	22	Without	650	100	2	**3RV2332-4VC10**	1	1 unit	41E
52	22	Without	741	100	2	**3RV2332-4WC10**	1	1 unit	41E
59	30	Without	845	100	2	**3RV2332-4XC10**	1	1 unit	41E
65	30	Without	845	100	2	**3RV2332-4JC10**	1	1 unit	41E
73	37	Without	949	100	2	**3RV2332-4KC10**	1	1 unit	41E
80[3]	37	Without	1 040	100	2	**3RV2332-4RC10**	1	1 unit	41E
Size S3 NEW									
40	18.5	Without	520	65	2	**3RV2341-4FC10**	1	1 unit	41E
50	22	Without	650	65	2	**3RV2341-4HC10**	1	1 unit	41E
63	30	Without	819	65	2	**3RV2341-4JC10**	1	1 unit	41E
75	37	Without	975	65	2	**3RV2341-4KC10**	1	1 unit	41E
84	45	Without	1 170	65	2	**3RV2341-4RC10**	1	1 unit	41E
93	45	Without	1 300	65	2	**3RV2341-4YC10**	1	1 unit	41E
100	45, 55	Without	1 300	65	2	**3RV2341-4MC10**	1	1 unit	41E
Size S3, with increased switching capacity NEW									
40	18.5	Without	520	100	2	**3RV2342-4FC10**	1	1 unit	41E
50	22	Without	650	100	2	**3RV2342-4HC10**	1	1 unit	41E
63	30	Without	819	100	2	**3RV2342-4JC10**	1	1 unit	41E
75	37	Without	975	100	2	**3RV2342-4KC10**	1	1 unit	41E
84	45	Without	1 170	100	2	**3RV2342-4RC10**	1	1 unit	41E
93	45	Without	1 300	100	2	**3RV2342-4YC10**	1	1 unit	41E
100	45, 55	Without	1 300	100	2	**3RV2342-4MC10**	1	1 unit	41E

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) For overload protection of the motors, appropriate overload relays must be used.

3) Suitable for use with IE3/IE4 motors up to a starting current of 720 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S3.

Auxiliary switches and other accessories can be ordered separately (see "Accessories" page 7/38 onwards).

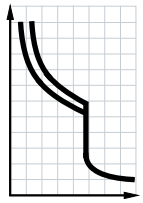
For transformer protection

Selection and ordering data

CLASS 10, without auxiliary switches

Motor starter protectors for the protection of transformers with high inrush current

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2411-0AA10

3RV2411-0AA20

3RV2421-4AA10

3RV2421-4AA20

3RV2431-4WA10

Rated current	Setting range for thermal overload release	Instantaneous overcurrent release	Short-circuit breaking capacity at 400 V AC	SD	**Screw terminals**	SD	**Spring-type terminals**
I_n		$I >$	I_{cu}		Article No. Price per PU		Article No. Price per PU
A	A	A	kA	d		d	
Size S00							
0.16	0.11 ... 0.16	3.3	100	▶	**3RV2411-0AA10**	2	**3RV2411-0AA20**
0.2	0.14 ... 0.2	4.2	100	▶	**3RV2411-0BA10**	2	**3RV2411-0BA20**
0.25	0.18 ... 0.25	5.2	100	▶	**3RV2411-0CA10**	2	**3RV2411-0CA20**
0.32	0.22 ... 0.32	6.5	100	▶	**3RV2411-0DA10**	2	**3RV2411-0DA20**
0.4	0.28 ... 0.4	8.2	100	▶	**3RV2411-0EA10**	2	**3RV2411-0EA20**
0.5	0.35 ... 0.5	10	100	▶	**3RV2411-0FA10**	2	**3RV2411-0FA20**
0.63	0.45 ... 0.63	13	100	▶	**3RV2411-0GA10**	2	**3RV2411-0GA20**
0.8	0.55 ... 0.8	16	100	▶	**3RV2411-0HA10**	2	**3RV2411-0HA20**
1	0.7 ... 1	21	100	▶	**3RV2411-0JA10**	2	**3RV2411-0JA20**
1.25	0.9 ... 1.25	26	100	▶	**3RV2411-0KA10**	2	**3RV2411-0KA20**
1.6	1.1 ... 1.6	33	100	▶	**3RV2411-1AA10**	2	**3RV2411-1AA20**
2	1.4 ... 2	42	100	▶	**3RV2411-1BA10**	2	**3RV2411-1BA20**
2.5	1.8 ... 2.5	52	100	▶	**3RV2411-1CA10**	2	**3RV2411-1CA20**
3.2	2.2 ... 3.2	65	100	▶	**3RV2411-1DA10**	2	**3RV2411-1DA20**
4	2.8 ... 4	82	100	▶	**3RV2411-1EA10**	2	**3RV2411-1EA20**
5	3.5 ... 5	104	100	▶	**3RV2411-1FA10**	2	**3RV2411-1FA20**
6.3	4.5 ... 6.3	130	100	▶	**3RV2411-1GA10**	2	**3RV2411-1GA20**
8	5.5 ... 8	163	100	▶	**3RV2411-1HA10**	2	**3RV2411-1HA20**
10	7 ... 10	208	100	▶	**3RV2411-1JA10**	2	**3RV2411-1JA20**
12.5	9 ... 12.5	260	100	▶	**3RV2411-1KA10**	2	**3RV2411-1KA20**
16	10[1] ... 16	286	55	▶	**3RV2411-4AA10**	2	**3RV2411-4AA20**
Size S0							
16	10[1] ... 16	286	55	▶	**3RV2421-4AA10**	2	**3RV2421-4AA20**
20	13[1] ... 20	325	55	▶	**3RV2421-4BA10**	2	**3RV2421-4BA20**
22	16[1] ... 22	364	55	▶	**3RV2421-4CA10**	2	**3RV2421-4CA20**
25	18[1] ... 25	400	55	▶	**3RV2421-4DA10**	2	**3RV2421-4DA20**
Size S2							
14	9.5 ... 14	328	65	▶	**3RV2431-4SA10**		--
17	12 ... 17	410	65	▶	**3RV2431-4TA10**		--
20	14 ... 20	410	65	▶	**3RV2431-4BA10**		--
25	18 ... 25	512	65	▶	**3RV2431-4DA10**		--
32	22 ... 32	656	65	▶	**3RV2431-4EA10**		--
36	28 ... 36	820	65	▶	**3RV2431-4PA10**		--
40	32 ... 40	820	65	▶	**3RV2431-4UA10**		--
45	35 ... 45	922	65	▶	**3RV2431-4VA10**		--
52	42 ... 52	1 025	65	▶	**3RV2431-4WA10**		--
59	49 ... 59	1 040	65	▶	**3RV2431-4XA10**		--
65	54 ... 65	1 040	65	▶	**3RV2431-4JA10**		--

[1] The setting range of the thermal overload releases has been extended.

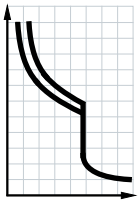
Auxiliary switches and other accessories can be ordered separately (see "Accessories" page 7/38 onwards).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Selection and ordering data

Without auxiliary switches

Circuit breakers for system protection and non-motor loads according to UL/CSA



3RV2711-0AD10

3RV2742-5FD10

Rated current[1]	Thermal overload release (non-adjustable)	Instantaneous overcurrent release	Short-circuit breaking capacity at 480 Y/277 V AC[2]	480 V AC	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
I_n[1]		$I >$	I_{bc}			Article No.	Price per PU			
A	A	A	kA		d					
Size S00										
0.16	0.16	2.1	65	--	5	**3RV2711-0AD10**		1	1 unit	41E
0.2	0.2	2.6	65	--	5	**3RV2711-0BD10**		1	1 unit	41E
0.25	0.25	3.3	65	--	5	**3RV2711-0CD10**		1	1 unit	41E
0.32	0.32	4.2	65	--	5	**3RV2711-0DD10**		1	1 unit	41E
0.4	0.4	5.2	65	--	5	**3RV2711-0ED10**		1	1 unit	41E
0.5	0.5	6.5	65	--	5	**3RV2711-0FD10**		1	1 unit	41E
0.63	0.63	8.2	65	--	5	**3RV2711-0GD10**		1	1 unit	41E
0.8	0.8	10	65	--	5	**3RV2711-0HD10**		1	1 unit	41E
1	1	13	65	--	5	**3RV2711-0JD10**		1	1 unit	41E
1.25	1.25	16	65	--	5	**3RV2711-0KD10**		1	1 unit	41E
1.6	1.6	21	65	--	5	**3RV2711-1AD10**		1	1 unit	41E
2	2	26	65	--	5	**3RV2711-1BD10**		1	1 unit	41E
2.5	2.5	33	65	--	5	**3RV2711-1CD10**		1	1 unit	41E
3.2	3.2	42	65	--	5	**3RV2711-1DD10**		1	1 unit	41E
4	4	52	65	--	5	**3RV2711-1ED10**		1	1 unit	41E
5	5	65	65	--	5	**3RV2711-1FD10**		1	1 unit	41E
6.3	6.3	82	65	--	5	**3RV2711-1GD10**		1	1 unit	41E
8	8	104	65	--	5	**3RV2711-1HD10**		1	1 unit	41E
10	10	130	65	--	5	**3RV2711-1JD10**		1	1 unit	41E
12.5	12.5	163	65	--	5	**3RV2711-1KD10**		1	1 unit	41E
15	15	208	65	--	5	**3RV2711-4AD10**		1	1 unit	41E
Size S0										
20	20	260	50	--	5	**3RV2721-4BD10**		1	1 unit	41E
22	22	286	50	--	5	**3RV2721-4CD10**		1	1 unit	41E
Size S3 NEW										
10	10	150	65	65	5	**3RV2742-5AD10**		1	1 unit	41E
15	15	225	65	65	5	**3RV2742-5BD10**		1	1 unit	41E
20	20	260	65	65	5	**3RV2742-5CD10**		1	1 unit	41E
25	25	325	65	65	5	**3RV2742-5DD10**		1	1 unit	41E
30	30	390	65	65	5	**3RV2742-5ED10**		1	1 unit	41E
35	35	455	65	--	5	**3RV2742-5FD10**		1	1 unit	41E
40	40	520	65	--	5	**3RV2742-5GD10**		1	1 unit	41E
45	45	585	65	--	5	**3RV2742-5HD10**		1	1 unit	41E
50	50	650	65	--	5	**3RV2742-5JD10**		1	1 unit	41E
60	60	780	65	--	5	**3RV2742-5LD10**		1	1 unit	41E
70	70	910	65	--	5	**3RV2742-5QD10**		1	1 unit	41E

[1] Rated value 100 % according to UL 489 and IEC 60947-2 ("100 % rated breaker").

[2] Values for 600 Y/347 V AC, see page 7/16.

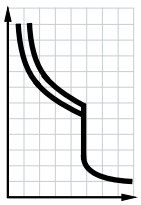
Lateral and transverse auxiliary switches can be ordered separately (see "Accessories" page 7/38 onwards)

For transformer protection according to UL 489/CSA C22.2 No.5

Selection and ordering data

Without auxiliary switches

Circuit breakers for system and transformer protection according to UL/CSA, specially designed for transformers with high inrush current



3RV2811-0AD10

Rated current[1]	Thermal overload release (non-adjustable)	Instantaneous overcurrent release	Short-circuit breaking capacity at 480 Y/277 V AC[2]	SD	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
I_n[1]		$I >$	I_{bc}		Article No.	Price per PU			
A	A	A	kA	d					
Size S00									
0.16	0.16	3.3	65	5	**3RV2811-0AD10**		1	1 unit	41E
0.2	0.2	4.2	65	5	**3RV2811-0BD10**		1	1 unit	41E
0.25	0.25	5.2	65	5	**3RV2811-0CD10**		1	1 unit	41E
0.32	0.32	6.5	65	5	**3RV2811-0DD10**		1	1 unit	41E
0.4	0.4	8.2	65	5	**3RV2811-0ED10**		1	1 unit	41E
0.5	0.5	10	65	5	**3RV2811-0FD10**		1	1 unit	41E
0.63	0.63	13	65	5	**3RV2811-0GD10**		1	1 unit	41E
0.8	0.8	16	65	5	**3RV2811-0HD10**		1	1 unit	41E
1	1	21	65	5	**3RV2811-0JD10**		1	1 unit	41E
1.25	1.25	26	65	5	**3RV2811-0KD10**		1	1 unit	41E
1.6	1.6	33	65	5	**3RV2811-1AD10**		1	1 unit	41E
2	2	42	65	5	**3RV2811-1BD10**		1	1 unit	41E
2.5	2.5	52	65	5	**3RV2811-1CD10**		1	1 unit	41E
3.2	3.2	65	65	5	**3RV2811-1DD10**		1	1 unit	41E
4	4	82	65	5	**3RV2811-1ED10**		1	1 unit	41E
5	5	104	65	5	**3RV2811-1FD10**		1	1 unit	41E
6.3	6.3	130	65	5	**3RV2811-1GD10**		1	1 unit	41E
8	8	163	65	5	**3RV2811-1HD10**		1	1 unit	41E
10	10	208	65	5	**3RV2811-1JD10**		1	1 unit	41E
12.5	12.5	260	65	5	**3RV2811-1KD10**		1	1 unit	41E
15	15	286	65	5	**3RV2811-4AD10**		1	1 unit	41E
Size S0									
20	20	325	50	5	**3RV2821-4BD10**		1	1 unit	41E
22	22	364	50	5	**3RV2821-4CD10**		1	1 unit	41E

1) Rated value 100 % according to UL 489 and IEC 60947-2 ("100 % rated breaker").

2) Values for 600 Y/347 V AC, see page 7/16.

Lateral and transverse auxiliary switches can be ordered separately (see "Accessories" page 7/38 onwards)

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Mounting location and function

The 3RV2 motor starter protectors/circuit breakers have three main contact elements. In order to achieve maximum flexibility, auxiliary switches, signaling switches, auxiliary releases and isolator modules can be supplied separately.

These components are easily fitted to the switches without the use of any tools according to requirements.

Overview graphic, see page 7/7.

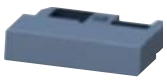
Front side Note: • A maximum of four auxiliary contacts with auxiliary switches can be mounted on each motor starter protector/circuit breaker	**Transverse auxiliary switches, solid-state compatible transverse auxiliary switches** 1 NO + 1 NC or 2 NO or 1 CO	An auxiliary switch block can be inserted transversely on the front. The overall width of the motor starter protectors/circuit breakers remains unchanged.
Left-hand side Notes: • A maximum of four auxiliary contacts with auxiliary switches can be mounted on each motor starter protector/circuit breaker • Lateral auxiliary switches (two contacts) and signaling switches can be mounted separately or together • Signaling switches cannot be used for 3RV27 and 3RV28 circuit breakers	**Lateral auxiliary switches (2 contacts)** 1 NO + 1 NC or 2 NO or 2 NC	One of the three lateral auxiliary switches can be mounted on the left side per motor starter protector/circuit breaker. The contacts of the auxiliary switch close and open together with the main contacts of the motor starter protector/circuit breaker. The width of the lateral auxiliary switch with two contacts is 9 mm.
	Lateral auxiliary switches (4 contacts) 2 NO + 2 NC	One lateral auxiliary switch with four contacts can be mounted on the left side per motor starter protector/circuit breaker. The contacts of the auxiliary switch close and open together with the main contacts of the motor starter protector/circuit breaker. The width of the lateral auxiliary switch with four contacts is 18 mm.
	Signaling switches Tripping 1 NO + 1 NC Short circuit 1 NO + 1 NC	One signaling switch can be mounted on the left side of each motor starter protector. The signaling switch has two contact systems. One contact system always signals tripping irrespective of whether this was caused by a short circuit, an overload or an auxiliary release. The other contact system only switches in the event of a short circuit. There is no signaling as a result of switching off with the actuator. In order to be able to switch on the motor starter protector again after a short circuit, the signaling switch must be reset manually after the error cause has been eliminated. The width of the signaling switch is 18 mm.
Right-hand side Notes: • One auxiliary release can be mounted per motor starter protector/circuit breaker • Accessories cannot be mounted on the right-hand side of the 3RV21 motor starter protectors for motor protection with overload relay function	**Auxiliary releases**	
	Shunt releases	For remote-controlled tripping of the motor starter protector/circuit breaker. The release coil should only be energized for short periods (see circuit diagrams).
	or	
	Undervoltage releases	Trips the motor starter protector/circuit breaker when the voltage is interrupted and prevents the motor from being restarted accidentally when the voltage is restored. Used for remote-controlled tripping of the motor starter protector/circuit breaker. Particularly suitable for EMERGENCY-STOP disconnection by way of corresponding EMERGENCY-STOP pushbuttons according to EN 60204-1.
	or	
	Undervoltage releases with leading auxiliary contacts 2 NO	Function and use as for the undervoltage release without leading auxiliary contacts, but with the following additional function: the auxiliary contacts will open in switch position OFF to deenergize the coil of the undervoltage release, thus interrupting energy consumption. In the "tripped" position, these auxiliary contacts are not guaranteed to open. The leading contacts permit the motor starter protector/circuit breaker to reclose. The width of the auxiliary release is 18 mm.
Top Notes: • Isolator modules cannot be used for 3RV27 and 3RV28 circuit breakers • Isolator module for size S2: - only with 3RV2 motor starter protectors/circuit breakers up to max. 65 A - not with the transverse auxiliary switch • Terminal screws of the transverse auxiliary switch are covered by the isolator module; Recommendation: Lateral auxiliary switches should be used in combination with the isolator module, or the isolator module should not be mounted until the auxiliary switch has been wired up	**Isolator modules**	Isolator modules can be mounted to the upper connection side of the motor starter protectors. The supply cable is connected to the motor starter protector through the isolator module. The plug can only be unplugged when the motor starter protector is open and isolates all 3 poles of the motor starter protector from the network. The shock-protected isolation point is clearly visible and secured with a padlock to prevent reinsertion of the plug.

For a complete overview of which accessories can be used for the various motor starter protectors/circuit breakers, see page 7/2.

Mountable accessories

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41E

Version	For motor starter protectors/ circuit breakers	SD	Screw terminals	SD	Spring-type terminals
	Size	d	Article No. Price per PU	d	Article No. Price per PU
Auxiliary switches[1]					
 3RV2901-1E  3RV2901-2E  3RV2901-1G	**Transverse auxiliary switches** For mounting on the front				
	1 CO	S00 ... S3	▶ **3RV2901-1D**		**--**
	1 NO + 1 NC		▶ **3RV2901-1E**	▶	**3RV2901-2E**
	2 NO		▶ **3RV2901-1F**	▶	**3RV2901-2F**
	Solid-state compatible transverse auxiliary switches For mounting on the front, for operation in dusty atmospheres and in solid-state circuits with low operating currents				
	1 CO	S00 ... S3	2 **3RV2901-1G**		**--**
 3RV2901-0H	**Covers for transverse auxiliary switches** (PS* = 10 units)	S00 ... S3	▶ **3RV2901-0H**		**--**
 3RV2901-1A  3RV2901-2A	**Lateral auxiliary switches** For mounting on the left				
	1 NO + 1 NC	S00 ... S3	▶ **3RV2901-1A**	▶	**3RV2901-2A**
	2 NO		▶ **3RV2901-1B**	▶	**3RV2901-2B**
	2 NC		▶ **3RV2901-1C**	▶	**3RV2901-2C**
	2 NO + 2 NC		2 **3RV2901-1J**		**--**
Signaling switches[2]					
 3RV2921-1M  3RV2921-2M	**Signaling switches** One signaling switch can be mounted on the left per motor starter protector. Separate tripped and short-circuit alarms, 1 NO + 1 NC each	S00 ... S3	▶ **3RV2921-1M**	▶	**3RV2921-2M**
Isolator modules[2]					
 3RV2928-1A  3RV2938-1A	**Isolator modules**[3] Visible isolating distance for isolating individual motor starter protectors from the network, lockable in disconnected position	S00, S0 S2[4]	▶ **3RV2928-1A** ▶ **3RV2938-1A**		**--** **--**

[1] Each motor starter protector/circuit breaker can be fitted with one transverse and one lateral auxiliary switch. The lateral auxiliary switch with 2 NO + 2 NC is used without a transverse auxiliary switch.

[2] This accessory cannot be used for the 3RV27 and 3RV28 circuit breakers (sizes S00, S0, S3).

[3] The isolator module for size S2 can be used only with 3RV2 motor starter protectors/circuit breakers up to max. 65 A. Similarly, it cannot be used with the transverse auxiliary switch.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E


3RV2902-1AV0


3RV2902-2AV0


3RV2922-1CP0


3RV2902-2DB0

Rated control supply voltage U_s					For motor starter protectors/ circuit breakers	SD	**Screw terminals**		SD	**Spring-type terminals**	
AC 50 Hz	AC 60 Hz	AC 50/60 Hz 100 % ON period[1]	AC/DC 50/60 Hz, DC 5 s ON period[2]	DC			Article No.	Price per PU		Article No.	Price per PU
V	V	V	V	V	Size	d			d		
Auxiliary releases[3]											
Undervoltage releases											
--	--	--	--	24	S00 ... S3	2	**3RV2902-1AB4**			**--**	
24	--	--	--	--	S00 ... S3	2	**3RV2902-1AB0**			**--**	
110	120	--	--	--	S00 ... S3	2	**3RV2902-1AF0**			**--**	
--	208	--	--	--	S00 ... S3	2	**3RV2902-1AM1**			**--**	
230	240	--	--	--	S00 ... S3	▶	**3RV2902-1AP0**		▶	**3RV2902-2AP0**	
400	440	--	--	--	S00 ... S3	▶	**3RV2902-1AV0**		▶	**3RV2902-2AV0**	
415	480	--	--	--	S00 ... S3	2	**3RV2902-1AV1**			**--**	
500	600	--	--	--	S00 ... S3	2	**3RV2902-1AS0**			**--**	
Undervoltage releases with leading auxiliary contacts 2 NO											
24	24	--	--	--	S00 ... S3	5	**3RV2922-1CB0**			**--**	
230	240	--	--	--	S00 ... S3	2	**3RV2922-1CP0**		2	**3RV2922-2CP0**	
400	440	--	--	--	S00 ... S3	2	**3RV2922-1CV0**		2	**3RV2922-2CV0**	
415	480	--	--	--	S00 ... S3	2	**3RV2922-1CV1**		2	**3RV2922-2CV1**	
Shunt releases											
--	--	20 ... 24	20 ... 70	--	S00 ... S3	▶	**3RV2902-1DB0**		▶	**3RV2902-2DB0**	
--	--	90 ... 110	70 ... 190	--	S00 ... S3	2	**3RV2902-1DF0**		2	**3RV2902-2DF0**	
--	--	210 ... 240	190 ... 330	--	S00 ... S3	▶	**3RV2902-1DP0**		▶	**3RV2902-2DP0**	
--	--	350 ... 415	330 ... 500	--	S00 ... S3	2	**3RV2902-1DV0**			**--**	
--	--	500	500	--	S00 ... S3	2	**3RV2902-1DS0**			**--**	

1) The voltage range is valid for 100 % (infinite) ON period. The response voltage lies at 0.9 of the lower limit of the voltage range.

2) The voltage range is valid for 5 s ON period at AC 50/60 Hz and DC. The response voltage lies at 0.85 of the lower limit of the voltage range.

3) One auxiliary release can be mounted on the right per motor starter protector/circuit breaker (does not apply to 3RV21 motor starter protectors with overload relay function).

Busbar accessories

Overview

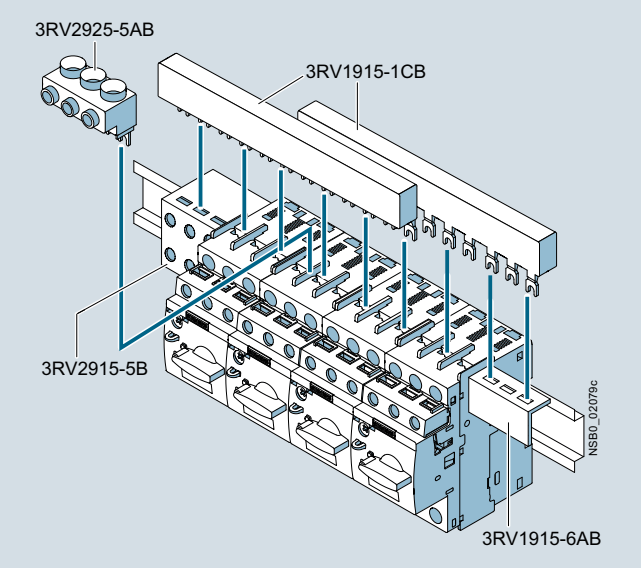
Insulated three-phase busbar system

Three-phase busbar systems provide an easy, time-saving and clearly arranged means of feeding 3RV2 motor starter protectors/circuit breakers with screw terminals. Different versions are available for sizes S00 to S2 and can be used for the various different types of motor starter protectors/circuit breakers (size S0 up to 32 A).

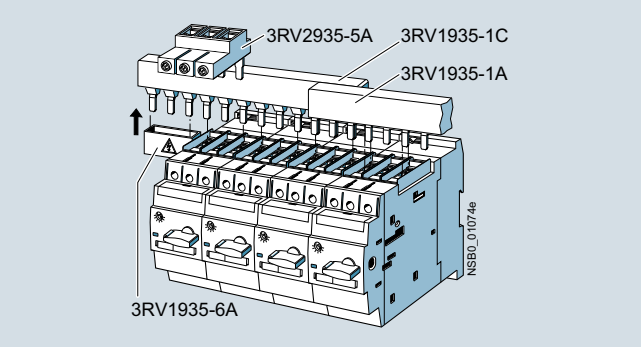
The 3RV1915 and 3RV1935 three-phase busbar systems are generally unsuitable for the 3RV21 motor starter protectors for motor protection with overload relay function and 3RV27 and 3RV28 circuit breakers according to UL 489/CSA C22.2 No. 5.

The busbars are suitable for between two and five motor starter protectors/circuit breakers. However, any kind of extension is possible by clamping the tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last motor starter protector/circuit breaker.

A combination of motor starter protectors/circuit breakers of size S00 and S0 is possible. The motor starter protectors/circuit breakers are supplied by appropriate infeed terminals.



SIRIUS three-phase busbar system size S00/S0



SIRIUS three-phase busbar system size S2

The three-phase busbar systems are finger-safe. They are designed for any short-circuit stress which can occur at the output side of connected motor starter protectors/circuit breakers.

The three-phase busbar systems can also be used to construct "Type E Starters" according to UL/CSA. Special infeed terminals must be used for this purpose, however (see "Selection and ordering data", page 7/41).

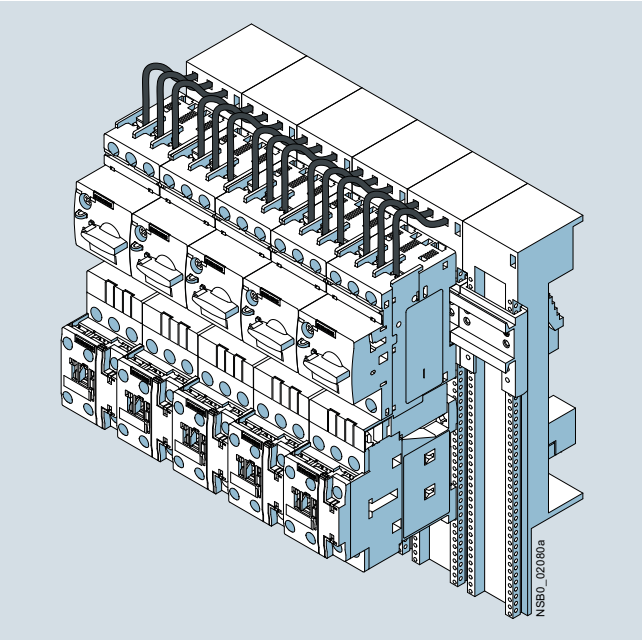
8US busbar adapters for 60 mm systems

The motor starter protectors/circuit breakers are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs.

Busbar adapters for busbar systems with 60 mm center-to-center clearance are suitable for copper busbars with a width of 12 mm to 30 mm. The busbars can be 5 mm or 10 mm thick.

The motor starter protectors/circuit breakers are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

For further busbar adapters for snap-mounting direct-on-line starters and reversing starters as well as additional accessories such as incoming and outgoing terminals, flat copper profile etc., see Catalog LV 10.



SIRIUS load feeders with busbar adapters snapped onto busbars

Selection and ordering data

	Modular spacing	Number of motor starter protectors that can be connected: Without lateral accessories	With lateral auxiliary switch	incl. auxiliary release	Rated current I_n at 690 V	For motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm				A	Size	d					
Three-phase busbars[1]												
 3RV1915-1AB	For feeding several motor starter protectors with screw terminals, mounted side by side on standard mounting rails, insulated, with touch protection											
	45[3]	2	--	--	63	S00, S0[2]	▶	**3RV1915-1AB**		1	1 unit	41E
		3	--	--	63	S00, S0[2]	▶	**3RV1915-1BB**		1	1 unit	41E
		4	--	--	63	S00, S0[2]	▶	**3RV1915-1CB**		1	1 unit	41E
		5	--	--	63	S00, S0[2]	▶	**3RV1915-1DB**		1	1 unit	41E
 3RV1915-1BB	55[4]	--	2	--	63	S00, S0[2]	▶	**3RV1915-2AB**		1	1 unit	41E
		--	3	--	63	S00, S0[2]	▶	**3RV1915-2BB**		1	1 unit	41E
		--	4	--	63	S00, S0[2]	▶	**3RV1915-2CB**		1	1 unit	41E
		--	5	--	63	S00, S0[2]	▶	**3RV1915-2DB**		1	1 unit	41E
 3RV1915-1CB		2	--	--	108	S2	▶	**3RV1935-1A**		1	1 unit	41E
		3	--	--	108	S2	▶	**3RV1935-1B**		1	1 unit	41E
		4	--	--	108	S2	▶	**3RV1935-1C**		1	1 unit	41E
 3RV1915-1DB	63[5]	--	--	2	63	S00, S0[2]	▶	**3RV1915-3AB**		1	1 unit	41E
		--	--	4	63	S00, S0[2]	▶	**3RV1915-3CB**		1	1 unit	41E
	75[5]	--	2	2	108	S2	▶	**3RV1935-3A**		1	1 unit	41E
		--	3	3	108	S2	▶	**3RV1935-3B**		1	1 unit	41E
		--	4	4	108	S2	▶	**3RV1935-3C**		1	1 unit	41E

1) Not suitable for 3RV21 motor starter protectors for motor protection with overload relay function and for 3RV27 and 3RV28 circuit breakers according to UL 489/CSA C22.2 No.5.

2) Approved for motor starter protectors size S0 with $I_n \leq 32$ A.

3) For 3RV2 motor starter protectors without accessories mounted on the side.

4) For 3RV2 motor starter protectors with auxiliary switches with 1 NO + 1 NC, 2 NO and 2 NC mounted on the left (9 mm wide).

5) For 3RV2 motor starter protectors with mounted accessories (18 mm wide). Auxiliary switches with 2 NO + 2 NC or signaling switch (mounted on the left) or with auxiliary release (mounted on the right).

	Conductor cross-section: Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded	Tightening torque	For motor starter protectors/ circuit breakers	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm²	mm²	AWG	Nm	Size	d					
Three-phase infeed terminals											
	Connection from top										
 3RV2925-5AB	2.5 ... 25	2.5 ... 16	10 ... 4	3 ... 4	S00, S0	▶	**3RV2925-5AB**		1	1 unit	41E
	2 x (2.5 ... 50)[1], 1 x (2.5 ... 70)[1]	2 x (2.5 ... 35)[1], 1 x (2.5 ... 50)[1]	2 x (10 ... 1/0)[1], 1 x (10 ... 2/0)[1]	4 ... 6	S2	▶	**3RV2935-5A**		1	1 unit	41E
 3RV2935-5A											
	Connection from below Terminal is connected in place of a switch, take space requirement into account										
 3RV2915-5B	2.5 ... 25	2.5 ... 16	10 ... 4	Input: 4, Output: 2 ... 2.5	S00, S0	▶	**3RV2915-5B**		1	1 unit	41E
Three-phase infeed terminals for constructing "Type E Starters" "											
	Connection from top										
 3RV2925-5EB	2.5 ... 25	2.5 ... 16	10 ... 4	3 ... 4	S00, S0	2	**3RV2925-5EB**		1	1 unit	41E
	2 x (2.5 ... 50)[1], 1 x (2.5 ... 70)[1]	2 x (2.5 ... 35)[1], 1 x (2.5 ... 50)[1]	2 x (10 ... 1/0)[1], 1 x (10 ... 2/0)[1]	4 ... 6	S2	▶	**3RV2935-5E**		1	1 unit	41E
 3RV2935-5E											

1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Busbar accessories

	Version	For motor starter protectors/circuit breakers Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Covers for connection tags								
 3RV1915-6AB	Touch protection for empty positions	S00, S0	►	**3RV1915-6AB**		1	10 units	41E
		S2	►	**3RV1935-6A**		1	5 units	41E

Busbar adapters


8US1251-5DS10


8US1251-5DT11


8US1250-5AS10


8US1250-5AT10


8US1211-4RT00

For motor starter protectors/circuit breakers Size	Rated current A	Connecting cable AWG	Adapter length mm	Adapter width mm	Rated voltage V	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Busbar adapters for 60 mm systems											
For copper busbars according to DIN 46433 Width: 12 mm and 30 mm Thickness: 5 mm and 10 mm also for T and double-T special profiles											
• For motor starter protectors/circuit breakers with screw terminals							**Screw terminals**				
S00, S0[2]	25	12	200	45	690	2	**8US1251-5DS10**		1	1 unit	14O
S0[2]	32	10	260	45	690	2	**8US1251-5NT10**		1	1 unit	14O
S2	80	4	200	55	69	5	**8US1261-5MS13**		1	1 unit	14O
S2	80	4	260	55	690	5	**8US1261-6MT10**		1	1 unit	14O
S2[1]	80	4	260	118	690	5	**8US1211-6MT10**		1	1 unit	14O
S3	100/70[3]	4	215	72	690/600[3] NEW	2	**8US1211-4TR00**		1	1 unit	14O
• For motor starter protectors/circuit breakers with spring-type terminals							**Spring-type terminals**				
S00, S0[2]	25	12	200	45	690	2	**8US1251-5DS11**		1	1 unit	14O
S00, S0[2]	25	12	260	45	690	2	**8US1251-5DT11**		1	1 unit	14O
S0[2]	32	10	260	45	690	2	**8US1251-5NT11**		1	1 unit	14O
Accessories											
Device holders For lateral mounting to busbar adapters	--	--	200	45	--	2	**8US1250-5AS10**		1	1 unit	14O
	--	--	260	45	--	2	**8US1250-5AT10**		1	1 unit	14O
Side modules For widening of busbar adapters	--	--	200	9	--	2	**8US1998-2BJ10**		1	10 units	14O
Spacers For fixing the feeder onto the busbar adapter	--	--	--	--	--	2	**8US1998-1BA10**		1	50 units	14O
Vibration and shock kits For high vibration and shock loads											
S00/S0	--	--	--	--	--	2	**8US1998-1CA10**		1	2 units	14O
S2	--	--	--	--	--	5	**8US1998-1DA10**		1	1 unit	14O

1) For the assembly of feeders for reversing starters comprising a motor starter protector and two contactors.
2) Also approved for 3RV27, 3RV28 according to UL.
3) Values according to UL/CSA:
-Rated current: 70 A at 600 V AC
-Short-circuit breaking capacity:
480 V AC: 65 kA, up to I_n = 30 A
480 Y/277 V AC: 65 kA
600 Y/347 V AC: 20 kA.

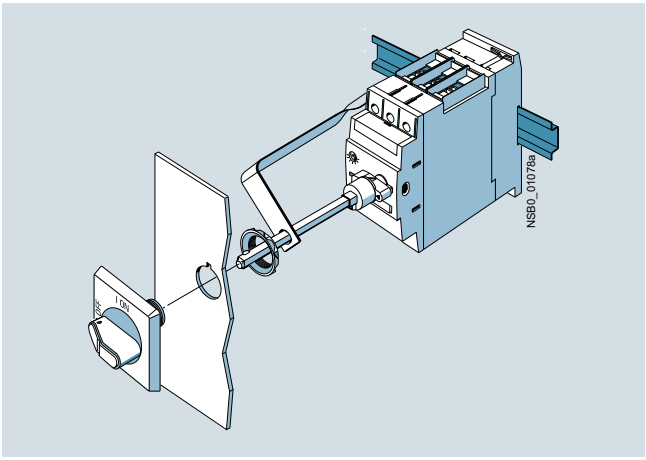
For additional busbar adapters, see Catalog LV 10.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

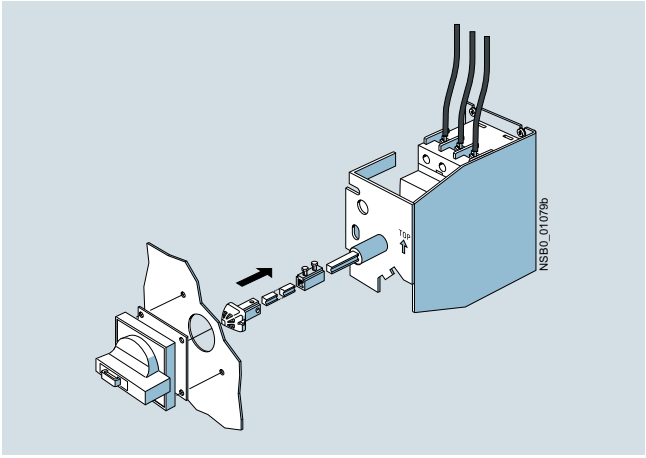
Overview

Door-coupling rotary operating mechanisms

Motor starter protectors/circuit breakers with a rotary operating mechanism can be mounted in a control cabinet and operated externally by means of a door-coupling rotary operating mechanism. When the cabinet door with motor starter protector/circuit breaker is closed, the operating mechanism is coupled. When the motor starter protector/circuit breaker closes, the coupling is locked which prevents the door from being opened unintentionally. This interlock can be defeated by the maintenance personnel. In the OPEN position, the rotary operating mechanism can be secured against reclosing with up to three padlocks. Inadvertent opening of the door is not possible in this case either.



SIRIUS 3RV2926-0K door-coupling rotary operating mechanism



SIRIUS 3RV2926-2B door-coupling rotary operating mechanism for arduous conditions

Remote motorized operating mechanisms

3RV motor starter protectors are manually operated switching devices. They automatically trip in response to an overload or short circuit. Intentional remote-controlled tripping is possible by means of a shunt release or an undervoltage release. Reclosing is only possible directly at the motor starter protector/circuit breaker.

The remote motorized operating mechanism allows the motor starter protectors/circuit breakers to be opened and closed by electrical commands. This enables a load or an installation to be isolated from the network or reconnected to it from an operator panel.

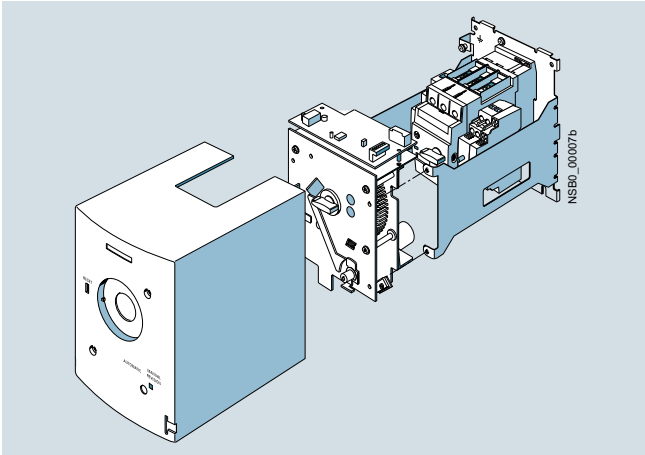
If the motor starter protector/circuit breaker is tripped as a result of overload or short circuit, it will be in the tripped position. For reclosing, the remote motorized operating mechanism must first be set manually or electrically to the 0 position (electrically by means of the Open command). Then it can be reclosed.

The remote motorized operating mechanism is available for motor starter protectors/circuit breakers in size S3 for control voltages of 230 V AC and 24 V DC. The motor starter protector/circuit breaker is fitted into the remote motorized operating mechanism as shown in the drawing.

In the "MANUAL" position, the motor starter protector/circuit breaker in the remote motorized operating mechanism can continue to be switched manually on site. In the "AUTOMATIC" position, the motor starter protector/circuit breaker is switched by means of electrical commands. The switching command must be applied for a minimum of 100 ms. The remote motorized operating mechanism closes the motor starter protector after a maximum of 1 s. On voltage failure during the switching operation it is ensured that the motor starter protector/circuit breaker remains in the "OPEN" or "CLOSED" position. In the "MANUAL" and "OFF" position, the remote motorized operating mechanism can be locked with a padlock.

RESET function

The RESET button on the motorized operating mechanism serves to reset any 3RV2921-1M signaling switch that might be installed.



SIRIUS 3RV1946-3A.. remote motorized operating mechanism

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Rotary operating mechanisms

Technical specifications

Remote motorized operating mechanisms

Type		3RV1946
Max. power consumption		
• At U_s = 24 V DC	W	48
• At U_s = 230 V AC	VA	170
Operating range		0.85 ... 1.1 x U_s
Minimum command duration at U_s	s	0.1
Max. command duration		Unlimited (uninterrupted operation)
Max. total make/break time, remote-controlled	s	2
Ready to reclose after approx.	s	2.5
Switching frequency	1/h	25
Internal back-up fuse		
• 230 V AC	A	0.8
• 24 V DC	A	1.6
Connection type of control cables		Plug-in connectors with screw terminals
Shock resistance acc. to IEC 60068-2-27	g/ms	25/11 (square and sine pulse)

Selection and ordering data

Door-coupling rotary operating mechanisms


3RV2926-0B

Door-coupling rotary operating mechanisms consisting of an actuator, a coupling driver and a 130/330 mm long extension shaft (6 mm x 6 mm)

Designed for degree of protection IP65; the door locking device prevents accidental opening of the control cabinet door when the switch is set to ON. The OFF position can be locked with up to three padlocks.

Version	Color of actuator	Version of extension shaft mm	For motor starter protectors/ circuit breakers Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Door-coupling rotary operating mechanisms	Black	130	S00 ... S3	▶	**3RV2926-0B**	1	1 unit		41E
		330	S00 ... S3	▶	**3RV2926-0K**	1	1 unit		41E
EMERGENCY-STOP door-coupling rotary operating mechanisms	Red/yellow	130	S00 ... S3	▶	**3RV2926-0C**	1	1 unit		41E
		330	S00 ... S3	▶	**3RV2926-0L**	1	1 unit		41E

Door-coupling rotary operating mechanisms for arduous conditions


3RV2926-2B


3RV2936-2C

The door-coupling rotary operating mechanisms consist of an actuator, a coupling driver, an extension shaft of 300 mm in length (8 mm x 8 mm), a spacer and two metal brackets into which the motor starter protector/circuit breaker is inserted.

The door-coupling rotary operating mechanisms are designed to degree of protection IP65. The door interlocking reliably prevents opening of the control cabinet door in the ON position of the motor starter protector/circuit breaker. The OFF position can be locked with up to three padlocks.

Laterally mountable auxiliary releases and two-pole auxiliary switches can be used.
The door-coupling rotary operating mechanisms thus meet the requirements for isolating functions according to IEC 60947-2.

Version	Color of actuator	Version of extension shaft mm	For motor starter protectors/ circuit breakers Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Door-coupling rotary operating mechanisms	Gray	300	S00, S0	▶	**3RV2926-2B**	1	1 unit		41E
			S2	▶	**3RV2936-2B**	1	1 unit		41E
			S3	▶	**3RV2946-2B**	1	1 unit		41E
EMERGENCY-STOP door-coupling rotary operating mechanisms	Red/yellow	300	S00, S0	▶	**3RV2926-2C**	1	1 unit		41E
			S2	▶	**3RV2936-2C**	1	1 unit		41E
			S3	▶	**3RV2946-2C**	1	1 unit		41E

Remote motorized operating mechanisms


3RV1946-3A...

Version	Rated control supply voltage U_s	For motor starter protectors/ circuit breakers Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Remote motorized operating mechanisms	50/60 Hz, 230 V AC	S3	X	**3RV1946-3AP0**	1	1 unit		41E
	24 V DC	S3	X	**3RV1946-3AB4**	1	1 unit		41E

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

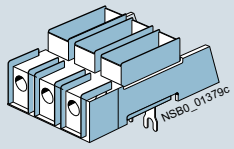
Overview

More information	
System Manual "SIRIUS – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318	Manual "SIRIUS – SIRIUS 3RV2 Motor Starter Protectors", see https://support.industry.siemens.com/cs/ww/en/view/60279172

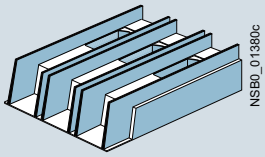
Accessories for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1

The 3RV20 motor starter protectors with screw terminals are approved according to UL 508/UL 60947-4-1 as "Self-Protected Combination Motor Controllers (Type E)".

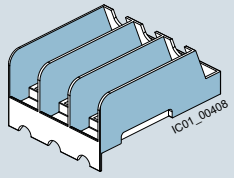
This requires increased through air and over surface spacing (1 inch and 2 inches respectively) at the input side of the device, which are achieved by mounting a terminal block or a phase barrier.



SIRIUS 3RV2928-1H terminal block



SIRIUS 3RT2946-4GA07 terminal block (type E)



SIRIUS 3RV2928-1K phase barrier

Motor starter protectors/circuit breakers	Size	Essential accessories for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1
3RV201., 3RV202.	S00/S0	3RV2928-1H terminal block or 3RV2928-1K phase barrier
3RV2031-4B.1., 3RV2031-4D.1., 3RV2031-4E.1., 3RV2031-4P.1., 3RV2031-4S.1., 3RV2031-4T.1., 3RV2031-4U.1., 3RV2031-4V.1.	S2	--
3RV2031-4J.1., 3RV2031-4K.1., 3RV2031-4R.1., 3RV2031-4W.1., 3RV2031-4X.1., 3RV2032	S2	3RV2938-1K phase barrier
3RV204.	S3	3RT2946-4GA07 terminal block

-- No accessories needed

Special three-phase infeed terminals are required for constructing "Type E Starters" with an insulated three-phase busbar system (see "Busbar Accessories", page 7/41).

The 3RV29 infeed system also enables the assembly of "Type E Starters", see page 7/55 onwards.

Note:

According to CSA, these terminal blocks and the phase barriers can be omitted when the device is used as a "Self-Protected Combination Motor Controller (Type E)".

Mounting accessories

Link modules

Feeders can be easily assembled from single devices with the help of the link modules. The following table shows the different combination options for devices with screw or spring-type terminals.

Combination devices	3RV2 motor starter protectors/ circuit breakers Size	3RT2 contactors; 3RW30, 3RW40 soft starters; 3RF34 solid-state contactors Size	Link modules Screw terminals	Spring-type terminals
Link modules for connecting switching devices to 3RV2 motor starter protectors/circuit breakers[1)]				
3RT2 contactors with AC or DC coil	S00	S00	3RA1921-1DA00	3RA2911-2AA00
	S0	S00		--
	S2	S2	3RA2931-1AA00	--
	S3[2)]	S3[2)]	3RA1941-1AA00	--
3RT2 contactors with AC coil	S0	S0	3RA2921-1AA00	3RA2921-2AA00[3)]
	S00	S0		--
3RT2 contactors with DC coil	S0	S0	3RA2921-1BA00	3RA2921-2AA00
	S00	S0		--
3RW30 soft starters	S00	S00	3RA2921-1BA00	3RA2911-2GA00
	S0	S00		--
3RW30/3RW40 soft starters	S0	S0	3RA2921-1BA00	3RA2921-2GA00
	S00	S0		--
	S2[4)]	S2[4)]	3RA2931-1AA00	--
	S3[5)]	S3[5)]	3RA1941-1AA00	--
3RF34 solid-state contactors	S00/S0	S00	3RA2921-1BA00	--
Hybrid link modules for connecting contactors with spring-type terminals to 3RV2 motor starter protectors/circuit breakers with screw terminals[6)]				
3RT2 contactors with AC or DC coil	S00	S00	3RA2911-2FA00	--
	S0	S0	3RA2921-2FA00	--

-- Version not possible

1) The link modules cannot be used for 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/circuit breakers.

2) To assemble the feeder between a motor starter protector and a contactor in size S3, the 3RA2942-1A00 standard mounting rail adapter must be used.

3) A spacer for height compensation on AC contactors, size S0, is optionally available, see page 7/49.

4) To assemble the feeder between a motor starter protector and a soft starter in size S2, the 3RA2932-1CA00 standard mounting rail adapter must be used.

5) It is only permissible to assemble the feeder between the motor starter protector and the soft starter in size S3 on a mounting plate.

6) The motor starter protector to contactor hybrid link modules cannot be used for the 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV27 and 3RV28 motor starter protectors/circuit breakers. They are suitable only for constructing direct-on-line starters.

Note:

- Link modules can be used in
  - Sizes S00 and S0: up to max. 32 A
  - Size S2: up to max. 65 A
- Hybrid link modules can be used in
  - Sizes S00 and S0: up to max. 32 A

Selection and ordering data

Accessories

	Version	For motor starter protectors/ circuit breakers Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Covers								
 3RV2 (size S3) with 3RT1946-4EA1 (left)	**Terminal covers** For cable lug and busbar connection for maintaining the required voltage clearances and as touch protection if box terminal is removed (2 units can be mounted per motor starter protector/circuit breaker)	S3	5	**3RT1946-4EA1**		1	1 unit	41B
 3RV2908-0P	**Scale covers** Sealable, for covering the set current scale	3RV20, 3RV21, 3RV24: S00 ... S3	►	**3RV2908-0P**		100	10 units	41E
 3RT2936-4EA2	**Covers for devices with screw terminals (box terminals)** Additional touch protection for fastening to the box terminals (2 units required per device)			**Screw terminals**				
	• Main current level	S2	2	**3RT2936-4EA2**		1	1 unit	41B
		S3 NEW	►	**3RT2946-4EA2**		1	1 unit	41B
Fixing accessories								
 3RV2928-0B	**Push-in lugs** For screwing the motor starter protector onto mounting plates Two units are required for each motor starter protector.	S00, S0	2	**3RV2928-0B**		100	10 units	41E
Tools for opening spring-type terminals								
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals			**Spring-type terminals**				
	Length, approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	S00 ... S3	2	**3RA2908-1A**		1	1 unit	41B

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* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Mounting accessories

Version	For motor starter protectors/ circuit breakers Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal blocks and phase barriers for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1							
 3RV2928-1H  3RT2946-4GA07  3RV2928-1K  3RV2938-1K	Note: UL 508/UL 60947-4-1 approval demands 1-inch through air spacing and 2-inch over surface spacing for "Self-Protected Combination Motor Controllers (Type E)". The following terminal blocks or phase barriers must be used for the 3RV20 motor starter protectors with screw terminals. 3RV20 motor starter protectors with spring-type terminals must be assembled with the 3RV29 infeed system for approval as "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1. The terminal block or phase barriers cannot be used in combination with the 3RV19.5 three-phase busbars. For construction with three-phase busbars, see "Busbar Accessories", page 7/40 onwards.						
Terminal blocks type E For extended clearances (1 and 2 inch)	S00, S0	▶	**3RV2928-1H**		1	1 unit	41E
	S3	NEW 3	**3RT2946-4GA07**		1	1 unit	41B
Phase barriers For extended clearances (1 and 2 inch)	S00, S0	▶	**3RV2928-1K**		1	1 unit	41E
	S2	▶	**3RV2938-1K**		1	1 unit	41E
Auxiliary terminals, 3-pole							
 3RT2946-4F	For connection of auxiliary and control cables to the main conductor connections (for one side)	S3	NEW 5	**3RT2946-4F**		1	1 unit	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Link modules

Actuating voltage of contactor	Size: 3RT2 contactors	Size: 3RV2 motor starter protectors/circuit breakers	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Link modules for motor starter protector to contactor[1]								
For electrical and mechanical connection between motor starter protector and contactor with screw terminals				**Screw terminals**				
Single-unit packaging								
AC/DC	S00	S00/S0	▶	**3RA1921-1DA00**		1	1 unit	41B
AC	S0	S00/S0	2	**3RA2921-1AA00**		1	1 unit	41B
DC	S0	S00/S0	2	**3RA2921-1BA00**		1	1 unit	41B
AC/DC	S2	S2	▶	**3RA2931-1AA00**		1	1 unit	41B
AC/DC	S3	S3	▶	**3RA1941-1AA00**		1	1 unit	41B
Multi-unit packaging								
AC/DC	S00	S00/S0	▶	**3RA1921-1D**		1	10 units	41B
AC	S0	S00/S0	2	**3RA2921-1A**		1	10 units	41B
DC	S0	S00/S0	2	**3RA2921-1B**		1	10 units	41B
AC/DC	S2	S2	▶	**3RA2931-1A**		1	5 units	41B
AC/DC	S3	S3	▶	**3RA1941-1A**		1	5 units	41B
For electrical and mechanical connection between motor starter protector and contactor with spring-type terminals				**Spring-type terminals**				
Single-unit packaging								
AC/DC	S00	S00	▶	**3RA2911-2AA00**		1	1 unit	41B
AC[2]	S0	S0	▶	**3RA2921-2AA00**		1	1 unit	41B
DC	S0	S0	▶	**3RA2921-2AA00**		1	1 unit	41B
Multi-unit packaging								
AC/DC	S00	S00	▶	**3RA2911-2A**		1	10 units	41B
AC[2]	S0	S0	▶	**3RA2921-2A**		1	10 units	41B
DC	S0	S0	▶	**3RA2921-2A**		1	10 units	41B
Spacers[2] For compensating the height on AC contactors								
Single-unit packaging	S0	S0	2	**3RA2911-1CA00**		1	1 unit	41B
Multi-unit packaging	S0	S0	2	**3RA2911-1C**		1	5 units	41B


3RA2921-1AA00


3RA2931-1AA00


3RA2911-2AA00


3RA2911-1CA00

[1] The link modules for motor starter protector to contactor cannot be used for 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/ circuit breakers.

[2] A spacer for height compensation on AC contactors size S0 is optionally available.

Note:

Link modules can be used in

- Sizes S00 and S0 up to max. 32 A
- Size S2 up to max. 65 A

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Mounting accessories

Size		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RW30, 3RW40 soft starters; 3RF34 solid-state contactors	3RV2 motor starter protectors/ circuit breakers	d					
Link modules for motor starter protector to soft starter[1] and motor starter protector to solid-state contactor[1]							
 3RA2921-1BA00	Connection between motor starter protector and soft starter / solid-state contactor with screw terminals		**Screw terminals**				
	Single-unit packaging						
S00	S00/S0	2	**3RA2921-1BA00**		1	1 unit	41B
S0	S00/S0	2	**3RA2921-1BA00**		1	1 unit	41B
S2[2]	S2	►	**3RA2931-1AA00**		1	1 unit	41B
S3[3]	S3[3]	►	**3RA1941-1AA00**		1	1 unit	41B
 3RA2931-1AA00	**Multi-unit packaging**						
S00	S00/S0	2	**3RA2921-1B**		1	10 units	41B
S0	S00/S0	2	**3RA2921-1B**		1	10 units	41B
S2[2]	S2	►	**3RA2931-1A**		1	5 units	41B
S3[3]	S3[3]	►	**3RA1941-1A**		1	5 units	41B
 3RA2921-2GA00	Connection between motor starter protector and soft starter spring-type terminals		**Spring-type terminals**				
	Single-unit packaging						
S00	S00	►	**3RA2911-2GA00**		1	1 unit	41B
S0	S0	►	**3RA2921-2GA00**		1	1 unit	41B

1) The link modules for motor starter protector to soft starter and motor starter protector to solid-state contactor cannot be used for 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/circuit breakers.

2) To assemble the feeder between a motor starter protector and a soft starter in size S2, the 3RA2932-1AC00 standard mounting rail adapter must be used.

3) It is only permissible to assemble the feeder between the motor starter protector and the soft starter in size S3 on a mounting plate.

Note:

Link modules can be used in

- Sizes S00 and S0 up to max. 32 A
- Size S2 up to max. 65 A

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

	Actuating voltage of contactor	Size: 3RT2 contactors	Size: 3RV2 motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Hybrid link modules for motor starter protector to contactor[1]									
 3RA2911-2FA00	Mechanical and electrical connection between motor starter protector with screw terminals and contactor with spring-type terminals								
	Single-unit packaging								
	AC/DC	S00	S00		▶ **3RA2911-2FA00**		1	1 unit	41B
	AC[2]/DC	S0	S0		▶ **3RA2921-2FA00**		1	1 unit	41B
 3RA2921-2FA00	**Multi-unit packaging**								
	AC/DC	S00	S00		▶ **3RA2911-2F**		1	10 units	41B
	AC[2]/DC	S0	S0		▶ **3RA2921-2F**		1	10 units	41B
 3RA2911-1CA00	**Spacers[2]** For compensating the height on AC contactors								
	Single-unit packaging	S0	S0	2	**3RA2911-1CA00**		1	1 unit	41B
	Multi-unit packaging	S0	S0	2	**3RA2911-1C**		1	5 units	41B

[1] The hybrid link modules for motor starter protector to contactor cannot be used for 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV27 and 3RV28 motor starter protectors/circuit breakers. They are suitable only for constructing direct-on-line starters.

[2] A spacer for height compensation on AC contactors size S0 is optionally available.

Note:

Hybrid link modules in sizes S00 and S0 can be used up to max. 32 A.

	For motor starter protectors/ circuit breakers Type	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor feeder connectors for motor starter protectors/circuit breakers with screw terminals								
 3RT1926-4RD01		**Adapters for motor starter protectors/circuit breakers** Ambient temperature $t_{u\,max.}$ = 60 °C		**Screw terminals**				
	3RV2.2	Size S0, rated operational current I_e at AC-3/400 V: 25 A	5	**3RT1926-4RD01**		1	1 unit	41B
 3RT1900-4RE01	3RV2.2	**Motor feeder connectors for motor starter protectors/circuit breakers** Size S0	5	**3RT1900-4RE01**		1	1 unit	41B

7

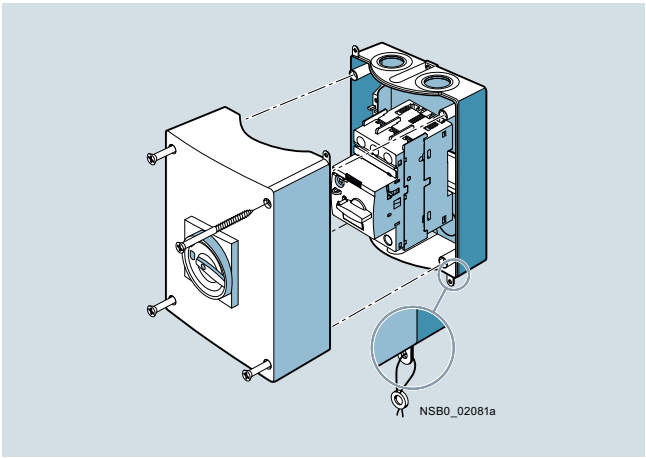
Overview

Enclosures

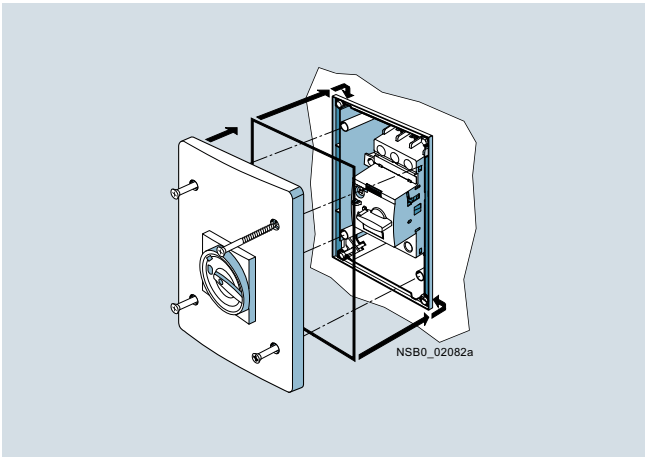
For stand-alone installation of 3RV20 to 3RV24 motor starter protectors size S00 ($I_{n\,max}$ = 16 A), S0 ($I_{n\,max}$ = 32 A) and S2 ($I_{n\,max}$ = 65 A), cast aluminum enclosures for surface mounting and molded-plastic enclosures for flush mounting are available in various dimensions.

When installed in a molded-plastic enclosure the motor starter protectors have a rated operational voltage U_e of 500 V.

The enclosures for surface mounting have the degree of protection IP55; the enclosures for flush mounting also comply with the degree of protection IP55 at the front (the flush-mounted section complies with IP20).



Enclosures for surface mounting



Enclosures (only for sizes S00 and S0)

All enclosures are equipped with N and PE terminals. There are two knock-out cable entries for cable glands at the top and two at the bottom; also on the rear corresponding cable entries are scored. There is a knockout on the top of the enclosure for indicator lights that are available as accessories.

The narrow enclosure can accommodate a motor starter protector without accessories, with transverse auxiliary switch and with lateral auxiliary switch. There is no provision for installing a motor starter protector with a signaling switch.

With size S00 to S2 circuit breakers the molded-plastic enclosures are equipped with a rotary operating mechanism.

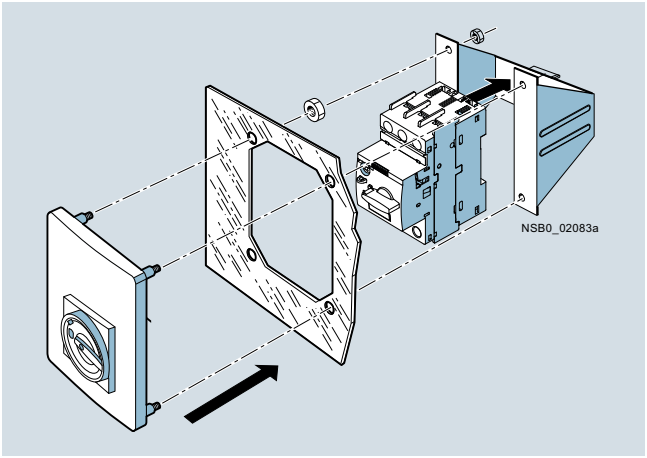
The enclosures can be supplied with either a black rotary operating mechanism or with an EMERGENCY-STOP rotary operating mechanism with a red/yellow knob.

In the OFF setting, all rotary operating mechanisms can be locked with up to three padlocks.

Front plates

Motor starter protectors are frequently required to be actuated in any enclosure. Front plates equipped with a rotary operating mechanism for 3RV20 to 3RV24 motor starter protectors sizes S00 to S3 are available for this purpose.

A holder for the motor starter protectors size S00 and S0, into which the motor starter protectors can be snapped, is available for the front plates.



Front plate (including holder) for sizes S00 and S0

Selection and ordering data

	Version	Degree of protection	Integrated terminals	Width	For 3RV20 to 3RV24 motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				mm	Size	d					
Molded-plastic enclosures for surface mounting[1]											
 3RV1933-1DA00	**With rotary operating mechanism,** lockable in 0 position	IP55	N and PE/ground	54 (for motor starter protector + lateral auxiliary switch)	S00, S0	►	**3RV1923-1CA00**		1	1 unit	41E
				72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00, S0	►	**3RV1923-1DA00**		1	1 unit	41E
				82 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S2	2	**3RV1933-1DA00**		1	1 unit	41E
 3RV1923-1FA00, 3RV1933-1GA00	**With EMERGENCY-STOP rotary operating mechanism,** lockable in 0 position	IP55	N and PE/ground	54 (for motor starter protector + lateral auxiliary switch)	S00, S0	►	**3RV1923-1FA00**		1	1 unit	41E
				72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00, S0	►	**3RV1923-1GA00**		1	1 unit	41E
				82 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S2	2	**3RV1933-1GA00**		1	1 unit	41E
Cast aluminum enclosures for surface mounting[1]											
 3RV1923-1DA01	**With rotary operating mechanism,** lockable in 0 position	IP65	PE[3]	72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00, S0	►	**3RV1923-1DA01**		1	1 unit	41E
	With EMERGENCY-STOP rotary operating mechanism, lockable in 0 position	IP65	PE[3]	72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00, S0	►	**3RV1923-1GA01**		1	1 unit	41E
Molded-plastic enclosures for flush mounting[4]											
 3RV1923-2DA00	**With rotary operating mechanism,** lockable in 0 position	IP55 (front side)	N and PE/ground	72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00, S0	2	**3RV1923-2DA00**		1	1 unit	41E
	With EMERGENCY-STOP rotary operating mechanism, lockable in 0 position	IP55 (front side)	N and PE/ground	72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00, S0	2	**3RV1923-2GA00**		1	1 unit	41E

1) The rear cable glands cannot be used on 3RV2.11-...2. and 3RV2.21-...2. devices with spring-type terminals.

2) Only valid for lateral auxiliary switches with two auxiliary contacts.

3) If required, an additional N terminal can be mounted (e.g. 8WA1011-1BG11).

4) Not suitable for 3RV2.11-...2. and 3RV2.21-...2. devices with spring-type terminals.

7

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Enclosures and front plates

Front plates

Version	Degree of protection	For 3RV20 to 3RV24 motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		Size	d					
Molded-plastic front plates with rotary operating mechanism, lockable in 0 position For actuation of 3RV2 motor starter protectors in any enclosure	IP55 (front side)	S00 to S3	▶	**3RV1923-4B**		1	1 unit	41E
Molded-plastic front plates with EMERGENCY-STOP rotary operating mechanism, red/yellow, lockable in 0 position EMERGENCY-STOP actuation of 3RV2 motor starter protectors in any enclosure	IP55 (front side)	S00 to S3	2	**3RV1923-4E**		1	1 unit	41E
Holders for front plates Holder is mounted on front plate, motor starter protector with and without accessories is snapped in.	--	S00, S0	▶	**3RV1923-4G**		1	1 unit	41E

3RV1923-4B +
3RV1923-4G

Indicator lights

Version	Rated control supply voltage U_s	For 3RV20 to 3RV24 motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V	Size	d					
Indicator lights For all enclosures and front plates • With LED lamp for versions 110 ... 120 V, with glow lamp for versions 220 ... 500 V • With colored lenses red, green, yellow-orange and clear	110 ... 120	S00 to S3	5	**3RV1903-5B**		1	1 unit	41E
	220 ... 240		5	**3RV1903-5C**		1	1 unit	41E
	380 ... 415		5	**3RV1903-5E**		1	1 unit	41E
	480 ... 500		5	**3RV1903-5G**		1	1 unit	41E

3RV1903-5B

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

The 3RV29 infeed system is a convenient means of energy supply and distribution for a group of several motor starter protectors or complete load feeders with screw or spring-type terminals in sizes S00 and S0. Motor starter protectors or load feeders with a rated current of maximum 32 A each can be used. 3RV21, 3RV27 and 3RV28 motor starter protectors/circuit breakers cannot be deployed in this system.

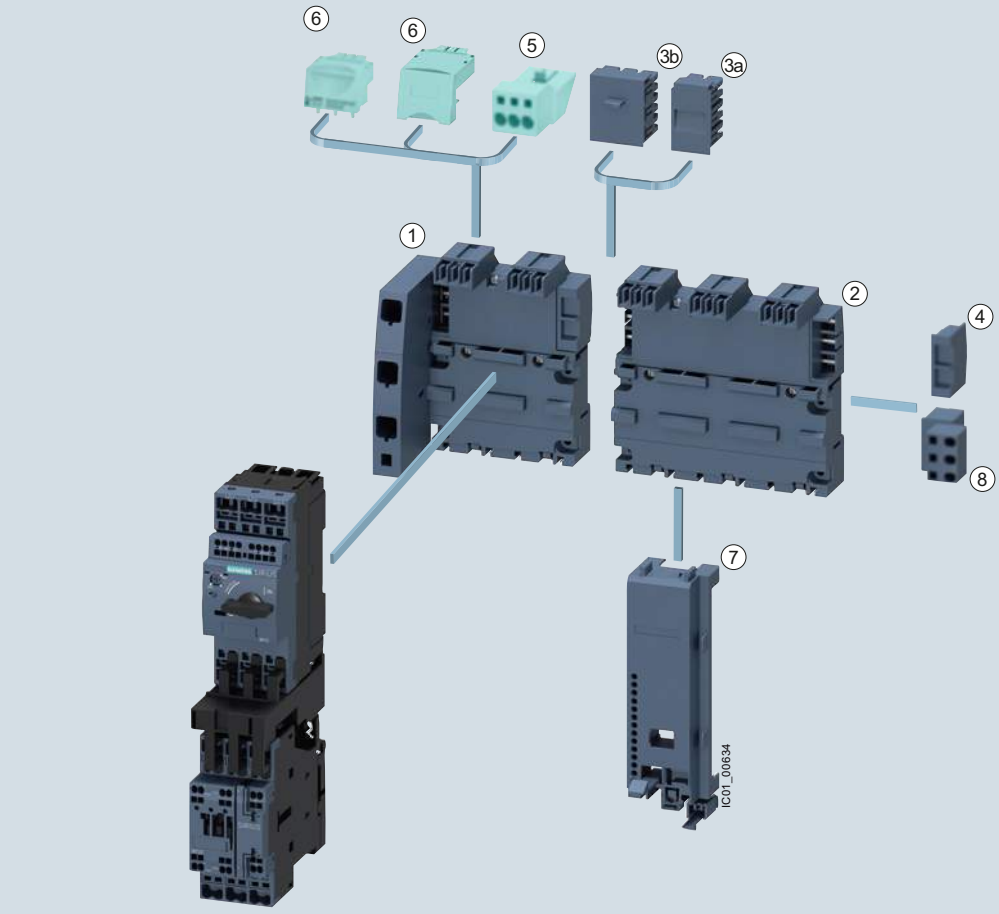
The system is based on a basic module complete with a lateral incoming unit (three-phase busbar with infeed). This infeed with spring-type terminals is mounted on the right or left, depending on the version, and can be supplied with a maximum conductor cross-section of 25 mm^2 (with end sleeve). A basic module has two sockets onto each of which a motor starter protector can be snapped.

Expansion modules (three-phase busbars for system expansion) are available for extending the system. The individual modules are connected through an expansion plug.

The electrical connection between the three-phase busbars and the motor starter protectors is implemented through plug-in connectors. The complete system can be mounted on a TH 35 standard mounting rail to IEC 60715, and can be expanded as required up to a maximum current carrying capacity of 63 A.

The system is mounted extremely quickly and easily thanks to the simple plug-in technique. Thanks to the lateral infeed, the system also saves space in the control cabinet. The additional height required for the infeed unit is only 30 mm. The alternative infeed possibilities on each side offer a high degree of flexibility for configuring the control cabinet: Infeed on left-hand or right-hand side as well as infeed on one side and outfeed on the other side to supply further loads are all possible. A terminal block with spring-type connections in combination with a standard mounting rail enables the integration of not only SIRIUS motor starter protectors but also single-phase, 2-phase and 3-phase components such as 5SY miniature circuit breakers or SIRIUS relay components.

The 3RV29 infeed system is approved in accordance with IEC to 500 V. It is also UL-approved and authorized for "Self-Protected Combination Motor Controller" (Type E starter) as well as for Type F starter (Type E starter + contactor).



1 3-phase busbar with infeed
2 3-phase busbar for system expansion
3a Expansion plug
3b Extra-wide expansion plug
4 End cover
5 Terminal block for device infeed
6 Plug-in connector
7 Contactor base
8 Terminal block

SIRIUS 3RV29 infeed systems

3RV29 infeed system

① Three-phase busbars with infeed

A three-phase busbar with infeed unit is required for connecting the incoming supply. These modules comprise one infeed module and two sockets which each accept one motor starter protector. A choice of two versions with infeed on the left or right is available. The infeed is connected to spring-type terminals. They permit an infeed with conductor cross-sections of up to 25 mm^2 with end sleeve. An end cover is supplied with each module.

② *Three-phase busbars for system expansion*

The three-phase busbars for system expansion support expansion of the system. There is a choice of modules with two or three sockets. The system can be expanded as required up to a maximum current carrying capacity of 63 A. An expansion plug is supplied with each module.

③a *Expansion plug*

The expansion plug is used for electrical connection of adjacent three-phase busbars. The current carrying capacity of this plug equals 63 A. One expansion plug is supplied with each three-phase busbar for system expansion. Additional expansion plugs are therefore only required as spare parts.

③b *Extra-wide expansion plug*

The wide expansion plug makes the electrical connection between two three-phase busbars, thus performing the same function as the 3RV2917-5BA00 expansion plug; the electrical characteristics (e.g. a current carrying capacity of 63 A) are identical.

The 3RV2917-5E expansion plug is 10 mm wider than the 3RV2917-5BA00 expansion plug, hence in the plugged state there is a distance of 10 mm between the connected three-phase busbars. This distance can be used to lay the auxiliary current and control current wiring ("wiring duct"). The motor starter protector and contactor can be wired from underneath, which means that the complete cable duct above the system can be omitted.

④ *End cover*

The end cover is used to cover the three-phase busbar at the open end of the system. This cover is therefore only required once for each system. An end cover is supplied with each three-phase busbar system with infeed. Further end covers are therefore only required as spare parts.

⑤Terminal block for device infeed

A new addition to the system is a connector for outfeeding to a device slot within a module. This offers the option not only of connecting three-phase loads to the system, but also of integrating single-phase loads into the infeed system.

⑥ *Plug-in connector*

The plug-in connector is used for the electrical connection between the three-phase busbar and the 3RV2 motor starter protector. These plug-in connectors are available for screw or spring-type terminals.

⑦ *Contactor base*

Load feeders can be assembled in the system using the S00 and S0 contactor base. The contactor bases are suitable for contactors sizes S00 and S0 with spring-type and screw terminals and are simply snapped onto the three-phase busbars. Direct-on-line starters and reversing starters are possible. One contactor base is required for direct-on-line starters and two are required for reversing starters.

To assemble load feeders for reversing starters, the contactor bases can be arranged alongside each other (90 mm overall width). In this case the mechanical interlocking of the contactors is possible. The S0 contactor bases are also suitable for soft starters size S00 and S0 with screw terminal.

The infeed system is designed for mounting onto a TH 35 standard mounting rail with 7.5 mm overall depth. This standard mounting rail gives the contactor base a stable mounting surface to sit on. If standard mounting rails with a depth of 15 mm are used, the spacer connected to the bottom of the contactor base must be knocked out and plugged into the standard mounting rail mating piece, which is also located on the underside. Then the contactor base also has a stable mounting surface. When standard mounting rails with a depth of 7.5 mm are used, the spacer has no function and can be removed.

The link modules are used for direct start load feeders, in which case the use of a contactor base is not absolutely necessary. Motor starter protector and contactor assemblies can then be directly snapped onto the sockets of the three-phase busbars. For feeders of sizes S00 and S0, the corresponding 3RA1921-1...., 3RA2911-2...., 3RA2921-1.... or 3RA2921-2.... link modules should generally be used.

⑧ *Terminal block*

The 3RV2917-5D terminal block enables the integration of not only SIRIUS motor starter protectors but also single-phase, 2-phase and 3-phase components. The three phases can be fed out of the system using the terminal block; which means that single-phase loads can also be integrated in the system. The terminal block is plugged into the slot of the expansion plug and thus enables outfeeding from the middle or end of the infeed system. The terminal block can be rotated through 180° and be locked to the support modules of the infeed system. In addition, the 45 mm wide TH 35 3RV1917-7B standard mounting rail option for screwing onto the support plate facilitates plugging the single-phase, two-phase and three-phase components onto the infeed system.

Technical specifications

More information
Manual "SIRIUS – SIRIUS 3RV2 Motor Starter Protectors", see https://support.industry.siemens.com/cs/ww/en/view/60279172

General data

Type					**3RV29.7**
Size					S00, S0
Standards					
• IEC 60947-2					✓
• IEC 60947-4-1					✓
• UL 508/UL 60947-4-1					✓
Rated current I_n				A	63
Permissible rated current at inside temperature of control cabinet					
Motor starter protectors	Size	Rated current	Inside temperature of control cabinet		
• 3RV2.11	S00	... 14 A	60 °C	%	100
		> 14 ... 16 A	40 °C	%	100
			60 °C	%	87
• 3RV2.21	S0	... 16 A	60 °C	%	100
		> 16 ... 25 A	40 °C	%	100
			60 °C	%	87
		> 25 ... 32 A	40 °C	%	87
Permissible ambient temperature					
• Storage/transport				°C	–50 ... +80
• Operation				°C	–20 ... +60
Rated operational voltage U_e					
• Acc. to IEC		10 % overvoltage		V AC	500
		5 % overvoltage		V AC	525
• Acc. to UL/CSA				V AC	600
Rated frequency				Hz	50/60
Rated impulse withstand voltage U_{imp}				kV	6
Short-circuit strength					Corresponds to the mounted motor starter protector or load feeder
Degree of protection acc. to IEC 60529					IP20 (In the terminal compartment of the infeed without connected IP00 conductor)
Touch protection acc. to IEC 60529					Finger-safe

✓ Yes

Conductor cross-sections

Type		**Three-phase busbar with infeed 3RV2917-1A, 3RV2917-1E**	**Terminal block 3RV2917-5D**	**Terminal block for device infeed 3RV2917-5FA00**
Conductor cross-sections (min./max.)				
• Solid or stranded	mm^2	4 ... 25	1.5 ... 6	1 ... 10
• Finely stranded with end sleeve	mm^2	4 ... 25	1.5 ... 4	1 ... 6
• Finely stranded without end sleeve	mm^2	6 ... 25	1.5 ... 6	--
• AWG cables	AWG	10 ... 3	15 ... 10	18 ... 8

-- No

3RV29 infeed system

Selection and ordering data

	Type	Version	For 3RV20, 3RV23, 3RV24 motor starter protectors Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Three-phase busbars with infeed									
 3RV2917-1A	**Three-phase busbars with infeed** incl. 3RV2917-6A end cover	For 2 motor starter protectors with screw or spring-type terminals							
		• With infeed on the left	S00, S0	2	**3RV2917-1A**		1	1 unit	41E
		• With infeed on the right	S00, S0	2	**3RV2917-1E**		1	1 unit	41E
Three-phase busbars for system expansion									
 3RV2917-4A	**Three-phase busbars** incl. 3RV2917-5BA00 expansion plug	For motor starter protectors with screw or spring-type terminals							
		• For 2 motor starter protectors	S00, S0	2	**3RV2917-4A**		1	1 unit	41E
		• For 3 motor starter protectors	S00, S0	2	**3RV2917-4B**		1	1 unit	41E
Plug-in connectors									
 3RV2917-5AA00	**Plug-in connectors** to make contact with motor starter protectors	• For spring-type terminals			**Spring-type terminals**				
		- Single-unit packaging	S00[1] S0[2]	2 2	**3RV2917-5AA00** **3RV2927-5AA00**		1 1	1 unit 1 unit	41E 41E
		- Multi-unit packaging	S00[1] S0[2]	2 2	**3RV2917-5A** **3RV2927-5A**		1 1	10 units 10 units	41E 41E
 3RV2917-5CA00		• For screw terminals			**Screw terminals**				
		- Single-unit packaging	S00[1] S0[2]	2 2	**3RV2917-5CA00** **3RV1927-5AA00**		1 1	1 unit 1 unit	41E 41E
		- Multi-unit packaging	S00[1] S0[2]	2 2	**3RV2917-5C** **3RV1927-5A**		1 1	10 units 10 units	41E 41E

[1] I > 14 A, please note derating.

[2] I > 16 A, please note derating.

	Type	Version	For contactors Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contactor bases									
 3RV2927-7AA00	**Contactor bases** for mounting direct-on-line or reversing starters	Single-unit packaging	S00	2	**3RV2917-7AA00**		1	1 unit	41E
			S00, S0	2	**3RV2927-7AA00**		1	1 unit	41E

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

	Type	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal blocks								
 3RV2917-5D	**Terminal blocks** for integration of single-phase, two-phase and three-phase components	Single-unit packaging	2	**3RV2917-5D**		1	1 unit	41E
TH 35 standard mounting rails, width 45 mm								
 3RV1917-7B	**TH 35 standard mounting rails** acc. to IEC 60715, width 45 mm For mounting onto three-phase busbars	Single-unit packaging	2	**3RV1917-7B**		1	1 unit	41E
Extra-wide expansion plugs								
 3RV2917-5E	**Extra-wide expansion plugs** As accessory	Single-unit packaging	2	**3RV2917-5E**		1	1 unit	41E
Expansion plugs								
 3RV2917-5BA00	**Expansion plugs**[1] As spare part	Single-unit packaging	2	**3RV2917-5BA00**		1	1 unit	41E
End covers								
 3RV2917-6A	**End covers**[2] As spare part	Multi-unit packaging	2	**3RV2917-6A**		100	10 units	41E
Terminal blocks for device infeed								
 3RV2917-5FA00	**Terminal blocks for device infeed**	Single-unit packaging	2	**3RV2917-5FA00**		1	1 unit	41E

1) The expansion plug is included in the scope of supply of the 3RV2917-4. three-phase busbars for system expansion.

2) The end cover is included in the scope of supply of the 3RV2917-1. three-phase busbars with infeed system.

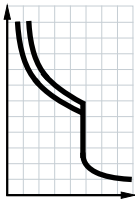
For fuse monitoring

Technical specifications

See pages 7/10, 7/12, 7/14, 7/18, 7/19 and 7/22

Selection and ordering data

Without auxiliary switches



Rated current	Thermal overload releases	Instantaneous overcurrent release	Short-circuit breaking capacity at 400 V AC	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
I_n		$I >$	I_{cu}		Article No. Price per PU			
A	A	A	kA	d				
Size S00								
0.2	0.2	1.2	100	▶	**3RV1611-0BD10**	1	1 unit	41E

3RV1611-0BD10

Note:

The auxiliary switch required for signaling must be ordered separately.

Accessories

Version	Contacts	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
			Article No. Price per PU			
		d				
Mountable auxiliary switches (essential accessories)						
Transverse auxiliary switches With screw terminals, mountable on front	1 NO + 1 NC	▶	**3RV2901-1E**	1	1 unit	41E
Lateral auxiliary switches With screw terminals, mountable on the left	1 NO + 1 NC	▶	**3RV2901-1A**	1	1 unit	41E

3RV2901-1E

3RV2901-1A

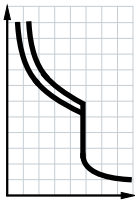
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Technical specifications

See page 7/23

Selection and ordering data

Voltage transformer circuit breakers with transverse auxiliary switches (1 CO)



Rated current	Thermal overload releases	Instanta-neous overcurrent release	Auxiliary switch integrated in the motor starter protector, transverse	Short-circuit breaking capacity at 400 V AC	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
I_n		$I >$		I_{cu}		Article No. Price per PU			
A	A	A		kA	d				
Size S00									
1.4	1.4	6	1 CO	50	5	**3RV1611-1AG14**	1	1 unit	41E
2.5	2.5	10.5	1 CO	50	▶	**3RV1611-1CG14**	1	1 unit	41E
3	3	20	1 CO	50	▶	**3RV1611-1DG14**	1	1 unit	41E

3RV1611-1.G14

Accessories

Version	Contacts	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
			Article No. Price per PU			
		d				
Mountable auxiliary switches for other signaling purposes						
Lateral auxiliary switches With screw terminals, mountable on the left	1 NO + 1 NC	▶	**3RV2901-1A**	1	1 unit	41E

3RV2901-1A

Overview

More information
Home page, see www.siemens.com/sirius-circuit-breaker

SIRIUS 3RV1063-7AL10 molded case motor starter protector

The 3RV10 and 3RV13 molded case motor starter protectors for up to 800 A are compact, current-limiting motor starter protectors which can be used above all in motor feeders for special voltages of 440 V, 480 V, 550 V and 690 V. They are used for switching and protecting three-phase motors and other loads with rated currents up to 800 A.

Note:

For motor feeders above 100 A and at 400 V and 500 V, the 3VL molded case motor starter protectors must be used, see Catalog LV 10.

Type of construction

The molded case motor starter protectors are available in 4 widths:

- 3RV1353 – width 90 mm, max. rated current 32 A at 550 V AC suitable for three-phase motors up to 22 kW
- 3RV1.6. – width 105 mm, max. rated current 250 A at 690 V AC suitable for three-phase motors up to 160 kW
- 3RV1.7. – width 140 mm, max. rated current 630 A at 690 V AC suitable for three-phase motors up to 315 kW
- 3RV1.83 – width 210 mm, max. rated current 800 A at 690 V AC suitable for three-phase motors up to 500 kW

The 3RV1 molded case motor starter protectors for up to 800 A can be mounted in horizontal, vertical or lying arrangement directly on a mounting plate or mounting rail. Their rated data are adversely affected as the result.

The phase barriers for better insulation between the phases are included in the scope of supply, and it is essential to use them.

The motor starter protectors can be supplied through top and bottom terminals without impairing their function, enabling them to be installed in any type of switchgear without any further steps.

Connection methods

The 3RV1 molded case motor starter protectors up to 800 A are suitable solely for screw connection.

⊕	Screw terminals
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Article No. scheme

Product versions		Article number
Molded case motor starter protectors		**3RV1** □□□ – □□□□□ – □□□□
Type of motor starter protector/ circuit breaker	e. g. 0 = for motor protection	□
Rated current	e. g. 6 = 100 A	□
Breaking capacity	e. g. 3 = standard switching capacity	□
Setting range for overload release	e. g. 7A = 40 ... 100 A	□□
Trip class (CLASS)	e.g. L = CLASS 10A, 10, 20, 30	□
Connection methods	e. g. 1 = screw terminals	□
With or without auxiliary switch	e. g. 0 = without	□
Special versions		□□□□
Example		**3RV1 0 6 3 – 7 A L 1 0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

- High short-circuit breaking capacity in the feeder
- Optimum usability in motor feeders for the special voltages 440 V, 480 V, 550 V and 690 V
- Compact design
- The releases are available both in purely magnetic (up to 32 A) and in solid-state versions (100 A to 800 A).
- Available for motor or starter protection (short-circuit protection alone)

Application

Operating conditions

The 3RV1 molded case motor starter protectors for up to 800 A can be operated at ambient temperatures between -25 °C and +70 °C. They can be used according to IEC 60721-2-1 in the most difficult environmental conditions with a hot and damp climate.

Since operational currents, starting currents and current peaks are different even for motors with identical power ratings due to the inrush current, the motor ratings in the selection tables are only guide values. The specific rated and start up data of the motor to be protected is always paramount to the choice of the most suitable molded case motor starter protectors.

The 3RV1 molded case motor starter protectors up to 800 A have not been tested for use with frequency converters. The possibility of premature tripping in such applications cannot therefore be ruled out.

Possible uses

The 3RV1 molded case motor starter protectors for up to 800 A are suitable as switching and protection devices for motors. The following versions are available:

- For motor protection;
  the overload and short-circuit releases are designed for optimized protection and direct-on-line starting of three-phase AC squirrel-cage motors. The motor starter protectors have an electronic release which not only provides short-circuit and overload protection but is also sensitive to phase failure and phase asymmetry and offers protection in the event of rotor blockage.
- For starter combinations;
  these molded case motor starter protectors are used for short-circuit protection in combinations of circuit breaker, motor contactor and overload relay. They are equipped with a purely magnetic release (up to 32 A) or a solid-state release (100 A to 800 A).

Standards and specifications

The overcurrent releases for motor protection comply with IEC 60947-4-1. Isolating features are also compliant with IEC 60947-2.

The 3RV1 molded case motor starter protectors comply in addition with IEC 60068-2-6 (shock and vibration strength) and are certified for the specifications of the major marine classification societies:

- RINA
- Det Norske Veritas
- Bureau Veritas
- Lloyds Register of Shipping
- Germanischer Lloyd
- American Bureau of Shipping

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RV1 motor starter protectors/circuit breakers in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see Preface on page 7.

General data

Technical specifications

More information

Configuration Manual "SIRIUS Configuration – Selection Data for Fuseless Load Feeders", see https://support.industry.siemens.com/cs/ww/en/view/40625241

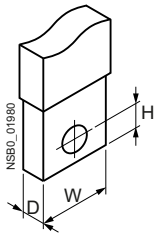
Reference Manual "Protection Equipment – Circuit Breakers · Molded Case Circuit Breakers", see https://support.industry.siemens.com/cs/ww/en/view/35681461

General data

Type		3RV1063	3RV1073	3RV1083	3RV1353	3RV1363	3RV1364	3RV1373	3RV1374	3RV1383
Dimensions										
• W	mm	105	140	210	90	105	105	140	140	210
• H	mm	205	205	268	130	205	205	205	205	268
• D	mm	139	139	159	102	139	139	139	139	159
Standard		IEC 60947-2, EN 60947-2								
Motor protection		✓			--					
Starter combinations		--			✓					
Rated current I_n	A	160	400	630	160	250		400, 630		630, 800
Number of poles		3								
Rated operational voltage U_e 50 ... 60 Hz AC	V	690								
Rated impulse withstand voltage U_{imp}	V	8								
Rated insulation voltage U_i	V	1 000			800	1 000				
Test voltage at industrial frequency for 1 min	V	3 500			3 000	3 500				
Rated ultimate short-circuit breaking capacity I_{cu}										
• At 220/230 V AC, 50 ... 60 Hz	kA	200			120	200				
• At 380/415 V AC, 50 ... 60 Hz	kA	120		100	85	120	200	120	200	100
• At 440 V AC, 50 ... 60 Hz	kA	100		80	75	100	180	100	180	80
• At 500 V AC, 50 ... 60 Hz	kA	85		65	50	85	150	85	150	65
• At 550 V AC, 50 ... 60 Hz	kA	--			35	--				
• At 690 V AC, 50 ... 60 Hz	kA	70		30	10	70	80	70	80	30
Rated service short-circuit breaking capacity I_{cs} (% of I_{cu})										
• At 220/230 V AC, 50 ... 60 Hz	%	100		75	100					75
• At 380/415 V AC, 50 ... 60 Hz	%	100		75		100				75
• At 440 V AC, 50 ... 60 Hz	%	100		75		100				75
• At 500 V AC, 50 ... 60 Hz	%	100		75		100		100[1]/75[2]	100	75
• At 690 V AC, 50 ... 60 Hz	%	100		75		100		100[1]/50[2]	100	75
Rated short-circuit making capacity (415 V)	kA	264		220	187	264	440	264	440	220
Break time (415 V at I_{cu})	ms	5	6	7	3	5		6		7
Category (IEC 60947-2)		A	B (400 A), A (630 A)	B	A			B (400 A), A (630 A)		B
Isolating features		✓								
Trip class CLASS		10A, 10, 20, 30			--					
Releases										
• Magnetic type		--			✓	--				
• Electronic (motor protection)		✓			--[3]					
• Electronic (starter combinations)		--				✓				
Permissible ambient temperature										
• Operation	°C	-25 ... +70[4]								
• Storage	°C	-40 ... +70								
Mechanical endurance										
• Operating cycles		20 000			25 000	20 000				
• Operating cycles per hour		240	120		240			120		
Electrical endurance										
• Operating cycles		8 000	7 000	5 000	8 000			7 000		5 000
• Operating cycles per hour (415 V AC)		120	60		120			60		

✓ Has this function
-- Does not have this function

[1] Value applies for 3RV1373-7GN10 molded case motor starter protectors.
[2] Value applies for 3RV1373-7JN10 molded case motor starter protectors.
[3] For overload protection of the motors, appropriate overload relays must be used.
[4] From 50 °C, derating applies in some cases.

Main circuit terminals						
Type		**3RV1353**	**3RV1.6.**	**3RV1.7.**	**3RV1083-7JL10, 3RV1383-7JN10**	**3RV1383-7KN10**
Terminal dimensions						
Front-accessible standard terminals						
Busbars/cable lug						
Number	Unit(s)	11			2	
Dimensions						
• W	mm	20	25	35	40	50
• D	mm	5	8	10	5	
• H	mm	7.5	9.5	11	12	
• Lock hasp diameter	mm	6.5	8.5	10.5	7	
Front-extended terminals						
Busbars						
Number	Unit(s)	1		2		
Dimensions						
• W	mm	20		30	40	50
• D	mm	4	10	7	5	5
• Lock hasp diameter	mm	8.5	10	11		14
Cable lug						
Number	Unit(s)	1		2		
Dimensions						
• W	mm	20		30	40	50
• Lock hasp diameter	mm	8.5	10	11		14
Front-extended cable terminals for copper cable						
Busbars, flexible						
Number	Unit(s)	1			--	
Dimensions W x D x N						
• W	mm	13	15.5	24	--	
• D	mm	0.5	0.8	1	--	
• N (= number of laminations)	mm	10			--	
Cable lug, flexible						
Number	Unit(s)	1 or 2			--	
Dimensions						
• For 1 unit	mm^2	1 ... 70	2.5 ... 120	16 ... 240	--	
• For 2 units	mm^2	1 ... 50	2.5 ... 95	16 ... 150	--	
Cable lug, rigid						
Number	Unit(s)	1		1 or 2	--	
Dimensions						
• For 1 unit	mm^2	1 ... 95	2.5 ... 185	16 ... 300	--	
• For 2 units (for outside mounting)	mm^2	--		120 ... 240	--	
Rear terminals						
Busbars						
Number	Unit(s)	1		2		
Dimensions						
• W	mm	20		30	40	50
• D	mm	4	10	7	5	
• Lock hasp diameter	mm	8.5		11	14	

General data

Auxiliary switches

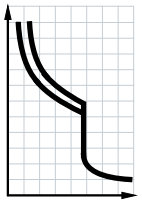
Type		3RV1991-1.A0
Rated operational current I_e		
• At 250 V AC/DC		
- At AC-14 (utilization category according to IEC 60947-5-1)		
Supply voltage 125 V	A	6
Supply voltage 250 V	A	5
- At DC-13 (utilization category according to IEC 60947-5-1)		
Supply voltage 125 V	A	0.3
Supply voltage 250 V	A	0.15
• At 24 V DC		
- Supply voltage 24 V	mA	≥ 0.75
- Supply voltage 5 V	mA	≥ 1

Auxiliary releases

		Power consumption during pick-up			
Molded case motor starter protectors		**3RV1353**		**3RV1.6., 3RV1.7., 3RV1.83**	
Version		AC	DC	AC	DC
Undervoltage releases		**3RV1952-1A.0**		**3RV1982-1A.0**	
• 24 ... 30 V AC/DC		1.5 VA	1.5 W	6 VA	3 W
• 110 ... 127 V AC/110 ... 125 V DC		2 VA	2 CO	6 VA	3 W
• 220 ... 240 V AC/220 ... 250 V DC		2.5 VA	2.5 W	6 VA	3 W
Opening times	ms	15	15	≤ 25	≤ 15
Shunt releases		**3RV1952-1E.0**		**3RV1982-1E.0**	
• 24 ... 30 V AC/DC		50 VA	50 W	150 VA	150 W
• 110 ... 127 V AC/110 ... 125 V DC		50 VA	50 W	150 VA	150 W
• 220 ... 240 V AC/220 ... 250 V DC		50 VA	50 W	150 VA	150 W
Opening times	ms	15	15	15	15

Selection and ordering data

CLASS 10A, 10, 20, 30; without auxiliary switch



Rated current	Current setting of the inverse-time delayed overload releases "L"	Operating current of the instantaneous short-circuit releases "I"	Short-circuit breaking capacity at 400 V AC	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
I_n	I_R	I_i	I_{cu}		Article No. / Price per PU			
A	A	A	kA	d				
With electronic releases								
Standard switching capacity, adjustable short-circuit and overload release, TU 4								
100	40 ... 100	600 ... 1 300	120	20	**3RV1063-7AL10**	1	1 unit	41E
160	64 ... 160	960 ... 2 080	120	20	**3RV1063-7CL10**	1	1 unit	41E
200	80 ... 200	1 200 ... 2 600	120	20	**3RV1063-7DL10**	1	1 unit	41E
400	160 ... 400	2 400 ... 5 200	120	20	**3RV1073-7GL10**	1	1 unit	41E
630	252 ... 630	3 780 ... 8 190	100	20	**3RV1083-7JL10**	1	1 unit	41E

3RV10.3-7.L10

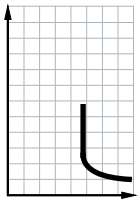
TU = trip unit (release)

Further accessories can be ordered separately
(see "Accessories" page 7/69 onwards).

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data

Without auxiliary switches



Rated current	Inverse-time delayed overload release "L"	Operating current of the instantaneous short-circuit releases "I"	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
I_n		$I >$	I_{cu}		Article No.	Price per PU			
A	A	A	kA	d					
With magnetic releases									
Standard switching capacity, non-adjustable short-circuit release, TU 1									
1	Without	13	85	20	**3RV1353-6AP10**		1	1 unit	41E
1.6	Without	21	85	20	**3RV1353-6BP10**		1	1 unit	41E
2	Without	26	85	20	**3RV1353-6CP10**		1	1 unit	41E
3.2	Without	42	85	20	**3RV1353-6DP10**		1	1 unit	41E
4	Without	52	85	20	**3RV1353-6EP10**		1	1 unit	41E
5	Without	65	85	20	**3RV1353-6FP10**		1	1 unit	41E
6.5	Without	85	85	20	**3RV1353-6GP10**		1	1 unit	41E
8.5	Without	111	85	20	**3RV1353-6HP10**		1	1 unit	41E
12.5	Without	163	85	20	**3RV1353-6JP10**		1	1 unit	41E
Standard switching capacity, adjustable short-circuit release, TU 2									
20	Without	120 ... 240	85	20	**3RV1353-6LM10**		1	1 unit	41E
32	Without	192 ... 384	85	20	**3RV1353-6MM10**		1	1 unit	41E

3RV1353-6.P10

With electronic releases									
Standard switching capacity, adjustable short-circuit release, TU 3									
100	Without	100 ... 1 000	120	20	**3RV1363-7AN10**		1	1 unit	41E
160	Without	160 ... 1 600	120	20	**3RV1363-7CN10**		1	1 unit	41E
250	Without	250 ... 2 500	120	20	**3RV1363-7EN10**		1	1 unit	41E
400	Without	400 ... 4 000	120	20	**3RV1373-7GN10**		1	1 unit	41E
630	Without	630 ... 6 300	120	20	**3RV1373-7JN10**		1	1 unit	41E
630	Without	630 ... 6 300	100	20	**3RV1383-7JN10**		1	1 unit	41E
800	Without	800 ... 8 000	100	20	**3RV1383-7KN10**		1	1 unit	41E
Increased switching capacity, adjustable short-circuit release, TU 3									
100	Without	100 ... 1 000	200	20	**3RV1364-7AN10**		1	1 unit	41E
160	Without	160 ... 1 600	200	20	**3RV1364-7CN10**		1	1 unit	41E
250	Without	250 ... 2 500	200	20	**3RV1364-7EN10**		1	1 unit	41E
400	Without	400 ... 4 000	200	20	**3RV1374-7GN10**		1	1 unit	41E

3RV13..-7.N10

TU = trip unit (release)

Further accessories can be ordered separately
(see "Accessories" page 7/69 onwards).

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data

Auxiliary switches

Type	Version	For molded case motor starter protectors	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
 3RV1991-1AA0								
Auxiliary switches For mounting on the front	1 signaling switch Off-On + 1 tripped signal (250 V AC/DC)	3RV1353, 3RV1.6. ... 3RV1.83	20	**3RV1991-1AA0**		1	1 unit	41E
	3 signaling switches Off-On + 1 tripped signal (250 V AC/DC)		20	**3RV1991-1BA0**		1	1 unit	41E
	3 signaling switches Off-On + 1 tripped signal (24 V DC)		20	**3RV1991-1CA0**		1	1 unit	41E
Connection cables for auxiliary switches	Length 2 m, 6-pole	3RV1353, 3RV1.6. ... 3RV1.83	20	**3RV1991-1FA0**		1	1 unit	41E

Auxiliary releases

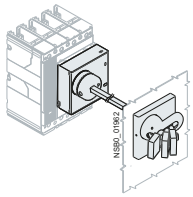
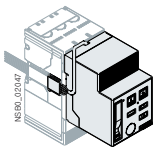
Type	Rated control supply voltage U_s AC 50/60 Hz	Rated control supply voltage U_s DC	For molded case motor starter protectors	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V	V		d					
 3RV1952-1AA0									
Undervoltage releases For mounting on the front	24 ... 30	24 ... 30	3RV1353	20	**3RV1952-1AA0**		1	1 unit	41E
	110 ... 127	110 ... 125		20	**3RV1952-1AD0**		1	1 unit	41E
	220 ... 240	220 ... 250		20	**3RV1952-1AE0**		1	1 unit	41E
	24 ... 30	24 ... 30	3RV1.6. ... 3RV1.83	20	**3RV1982-1AA0**		1	1 unit	41E
	110 ... 127	110 ... 125		20	**3RV1982-1AD0**		1	1 unit	41E
	220 ... 240	220 ... 250		20	**3RV1982-1AF0**		1	1 unit	41E
 3RV1952-1EA0									
Shunt releases For mounting on the front	24 ... 30	24 ... 30	3RV1353	20	**3RV1952-1EA0**		1	1 unit	41E
	110 ... 127	110 ... 125		20	**3RV1952-1ED0**		1	1 unit	41E
	220 ... 240	220 ... 250		20	**3RV1952-1EF0**		1	1 unit	41E
	24 ... 30	24 ... 30	3RV1.6. ... 3RV1.83	20	**3RV1982-1EA0**		1	1 unit	41E
	110 ... 127	110 ... 125		20	**3RV1982-1ED0**		1	1 unit	41E
	220 ... 240	220 ... 250		20	**3RV1982-1EF0**		1	1 unit	41E
Connection cables for undervoltage and shunt releases	Length 2 m, 6-pole		3RV1353, 3RV1.6. ... 3RV1.83	20	**3RV1992-1FA0**		1	1 unit	41E

7

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Rotary operating mechanisms, mounting accessories

Selection and ordering data

	Version		For molded case motor starter protectors	SD d	**Screw terminals** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rotary operating mechanisms									
 3RV19.6-0BA0	**Lever-type rotary operating mechanisms**	with adjustable distance, with lock/door interlocking (padlocks are not included in scope of supply)	3RV1353	20	**3RV1956-0BA0**		1	1 unit	41E
			3RV1.6., 3RV1.7.	20	**3RV1976-0BA0**		1	1 unit	41E
			3RV1.83	20	**3RV1986-0BA0**		1	1 unit	41E
 3RV19.6-3AP3	**Motorized operating mechanisms**	With stored energy mechanism, 220 ... 250 V AC/DC	3RV1.6., 3RV1.7.	20	**3RV1976-3AP3**		1	1 unit	41E
			3RV1.83	20	**3RV1986-3AP3**		1	1 unit	41E
Connections									
 3RV1975-1CA0	**Connections**	Front-extended (1 set = 6 units)	3RV1353	20	**3RV1955-1AA0**		1	1 unit	41E
			3RV1.6.	20	**3RV1965-1BA0**		1	1 unit	41E
			3RV1.7.	20	**3RV1975-1CA0**		1	1 unit	41E
			3RV1.83-7J.10	20	**3RV1985-1DA0**		1	1 unit	41E
			3RV1.83-7KN10	20	**3RV1985-1EA0**		1	1 unit	41E
 3RV1955-3AA0		Rear (1 set = 3 units)	3RV1353	20	**3RV1955-3AA0**		1	1 unit	41E
			3RV1.6.	20	**3RV1965-3AA0**		1	1 unit	41E
			3RV1.7.	20	**3RV1975-3AA0**		1	1 unit	41E
			3RV1.83	20	**3RV1985-3AA0**		1	1 unit	41E
 3RV1975-2AA0	**Cable terminals**	Front-extended (1 set = 6 units)	3RV1353	20	**3RV1955-2AA0**		1	1 unit	41E
			3RV1.6.	20	**3RV1965-2BA0**		1	1 unit	41E
			3RV1.7.-7G.10	20	**3RV1975-2CA0**		1	1 unit	41E
			3RV1.73-7JN10	20	**3RV1975-2DA0**		1	1 unit	41E

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

More information	
Home page, see http://www.siemens.com/sirius-overloadrelays Industry Mall, see • www.siemens.com/product?3RU2 • www.siemens.com/product?3RB3 • www.siemens.com/product?3RB2	Configuration Manuals, see • "SIRIUS Configuration – Selection Data for Fuseless Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/40625241 • "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/39714188

Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
General data						
Sizes	S00 ... S3	S00 ... S3	S6 ... S12	S00 ... S12	S00 ... S12	• Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, etc., ...) • Permit the mounting of slim and compact load feeders in widths of 45 mm (S00, S0), 55 mm (S2), 70 mm (S3), 120 mm (S6) and 145 mm (S10/S12); this does not include the current measuring modules for the 3RB22 to 3RB24 evaluation modules sizes S00 to S3 • Simplify configuration
Seamless current range	0.11 ... 100 A	0.1 ... 115 A	50 ... 630 A	0.3 ... 630 A (up to 820 A)[1]	0.3 ... 630 A (up to 820 A)[1]	• Allows easy and consistent configuration with one series of overload relays (for small to large loads)
Protection functions						
Tripping due to overload	✓	✓	✓	✓	✓	• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload
Tripping due to phase asymmetry	✓	✓	✓	✓	✓	• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to phase asymmetry
Tripping due to phase failure	✓	✓	✓	✓	✓	• Minimizes heating of three-phase motors during phase failure
Protection of single-phase loads	✓	--	--	✓	✓	• Enables the protection of single-phase loads
Tripping due to overtemperature by **integrated thermistor motor protection function**	--[2]	--[2]	--[2]	✓	✓	• Provides optimum temperature-dependent protection of loads against excessive temperature rises, e.g. for stator-critical motors or in the event of insufficient coolant flow, contamination of the motor surface or long starting or braking operations • Eliminates the need for additional special equipment • Saves space in the control cabinet • Reduces wiring outlay and costs
Tripping due to ground fault by **internal ground-fault detection (can be activated)**	--	✓ (only 3RB31)	✓ (only 3RB21)	✓	✓	• Provides optimum protection of loads against high-resistance short circuits or ground faults due to moisture, condensed water, damage to the insulation material, etc. • Eliminates the need for additional special equipment • Saves space in the control cabinet • Reduces wiring outlay and costs

✓ Available
-- Not available

[1] Motor currents up to 820 A can be recorded and evaluated by a current measuring module, e.g. 3RB2906-2BG1 (0.3 to 3 A), in combination with a 3UF1868-3GA00 (820 A/1 A) series transformer.
For 3UF18 transformers see page 10/22.

[2] The SIRIUS 3RN thermistor motor protection devices can be used to provide additional temperature-dependent protection.

General data





Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Features						
RESET function	✓	✓	✓	✓	✓	• Allows manual or automatic resetting of the device
Remote RESET function	✓ (by means of separate module)	✓ (only with 3RB31 and external auxiliary voltage 24 V DC)	✓ (only with 3RB21 and external auxiliary voltage 24 V DC)	✓ (electrically via external button)	✓ (electrically with button or via IO-Link)	• Allows the remote resetting of the device
TEST function for auxiliary contacts	✓	✓	✓	✓	✓	• Allows easy checking of the function and wiring
TEST function for electronics	--	✓	✓	✓	✓	• Allows checking of the electronics
Status display	✓	✓	✓	✓	✓	• Displays the current operating state
Large current adjustment button	✓	✓	✓	✓	✓	• Makes it easier to set the relay exactly to the correct current value
Integrated auxiliary contacts (1 NO + 1 NC)	✓	✓	✓	✓ (2 ×)	--	• Allows the load to be switched off if necessary • Can be used to output signals
Integrated auxiliary contacts (1 CO and 1 NO in series)	--	--	--	--	✓	• Enables the controlling of contactors directly from the higher-level control system through IO-Link
IO-Link connection	--	--	--	--	✓	• Reduction of wiring in the control cabinet • Enables communication
Connection of optional hand-held device	--	--	--	--	✓	• Enables local operation
Communication capability through IO-Link						
Full starter functionality through IO-Link	--	--	--	--	✓	• Enables in combination with the SIRIUS 3RT contactors the assembly of communication-capable motor starters (direct-on-line, reversing and star-delta (wye-delta) starting)
Readout of diagnostics functions	--	--	--	--	✓	• Enables the reading out of diagnostics information such as overload, open circuit, ground fault, etc.
Readout of current values	--	--	--	--	✓	• Enables the reading out of current values and their direct processing in the higher-level control system
Readout of all set parameters	--	--	--	--	✓	• Enables the reading out of all set parameters, e.g. for plant documentation

✓ Available

-- Not available





Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Design of load feeders						
Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	✓	✓	✓	✓	✓	• Provides optimum protection of the loads and operating personnel in the event of short circuits due to insulation faults or faulty switching operations
Electrical and mechanical matching to 3RT contactors	✓	✓	✓	✓[1]	✓[1]	• Simplifies configuration • Reduces wiring outlay and costs • Enables stand-alone installation as well as space-saving direct mounting
Straight-through transformers for main circuit[2] (in this case the cables are routed through the feed-through openings of the overload relay and connected directly to the box terminals of the contactor)	--	✓ (S2, S3)	✓ (S6)	✓ (S00 ... S6)	✓ (S00 ... S6)	• Reduces the contact resistance (only one point of contact) • Saves wiring costs (easy, no need for tools, and fast) • Saves material costs • Reduces installation costs
Spring-type connection system for main circuit[2]	✓ (S00, S0)	✓ (S00, S0)	--	--	--	• Enables fast connections • Permits vibration-resistant connections • Enables maintenance-free connections
Spring-type connection system for auxiliary circuits[2]	✓	✓	✓	✓	✓	• Enables fast connections • Permits vibration-resistant connections • Enables maintenance-free connections
Full starter functionality through IO-Link	--	--	--	--	✓	• Enables in combination with the SIRIUS 3RT contactors the assembly of communication-capable motor starters (direct-on-line, reversing and star-delta (wye-delta) starting)
Starter function	--	--	--	--	✓	• Integration of feeders via IO-Link in the control system up to 630 A or 820 A

✓ Available

-- Not available

[1] Exception: up to size S3, only stand-alone installation is possible.

[2] Alternatively available for screw terminals.

General data





Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Other features						
Temperature compensation	✓	✓	✓	✓	✓	• Allows the use of the relays at high temperatures without derating • Prevents premature tripping • Allows compact installation of the control cabinet without distance between the devices/load feeders • Simplifies configuration • Enables space to be saved in the control cabinet
Very high long-term stability	✓	✓	✓	✓	✓	• Provides safe protection for the loads even after years of use in severe operating conditions
Wide setting ranges	--	✓ (1:4)	✓ (1:4)	✓ (1:10)	✓ (1:10)	• Minimize the configuration outlay and costs • Minimize storage overheads, storage costs, tied-up capital
Fixed trip class	CLASS 10, CLASS 10A	3RB30: CLASS 10E or CLASS 20E	3RB20: CLASS 10E or CLASS 20E	--	--	• Optimum motor protection for standard starts
Trip classes adjustable on the device CLASS 5E, 10E, 20E, 30E	--	3RB31: ✓	3RB21: ✓	✓	✓	• Enables solutions for very fast starting motors requiring special protection (e.g. Ex motors) • Enables heavy starting solutions • Reduces the number of variants • Minimizes the configuring outlay and costs • Minimizes storage overhead, storage costs, and tied-up capital
Low power loss	--	✓	✓	✓	✓	• Reduces power consumption and energy costs (up to 98 % less power is used than for thermal overload relays) • Minimizes temperature rises of the contactor and control cabinet – in some cases this may eliminate the need for control cabinet cooling. • Direct mounting to contactor saves space, even for high motor currents (i.e. no heat decoupling is required)
Internal power supply	--[1)]	✓	✓	--	--	• Eliminates the need for configuration and connecting an additional control circuit
Supplied from an external source via IO-Link	--	--	--	--	✓	• Eliminates the need for configuration and connecting an additional control circuit

✓ Available
-- Not available

1) SIRIUS 3RU11 and 3RU21 thermal overload relays use a bimetal contactor and therefore do not require a control supply voltage.

Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Other features (continued)						
Overload warning	--	--	--	✓	✓	• Indicates imminent tripping of the relay directly on the device due to overload, phase asymmetry or phase failure through flickering of the LEDs or in the case of the 3RB24 as a signal through IO-Link • Allows the imminent tripping of the relay to be signaled • Allows measures to be taken in time in the event of inverse-time delayed overloading of the load for an extended period over the current limit • Eliminates the need for an additional device • Saves space in the control cabinet • Reduces wiring outlay and costs
Analog output	--	--	--	✓	✓	• Allows the output of an analog output signal for actuating moving-coil instruments, feeding programmable logic controllers or transfer to bus systems • Eliminates the need for an additional measuring transducer and signal converter • Saves space in the control cabinet • Reduces wiring outlay and costs

✓ Available

-- Not available

General data

Overview of overload relays – matching contactors

Overload relays	Current measure-ment	Current range	**Contactors** (type, size, rating in kW) **3RT201.**	**3RT202.**	**3RT203.**	**3RT204.**	**3RT105.**	**3RT106.**	**3RT107.**	**3TF68/3TF69**
			S00	S0	S2	S3	S6	S10	S12	14
Type		A	3/4/5.5/7.5	5.5/7.5/11/15/18.5	15/18.5/22/30/37	37/45/55	55/75/90	110/132/160	200/250	375/450
SIRIUS 3RU21 thermal overload relays										
 3RU21										
3RU211	Integrated	0.11 … 16	✓	--	--	--	--	--	--	--
3RU212	Integrated	1.8 … 40	--	✓	--	--	--	--	--	--
3RU213	Integrated	11 … 80	--	--	✓	--	--	--	--	--
3RU214	Integrated	28 … 100	--	--	--	✓	--	--	--	--
SIRIUS 3RB30 electronic overload relays[1]										
 3RB30										
3RB301	Integrated	0.1 … 16	✓	--	--	--	--	--	--	--
3RB302	Integrated	0.1 … 40	--	✓	--	--	--	--	--	--
3RB303	Integrated	12.5 … 80	--	--	✓	--	--	--	--	--
3RB304	Integrated	32 … 115	--	--	--	✓	--	--	--	--
SIRIUS 3RB31 electronic overload relays[1]										
 3RB31										
3RB311	Integrated	0.1 … 16	✓	--	--	--	--	--	--	--
3RB312	Integrated	0.1 … 40	--	✓	--	--	--	--	--	--
3RB313	Integrated	12.5 … 80	--	--	✓	--	--	--	--	--
3RB314	Integrated	32 … 115	--	--	--	✓	--	--	--	--
SIRIUS 3RB20 electronic overload relays[1]										
 3RB20										
3RB205	Integrated	50 … 200	--	--	--	--	✓	--	--	--
3RB206	Integrated	55 … 630	--	--	--	--	--	✓	✓	✓
3RB201 + 3UF18	Integrated	630 … 820	--	--	--	--	--	--	--	✓
SIRIUS 3RB21 electronic overload relays[1]										
 3RB21										
3RB215	Integrated	50 … 200	--	--	--	--	✓	--	--	--
3RB216	Integrated	55 … 630	--	--	--	--	--	✓	✓	✓
3RB211 + 3UF18	Integrated	630 … 820	--	--	--	--	--	--	--	✓
SIRIUS 3RB22 to 3RB24 electronic overload relays[1]										
 3RB22, 3RB23										
3RB2283/ 3RB2383/ 3RB2483+	3RB2906	0.3 … 25	✓	✓	--	--	--	--	--	--
	3RB2906	10 … 100	✓	✓	✓	✓	--	--	--	--
	3RB2956	20 … 200	--	✓	✓	✓	✓	--	--	--
	3RB2966	63 … 630	--	--	--	--	--	✓	✓	✓
	3RB2906 + 3UF18	630 … 820	--	--	--	--	--	--	--	✓
 3RB24										

✓ Can be used
-- Cannot be used

[1] "Technical specifications" for the use of overload relays with trip class ≥ CLASS 20E can be found in "Short-circuit protection with fuses for motor feeders" in the Configuration Manuals:
- "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders",
- "SIRIUS Configuration – Selection Data for Fuseless Load Feeders".

Connection methods

3RU2 thermal overload relays

- Sizes S00 and S0:
  - Main and auxiliary circuit: Either screw or spring-type terminals
- Sizes S2 and S3:
  - Main circuit: Screw terminals with box terminal
  - Auxiliary circuit: Either screw or spring-type terminals

3RB3 electronic overload relays

- Sizes S00 and S0:
  - Main and auxiliary circuit: Either screw or spring-type terminals
- Sizes S2 and S3:
  - Main circuit: Screw terminals with box terminal or as straight-through transformer
  - Auxiliary circuit: Either screw or spring-type terminals

3RB2 electronic overload relays

3RB20 and 3RB21 overload relays:

- Size S6:
  - Main circuit: With busbar connection or as straight-through transformer
  - Auxiliary circuit: Either screw or spring-type terminals
- Sizes S10/S12:
  - Main circuit: With busbar connection
  - Auxiliary circuit: Either screw or spring-type terminals

3RB22 to 3RB24 evaluation modules:

- Screw or spring-type terminals

3RB29 current measuring modules:

- Up to size S3: Straight-through transformers
- As from size S6:
  - Main circuit: With busbar connection
  - Auxiliary circuit: Either screw or spring-type terminals

Screw terminals

Spring-type terminals

Busbar connections

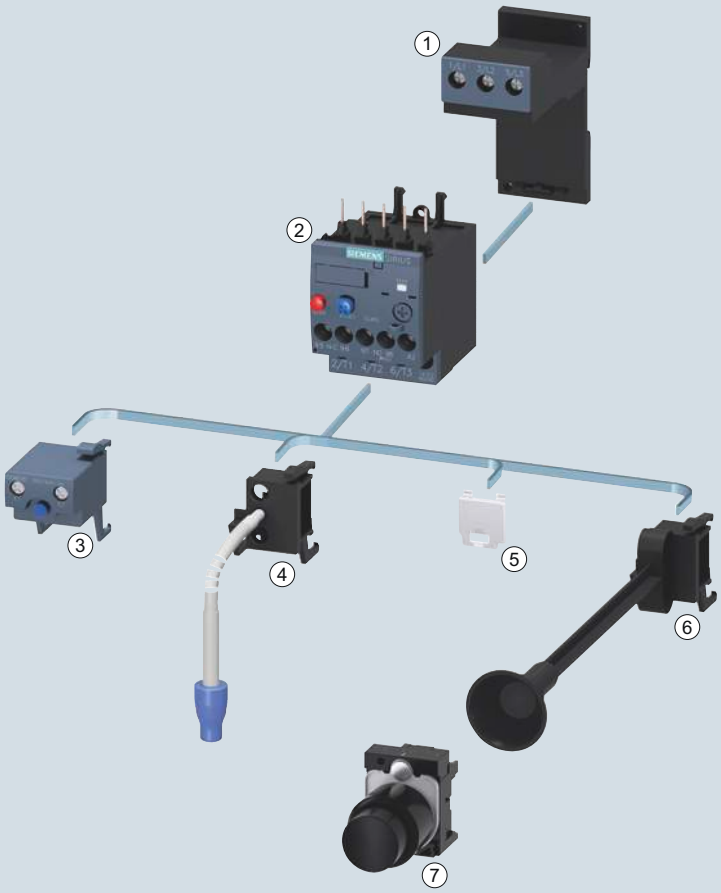
Straight-through transformers

The various terminals and straight-through transformers are indicated in the corresponding tables by the symbols shown on orange backgrounds.

7

Overview

More information	
Home page, see http://www.siemens.com/sirius-overloadrelays Industry Mall, see www.siemens.com/product?3RU2 Conversion tool, e.g. from 3RU11 to 3RU21, see www.siemens.com/sirius/conversion-tool	Application Manual "SIRIUS Controls with IE3/IE4 Motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820 Manual "SIRIUS – SIRIUS 3RU Thermal Overload Relays / SIRIUS 3RB Electronic Overload Relays", see http://support.automation.siemens.com/WW/view/en/60298164 Characteristics and certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16271

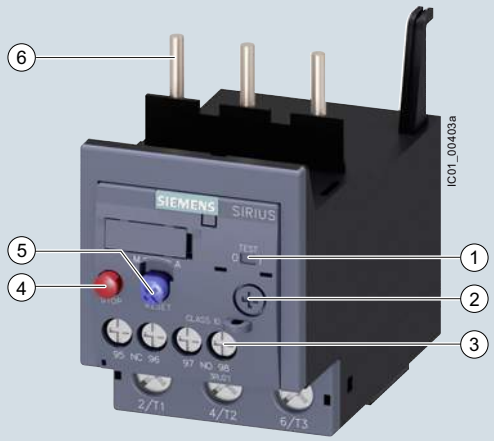


1. Stand-alone assembly support for 3RU2 and 3RB3
2. 3RU21 thermal overload relay Sizes S00 to S3

Mountable accessories

3. Module for remote RESET
4. Cable release with holder for RESET
5. Sealable cover
6. Mechanical RESET
7. Pushbutton

Mountable accessories for 3RU thermal overload relay



(1) Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.

(2) Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.

(3) Connecting terminals:
Depending on the device version, the connecting terminals are screw terminals or spring-type terminals for the the main and auxiliary circuits.

(4) STOP button:
If the STOP button is pressed, the NC contact is opened. This switches off the contactor downstream. The NC contact is closed again when the button is released.

(5) Selector switch for manual/automatic RESET and RESET button:
With this switch you can choose between manual and automatic RESET. A device set to manual RESET can be reset locally by pressing the RESET button. A remote RESET is possible using the RESET modules (accessories), which are independent of size.

(6) Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the contactors. The overload relay can be connected directly to the contactor using these pins. Stand-alone installation is possible as an alternative (in conjunction with a terminal bracket for stand-alone installation).

A sealable transparent cover can be optionally mounted (accessory). It secures the motor current setting against adjustment.

SIRIUS 3RU2136-4.B0 thermal overload relay

3RU21 thermal overload relays up to 100 A have been designed to provide current-dependent protection for loads with normal starting against impermissibly high temperature rises due to overload or phase failure.

An overload or phase failure results in an increase of the motor current beyond the set rated motor current. Via heating elements, this current rise heats up the bimetal strips inside the device which then bend and as a result trigger the auxiliary contacts by means of a tripping mechanism. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, see Characteristic curves.

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after a recovery time has elapsed.

The 3RU2 thermal overload relays are suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

Use in hazardous areas

The 3RU2 overload relays are certified in accordance with the European explosion protection directive (ATEX) and the international explosion protection standard (IECEx), see Certificates.

Article No. scheme

Product versions		Article number
Thermal overload relays		**3RU2** □ □ □ – □ □ □ □
Device type	e. g. 1 = CLASS 10, 1 NO + 1 NC	□
Size, rated operational current and power	e. g. 16 = 16 A (7.5 kW) for size S00	□ □
Setting range for overload release	e. g. 0A = 0.11 ... 0.16 A	□ □
Connection methods	e.g. B = screw terminals	□
Installation type	e. g. 0 = mounting on contactor	□
Example		**3RU2 1 1 6 – 0 A B 0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RU21 thermal overload relays are listed in the overview table (see "General Data", page 7/71 onwards).

Application

Industries

The 3RU21 thermal overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal starting conditions (CLASS 10, 10A).

Application

The 3RU21 thermal overload relays have been designed for the protection of three-phase and single-phase AC and DC motors.

If single-phase AC or DC loads are to be protected by the 3RU21 thermal overload relays, all three bimetal strips must be heated. For this purpose, all main current paths of the relay must be connected in series.

Ambient conditions

3RU21 thermal overload relays compensate temperature in the temperature range from –40 °C to +60 °C according to IEC 60947-4-1. At temperatures from +60 °C to +70 °C, the upper set value of the setting range has to be reduced by a specific factor in accordance with the table below.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RU21 thermal overload relays in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring.
see Application Manual.

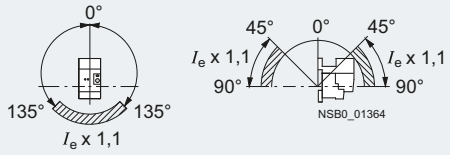
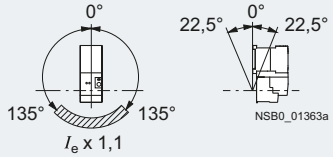
For more information, see Preface on page 7.

Technical specifications

More information	
System Manual "SIRIUS – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318	Manual "SIRIUS – SIRIUS 3RU Thermal Overload Relays / SIRIUS 3RB Electronic Overload Relays", see https://support.industry.siemens.com/cs/ww/en/view/60298164
Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", see https://support.industry.siemens.com/cs/ww/en/view/39714188	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16270/td

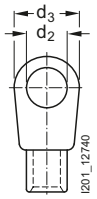
The following technical information is intended to provide an initial overview of the various types of device and functions.

Type		**3RU2116**	**3RU2126**	**3RU2136**	**3RU2146**
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 95	55 x 105 x 117	70 x 106 x 124
• Spring-type terminals	mm	45 x 102 x 79	45 x 114 x 95	55 x 105 x 117	70 x 106 x 124
General data					
Tripping in the event of		Overload and phase failure			
Trip class acc. to IEC 60947-4-1	Class	10		10, 10A	
Phase failure sensitivity		Yes			
Overload warning		No			
Reset and recovery					
• Reset options after tripping		Manual, Automatic and Remote RESET (Remote RESET in conjunction with the appropriate accessory)			
• Recovery time					
- For automatic RESET	min.	Depends on the strength of the tripping current and characteristic			
- For manual RESET	min.	Depends on the strength of the tripping current and characteristic			
- For remote RESET	min.	Depends on the strength of the tripping current and characteristic			
Features					
• Display of operating state on device		Yes, by means of TEST function/switch position indicator slide			
• TEST function		Yes			
• RESET button		Yes			
• STOP button		Yes			
Protection of motors in hazardous environments					
• according to European Directive 2014/34/EU (ATEX)		DMT 98 ATEX G 001 Ex II (2) GD			
• according to international standard IECEx		IECEx BVS 15.0046 see https://support.industry.siemens.com/cs/ww/en/ps/16270/cert			

Type		**3RU2116**	**3RU2126**	**3RU2136**	**3RU2146**
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 95	55 x 105 x 117	70 x 106 x 124
• Spring-type terminals	mm	45 x 102 x 79	45 x 114 x 95	55 x 105 x 117	70 x 106 x 124
General data (continued)					
Ambient temperature					
• Storage/transport	°C	-55 ... +80			
• Operation	°C	-40 ... +70			
• Temperature compensation	°C	Up to +60			
• Permissible rated current at					
- Temperature inside control cabinet 60 °C	%	100 (current reduction is required above +60 °C)			
- Temperature inside control cabinet 70 °C	%	87			
Repeat terminals					
• Coil repeat terminals		Yes	Not required		
• Auxiliary contact repeat terminal		Yes	Not required		
Degree of protection acc. to IEC 60529		IP20		- IP20 (front side) - Terminal IP00 (use additional terminal covers for higher degree of protection)	
Touch protection acc. to IEC 60529		Finger-safe			
Shock resistance with sine acc. to IEC 60068-2-27	*g*/ms	15/11 (auxiliary contacts 95/96 and 97/98: 8 *g*/11 ms)			
Electromagnetic compatibility (EMC)					
• Interference immunity		Not relevant			
• Emitted interference		Not relevant			
Resistance to extreme climates – air humidity	%	90			
Installation altitude above sea level	m	Up to 2 000			
Mounting position		The diagrams show the permissible mounting positions for mounting onto contactors and stand-alone installation. For mounting position in the hatched area, a setting correction of 10 % must be implemented. Stand-alone installation:  Contactor + overload relay:  			
Type of mounting		For mounting onto contactor or stand-alone installation with terminal support, screw and snap-on mounting onto standard mounting rail.			

3RU2 for standard applications

Type		3RU2116	3RU2126	3RU2136	3RU2146
Size		S00	S0	S2	S3
Main circuit					
Rated insulation voltage U_i (pollution degree 3)	V	690			1000
Rated impulse withstand voltage U_{imp}	kV	6			8
Rated operational voltage U_e	V	690			
Type of current					
• Direct current		Yes			
• Alternating current		Yes, frequency range up to 400 Hz			
Current setting	A	0.11 ... 0.16 up to 11 ... 16	1.8 ... 2.5 up to 34 ... 40	11 ... 16 up to 70 ... 80	28 ... 40 up to 80 ... 100
	A				
Power loss per unit (max.)	W	4.1 ... 6.3	6.2 ... 7.5	8 ... 14	12 ... 16.5
Short-circuit protection					
• With fuse without contactor		See "Selection and ordering data", pages 7/84 ... 7/87			
• With fuse and contactor		"Short-Circuit Protection with Fuses/Motor Starter Protectors for Motor Feeders" see Configuration Manual.			
Protective separation between main and auxiliary current paths Acc. to IEC 60947-1					
• Screw terminals or ring terminal lug connections	V	440	690: Setting range ≤ 25 A	690	
• Spring-type terminals	V	440	440: Setting range > 25 A	690	
Conductor cross-sections of main circuit					
Connection type		**Screw terminals**			**Screw terminals with box terminal**
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2	4 mm Allen screw
Operating devices	mm	⌀ 5 ... 6	⌀ 5 ... 6	⌀ 5 ... 6	4 mm Allen screw
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3 ... 4.5	4.5 ... 6
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1], max. 2 x 4	2 x (1 ... 2.5)[1], 2 x (2.5 ... 10)[1]	2 x (2.5 ... 35)[1], 1 x (2.5 ... 50)[1]	2 x (2.5 ... 16)[1], 2 x (10 ... 50)[1], 1 x (10 ... 70)[1]
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1]; max.. 1 x 10	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	2 x (2.5 ... 35)[1], 1 x (2.5 ... 50)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1], 2 x (18 ... 14)[1], 2 x 12	2 x (16 ... 12)[1], 2 x (14 ... 8)[1]	2 x (18 ... 2)[1], 1 x (18 ... 1)[1]	2 x (10 ... 1/0)[1], 1 x (10 ... 2/0)[1]
Removable box terminals[2]					
• With copper bars[3]	mm	--	--	--	2 x 12 x 4
• With cable lugs[4]					
- Terminal screw		--	--	--	M6
- Prescribed tightening torque	Nm	--	--	--	4.5 ... 6
- Usable ring terminal lugs	mm	--	--	--	d_2 = min. 6.3 d_3 = max. 19
Connection type		**Spring-type terminals**			
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), 1 conductor can be connected					
• Solid or stranded	mm^2	1 x (0.5 ... 4)	1 x (1 ... 10)	--	
• Finely stranded without end sleeve	mm^2	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• AWG cables, solid or stranded	AWG	1 x (20 ... 12)	1 x (18 ... 8)	--	



1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

2) Cable lug and busbar connection possible after removing the box terminals.

3) If bars larger than 12 mm x 10 mm are connected, a 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/89.

4) When conductors larger than 25 mm^2 are connected, the 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/89.

Type		**3RU2116**	**3RU2126**	**3RU2136**	**3RU2146**
Size		S00	S0	S2	S3
Auxiliary circuit					
Number of NO contacts		1			
Number of NC contacts		1			
Auxiliary contacts – assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Contact rating of the auxiliary contacts					
• NC, NO contact with alternating current AC-15, rated operational current I_e at U_e					
- 24 V	A	3			
- 120 V	A	3			
- 125 V	A	3			
- 230 V	A	2			
- 400 V	A	1			
- 600 V	A	0.75			
- 690 V	A	0.75			
• NC, NO contacts with DC current DC-13, rated operational current I_e at U_e					
- 24 V	A	1			
- 110 V	A	0.22			
- 125 V	A	0.22			
- 220 V	A	0.11			
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes			
Short-circuit protection					
• With fuse					
- Operational class gG	A	6			
- Quick	A	10			
• With miniature circuit breaker (C characteristic)	A	6 (up to $I_k \leq 0.5$ kA; $U \leq 260$ V)			
Permissible operational voltage for protective separation between auxiliary current paths Acc. to IEC 60947-1	V	440			
CSA, UL, UR rated data					
Auxiliary circuit – switching capacity		B600, R300			
Conductor cross-sections for auxiliary circuit					
Connection type		**Screw terminals**			
Terminal screw		M3, Pozidriv size 2			
Operating devices	mm	⌀ 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]			
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]			
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1], 2 x (18 ... 14)[1]			
Connection type		**Spring-type terminals**			
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)			
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)			

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Selection and ordering data

3RU21 thermal overload relays for mounting onto contactor[1], sizes S00 and S0, CLASS 10

Features and technical specifications:

- Connection methods
  Main and auxiliary circuit: Either screw or spring-type terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F


3RU2116-4AB0


3RU2116-4AC0


3RU2126-4FB0


3RU2126-4AC0

Size contactor	Trip class	Rated power for three-phase motors, rated value[2]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[3]	SD	**Screw terminals**		SD	**Spring-type terminals**	
						Article No.	Price per PU		Article No.	Price per PU
	Class	kW	A	A	d			d		
Size S00										
S00	10	0.04	0.11 ... 0.16	0.5	▶	**3RU2116-0AB0**		5	**3RU2116-0AC0**	
	10	0.06	0.14 ... 0.2	1	▶	**3RU2116-0BB0**		5	**3RU2116-0BC0**	
	10	0.06	0.18 ... 0.25	1	▶	**3RU2116-0CB0**		5	**3RU2116-0CC0**	
	10	0.09	0.22 ... 0.32	1.6	▶	**3RU2116-0DB0**		5	**3RU2116-0DC0**	
	10	0.09	0.28 ... 0.4	2	▶	**3RU2116-0EB0**		5	**3RU2116-0EC0**	
	10	0.12	0.35 ... 0.5	2	▶	**3RU2116-0FB0**		5	**3RU2116-0FC0**	
	10	0.18	0.45 ... 0.63	2	▶	**3RU2116-0GB0**		5	**3RU2116-0GC0**	
	10	0.18	0.55 ... 0.8	4	▶	**3RU2116-0HB0**		5	**3RU2116-0HC0**	
	10	0.25	0.7 ... 1	4	▶	**3RU2116-0JB0**		5	**3RU2116-0JC0**	
	10	0.37	0.9 ... 1.25	4	▶	**3RU2116-0KB0**		5	**3RU2116-0KC0**	
	10	0.55	1.1 ... 1.6	6	▶	**3RU2116-1AB0**		5	**3RU2116-1AC0**	
	10	0.75	1.4 ... 2	6	▶	**3RU2116-1BB0**		5	**3RU2116-1BC0**	
	10	0.75	1.8 ... 2.5	10	▶	**3RU2116-1CB0**		5	**3RU2116-1CC0**	
	10	1.1	2.2 ... 3.2	10	▶	**3RU2116-1DB0**		5	**3RU2116-1DC0**	
	10	1.5	2.8 ... 4	16	▶	**3RU2116-1EB0**		5	**3RU2116-1EC0**	
	10	1.5	3.5 ... 5	20	▶	**3RU2116-1FB0**		5	**3RU2116-1FC0**	
	10	2.2	4.5 ... 6.3	20	▶	**3RU2116-1GB0**		5	**3RU2116-1GC0**	
	10	3	5.5 ... 8	25	▶	**3RU2116-1HB0**		5	**3RU2116-1HC0**	
	10	4	7 ... 10	35	▶	**3RU2116-1JB0**		5	**3RU2116-1JC0**	
	10	5.5	9 ... 12.5	35	▶	**3RU2116-1KB0**		5	**3RU2116-1KC0**	
	10	7.5	11 ... 16	40	▶	**3RU2116-4AB0**		5	**3RU2116-4AC0**	
Size S0										
S0	10	0.75	1.8 ... 2.5	10	▶	**3RU2126-1CB0**		5	**3RU2126-1CC0**	
	10	1.1	2.2 ... 3.2	10	▶	**3RU2126-1DB0**		5	**3RU2126-1DC0**	
	10	1.5	2.8 ... 4	16	▶	**3RU2126-1EB0**		5	**3RU2126-1EC0**	
	10	1.5	3.5 ... 5	20	▶	**3RU2126-1FB0**		5	**3RU2126-1FC0**	
	10	2.2	4.5 ... 6.3	20	▶	**3RU2126-1GB0**		5	**3RU2126-1GC0**	
	10	3	5.5 ... 8	25	▶	**3RU2126-1HB0**		5	**3RU2126-1HC0**	
	10	4	7 ... 10	35	▶	**3RU2126-1JB0**		5	**3RU2126-1JC0**	
	10	5.5	9 ... 12.5	35	▶	**3RU2126-1KB0**		5	**3RU2126-1KC0**	
	10	7.5	11 ... 16	40	▶	**3RU2126-4AB0**		▶	**3RU2126-4AC0**	
	10	7.5	14 ... 20	50	▶	**3RU2126-4BB0**		▶	**3RU2126-4BC0**	
	10	11	17 ... 22	63	▶	**3RU2126-4CB0**		▶	**3RU2126-4CC0**	
	10	11	20 ... 25	63	▶	**3RU2126-4DB0**		▶	**3RU2126-4DC0**	
	10	15	23 ... 28	63	▶	**3RU2126-4NB0**		▶	**3RU2126-4NC0**	
	10	15	27 ... 32	80	▶	**3RU2126-4EB0**		▶	**3RU2126-4EC0**	
	10	18.5	30 ... 36	80	▶	**3RU2126-4PB0**		▶	**3RU2126-4PC0**	
	10	18.5	34 ... 40	80	▶	**3RU2126-4FB0**		▶	**3RU2126-4FC0**	

1) With the appropriate terminal supports (see "Accessories", page 7/88), the 3RU2 overload relays for mounting on contactors can also be installed as stand-alone units.

2) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

3) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

Overload relays in size S2, see page 7/85.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

3RU21 thermal overload relays for mounting onto contactor[1], sizes *S2 and S3, CLASS 10 or 10A*

Features and technical specifications:

- Connection methods
  - Main circuit: Screw terminals with box terminal
  - Auxiliary circuit: Either screw or spring-type terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F


3RU2136-4.B0


3RU2136-4.D0


3RU2146-4.B0


3RU2146-4.D0

Size contactor	Trip class	Rated power for three-phase motors, rated value[2]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[3]	SD	**Screw terminals**	SD	**Spring-type terminals** (on auxiliary current side)
						Article No. / Price per PU		Article No. / Price per PU
	Class	kW	A	A	d		d	
Size S2								
S2	10	7.5	11 ... 16	40	5	**3RU2136-4AB0**	5	**3RU2136-4AD0**
	10	7.5	14 ... 20	50	5	**3RU2136-4BB0**	5	**3RU2136-4BD0**
	10	11	18 ... 25	63	5	**3RU2136-4DB0**	5	**3RU2136-4DD0**
	10	15	22 ... 32	80	5	**3RU2136-4EB0**	5	**3RU2136-4ED0**
	10	18.5	28 ... 40	80	5	**3RU2136-4FB0**	5	**3RU2136-4FD0**
	10	22	36 ... 45	100	▶	**3RU2136-4GB0**	▶	**3RU2136-4GD0**
	10	22	40 ... 50	100	▶	**3RU2136-4HB0**	▶	**3RU2136-4HD0**
	10	30	47 ... 57	100	▶	**3RU2136-4QB0**	▶	**3RU2136-4QD0**
	10	30	54 ... 65	125	▶	**3RU2136-4JB0**	▶	**3RU2136-4JD0**
	10A	37	62 ... 73	160	▶	**3RU2136-4KB0**	▶	**3RU2136-4KD0**
	10A	37	70 ... 80	160	▶	**3RU2136-4RB0**	▶	**3RU2136-4RD0**
Size S3 NEW								
S3	10	18.5	28 ... 40	80	1	**3RU2146-4FB0**	5	**3RU2146-4FD0**
	10	22	36 ... 50	125	1	**3RU2146-4HB0**	5	**3RU2146-4HD0**
	10	30	45 ... 63	125	1	**3RU2146-4JB0**	1	**3RU2146-4JD0**
	10	37	57 ... 75	160	1	**3RU2146-4KB0**	1	**3RU2146-4KD0**
	10	45	70 ... 90	160	1	**3RU2146-4LB0**	1	**3RU2146-4LD0**
	10	45	80 ... 100[4]	200	1	**3RU2146-4MB0**	1	**3RU2146-4MD0**

1) With the appropriate terminal supports (see "Accessories", page 7/88), the 3RU2 overload relays for mounting on contactors can also be installed as stand-alone units.

2) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

3) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

4) For overload relays > 100 A, see 3RB2 electronic overload relays, page 7/102 onwards.

3RU2 for standard applications *IE3/IE4 ready*

3RU21 thermal overload relays for stand-alone installation, sizes S00 and S0, CLASS 10

Features and technical specifications:

- Connection methods
  Main and auxiliary circuit: Either screw or spring-type terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F


3RU2116-..B1


3RU2116-..C1


3RU2126-..B1


3RU2126-..C1

Size contactor	Trip class	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	SD	**Screw terminals**		SD	**Spring-type terminals**	
						Article No.	Price per PU		Article No.	Price per PU
	Class	kW	A	A	d			d		
Size S00										
S00	10	0.04	0.11 ... 0.16	0.5	5	**3RU2116-0AB1**		5	**3RU2116-0AC1**	
	10	0.06	0.14 ... 0.2	1	5	**3RU2116-0BB1**		5	**3RU2116-0BC1**	
	10	0.06	0.18 ... 0.25	1	5	**3RU2116-0CB1**		5	**3RU2116-0CC1**	
	10	0.09	0.22 ... 0.32	1.6	5	**3RU2116-0DB1**		5	**3RU2116-0DC1**	
	10	0.09	0.28 ... 0.4	2	5	**3RU2116-0EB1**		5	**3RU2116-0EC1**	
	10	0.12	0.35 ... 0.5	2	5	**3RU2116-0FB1**		5	**3RU2116-0FC1**	
	10	0.18	0.45 ... 0.63	2	5	**3RU2116-0GB1**		5	**3RU2116-0GC1**	
	10	0.18	0.55 ... 0.8	4	5	**3RU2116-0HB1**		5	**3RU2116-0HC1**	
	10	0.25	0.7 ... 1	4	5	**3RU2116-0JB1**		5	**3RU2116-0JC1**	
	10	0.37	0.9 ... 1.25	4	5	**3RU2116-0KB1**		5	**3RU2116-0KC1**	
	10	0.55	1.1 ... 1.6	6	5	**3RU2116-1AB1**		5	**3RU2116-1AC1**	
	10	0.75	1.4 ... 2	6	5	**3RU2116-1BB1**		5	**3RU2116-1BC1**	
	10	0.75	1.8 ... 2.5	10	5	**3RU2116-1CB1**		5	**3RU2116-1CC1**	
	10	1.1	2.2 ... 3.2	10	5	**3RU2116-1DB1**		5	**3RU2116-1DC1**	
	10	1.5	2.8 ... 4	16	5	**3RU2116-1EB1**		5	**3RU2116-1EC1**	
	10	1.5	3.5 ... 5	20	5	**3RU2116-1FB1**		5	**3RU2116-1FC1**	
	10	2.2	4.5 ... 6.3	20	5	**3RU2116-1GB1**		5	**3RU2116-1GC1**	
	10	3	5.5 ... 8	25	5	**3RU2116-1HB1**		5	**3RU2116-1HC1**	
	10	4	7 ... 10	35	5	**3RU2116-1JB1**		5	**3RU2116-1JC1**	
	10	5.5	9 ... 12.5	35	5	**3RU2116-1KB1**		5	**3RU2116-1KC1**	
	10	7.5	11 ... 16	40	5	**3RU2116-4AB1**		5	**3RU2116-4AC1**	
Size S0										
S0	10	7.5	14 ... 20	50	5	**3RU2126-4BB1**		5	**3RU2126-4BC1**	
	10	11	17 ... 22	63	5	**3RU2126-4CB1**		5	**3RU2126-4CC1**	
	10	11	20 ... 25	63	5	**3RU2126-4DB1**		5	**3RU2126-4DC1**	
	10	15	23 ... 28	63	5	**3RU2126-4NB1**		5	**3RU2126-4NC1**	
	10	15	27 ... 32	80	5	**3RU2126-4EB1**		5	**3RU2126-4EC1**	
	10	18.5	30 ... 36	80	5	**3RU2126-4PB1**		5	**3RU2126-4PC1**	
	10	18.5	34 ... 40	80	5	**3RU2126-4FB1**		5	**3RU2126-4FC1**	

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

3RU21 thermal overload relays for stand-alone installation, sizes S2 and S3, CLASS 10 or 10A

Features and technical specifications:

- Connection methods
  - Main circuit: Screw terminals with box terminal
  - Auxiliary circuit: Either screw or spring-type terminals
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F

3RU2136-..B1

3RU2136-..D1

3RU2146-..B1

3RU2146-..D1

Size contactor	Trip class	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	SD	Screw terminals		SD	Spring-type terminals	
						Article No.	Price per PU		Article No.	Price per PU
	CLASS	kW	A	A	d			d		
Size S2										
S2	10	15	22 ... 32	80	5	**3RU2136-4EB1**		5	**3RU2136-4ED1**	
	10	18.5	28 ... 40	80	5	**3RU2136-4FB1**		5	**3RU2136-4FD1**	
	10	22	36 ... 45	100	▶	**3RU2136-4GB1**		▶	**3RU2136-4GD1**	
	10	22	40 ... 50	100	▶	**3RU2136-4HB1**		▶	**3RU2136-4HD1**	
	10	30	47 ... 57	100	▶	**3RU2136-4QB1**		▶	**3RU2136-4QD1**	
	10	30	54 ... 65	125	▶	**3RU2136-4JB1**		▶	**3RU2136-4JD1**	
	10A	37	62 ... 73	160	▶	**3RU2136-4KB1**		▶	**3RU2136-4KD1**	
	10A	37	70 ... 80	160	▶	**3RU2136-4RB1**		▶	**3RU2136-4RD1**	
Size S3 NEW										
S3	10	30	45 ... 63	125	1	**3RU2146-4JB1**		5	**3RU2146-4JD1**	
	10	37	57 ... 75	160	1	**3RU2146-4KB1**		5	**3RU2146-4KD1**	
	10	45	70 ... 90	160	1	**3RU2146-4LB1**		5	**3RU2146-4LD1**	
	10	45	80 ... 100[3]	200	1	**3RU2146-4MB1**		X	**3RU2146-4MD1**	

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

[3] For overload relays > 100 A, see 3RB2 electronic overload relays, page 7/102 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Overview

The following optional accessories are available for the 3RU21 thermal overload relays:

- Size-specific terminal support for stand-alone installation, in sizes S00 and S0 also with spring-type terminals
- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)
- Electrical remote RESET module in three voltage variants (for all sizes)
- Sealable cover (for all sizes)
- Terminal covers for devices with screw terminals (box terminals) and ring terminal lug connections

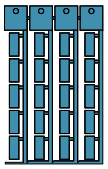
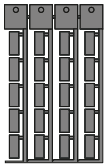
Selection and ordering data

Version	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Terminal supports for stand-alone installation							
 3RU2916-3AA01							
Terminal supports for overload relays with screw terminals			**Screw terminals**				
For separate mounting of the overload relays; screw and snap-on mounting onto standard mounting rail	S00		**3RU2916-3AA01**		1	1 unit	41F
	S0		**3RU2926-3AA01**		1	1 unit	41F
	S2		**3RU2936-3AA01**		1	1 unit	41F
	S3 NEW	1	**3RU2946-3AA01**		1	1 unit	41F
 3RU2926-3AA01							
Terminal supports for overload relays with spring-type terminals			**Spring-type terminals**				
For separate mounting of the overload relays; screw and snap-on mounting onto standard mounting rail	S00	5	**3RU2916-3AC01**		1	1 unit	41F
	S0	5	**3RU2926-3AC01**		1	1 unit	41F
 3RU2936-3AA01							
 3RU2946-3AA01							
 3RU2916-3AC01							
 3RU2926-3AC01							
Mechanical RESET							
 3RU2900-1A with pushbutton and extension plunger							
Resetting plungers, holders and formers	S00 ... S3		**3RU2900-1A**		1	1 unit	41F
Pushbuttons with extended stroke (12 mm), IP65, ⌀ 22 mm	S00 ... S3		**3SU1200-0FB10-0AA0**		1	1 unit	41J
Extension plungers For compensation of the distance between the pushbutton and the unlatching button of the relay	S00 ... S3		**3SU1900-0KG10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

	Version	Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Cable releases with holder for RESET								
 3RU2900-1.	For ⌀ 6.5 mm holes in the control panel; max. control panel thickness 8 mm							
	• Length 400 mm	S00 ... S3	▶	**3RU2900-1B**		1	1 unit	41F
	• Length 600 mm	S00 ... S3	▶	**3RU2900-1C**		1	1 unit	41F
Modules for remote RESET, electrical								
 3RU1900-2A.71	Operating range 0.85 ... 1.1 x U_s, power consumption 80 VA AC, 70 W DC, ON period 0.2 ... 4 s, switching frequency 60/h							
	• 24 ... 30 V AC/DC	S00 ... S3	2	**3RU1900-2AB71**		1	1 unit	41F
	• 110 ... 127 V AC/DC	S00 ... S3	2	**3RU1900-2AF71**		1	1 unit	41F
	• 220 ... 250 V AC/DC	S00 ... S3	2	**3RU1900-2AM71**		1	1 unit	41F
Sealable covers								
 3RV2908-0P	For covering the setting knobs	S00 ... S3	▶	**3RV2908-0P**		100	10 units	41E
Terminal covers								
 3RT2936-4EA2	**Covers for devices with screw terminals (box terminals)** Additional touch protection for fastening to the box terminals			**Screw terminals**				
	• Main current level	S2	2	**3RT2936-4EA2**		1	1 unit	41B
		S3 NEW	▶	**3RT2946-4EA2**		1	1 unit	41B

General accessories

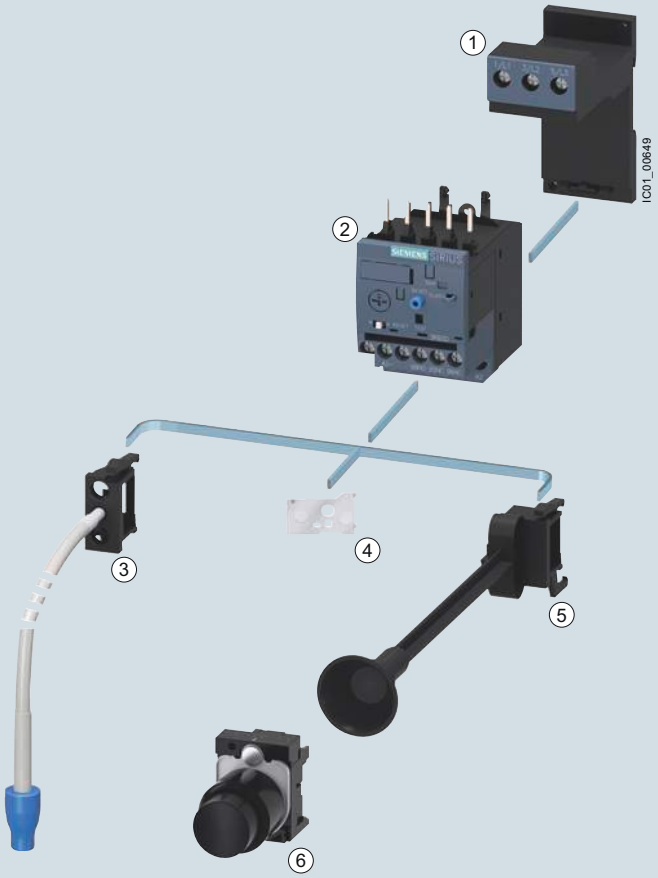
	Version	Size	Color	For overload relays	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-type terminals										
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals	Length approx. 200 mm, 3.0 mm x 0.5 mm	Titanium gray/ black, partially insulated	Main and auxiliary circuit connection: 3RU2	2	**Spring-type terminals** **3RA2908-1A**		1	1 unit	41B
Blank labels										
 3RT1900-1SB20	**Unit labeling plates**[1] For SIRIUS devices	20 mm x 7 mm	Pastel turquoise	3RU2	20	**3RT1900-1SB20**		100	340 units	41B
		20 mm x 7 mm	Titanium gray	3RU2	20	**3RT2900-1SB20**		100	340 units	41B
	Adhesive inscription labels[1] For SIRIUS devices	19 mm x 6 mm	Pastel turquoise	3RU2	15	**3RT1900-1SB60**		100	3 060 units	41B
		19 mm x 6 mm	Zinc yellow	3RU2	15	**3RT1900-1SD60**		100	3 060 units	41B
 3RT2900-1SB20										

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/20).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Overview

More information	
Home page, see http://www.siemens.com/sirius-overloadrelays Industry Mall, see www.siemens.com/product?3RB3 Conversion tool, e.g. from 3RB20/3RB211 to 3RB30/3RB31, see www.siemens.com/sirius/conversion-tool	Application Manual "SIRIUS Controls with IE3/IE4 Motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820 Manual "SIRIUS – SIRIUS 3RU Thermal Overload Relays / SIRIUS 3RB Electronic Overload Relays", see https://support.industry.siemens.com/cs/ww/en/view/60298164 Characteristics and certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16276

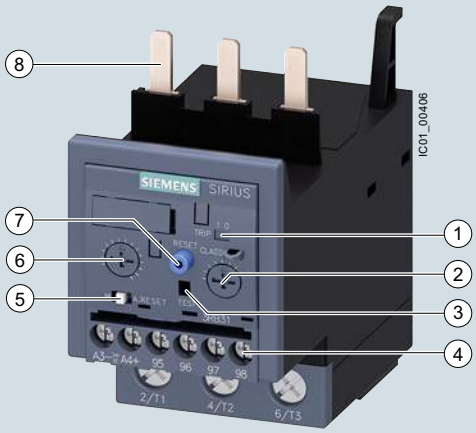


1. Stand-alone assembly support for 3RU2 and 3RB3
2. 3RB30, 3RB31 electronic overload relay, sizes S00 to S3

Mountable accessories

3. Cable release with holder for RESET
4. Sealable cover
5. Mechanical RESET
6. Pushbutton

Mountable accessories for 3RB30 and 3RB31 electronic overload relays



1. Switch position indicator and TEST function of the wiring: Indicates a trip and enables the wiring test.
2. Trip class setting/internal ground-fault detection (only 3RB31): Using the rotary switch you can set the required trip class and activate the internal ground-fault detection dependent on the start-up conditions.
3. Solid-state test (device test): Enables a test of all important device components and functions.
4. Connecting terminals (removable joint block for auxiliary circuits): Depending on the device version, the terminals for screw and spring-type connection are configured for the main and auxiliary circuit.
5. Selector switch for manual/automatic RESET: With the slide switch you can choose between manual and automatic RESET.
6. Motor current setting: Setting the device to the rated motor current is easy with the large rotary knob.
7. A device set to manual RESET can be reset locally by pressing the RESET button. On 3RB31 overload relays an electrical remote RESET is integrated.
8. Connection for mounting onto contactors: Optimally adapted in electrical, mechanical and design terms to the contactors 3RT2. The overload relay can be connected directly using these connection pins. Stand-alone installation is possible as an alternative (in conjunction with a terminal support for stand-alone installation).

A sealable transparent cover can be optionally mounted (accessory). It secures the motor current setting against adjustment.

SIRIUS 3RB3133-4.B0 electronic overload relay

The 3RB30/3RB31 electronic overload relays up to 115 A with internal power supply have been designed for current-dependent protection of loads with normal and heavy starting, and to protect against excessive temperature rises due to overload, phase asymmetry or phase failure. An overload, phase asymmetry or phase failure result in an increase of the motor current beyond the set rated motor current. This current rise is detected by the current transformers integrated into the devices and evaluated by corresponding solid-state circuits which then output a pulse to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, (see Characteristic curves).

In addition to inverse-time delayed protection of loads against excessive temperature rises due to overload, phase asymmetry and phase failure, the 3RB31 electronic overload relays also allow internal ground-fault detection (not possible in conjunction with contactor assemblies for wye-delta starting). This provides protection of loads against high-resistance short circuits due to damage to the insulation material, moisture, condensed water etc.

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after the recovery time has elapsed.

The 3RB3 electronic overload relays are suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

3RB20 and 3RB21 overload relays in sizes S6 to S10/S12, see page 7/109 onwards.

Use in hazardous areas

The 3RB30/3RB31 electronic overload relays are suitable for the overload protection of motors with the following types of protection:

- Ⓔx II (2) G [Ex e] [Ex d] [Ex px]
- Ⓔx II (2) D [Ex t] [Ex p]

EC type test certificate for Group II, Category (2) G/D exists. It has the number PTB 09 ATEX 3001.

3RB30, 3RB31 for standard applications

Article No. scheme

Product versions		Article number
Electronic overload relays		**3RB3** □ □ □ – □ □ □ □
Device type	e. g. 0 = standard device, with internal supply, for three-phase loads	□
Size, rated operational current and power	e. g. 1 = 16 A (7.5 kW) for size S00	□
Version of the automatic RESET, electrical remote RESET	e. g. 6 = switchable between manual/auto RESET	□
Trip class (CLASS)	e. g. 1 = CLASS 10E	□
Setting range of the overload release	e.g. R = 0.1 ... 0.4 A	□
Connection methods	e.g. B = screw terminals for main and auxiliary circuits	□
Installation type	e. g. 0 = mounting on contactor	□
Example		**3RB3 0 1 6 – 1 R B 0**

Note:

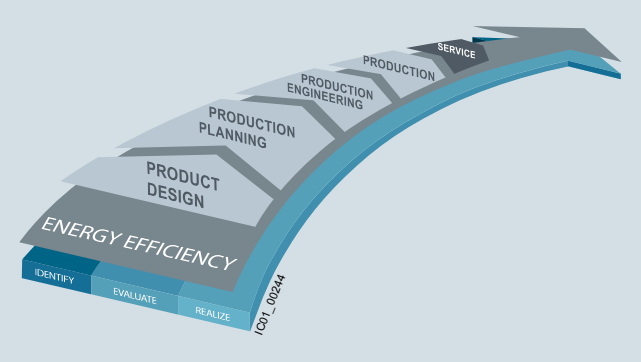
The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RB30/3RB31 electronic overload relays are listed in the overview table (see "General Data" page 7/71 onwards).

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see www.siemens.com/sirius/energysaving).

3RB30/3RB31 electronic overload relays contribute to energy efficiency throughout the plant as follows:

- Reduced inherent power loss
- Less heating of the control cabinet
- Smaller control cabinet air conditioners can be used

Application

Industries

The 3RB30/3RB31 electronic overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5E to 30E), minimize project completion times, inventories and energy consumption, and optimize plant availability and maintenance management.

Application

The 3RB30/3RB31 electronic overload relays have been designed for the protection of three-phase motors in sinusoidal 50/60 Hz voltage networks. The relays are not suitable for the protection of single-phase AC or DC loads.

The 3RU21 thermal overload relay or the 3RB22/3RB23/3RB24 electronic overload relay can be used for single-phase AC loads. For DC loads we recommend the 3RU21 thermal overload relay.

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, ageing and temperature fluctuations.

For the temperature range from –25 °C to +60 °C, the 3RB30/3RB31 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RB30/3RB31 electronic overload relays in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

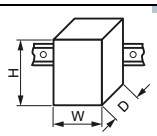
For more information, see Preface on page 7.

Technical specifications

More information	
System Manual "SIRIUS – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318	Manual "SIRIUS – SIRIUS 3RU Thermal Overload Relays / SIRIUS 3RB Electronic Overload Relays", see https://support.industry.siemens.com/cs/ww/en/view/60298164
Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", see https://support.industry.siemens.com/cs/ww/en/view/39714188	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16276/td

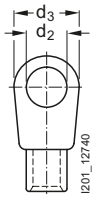
The following technical information is intended to provide an initial overview of the various types of device and functions.

Type		**3RB3016, 3RB3113**	**3RB3026, 3RB3123**	**3RB3036, 3RB3133**	**3RB3046, 3RB3143**
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 94	55 x 105 x 117	70 x 106 x 124
• Spring-type terminals	mm	45 x 102 x 80	45 x 116 x 95	55 x 105 x 117	70 x 106 x 124
General data					
Tripping in the event of		Overload, phase failure and phase asymmetry + ground fault (for 3RB31 only)			
Trip class acc. to IEC 60947-4-1	CLASS	3RB30: 10E, 20E; 3RB31: 5E, 10E, 20E or 30E adjustable			
Phase failure sensitivity		Yes			
Reset and recovery					
• Reset options after tripping		Manual and automatic RESET, 3RB31 has an integrated connection for electrical remote RESET (24 V DC)			
• Recovery time					
- For automatic RESET		Approx. 3 min			
- For manual RESET		Immediately			
- For remote RESET		Immediately			
Features					
• Display of operating state on device		Yes, by means of switch position indicator slide			
• TEST function		Yes, test of electronics by pressing the TEST button/test of auxiliary contacts and wiring of control circuit by actuating the switch position indicator slide/self-monitoring			
• RESET button		Yes			
• STOP button		No			
Protection and operation of explosion-proof motors					
EC type-examination certificate number according to directive 2014/34/EU (ATEX)		PTB 09 ATEX 3001 II (2) G [Ex e] [Ex d] [Ex px] II (2) G [Ex t] [Ex p] see https://support.industry.siemens.com/cs/ww/en/view/40591327			
Ambient temperatures					
• Storage/transport	°C	-40 ... +80			
• Operation	°C	-25 ... +60			
• Temperature compensation	°C	+60			
• Permissible rated current at					
- Temperature inside control cabinet 60 °C	%	100			
- Temperature inside control cabinet 70 °C	%	On request			
Repeat terminals					
• Coil repeat terminals		Yes	Not required		
• Auxiliary contact repeat terminal		Yes	Not required		
Degree of protection acc. to IEC 60529					
• Screw terminals/spring-type terminals		IP20		- IP20 (front side) - Terminal IP00 (use additional terminal covers for higher degree of protection)	
• Straight-through transformers		--		IP20	
Touch protection acc. to IEC 60529		Finger-safe		Finger-safe, for vertical contact from the front	
Shock resistance with sine acc. to IEC 60068-2-27	*g*/ms	15/11 (signaling contact 97/98 in "Tripped" position: 9 *g*/11 ms)		15/11 (signaling contact 97/98 in "Tripped" position: 8 *g*/11 ms)	

Type		**3RB3016, 3RB3113**	**3RB3026, 3RB3123**	**3RB3036, 3RB3133**	**3RB3046, 3RB3143**
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 94	55 x 105 x 117	70 x 106 x 124
• Spring-type terminals	mm	45 x 102 x 80	45 x 116 x 95	55 x 105 x 117	70 x 106 x 124
General data (continued)					
Electromagnetic compatibility (EMC) – Interference immunity					
• Conductor-related interference					
- Burst acc. to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	2 (power ports), 1 (signal port)			
- Surge acc. to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	2 (line to earth), 1 (line to line)			
• Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	8 (air discharge), 6 (contact discharge)			
• Field-related interference acc. to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	10			
Electromagnetic compatibility (EMC) – Emitted interference		Degree of severity B acc. to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)			
Resistance to extreme climates – air humidity	%	95			
Installation altitude above sea level	m	Up to 2 000			
Mounting position		Any			
Type of mounting		Direct mounting/stand-alone installation with terminal support			

Type		**3RB3016, 3RB3113**	**3RB3026, 3RB3123**	**3RB3036, 3RB3133**	**3RB3046, 3RB3143**
Size		S00	S0	S2	S3
Main circuit					
Rated insulation voltage U_i (pollution degree 3)	V	690		690 1 000 with straight-through transformer	1000
Rated impulse withstand voltage U_{imp}	kV	6		6 8 with straight-through transformer	8
Rated operational voltage U_e	V	690		690 1 000 with straight-through transformer	1000
Type of current					
• Direct current		No			
• Alternating current		Yes, 50/60 Hz ± 5 %			
Current setting	A A	0.1 ... 0.4 up to 4 ... 16	0.1 ... 0.4 up to 10 ... 40	12.5 … 50 and 20 ... 80	12.5 … 50 and 32 ... 115
Heavy starting		see Manual			
Power loss per unit (max.)	W	0.1 ... 1.1	0.1 ... 4.5	0.5 ... 4.6	0.9 ... 4.6
Short-circuit protection					
• With fuse without contactor		See "Selection and ordering data", pages 7/97 ... 7/99			
• With fuse and contactor		"Short-Circuit Protection with Fuses/Motor Starter Protectors for Motor Feeders" see Configuration Manual.			
Protective separation between main and auxiliary current paths acc. to IEC 60947-1 (pollution degree 2)					
• For systems with grounded neutral point	V	690			
• For systems with ungrounded neutral point	V	600			

Type		**3RB3016, 3RB3113**	**3RB3026, 3RB3123**	**3RB3036, 3RB3133**	**3RB3046, 3RB3143**
Size		S00	S0	S2	S3
Conductor cross-sections of main circuit					
Connection type		**Screw terminals**			**Screw terminals with box terminal**
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2		4 mm Allen screw
Operating devices	mm	⌀ 5 ... 6	⌀ 5 ... 6		4 mm Allen screw
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5		4.5 ... 6
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1], 2 x (0.5 ... 4)[1]	2 x (1 ... 2.5)[1], 2 x (2.5 ... 10)[1]	1 x (1 ... 50)[1], 2 x (1 ... 35)[1]	2 x (2.5 ... 16)[1], 2 x (10 ... 50)[1], 1 x (10 ... 70)[1]
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1], max.. 1 x 10	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	2 x (2.5 ... 35)[1], 1 x (2.5 ... 50)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1], 2 x (18 ... 14)[1], 2 x 12	2 x (16 ... 12)[1], 2 x (14 ... 8)[1]	2 x (18 ... 2)[1], 1 x (18 ... 1)[1]	2 x (10 ... 1/0)[1], 1 x (10 ... 2/0)[1]
Removable box terminals[2]					
• With copper bars[3]	mm	--	--	--	2 x 12 x 4
• With cable lugs[4]					
- Terminal screw		--	--	--	M6
- Prescribed tightening torque	Nm	--	--	--	4.5 ... 6
- Usable ring terminal lugs	mm	--	--	--	d_2 = min. 6.3 d_3 = max. 19
Connection type		**Spring-type terminals**			
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), 1 conductor can be connected					
• Solid or stranded	mm^2	1 x (0.5 ... 4)	1 x (1 ... 10)	--	
• Finely stranded without end sleeve	mm^2	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• AWG cables, solid or stranded	AWG	1 x (20 ... 12)	1 x (18 ... 8)	--	
Connection type		**Straight-through transformers**			
Diameter of opening	mm	--		15	18



1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

2) Cable lug and busbar connection possible after removing the box terminals.

3) If bars larger than 12 mm x 10 mm are connected, a 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/101.

4) When conductors larger than 25 mm^2 are connected, the 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/101.

Type		3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143
Size		S00	S0	S2	S3
Auxiliary circuit					
Number of NO contacts		1			
Number of NC contacts		1			
Auxiliary contacts – assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor			
Rated insulation voltage U_i (pollution degree 3)	V	300			
Rated impulse withstand voltage U_{imp}	kV	4			
Auxiliary contacts – contact rating					
• NC, NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e					
- 24 V	A	4			
- 120 V	A	4			
- 125 V	A	4			
- 250 V	A	3			
• NC, NO contacts with DC current DC-13, rated operational current I_e at U_e					
- 24 V	A	2			
- 60 V	A	0.55			
- 110 V	A	0.3			
- 125 V	A	0.3			
- 250 V	A	0.11			
• Conventional thermal current I_{th}	A	5			
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes			
Short-circuit protection					
• With fuse, operational class gG	A	6			
Ground-fault protection (only 3RB31)		The information refers to sinusoidal residual currents at 50/60 Hz.			
• Tripping value I_Δ		> 0.75 × I_{motor}			
• Operating range I		Lower current setting < I_{motor} < 3.5 × upper current setting			
• Response time t_{trip} (in steady-state condition)	s	< 1			
Integrated electrical remote RESET (only 3RB31)					
Connecting terminals A3, A4		24 V DC, max. 200 mA for approx. 20 ms, then < 10 mA			
Protective separation between auxiliary current paths acc. to IEC 60947-1	V	300			

Type		3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143
Size		S00	S0	S2	S3
CSA, UL, UR rated data					
Auxiliary circuit – switching capacity		B600, R300			
Conductor cross-sections for auxiliary circuit					
Connection type		**Screw terminals**			
Terminal screw		M3, Pozidriv size 2			
Operating devices	mm	⌀ 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm^2	1 × (0.5 ... 4)[1], 2 × (0.5 ... 2.5)[1]			
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	1 × (0.5 ... 2.5)[1], 2 × (0.5 ... 1.5)[1]			
• AWG cables, solid or stranded	AWG	2 × (20 ... 14)			
Connection type		**Spring-type terminals**			
Operating devices	mm	3.0 x 0.5			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm^2	2 × (0.25 ... 1.5)			
• Finely stranded without end sleeve	mm^2	2 × (0.25 ... 1.5)			
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 × (0.25 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 × (24 ... 16)			

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Selection and ordering data

3RB30 electronic overload relays, CLASS 10E

Features and technical specifications:

- Connection methods
  - Sizes S00 and S0:
    Main and auxiliary circuit: Either screw or spring-type terminals
  - Sizes S2 and S3:
    Main circuit: Screw terminals with box terminal or as straight-through transformer,
    Auxiliary circuit: Either screw or spring-type terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G


3RB3016-1.B0


3RB3026-1.B0


3RB3036-1.B0


3RB3036-1.W1


3RB3046-1.B0


3RB3046-1.W1

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	SD	**Screw terminals**		SD	**Spring-type terminals**	
					Article No.	Price per PU		Article No.	Price per PU
	kW	A	A	d			d		
Size S00									
S00	***Devices for mounting onto contactor[3]***								
	0.04 ... 0.09	0.1 ... 0.4	4	▶	**3RB3016-1RB0**		2	**3RB3016-1RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	▶	**3RB3016-1NB0**		2	**3RB3016-1NE0**	
	0.55 ... 1.5	1 ... 4	20	▶	**3RB3016-1PB0**		2	**3RB3016-1PE0**	
	1.1 ... 5.5	3 ... 12	25	▶	**3RB3016-1SB0**		2	**3RB3016-1SE0**	
	2.2 ... 7.5	4 ... 16	25	▶	**3RB3016-1TB0**		2	**3RB3016-1TE0**	
Size S0									
S0	***Devices for mounting onto contactor[3]***								
	0.04 ... 0.09	0.1 ... 0.4	4	▶	**3RB3026-1RB0**		2	**3RB3026-1RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	▶	**3RB3026-1NB0**		2	**3RB3026-1NE0**	
	0.55 ... 1.5	1 ... 4	20	▶	**3RB3026-1PB0**		2	**3RB3026-1PE0**	
	1.1 ... 5.5	3 ... 12	25	▶	**3RB3026-1SB0**		2	**3RB3026-1SE0**	
	3 ... 11	6 ... 25	50	▶	**3RB3026-1QB0**		2	**3RB3026-1QE0**	
	5.5 ... 18.5	10 ... 40	50	▶	**3RB3026-1VB0**		2	**3RB3026-1VE0**	
Size S2									
S2	***Devices with screw terminals (main current side) and for mounting onto contactor[3]***								
	7.5 ... 22	12.5 ... 50	250	▶	**3RB3036-1UB0**		▶	**3RB3036-1UD0**	
	11 ... 37	20 ... 80	250	▶	**3RB3036-1WB0**		▶	**3RB3036-1WD0**	
	Devices with straight-through transformer for stand-alone installation								
	7.5 ... 22	12.5 ... 50	250	▶	**3RB3036-1UW1**		▶	**3RB3036-1UX1**	
	11 ... 37	20 ... 80	250	▶	**3RB3036-1WW1**		▶	**3RB3036-1WX1**	
Size S3 *NEW*									
S3	***Devices with screw terminals (main current side) and for mounting onto contactor[3]***								
	7.5 ... 22	12.5 ... 50	200	X	**3RB3046-1UB0**		X	**3RB3046-1UD0**	
	18.5 ... 55	32 ... 115	315	X	**3RB3046-1XB0**		X	**3RB3046-1XD0**	
	Devices with straight-through transformer for stand-alone installation								
	7.5 ... 22	12.5 ... 50	200	X	**3RB3046-1UW1**		X	**3RB3046-1UX1**	
	18.5 ... 55	32 ... 115	315	X	**3RB3046-1XW1**		X	**3RB3046-1XX1**	

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] Maximum protection by fuse only for overload relays, type of coordination "2".
For fuse values in connection with contactors, see Configuration Manual.

[3] With the appropriate terminal supports (see "Accessories", page 7/100), these overload relays can also be installed as stand-alone units.

Note:

For reliable operational current, note derating information, see Manual.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

3RB30, 3RB31 for standard applications *IE3/IE4 ready*

3RB30 electronic overload relays, CLASS 20E

Features and technical specifications:

- Connection methods
  - Sizes S00 and S0:
    Main and auxiliary circuit: Either screw or spring-type terminals
  - Sizes S2 and S3:
    Main circuit: Screw terminals with box terminal or as straight-through transformer,
    Auxiliary circuit: Either screw or spring-type terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G


3RB3016-2.B0


3RB3026-2.B0


3RB3036-2.B0


3RB3036-2.W1


3RB3046-2.B0


3RB3046-2.W1

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	SD	Screw terminals		SD	Spring-type terminals	
					Article No.	Price per PU		Article No.	Price per PU
	kW	A	A	d			d		
Size S00									
S00	***Devices for mounting onto contactor[3]***								
	0.04 ... 0.09	0.1 ... 0.4	4	▶	**3RB3016-2RB0**		2	**3RB3016-2RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	▶	**3RB3016-2NB0**		2	**3RB3016-2NE0**	
	0.55 ... 1.5	1 ... 4	20	▶	**3RB3016-2PB0**		2	**3RB3016-2PE0**	
	1.1 ... 5.5	3 ... 12	25	▶	**3RB3016-2SB0**		2	**3RB3016-2SE0**	
	2.2 ... 7.5	4 ... 16	25	▶	**3RB3016-2TB0**		2	**3RB3016-2TE0**	
Size S0									
S0	***Devices for mounting onto contactor[3]***								
	0.04 ... 0.09	0.1 ... 0.4	4	▶	**3RB3026-2RB0**		2	**3RB3026-2RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	▶	**3RB3026-2NB0**		2	**3RB3026-2NE0**	
	0.55 ... 1.5	1 ... 4	20	▶	**3RB3026-2PB0**		2	**3RB3026-2PE0**	
	1.1 ... 5.5	3 ... 12	25	▶	**3RB3026-2SB0**		2	**3RB3026-2SE0**	
	3 ... 11	6 ... 25	50	▶	**3RB3026-2QB0**		2	**3RB3026-2QE0**	
	5.5 ... 18.5	10 ... 40	50	▶	**3RB3026-2VB0**		2	**3RB3026-2VE0**	
Size S2									
S2	***Devices with screw terminals (main current side) and for mounting onto contactor[3]***								
	7.5 ... 22	12.5 ... 50	250	▶	**3RB3036-2UB0**		▶	**3RB3036-2UD0**	
	11 ... 37	20 ... 80	250	▶	**3RB3036-2WB0**		▶	**3RB3036-2WD0**	
	Devices with straight-through transformer for stand-alone installation								
	7.5 ... 22	12.5 ... 50	250	▶	**3RB3036-2UW1**		▶	**3RB3036-2UX1**	
	11 ... 37	20 ... 80	250	▶	**3RB3036-2WW1**		▶	**3RB3036-2WX1**	
Size S3 NEW									
S3	***Devices with screw terminals (main current side) and for mounting onto contactor[3]***								
	7.5 ... 22	12.5 ... 50	200	X	**3RB3046-2UB0**		X	**3RB3046-2UD0**	
	18.5 ... 55	32 ... 115	315	X	**3RB3046-2XB0**		X	**3RB3046-2XD0**	
	Devices with straight-through transformer for stand-alone installation								
	7.5 ... 22	12.5 ... 50	200	X	**3RB3046-2UW1**		X	**3RB3046-2UX1**	
	18.5 ... 55	32 ... 115	315	X	**3RB3046-2XW1**		X	**3RB3046-2XX1**	

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] Maximum protection by fuse only for overload relays, type of coordination "2".
For fuse values in connection with contactors, see Configuration Manual.

[3] With the appropriate terminal supports (see "Accessories", page 7/100), these overload relays can also be installed as stand-alone units.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

3RB31 electronic overload relays, CLASS 5E, 10E, 20E or 30E (adjustable)

Features and technical specifications:

- Connection methods
  - Sizes S00 and S0:
    Main and auxiliary circuit: Either screw or spring-type terminals
  - Sizes S2 and S3:
    Main circuit: Screw terminals with box terminal or as straight-through transformer,
    Auxiliary circuit: Either screw or spring-type terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal ground-fault detection (activatable)
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Electrical remote RESET integrated
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G


3RB3113-4TB0


3RB3123-4VB0


3RB3133-4.B0


3RB3133-4.W1


3RB3143-4.B0


3RB3143-4.W1

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	SD	Screw terminals		SD	Spring-type terminals	
					Article No.	Price per PU		Article No.	Price per PU
	kW	A	A	d			d		
Size S00									
S00	***Devices for mounting onto contactor[3]***								
	0.04 ... 0.09	0.1 ... 0.4	4	▶	**3RB3113-4RB0**		2	**3RB3113-4RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	▶	**3RB3113-4NB0**		2	**3RB3113-4NE0**	
	0.55 ... 1.5	1 ... 4	20	▶	**3RB3113-4PB0**		2	**3RB3113-4PE0**	
	1.1 ... 5.5	3 ... 12	25	▶	**3RB3113-4SB0**		2	**3RB3113-4SE0**	
	2.2 ... 7.5	4 ... 16	25	▶	**3RB3113-4TB0**		2	**3RB3113-4TE0**	
Size S0									
S0	***Devices for mounting onto contactor[3]***								
	0.04 ... 0.09	0.1 ... 0.4	4	▶	**3RB3123-4RB0**		2	**3RB3123-4RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	▶	**3RB3123-4NB0**		2	**3RB3123-4NE0**	
	0.55 ... 1.5	1 ... 4	20	▶	**3RB3123-4PB0**		2	**3RB3123-4PE0**	
	1.1 ... 5.5	3 ... 12	25	▶	**3RB3123-4SB0**		2	**3RB3123-4SE0**	
	3 ... 11	6 ... 25	50	▶	**3RB3123-4QB0**		2	**3RB3123-4QE0**	
	5.5 ... 18.5	10 ... 40	50	▶	**3RB3123-4VB0**		2	**3RB3123-4VE0**	
Size S2									
S2	***Devices with screw terminals (main current side) and for mounting onto contactor[3]***								
	7.5 ... 22	12.5 ... 50	250	▶	**3RB3133-4UB0**		▶	**3RB3133-4UD0**	
	11 ... 37	20 ... 80	250	▶	**3RB3133-4WB0**		▶	**3RB3133-4WD0**	
	Devices with straight-through transformer for stand-alone installation								
	7.5 ... 22	12.5 ... 50	250	▶	**3RB3133-4UW1**		▶	**3RB3133-4UX1**	
	11 ... 37	20 ... 80	250	▶	**3RB3133-4WW1**		▶	**3RB3133-4WX1**	
Size S3 *NEW*									
S3	***Devices with screw terminals (main current side) and for mounting onto contactor[3]***								
	7.5 ... 22	12.5 ... 50	200	X	**3RB3143-4UB0**		X	**3RB3143-4UD0**	
	18.5 ... 55	32 ... 115	315	X	**3RB3143-4XB0**		X	**3RB3143-4XD0**	
	Devices with straight-through transformer for stand-alone installation								
	7.5 ... 22	12.5 ... 50	200	X	**3RB3143-4UW1**		X	**3RB3143-4UX1**	
	18.5 ... 55	32 ... 115	315	X	**3RB3143-4XW1**		X	**3RB3143-4XX1**	

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] Maximum protection by fuse only for overload relays, type of coordination "2".
For fuse values in connection with contactors, see Configuration Manual.

[3] With the appropriate terminal supports (see "Accessories", page 7/100), these overload relays can also be installed as stand-alone units.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Accessories

Overview

The following optional accessories are available for the 3RB30/3RB31 electronic overload relays:

- Size-specific terminal support for stand-alone installation, in sizes S00 and S0 also with spring-type terminals
- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)
- Sealable cover (for all sizes)

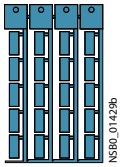
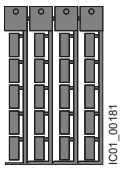
Selection and ordering data

Version	Size		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Terminal supports for stand-alone installation								
 3RU2916-3AA01	**Terminal supports for overload relays with screw terminals**			**Screw terminals**				
	For separate mounting of the overload relays; screw and snap-on mounting onto standard mounting rail	S00	▶	**3RU2916-3AA01**		1	1 unit	41F
		S0	▶	**3RU2926-3AA01**		1	1 unit	41F
		S2	▶	**3RU2936-3AA01**		1	1 unit	41F
		S3	NEW 1	**3RU2946-3AA01**		1	1 unit	41F
 3RU2926-3AA01	**Terminal supports for overload relays with spring-type terminals**			**Spring-type terminals**				
	For separate mounting of the overload relays; screw and snap-on mounting onto standard mounting rail	S00	5	**3RU2916-3AC01**		1	1 unit	41F
		S0	5	**3RU2926-3AC01**		1	1 unit	41F
 3RU2936-3AA01								
 3RU2946-3AA01								
 3RU2916-3AC01								
 3RU2926-3AC01								
Mechanical RESET								
 3RB3980-0A with pushbutton and extension plungers	**Resetting plungers, holders and formers**	S00 ... S3	▶	**3RB3980-0A**		1	1 unit	41F
	Pushbuttons with extended stroke (12 mm), IP65, ⌀ 22 mm	S00 ... S3	▶	**3SU1200-0FB10-0AA0**		1	1 unit	41J
	Extension plungers For compensation of the distance between a pushbutton and the unlatching button of the relay	S00 ... S3	▶	**3SU1900-0KG10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

	Version	Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Cable releases with holder for RESET								
 3RB3980-0.	For ⌀ 6.5 mm holes in the control panel; max. control panel thickness 8 mm							
	• Length 400 mm	S00 ... S3	►	**3RB3980-0B**		1	1 unit	41F
	• Length 600 mm	S00 ... S3	►	**3RB3980-0C**		1	1 unit	41F
Sealable covers								
3RB3984-0	For covering the setting knobs	S00 ... S3	►	**3RB3984-0**		1	1 unit	41F
Terminal covers								
 3RT2936-4EA2	**Covers for devices with screw terminals (box terminals)** Additional touch protection for fastening to the box terminals			**Screw terminals**				
	• Main current level	S2	2	**3RT2936-4EA2**		1	1 unit	41B
		S3 NEW	►	**3RT2946-4EA2**		1	1 unit	41B

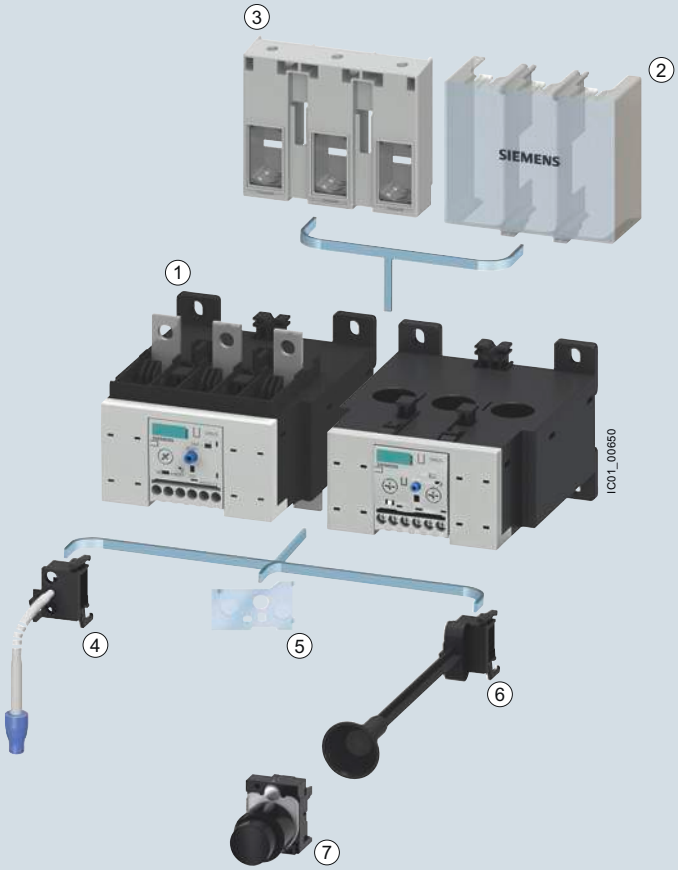
General accessories

	Version	Size	Color	For overload relays	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-type terminals										
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals	Length, approx. 200 mm, 3.0 mm x 0.5 mm	Titanium gray/ black, partially insulated	Main and auxiliary circuit connection: 3RB3	2	**Spring-type terminals** **3RA2908-1A**		1	1 unit	41B
Blank labels										
 3RT1900-1SB20	**Unit labeling plates**[1] For SIRIUS devices	20 mm x 7 mm	Pastel turquoise	3RB3	20	**3RT1900-1SB20**		100	340 units	41B
		20 mm x 7 mm	Titanium gray	3RB3	20	**3RT2900-1SB20**		100	340 units	41B
	Adhesive inscription labels[1] For SIRIUS devices	19 mm x 6 mm	Pastel turquoise	3RU2	15	**3RT1900-1SB60**		100	3 060 units	41B
		19 mm x 6 mm	Zinc yellow	3RU2	15	**3RT1900-1SD60**		100	3 060 units	41B
 3RT2900-1SB20										

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/20).

Overview

More information	
Home page, see http://www.siemens.com/sirius-overloadrelays Industry Mall, see www.siemens.com/product?3RB2	Application Manual "SIRIUS Controls with IE3/IE4 Motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820 Manual "SIRIUS – SIRIUS 3RU Thermal Overload Relays / SIRIUS 3RB Electronic Overload Relays", see https://support.industry.siemens.com/cs/ww/en/view/60298164 Characteristics and certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16278



1 3RB2 overload relay
Sizes S6 to S10/S12

Mountable accessories
2 Terminal cover
3 Box terminals
4 Cable release with holder for RESET
5 Sealable cover
6 Mechanical RESET
7 Pushbutton

Mountable accessories for 3RB2 electronic overload relays (sizes S6 to S10/S12)

(1) Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.

(2) Trip class setting/internal ground-fault detection (only 3RB21):
Using the rotary switch you can set the required trip class and activate the internal ground-fault detection dependent on the start-up conditions.

(3) Solid-state test (device test):
Enables a test of all important device components and functions.

(4) Connecting terminals (removable terminal block for auxiliary circuits):
The generously sized terminals permit connection of two conductors with different cross-sections for the main and auxiliary circuits. The auxiliary circuit can be connected with screw terminals and alternatively with spring-type terminals.

(5) Selector switch for manual/automatic RESET:
With the slide switch you can choose between manual and automatic RESET.

(6) Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.

(7) A device set to manual RESET can be reset locally by pressing the RESET button. On the 3RB21 overload relay a solid-state remote RESET is integrated.

(8) Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the contactors 3RT1. These connecting pins can be used for direct mounting of the overload relay to the contactor. Stand-alone installation is possible as an alternative (partly in conjunction with a terminal bracket for stand-alone installation).

SIRIUS 3RB2153-4FW2 electronic overload relay

The 3RB20 and 3RB21 electronic overload relays up to 630 A with internal power supply have been designed for current-dependent protection of loads with normal and heavy starting (see Manual) against excessive temperature rises due to overload, phase asymmetry or phase failure.

An overload, phase asymmetry or phase failure result in an increase of the motor current beyond the set rated motor current. This current rise is detected by the current transformers integrated into the devices and evaluated by corresponding solid-state circuits which then output a pulse to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, see Characteristic curves.

In addition to inverse-time delayed protection of loads against excessive temperature rises due to overload, phase asymmetry and phase failure, the 3RB21 electronic overload relays also allow internal ground-fault detection (not possible in conjunction with contactor assemblies for star-delta (wye-delta) starting). This provides protection of loads against high-resistance short circuits due to damage to the insulation material, moisture, condensed water etc.

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after the recovery time has elapsed.

The 3RB2 electronic overload relays are suitable for operation with frequency converters, see Manual.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

For 3RB30 and 3RB31 overload relay sizes S00 to S3, see page 7/97 onwards.

Use in hazardous areas

The 3RB20/3RB21 electronic overload relays are suitable for the overload protection of motors with the following types of protection:

- Ex II (2) G [Ex e] [Ex d] [Ex px]
- Ex II (2) D [Ex t] [Ex p]

EC type test certificate for Group II, Category (2) G/D exists. It has the number PTB 06 ATEX 3001.

3RB20, 3RB21 for standard applications

Article No. scheme

Product versions		Article number
Electronic overload relays		**3RB2** □ □ □ – □ □ □ □
Device type	e. g. 0 = standard device, with internal supply, for three-phase loads	□
Size, rated operational current and power	e. g. 5 = 200 A (90 kW) for size S6	□
Version of the automatic RESET, electrical remote RESET	e. g. 6 = switchable between manual/auto RESET	□
Trip class (CLASS)	e. g. 1 = CLASS 10E	□
Setting range of the overload release	e.g. F = 5 ... 200 A	□
Connection methods	e.g. C = busbar connections main circuit; screw terminals auxiliary circuit	□
Installation type	e. g. 2 = mounting on contactor and stand-alone installation	□
Example		**3RB2 0 5 6 – 1 F C 2**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RB20/3RB21 electronic overload relays are listed in the overview table (see "General Data", page 7/71 onwards)

Application

Industries

The 3RB20 and 3RB21 electronic overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5E to 30E), minimize project completion times, inventories and energy consumption, and optimize plant availability and maintenance management.

Application

The 3RB20 and 3RB21 electronic overload relays have been designed for the protection of three-phase motors in sinusoidal 50/60 Hz voltage networks. The relays are not suitable for the protection of single-phase AC or DC loads.

The 3RU21 thermal overload relays or the 3RB22 to 3RB24 electronic overload relays can be used for single-phase AC loads. For DC loads we recommend the 3RU21 thermal overload relay.

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, ageing and temperature fluctuations.

For the temperature range from –25 C to +60 °C, the 3RB20 and 3RB21 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

For the 3RB20 and 3RB21 electronic overload relays with the sizes S6, S10 and S12, the upper set value of the setting range must be reduced for ambient temperatures > 50 °C by a certain factor.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

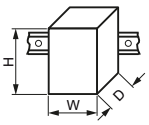
For the use of 3RB20 and 3RB21 electronic overload relays in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see Preface on page 7.

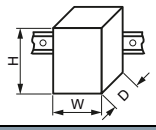
Technical specifications

More information	
Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", see https://support.industry.siemens.com/cs/ww/en/view/39714188	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16278
Manual "SIRIUS – SIRIUS 3RU Thermal Overload Relays / SIRIUS 3RB Electronic Overload Relays", see https://support.industry.siemens.com/cs/ww/en/view/60298164	

The following technical information is intended to provide an initial overview of the various types of device and functions.

Type			**3RB2056, 3RB2153**	**3RB2066, 3RB2163**
Size			S6	S10/S12
Dimensions (W x H x D) (overload relay with stand-alone installation support)		mm	120 x 119 x 155	145 x 147 x 156
General data				
Tripping in the event of			Overload, phase failure and phase asymmetry + ground fault (for 3RB21 only)	
Trip class acc. to IEC 60947-4-1		CLASS	3RB20: 10E or 20E; 3RB21: 5E, 10E, 20E and 30E adjustable	
Phase failure sensitivity			Yes	
Overload warning			No	
Reset and recovery				
• Reset options after tripping			3RB20: Manual and automatic RESET; 3RB21: Manual, Automatic and Remote RESET	
• Recovery time				
- For automatic RESET			Approx. 3 min	
- For manual RESET			Immediately	
- For remote RESET			Immediately	
Features				
• Display of operating state on device			Yes, by means of switch position indicator slide	
• TEST function			Yes, test of electronics by pressing the TEST button/ test of auxiliary contacts and wiring of control circuit by actuating the switch position indicator slide/ self-monitoring	
• RESET button			Yes	
• STOP button			No	
Protection and operation of explosion-proof motors				
EC type-examination certificate number according to directive 2014/34/EU (ATEX)			PTB 06 ATEX 3001 ⟨Ex⟩ II (2) G [Ex e] [Ex d] [Ex px] ⟨Ex⟩ II (2) G [Ex t] [Ex p] see https://support.industry.siemens.com/cs/ww/en/view/23814648	
Ambient temperatures				
• Storage/transport		°C	-40 ... +80	
• Operation		°C	-25 ... +60	
• Temperature compensation		°C	+60	
• Permissible rated current at				
- Temperature inside control cabinet 60 °C, stand-alone installation		%	100	100 or 90[1]
- Temperature inside control cabinet 60 °C, mounted on contactor		%	70	70
- Temperature inside control cabinet 70 °C		%	On request	
Degree of protection acc. to IEC 60529				
• Screw terminals/busbar connections			- IP20 (front side) - Terminal IP00 (use additional terminal covers for higher degree of protection)	
• Straight-through transformers			IP20	--

1) 90 % for relay with current setting range 160 A to 630 A.

Type		**3RB2056, 3RB2153**	**3RB2066, 3RB2163**
Size		S6	S10/S12
Dimensions (W x H x D) (overload relay with stand-alone installation support) 	mm	120 x 119 x 155	145 x 147 x 156
General data (continued)			
Touch protection acc. to IEC 60529			
• Screw terminals/busbar connections		Finger-safe with terminal covers for vertical contact from the front	
• Straight-through transformers		Finger-safe	--
Shock resistance with sine acc. to IEC 60068-2-27	*g*/ms	15/11 (signaling contact 97/98 in position "tripped": 4 g/ 11 ms	
Electromagnetic compatibility (EMC) – Interference immunity			
• Conductor-related interference			
- Burst acc. to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	2 (power ports), 1 (signal port)	
- Surge acc. to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	2 (line to earth), 1 (line to line)	
• Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	8 (air discharge), 6 (contact discharge)	
• Field-related interference acc. to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	10	
Electromagnetic compatibility (EMC) – Emitted interference		Degree of severity B acc. to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)	
Resistance to extreme climates – air humidity	%	100	
Installation altitude above sea level	m	Up to 2 000	
Mounting position		Any	
Type of mounting		Direct mounting/stand-alone installation	

Type		**3RB2056, 3RB2153**	**3RB2066, 3RB2163**
Size		S6	S10/S12
Main circuit			
Rated insulation voltage U_i (pollution degree 3)	V	1 000	
Rated impulse withstand voltage U_{imp}	kV	8	
Rated operational voltage U_e	V	1 000	
Type of current			
• Direct current		No	
• Alternating current		Yes, 50/60 Hz ± 5 %	
Current setting	A	50 ... 200	55 ... 250, 160 ... 630
Power loss per unit (max.)	W	0.05	
Short-circuit protection			
• With fuse without contactor		See "Selection and ordering data", pages 7/109 ... 7/111	
• With fuse and contactor		"Short-Circuit Protection with Fuses/Motor Starter Protectors for Motor Feeders" see Configuration Manual.	
Protective separation between main and auxiliary current paths acc. to IEC 60947-1 (pollution degree 2)			
• For systems with grounded neutral point	V	690	
• For systems with ungrounded neutral point	V	600	
Conductor cross-sections of the main circuit			
Connection type		**Screw terminals with box terminal**	
Terminal screw	mm	4 mm Allen screw	5 mm Allen screw
Operating devices	mm	4 mm Allen screw	5 mm Allen screw
Prescribed tightening torque	Nm	1 ... 12	20 ... 22
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected			
• Solid	mm^2	--	--
• Finely stranded without end sleeve	mm^2	With 3RT1955-4G box terminal: 2 × (1 × max. 50, 1 × max. 70), 1 × (10 ... 70); With 3RT1956-4G box terminal: 2 × (1 × max. 95, 1 × max. 120), 1 × (10 ... 120)	2 × (50 ... 185), Front clamping point only: 1 × (70 ... 240); Rear clamping point only: 1 × (120 ... 185)
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	With 3RT1955-4G box terminal: 2 × (1 × max. 50, 1 × max. 70), 1 × (10 ... 70); With 3RT1956-4G box terminal: 2 × (1 × max. 95, 1 × max. 120), 1 × (10 ... 120)	2 × (50 ... 185), Front clamping point only: 1 × (70 ... 240); Rear clamping point only: 1 × (120 ... 185)
• Stranded	mm^2	With 3RT1955 -4G box terminal: 2 × (max. 70), 1 × (16 ... 70); With 3RT1956-4G box terminal: 2 × (max. 120), 1 × (16 ... 120)	2 × (70 ... 240), Front clamping point only: 1 × (95 ... 300); Rear clamping point only: 1 × (120 ... 240)
• AWG cables, solid or stranded	AWG	With 3RT1955-4G box terminal: 2 × (max. 1/0), 1 × (6 ... 2/0); With 3RT1956-4G box terminal: 2 × (max. 3/0), 1 × (6 ... 250 kcmil)	2 × (2/0 ... 500 kcmil), Front clamping point only: 1 × (3/0 ... 600 kcmil); Rear clamping point only: 1 × (250 kcmil ... 500 kcmil)
• Ribbon cables (Number x Width x Thickness)	mm	With 3RT1955-4G box terminal: 2 × (6 × 15.5 × 0.8), 1 × (3 × 9 × 0.8 ... 6 × 15.5 × 0.8); With 3RT1956-4G box terminal: 2 × (10 × 15.5 × 0.8), 1 × (3 × 9 × 0.8 ... 10 × 15.5 × 0.8)	2 × (20 × 24 × 0.5), 1 × (6 × 9 × 0.8 ... 20 × 24 × 0.5)
Connection type		**Busbar connections**	
Terminal screw		M8 × 25	M10 × 30
Prescribed tightening torque	Nm	10 ... 14	14 ... 24
Conductor cross-sections (min./max.)			
• Finely stranded with cable lug	mm^2	16 ... 95[1)]	50 ... 240[2)]
• Stranded with cable lug	mm^2	25 ... 120[1)]	70 ... 240[2)]
• AWG cables, solid or stranded, with cable lug	AWG	4 ... 250 kcmil	2/0 ... 500 kcmil
• With connecting bars (max. width)	mm	15	25
Connection type		**Straight-through transformers**	
Diameter of opening	mm	24.5	--

1) When connecting cable lugs according to DIN 46235 with conductor cross-sections of 95 mm^2 and more, the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/112.

2) When connecting cable lugs according to DIN 46234 for conductor cross-sections from 240 mm^2, as well as DIN 46235 for cable cross-sections from 185 mm^2 , the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/112.

3RB20, 3RB21 for standard applications

Type		3RB2056, 3RB2153	3RB2066, 3RB2163
Size		S6	S10/S12
Auxiliary circuit			
Number of NO contacts		1	
Number of NC contacts		1	
Auxiliary contacts – assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor	
Rated insulation voltage U_i (pollution degree 3)	V	300	
Rated impulse withstand voltage U_{imp}	kV	4	
Auxiliary contacts – contact rating			
• NC contact with alternating current AC-14/AC-15, rated operational current I_e at U_e:			
- 24 V	A	4	
- 120 V	A	4	
- 125 V	A	4	
- 250 V	A	3	
• NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e:			
- 24 V	A	4	
- 120 V	A	4	
- 125 V	A	4	
- 250 V	A	3	
• NC, NO contacts with DC current DC-13, rated operational current I_e at U_e:			
- 24 V	A	2	
- 60 V	A	0.55	
- 110 V	A	0.3	
- 125 V	A	0.3	
- 250 V	A	0.11	
• Conventional thermal current I_{th}	A	5	
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes	
Short-circuit protection			
• With fuse, operational class gG	A	6	
Ground-fault protection (only 3RB21)		The information refers to sinusoidal residual currents at 50/60 Hz.	
• Tripping value I_Δ		> 0.75 × I_{motor}	
• Operating range I		Lower current setting < I_{motor} < 3.5 × upper current setting	
• Response time t_{trip} (in steady-state condition)	s	< 1	
Integrated electrical remote RESET (only 3RB21)			
Connecting terminals A3, A4		24 V DC, 100 mA, 2.4 W short-term	
Protective separation between auxiliary current paths acc. to IEC 60947-1	V	300	
CSA, UL, UR rated data			
Auxiliary circuit – switching capacity		B300, R300	
Conductor cross-sections of the auxiliary circuit			
Connection type		**Screw terminals**	
Terminal screw		M3, Pozidriv size 2	
Operating devices	mm	⌀ 5 ... 6	
Prescribed tightening torque	Nm	0.8 ... 1.2	
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected			
• Solid and stranded	mm^2	1 × (0.5 ... 4)[1], 2 × (0.5 ... 2.5)[1]	
• Finely stranded without end sleeve	mm^2	--	
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	1 × (0.5 ... 2.5)[1], 2 × (0.5 ... 1.5)[1]	
• AWG cables, solid or stranded	AWG	2 × (20 ... 14)	
Connection type		**Spring-type terminals**	
Operating devices	mm	3.0 x 0.5	
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected			
• Solid and stranded	mm^2	2 × (0.25 ... 1.5)	
• Finely stranded without end sleeve	mm^2	--	
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 × (0.25 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 × (24 ... 16)	

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Selection and ordering data

3RB20 electronic overload relays for mounting onto contactors and stand-alone installation, CLASS 10E

Features and technical specifications:

- Connection methods
  - Size S6
    Main circuit: With busbar connection or as straight-through transformer,
    Auxiliary circuit: Either screw or spring-type terminals
  - Sizes S10/S12:
    Main circuit: With busbar connection,
    Auxiliary circuit: Either screw or spring-type terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB2056-1FW2

3RB2066-1MF2

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	SD	**Screw terminals** (on auxiliary current side)		SD	**Spring-type terminals** (on auxiliary current side)	
					Article No.	Price per PU		Article No.	Price per PU
	kW	A	A	d			d		
Size S6									
Devices with busbar connection for mounting onto contactor and stand-alone installation									
S6	22 ... 90	50 ... 200	315	▶	**3RB2056-1FC2**		2	**3RB2056-1FF2**	
Devices with straight-through transformer for mounting onto contactor and stand-alone installation									
For mounting onto S6 contactors with box terminals	22 ... 90	50 ... 200	315	▶	**3RB2056-1FW2**		▶	**3RB2056-1FX2**	
Size S10/S12									
Devices with busbar connection for mounting onto contactor and stand-alone installation									
S10/S12	22 ... 110	55 ... 250	400	▶	**3RB2066-1GC2**		▶	**3RB2066-1GF2**	
and size 14 (3TF68/ 3TF69)[3]	90 ... 450	160 ... 630	800	▶	**3RB2066-1MC2**		▶	**3RB2066-1MF2**	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

3) For 3TF68/3TF69 contactors, direct mounting is not possible.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

3RB20, 3RB21 for standard applications *IE3/IE4* ready

3RB20 electronic overload relays for mounting onto contactors and stand-alone installation, CLASS 20E

Features and technical specifications:

- Connection methods
  - Size S6
    Main circuit: With busbar connection or as straight-through transformer,
    Auxiliary circuit: Either screw or spring-type terminals
  - Sizes S10/S12:
    Main circuit: With busbar connection,
    Auxiliary circuit: Either screw or spring-type terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G


3RB2056-1FW2


3RB2066-1MF2

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	SD	**Screw terminals** (on auxiliary current side)		SD	**Spring-type terminals** (on auxiliary current side)	
					Article No.	Price per PU		Article No.	Price per PU
	kW	A	A	d			d		
Size S6									
Devices with busbar connection for mounting onto contactor and stand-alone installation									
S6	22 ... 90	50 … 200	315	▶	**3RB2056-2FC2**		2	**3RB2056-2FF2**	
Devices with straight-through transformer for mounting onto contactor and stand-alone installation									
For mounting onto S6 contactors with box terminals	22 ... 90	50 … 200	315	▶	**3RB2056-2FW2**		▶	**3RB2056-2FX2**	
Size S10/S12[2]									
Devices with busbar connection for mounting onto contactor and stand-alone installation									
S10/S12 and size 14 (3TF68/ 3TF69)[3]	22 ... 110	55 … 250	400	▶	**3RB2066-2GC2**		▶	**3RB2066-2GF2**	
	90 ... 450	160 … 630	800	▶	**3RB2066-2MC2**		▶	**3RB2066-2MF2**	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

3) For 3TF68/3TF69 contactors, direct mounting is not possible.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

3RB21 electronic overload relays for mounting onto contactors and stand-alone installation, CLASS 5E, 10E, 20E and 30E adjustable

Features and technical specifications:

- Connection methods
  - Size S6
    Main circuit: With busbar connection or as straight-through transformer,
    Auxiliary circuit: Either screw or spring-type terminals
  - Sizes S10/S12:
    Main circuit: With busbar connection,
    Auxiliary circuit: Either screw or spring-type terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal ground-fault detection (activatable)
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Electrical remote RESET integrated
- Switch position indicator
- TEST function and self-monitoring

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB2153-4FX2

3RB2163-4MC2

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	SD	**Screw terminals** (on auxiliary current side)		SD	**Spring-type terminals** (on auxiliary current side)	
					Article No.	Price per PU		Article No.	Price per PU
	kW	A	A	d			d		
Size S6									
Devices with busbar connection for mounting onto contactor and stand-alone installation									
S6	22 ... 90	50 … 200	315	▶	**3RB2153-4FC2**		▶	**3RB2153-4FF2**	
Devices with straight-through transformer for mounting onto contactor and stand-alone installation									
For mounting onto S6 contactors with box terminals	22 ... 90			▶	**3RB2153-4FW2**		▶	**3RB2153-4FX2**	
Size S10/S12[2]									
Devices with busbar connection for mounting onto contactor and stand-alone installation									
S10/S12 and size 14 (3TF68/ 3TF69)[3]	22 ... 110	55 … 250	400	▶	**3RB2163-4GC2**		▶	**3RB2163-4GF2**	
	90 ... 450	160 … 630	800	▶	**3RB2163-4MC2**		▶	**3RB2163-4MF2**	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

3) For 3TF68/3TF69 contactors, direct mounting is not possible.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Accessories for 3RB20, 3RB21

Overview

Overload relays for standard applications

The following optional accessories are available for the 3RB20 and 3RB21 electronic overload relays:

- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)
- Sealable cover (for all sizes)
- Terminal covers for sizes S6 to S10/S12
- Box terminal blocks for sizes S6 and S10/S12

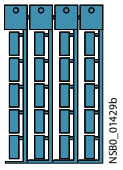
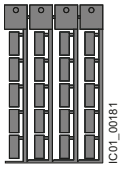
Selection and ordering data

	Version	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Mechanical RESET								
 3RU1900-1A with pushbutton and extension plunger	**Resetting plungers, holders and formers**	S6 S10/S12	►	**3RU1900-1A**		1	1 unit	41F
	Pushbuttons with extended stroke (12 mm), IP65, ⌀ 22 mm	S6 S10/S12	►	**3SU1200-0FB10-0AA0**		1	1 unit	41J
	Extension plungers For compensation of the distance between a pushbutton and the unlatching button of the relay	S6 S10/S12	►	**3SU1900-0KG10-0AA0**		1	1 unit	41J
Cable releases with holder for RESET								
 3RU1900-1.	For ⌀ 6.5 mm holes in the control panel; max. control panel thickness 8 mm	S6 S10/S12						
	• Length 400 mm		►	**3RU1900-1B**		1	1 unit	41F
	• Length 600 mm		►	**3RU1900-1C**		1	1 unit	41F
Sealable covers								
 3RB2984-0	For covering the setting knobs	S6 S10/S12	►	**3RB2984-0**		1	10 units	41F
Terminal covers								
 3RT1956-4EA1	**Covers for cable lugs and busbar connections**							
	• Length 100 mm	S6	►	**3RT1956-4EA1**		1	1 unit	41B
	• Length 120 mm	S10/S12	►	**3RT1966-4EA1**		1	1 unit	41B
	Covers for box terminals							
	• Length 25 mm	S6	►	**3RT1956-4EA2**		1	1 unit	41B
	• Length 30 mm	S10/S12	►	**3RT1966-4EA2**		1	1 unit	41B
 3RT1956-4EA2	**Covers for screw terminals** between contactor and overload relay, without box terminals (1 unit required per combination)	S6 S10/S12	►	**3RT1956-4EA3** **3RT1966-4EA3**		1 1	1 unit 1 unit	41B 41B
Box terminal blocks								
 3RT195.-4G	For round and ribbon cables							
	• Up to 70 mm^2	S6[1)]	►	**3RT1955-4G**		1	1 unit	41B
	• Up to 120 mm^2	S6	►	**3RT1956-4G**		1	1 unit	41B
	• Up to 240 mm^2	S10/S12	►	**3RT1966-4G**		1	1 unit	41B

[1)] In the scope of supply for 3RT1054-1 contactors (55 kW).

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

General accessories

	Version	Size	Color	For overload relays	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-type terminals										
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals	Length approx. 200 mm, 3.0 mm x 0.5 mm	Titanium gray/ black, partially insulated	Main and auxiliary circuit connection: 3RB2	2	**Spring-type terminals** **3RA2908-1A**		1	1 unit	41B
Blank labels										
 3RT1900-1SB20	**Unit labeling plates**[1] For SIRIUS devices	20 mm x 7 mm	Pastel turquoise	3RB2	20	**3RT1900-1SB20**		100	340 units	41B
		20 mm x 7 mm	Titanium gray	3RB2	20	**3RT2900-1SB20**		100	340 units	41B
 3RT2900-1SB20	**Adhesive inscription labels**[1] For SIRIUS devices	19 mm x 6 mm	Pastel turquoise	3RU2	15	**3RT1900-1SB60**		100	3 060 units	41B
		19 mm x 6 mm	Zinc yellow	3RU2	15	**3RT1900-1SD60**		100	3 060 units	41B

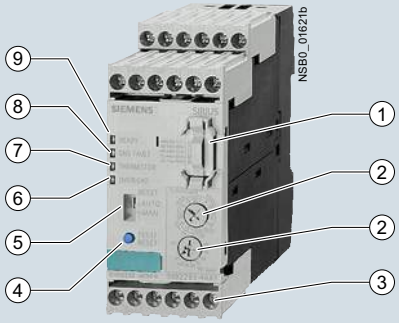
1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/20).

Overview

More information

Home page, see http://www.siemens.com/sirius-overloadrelays
Industry Mall, see www.siemens.com/product?3RB2

Application Manual "SIRIUS Controls with IE3/IE4 Motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820
Operating Instructions "3RB22, 3RB23 Electronic Overload Relays", see https://support.industry.siemens.com/cs/ww/en/view/21833251
Characteristics and certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16280



1. 3RB2985 function expansion module:
Enables more functions to be added, e.g. internal ground-fault detection and/or an analog output with corresponding signals.
2. Motor current and trip class setting:
Setting the device to the motor current and to the required trip class dependent on the start-up conditions is easy with the two rotary switches.
3. Connecting terminals (removable joint block):
The generously sized terminals permit connection of two conductors with different cross-sections for the auxiliary, control and sensor circuits. Connection is possible with screw connection and alternatively with spring-type connection.
4. Test/RESET button:
Enables testing of all important device components and functions, plus resetting of the device after a trip when manual RESET is selected.
5. Selector switch for manual/automatic RESET:
With this switch you can choose between manual and automatic RESET.
6. Red LED "OVERLOAD":
A continuous red light signals an active overload trip; a flickering red light signals an imminent trip (overload warning).
7. Red LED "THERMISTOR":
A continuous red light signals an active thermistor trip.
8. Red LED "GND FAULT":
A continuous red light signals a ground-fault tripping.
9. Green LED "READY":
A continuous green light signals that the device is working correctly.

SIRIUS 3RB22 and 3RB23 evaluation modules

The 3RB22 and 3RB23 electronic overload relays up to 630 A (up to 820 A possible in combination with a series transformer) are from a modular system and comprise an evaluation unit, a current measuring module and a connecting cable. The 3RB22 overload relays (with monostable auxiliary contacts) and the 3RB23 overload relays (with bistable auxiliary contacts) are supplied from an external voltage.

They have been designed for inverse-time delayed protection of loads with normal and heavy starting against excessive temperature rises due to overload, phase asymmetry or phase failure. An overload, phase asymmetry or phase failure result in an increase of the motor current beyond the set rated motor current.

This current rise is detected by means of a current measuring module (see page 7/132) and electronically evaluated by the evaluation module which is connected to it. The evaluation electronics sends a signal to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor.

The break time depends on the ratio between the tripping current and current setting I_e and is stored in the form of a long-term stable tripping characteristic curve (see Characteristic Curves). The "tripped" status is signaled by means of a continuous red "OVERLOAD" LED.

The LED indicates imminent tripping of the relay due to overload, phase asymmetry or phase failure by flickering when the limit current has been violated. In the case of the 3RB22 and 3RB23 overload relays this warning can also be issued through auxiliary contacts.

In addition to the described inverse-time delayed protection of loads against excessive temperature rises, the 3RB22 and 3RB23 electronic overload relays also allow direct temperature monitoring of the motor windings (full motor protection) by connection with broken-wire interlock of a PTC sensor circuit. With this temperature-dependent protection, the loads can be protected against overheating caused, for example, indirectly by reduced coolant flow and which cannot be detected by means of the current alone. In the event of overheating, the devices switch off the contactor, and thus the load, by means of the auxiliary contacts. The "tripped" status is signaled by means of a continuously illuminated "THERMISTOR" LED.

To protect the loads against high-resistance short circuits due to damage to the insulation, humidity, condensed water, etc., the 3RB22 and 3RB23 electronic overload relays offer the possibility of internal ground fault monitoring in conjunction with a function expansion module (for details, see Operating Instructions, not possible in conjunction with contactor assemblies for start-delta (wye-delta) starting). In the event of a ground fault the 3RB22 and 3RB23 relays trip instantaneously.

The "tripped" status is signaled by means of a continuous red "Ground Fault" LED. Signaling through auxiliary contacts is also possible.

After tripping due to overload, phase asymmetry, phase failure, thermistor or ground-fault tripping, the relay is reset manually or automatically after the recovery time has elapsed.

In conjunction with a function expansion module, the motor current measured by the microprocessor can be output in the form of a DC 4 mA to 20 mA analog signal for operating rotary coil instruments or for feeding into analog inputs of programmable logic controllers.

With an additional AS-Interface analog module the current values can also be transferred over the AS-i bus system.

The 3RB2 electronic overload relays are suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

Use in hazardous areas

The 3RB22 electronic overload relays (monostable) with the 3RB29 current measuring module are suitable for the overload protection of explosion-proof motors.

EC type test certificate for category (2) G/D exists. It has the number PTB 05 ATEX 3022.

Article No. scheme

Product versions		Article number
Electronic overload relays		**3RB2** □ □ □ – □ □ □ □
Device type	e. g. 2 = monostable device for high-feature applications, supplied from external source, for three-phase loads	□
Size, rated operational current and power	e. g. 8 = irrespective of size and current	□
Version of the automatic RESET, electrical remote RESET	e. g. 3 = switchable between manual/auto RESET, with integral electrical remote RESET	□
Trip class (CLASS)	e. g. 4 = CLASS 5E, 10E, 20E, 30E (adjustable)	□
Setting range of the overload release	e.g. A = none specified	□
Connection methods	e.g. A = screw terminals for auxiliary, control and main circuits	□
Installation type	e. g. 1 = stand-alone installation	□
Example		**3RB2 2 8 3 – 4 A A 1**

Note:

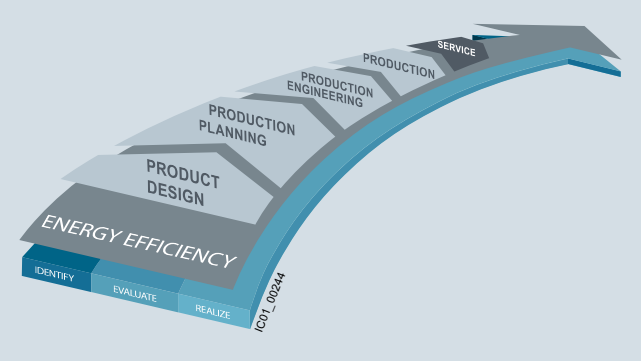
The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RB22 and 3RB23 electronic overload relays are listed in the overview table, (see "General Data", page 7/71 onwards).

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency, see www.siemens.com/sirius/energysaving.

3RB22 and 3RB23 electronic overload relays contribute to energy efficiency throughout the plant as follows:

- Reduced inherent power loss
- Less heating of the control cabinet
- Smaller control cabinet air conditioners can be used

Application

Industries

The 3RB22/3RB23 electronic overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed and temperature-dependent protection of their electrical loads (e. g. motors) under normal and heavy starting conditions (CLASS 5 to CLASS 30), minimize project completion times, inventories and power consumption, and optimize plant availability and maintenance management.

Application

The 3RB22 and 3RB23 devices have been designed for the protection of three-phase asynchronous and single-phase AC motors.

If single-phase AC motors are to be protected by the 3RB22 and 3RB23 electronic overload relays, the main current paths of the current measuring modules must be series-connected. For circuit diagrams see Operating Instructions.

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, ageing and temperature fluctuations.

For the temperature range from -25 °C to +60 °C, the 3RB22 and 3RB23 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

Configuration notes for use of the devices below –25°C or above +60°C on request.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

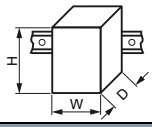
For the use of 3RB22 and 3RB23 electronic overload relays in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

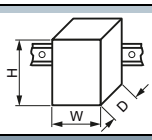
For more information, see Preface on page 7.

Technical specifications

More information	
Application Manual "SIRIUS Controls with IE3/IE4 Motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820	Operating Instructions "3RB22, 3RB23 Electronic Overload Relays", see https://support.industry.siemens.com/cs/ww/en/view/21833251
Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", see https://support.industry.siemens.com/cs/ww/en/view/39714188	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16280/td

The following technical information is intended to provide an initial overview of the various types of device and functions.

Type – Overload relay: evaluation modules			**3RB2283-4A.1**	**3RB2383-4A.1**
Size contactor			S00 ... S10/S12	
Dimensions of evaluation modules (W x H x D)	mm		45 x 111 x 95	
General data				
Tripping in the event of			Overload, phase failure and phase asymmetry (> 40 % according to NEMA), + ground fault (with corresponding function expansion module) and activation of the thermistor motor protection (with closed PTC sensor circuit)	
Trip class acc. to IEC 60947-4-1	CLASS		5E, 10E, 20E and 30E adjustable	
Phase failure sensitivity			Yes	
Overload warning			Yes, from 1.125 x I_e for symmetrical loads and from 0.85 x I_e for unsymmetrical loads	
Reset and recovery				
• Reset options after tripping			Manual, Automatic and Remote RESET	
• Recovery time				
- For automatic RESET	min.		- For tripping due to overcurrent: 3 (stored permanently), - For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature, - For tripping due to a ground fault: no automatic RESET	
- For manual RESET	min.		- For tripping due to overcurrent: 3 (stored permanently), - For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature, - For tripping due to a ground fault: Immediately	
- For remote RESET	min.		- For tripping due to overcurrent: 3 (stored permanently), - For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature, - For tripping due to a ground fault: Immediately	
Features				
• Display of operating state on device			Yes, with four LEDs: - Green LED "Ready", - Red LED "Ground Fault", - Red LED "Thermistor", - Red LED "Overload"	
• TEST function			Yes, test of LEDs, electronics, auxiliary contacts and wiring of control circuit by pressing the button TEST/RESET / self-monitoring	
• RESET button			Yes, with the TEST/RESET button	
• STOP button			No	
Protection and operation of explosion-proof motors				
EC type-examination certificate number according to directive 2014/34/EU (ATEX)			PTB 05 ATEX 3022 Ex II (2) GD see https://support.automation.siemens.com/WW/view/en/23115758	--
Ambient temperatures				
• Storage/transport	°C		-40 ... +80	
• Operation	°C		-25 ... +60	
• Temperature compensation	°C		+60	
• Permissible rated current				
- Temperature inside control cabinet 60 °C	%		100	
- Temperature inside control cabinet 70 °C	%		On request	
Degree of protection acc. to IEC 60529			IP20	
Touch protection acc. to IEC 60529			Finger-safe	
Shock resistance with sine acc. to IEC 60068-2-27	*g*/ms		15/11	

Type – Overload relay: evaluation modules			**3RB2283-4A.1**	**3RB2383-4A.1**
Size contactor			S00 ... S10/S12	
Dimensions of evaluation modules (W x H x D)		mm	45 x 111 x 95	

General data (continued)		
Electromagnetic compatibility (EMC) – Interference immunity		
• Conductor-related interference		
- Burst acc. to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	2 (power ports), 1 (signal port)
- Surge acc. to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	2 (line to earth), 1 (line to line)
• Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	8 (air discharge), 6 (contact discharge)
• Field-related interference acc. to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	10
Electromagnetic compatibility (EMC) – Emitted interference		Degree of severity A according to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)
Resistance to extreme climates – air humidity	%	100
Installation altitude above sea level	m	Up to 2 000
Mounting position		Any
Type of mounting		
• Evaluation modules		Stand-alone installation
• Current measuring module	Size	S00 to S3: Stand-alone installation, S6 and S10/S12: Stand-alone installation or mounting onto contactors

Type – Overload relay: evaluation modules		**3RB2283-4A.1, 3RB2383-4A.1**
Size contactor		S00 ... S10/S12
Auxiliary circuit		
Number of NO contacts		2
Number of NC contacts		2
Number of CO contacts		--
Auxiliary contacts – assignment		• Alternative 1 - 1 NO for the signal "tripped by overload and/or thermistor", - 1 NC for disconnecting the contactor, - 1 NO for the signal "tripped by ground fault", - 1 NC for disconnecting the contactor or [1] • Alternative 2 - 1 NO for the signal "tripped by overload and/or thermistor and/or ground fault", - 1 NC for disconnecting the contactor, - 1 NO for overload warning - 1 NC for disconnecting the contactor
Rated insulation voltage U_i (pollution degree 3)	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Auxiliary contacts – contact rating		
• NC, NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e		
- 24 V	A	6
- 120 V	A	6
- 125 V	A	6
- 250 V	A	3
• NC, NO contacts with DC current DC-13, rated operational current I_e at U_e		
- 24 V	A	2
- 60 V	A	0.55
- 110 V	A	0.3
- 125 V	A	0.3
- 250 V	A	0.2
• Conventional thermal current I_{th}	A	5
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes
Short-circuit protection		
• With fuse, operational class gG	A	6
• With miniature circuit breaker, C characteristic	A	1.6
Protective separation between auxiliary current paths Acc. to IEC 60947-1	V	300
CSA, UL, UR rated data		
Auxiliary circuit – switching capacity		B300, R300

[1] The assignment of auxiliary contacts may be influenced by function expansion modules.

3RB22, 3RB23 for high-feature applications

Type – Overload relay: evaluation modules		**3RB2283-4A.1, 3RB2383-4A.1**
Size contactor		S00 ... S10/S12
Control circuit		
Rated insulation voltage U_i (pollution degree 3)	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Rated control supply voltage U_s		
• 50/60 Hz AC	V	24 ... 240
• DC	V	24 ... 240
Operating range		
• 50/60 Hz AC		$0.85 \times U_{s\,min} \leq U_s \leq 1.1 \times U_{s\,max}$
• DC		$0.85 \times U_{s\,min} \leq U_s \leq 1.1 \times U_{s\,max}$
Rated power		
• 50/60 Hz AC	W	0.5
• DC	W	0.5
Mains buffering time	ms	200
Sensor circuit		
Thermistor motor protection (PTC thermistor sensor)		
• Summation cold resistance	kΩ	≤ 1.5
• Response value	kΩ	3.4 ... 3.8
• Return value	kΩ	1.5 ... 1.65
Ground-fault detection		The information refers to sinusoidal residual currents at 50/60 Hz.
• Tripping value I_Δ [1]		
- For $0.3 \times I_e < I_{motor} < 2.0 \times I_e$		$> 0.3 \times I_e$
- For $2.0 \times I_e < I_{motor} < 8.0 \times I_e$		$> 0.15 \times I_{motor}$
• Response time t_{trip}	ms	500 ... 1 000
Analog output [1)2)]		
Rated values		
• Output signal	mA	4 ... 20
• Measuring range		0 ... $1.25 \times I_e$ 4 mA is equivalent to $0 \times I_e$ 16.8 mA is equivalent to $1.0 \times I_e$ 20 mA is equivalent to $1.25 \times I_e$
• Load, max.	Ω	100
Conductor cross-sections for the auxiliary, control and sensor circuits as well as the analog output		
Connection type		**Screw terminals**
Terminal screw		M3, Pozidriv size 2
Operating devices	mm	3.0 x 0.5
Prescribed tightening torque	Nm	0.8 ... 1.2
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
• Solid or stranded	mm^2	1 × (0.5 ... 4)[3)], 2 × (0.5 ... 2.5)[3)]
• Finely stranded without end sleeve	mm^2	--
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	1 × (0.5 ... 2.5)[3)], 2 × (0.5 ... 1.5)[3)]
• AWG cables, solid or stranded	AWG	2 × (20 ... 14)
Connection type		**Spring-type terminals**
Operating devices	mm	3.0 x 0.5
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
• Solid or stranded	mm^2	2 × (0.25 ... 1.5)
• Finely stranded without end sleeve	mm^2	--
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 × (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	2 × (24 ... 16)

1) For the 3RB22 and 3RB23 overload relays in combination with a corresponding function expansion module.

2) Analog input modules, e.g. SM 331, must be configured for 4-wire measuring transducers. In this case the analog input module must not supply current to the analog output of the 3RB22 and 3RB23 relay.

3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Functions of the 3RB22 and 3RB23 evaluation modules in combination with the 3RB2985 function expansion modules

Evaluation modules	With function expansion module	Basic functions	Inputs		
			A1/A2	T1/T2	Y1/Y2
3RB2283-4AA1 3RB2283-4AC1 3RB2383-4AA1 3RB2383-4AC1	--	Inverse-time delayed protection, temperature-dependent protection, electrical remote RESET, overload warning	Power supply 24 ... 240 V AC/DC	Connection PTC sensor	Electrical remote RESET
	3RB2985-2CA1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical remote RESET, overload warning	Power supply 24 ... 240 V AC/DC	Connection PTC sensor	Electrical remote RESET
	3RB2985-2CB1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical remote RESET, ground-fault signal	Power supply 24 ... 240 V AC/DC	Connection PTC sensor	Electrical remote RESET
	3RB2985-2AA0	Inverse-time delayed protection, temperature-dependent protection, electrical remote RESET, overload warning, analog output	Power supply 24 ... 240 V AC/DC	Connection PTC sensor	Electrical remote RESET
	3RB2985-2AA1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical remote RESET, overload warning, analog output	Power supply 24 ... 240 V AC/DC	Connection PTC sensor	Electrical remote RESET
	3RB2985-2AB1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical remote RESET, ground-fault signal, analog output	Power supply 24 ... 240 V AC/DC	Connection PTC sensor	Electrical remote RESET

Evaluation modules	With function expansion module	Outputs				
		I (–) / I (+)	95/96 NC	97/98 NO	05/06 NC	07/08 NO
3RB2283-4AA1 3RB2283-4AC1 3RB2383-4AA1 3RB2383-4AC1	--	No	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2CA1	No	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection + ground fault)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2CB1	No	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection)	Signal "tripped"	Disconnection of the contactor (ground fault)	Signal "ground-fault tripping"
	3RB2985-2AA0	Analog signal	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2AA1	Analog signal	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection + ground fault)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2AB1	Analog signal	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection)	Signal "tripped"	Disconnection of the contactor (ground fault)	Signal "ground-fault tripping"

3RB22, 3RB23 for high-feature applications *IE3/IE4 ready*

3RB22 and 3RB23 electronic overload relays (evaluation modules) for full motor protection, stand-alone installation, CLASS 5E, 10E, 20E and 30E (adjustable)

Type	3RB2283-4A.1, 3RB2383-4A.1
Features and technical specifications	
Overload protection, phase failure protection and asymmetry protection	✓
Supplied from an external source	✓ 24 ... 240 V AC/DC
Auxiliary contacts	✓ 2 NO + 2 NC
Electrical remote RESET integrated	✓
Four LEDs for operating and status displays	✓
TEST function and self-monitoring	✓
Internal ground-fault detection	✓ (with function expansion module)
Screw or spring-type terminals for auxiliary, control and sensor circuits	✓
Input for PTC sensor circuit	✓
Analog output	✓ (with function expansion module)

✓ Available

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB2283-4AA1,
3RB2383-4AA1

3RB2283-4AC1,
3RB2383-4AC1

Size contactor	Version	SD d	Screw terminals Article No.	Price per PU	SD d	Spring-type terminals Article No.	Price per PU
Evaluation modules							
S00 ... S12	Monostable	►	**3RB2283-4AA1**		►	**3RB2283-4AC1**	
	Bistable	►	**3RB2383-4AA1**		►	**3RB2383-4AC1**	

Notes:

Overview of overload relays – matching contactors, see page 7/76.

Current measuring modules and related connecting cables, see page 7/132, general accessories, see page 7/133 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Function expansion modules for 3RB22 and 3RB23 overload relays (evaluation modules)

	Size contactor	Version	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Sizes S00 to S12									
		For plugging into evaluation module (1 unit)							
 3RB2985-2..1	S00 ... S12	**Analog Basic 1 modules**[1] Analog output 4 ... 20 mA DC, with overload warning	3RB22, 3RB23	►	**3RB2985-2AA0**		1	1 unit	41F
		Analog Basic 1 GF modules[1)2)] Analog output 4 ... 20 mA DC, with internal ground-fault detection and overload warning	3RB22, 3RB23	►	**3RB2985-2AA1**		1	1 unit	41F
		Analog Basic 2 GF modules[1)2)] Analog output 4 ... 20 mA DC, with internal ground-fault detection and ground-fault signal	3RB22, 3RB23	►	**3RB2985-2AB1**		1	1 unit	41F
		Basic 1 GF modules[2)] with internal ground-fault detection and overload warning	3RB22, 3RB23	►	**3RB2985-2CA1**		1	1 unit	41F
		Basic 2 GF modules[2)] with internal ground-fault detection and ground-fault signal	3RB22, 3RB23	►	**3RB2985-2CB1**		1	1 unit	41F

1) The analog signal 4 mA up to 20 mA DC can be used for operating rotary coil instruments or for feeding into analog inputs of programmable logic controllers.

2) The following information on ground-fault protection refers to sinusoidal residual currents at 50/60 Hz:
- With a motor current of between 0.3 and 2 times the current setting I_e, the unit will trip at a ground-fault current equal to 30 % of the current setting.
- With a motor current of between 2 and 8 times the current setting I_e, the unit will trip at a ground-fault current equal to 15 % of the current setting.
- The response delay amounts to between 0.5 s and 1 s.

Note:

Analog input modules, e.g. SM 331, must be configured for 4-wire measuring transducers. In this case the analog input module must not supply current to the analog output of the 3RB22/3RB23 relay.

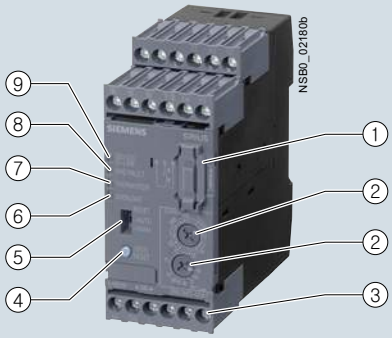
7

Overview

More information

Home page, see http://www.siemens.com/sirius-overloadrelays
Industry Mall, see www.siemens.com/product?3RB2

Application Manual "SIRIUS Controls with IE3/IE4 Motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820
Manual "SIRIUS 3RB24 Electronic Overload Relay for IO-Link", see https://support.industry.siemens.com/cs/ww/en/view/46165627
Certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16281/cert



1. Plug-in point for operator panel:
enables connection of the 3RA6935-0A operator panel.
2. Motor current and trip class setting:
Setting the device to the motor current and to the required trip class dependent on the start-up conditions is easy with the two rotary switches.
3. Connecting terminals (removable terminal block):
The generously sized terminals permit connection of two conductors with different cross-sections for the auxiliary, control and sensor circuits. Connection is possible with screw connection and alternatively with spring-type connection.
4. Test/RESET button:
Enables testing of all important device components and functions, plus resetting of the device after a trip when manual RESET is selected.
5. Selector switch for manual/automatic RESET:
With this switch you can choose between manual and automatic RESET.
6. Red LED "OVERLOAD":
A continuous red light signals an active overload trip; a flickering led light signals an imminent trip (overload warning).
7. Red LED "THERMISTOR":
A continuous red light signals an active thermistor trip.
8. Red LED "GND FAULT":
A continuous red light signals an active ground-fault trip.
9. Green LED "DEVICE/IO-Link:
A continuous green light signals that the device is working correctly, a green flickering light signals the communication through IO-Link.

SIRIUS 3RB24 evaluation module

The modular, IO-Link powered 3RB24 electronic overload relays (with monostable auxiliary contacts) up to 630 A (up to 820 A possible with a series transformer) have been designed for current-dependent protection of loads with normal and heavy starting against excessive temperature rises due to overload, phase asymmetry or phase failure. It comprises an evaluation unit, a current measuring module and a connecting cable.

The evaluation module 3RB24 also offers an engine starter function: The contactors, which are connected via the auxiliary contacts, can also be actuated for operation via IO-Link. In this way, direct-on-line, reversing and wye-delta starters up to 630 A (or 830 A) can be connected to the controller wirelessly via the IO-Link controller.

An overload, phase asymmetry or phase failure result in an increase of the motor current beyond the set rated motor current.

This current rise is detected by means of the current measuring module (see page 7/132) and electronically evaluated by the evaluation module which is connected to it. The evaluation electronics sends a signal to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor.

The break time depends on the ratio between the tripping current and current setting I_e and is stored in the form of a long-term stable tripping characteristic curve (see Manual). The "tripped" status is signaled by means of a continuously illuminated red "OVERLOAD" LED and also reported as a group fault via IO-Link.

The LED indicates imminent tripping of the relay due to overload, phase asymmetry or phase failure by flickering when the limit current has been violated. This warning can also be reported to the higher-level PLC via IO-Link at the 3RB24 overload relay.

In addition to the described inverse-time delayed protection of loads against excessive temperature rises, the 3RB24 electronic overload relays also allow direct temperature monitoring of the motor windings (full motor protection) by connection with broken-wire interlock of a PTC sensor circuit. With this temperature-dependent protection, the loads can be protected against overheating caused, for example, indirectly by reduced coolant flow and which cannot be detected by means of the current alone. In the event of overheating, the devices switch off the contactor, and thus the load, by means of the auxiliary contacts. The "tripped" status is signaled by means of a continuously illuminated "THERMISTOR" LED and also reported as a group fault via IO-Link.

To protect the loads against incomplete ground faults due to damage to the insulation, humidity, condensation, etc., the 3RB24 electronic overload relays offer the possibility of internal ground-fault detection (for details, see Manual, not possible in conjunction with contactor assemblies for star-delta (wye-delta) starting). In the event of a ground fault, the 3RB24 relays trip instantaneously.

The "tripped" status is signaled by means of a flashing red LED "Ground Fault" and reported at the overload relay 3RB24 as a group fault via IO-Link.

The reset after overload, phase asymmetry, phase failure, thermistor or ground-fault tripping is performed manually by key on site, via IO-Link or by electrical remote RESET or automatically after the cooling time (motor model) or for thermistor protection after sufficient cooling. Trips in devices initiated by function monitoring systems (broken wire or short-circuit on the thermistor) can only be reset locally.

A motor current measured by the microprocessor can be output in the form of an analog signal DC 4 mA to 20 mA for operating rotary coil instruments or for feeding into analog inputs of programmable logic controllers.

The current values can be transmitted to the higher-level controller via IO-Link.

The 3RB24 electronic overload relay for IO-Link is suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

Use in hazardous areas

The 3RB24 electronic overload relays for IO-Link with the 3RB29 current measuring module are suitable for the overload protection of motors with the following types of protection:

- Ex II (2) G [Ex e] [Ex d] [Ex px]
- Ex II (2) D [Ex t] [Ex p]

EC type test certificate for Group II, Category (2) G/D exists. It has the number PTB 11 ATEX 3014.

Article No. scheme

Product versions		Article number
Electronic overload relays		**3RB2** □ □ □ – □ □ □ □
Device type	e. g. 4 = monostable device for high-feature applications, supplied from external source (24 V DC), for three-phase loads	□
Size, rated operational current and power	e. g. 8 = irrespective of size and current	□
Version of the automatic RESET, electrical remote RESET	e. g. 3 = switchable between manual/auto RESET, with integral electrical remote RESET	□
Trip class (CLASS)	e. g. 4 = CLASS 5E, 10E, 20E, 30E (adjustable)	□
Setting range of the overload release	e.g. A = none specified	□
Connection methods	e.g. A = screw terminals for auxiliary, control and main circuits	□
Installation type	e. g. 1 = stand-alone installation	□
Example		**3RB2 4 8 3 – 4 A A 1**

Note:

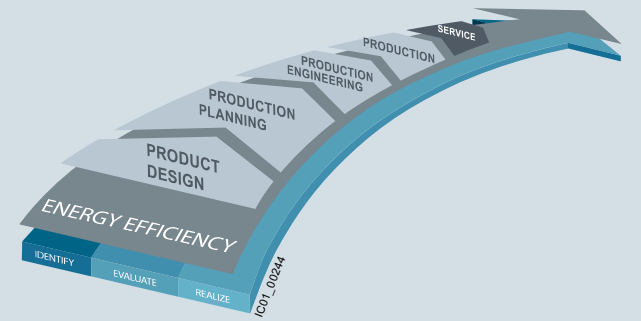
The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RB24 electronic overload relays for IO-Link are listed in the overview table (see "General Data", page 7/71 onwards).

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.
The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see www.siemens.com/sirius/energysaving).

3RB24 electronic overload relays for IO-Link contribute to energy efficiency throughout the plant as follows:

- Transmission of current values
- Reduced inherent power loss
- Less heating of the control cabinet
- Smaller control cabinet air conditioners can be used

3RB24 for IO-Link for high-feature applications

Application

Industries

The 3RB24 electronic overload relays are suitable for customers from all industries who want to guarantee optimum current and temperature-dependent protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5E to 30E), minimize project completion times, inventories and energy consumption, and optimize plant availability and maintenance management.

Application

The 3RB24 electronic overload relays have been designed for the protection of three-phase asynchronous and single-phase AC motors.

In addition to protection function, these devices can be used together with contactors as direct or reversing starters (star-delta (wye-delta) start also possible), which are controlled via IO-Link. This makes it possible to directly control drives via IO-Link from a higher-level controller or on site via the optional hand-held device and also, for example, to return current values directly via IO-Link.

If single-phase AC motors are to be protected by the 3RB24 electronic overload relays, the main current paths of the current measuring modules must be series-connected.
(Circuit Diagrams see Manual).

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, ageing and temperature fluctuations.

In the temperature range from -25 °C to +60 °C, the 3RB24 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

Configuration notes for use of the devices below –25°C or above +60°C on request.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

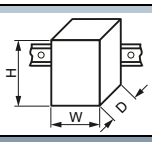
For the use of 3RB24 electronic overload relays in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

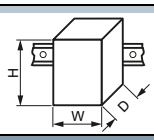
For more information, see Preface on page 7.

Technical specifications

More information	
Application Manual "SIRIUS Controls with IE3/IE4 Motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820	Manual "SIRIUS 3RB24 Electronic Overload Relay for IO-Link", see https://support.industry.siemens.com/cs/ww/en/view/46165627
Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", see https://support.industry.siemens.com/cs/ww/en/view/39714188	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16281/td

The following technical information is intended to provide an initial overview of the various types of device and functions.

Type – Overload relay: evaluation modules			**3RB2483-4A.1**
Size contactor			S00 ... S10/S12
Dimensions of evaluation modules (W x H x D)		mm	45 x 111 x 95
General data			
Tripping in the event of			Overload, phase failure and phase asymmetry (> 40 % according to NEMA), + ground fault (connectable and disconnectable) and activation of the thermistor motor protection (with closed PTC sensor circuit)
Trip class acc. to IEC 60947-4-1		CLASS	5E, 10E, 20E and 30E adjustable
Phase failure sensitivity			Yes
Overload warning			Yes, from 1.125 x I_e for symmetrical loads and from 0.85 x I_e for unsymmetrical loads
Reset and recovery			
• Reset options after tripping			Manual and automatic RESET, electrical remote RESET or through IO-Link
• Recovery time			
- For automatic RESET		min.	- For tripping due to overcurrent: 3 (stored permanently), - For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature, - For tripping due to a ground fault: no automatic RESET
- For manual RESET		min.	- For tripping due to overcurrent: 3 (stored permanently), - For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature, - For tripping due to a ground fault: Immediately
- For remote RESET		min.	- For tripping due to overcurrent: 3 (stored permanently), - For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature, - For tripping due to a ground fault: Immediately

Type – Overload relay: evaluation modules		**3RB2483-4A.1**
Size contactor		S00 ... S10/S12
Dimensions of evaluation modules (W x H x D)	mm	45 x 111 x 95

General data (continued)

Features		
• Display of operating state on device		Yes, with four LEDs: - Green "DEVICE/IO-Link" LED - Red LED "Ground Fault" - Red LED "Thermistor" - Red "Overload" LED
• TEST function		Yes, test of LEDs, electronics, auxiliary contacts and wiring of control circuit by pressing the button TEST/RESET / self-monitoring
• RESET button		Yes, with the TEST/RESET button
• STOP button		No
Protection and operation of explosion-proof motors		
EC type-examination certificate number according to directive 2014/34/EU (ATEX)		PTB 11 ATEX 3014 Ex II (2) G [Ex e] [Ex d] [Ex px] Ex II (2) G [Ex t] [Ex p] see https://support.industry.siemens.com/cs/ww/en/view/60524083
Ambient temperatures		
• Storage/transport	°C	-40 ... +80
• Operation	°C	-25 ... +60
• Temperature compensation	°C	+60
• Permissible rated current		
- Temperature inside control cabinet 60 °C	%	100
- Temperature inside control cabinet 70 °C	%	On request
Degree of protection acc. to IEC 60529		IP20
Touch protection acc. to IEC 60529		Finger-safe
Shock resistance with sine acc. to IEC 60068-2-27	g/ms	15/11
Electromagnetic compatibility (EMC) – Interference immunity		
• Conductor-related interference		
- Burst acc. to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	2 (power ports), 1 (signal port)
- Surge acc. to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	2 (line to earth), 1 (line to line)
• Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	8 (air discharge), 6 (contact discharge)
• Field-related interference acc. to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	10
Electromagnetic compatibility (EMC) – Emitted interference		Degree of severity A according to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)
Resistance to extreme climates – air humidity	%	100
Installation altitude above sea level	m	Up to 2 000
Mounting position		Any
Type of mounting		
• Evaluation modules		Stand-alone installation
• Current measuring module	Size	S00 to S3: Stand-alone installation, S6 and S10/S12: Stand-alone installation or mounting onto contactors

3RB24 for IO-Link for high-feature applications

Type – Overload relay: evaluation modules		**3RB2483-4A.1**
Size contactor		S00 ... S10/S12
Auxiliary circuit		
Number of auxiliary switches		1 CO contact, 1 NO contact connected in series internally
Auxiliary contacts – assignment		• 1 CO contact for selecting the contactor (for reversing starter function), actuated by the control system • 1 NO contact for normal switching duty, actuated by the control system (opens automatically when tripping occurs)
Rated insulation voltage U_i (pollution degree 3)	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Auxiliary contacts – contact rating		
• NC, NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e		
- 24 V	A	6
- 120 V	A	6
- 125 V	A	6
- 250 V	A	3
• NC, NO contacts with DC current DC-13, rated operational current I_e at U_e		
- 24 V	A	2
- 60 V	A	0.55
- 110 V	A	0.3
- 125 V	A	0.3
- 250 V	A	0.2
• Conventional thermal current I_{th}	A	5
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes
Short-circuit protection		
• With fuse, operational class gG	A	6
• With miniature circuit breaker, C characteristic	A	1.6
Protective separation between auxiliary current paths Acc. to IEC 60947-1	V	300
CSA, UL, UR rated data		
Auxiliary circuit – switching capacity		B300, R300
Conductor cross-sections of the auxiliary circuit		
Connection type		**Screw terminals**
Terminal screw		M3, Pozidriv size 2
Operating devices	mm	3.0 x 0.5
Prescribed tightening torque	Nm	0.8 ... 1.2
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
• Solid or stranded	mm^2	1 × (0.5 ... 4)[1], 2 × (0.5 ... 2.5)[1]
• Finely stranded without end sleeve	mm^2	--
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	1 × (0.5 ... 2.5)[1], 2 × (0.5 ... 1.5)[1]
• AWG cables, solid or stranded	AWG	2 × (20 ... 14)
Connection type		**Spring-type terminals**
Operating devices	mm	3.0 x 0.5
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
• Solid or stranded	mm^2	2 × (0.25 ... 1.5)
• Finely stranded without end sleeve	mm^2	–
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 × (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	2 × (24 ... 16)

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Type – Overload relay: evaluation modules		**3RB2483-4A.1**
Size contactor		S00 ... S10/S12
Control circuit		
Rated insulation voltage U_i (pollution degree 3)	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Rated control supply voltage U_s [1]		
• DC	V	24 through IO-Link
Operating range		
• DC		$0.85 \times U_{s\,min} \leq U_s \leq 1.1 \times U_{s\,max}$
Rated power		
• DC	W	0.5
Mains buffering time	ms	200
Sensor circuit		
Thermistor motor protection (PTC thermistor sensor)		
• Summation cold resistance	kΩ	≤ 1.5
• Response value	kΩ	3.4 ... 3.8
• Return value	kΩ	1.5 ... 1.65
Ground-fault detection		The information refers to sinusoidal residual currents at 50/60 Hz.
• Tripping value I_Δ		
- For $0.3 \times I_e < I_{motor} < 2.0 \times I_e$		$> 0.3 \times I_e$
- For $2.0 \times I_e < I_{motor} < 8.0 \times I_e$		$> 0.15 \times I_{motor}$
• Response time t_{trip}	ms	500 ... 1 000
Analog output [1]		
Rated values		
• Output signal	mA	4 ... 20
• Measuring range		0 ... $1.25 \times I_e$ 4 mA is equivalent to $0 \times I_e$ 16.8 mA is equivalent to $1.0 \times I_e$ 20 mA is equivalent to $1.25 \times I_e$
• Load, max.	Ω	100
Conductor cross-sections for the control and sensor circuits as well as the analog output		
Connection type		**Screw terminals**
Terminal screw		M3, Pozidriv size 2
Operating devices	mm	3.0 x 0.5
Prescribed tightening torque	Nm	0.8 ... 1.2
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
• Solid	mm^2	1 × (0.5 ... 4)[2], 2 × (0.5 ... 2.5)[2]
• Finely stranded without end sleeve	mm^2	--
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	1 × (0.5 ... 2.5)[2], 2 × (0.5 ... 1.5)[2]
• Stranded	mm^2	--
• AWG cables, solid or stranded	AWG	2 × (20 ... 14)
Connection type		**Spring-type terminals**
Operating devices	mm	3.0 x 0.5
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
• Solid	mm^2	2 × (0.25 ... 1.5)
• Finely stranded without end sleeve	mm^2	--
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 × (0.25 ... 1.5)
• Stranded	mm^2	2 × (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	2 × (24 ... 16)

[1] Analog input modules, e.g. SM 331, must be configured for 4-wire measuring transducers. The analog input module may not supply current to the analog output of the 3RB24 overload relay.

[2] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

3RB24 for IO-Link for high-feature applications *IE3/IE4* ready

3RB24 electronic overload relays (evaluation modules) for full motor protection, stand-alone installation, CLASS 5E, 10E, 20E and 30E (adjustable)

Type	3RB2483-4A.1
Features and technical specifications	
Overload protection, phase failure protection and asymmetry protection	✓
Supplied from an external source	✓ 24 V DC through IO-Link
Direct-on-line or reversing starters (wye-delta starting also possible) controllable through IO-Link	✓
Auxiliary contacts	✓ 1 CO and 1 NO in series
Manual and automatic RESET	✓
Remote RESET	✓ (electrically or via IO-Link)
Four LEDs for operating and status displays	✓
TEST function and self-monitoring	✓
Internal ground-fault detection	✓
Screw or spring-type terminals for auxiliary, control and sensor circuits	✓
Input for PTC sensor circuit	✓
Analog output	✓
IO-Link-specific functions	
• Connection of direct-on-line, reversing and star-delta starters to the controller via IO-Link	✓
• On-site controlling of the starter using the hand-held device	✓
• Accessing process data (e.g. current values in all three phases) via IO-Link	✓
• Accessing parameterization and diagnostics data (e.g. tripped signals) via IO-Link	✓

✓ Available

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB2483-4AA1

3RB2483-4AC1

Size contactor	Version	SD d	Screw terminals Article No.	Price per PU	SD d	Spring-type terminals Article No.	Price per PU
Evaluation modules							
S00 ... S12	Monostable	►	**3RB2483-4AA1**		2	**3RB2483-4AC1**	

Notes:

- Overview table of overload relays – matching contactors, see page 7/76
- Analog input modules, e.g. SM 331, must be configured for 4-wire measuring transducers. The analog input module may not supply current to the analog output of the 3RB24 relay.

Current measuring modules and related connecting cables, see page 7/132, "Accessories", see page 7/133 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

More information	
Home page, see http://www.siemens.com/sirius-overloadrelays Industry Mall, see www.siemens.com/product?3RB2	Application Manual "SIRIUS Controls with IE3/IE4 Motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820 Other Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16282/man

SIRIUS 3RB2906 current measuring module

The current measuring modules are designed as system components for connecting to evaluation units 3RB22 to 3RB24. Using these evaluation units the motor current is measured and the measured value sent to the evaluation unit for evaluation.

The current measuring modules in sizes up to S3 are equipped with straight-through transformers and can be snap-fitted under the evaluation units. The larger evaluation units are installed directly on the contactor or as stand-alone units.

Application

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

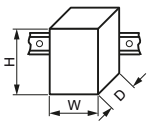
For the use of current measuring modules for 3RB22, 3RB23, 3RB24 in conjunction with highly energy-efficient IE3/IE4 motors, please read the information on dimensioning and configuration, see Application Manual.

For more information, see Preface on page 7.

Technical specifications

More information	
Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16282/man	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16282/td

The following technical information is intended to provide an initial overview of the various types of device and functions.

Type – Overload relays: Current measuring modules			**3RB2906**		**3RB2956**	**3RB2966**
Size contactor			S00/S0	S2/S3	S6	S10/S12
Dimensions of current measuring modules (W x H x D)	mm		45 x 84 x 45	55 x 94 x 72	120 x 119 x 145	145 x 147 x 148
Main circuit						
Rated insulation voltage U_i (pollution degree 3)	V		1 000			
Rated impulse withstand voltage U_{imp}	kV		6		8	
Rated operational voltage U_e	V		1 000			
Type of current						
• Direct current			No			
• Alternating current			Yes, 50/60 Hz ± 5 %			
Current setting	A		0.3 ... 3; 2.4 ... 25	10 ... 100	20 ... 200	63 ... 630
Power loss per unit (max.)	W		0.5			
Short-circuit protection						
• With fuse without contactor			see "Selection and Ordering Data", page 7/132			
• With fuse and contactor			See Configuration Manuals • "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders" • "SIRIUS Configuration – Selection Data for Fuseless Load Feeders"			
Degree of protection acc. to IEC 60529						
• Screw terminals/busbar connections			IP20		- IP20 (front side) - Terminal IP00 (use additional terminal covers for higher degree of protection)	
• Straight-through transformers			IP20		IP20	--
Touch protection acc. to IEC 60529						
• Screw terminals/busbar connections			Finger-safe		Finger-safe with terminal covers for vertical contact from the front	
• Straight-through transformers			Finger-safe		Finger-safe	--
Protective separation between main and auxiliary current paths acc. to IEC 60947-1 (pollution degree 2)						
• For systems with grounded neutral point	V		690			
• For systems with ungrounded neutral point	V		600			

Type – Overload relays: Current measuring modules		**3RB2906**		**3RB2956**	**3RB2966**
Size contactor		S00/S0	S2/S3	S6	S10/S12
Dimensions of current measuring modules (W x H x D)	mm	45 x 84 x 45	55 x 94 x 72	120 x 119 x 145	145 x 147 x 148
Conductor cross-sections of main circuit					
Connection type		**Screw terminals with box terminal**			
Terminal screw	mm	--		4 mm Allen screw	5 mm Allen screw
Operating devices	mm	--		4 mm Allen screw	5 mm Allen screw
Prescribed tightening torque	Nm	--		10 ... 12	20 ... 22
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm^2	--		With box terminal 3RT1955-4G: 2 × (max. 70), 1 × (16 ... 70) With box terminal 3RT1956-4G: 2 × (max. 120), 1 × (16 ... 120)	2 × (70 ... 240), Front clamping point only: 1 × (95 ... 300) Rear clamping point only: 1 × (120 ... 240)
• Finely stranded without end sleeve	mm^2	--		With box terminal 3RT1955-4G: 2 × (1 × max. 50, 1 × max. 70), 1 × (10 ... 70) With box terminal 3RT1956-4G: 2 × (1 × max. 95, 1 × max. 120), 1 × (10 ... 120)	2 × (50 ... 185), Front clamping point only: 1 × (70 ... 240) Rear clamping point only: 1 × (120 ... 185)
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	--		With box terminal 3RT1955-4G: 2 × (1 × max. 50, 1 × max. 70), 1 × (10 ... 70) With box terminal 3RT1956-4G: 2 × (1 × max. 95, 1 × max. 120), 1 × (10 ... 120)	2 × (50 ... 185), Front clamping point only: 1 × (70 ... 240) Rear clamping point only: 1 × (120 ... 185)
• AWG cables	AWG	--		With box terminal 3RT1955-4G: 2 × (max. 1/0), 1 × (6 ... 2/0) With box terminal 3RT1956-4G: 2 × (max. 3/0), 1 × (6 ... 250 kcmil)	2 × (2/0 ... 500 kcmil), Front clamping point only: 1 × (3/0 ... 600 kcmil) Rear clamping point only: 1 × (250 kcmil ... 500 kcmil)
• Ribbon cables (Number x Width x Thickness)	mm	--		With box terminal 3RT1955-4G: 2 × (6 × 15.5 × 0.8), 1 × (3 × 9 × 0.8 ... 6 × 15.5 × 0.8) With box terminal 3RT1956-4G: 2 × (10 × 15.5 × 0.8), 1 × (3 × 9 × 0.8 ... 10 × 15.5 × 0.8)	2 × (20 × 24 × 0.5), 1 × (6 × 9 × 0.8 ... 20 × 24 × 0.5)
Connection type		**Busbar connections**			
Terminal screw		--		M8 × 25	M10 x 30
Prescribed tightening torque	Nm	--		10 ... 14	14 ... 24
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid with cable lug	mm^2	--		16 ... 95[1]	50 ... 240[2]
• Stranded with cable lug	mm^2	--		25 ... 120[1]	70 ... 240[2]
• AWG cables, solid or stranded, with cable lug	AWG	--		4 ... 250 kcmil	2/0 ... 500 kcmil
• With connecting bars (max. width)	mm	--		17	25
Connection type		**Straight-through transformers**			
Diameter of opening	mm	7.5	14	25	--

1) When connecting cable lugs according to DIN 46235 with conductor cross-sections of 95 mm^2 and more, the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/133.

2) When connecting cable lugs according to DIN 46234 for conductor cross-sections from 240 mm^2, as well as DIN 46235 for cable cross-sections from 185 mm^2, the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/133.

Current measuring modules for 3RB22, 3RB23, 3RB24 *IE3/IE4* ready

Selection and ordering data

Current measuring modules (essential accessories)

3RB2906-2BG1,
3RB2906-2DG1

3RB2906-2JG1

3RB2956-2TG2

3RB2966-2WH2

Size contactor	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[1]	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A		d					
Sizes S00/S0									
Devices with straight-through transformer for stand-alone installation									
S00/S0	0.3 … 3	20	3RB22 to 3RB24	►	**3RB2906-2BG1**		1	1 unit	41G
	2.4 … 25	63		►	**3RB2906-2DG1**		1	1 unit	41G
Sizes S2/S3									
Devices with straight-through transformer for stand-alone installation									
S2/S3	10 … 100	315	3RB22 to 3RB24	►	**3RB2906-2JG1**		1	1 unit	41G
Size S6									
Devices with busbar connection for mounting onto contactor and stand-alone installation									
S6	20 … 200	315	3RB22 to 3RB24	►	**3RB2956-2TH2**		1	1 unit	41G
Devices with straight-through transformer for mounting onto contactor and stand-alone installation									
For mounting onto S6 contactors with box terminals	20 … 200	315	3RB22 to 3RB24	►	**3RB2956-2TG2**		1	1 unit	41G
Sizes S10/S12[2]									
Devices with busbar connection for mounting onto contactor and stand-alone installation									
S10/S12 and size 14 (3TF68/3TF69)[2]	63 … 630	800	3RB22 to 3RB24	►	**3RB2966-2WH2**		1	1 unit	41G

[1] Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, See Configuration Manuals
- "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders",
- "SIRIUS Configuration – Selection Data for Fuseless Load Feeders".

[2] For 3TF68/3TF69 contactors, direct mounting is not possible.

Note:

The connecting cable between the current measuring module and the evaluation module is not included in the scope of supply; please order separately (see "Accessories").

Accessories

	Size contactor	Version	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Connecting cables (essential accessories)									
 3RB2987-2.		For connection between evaluation module and current measuring module							
	S00 ... S3	• Length 0.1 m (only for mounting of the evaluation module directly onto the current measuring module)	3RB22 to 3RB24	►	**3RB2987-2B**		1	1 unit	41F
	S00 ... S12	• Length 0.5 m	3RB22 to 3RB24	►	**3RB2987-2D**		1	1 unit	41F

Additional general accessories, see page 7/133.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

More information

Home page, see http://www.siemens.com/sirius-overloadrelays
Industry Mall, see www.siemens.com/product?3RB2
Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16283/man

The following optional accessories are available for the 3RB22 to 3RB24 electronic overload relays:

- Operator panel for the evaluation modules 3RB24
- Sealable cover for the evaluation modules 3RB22 to 3RB24
- Terminal covers for the 3RB29 current measuring modules size S6 and S10/S12
- Box terminal blocks for the 3RB29 current measuring modules size S6 and S10/S12
- Push-in lugs for screw fixing for 3RB22 to 3RB24 evaluation modules and 3RB2906 current measuring modules

Selection and ordering data

Accessories for 3RB24 overload relays

Version	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Operator panels for evaluation modules							
 3RA6935-0A **Operator panels (set)** One set comprises: • 1 x operator panel • 1 x 3RA6936-0A enabling module • 1 x 3RA6936-0B interface cover • 1 x fixing terminal Note: The connecting cable between the evaluation module and the operator panel is not included in the scope of supply; please order separately.	3RB24	10	**3RA6935-0A**		1	1 unit	42F
Connecting cables Length 2.5 m (round), for connecting the evaluation module to the operator panel	3RB24	►	**3UF7933-0BA00-0**		1	1 unit	42J
Enabling modules (replacement)	3RB24	10	**3RA6936-0A**		1	1 unit	42F
Interface covers	3RB24	10	**3RA6936-0B**		1	5 units	42F

General accessories

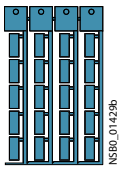
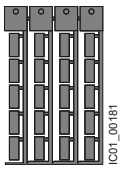
Version	Size	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Sealable covers for evaluation modules								
 3RB2984-2 For covering the setting knobs	--	3RB22 to 3RB24	►	**3RB2984-2**		1	10 units	41F
Terminal covers for current measuring modules								
 3RT1956-4EA1 **Covers for cable lugs and busbar connections**								
• Length 100 mm	S6	3RB2956	►	**3RT1956-4EA1**		1	1 unit	41B
• Length 120 mm	S10/S12	3RB2966	►	**3RT1966-4EA1**		1	1 unit	41B
Covers for box terminals								
• Length 25 mm	S6	3RB2956	►	**3RT1956-4EA2**		1	1 unit	41B
• Length 30 mm	S10/S12	3RB2966	►	**3RT1966-4EA2**		1	1 unit	41B
 3RT1956-4EA2 **Covers for screw terminals** between contactor and overload relay, without box terminals (1 unit required per combination)	S6	3RB2956	►	**3RT1956-4EA3**		1	1 unit	41B
	S10/S12	3RB2966	►	**3RT1966-4EA3**		1	1 unit	41B
Box terminal blocks for current measuring modules								
 3RT195.-4G For round and ribbon cables								
• Up to 70 mm^2	S6[1)]	3RB2956	►	**3RT1955-4G**		1	1 unit	41B
• Up to 120 mm^2	S6	3RB2956	►	**3RT1956-4G**		1	1 unit	41B
• Up to 240 mm^2	S10/S12	3RB2966	►	**3RT1966-4G**		1	1 unit	41B

[1)] In the scope of supply for 3RT1054-1 contactors (55 kW).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Accessories for 3RB22, 3RB23, 3RB24

	Version	Size	For overload relays	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Push-in lugs for evaluation modules and current measuring modules									
 3RP1903	For screw fixing the evaluation modules	--	3RB22 to 3RB24	5	**3RP1903**		1	10 units	41H
 3RB1900-0B	For screw fixing the current measuring modules (2 units required per module)	S00 .. S3	3RB2906	2	**3RB1900-0B**		100	10 units	41F

	Version	Size	Color	For overload relays	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-type terminals										
						Spring-type terminals				
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals	Length, approx. 200 mm, 3.0 mm x 0.5 mm	Titanium gray/ black, partially insulated	Main and auxiliary circuit connection: 3RB2	2	**3RA2908-1A**		1	1 unit	41B
Blank labels										
 3RT1900-1SB20	**Unit labeling plates**[1] For SIRIUS devices	20 mm x 7 mm	Pastel turquoise	3RB2	20	**3RT1900-1SB20**		100	340 units	41B
		20 mm x 7 mm	Titanium gray	3RB2	20	**3RT2900-1SB20**		100	340 units	41B
	Adhesive inscription labels[1] For SIRIUS devices	19 mm x 6 mm	Pastel turquoise	3RU2	15	**3RT1900-1SB60**		100	3 060 units	41B
 3RT2900-1SB20		19 mm x 6 mm	Zinc yellow	3RU2	15	**3RT1900-1SD60**		100	3 060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/20).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Note:
The 3RA1 load feeders (sizes S00/S0 to S3) can be found
- In the Catalog Add-On IC 10 AO · 2016 in the Information and Download Center
- In the interactive Catalog CA 01
- In the Industry Mall www.siemens.com/product?3RA1

For the conversion tool, see www.siemens.com/sirius/conversion-tool

Overview

3RA2110

3RA2210

3RA2130
3RA2150

		Type	Page
SIRIUS 3RA2 load feeders			
	• The 3RA2 fuseless load feeders consist of the 3RV2 motor starter protector and the 3RT2 contactor. The motor starter protector and contactor are prewired and mechanically and electrically connected in pre-assembled assembly kits (link modules, wiring kits and standard mounting rail or busbar adapters) • 4 sizes (S00, S0, S2, S3) • Can be supplied for direct-on-line start or reversing duty as - a complete unit or - single devices for self-assembly • Can be supplied with screw or spring-type terminals		
3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing	• Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC	**3RA21**	8/21
3RA21 direct-on-line starters for 60 mm busbars	• Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC	**3RA21**	8/29
3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing	• Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC	**3RA22**	8/33
3RA22 reversing starters for 60 mm busbars	• Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC	**3RA22**	8/40
Accessories for 3RA2 direct-on-line and reversing starters			8/45

Central and compact starter solutions

Our range offers you many different possibilities for simple and practical starter solutions in the control cabinet. Features common to all our load feeders, compact starters and motor starters: Like all SIRIUS devices they are optimally coordinated with each other, have a very compact design and are particularly easy and quick to install and wire up.

In addition there is a seamless range of SIRIUS 3RW soft starters available for soft starting in the control cabinet (see page 6/2).

3RA61

3RA62

3RA68

3RM12

3RM13

3RK1308

3RK1908-0

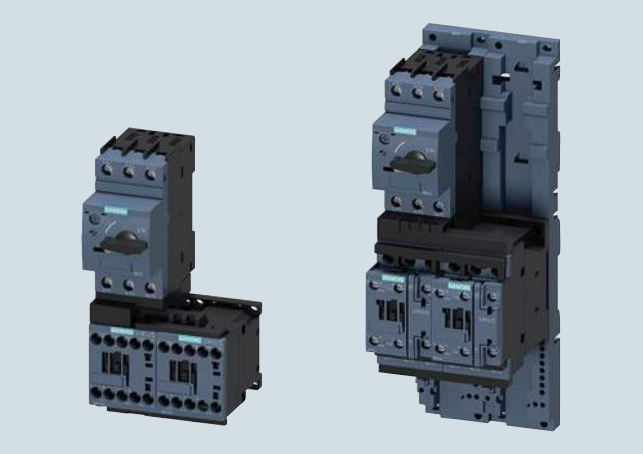
3RK1908-1A

		Type	Page
SIRIUS 3RA6 compact starters			
	• Integrated functionality of a motor starter protector, contactor and electronic overload relay and various functions of optional mountable accessories • Can be used for direct starting of standard three-phase motors up to 32 A		
3RA61 direct-on-line starters	• Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	**3RA61**	8/67
3RA62 reversing starters	• Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	**3RA62**	8/68
3RA64 direct-on-line starters for IO-Link	• Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	**3RA64**	8/69
3RA65 reversing starters for IO-Link	• Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	**3RA65**	8/70
Accessories for 3RA6 direct-on-line and reversing starters		**3RA69**	8/71
Add-on modules for AS-Interface		**3RA69**	8/77
Infeed system for 3RA6	• Modular expandability, up to 100 A, terminals up to 70 mm^2	**3RA68**	8/79
	• Three-phase infeeds and expansion modules		8/82
	• Expansion modules		8/83
	• Accessories for infeed systems for 3RA6		8/84
SIRIUS 3RM1 motor starters			
	• For switching three-phase motors up to 3 kW (at 400 V) and resistive loads up to 10 A at AC voltages up to 500 V under normal operating conditions • Space-saving design (width 22.5 mm)		
3RM10 direct-on-line starters	• Direct-on-line starting with electronic overload protection	**3RM10**	8/91
3RM12 reversing starters	• Reversing functionality with electronic overload protection	**3RM12**	8/91
3RM11 Failsafe direct-on-line starters	• As 3RM10 plus safety-related shutdown	**3RM11**	8/91
3RM13 Failsafe reversing starters	• As 3RM12 plus safety-related shutdown	**3RM13**	8/91
Accessories for 3RM1 motor starters	• Three-phase infeed system for the main circuit	**3RM19**	8/92
	• Fuse module for the use of 3RM1 motor starters on 8US busbar systems and mounting rails	**3RM19**	8/89, 8/92
	• Adapters	**8US1**	8/92
	• Cover profiles	**8US1922**	8/93
	• Device connectors for the control circuit	**3ZY1212**	8/90, 8/93
	• Spare terminals for main and control circuits	**3ZY11**	8/94
	• Push-in lugs for wall mounting, integrated sealable cover, coding pins	**3ZY1**	8/94
ET 200SP motor starters			
	• In hybrid technology in the SIMATIC ET 200SP I/O system • For the switching and protection of three-phase asynchronous motors, single-phase AC motors and single-phase asynchronous motors up to 4 kW (at 400 V)		
3RK1308 direct-on-line starters	• Direct-on-line starting with electronic overload protection	**3RK1308-0A.0**	8/99
3RK1308 reversing starters	• Reversing functionality with electronic overload protection	**3RK1308-0B.0**	8/99
ET 200SP BaseUnits	• Designed for the infeed and integration into the ET 200SP I/O system	**3RK1908-0AP00**	8/99
3DI/LC module	• Module with 3 digital inputs for the use of additional functions such as "Quick stop", and for manual-local operation	**3RK1908-1AA0**	8/99
Accessories	• Cover for BaseUnit and infeed bus, additional mechanical bracket, fan	**3RK19, 3RW49**	8/100
ET 200S motor starters and safety motor starters			
	• ET 200S motor starters in the ET 200S I/O system (the SIMATIC ET 200SP I/O system is the successor system)		8/101

General data

Overview

3RA2 load feeders



3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing with screw terminals

The 3RA2 fuseless load feeders consist of the 3RV2 motor starter protector and the 3RT2 electromechanical contactor. The devices are electrically and mechanically connected using pre-assembled assembly kits (link modules, wiring kits and standard mounting rail or busbar adapters).

Around 500 preassembled 3RA2 combinations can be ordered for direct-on-line and reversing starting of standard three-phase motors up to 65 A (approx. 37 kW/400 V). Preassembled assembly kits are available as accessories for the power range up to 45 kW. The desired fuseless load feeder can thus be assembled quickly and economically by the customer. A time saving is also achieved in connection with switchgear acceptances, as – unlike with conventional wiring systems – there is no need to rectify possible wiring errors.

In the 3RA2 load feeder, the 3RV2 motor starter protector is responsible for overload and short-circuit protection. Back-up protective devices, such as melting fuses or limiters, are superfluous here, as the motor starter protector is short-circuit proof up to 150 kA at 400 V.

The 3RT2 contactor is particularly suitable for extremely complex switching tasks requiring the greatest endurance.

The 3RA2 load feeders are available with setting ranges from 0.14 to 65 A in sizes S00, S0 and S2. Load feeders in size S3 up to 100 A are available for self-assembly.

Size	Width Direct-on-line starters/ reversing starters	Max. rated current $I_{n\ max}$	For three-phase motors up to
	mm	A	kW
S00	45/90	16	7.5
S0	45/90	32	15
S2	55/120	65	37
S3	70/150	100	45

The size of the 3RA2 load feeders is based on the size of the contactor:

Size 3RA2	S00	S0	S2	S3
Size of 3RV2 motor starter protector	S00	S00[1], S0	S2	S3
Size of 3RT2 contactor	S00	S0	S2	S3

[1] The combination of an S00 motor starter protector with an S0 contactor is possible only for screw connection versions.

More information

Home page, see www.siemens.com/sirius-starting
Industry Mall, see www.siemens.com/product?3RA2
Online configurator, see www.siemens.com/sirius/configurators

Operating conditions

3RA2 load feeders are climate-proof. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. Suitable covers must be provided for installation in dusty and damp locations.

Behavior in the event of short circuit

EN 60947-4-1 (VDE 0660 Part 102) and IEC 60947-4-1 make a distinction between two different types of coordination (types "1" and "2"). Any short circuits that occur are cleared safely by both types of coordination. The only differences concern the extent of the damage caused to the device by a short circuit.

ToC 1 Type of coordination "1"
The load feeder may be non-operational after a short circuit has been cleared. Damage to the contactor or to the overload release is permissible.

ToC 2 Type of coordination "2"
There must be no damage to the overload release or to any other components after a short circuit has been cleared. The load feeder can resume operation without needing to be renewed. At most, welding of the contactor contacts is permissible if they can be disconnected easily without any significant deformation.

The types of coordination are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Tripping times

All 3RA2 load feeders described here are designed for normal starting, in other words for overload tripping times of less than 10 s (CLASS 10). At rated-load operating temperature the tripping times are shorter, depending on the particular equipment and the setting range. The exact values can be derived from the tripping characteristics of the motor starter protectors.

Connection methods

For all 3RA2 feeders up to 32 A, spring-type connection is available as well as screw terminals. To connect two devices with spring-type terminals, there are plug-in connection modules for sizes S00 and S0 which enable very quick mounting of the feeders and a vibration-resistant assembly.

To connect a motor starter protector with screw terminals to a contactor with spring-type terminals there are special hybrid connection modules for the sizes S00 and S0.

Screw terminals

Spring-type terminals

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Use of load feeders in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS 3RA2 load feeders in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see "Application Manual for Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820.

For more information, see Preface, page 7.

3RA2 complete units

The 3RA2 fuseless load feeders can be ordered as preassembled complete units for direct-on-line starting (3RA21) or for reversing duty (3RA22) with screw or spring-type connection. From size S2, complete units for direct-on-line starting (3RA21) are only available with screw-type connections.

There are control supply voltages available of 50 Hz 230 V AC and 24 V DC.

A distinction is also drawn between whether the feeder is mounted onto a 35 mm standard mounting rail, on a flat surface using screws, or on a 60 mm busbar system.

3RA21 load feeders in the size S0 must be configured on standard mounting rail adapters if high vibration and shock loads (railways, power generation,...) are involved.

A vibration and shock kit is available for mounting on busbar adapters.

Accessories

As the 3RA2 fuseless load feeders are constructed from 3RV2 motor starter protectors and 3RT2 contactors, the same accessories – such as auxiliary switches, undervoltage releases or door-coupling rotary operating mechanisms – can be used for the 3RA2 fuseless load feeders as for these motor starter protectors and contactors.

In particular, certain accessories have been optimized for the fuseless load feeders. These include the top-connected, transverse auxiliary switch on the motor starter protector, which is available in a range of different versions. Special auxiliary switch blocks that can be snapped on from below are available for the contactor. These two accessories enable the fuseless load feeders to be wired simply without having to route cables through the device.

Incoming power supply

In total, four different energy supply options are available (see "3RV29 infeed system for load feeders" on page 8/56).

Customer assembly of fuseless load feeders

Whereas preassembled 3RA2s can be ordered up to 65 A, combinations in size S3 up to 100 A (approx. 45 kW/400 V) can be self-assembled.

The standard devices can be combined optimally – in terms of both technical specifications and dimensions, thanks to the modular system of the SIRIUS series.

The fuseless load feeders can thus be assembled easily by the customer. It is simply necessary to assemble the standard 3RV2 motor starter protector, the 3RT2 contactor and the appropriate assembly kit.

For single devices and assembly kits, see the "Selection and ordering data" for 3RA21 direct-on-line starters and 3RA22 reversing starters, page 8/21 or 8/33 onwards.

For assembly kits for direct-on-line starting or reversing duty for mounting onto standard mounting rails or busbars, see page 8/50.

For size S3 direct-on-line starters and sizes S0, S2 and S3 reversing starters, it is imperative that a standard mounting rail adapter is used to ensure the necessary mechanical strength. If a busbar adapter is used (not possible for size S3) then a standard mounting rail adapter is not necessary.

SENTRON 3VA circuit breakers and SIRIUS 3RT contactors are available for rated currents >100 A.

Special equipment for customer assembly can be ordered if other rated control supply voltages are required. Assembly kits can be used to facilitate assembly.

Customers can also assemble tested combinations of motor starter protectors with solid-state controls (soft starters, solid-state contactors) and load feeders with additional monitoring and control devices (3RR monitoring relays, SIMOCODE 3UF).

For the electrical and mechanical connection of protection equipment and controls there are preassembled assembly kits (link modules, wiring kits and standard mounting rail or busbar adapters).

The following types of configuration are possible:

- Direct-on-line/reversing starting
- Star-delta (wye-delta) starting
- Solid-state/soft starting

For more information and assignment tables for combinations of the 3RA2 generation for self-assembly, see

- Configuration manual, https://support.industry.siemens.com/cs/ww/en/view/39714188
- Manual "SIRIUS – SIRIUS 3RA21 / 3RA22 Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/60284351

Customer assembly of fused load feeders

The flexible, modular system of SIRIUS also enables the configuration of fused load feeders up to 100 A (approx. 45 kW/400 V). Up to 32 A is also available for 45 mm installation widths.

Compact 3NW7...-1 cylindrical fuse holders for IEC fuses size 10 x 38 mm, or 3NW7...-1HG holders for Class CC UL fuses, can be used for this purpose.

For more information about fuse systems, see Catalog LV 10.

General data

Communications integration using IO-Link

Load feeders can also be assembled with IO-Link for connection to the higher-level control system. For each feeder, this requires a contactor with a voltage tap onto which a 3RA2711 function module is plugged (various versions for direct-on-line, reversing and wye-delta starters). The design of the SIRIUS load feeders permits a group of up to four SIRIUS controls to be conveniently connected through the standardized open system IO-Link to a control system, thus reducing wiring considerably compared to the conventional parallel wiring method. The electrical connection is made using only three standard cables.

The function modules perform not only the communication (contactor operation and feedback, ready signal) but also the electrical interlocking (for reversing and wye-delta starters) and the timing relay function (wye-delta reversing time).

Communication information and control supply voltages are passed on through ribbon cables so that the complete control current wiring on the feeder is no longer needed.

The monitoring and maintenance of a plant is made considerably easier by transmitting diverse diagnostics data from the function modules (e.g. missing main and auxiliary voltage, local disconnection…) through IO-Link to the higher-level control system. Also, feeders equipped for IO-Link can be conveniently controlled from the control cabinet door using the optional operator panel.

More information:

- For IO-Link, see page 2/101 onwards
- For 3RA27 function modules, see pages 3/79, 3/86 and 3/106

Communications integration via AS-Interface

Connection of the load feeders to the higher-level control system is possible not only through IO-Link but also through AS-Interface. The AS-Interface connection is recommended wherever load feeders are used in distributed applications. In this case, too, a contactor with a voltage tap is required with a corresponding 3RA2712 function module (various versions for direct-on-line, reversing and wye-delta starters). The devices are implemented in A/B technology, making it easy to connect up to 62 feeders to an AS-i master (regardless of whether they are direct-on-line, reversing or wye-delta starters). This results in a significant reduction of wiring compared to the conventional parallel wiring method. The electrical connection is made using standard cables.

The function modules perform not only the communication (contactor operation and feedback, ready signal) but also the electrical interlocking (for reversing and wye-delta starters) and the timing relay function (wye-delta reversing time).

Communication information and control supply voltages are passed on through ribbon cables so that the complete control current wiring on the starter is no longer needed.

More information:

- For AS-Interface, see page 2/18 onwards
- For 3RA27 function modules, see pages 3/79, 3/86 and 3/106

Contactors with voltage tap-off

For configuring load feeders with communication interfaces (AS-i/IO-Link), contactors with voltage taps are required. These contactors are not included as standard in the preassembled 3RA2 load feeders. A load feeder with communication interface must be assembled therefore from single devices.

Complete integration in the automation landscape

As the result of the communication connection through IO-Link or AS-i, the SIRIUS load feeders are fully integrated in the automation landscape and can draw on all the advantages of TIA (e.g. integration in the TIA Maintenance Station).

Mounting

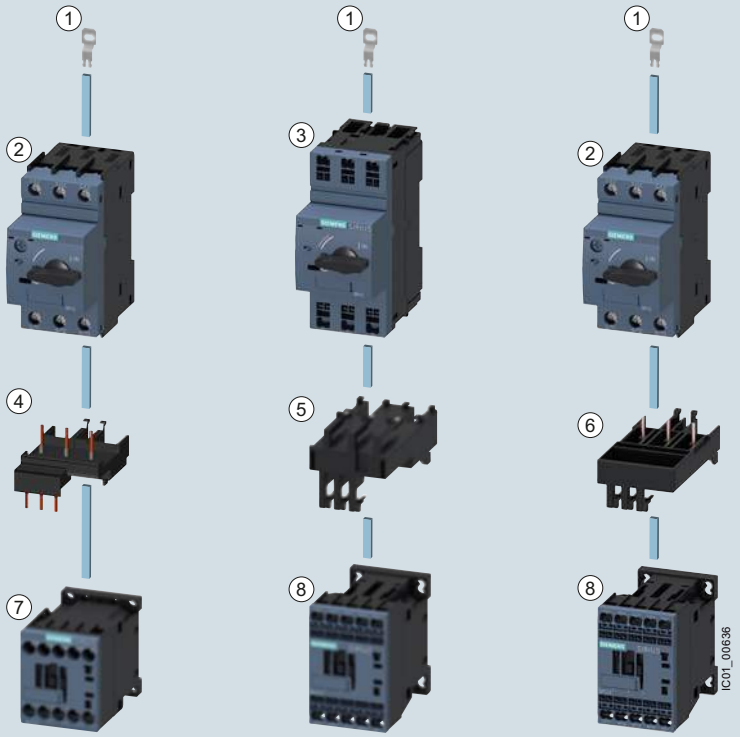
3RA2 fuseless load feeders can be supplied:

- For assembly on TH 35 standard mounting rails according to EN 60715 (depth 15 mm)
- For assembly on busbar adapters (busbar center-to-center clearance 60 mm, busbar thickness 5 to 10 mm with beveled edges)

The fuseless load feeders are also suitable for screw fixing using two 3RV2928-0B push-in lugs.

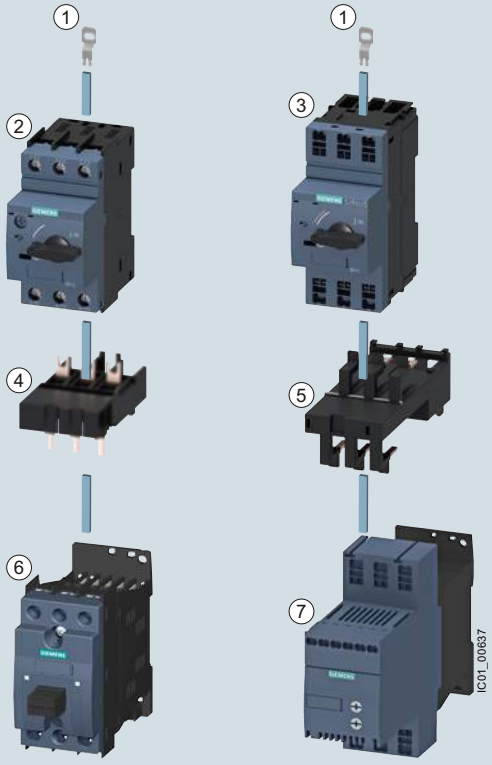
3RA2 fuseless load feeders can also be installed using infeed system 3RV29 (S0 and S00 only, see page 7/55).

Direct-on-line starting • For standard rail mounting or screw fixing • Sizes S00 and S0



1. **2 push-in lugs**
   3RV2928-0B
   (only for screw fixing)
2. **Motor starter protector**
   Size S00/S0
   Screw terminals
3. **Motor starter protector**
   Size S00/S0
   Spring-type terminals
4. **Link module**
   (Screw terminals)
   3RA1921-1DA00 (for S00)
   3RA2921-1AA00 (for S0, AC contactor)
   3RA2921-1BA00 (for S0, DC contactor)
5. **Link module**
   (Spring-type terminals)
   3RA2911-2AA00 for S00
   3RA2921-2AA00 for S0
6. **Link module**
   (Hybrid)
   3RA2911-2FA00 for S00
   3RA2921-2FA00 for S0
7. **Contactor**
   Size S00/S0
   Screw terminals
8. **Contactor**
   Size S00/S0
   Spring-type terminals

Left: 3RA21 load feeder with screw terminals
Center: 3RA21 load feeder with spring-type terminals
Right: Motor starter protector assembly with screw terminals, with contactor with spring-type terminals

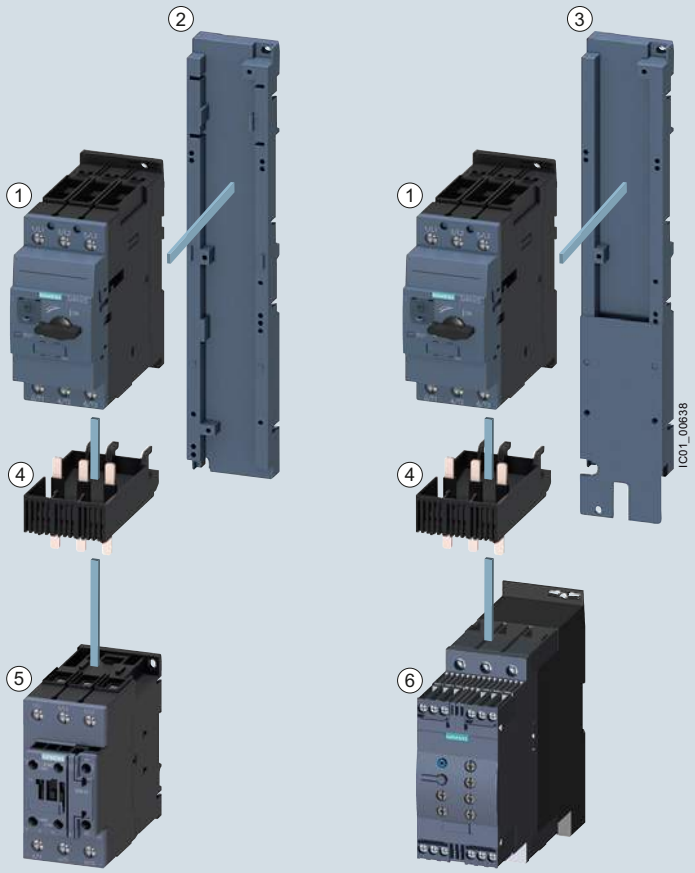


1. **2 push-in lugs**
   3RV2928-0B
   (only for screw fixing)
2. **Motor starter protector**
   Size S00/S0
   Screw terminals
3. **Motor starter protector**
   Size S00/S0
   Screw terminals/spring-type terminals
4. **Link module**
   3RA2921-1BA00 (Screw terminals)
5. **Link module**
   3RA2921-1BA00 for S00/S0 and screw terminals
   3RA2911-2GA00 for S00 and spring-type terminals
   3RA2921-2GA00 for S0 and spring-type terminals
6. **Solid-state switching device** (Screw terminals)
7. **Soft starter**
   Size S00/S0
   Screw terminals/spring-type terminals

Left: Motor starter protector combination with solid-state switching device with screw terminals
Right: Motor starter protector assembly with soft starter with spring-type terminals

General data

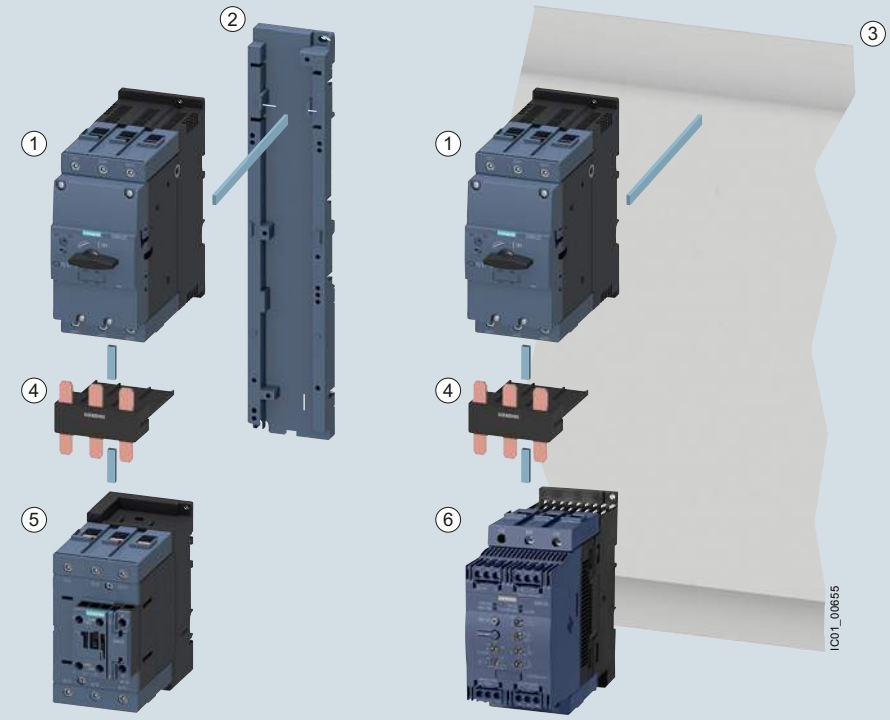
Direct-on-line starting • For standard rail mounting • Size S2



1. **Motor starter protector**
   Size S2
   Screw terminals
2. **Standard mounting rail adapter** (optional)
   3RA2932-1AA00
   Alternatively, the device can be mounted on two standard mounting rails spaced at a distance of 175 mm without a standard mounting rail adapter.
3. **Standard mounting rail adapter**
   3RA2932-1CA00
4. **Link module**
   3RA2931-1AA00
   Screw terminals
5. **Contactor**
   Size S2
   Screw terminals
6. **Soft starter**
   Size S2
   Screw terminals

Left: 3RA21 load feeder with screw terminals
Right: Motor starter protector assembly with soft starter with screw terminals

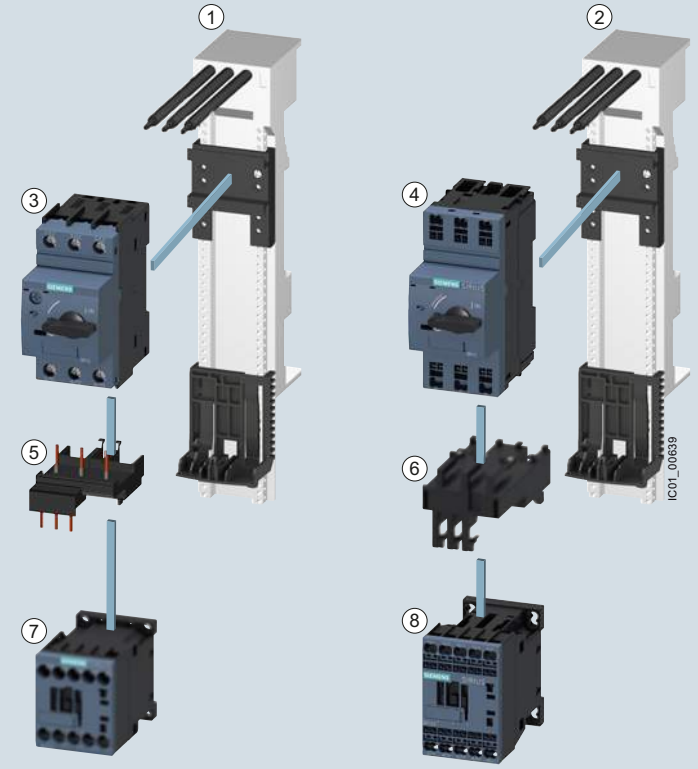
Direct-on-line starting • For standard rail mounting • Size S3



1. **Motor starter protector**
   Size S3
   Screw terminals
2. **Standard mounting rail adapter**
   3RA1942-1AA00
3. **Base plate**
4. **Link module**
   3RA1941-1AA00
   Screw terminals
5. **Contactor**
   Size S3
   Screw terminals
6. **Soft starter**
   Size S3
   Screw terminals

Load feeder for direct-on-line starting and standard rail mounting in size S3
(the version with screw terminals is shown in the picture)

Direct-on-line starting • For 60 mm busbar systems • Sizes S00 and S0

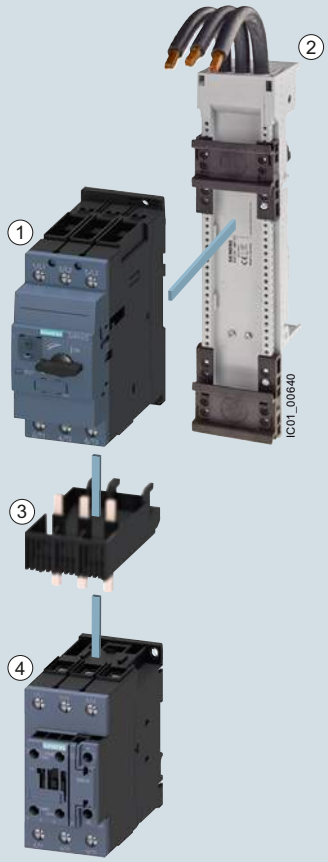


1. **60 mm busbar adapter for screw terminals**
   8US1251-5DS10 for S00
   8US1251-5NT10 for S0
2. **60 mm busbar adapter for spring-type terminals**
   8US1251-5DT11 for S00
   8US1251-5NT11 for S0
3. **Motor starter protector**
   Size S00/S0
   Screw terminals
4. **Motor starter protector**
   Size S00/S0
   Spring-type terminals
5. **Link module**
   Screw terminals
   3RA1921-1DA00 for S00
   3RA2921-1AA00 for S0, AC contactor
   3RA2921-1BA00 for S0, DC contactor
6. **Link module**
   3RA2911-2AA00 for S00
   3RA2921-2AA00 for S0
   (additional 3RA2911-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals)
7. **Contactor**
   Size S00/S0
   Screw terminals
8. **Contactor**
   Size S00/S0
   Spring-type terminals

Left: 3RA21 load feeder for direct-on-line starting with busbar adapter with screw terminals
Right: 3RA21 load feeder for direct-on-line starting with busbar adapter with spring-type terminals

General data

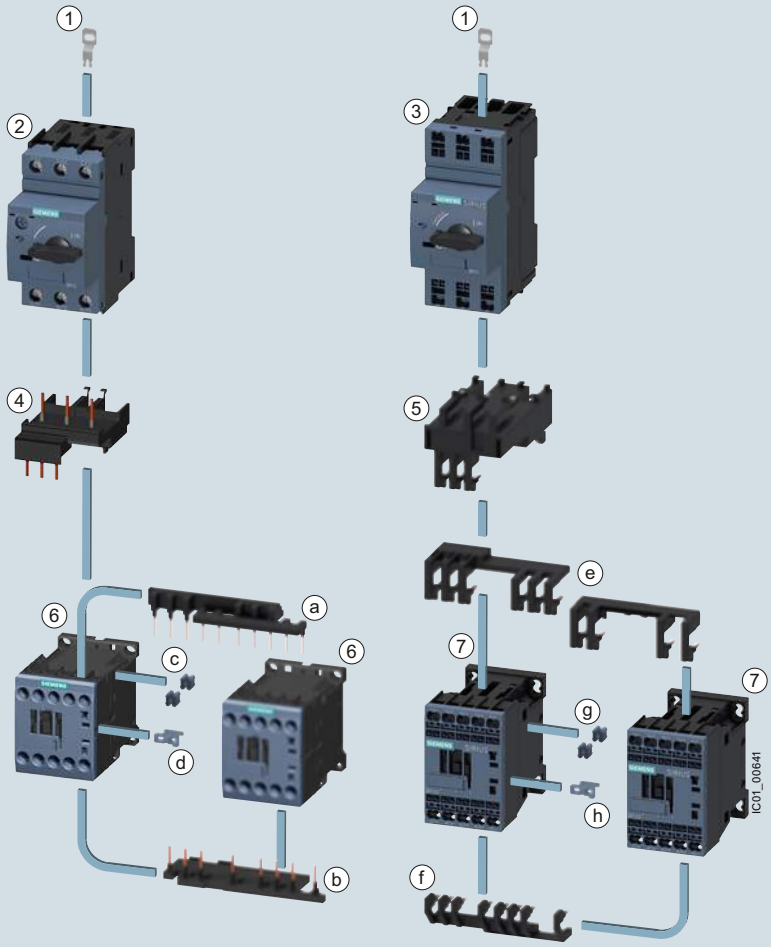
Direct-on-line starting • For 60 mm busbar systems • Size S2



1. **Motor starter protector**
   Size S2
   Screw terminals
2. **Busbar adapter 60 mm**
   8US1261-6MT10
3. **Link module**
   3RA2931-1AA00
   Screw terminals
4. **Contactor**
   Size S2
   Screw terminals

3RA21 load feeder for direct-on-line starting with busbar adapter with screw terminals

Reversing duty • For standard rail mounting or screw fixing • Size S00



1. **Push-in lug**
   3RV2928-0B
   (only for screw fixing)
2. **Motor starter protector**
   Size S00/S0
   Screw terminal
3. **Motor starter protector**
   Size S00/S0
   Spring-type terminal
4. **Link module**
   Screw terminal
   3RA1921-1DA00 for S00
   3RA2921-1AA00 for S0, AC contactor
   3RA2921-1BA00 for S0, DC contactor
5. **Link module**
   Spring-type terminal
   3RA2911-2AA00 for S00
   3RA2921-2AA00 for S0
6. **Contactor**
   Size S00/S0
   Screw terminal
7. **Contactor**
   Size S00/S0
   Spring-type terminal

Wiring kit
3RA2913-2AA1

- a Upper wiring module
- b Lower wiring module
- c Two connecting clips for two contactors
- d Mechanical interlock
  (can be removed if necessary)

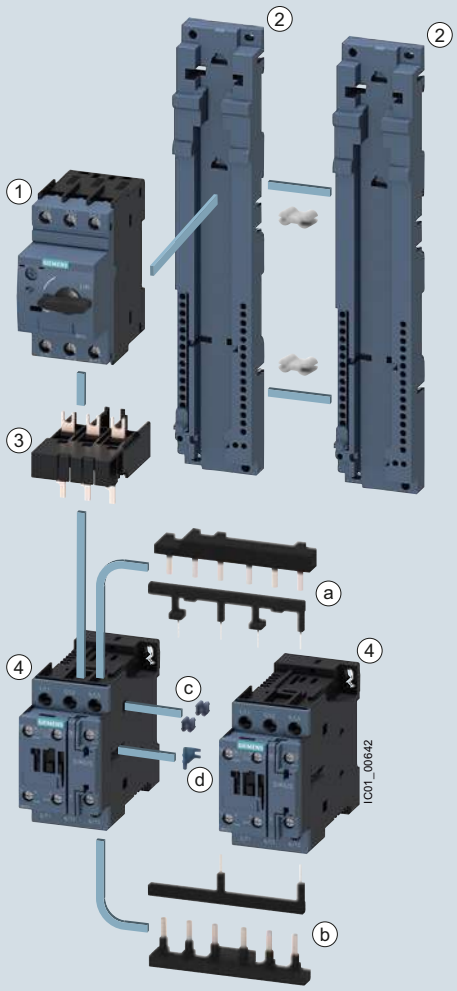
Wiring kit
3RA2913-2AA2

- e Upper wiring module
- f Lower wiring module
- g Two connecting clips for two contactors
- h Mechanical interlock
  (can be removed if necessary)

Left: 3RA22 load feeder with screw terminals with push-in lugs with two contactors for reversing duty and wiring kit 3RA2913-2AA1 for connecting the contactors (including mechanical interlocking and connecting clips)
Right: 3RA22 load feeder with spring-type terminals with push-in lugs with two contactors for reversing duty and wiring kit 3RA2913-2AA2 (including mechanical interlocking and connecting clips)

General data

Reversing duty • For standard rail mounting • Size S0



RH assembly kit for reversing duty and standard rail mounting in size S0

Screw terminals
3RA2923-1BB1

Spring-type terminals
3RA2923-1BB2[1)]

Comprising:
- Wiring kit for the main and auxiliary circuits
- Two standard mounting rail adapters
- Two connecting wedges
- Mechanical interlock
- Two connecting clips
- Fixing accessories

(1) **Motor starter protector**
Size S0
Screw terminals/spring-type terminals

(2) **Standard mounting rail adapters**
3RA2922-1AA00

with two connecting wedges
8US1998-1AA00

(3) **Link module**
Screw terminals:
3RA2921-1AA00 for S0, AC contactor
3RA2921-1BA00 for S0, DC contactor

Spring-type terminals:
3RA2921-2AA00[2)]

(4) **Contactor**
Size S0
Screw terminals/spring-type terminals

Wiring kit
Screw terminals:
3RA2923-2AA1

Spring-type terminals:
3RA2923-2AA2

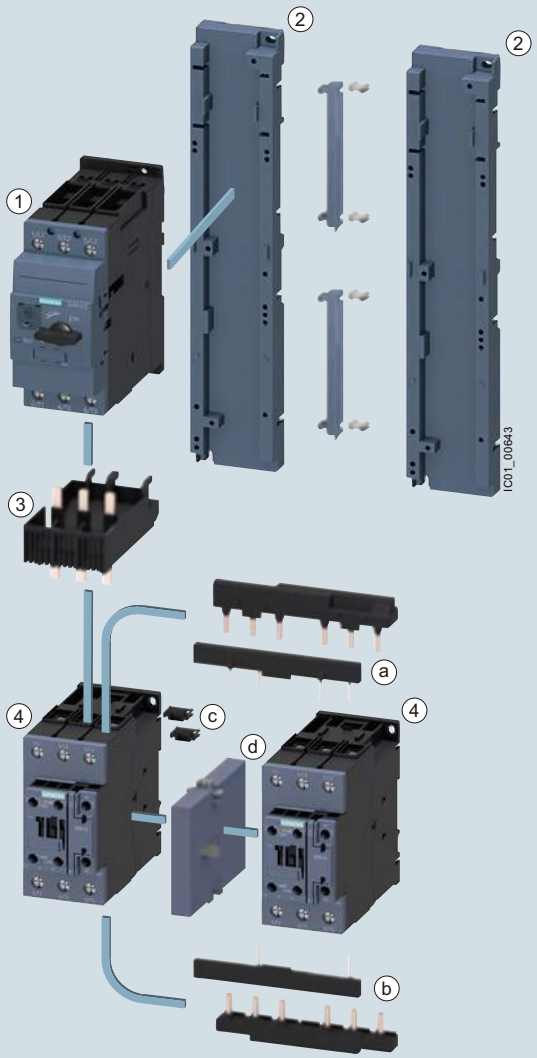
(a) Upper wiring module
(b) Lower wiring module
(c) Two connecting clips for two contactors
(d) Mechanical interlock
(can be removed if necessary)

[1)] Contains two 3RA2911-1CA00 spacers for height compensation on AC contactors size S0 with spring-type terminals.

[2)] Additionally two 3RA2911-1CA00 spacers for height compensation on AC contactors size S0 with spring-type terminals.

3RA22 load feeder for reversing duty and standard rail mounting in size S0
(the version with screw terminals is shown in the picture)

Reversing duty • For standard rail mounting • Size S2



RH assembly kit for reversing duty and standard rail mounting in size S2

3RA2933-1BB1

Comprising:
- Wiring kit for the main and auxiliary circuits
- Two standard mounting rail adapters
- Two side modules
- Four connecting wedges
- Mechanical interlock
- Two connectors for two contactors
- Fixing accessories

(1) **Motor starter protector**
Size S2
Screw terminals

(2) **Standard mounting rail adapter**
3RA2932-1AA00

with two side modules
3RA1902-1B

and four connecting wedges
8US1998-1AA00

(3) **Link module**
3RA2931-1AA00
Screw terminals

(4) **Contactor**
size S2
Screw terminals

Wiring kit
Screw terminals
3RA2933-2AA1

(a) Upper wiring module

(b) Lower wiring module

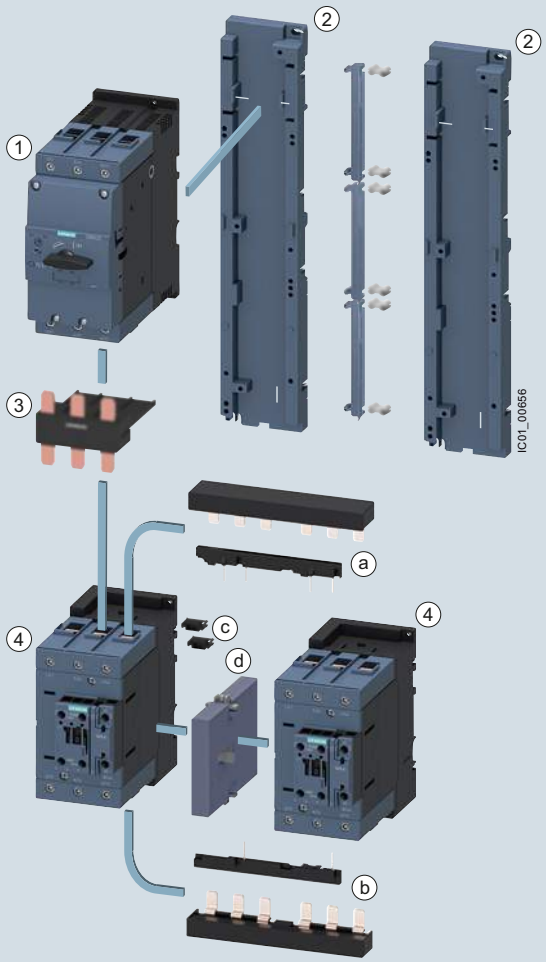
(c) Two connectors for two contactors

(d) Mechanical interlock
3RA2934-2B (not part of the wiring kit, must be ordered separately)

Load feeder for reversing duty and standard rail mounting in size S2
(the version with screw terminals is shown in the picture)

General data

Reversing duty • For standard rail mounting • size S3



Assembly kit (RH) for reversing duty and mounting onto standard rails

3RA2943-1BB1

Comprising:
- Wiring kit for the main and auxiliary circuits
- Two standard mounting rail adapters
- Three side modules
- Six connecting wedges
- Mechanical interlock
- Two connectors for two contactors
- Fixing accessories

(1) **Motor starter protector** size S3

(2) **Standard mounting rail adapter** 3RA2932-1AA00
with two side modules 3RA1902-1B
and four connecting wedges 8US1998-1AA00

(3) **Link module** 3RA1941-1AA00

(4) **Contactor** size S3

Wiring kit 3RA2943-2AA1

(a) Upper wiring module

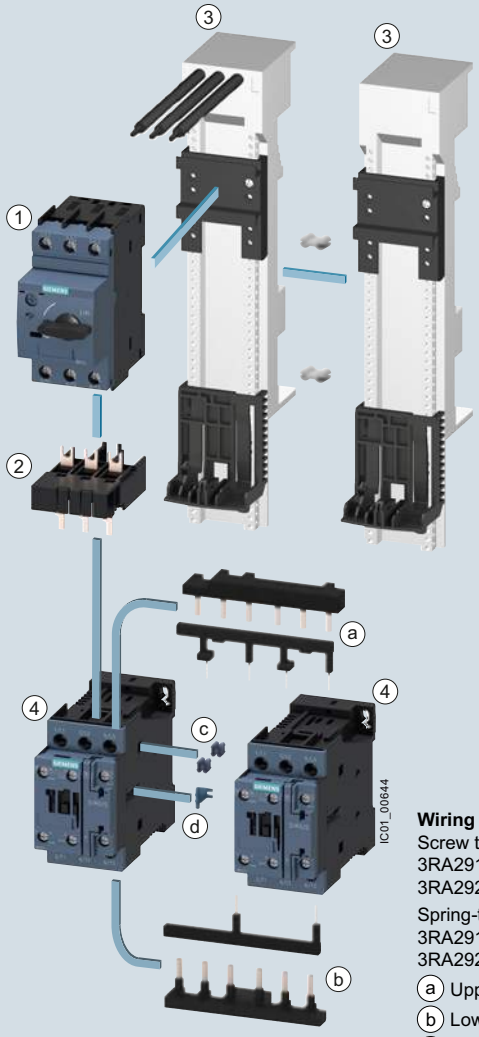
(b) Lower wiring module

(c) Two connectors for two contactors

(d) Mechanical interlock 3RA2934-2B (not part of the wiring kit, must be ordered separately)

Load feeder for reversing duty and standard rail mounting in size S3 (the version with screw terminals is shown in the picture)

Reversing duty • For 60 mm busbar systems • Sizes S00 and S0



Wiring kit
Screw terminals
3RA2913-2AA1 for S00
3RA2923-2AA1 for S0

Spring-type terminals
3RA2913-2AA2 for S00
3RA2923-2AA2 for S0

(a) Upper wiring module
(b) Lower wiring module
(c) Two connecting clips for two contactors
(d) Mechanical interlock
(can be removed if necessary)

RS assembly kit for reversing duty and busbar mounting in size S00/S0

Screw terminals
3RA2913-1DB1 for S00
3RA2923-1DB1 for S0

Spring-type terminals
3RA2913-1DB2 for S00
3RA2923-1DB2 for S0[1)]

Comprising:
- Wiring kit for the main and auxiliary circuits
- Busbar adapter
- Device holder
- Two connecting wedges
- Mechanical interlock
- Two connecting clips for two contactors
- Fixing accessories

(1) **Motor starter protector**
Size S00/S0
Screw terminals/spring-type terminals

(2) **Link module**
Screw terminals
3RA1921-1DA00 for S00
3RA2921-1AA00 for S0, AC contactor
3RA2921-1BA00 for S0, DC contactor

Spring-type terminals
3RA2911-2AA00 for S00
3RA2921-2AA00 for S0[2)]

(3) **60 mm busbar adapter**
Screw terminals
8US1251-5DS10 for S00/S0
8US1251-5NT10 for S0

Spring-type terminals
8US1251-5DT11 for S00/S0
8US1251-5NT11 for S0

2 connecting wedges
8US1998-1AA00

60 mm device holder
8US1250-5AS10 or
8US1250-5AT10
(according to left adapter)

(4) **Contactor**
Size S00/S0
Screw terminals/spring-type terminals

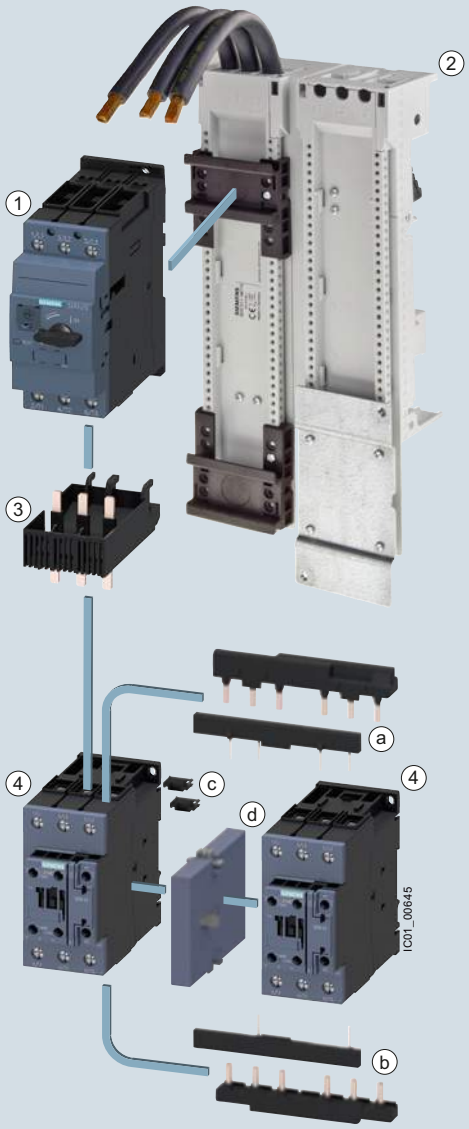
[1)] Contains two 3RA2911-1CA00 spacers for height compensation on AC contactors size S0 with spring-type terminals.

[2)] Additionally two 3RA2911-1CA00 spacers for height compensation on AC contactors size S0 with spring-type terminals.

3RA22 load feeder for reversing duty and 60 mm busbar in size S00/S0
(the version with screw terminals is shown in the picture)

General data

Reversing duty • For 60 mm busbar systems • Size S2



RS assembly kit for reversing duty and busbar mounting in size S2

3RA2933-1DB1

Comprising:
- Wiring kit for the main and auxiliary circuits
- Busbar adapter
- Mechanical interlock
- Two connectors for two contactors
- Fixing accessories

(1) **Motor starter protector**
Size S2
Screw terminals

(2) **Busbar adapter 60 mm**
8US1211-6MT10

(3) **Link module**
3RA2931-1AA00
Screw terminals

(4) **Contactor**
Size S2
Screw terminals

Wiring kit
For screw terminals
3RA2933-2AA1

(a) Upper wiring module
(b) Lower wiring module
(c) Two connecting pins for two contactors
(d) Mechanical interlock
3RA2934-2B (not part of the wiring kit, must be ordered separately)

Load feeder for reversing duty and 60 mm standard rail mounting in size S2
(the version with screw terminals is shown in the picture)

Article No. scheme

Product versions		Article number															
SIRIUS load feeders		**3RA2**	□	□	**0**	**–**	□	□	□	□	□	**–**	□	□	□	□	
Product function	Direct-on-line starter		**1**														For motor standard output 0.06 ... 45 kW
	Reversing starter		**2**														For motor standard output 0.06 ... 45 kW
Size	S00			**1**													
	S0			**2**													
	e.g. 3 = S2			□													at I_q = 100 kA at 400 V
	e.g. 5 = S2			□													at I_q = 150 kA at 400 V
Setting range of the overload release	e.g. 0B = 0.14 ... 0.2 A						□	□									
Assembly, assembly type, connection method	e.g. A = S00, S0, S2								□								Direct mounting, screw terminals
Contactor size, rated power at 400 V AC	e.g. 15 = S00 / 3 kW									□	□						
Version Auxiliary switches on the contactor	e.g. 0 = S0, S2												□				1 NO + 1 NC integrated in contactor
	e.g. 1 = S00												□				1 NO integrated in contactor
	e.g. 2 = S00												□				1 NC integrated in contactor
Operating range of solenoid coil (contactor)	e.g. A = S00, S0, S2													□			AC 0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$, standard coil without RC circuit
Rated control supply voltage (contactor)	230 V AC														**P**	**0**	50/60 Hz AC for S00, 50 Hz AC for S0 ... S3
	24 V DC														**B**	**4**	
Example		**3RA2**	**1**	**1**	**0**	**–**	**0**	**B**	**A**	**1**	**5**	**–**	**1**	**A**	**P**	**0**	

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

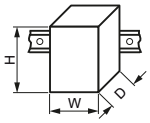
The 3RA2 fuseless load feeders offer a number of benefits:

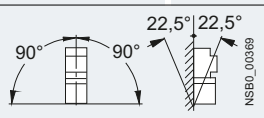
- Minimum planning and assembly work and far less wiring with the preassembled complete units (only one Article number 3RA2)
- Plug-in connectors from the motor starter protector to all types of SIRIUS controls, for quicker and error-free assembly of feeders with screw and spring-type connection
- High planning reliability through consistent combination tests for fuseless and fused configuration in accordance with IEC and UL/CSA
- Comprehensive approvals for use world-wide on request; see page 16/10 onwards.
- High operational reliability through short-circuit breaking capacity of 150 kA with type of coordination "1" and "2"
- Uniform accessories for sizes S00, S0, S2 and S3
- Spring-type connection possible throughout: Enhanced operational reliability (vibration-resistant wiring) and less wiring work thanks to plug-in connections (S00 and S0 only)
- Power loss 5 to 10 % smaller than for comparable devices, hence lower energy consumption
- Connection of feeders to the control system through standardized system connection (IO-Link and AS-i), for fast integration in TIA and less wiring work

General data

Technical specifications

More information	
Industry Mall, see www.siemens.com/product?3RA2	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16289/faq
Manual, see https://support.industry.siemens.com/cs/ww/en/view/60284351	

Direct-on-line starters/ reversing starters	Size	Connection method	Mounting	Control voltage	Width W	Height H	Depth D
					mm	mm	mm
Mounting dimensions							
Direct-on-line starters 3RA21. (Size S3 or larger is only available for self-assembly) 	S00 3RA211.	Screw terminals	Standard mounting rails	AC/DC	45	167	97
			Busbar adapters	AC/DC	45	200	155
		Spring-type terminals	Standard mounting rails	AC/DC	45	198	97
			Busbar adapters	AC/DC	45	260	155
	S0 3RA212.	Screw terminals	Standard mounting rails	AC	45	193	97
				DC	45	193	107
			Busbar adapters	AC	45	260	155
				DC	45	260	165
		Spring-type terminals	Standard mounting rails	AC/DC	45	243	107
			Busbar adapters	AC/DC	45	260	165
	S2 3RA213./3RA215.	Screw terminals	Standard mounting rail	AC/DC	55	274	150
			Busbar adapters	AC/DC	55	350	208
	S3 (self-assembly only)	Screw terminals	Standard mounting rail adapters	AC/DC	70	333	198
Reversing starters 3RA22. (Size S2 or larger is only available for self-assembly)	S00 3RA221.	Screw terminals	Standard mounting rails	AC/DC	90	170	97
			Busbar adapters	AC/DC	90	200	155
		Spring-type terminals	Standard mounting rails	AC/DC	90	204	97
			Busbar adapters	AC/DC	90	260	155
	S0 3RA222.	Screw terminals	Standard mounting rail adapters	AC	90	265	120.3
				DC	90	265	130
			Busbar adapters	AC	90	260	155
				DC	90	260	165
		Spring-type terminals	Standard mounting rail adapters	AC/DC	90	270	131
			Busbar adapters	AC/DC	90	260	165
	S2 (self-assembly only)	Screw terminals	Standard mounting rail	AC/DC	120	295	175
			Busbar adapters	AC/DC	120	361	208
	S3 (self-assembly only)	Screw terminals	Standard mounting rail adapters	AC/DC	150	333	198

Type			3RA2.1	3RA2.2	3RA213, 3RA215	For self-assembly
Size			S00	S0	S2	S3
Number of poles			3	3	3	3
Mechanics and environment						
Permissible ambient temperature						
• During operation		°C	-20 ... +60			
• During storage and transport		°C	-55 ... +80			
Weight		kg	0.6 ... 1.5	0.8 ... 2.3	2.2 ... 2.5	4.0 ... 4.2
Permissible mounting position			 Important: Acc. to DIN 43602 start command "I" at the right or top			
Shock resistance	Acc. to IEC 60068-2-27	g/ms	6/11 (sine pulse)			On request
Degree of protection	Acc. to IEC 60529		IP20		• IP20 on front side • Connecting terminal IP00	
Touch protection	Acc. to IEC 60529		Finger-safe		Finger-safe for vertical touching from front	

Type			**3RA2.1**	**3RA2.2**	**3RA213, 3RA215**	**For self-assembly**
Size			**S00**	**S0**	**S2**	**S3**
Number of poles			**3**	**3**	**3**	**3**
Electrical specifications						
Standards			• IEC 60947-1; EN 60947-1 (VDE 0660 Part 100) • IEC 60947-2; EN 60947-2 (VDE 0660 Part 101) • IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)			
Max. rated current $I_{n\,max}$ (= max. rated operational current I_e)		A	16	32	65	100
Rated operational voltage U_e		V	690			
Rated frequency		Hz	50/60			
Rated insulation voltage U_i (pollution degree 3)		V	690			
Rated impulse withstand voltage U_{imp}		kV	6			
Trip class (CLASS)	Acc. to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)		10			
Rated short-circuit current I_q 50/60 Hz 400 V AC	Acc. to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)	kA	150		3RA213: 100 3RA215: 150	With 3RV2041: On request With 3RV2042: On request
Types of coordination	Acc. to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)		See "Selection and ordering data", page 8/21 onwards			
Power losses P_v of all main circuits Dependent on rated current I_n (upper setting range)			See technical specifications of the individual devices: • "Switching Devices - Contactors and Contactor Assemblies", page 3/19 onwards • "Protection Equipment" → "Motor starter protectors/circuit breakers", page 7/17 onwards			
Power consumption of the solenoid coils with contactors			See technical specifications of the contactor, from page 3/19 onwards			
Magnetic coil operating range with contactors						
Endurance of the motor starter protector						
• Mechanical endurance	Operating cycles		100 000		Up to 52 A: 50 000 From 59 A: 20 000	On request
• Electrical endurance	Operating cycles		100 000			25 000
• Max. switching frequency per hour (motor starts)		1/h	15			
Endurance of contactor						
• Mechanical endurance	Operating cycles		30 million	10 million		
• Electrical endurance	Operating cycles		See endurance characteristic curves of the contactors, page 3/19 onwards			
Phase failure sensitivity of the motor starter protector	Acc. to IEC 60947-1, EN 60947-1 (VDE 0660 Part 102)		✓			
Isolating features of the motor starter protector	Acc. to IEC 60947-2, EN 60947-2 (VDE 0660 Part 101)		✓			
Main and EMERGENCY STOP switch characteristics of the motor starter protector and accessories	Acc. to IEC 60204-1, EN 60204-1 (VDE 0113 Part 1)		✓ (with overvoltage releases of category "1" for proper use)			
Protective separation between main and auxiliary circuits	Acc. to EN 60947-1, Appendix N	V	Up to 400			
Mirror contacts for contactors Integrated auxiliary switches			✓ Acc. to IEC 60947-4-1, Appendix F			

✓ Function available

General data

Conductor cross-sections of main circuit

Type		3RA2.10	3RA2.20	3RA2130-4E..., 3RA2130-4P..., 3RA2130-4U..., 3RA2130-4V...	3RA2130-4W..., 3RA2130-4X..., 3RA2130-4J..., 3RA2130-4K..., 3RA2150	For self-assembly
Size		S00	S0	S2		S3
Connection type		**Screw terminals**				**Screw terminals with box terminal**
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2		4 mm Allen screw
Operating devices	mm	⌀ 5 ... 6	⌀ 5 ... 6	⌀ 5 ... 6		Hexagonal recess
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3.0 ... 4.5		4.5 ... 6
Conductor cross-section (min./max.), One or two conductors can be connected						
• Solid or stranded	mm^2	2 x (0.75 ... 2.5)[1], 2 x (0.5 ... 1.5)[1], For contactor only 2 x 4	2 x (1 ... 2.5)[1], 2 x (2.5 ... 10)[1]	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	2 x (1 ... 35)[1], 1 x (1 ... 50)[1]	2 x (2.5 ... 16)[1] 2 x (10 ... 50)[1] 1 x (10 ... 70)[1]
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[1] 2 x (0.75 ... 2.5)[1]	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1], 1 x 10	2 x (1 ... 16)[1], 1 x (1 ... 25)[1]	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	2 x (2.5 ... 35)[1] 1x (2.5... 50)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1], For contactor only 2 x (18 ... 14)[1] 2 x 12	2 x (16 ... 12)[1], 2 x (14 ... 8)[1]	2 x (18 ... 3)[1], 1 x (18 ... 2)[1]	2 x (18 ... 2)[1], 1 x (18 ... 1)[1]	2 x (10 ... 1/0)[1] 1x (10... 2/0)[1]
• Ribbon cable conductors (Number x Width x Thickness)	mm	--				2 x (6 x 9 x 0.8)
Connection type		**Spring-type terminals**				
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5				
Conductor cross-section (min./max.), One or two conductors can be connected						
• Solid or stranded	mm^2	2 x (0.5 ... 4)	2 x (1 ... 10)	--		
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--		
• Finely stranded with end sleeve (DIN 46228-11)	mm^2	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--		
• AWG cables, solid or stranded	AWG	2 x (20 ... 12)	2 x (18 ... 8)	--		
Max. external diameter of the conductor insulation	mm	3.6	3.6	--		

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Conductor cross-sections for auxiliary and control circuits

Type		3RA2110 3RA2210	3RA2120 3RA2220	3RA2130 3RA2150	For self-assembly
Size		S00	S0	S2	S3
Connection type		**Screw terminals**			
Terminal screw		M3, Pozidriv size 2			
Operating devices	mm	⌀ 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), One or two conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]			
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]			
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)[1], 2 x (20 ... 16)[1], 2 x 12 for contactor S00 only			
Connection type		**Spring-type terminals**			
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), One or two conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)			
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)			
Max. external diameter of the conductor insulation	mm	3.6			

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

IE3/IE4 ready **3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing**

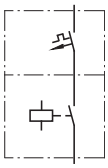
Selection and ordering data


3RA2110


3RA2120


3RA2150

Direct-on-line start



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0, S2 and S3
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor sizes S0, S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module, + Mounting rail adapter		Screw terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				3RV20	3RT20	3RA						
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP01	1921-1DA00	2	**3RA2110-0BA15-1AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10			2	**3RA2110-0CA15-1AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			2	**3RA2110-0DA15-1AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	**3RA2110-0EA15-1AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	**3RA2110-0FA15-1AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	**3RA2110-0GA15-1AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	**3RA2110-0HA15-1AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			2	**3RA2110-0JA15-1AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	**3RA2110-0KA15-1AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	**3RA2110-1AA15-1AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			2	**3RA2110-1BA15-1AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	**3RA2110-1CA15-1AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	**3RA2110-1DA15-1AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			2	**3RA2110-1EA15-1AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	2921-1AA00	2	**3RA2120-1FA24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10			2	**3RA2120-1GA24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2120-1HA24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			2	**3RA2120-1JA24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10			2	**3RA2120-1KA24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1AP00		2	**3RA2120-4AA26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1AP00		5	**3RA2120-4BA27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10			2	**3RA2120-4CA27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			2	**3RA2120-4DA27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			2	**3RA2120-4NA27-0AP0**		1	1 unit	41D
	15	29[4)]	27 ... 32	21-4EA10			2	**3RA2120-4EA27-0AP0**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1AP00	2931-1AA00	▶	**3RA2150-4EA35-0AP0**		1	1 unit	41D
	18.5	35	28 ... 36	32-4PA10			▶	**3RA2150-4PA35-0AP0**		1	1 unit	41D
	18.5	35	32 ... 40	32-4UA10			▶	**3RA2150-4UA35-0AP0**		1	1 unit	41D
	22	41	35 ... 45	32-4VA10	36-1AP00		▶	**3RA2150-4VA36-0AP0**		1	1 unit	41D
	22	41	42 ... 50	32-4WA10			▶	**3RA2150-4WA36-0AP0**		1	1 unit	41D
	30	55	49 ... 59	32-4XA10	37-1AP00		▶	**3RA2150-4XA37-0AP0**		1	1 unit	41D
	30	55	54 ... 65	32-4JA10			▶	**3RA2150-4JA37-0AP0**		1	1 unit	41D
	37[5)]	65	62 ... 65	32-4KA10	38-1AP00		▶	**3RA2150-4KA38-0AP0**		1	1 unit	41D
S3 NEW	Size S3 available on request							Size S3 is only available for self-assembly				

For footnote explanations, see page 8/22.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

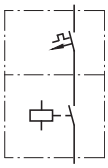
3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing IE3/IE4 ready


3RA2110


3RA2120


3RA2150

Direct-on-line start



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0, S2 and S3
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor sizes S0, S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ Contactor	+ Link module, + Mounting rail adapter		Screw terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")				**3RV20**	**3RT20**	**3RA**			ToC 1			
S00	For load feeders for lower outputs, see this table at type of coordination "2".											
	1.5	3.6	3.5 ... 5	11-1FA10	15-1AP01	1921-1DA00	2	**3RA2110-1FA15-1AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10			2	**3RA2110-1GA15-1AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2110-1HA15-1AP0**		1	1 unit	41D
	4	8.5	7 ... 9	11-1JA10	16-1AP01		2	**3RA2110-1JA16-1AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1AP01		2	**3RA2110-1KA17-1AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1AP01		2	**3RA2110-4AA18-1AP0**		1	1 unit	41D

Footnote explanations for pages 8/21 and 8/22:

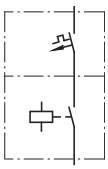
1) For push-in lugs, see "Accessories" on page 8/52.
2) For auxiliary switches, see "Accessories" on page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
5) Maximum permissible current setting at motor starter protector 65 A.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

IE3/IE4 ready **3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing**


3RA2130

Direct-on-line start



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0, S2 and S3
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor sizes S0, S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ Contactor	+ Link module, + Standard mounting rail adapter		**Screw terminals**			
	kW	A	A				d	Article No. / Basic price per PU			
Type of coordination "2" at I_q = 100 kA at 400 V (the motor starter protector is compatible with type of coordination "2")				**3RV20**	**3RT20**	**3RA**		ToC 2			
S2	15	29	22 ... 32	31-4EA10	35-1AP00	2931-1AA00	▶	**3RA2130-4EA35-0AP0**	1	1 unit	41D
	18.5	35	28 ... 36	31-4PA10			▶	**3RA2130-4PA35-0AP0**	1	1 unit	41D
	18.5	35	32 ... 40	31-4UA10			▶	**3RA2130-4UA35-0AP0**	1	1 unit	41D
	22	41	35 ... 45	31-4VA10	36-1AP00		▶	**3RA2130-4VA36-0AP0**	1	1 unit	41D
	22	41	42 ... 50	31-4WA10			▶	**3RA2130-4WA36-0AP0**	1	1 unit	41D
	30	55	49 ... 59	31-4XA10	37-1AP00		▶	**3RA2130-4XA37-0AP0**	1	1 unit	41D
	30	55	54 ... 65	31-4JA10			▶	**3RA2130-4JA37-0AP0**	1	1 unit	41D
	37[5)]	65	62 ... 65	31-4KA10	38-1AP00		▶	**3RA2130-4KA38-0AP0**	1	1 unit	41D
S3 NEW	Size S3 available on request							Size S3 is only available for self-assembly			

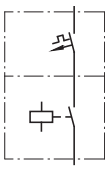
1) For push-in lugs, see "Accessories" on page 8/52.
2) For auxiliary switches, see "Accessories" on page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
5) Maximum permissible current setting at motor starter protector 65 A.

3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing — IE3/IE4 ready


3RA2110


3RA2120

Direct-on-line start



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With spring-type connection

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ Contactor	+ Link module		Spring-type terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")												
				3RV20	3RT20	3RA29		ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP01	11-2AA00	2	**3RA2110-0BE15-1AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20			2	**3RA2110-0CE15-1AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	**3RA2110-0DE15-1AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	**3RA2110-0EE15-1AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	**3RA2110-0FE15-1AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	**3RA2110-0GE15-1AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	**3RA2110-0HE15-1AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	**3RA2110-0JE15-1AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	**3RA2110-0KE15-1AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	**3RA2110-1AE15-1AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	**3RA2110-1BE15-1AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	**3RA2110-1CE15-1AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	**3RA2110-1DE15-1AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	**3RA2110-1EE15-1AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	5	**3RA2120-1FE24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20			5	**3RA2120-1GE24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			5	**3RA2120-1HE24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	**3RA2120-1JE24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	**3RA2120-1KE24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2AP00		2	**3RA2120-4AE26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2AP00		5	**3RA2120-4BE27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	**3RA2120-4CE27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	**3RA2120-4DE27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	**3RA2120-4NE27-0AP0**		1	1 unit	41D
	15	29[4)]	27 ... 32	21-4EA20			2	**3RA2120-4EE27-0AP0**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")												
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP01	11-2AA00	2	**3RA2110-1FE15-1AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20			2	**3RA2110-1GE15-1AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	**3RA2110-1HE15-1AP0**		1	1 unit	41D
	4	8.5	7 ... 9	11-1JA20	16-2AP01		2	**3RA2110-1JE16-1AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2AP01		2	**3RA2110-1KE17-1AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2AP01		2	**3RA2110-4AE18-1AP0**		1	1 unit	41D

1) For push-in lugs, see "Accessories" on page 8/52.
2) For auxiliary switches, see "Accessories" on page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

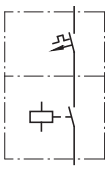
IE3/IE4 ready 3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing


3RA2110


3RA2120


3RA2150

Direct-on-line start



Rated control supply voltage 24 V DC
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor sizes S0, S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ Contactor	+ Link module + Standard mounting rail adapter		Screw terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				**3RV20**	**3RT20**	**3RA**		ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB41	1921-1DA00	2	**3RA2110-0BA15-1BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10			2	**3RA2110-0CA15-1BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			2	**3RA2110-0DA15-1BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	**3RA2110-0EA15-1BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	**3RA2110-0FA15-1BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	**3RA2110-0GA15-1BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	**3RA2110-0HA15-1BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			2	**3RA2110-0JA15-1BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	**3RA2110-0KA15-1BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	**3RA2110-1AA15-1BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			2	**3RA2110-1BA15-1BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	**3RA2110-1CA15-1BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	**3RA2110-1DA15-1BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			2	**3RA2110-1EA15-1BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	2921-1BA00	2	**3RA2120-1FA24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10			2	**3RA2120-1GA24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2120-1HA24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			2	**3RA2120-1JA24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10			2	**3RA2120-1KA24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1BB40		2	**3RA2120-4AA26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1BB40		5	**3RA2120-4BA27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10			2	**3RA2120-4CA27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			2	**3RA2120-4DA27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			2	**3RA2120-4NA27-0BB4**		1	1 unit	41D
	15	29[4)]	27 ... 32	21-4EA10			2	**3RA2120-4EA27-0BB4**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1NB30	2931-1AA00	▶	**3RA2150-4EA35-0NB3**		1	1 unit	41D
	18.5	35	28 ... 36	32-4PA10			▶	**3RA2150-4PA35-0NB3**		1	1 unit	41D
	18.5	35	32 ... 40	32-4UA10			▶	**3RA2150-4UA35-0NB3**		1	1 unit	41D
	22	41	35 ... 45	32-4VA10	36-1NB30		▶	**3RA2150-4VA36-0NB3**		1	1 unit	41D
	22	41	42 ... 50	32-4WA10			▶	**3RA2150-4WA36-0NB3**		1	1 unit	41D
	30	55	49 ... 59	32-4XA10	37-1NB30		▶	**3RA2150-4XA37-0NB3**		1	1 unit	41D
	30	55	54 ... 65	32-4JA10			▶	**3RA2150-4JA37-0NB3**		1	1 unit	41D
	37[5)]	65	62 ... 65	32-4KA10	38-1NB30		▶	**3RA2150-4KA38-0NB3**		1	1 unit	41D
S3 NEW	Size S3 available on request							Size S3 is only available for self-assembly				

For footnote explanations, see page 8/26.

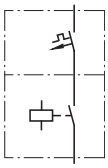
3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing — IE3/IE4 ready


3RA2110


3RA2120


3RA2150

Direct-on-line start



Rated control supply voltage 24 V DC
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor sizes S0, S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Standard mounting rail adapter		Screw terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")												
S00	For load feeders for lower outputs, see this table at type of coordination "2".											
	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB41	1921-1DA00	2	**3RA2110-1FA15-1BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10			2	**3RA2110-1GA15-1BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2110-1HA15-1BB4**		1	1 unit	41D
	4	8.5	7 ... 9	11-1JA10	16-1BB41		2	**3RA2110-1JA16-1BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1BB41		2	**3RA2110-1KA17-1BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB41		2	**3RA2110-4AA18-1BB4**		1	1 unit	41D

Footnote explanations for pages 8/25 and 8/26:

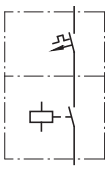
1) For push-in lugs, see "Accessories" on page 8/52.
2) For auxiliary switches, see "Accessories" on page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
5) Maximum permissible current setting at motor starter protector 65 A.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

IE3/IE4 ready 3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing


3RA2130

Direct-on-line start



Rated control supply voltage 24 V DC
With screw terminals

- Screw fixing with 2 push-in lugs each per load feeder is possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor sizes S0, S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	**Comprising the following single devices**			SD	**Fuseless load feeder**		PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ Contactor	+ Link module		**Screw terminals**				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 100 kA at 400 V (the motor starter protector is compatible with type of coordination "2")				**3RV20**	**3RT20**	**3RA**						
S2	15	29	22 ... 32	31-4EA10	35-1NB30	2931-1AA00	▶	**3RA2130-4EA35-0NB3**		1	1 unit	41D
	18.5	35	28 ... 36	31-4PA10			▶	**3RA2130-4PA35-0NB3**		1	1 unit	41D
	18.5	35	32 ... 40	31-4UA10			▶	**3RA2130-4UA35-0NB3**		1	1 unit	41D
	22	41	35 ... 45	31-4VA10	36-1NB30		▶	**3RA2130-4VA36-0NB3**		1	1 unit	41D
	22	41	42 ... 50	31-4WA10			▶	**3RA2130-4WA36-0NB3**		1	1 unit	41D
	30	55	49 ... 59	31-4XA10	37-1NB30		▶	**3RA2130-4XA37-0NB3**		1	1 unit	41D
	30	55	54 ... 65	31-4JA10			▶	**3RA2130-4JA37-0NB3**		1	1 unit	41D
	37[4)]	65	62 ... 65	31-4KA10	38-1NB30		▶	**3RA2130-4KA38-0NB3**		1	1 unit	41D
S3 NEW	Size S3 available on request							Size S3 is only available for self-assembly				

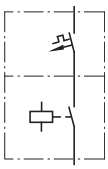
1) For push-in lugs, see "Accessories" on page 8/52.
2) For auxiliary switches, see "Accessories" on page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Maximum permissible current setting at motor starter protector 65 A.

3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing — IE3/IE4 ready


3RA2110


3RA2120

Direct-on-line start



Rated control supply voltage 24 V DC
With spring-type connection

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ Contactor	+ Link module		Spring-type terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				**3RV20**	**3RT20**	**3RA29**		ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB41	11-2AA00	2	**3RA2110-0BE15-1BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20			2	**3RA2110-0CE15-1BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	**3RA2110-0DE15-1BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	**3RA2110-0EE15-1BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	**3RA2110-0FE15-1BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	**3RA2110-0GE15-1BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	**3RA2110-0HE15-1BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	**3RA2110-0JE15-1BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	**3RA2110-0KE15-1BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	**3RA2110-1AE15-1BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	**3RA2110-1BE15-1BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	**3RA2110-1CE15-1BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	**3RA2110-1DE15-1BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	**3RA2110-1EE15-1BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	5	**3RA2120-1FE24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20			5	**3RA2120-1GE24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			5	**3RA2120-1HE24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	**3RA2120-1JE24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	**3RA2120-1KE24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		2	**3RA2120-4AE26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		5	**3RA2120-4BE27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	**3RA2120-4CE27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	**3RA2120-4DE27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	**3RA2120-4NE27-0BB4**		1	1 unit	41D
	15	29[4)]	27 ... 32	21-4EA20			2	**3RA2120-4EE27-0BB4**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")												
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB41	11-2AA00	2	**3RA2110-1FE15-1BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20			2	**3RA2110-1GE15-1BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	**3RA2110-1HE15-1BB4**		1	1 unit	41D
	4	8.5	7 ... 9	11-1JA20	16-2BB41		2	**3RA2110-1JE16-1BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2BB41		2	**3RA2110-1KE17-1BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB40		2	**3RA2110-4AE18-1BB4**		1	1 unit	41D

1) For push-in lugs, see "Accessories" on page 8/52.
2) For auxiliary switches, see "Accessories" on page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

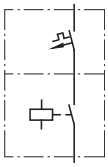
* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data


3RA2110


3RA2120

Direct-on-line start



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0 and S2
With screw terminals

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor sizes S0 and S2: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Screw terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (compatible with type of coordination "1")				3RV20	3RT20	3RA		ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP01	1921-1DA00	2	**3RA2110-0BD15-1AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 8US1251-	2	**3RA2110-0CD15-1AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10		5DS10	2	**3RA2110-0DD15-1AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	**3RA2110-0ED15-1AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	**3RA2110-0FD15-1AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	**3RA2110-0GD15-1AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	**3RA2110-0HD15-1AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			2	**3RA2110-0JD15-1AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	**3RA2110-0KD15-1AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	**3RA2110-1AD15-1AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			2	**3RA2110-1BD15-1AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	**3RA2110-1CD15-1AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	**3RA2110-1DD15-1AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			2	**3RA2110-1ED15-1AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	2921-1AA00	2	**3RA2120-1FD24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US1251-	2	**3RA2120-1GD24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10		5DT10	2	**3RA2120-1HD24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			2	**3RA2120-1JD24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10			2	**3RA2120-1KD24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1AP00	2921-1AA00	2	**3RA2120-4AD26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1AP00	+ 8US1251-	5	**3RA2120-4BD27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10		5NT10	2	**3RA2120-4CD27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			2	**3RA2120-4DD27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			2	**3RA2120-4ND27-0AP0**		1	1 unit	41D
	15	29[3]	27 ... 32	21-4EA10			2	**3RA2120-4ED27-0AP0**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1AP00	2931-1AA00		Size S2 is only available for self-assembly.				
	18.5	35	28 ... 36	32-4PA10		+ 8US1261-						
	18.5	35	32 ... 40	32-4UA10		6MT10						
	22	41	35 ... 45	32-4VA10	36-1AP00							
	22	41	42 ... 50	32-4WA10								
	30	55	49 ... 59	32-4XA10	37-1AP00							
	30	55	54 ... 65	32-4JA10								
	37[4]	65	62 ... 65	32-4KA10	38-1AP00							
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")												
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA10	15-1AP01	1921-1DA00	2	**3RA2110-1FD15-1AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US1251-	2	**3RA2110-1GD15-1AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10		5DS10	2	**3RA2110-1HD15-1AP0**		1	1 unit	41D
	4	8.5	7 ... 9	11-1JA10	16-1AP01		2	**3RA2110-1JD16-1AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1AP01		2	**3RA2110-1KD17-1AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1AP01		2	**3RA2110-4AD18-1AP0**		1	1 unit	41D

[1] For auxiliary switches, see "Accessories" on page 8/45.

[2] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[3] Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

[4] Maximum permissible current setting at motor starter protector 65 A.

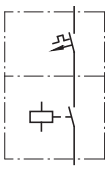
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

3RA21 direct-on-line starters for 60 mm busbars *IE3/IE4* ready


3RA2110


3RA2120

Direct-on-line start



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With spring-type connection

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Spring-type terminals			
								Article No.			
	kW	A	A				d	Basic price per PU			
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				**3RV20**	**3RT20**	**3RA29**		ToC 2			
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP01	11-2AA00	2	**3RA2110-0BH15-1AP0**	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 8US1251-	2	**3RA2110-0CH15-1AP0**	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20		5DT11	2	**3RA2110-0DH15-1AP0**	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	**3RA2110-0EH15-1AP0**	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	**3RA2110-0FH15-1AP0**	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	**3RA2110-0GH15-1AP0**	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	**3RA2110-0HH15-1AP0**	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	**3RA2110-0JH15-1AP0**	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	**3RA2110-0KH15-1AP0**	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	**3RA2110-1AH15-1AP0**	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	**3RA2110-1BH15-1AP0**	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	**3RA2110-1CH15-1AP0**	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	**3RA2110-1DH15-1AP0**	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	**3RA2110-1EH15-1AP0**	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	5	**3RA2120-1FH24-0AP0**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 8US1251-	5	**3RA2120-1GH24-0AP0**	1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20		5NT11[3]	5	**3RA2120-1HH24-0AP0**	1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	**3RA2120-1JH24-0AP0**	1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	**3RA2120-1KH24-0AP0**	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2AP00		2	**3RA2120-4AH26-0AP0**	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2AP00		5	**3RA2120-4BH27-0AP0**	1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	**3RA2120-4CH27-0AP0**	1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	**3RA2120-4DH27-0AP0**	1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	**3RA2120-4NH27-0AP0**	1	1 unit	41D
	15	29[4]	27 ... 32	21-4EA20			2	**3RA2120-4EH27-0AP0**	1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1			
	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP01	11-2AA00	2	**3RA2110-1FH15-1AP0**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 8US1251-	2	**3RA2110-1GH15-1AP0**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20		5DT11	2	**3RA2110-1HH15-1AP0**	1	1 unit	41D
	4	8.5	7 ... 9	11-1JA20	16-2AP01		2	**3RA2110-1JH16-1AP0**	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2AP01		2	**3RA2110-1KH17-1AP0**	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2AP01		2	**3RA2110-4AH18-1AP0**	1	1 unit	41D

1) For auxiliary switches, see "Accessories" on page 8/45.

2) The actual starting and rated data of the motor to be protected must be considered when selecting the units.

3) A 3RA2911-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals is included in the scope of supply.

4) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

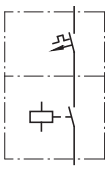
* You can order this quantity or a multiple thereof.
Illustrations are approximate.

IE3/IE4 ready **3RA21 direct-on-line starters for 60 mm busbars**


3RA2110


3RA2120

Direct-on-line start



Rated control supply voltage 24 V DC
With screw terminals

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor sizes S0 and S2: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Screw terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")												
				3RV20	3RT20	3RA		ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB41	1921-1DA00	2	**3RA2110-0BD15-1BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 8US1251-	2	**3RA2110-0CD15-1BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10		5DS10	2	**3RA2110-0DD15-1BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	**3RA2110-0ED15-1BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	**3RA2110-0FD15-1BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	**3RA2110-0GD15-1BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	**3RA2110-0HD15-1BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			2	**3RA2110-0JD15-1BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	**3RA2110-0KD15-1BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	**3RA2110-1AD15-1BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			2	**3RA2110-1BD15-1BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	**3RA2110-1CD15-1BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	**3RA2110-1DD15-1BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			2	**3RA2110-1ED15-1BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	2921-1BA00	2	**3RA2120-1FD24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US1251-	2	**3RA2120-1GD24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10		5DT10	2	**3RA2120-1HD24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			2	**3RA2120-1JD24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10			2	**3RA2120-1KD24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1BB40	2921-1BA00	2	**3RA2120-4AD26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1BB40	+ 8US1251-	5	**3RA2120-4BD27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10		5NT10	2	**3RA2120-4CD27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			2	**3RA2120-4DD27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			2	**3RA2120-4ND27-0BB4**		1	1 unit	41D
	15	29[3]	27 ... 32	21-4EA10			2	**3RA2120-4ED27-0BB4**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1NB30	2931-1AA00		Size S2 is only available for self-assembly.				
	18.5	35	28 ... 36	32-4PA10		+ 8US1261-						
	18.5	35	32 ... 40	32-4UA10		6MT10						
	22	41	35 ... 45	32-4VA10	36-1NB30							
	22	41	42 ... 50	32-4WA10								
	30	55	49 ... 59	32-4XA10	37-1NB30							
	30	55	54 ... 65	32-4JA10								
	37[4]	65	62 ... 65	32-4KA10	38-1NB30							
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")												
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB41	1921-1DA00	2	**3RA2110-1FD15-1BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US1251-	2	**3RA2110-1GD15-1BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10		5DS10	2	**3RA2110-1HD15-1BB4**		1	1 unit	41D
	4	8.5	7 ... 9	11-1JA10	16-1BB41		2	**3RA2110-1JD16-1BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1BB41		2	**3RA2110-1KD17-1BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB41		2	**3RA2110-4AD18-1BB4**		1	1 unit	41D

[1] For auxiliary switches, see "Accessories" on page 8/45.

[2] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[3] Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

[4] Maximum permissible current setting at motor starter protector 65 A.

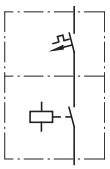
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

3RA21 direct-on-line starters for 60 mm busbars *IE3/IE4* ready

3RA2110

3RA2120

Direct-on-line start



Rated control supply voltage 24 V DC
With spring-type connection

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO
  Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Spring-type terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				**3RV20**	**3RT20**	**3RA29**		ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB41	11-2AA00	2	**3RA2110-0BH15-1BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 8US1251-	2	**3RA2110-0CH15-1BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20		5DT11	2	**3RA2110-0DH15-1BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	**3RA2110-0EH15-1BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	**3RA2110-0FH15-1BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	**3RA2110-0GH15-1BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	**3RA2110-0HH15-1BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	**3RA2110-0JH15-1BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	**3RA2110-0KH15-1BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	**3RA2110-1AH15-1BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	**3RA2110-1BH15-1BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	**3RA2110-1CH15-1BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	**3RA2110-1DH15-1BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	**3RA2110-1EH15-1BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	5	**3RA2120-1FH24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 8US1251-	5	**3RA2120-1GH24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20		5NT11	5	**3RA2120-1HH24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	**3RA2120-1JH24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	**3RA2120-1KH24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		2	**3RA2120-4AH26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		5	**3RA2120-4BH27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	**3RA2120-4CH27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	**3RA2120-4DH27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	**3RA2120-4NH27-0BB4**		1	1 unit	41D
	15	29[3]	27 ... 32	21-4EA20			2	**3RA2120-4EH27-0BB4**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")												
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB41	11-2AA00	2	**3RA2110-1FH15-1BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 8US1251-	2	**3RA2110-1GH15-1BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20		5DT11	2	**3RA2110-1HH15-1BB4**		1	1 unit	41D
	4	8.5	7 ... 9	11-1JA20	16-2BB41		2	**3RA2110-1JH16-1BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2BB41		2	**3RA2110-1KH17-1BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB40		2	**3RA2110-4AH18-1BB4**		1	1 unit	41D

[1] For auxiliary switches, see "Accessories" on page 8/45.

[2] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[3] Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

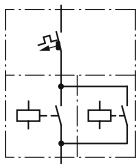
IE3/IE4 ready **3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing**

Selection and ordering data


3RA2210


3RA2220

Reversing duty



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0, S2 and S3
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without standard mounting rail adapter for size S00
- With 2 standard mounting rail adapters for size S0 for mechanical reinforcement (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0, S2 and S3, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protectors	+ 2 contactors	+ Link module + RH assembly kit[4)]/ wiring kit		Screw terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				3RV20	3RT20	3RA						
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP02	1921-1DA00	2	**3RA2210-0BA15-2AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 2913-2AA1	2	**3RA2210-0CA15-2AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			2	**3RA2210-0DA15-2AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	**3RA2210-0EA15-2AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	**3RA2210-0FA15-2AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	**3RA2210-0GA15-2AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	**3RA2210-0HA15-2AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			2	**3RA2210-0JA15-2AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	**3RA2210-0KA15-2AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	**3RA2210-1AA15-2AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			2	**3RA2210-1BA15-2AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	**3RA2210-1CA15-2AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	**3RA2210-1DA15-2AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			2	**3RA2210-1EA15-2AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	2921-1AA00	2	**3RA2220-1FB24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2923-1BB1	2	**3RA2220-1GB24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2220-1HB24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			2	**3RA2220-1JB24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10			2	**3RA2220-1KB24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1AP00		2	**3RA2220-4AB26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1AP00		5	**3RA2220-4BB27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10			2	**3RA2220-4CB27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			2	**3RA2220-4DB27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			2	**3RA2220-4NB27-0AP0**		1	1 unit	41D
	15	29[5)]	27 ... 32	21-4EA10			2	**3RA2220-4EB27-0AP0**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1AP00	2931-1AA00		Size S2 is only available for self-assembly.				
	18.5	35	28 ... 36	32-4PA10		+ 2933-1BB1						
	18.5	35	32 ... 40	32-4UA10								
	22	41	35 ... 45	32-4VA10	36-1AP00							
	22	41	42 ... 50	32-4WA10								
	30	55	49 ... 59	32-4XA10	37-1AP00							
	30	55	54 ... 65	32-4JA10								
	37[6)]	65	62 ... 65	32-4KA10	38-1AP00							

For footnote explanations, see page 8/34.

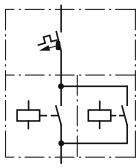
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing *IE3/IE4 ready*


3RA2210


3RA2220

Reversing duty



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0, S2 and S3
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without standard mounting rail adapter for size S00
- With 2 standard mounting rail adapters for size S0 for mechanical reinforcement (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0, S2 and S3, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	**Comprising the following single devices**			SD	**Fuseless load feeder**		PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protectors	+ 2 contactors	+ Link module + RH assembly kit[4)]/ wiring kit		**Screw terminals**				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")												
S3 *NEW* Size S3 available on request								Size S3 is only available for self-assembly				

Footnote explanations for pages 8/33 and 8/34:

1) For push-in lugs, see "Accessories" on page 8/52.
2) For auxiliary switches, see "Accessories" on page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) RH = assembly kit for reversing duty and standard rail mounting in sizes S0 and S2.
5) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
6) Maximum permissible current setting at motor starter protector 65 A.

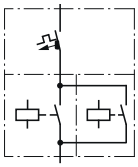
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

IE3/IE4 ready 3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing

3RA2210

3RA2220

Reversing duty



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without standard mounting rail adapter for size S00
- With 2 standard mounting rail adapters for size S0 for mechanical reinforcement (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0 and S2, an integrated NO contact is still available for free use

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	**Comprising the following single devices**			SD	**Fuseless load feeder**		PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protectors	+ 2 contactors	+ Link module + RH assembly kit[4)]/ wiring kit		**Screw terminals**				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")												
				3RV20	**3RT20**	**3RA**						
S00	For load feeders for lower outputs, see this table at type of coordination "2".											
S00	1.5	3.6	3.5 ... 5	11-1FA10	15-1AP02	1921-1DA00	2	**3RA2210-1FA15-2AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2913-2AA1	2	**3RA2210-1GA15-2AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2210-1HA15-2AP0**		1	1 unit	41D
	4	8.5	7 ... 9	11-1JA10	16-1AP02		2	**3RA2210-1JA16-2AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1AP02		2	**3RA2210-1KA17-2AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1AP02		2	**3RA2210-4AA18-2AP0**		1	1 unit	41D

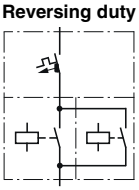
1) For push-in lugs, see "Accessories" on page 8/52.
2) For auxiliary switches, see "Accessories" on page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) RH = assembly kit for reversing duty and standard rail mounting in sizes S0 and S2.

3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing *IE3/IE4 ready*


3RA2210


3RA2220

Reversing duty



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With spring-type terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without standard mounting rail adapter for size S00
- With two standard mounting rail adapters for size S0 for mechanical reinforcement (included in the scope of delivery)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RH assembly kit[4)]/wiring kit		Spring-type terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")												
				3RV20	**3RT20**	**3RA29**		ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP02	11-2AA00	2	**3RA2210-0BE15-2AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 2913-2AA2	2	**3RA2210-0CE15-2AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	**3RA2210-0DE15-2AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	**3RA2210-0EE15-2AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	**3RA2210-0FE15-2AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	**3RA2210-0GE15-2AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	**3RA2210-0HE15-2AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	**3RA2210-0JE15-2AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	**3RA2210-0KE15-2AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	**3RA2210-1AE15-2AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	**3RA2210-1BE15-2AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	**3RA2210-1CE15-2AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	**3RA2210-1DE15-2AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	**3RA2210-1EE15-2AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	5	**3RA2220-1FF24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 2923-1BB2[5)]	5	**3RA2220-1GF24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			5	**3RA2220-1HF24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	**3RA2220-1JF24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	**3RA2220-1KF24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2AP00		2	**3RA2220-4AF26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2AP00		5	**3RA2220-4BF27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	**3RA2220-4CF27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	**3RA2220-4DF27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	**3RA2220-4NF27-0AP0**		1	1 unit	41D
	15	29[6)]	27 ... 32	21-4EA20			2	**3RA2220-4EF27-0AP0**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")												
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1				
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP02	11-2AA00	2	**3RA2210-1FE15-2AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 2913-2AA2	2	**3RA2210-1GE15-2AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	**3RA2210-1HE15-2AP0**		1	1 unit	41D
	4	8.5	7 ... 9	11-1JA20	16-2AP02		2	**3RA2210-1JE16-2AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2AP02		2	**3RA2210-1KE17-2AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2AP02		2	**3RA2210-4AE18-2AP0**		1	1 unit	41D

1) For push-in lugs, see "Accessories" on page 8/52.
2) For auxiliary switches, see "Accessories" on page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) RH = assembly kit for reversing duty and standard rail mounting in size S0.
5) The RH assembly kit also includes the 3RA2911-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals.
6) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

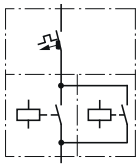
* You can order this quantity or a multiple thereof.
Illustrations are approximate.

IE3/IE4 ready **3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing**


3RA2210


3RA2220

Reversing duty



Rated control supply voltage 24 V DC
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without standard mounting rail adapter for size S00
- With two standard mounting rail adapters for size S0 for mechanical reinforcement (included in the scope of delivery)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0, S2 and S3, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RH assembly kit[4)]/ wiring kit		Screw terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (compatible with type of coordination "1")												
				3RV20	3RT20	3RA						
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	1921-1DA00	2	**3RA2210-0BA15-2BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 2913-2AA1	2	**3RA2210-0CA15-2BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			2	**3RA2210-0DA15-2BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	**3RA2210-0EA15-2BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	**3RA2210-0FA15-2BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	**3RA2210-0GA15-2BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	**3RA2210-0HA15-2BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			2	**3RA2210-0JA15-2BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	**3RA2210-0KA15-2BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	**3RA2210-1AA15-2BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			2	**3RA2210-1BA15-2BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	**3RA2210-1CA15-2BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	**3RA2210-1DA15-2BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			2	**3RA2210-1EA15-2BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	2921-1BA00	2	**3RA2220-1FB24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2923-1BB1	2	**3RA2220-1GB24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2220-1HB24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			2	**3RA2220-1JB24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10			2	**3RA2220-1KB24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1BB40		2	**3RA2220-4AB26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1BB40		5	**3RA2220-4BB27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10			2	**3RA2220-4CB27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			2	**3RA2220-4DB27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			2	**3RA2220-4NB27-0BB4**		1	1 unit	41D
	15	29[5)]	27 ... 32	21-4EA10			2	**3RA2220-4EB27-0BB4**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1NB30	2931-1AA00		Size S2 is only available for self-assembly.				
	18.5	35	28 ... 36	32-4PA10		+ 2933-1BB1						
	18.5	35	32 ... 40	32-4UA10								
	22	41	35 ... 45	32-4VA10	36-1NB30							
	22	41	42 ... 50	32-4WA10								
	30	55	49 ... 59	32-4XA10	37-1NB30							
	30	55	54 ... 65	32-4JA10								
	37[6)]	65	62 ... 65	32-4KA10	38-1NB30							
S3 NEW	Size S3 available on request							Size S3 is only available for self-assembly.				

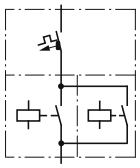
For footnote explanations, see page 8/38.

3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing *IE3/IE4 ready*


3RA2210


3RA2220

Reversing duty



Rated control supply voltage 24 V DC
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without standard mounting rail adapter for size S00
- With two standard mounting rail adapters for size S0 for mechanical reinforcement (included in the scope of delivery)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0, S2 and S3, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RH assembly kit[4)]/ wiring kit		Screw terminals			
								Article No.	Basic price per PU		
	kW	A	A				d				
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".										
S00	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB42	1921-1DA00 + 2913-2AA1	2	**3RA2210-1FA15-2BB4**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10			2	**3RA2210-1GA15-2BB4**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2210-1HA15-2BB4**	1	1 unit	41D
	4	8.5	7 ... 9	11-1JA10	16-1BB42		2	**3RA2210-1JA16-2BB4**	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1BB42		2	**3RA2210-1KA17-2BB4**	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB42		2	**3RA2210-4AA18-2BB4**	1	1 unit	41D

Footnotes for pages 8/37 and 8/38:

1) For push-in lugs, see "Accessories" on page 8/52.
2) For auxiliary switches, see "Accessories" on page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) RH = assembly kit for reversing duty and standard rail mounting in sizes S0 and S2.
5) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
6) Maximum permissible current setting at motor starter protector 65 A.

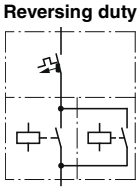
* You can order this quantity or a multiple thereof.
Illustrations are approximate.

IE3/IE4 ready 3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing

3RA2210

3RA2220

Reversing duty



Rated control supply voltage 24 V DC
With spring-type connection

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without standard mounting rail adapter for size S00
- With two standard mounting rail adapters for size S0 for mechanical reinforcement (included in the scope of delivery)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RS assembly kit[4)]/ wiring kit		Spring-type terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				**3RV20**	**3RT20**	**3RA29**		ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB42	11-2AA00	2	**3RA2210-0BE15-2BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 2913-2AA2	2	**3RA2210-0CE15-2BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	**3RA2210-0DE15-2BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	**3RA2210-0EE15-2BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	**3RA2210-0FE15-2BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	**3RA2210-0GE15-2BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	**3RA2210-0HE15-2BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	**3RA2210-0JE15-2BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	**3RA2210-0KE15-2BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	**3RA2210-1AE15-2BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	**3RA2210-1BE15-2BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	**3RA2210-1CE15-2BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	**3RA2210-1DE15-2BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	**3RA2210-1EE15-2BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	5	**3RA2220-1FF24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 2923-1BB2	5	**3RA2220-1GF24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			5	**3RA2220-1HF24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	**3RA2220-1JF24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	**3RA2220-1KF24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		2	**3RA2220-4AF26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		5	**3RA2220-4BF27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	**3RA2220-4CF27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	**3RA2220-4DF27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	**3RA2220-4NF27-0BB4**		1	1 unit	41D
	15	29[5)]	27 ... 32	21-4EA20			2	**3RA2220-4EF27-0BB4**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")												
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1				
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB42	11-2AA00	2	**3RA2210-1FE15-2BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 2913-2AA2	2	**3RA2210-1GE15-2BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	**3RA2210-1HE15-2BB4**		1	1 unit	41D
	4	8.5	7 ... 9	11-1JA20	16-2BB42		2	**3RA2210-1JE16-2BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2BB42		2	**3RA2210-1KE17-2BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB42		2	**3RA2210-4AE18-2BB4**		1	1 unit	41D

1) For push-in lugs, see "Accessories" on page 8/52.
2) For auxiliary switches, see "Accessories" on page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) RH = assembly kit for reversing duty and standard rail mounting in size S0.
5) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

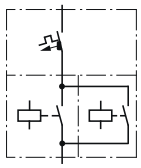
3RA22 reversing starters for 60 mm busbars *IE3/IE4 ready*

Selection and ordering data


3RA2210


3RA2220

Reversing duty



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With screw terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0 and S2, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	**Comprising the following single devices**			SD	**Fuseless load feeder**		PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RS assembly kit[3]/ wiring kit		**Screw terminals**				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				**3RV20**	**3RT20**	**3RA**						
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP02	1921-1DA00	2	**3RA2210-0BD15-2AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 2913-1DB1	2	**3RA2210-0CD15-2AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			2	**3RA2210-0DD15-2AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	**3RA2210-0ED15-2AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	**3RA2210-0FD15-2AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	**3RA2210-0GD15-2AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	**3RA2210-0HD15-2AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			2	**3RA2210-0JD15-2AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	**3RA2210-0KD15-2AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	**3RA2210-1AD15-2AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			2	**3RA2210-1BD15-2AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	**3RA2210-1CD15-2AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	**3RA2210-1DD15-2AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			2	**3RA2210-1ED15-2AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	2921-1AA00	2	**3RA2220-1FD24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2923-1DB1	2	**3RA2220-1GD24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2220-1HD24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			2	**3RA2220-1JD24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10			2	**3RA2220-1KD24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1AP00		2	**3RA2220-4AD26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1AP00		5	**3RA2220-4BD27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10			2	**3RA2220-4CD27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			2	**3RA2220-4DD27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			2	**3RA2220-4ND27-0AP0**		1	1 unit	41D
	15	29[4]	27 ... 32	21-4EA10			2	**3RA2220-4ED27-0AP0**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1AP00	2931-1AA00		Size S2 is only available for self-assembly.				
	18.5	35	28 ... 36	32-4PA10		+ 2933-1DB1						
	18.5	35	32 ... 40	32-4UA10								
	22	41	35 ... 45	32-4VA10	36-1AP00							
	22	41	42 ... 50	32-4WA10								
	30	55	49 ... 59	32-4XA10	37-1AP00							
	30	55	54 ... 65	32-4JA10								
	37[5]	65	62 ... 65	32-4KA10	38-1AP00							

1) For auxiliary switches, see "Accessories" on page 8/45.
2) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
3) RS = assembly kit for reversing duty and busbar mounting.
4) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
5) Maximum permissible current setting at motor starter protector 65 A.

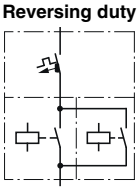
* You can order this quantity or a multiple thereof.
Illustrations are approximate.

IE3/IE4 ready **3RA22 reversing starters for 60 mm busbars**

3RA2210

3RA2220

Reversing duty



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With screw terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0 and S2, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RS assembly kit[3]/ wiring kit		Screw terminals			
								Article No.			
	kW	A	A				d		Basic price per PU		
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1			
S00	1.5	3.6	3.5 ... 5	11-1FA10	15-1AP02	1921-1DA00	2	**3RA2210-1FD15-2AP0**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2913-1DB1	2	**3RA2210-1GD15-2AP0**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2210-1HD15-2AP0**	1	1 unit	41D
	4	8.5	7 ... 9	11-1JA10	16-1AP02		2	**3RA2210-1JD16-2AP0**	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1AP02		2	**3RA2210-1KD17-2AP0**	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1AP02		2	**3RA2210-4AD18-2AP0**	1	1 unit	41D

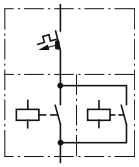
1) For auxiliary switches, see "Accessories" on page 8/45.
2) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
3) RS = assembly kit for reversing duty and busbar mounting.

3RA22 reversing starters for 60 mm busbars *IE3/IE4* ready

3RA2210

3RA2220

Reversing duty



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With spring-type connection

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protectors	+ 2 contactors	+ Link module + RS assembly kit[3]/ wiring kit		Spring-type terminals			
								Article No.	Basic price per PU		
	kW	A	A				d				
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				**3RV20**	**3RT20**	**3RA29**		ToC 2			
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP02	11-2AA00	2	**3RA2210-0BH15-2AP0**	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 2913-1DB2	2	**3RA2210-0CH15-2AP0**	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	**3RA2210-0DH15-2AP0**	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	**3RA2210-0EH15-2AP0**	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	**3RA2210-0FH15-2AP0**	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	**3RA2210-0GH15-2AP0**	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	**3RA2210-0HH15-2AP0**	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	**3RA2210-0JH15-2AP0**	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	**3RA2210-0KH15-2AP0**	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	**3RA2210-1AH15-2AP0**	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	**3RA2210-1BH15-2AP0**	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	**3RA2210-1CH15-2AP0**	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	**3RA2210-1DH15-2AP0**	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	**3RA2210-1EH15-2AP0**	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	5	**3RA2220-1FH24-0AP0**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 2923-	5	**3RA2220-1GH24-0AP0**	1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20		1DB2[4]	5	**3RA2220-1HH24-0AP0**	1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	**3RA2220-1JH24-0AP0**	1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	**3RA2220-1KH24-0AP0**	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2AP00		2	**3RA2220-4AH26-0AP0**	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2AP00		5	**3RA2220-4BH27-0AP0**	1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	**3RA2220-4CH27-0AP0**	1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	**3RA2220-4DH27-0AP0**	1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	**3RA2220-4NH27-0AP0**	1	1 unit	41D
	15	29[5]	27 ... 32	21-4EA20			2	**3RA2220-4EH27-0AP0**	1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1			
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP02	11-2AA00	2	**3RA2210-1FH15-2AP0**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 2913-1DB2	2	**3RA2210-1GH15-2AP0**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	**3RA2210-1HH15-2AP0**	1	1 unit	41D
	4	8.5	7 ... 9	11-1JA20	16-2AP02		2	**3RA2210-1JH16-2AP0**	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2AP02		2	**3RA2210-1KH17-2AP0**	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2AP02		2	**3RA2210-4AH18-2AP0**	1	1 unit	41D

1) For auxiliary switches, see "Accessories" on page 8/45.

2) The actual starting and rated data of the motor to be protected must be considered when selecting the units.

3) RS = assembly kit for reversing duty and busbar mounting.

4) The RS assembly kit also includes the 3RA2911-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals.

5) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

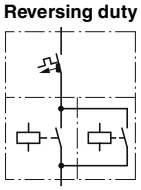
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

IE3/IE4 ready 3RA22 reversing starters for 60 mm busbars


3RA2210


3RA2220

Reversing duty



Rated control supply voltage 24 V DC
With screw terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0 and S2, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protectors	+ 2 contactors	+ Link module + RS assembly kit[3]/ Wiring kit		Screw terminals			
	kW	A	A				d	Article No.			
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")											
				3RV20	**3RT20**	**3RA**		ToC 2			
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	1921-1DA00	2	**3RA2210-0BD15-2BB4**	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 2913-1DB1	2	**3RA2210-0CD15-2BB4**	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			2	**3RA2210-0DD15-2BB4**	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	**3RA2210-0ED15-2BB4**	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	**3RA2210-0FD15-2BB4**	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	**3RA2210-0GD15-2BB4**	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	**3RA2210-0HD15-2BB4**	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			2	**3RA2210-0JD15-2BB4**	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	**3RA2210-0KD15-2BB4**	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	**3RA2210-1AD15-2BB4**	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			2	**3RA2210-1BD15-2BB4**	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	**3RA2210-1CD15-2BB4**	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	**3RA2210-1DD15-2BB4**	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			2	**3RA2210-1ED15-2BB4**	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	2921-1BA00	2	**3RA2220-1FD24-0BB4**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2923-1DB1	2	**3RA2220-1GD24-0BB4**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2220-1HD24-0BB4**	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			2	**3RA2220-1JD24-0BB4**	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10			2	**3RA2220-1KD24-0BB4**	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1BB40		2	**3RA2220-4AD26-0BB4**	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1BB40		5	**3RA2220-4BD27-0BB4**	1	1 unit	41D
	11	22	16 ... 22	21-4CA10			2	**3RA2220-4CD27-0BB4**	1	1 unit	41D
	11	22	18 ... 25	21-4DA10			2	**3RA2220-4DD27-0BB4**	1	1 unit	41D
	15	28	23 ... 28	21-4NA10			2	**3RA2220-4ND27-0BB4**	1	1 unit	41D
	15	29[4]	27 ... 32	21-4EA10			2	**3RA2220-4ED27-0BB4**	1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1NB30	2931-1AA00		Size S2 is only available for self-assembly.			
	18.5	35	28 ... 36	32-4PA10		+ 2933-1DB1					
	18.5	35	32 ... 40	32-4UA10							
	22	41	35 ... 45	32-4VA10	36-1NB30						
	22	41	42 ... 50	32-4WA10							
	30	55	49 ... 59	32-4XA10	37-1NB30						
	30	55	54 ... 65	32-4JA10							
	37[5]	65	62 ... 65	32-4KA10	38-1NB30						
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1			
S00	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB42	1921-1DA00	2	**3RA2210-1FD15-2BB4**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2913-1DB1	2	**3RA2210-1GD15-2BB4**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	**3RA2210-1HD15-2BB4**	1	1 unit	41D
	4	8.5	7 ... 9	11-1JA10	16-1BB42		2	**3RA2210-1JD16-2BB4**	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1BB42		2	**3RA2210-1KD17-2BB4**	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB42		2	**3RA2210-4AD18-2BB4**	1	1 unit	41D

[1] For auxiliary switches, see "Accessories" on page 8/45.

[2] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[3] RS = assembly kit for reversing duty and busbar mounting.

[4] Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

[5] Maximum permissible current setting at motor starter protector 65 A.

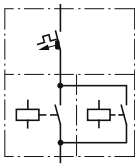
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

3RA22 reversing starters for 60 mm busbars *IE3/IE4* ready

3RA2210

3RA2220

Reversing duty



Rated control supply voltage 24 V DC
With spring-type connection

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output *P*	Motor current *I* (guide value)		Motor starter protectors	+ 2 contactors	+ Link module + RS assembly kit[3]/ wiring kit		Spring-type terminals				
								Article No.	Basic price per PU			
	kW	A	A				d					
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")												
				3RV20	**3RT20**	**3RA29**		ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB42	11-2AA00	2	**3RA2210-0BH15-2BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 2913-1DB2	2	**3RA2210-0CH15-2BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	**3RA2210-0DH15-2BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	**3RA2210-0EH15-2BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	**3RA2210-0FH15-2BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	**3RA2210-0GH15-2BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	**3RA2210-0HH15-2BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	**3RA2210-0JH15-2BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	**3RA2210-0KH15-2BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	**3RA2210-1AH15-2BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	**3RA2210-1BH15-2BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	**3RA2210-1CH15-2BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	**3RA2210-1DH15-2BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	**3RA2210-1EH15-2BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	5	**3RA2220-1FH24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 2923-1DB2	5	**3RA2220-1GH24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			5	**3RA2220-1HH24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	**3RA2220-1JH24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	**3RA2220-1KH24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		2	**3RA2220-4AH26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		5	**3RA2220-4BH27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	**3RA2220-4CH27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	**3RA2220-4DH27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	**3RA2220-4NH27-0BB4**		1	1 unit	41D
	15	29[4]	27 ... 32	21-4EA20			2	**3RA2220-4EH27-0BB4**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")												
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1				
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB42	11-2AA00	2	**3RA2210-1FH15-2BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 2913-1DB2	2	**3RA2210-1GH15-2BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	**3RA2210-1HH15-2BB4**		1	1 unit	41D
	4	8.5	7 ... 9	11-1JA20	16-2BB42		2	**3RA2210-1JH16-2BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2BB42		2	**3RA2210-1KH17-2BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB42		2	**3RA2210-4AH18-2BB4**		1	1 unit	41D

1) For auxiliary switches, see "Accessories" on page 8/45.

2) The actual starting and rated data of the motor to be protected must be considered when selecting the units.

3) RS = assembly kit for reversing duty and busbar mounting.

4) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

The accessories listed here are parts and add-ons for the 3RA2 direct-on-line and reversing starters as well as components for the customer assembly of fuseless load feeders.

Selection and ordering data

Accessories for motor starter protectors


3RV2901-1E


3RV2901-2E


3RV2901-1A


3RV2901-2A

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E

Version	For motor starter protectors	SD	Screw terminals	SD	Spring-type terminals
			Article No. / Price per PU		Article No. / Price per PU
	Size	d			
Auxiliary switches[1]					
Transverse auxiliary switches For mounting on the front					
1 CO	S00 ... S3	▶	**3RV2901-1D**		**--**
1 NO + 1 NC		▶	**3RV2901-1E**	▶	**3RV2901-2E**
2NO		▶	**3RV2901-1F**	▶	**3RV2901-2F**
Lateral auxiliary switches For mounting on the left					
1 NO + 1 NC	S00 ... S3	▶	**3RV2901-1A**	▶	**3RV2901-2A**

1) Each motor starter protector can be fitted with one transverse and one lateral auxiliary switch. The lateral auxiliary switches 2 NO + 2 NC are used without transverse auxiliary switches.


3RV2902-1A..


3RV2902-2A..

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E

Rated control supply voltage U_s				For motor starter protectors	SD	Screw terminals	SD	Spring-type terminals
AC 50 Hz	AC 60 Hz	AC 50/60 Hz 100 % ON period[1]	AC/DC 50/60 Hz, DC 5 s ON period[2]			Article No. / Price per PU		Article No. / Price per PU
V	V	V	V	Size	d		d	
Auxiliary releases for motor starter protectors[3]								
Undervoltage release								
230	240	--	--	S00 ... S3	▶	**3RV2902-1AP0**	▶	**3RV2902-2AP0**
Shunt release								
--	--	210 ... 240	190 ... 330	S00 ... S3	▶	**3RV2902-1DP0**	▶	**3RV2902-2DP0**

1) The voltage range is valid for 100 % (infinite) ON period. The response voltage lies at 0.9 of the lower limit of the voltage range.
2) The voltage range is valid for 5 s ON period at 50/60Hz AC and DC. The response voltage lies at 0.85 of the lower limit of the voltage range.
3) One auxiliary release can be mounted on the right per motor starter protector (does not apply to 3RV21 motor starter protectors with overload relay function).

For the complete range of accessories for the motor starter protectors, see page 7/37 onwards.

Accessories

Accessories for contactors

	For contactors Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Auxiliary switch blocks for snapping onto the front of contactors								
 3RH2911-1BA..				**Screw terminals**				
	Cable entry from below							
	S00 ... S3	1-pole						
		- 1 NO		**3RH2911-1BA10**		1	1 unit	41B
		- 1 NC		**3RH2911-1BA01**		1	1 unit	41B
 3RH2911-1MA..	S00 ... S3	2-pole						
		- 1 NO + 1 NC		**3RH2911-1MA11**		1	1 unit	41B
		- 2 NO		**3RH2911-1MA20**		1	1 unit	41B
Auxiliary switch blocks for contactors, for lateral mounting								
 3RH2911-1DA..				**Screw terminals**				
	S00	2 NC	2	**3RH2911-1DA02**		1	1 unit	41B
	S00	1 NO + 1 NC	2	**3RH2911-1DA11**		1	1 unit	41B
	S00	2 NO	2	**3RH2911-1DA20**		1	1 unit	41B
	S0/S3	2 NC	2	**3RH2921-1DA02**		1	1 unit	41B
	S0/S3	1 NO + 1 NC	2	**3RH2921-1DA11**		1	1 unit	41B
	S0/S3	2 NO	2	**3RH2921-1DA20**		1	1 unit	41B
 3RH2911-2DA..				**Spring-type terminals**				
	S00	2 NC	2	**3RH2911-2DA02**		1	1 unit	41B
	S00	1 NO + 1 NC	2	**3RH2911-2DA11**		1	1 unit	41B
	S00	2 NO	2	**3RH2911-2DA20**		1	1 unit	41B
	S0/S3	2 NC	2	**3RH2921-2DA02**		1	1 unit	41B
	S0/S3	1 NO + 1 NC	2	**3RH2921-2DA11**		1	1 unit	41B
	S0/S3	2 NO	2	**3RH2921-2DA20**		1	1 unit	41B
Motor feeder connectors for contactors with screw terminals (can only be used for direct-on-line starters)								
 3RT1926-4RD01				**Screw terminals**				
	Adapters for contactor							
	Ambient temperature $T_{u\,max.}$ = 60 °C							
	S00	Rated operational current I_e At AC-3/400 V: 20 A	5	**3RT1916-4RD01**		1	1 unit	41B
	S0	Rated operational current I_e At AC-3/400 V: 25 A	5	**3RT1926-4RD01**		1	1 unit	41B
 3RT1900-4RE01	**Motor feeder connectors for contactors**							
	S00, S0	--	5	**3RT1900-4RE01**		1	1 unit	41B

For the complete range of accessories for the 3RT contactors,
see page 3/75 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

For contactors	Version	Rated control supply voltage U_s [1] AC operation	Rated control supply voltage U_s [1] DC operation	SD	Article No. [2]	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	V DC	d					
Surge suppressors without LED for contactors (also for spring-type terminals)									
	Size S00								
	For plugging onto the front side of the contactors (with and without auxiliary switch blocks)								
3RT2.1	**Varistors**	24 ... 48	24 ... 70	▶	**3RT2916-1BB00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2916-1BD00**		1	1 unit	41B
3RT2.1	**RC element**	24 ... 48	24 ... 70	▶	**3RT2916-1CB00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2916-1CD00**		1	1 unit	41B
3RT2.1	**Noise suppression diode**	--	12 ... 250	▶	**3RT2916-1DG00**		1	1 unit	41B
3RT2.1	**Diode assemblies** (diode and Zener diode) For DC operation	--	12 ... 250	▶	**3RT2916-1EH00**		1	1 unit	41B
	Size S0								
	For plugging onto the front side of the contactors (before installing the auxiliary switch block)								
3RT2.2	**Varistors** [2]	24 ... 48	24 ... 70	▶	**3RT2926-1BB00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2926-1BD00**		1	1 unit	41B
3RT2.2	**RC element**	24 ... 48	24 ... 70	▶	**3RT2926-1CB00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2926-1CD00**		1	1 unit	41B
3RT2.2	**Diode assembly**	--	24	▶	**3RT2926-1ER00**		1	1 unit	41B
	For DC operation	--	30 ... 250	▶	**3RT2926-1ES00**		1	1 unit	41B
	Sizes S2 and S3								
	For plugging onto the front side of the contactors (before installing the auxiliary switch block)								
3RT2.3, 3RT2.4	**Varistors** [2][3]	24 ... 48	--	▶	**3RT2936-1BB00**		1	1 unit	41B
		127 ... 240	--	▶	**3RT2936-1BD00**		1	1 unit	41B
3RT2.3	**RC element**	24 ... 48	24 ... 70	▶	**3RT2936-1CB00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2936-1CD00**		1	1 unit	41B
3RT2.4	**RC element** NEW	24 ... 48	24 ... 70	▶	**3RT2946-1CB00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2946-1CD00**		1	1 unit	41B
3RT2.3, 3RT2.4	**Diode assembly** [3] for DC operation	--	24	▶	**3RT2936-1ER00**		1	1 unit	41B
		--	30 ... 250	▶	**3RT2936-1ES00**		1	1 unit	41B


3RT2916-1B.00


3RT2926-1E.00


3RT2936-1B.00

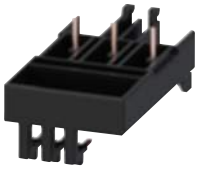
[1] Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

[2] The varistor is already integrated on the AC/DC contactors.

[3] Surge suppressors 3RT2936-1B/-1E can be used for 3RT2.4 contactors as from product version E03.

Accessories

Accessories for the customer assembly of fuseless load feeders

	For motor starter protectors	For contactors	Control circuit voltage contactors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Size		d					
Link modules from motor starter protector to contactor [1]									
 3RA2921-1AA00	Electrical and mechanical link between motor starter protector and contactor				**Screw terminals**				
	Single-unit packaging								
	S00/S0	S00	AC and DC		**3RA1921-1DA00**		1	1 unit	41B
	S00/S0	S0	AC	2	**3RA2921-1AA00**		1	1 unit	41B
	S00/S0	S0	DC	2	**3RA2921-1BA00**		1	1 unit	41B
	S2	S2	AC and DC		**3RA2931-1AA00**		1	1 unit	41B
	S3	S3	AC and DC	NEW	**3RA1941-1AA00**		1	1 unit	41B
 3RA2931-1AA00	**Multi-unit packaging**								
	S00/S0	S00	AC and DC		**3RA1921-1D**		1	10 units	41B
	S00/S0	S0	AC	2	**3RA2921-1A**		1	10 units	41B
	S00/S0	S0	DC	2	**3RA2921-1B**		1	10 units	41B
	S2	S2	AC and DC		**3RA2931-1A**		1	5 units	41B
	S3	S3	AC and DC	NEW	**3RA1941-1A**		1	5 units	41B
 3RA2911-2AA00	Electrical and mechanical link between motor starter protector and contactor				**Spring-type terminals**				
	Single-unit packaging								
	S00	S00	AC and DC		**3RA2911-2AA00**		1	1 unit	41B
	S0	S0	AC[2] and DC		**3RA2921-2AA00**		1	1 unit	41B
	Multi-unit packaging								
	S00	S00	AC and DC		**3RA2911-2A**		1	10 units	41B
	S0	S0	AC[2] and DC		**3RA2921-2A**		1	10 units	41B
Hybrid link modules from motor starter protector to contactor[3]									
 3RA2911-2FA00	Electrical and mechanical link between motor starter protector with screw terminals and contactor with spring-type terminals								
	Single-unit packaging								
	S00	S00	AC and DC		**3RA2911-2FA00**		1	1 unit	41B
	S0	S0	AC[2] and DC		**3RA2921-2FA00**		1	1 unit	41B
 3RA2921-2FA00	**Multi-unit packaging**								
	S00	S00	AC and DC		**3RA2911-2F**		1	10 units	41B
	S0	S0	AC[2] and DC		**3RA2921-2F**		1	10 units	41B

[1] The link modules from motor starter protector to contactor cannot be used for the 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/ circuit breakers.

[2] A spacer for height compensation on AC contactors, size S0, is optionally available; see page 8/54.

[3] The hybrid modules from motor starter protector to contactor cannot be used for the 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV27 and 3RV28 motor starter protectors/circuit breakers. They are only suitable for constructing direct-on-line starters.

Note:

Link modules can be used in

- Sizes S00 and S0 up to max. 32 A
- Size S2 up to max. 65 A

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

For motor starter protectors/ circuit breakers	For soft starters		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Size		d					
Link modules from motor starter protector to soft starter[1]								
 3RA2921-1BA00	Electrical and mechanical link between motor starter protector and soft starter			**Screw terminals**				
	Single-unit packaging							
	S00/S0	S00/S0	2	**3RA2921-1BA00**		1	1 unit	41B
	S2[2]	S2	▶	**3RA2931-1AA00**		1	1 unit	41B
	S3[3]	S3	NEW ▶	**3RA1941-1AA00**		1	1 unit	41B
	Multi-unit packaging							
	S00/S0	S00/S0	2	**3RA2921-1B**		1	10 units	41B
	S2[2]	S2	▶	**3RA2931-1A**		1	5 units	41B
	S3[3]	S3	NEW ▶	**3RA1941-1A**		1	5 units	41B
 3RA2921-2GA00	Electrical and mechanical link between motor starter protector and soft starter			**Spring-type terminals**				
	Single-unit packaging							
	S00	S00	▶	**3RA2911-2GA00**		1	1 unit	41B
	S0	S0	▶	**3RA2921-2GA00**		1	1 unit	41B

1) The link modules from motor starter protector to soft starter and motor starter protector to solid-state contactor cannot be used for the 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/circuit breakers.

2) To assemble the feeder between a motor starter protector and a soft starter in size S2, the 3RA2932-1CA00 standard mounting rail adapter must be used.

3) It is only permitted to assemble the feeder between the motor starter protector and the soft starter in size S3 on a mounting plate.

Note:

Link modules can be used in

- Sizes S00 and S0 up to max. 32 A
- Size S2 up to max. 65 A

8

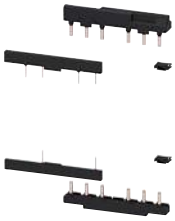
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Accessories

PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41B

3RA2923-2AA1

3RA2923-2AA2



3RA2933-2AA1

For contactors Type	Size	Version	SD d	Screw terminals Article No.	Price per PU	SD d	Spring-type terminals Article No.	Price per PU
Assembly kits for reversing contactor assemblies for making 3-pole contactor assemblies								
3RT201	**S00-S00**	The assembly kit contains: Mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom						
		• For main, auxiliary and control circuits	▶	**3RA2913-2AA1**		▶	**3RA2913-2AA2**	
3RT202	**S0-S0**	The assembly kit contains: Mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom						
		• For main, auxiliary and control circuits[1]	▶	**3RA2923-2AA1**			**--**	
		• Only for main circuit[2]		**--**		▶	**3RA2923-2AA2**	
3RT203	**S2-S2**	The assembly kit contains: Two connectors for two contactors, wiring modules on the top and bottom (The 3RA2934-2B mechanical interlock must be ordered separately; see page 3/113).						
		• For main and auxiliary circuits	▶	**3RA2933-2AA1**			**--**	
		• Only for main circuit[3]		**--**		5	**3RA2933-2AA2**	
3RT204	**S3-S3**	The assembly kit contains: Two connectors for two contactors, wiring modules on the top and bottom (The 3RA2934-2B mechanical interlock must be ordered separately; see page 3/113).						
		• For main and auxiliary circuits NEW	▶	**3RA2943-2AA1**			**--**	
		• Only for main circuit[3] NEW		**--**		▶	**3RA2943-2AA2**	

1) Use of the 3RA2923-2AA1 assembly kit in conjunction with the 3RT202.-.....-3MA0 contactors is limited because the auxiliary switches in the basic unit are not allowed to be used on account of the permanently mounted auxiliary switch block.

2) Version in size S0 with spring-type terminals:
Only the wiring modules for the main circuit are included.
No connecting clips are included for the auxiliary and control circuit.

3) Version in sizes S2 and S3 with spring-type terminals in the auxiliary and control circuits: Only the wiring modules for the main circuit are included.
A cable set is included for the auxiliary circuit.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Safety main circuit connectors for two contactors


3RA2916-1A

For contactors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size		d					
	switches two contactors in series		**Screw terminals** ⊕				
S00		2	**3RA2916-1A**		1	1 unit	41B
S0		2	**3RA2926-1A**		1	1 unit	41B
S2		2	**3RA2936-1A**		1	1 unit	41B

Mounting rails for mounting contactors for the customer assembly of 3RA21 load feeders with busbar adapters for 60 mm systems


8US1998-7CB45

For motor starter protectors	For contac-tors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
		For the discrete configuration of direct-on-line starters a further mounting rail is needed for the contactor in addition to the mounting rail existing on the busbar adapter.						
--	S0	For pushing onto the busbar adapter, including fixing screws	2	**8US1998-7CB45**		1	10 units	14O

Standard mounting rail adapters


3RA2922-1AA00

For motor starter protectors	For contac-tors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		For mechanical fixing of motor starter protector and contactor; for snapping onto standard mounting rail or for screw fixing						
S00, S0	S00, S0	**Single-unit packaging**	2	**3RA2922-1AA00**		1	1 unit	41B
S00, S0	S00, S0	**Multi-unit packaging**	2	**3RA2922-1A**		1	5 units	41B
S2	S2	**Single-unit packaging**	►	**3RA2932-1AA00**		1	1 unit	41B
S2	S2	**Multi-unit packaging**	►	**3RA2932-1A**		1	5 units	41B
S3	S3	**Single-unit packaging**	NEW ►	**3RA2942-1AA00**		1	1 unit	41B
S3	S3	**Multi-unit packaging**	NEW ►	**3RA2942-1A**		1	5 units	41B


3RA2932-1CA00

		For mechanical fixing of motor starter protector and soft starter; for snapping onto standard mounting rail or for screw fixing						
S2	S2	**Single-unit packaging**	►	**3RA2932-1CA00**		1	1 unit	41B

Side modules for standard mounting rail adapters


3RA2902-1B

For motor starter protectors	For contac-tors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
S00 ... S3	S00 ... S3	For standard mounting rail adapters 10 mm wide, 96 mm in length; For widening standard mounting rail adapters when using lateral auxiliary switches, 2 units required	NEW ►	**3RA2902-1B**		1	10 units	41B

8

Accessories

	For motor starter protectors	For contactors	Version		SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
RH assembly kits for reversing duty and standard rail mounting										
	RH assembly kits for screw terminals					**Screw terminals**				
 3RA2923-1BB1	S0	S0	Comprising: • Wiring kit for main and auxiliary circuit • Two standard mounting rail adapters • Two connecting wedges • Mechanical interlocks • Two connecting clips for two contactors • Fixing accessories Link modules must be ordered separately.		2	**3RA2923-1BB1**		1	1 unit	41B
	S2	S2	Comprising: • Wiring kit for main and auxiliary circuit • Two standard mounting rail adapters • Two side modules • Four connecting wedges • Mechanical interlocks • Two connectors for two contactors • Fixing accessories Link modules must be ordered separately.		2	**3RA2933-1BB1**		1	1 unit	41B
	S3	S3	Comprising: • Wiring kit for main and auxiliary circuit • Two standard mounting rail adapters • Three side modules • Six connecting wedges • Mechanical interlocks • Two connectors for two contactors • Fixing accessories Link modules must be ordered separately.	NEW	2	**3RA2943-1BB1**		1	1 unit	41B
	RH assembly kits for spring-type terminals					**Spring-type terminals**				
	S0	S0	Comprising: • Wiring kit for main and auxiliary circuit • Two standard mounting rail adapters • Two connecting wedges • Mechanical interlocks • Two connecting clips for two contactors • Two spacers • Fixing accessories Link modules must be ordered separately.		2	**3RA2923-1BB2**		1	1 unit	41B
Push-in lugs for screw fixing										
 3RV2928-0B	S00, S0	--	For screwing the motor starter protector (of the load feeder) onto mounting plates; 2 units are required for each motor starter protector		2	**3RV2928-0B**		100	10 units	41E

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Busbar adapters

8US1251-5DS10

8US1251-5DT11

8US1250-5AS10

8US1250-5AT10

For load feeders	Rated current	Connecting cable	Adapter length	Adapter width	Rated voltage	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	A	AWG	mm	mm	V	d					
Busbar adapters for 60 mm systems											
For flat copper profiles according to DIN 46433 Width: 12 mm and 30 mm Thickness: 5 mm and 10 mm and for T and I special profiles											
• For load feeders with screw terminals							**Screw terminals**				
S00/S0	25	12	200	45	690	2	**8US1251-5DS10**		1	1 unit	14O
S00 (motor starter protector)/S0 (contactor)	25	12	260	45	690	2	**8US1251-5DT10**		1	1 unit	14O
S0	32	10	260	45	690	2	**8US1251-5NT10**		1	1 unit	14O
S2	80	4	260	55	690	5	**8US1261-6MT10**		1	1 unit	14O
S2[1]	80	4	260	118	690	5	**8US1211-6MT10**		1	1 unit	14O
• For load feeders with spring-type terminals							**Spring-type terminals**				
S00	25	12	200	45	690	2	**8US1251-5DS11**		1	1 unit	14O
S00/S0	25	12	260	45	690	2	**8US1251-5DT11**		1	1 unit	14O
S0	32	10	260	45	690	2	**8US1251-5NT11**		1	1 unit	14O
Accessories[2]											
Device holders For lateral attachment to busbar adapters	-- --	-- --	200 260	45 45	-- --	2 2	**8US1250-5AS10** **8US1250-5AT10**		1 1	1 unit 1 unit	14O 14O
Side module For widening busbar adapters	--	--	200	9	--	2	**8US1998-2BJ10**		1	10 units	14O
Positioning piece For fixing the feeder onto the busbar adapter	--	--	--	--	--	NEW 5	**8US1998-1DA45**		1	10 units	14O
Vibration and shock kit For high vibration and shock loads											
S00/S0	--	--	--	--	--	2	**8US1998-1CA10**		1	2 units	14O
S2	--	--	--	--	--	5	**8US1998-1DA10**		1	1 unit	14O

[1] For the assembly of feeders for reversing starters comprising a motor starter protector and two contactors.

[2] For additional mounting rails for busbar adapters; see page 8/51.

8

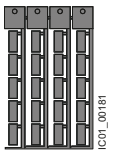
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Accessories

For motor starter protectors Size	For contac-tors Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
RS assembly kits for reversing duty and 60 mm busbar systems								
RS assembly kits for screw terminals				**Screw terminals**				
S00, S0 S0 S00	S00 S0 S0	Comprising: • Wiring kit for main and auxiliary circuit • Busbar adapters • Device holders • Two connecting wedges • Mechanical interlocks • Two connecting clips for two contactors • Fixing accessories Link modules must be ordered separately.	2 2 2	**3RA2913-1DB1** **3RA2923-1DB1** **3RA2923-1EB1**		1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
S2	S2	Comprising: • Wiring kit for main and auxiliary circuit • Busbar adapters • Mechanical interlocks • Two connectors for two contactors • Fixing accessories Link modules must be ordered separately.	2	**3RA2933-1DB1**		1	1 unit	41B
RS assembly kits for spring-type terminals				**Spring-type terminals**				
S00 S0	S00 S0	Comprising: • Wiring kit for main and auxiliary circuit • Busbar adapters • Device holders • Two connecting wedges • Mechanical interlocks • Two connectors for two contactors • Two spacers (for size S0 only) • Fixing accessories Link modules must be ordered separately.	2 2	**3RA2913-1DB2** **3RA2923-1DB2**		1 1	1 unit 1 unit	41B 41B

For motor starter protectors Size	For contac-tors Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Connecting wedges								
 8US1998-1AA00	For mechanical linking of busbar adapters and device holders or of standard mounting rail adapters (2 units per combination required)		2	**8US1998-1AA00**		100	100 units	14O
Spacers								
 3RA2911-1CA00	For height compensation on AC contactors size S0 with spring-type terminals			**Spring-type terminals**				
S0	S0	**Single-unit packaging**	2	**3RA2911-1CA00**		1	1 unit	41B
S0	S0	**Multi-unit packaging**	2	**3RA2911-1C**		1	5 units	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-type terminals							
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals Length, approx. 200 mm, 3.0 mm x 0.5 mm, Titanium gray/black, Partially insulated	2	**Spring-type terminals** **3RA2908-1A**		1	1 unit	41B
Blank labels							
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices 20 mm x 7 mm, Titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
Configuration Manual "Configuring SIRIUS"							
	Configuration manual for new combinations of load feeders Information and assignment tables for combinations for self-assembly; For the Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/39714188.						

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/20).

3RV29 infeed system for load feeders

Overview

Types of infeed for 3RA2 fuseless load feeders

On the whole four different power infeed possibilities are available:

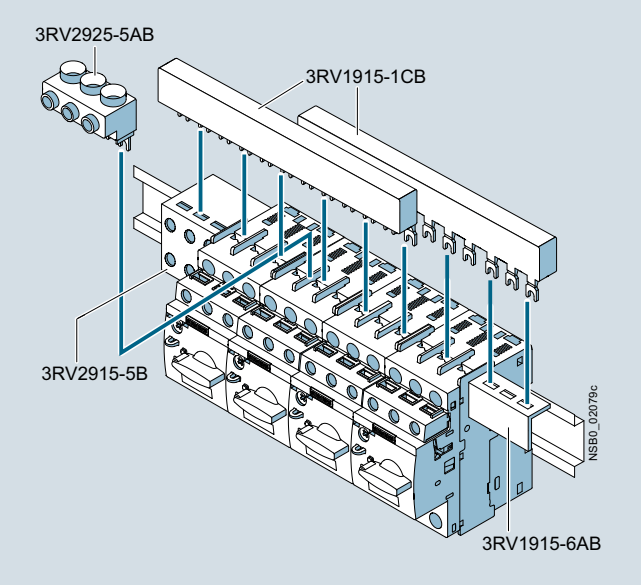
- Parallel wiring
- Use of three-phase busbars (combination with SIRIUS motor starter protectors and contactors possible)
- 8US busbar adapters
- SIRIUS 3RV29 infeed systems

Insulated three-phase busbar system

Three-phase busbar systems provide an easy, time-saving and clearly arranged means of feeding 3RA2 load feeders with screw terminals. Different versions are available for sizes S00 and S0 and can also be used for the various different types of motor starter protectors.

The busbars are suitable for between two and five feeders. However, any kind of extension is possible by clamping the tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last motor starter protector.

A combination of feeders of different sizes is possible with sizes S00 and S0. Connecting pieces are available for this purpose. The motor starter protectors/circuit breakers are supplied by appropriate infeed terminals.



SIRIUS three-phase busbar system size S00/S0

The three-phase busbar systems are finger-safe. They are designed for any short-circuit stress which can occur at the output side of connected motor starter protectors.

The three-phase busbar systems can also be used to construct "Type E Starters" of size S0 or S2 according to UL/CSA. However, special infeed terminals must be used for this purpose;
see page 7/41.

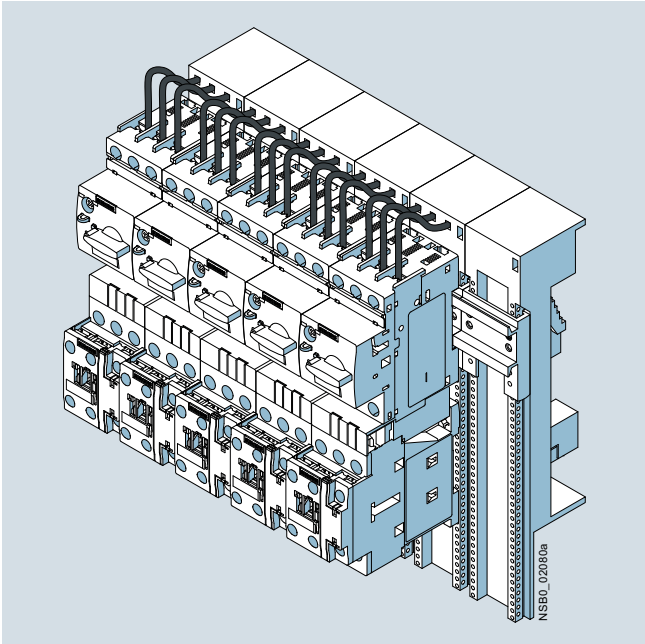
8US busbar adapters for 60 mm systems

The load feeders are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs.

The busbar adapters for busbar systems with 60 mm center-to-center clearance are suitable for copper busbars with a width of 12 to 30 mm. The busbars can be 4 to 5 mm or 10 mm thick.

The feeders are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

For "Selection and ordering data", see page 8/53.



SIRIUS load feeders with busbar adapters snapped onto busbars

SIRIUS 3RV29 infeed system

The 3RV29 infeed system is a convenient means of energy supply and distribution for a group of several motor starter protectors or complete load feeders with a screw or spring-type connection up to size S0.

The system is based on a basic module complete with a lateral incoming unit (three-phase busbar with infeed) which has two slots.

Expansion modules are available for extending the system (three-phase busbars for system expansion).

For the 3RV29 infeed system, see page 7/55.

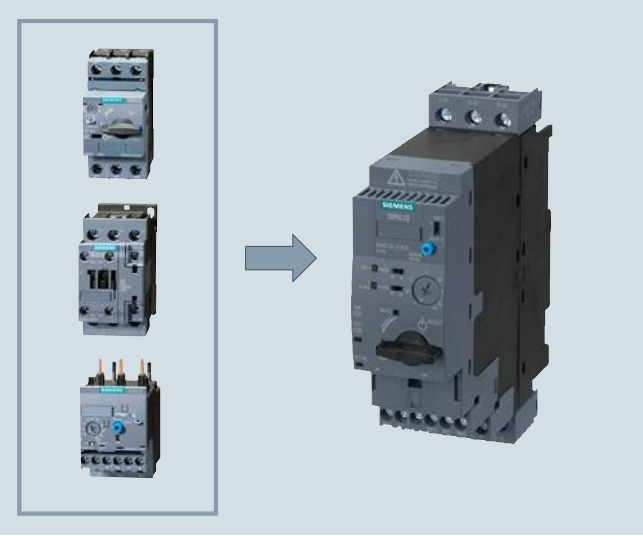
Overview

3RA6 fuseless compact starters and infeed system for 3RA6

3RA62 reversing starter

Integrated functionality

The SIRIUS 3RA6 compact starters are a generation of special load feeders with the integrated functionality of a motor starter protector, contactor and electronic overload relay. In addition, various functions of optional mountable accessories (e.g. auxiliary switches, surge suppressors) are already integrated in the SIRIUS compact starter.



3RA6 compact starters with the integrated functionality of a motor starter protector, contactor and electronic overload relay.

Applications

SIRIUS compact starters can be used wherever standard three-phase motors or resistive loads up to 32 A (approx. 15 kW/400 V) are directly started or switched.

The compact starters are not suitable for the protection of DC loads.

Approvals according to IEC, UL, CSA and CCC standards have been issued for the compact starters.

More information

Home page, see www.siemens.com/compactstarter
Industry Mall, see www.siemens.com/product?3RA68
Online configurator, see www.siemens.com/sirius/configurators

Very high operational reliability

The high short-circuit breaking capacity and defined shut-down when the end of service life is reached mean that the SIRIUS compact starter achieves a very high level of operational reliability that would otherwise have only been possible with considerable additional outlay. This sets it apart from devices with similar functionality.

Safe disconnection

The auxiliary switches (NC contacts) of the 3RA6 compact starters are designed as mirror contacts. This enables their use for safe disconnection – e.g. EMERGENCY STOP up to SIL 1 (IEC 62061) or PL c (ISO 13849-1) or, if used in conjunction with an additional infeed contactor, up to SIL 3 (IEC 62061) or PL e (ISO 13849-1).

Communications integration through AS-Interface

For the integration of communication via AS-Interface there is an AS-i add-on module available in several versions for mounting instead of the control circuit terminals on the SIRIUS compact starter.

The design of the AS-i add-on module permits a group of up to 62 feeders with a total of four cables to be connected to the control system. This reduces wiring work considerably compared to the parallel wiring method.

Communications integration using IO-Link

Up to four compact starters in IO-Link version (reversing and direct-on-line starters) can be connected together and conveniently linked to the IO-Link master through a standardized IO-Link connection. The SIRIUS 4SI electronic modules are used e.g. as IO-Link masters for connection to the SIMATIC ET 200S distributed I/O system.

The IO-Link connection enables a high density of information in the local range.

For details of the communication connection using IO-Link, see page 2/101 onwards.

The diagnostics data of the process collected by the 3RA6 compact starter, e.g. short circuit, end of service life, limit position, etc., are not only indicated on the compact starter itself but also transmitted to the higher-level control system through IO-Link.

Thanks to the optionally available operator panel, which can be installed in the control cabinet door, it is easy to control the 3RA6 compact starters with IO-Link from the control cabinet door.

Permanent wiring/easy replacement

Using the SIRIUS infeed system for 3RA6 (see page 8/79), it is possible to carry out the wiring in advance without a compact starter having to be connected.

A compact starter is very easily replaced simply by pulling it out of the device without disconnecting the wiring.

Even with screw connections or mounting on a standard mounting rail there is no need to disconnect any wiring (on account of the removable main and control circuit terminals) in order to replace a compact starter.

General data

Consistent solution from the infeed to the motor feeder

The SIRIUS infeed system for 3RA6 with integrated PE bar is offered as a user-friendly possibility of feeding in summation currents up to 100 A with a maximum conductor cross-section of 70 mm² and connecting the motor cable directly without additional intermediate terminals.

Screw and spring-type terminals

The SIRIUS compact starters and the infeed system for 3RA6 are available with screw and spring-type terminals.

	Screw terminals
	Spring-type terminals
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

System configurator for engineering

A free system configurator is available to reduce further the amount of engineering work for selecting the required compact starters and matching infeed.

Use of load feeders in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS 3RA6 compact starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring; see "Application Manual for SIRIUS Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820.

For more information see Preface, page 7.

Types of infeed for the 3RA6 fuseless compact starters

On the whole four different infeed possibilities are available:

- Parallel wiring
- Use of three-phase busbars (combination with SIRIUS motor starter protectors and SIRIUS contactors possible)
- 8US busbar adapters
- SIRIUS infeed system for 3RA6 (see page 8/79)

To comply with the clearance and creepage distances demanded according to UL 508 there are the following infeed possibilities:

Type of infeed	Infeed terminal (according to UL 508, type E)	Type
Parallel wiring	Terminal block for "Self-Protected Combination Motor Controller (Type E)"	**3RV2928-1H**
Three-phase busbars	Three-phase infeed terminal for constructing "Type E Starters", UL 508	**3RV2925-5EB**
Infeed system for 3RA6	Infeed on left, 50/70 mm², screw terminal with 3 sockets, outgoing terminal with screw/spring-type terminals incl. PE bar	**3RA6813-8AB** (screw terminals), **3RA6813-8AC** (spring-type terminals)

SIRIUS 3RA6 compact starters

SIRIUS 3RA6 compact starters are universal motor feeders according to IEC 60947-6-2. As control and protective switching devices (CPS) they can connect, convey and disconnect the thermal, dynamic and electrical loads from short-circuit currents up to I_q = 53 kA, i.e. they are practically weld-free. They combine the functions of a motor starter protector, a contactor and an electronic overload relay in one enclosure. 45-mm-wide direct-on-line starters and 90-mm-wide reversing starters are available as variants.

The reversing starter version comes with not only an internal electrical interlock but also with a mechanical interlock to prevent simultaneous actuation of both directions of rotation.

The compact starters have isolating features in accordance with IEC 60947.2 and can be used as disconnector units (main control switch according to EN 60204 or VDE 0113). Isolation is effected by moving the handle into the "OFF" position; disconnection by means of the control contacts is not enough.

3RA6 fuseless compact starters are available in five current setting ranges. The 3RA61 and 3RA62 have two control voltage ranges (AC/DC), and the 3RA64 and 3RA65 have one control voltage range (DC):

Current setting range	At 400 V AC for three-phase motors Standard output *P*	Rated control supply voltage for 3RA61, 3RA62 compact starters	3RA64, 3RA65 compact starters for IO-Link
A	kW	V AC/DC	V DC
0.1 ... 0.4	0.09	24 110 ... 240	24
0.32 ... 1.25	0.37		
1 ... 4	1.5		
3 ... 12	5.5		
8 ... 32	15		

Notes:

The 3RA2 load feeders can be used for fuseless load feeders > 32 A up to 65 A. Load feeders in size S3 up to 100 A are available for self-assembly (see also page 8/4).

The SENTRON 3VL circuit breakers and the SIRIUS 3RT contactors can be used for fuseless load feeders > 100 A.

Operating conditions

The SIRIUS 3RA6 compact starters are suitable for use in any climate. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. Suitable covers must be provided for installation in dusty and damp locations.

The SIRIUS compact starters are generally designed to degree of protection IP20. The permissible ambient temperature during operation is -20 to +60 °C. The rated short-circuit current I_{CS} according to IEC 60947-6-2 is 53 kA at 400 V.

Note:

The maximum permissible short-circuit currents of the device versions for the various line system configuration and currents are available on request from Technical Assistance:
Tel.: +49 (0) 911-895-5900
Email: technical-assistance@siemens.com

Overload tripping times

The tripping time in the event of overload can be set on the device to normal starting conditions (CLASS 10) and to heavy starting conditions (CLASS 20). As the breaker mechanism still remains closed after an overload, resetting is possible by either local manual reset or auto reset after three minutes cooling time.

With auto reset, there is no need to open the control cabinet.

Diagnostics options

The compact starter provides the following diagnostics options:

- With LEDs
  - Connection to the control voltage
  - Position of the main contacts
- With mechanical display
  - Tripping due to overload
  - Tripping due to short circuit
  - Tripping due to malfunction (end of service life reached because of worn switching contacts or a worn switching mechanism or faults in the control electronics)

These states can also be evaluated in the higher-level control system:

- With parallel wiring using the integrated auxiliary and signaling switches of the compact starter
- With AS-Interface or IO-Link in even greater detail using the respective communication interface

Four complement versions for 3RA61 and 3RA62 compact starters

- For standard mounting rail or screw fixing:
  Basic version including 1 pair of main circuit terminals and 1 pair of control circuit terminals
- For standard mounting rail or screw fixing when using the AS-i add-on module:
  without control circuit terminals because the AS-i add-on module is plugged on instead
- For use with the infeed system for 3RA6:
  Without main circuit terminals because they are supplied with the infeed system and the expansion modules
- For use with the infeed system for 3RA6 and AS-i add-on module: Without terminal complement
  (also for reordering when replacing the compact starter)

The control circuit terminals are always required by the compact starters for IO-Link; the main circuit terminals depend on the use of the infeed system.

More components of the 3RA6

Apart from the control supply voltage, "Overload" (1 CO) and "Short circuit / Function fault" (1 NO) signaling contacts are already integrated into the 3RA61/3RA62 – and lockable via two 6-pole removable control circuit terminals. The 3RA61 has two auxiliary contacts (1 NO + 1 NC) for displaying the position of the main contacts. Unlike the 3RA61 direct-on-line starter, the 3RA62 reversing starter has one auxiliary contact (1 NO) per direction of rotation per main contact.

Available for the 3RA61 and 3RA64 direct-on-line starters is a slot for an optional auxiliary switch block (optionally 2 NO, 2 NC or 1 NO + 1 NC) and for the 3RA62 and 3RA65 reversing starters there are two slots (for auxiliary switch blocks, see "Accessories" on page 8/72).

Positively-driven operation of the auxiliary contacts

Positively-driven operation between individual auxiliary circuits exists for the compact starter in the version as a direct-on-line starter for parallel wiring (3RA61) between the auxiliary circuits of the NC contacts (NC 21-22) and the NO contacts (NO 13-14) in the basic unit.
In addition, the optional auxiliary switch block offers positively driven contacts in the 3RA6913-1A version, each with one normally closed contact and one normally open contact.

General data

Article No. scheme

Product versions		Article number									
Compact starters		**3RA6**	□	□	□	–	□	□	□	□	□
Product function	Direct-on-line starter		**1**	**2**	**0**						For motor standard output 0.09 ... 15 kW[1]
	Reversing starter		**2**	**5**	**0**						For motor standard output 0.09 ... 15 kW[1]
	Direct-on-line starter for IO-Link		**4**	**0**	**0**						For motor standard output 0.09 ... 15 kW[1]
	Reversing starter for IO-Link		**5**	**0**	**0**						For motor standard output 0.09 ... 15 kW[1]
	Infeed system		**8**								
	Accessories		**9**								
	• Auxiliary switches			**1**	□						
	• Terminals			**2**	□						
	• IO-Link accessories			**3**	□						
	• Fixing elements			**4**	□						
	• Control kit			**5**	□						
Connection methods	No terminals					**0**					
	Screw terminals					**1**					
	Spring-type terminals					**2**					
Setting range	0.1 ... 0.4 A						**A**				
	0.32 ...1.25 A						**B**				
	1... 4 A						**C**				
	3 ... 12 A						**D**				
	8 ... 32 A						**E**				
Rated control supply voltage	24 V DC							**B**	**4**		For direct-on-line/reversing starters for IO-Link
	24 V AC/DC							**B**	**3**		For direct-on-line/reversing starters
	110 ... 240 V AC/DC							**P**	**3**		For direct-on-line/reversing starters
Terminals complement variants	None									**0**	Without main and control circuit terminals
	1/1									**2**	With 1 pair of main circuit and 1 pair of control circuit terminals
	0/1									**3**	Without main circuit terminals, with 1 pair of control circuit terminals
	1/0									**4**	With 1 pair of main circuit terminals, without control circuit terminals
Special versions											
Example		**3RA6**	**1**	**2**	**0**	**–**	**0**	**A**	**B**	**3**	**0**

[1] Standard three-phase motor, basis 4-pole at 400 V AC; the actual startup characteristics of the motor as well as its rated data are important factors here.

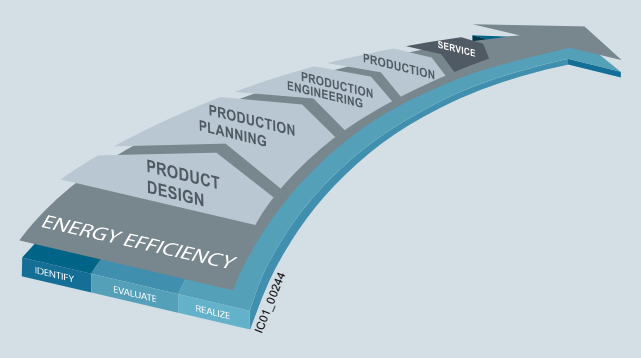
Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see www.siemens.com/sirius/energysaving).

With the 3RA6 compact starters, control cabinets heat up less because power losses have been minimized by operation:

- Lower intrinsic power loss (than comparable motor feeders with thermal overload trips) thanks to electronic current analysis
- Lower power losses (than conventional load feeders) because there is only one switching point for short circuit and operational switching
- Lower control circuit power losses (compared with conventional switching devices) as a result of electronic control of switching points
- Thanks to the above advantages, additional energy savings are possible because less cooling is required (and a more compact design is possible)

Product advantages

The SIRIUS 3RA6 compact starters offer a number of benefits:

- Compact design saves space in the control cabinet
- Little planning and assembly work and far less wiring thanks to a single complete unit with one article number
- Low variance and therefore low stock levels, with two wide voltage ranges and five wide setting ranges for the rated current
- High plant availability through integrated functionalities such as prevention of main contact welding and disconnection at end of service life
- Enhanced productivity through automatic device reset in case of overload and differentiated detection of overload and short circuit
- Easy checking of the wiring and testing of the motor direction prior to start-up thanks to optional control kits
- Speedy replacement of devices thanks to removable terminals with spring-type and screw connections in the main and control circuit
- Efficient power distribution through the related SIRIUS infeed system for 3RA6
- Direct connection of the motor feeder cable to the SIRIUS infeed system for 3RA6 thanks to integrated PE bar
- Connecting and looping through of incoming feeders up to a cross-section of 70 mm^2
- When using the infeed system for 3RA6, possibility of directly connecting the motor cable without intermediate terminals
- Integration in Totally Integrated Automation thanks to the optional connection to AS-Interface or IO-Link

The SIRIUS 3RA6 compact starters create the basis for high-availability and future-proof machine concepts.

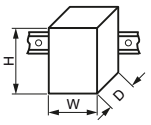
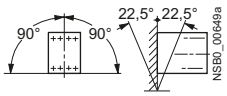
General data

Technical specifications

More information

Industry Mall, see www.siemens.com/product?3RA6
System Manual, see http://support.industry.siemens.com/cs/ww/en/view/27865747.
FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16301/faq

Note on security:
In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.
For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Type			**3RA61**	**3RA62**	**3RA64**	**3RA65**
Size			**S0**			
Number of poles			**3**			
Mechanics and environment						
Mounting dimensions (W x H x D)						
• Screw terminals		mm	45 x 170 x 165	90 x 170 x 165	45 x 170 x 165	90 x 170 x 165
• Spring-type terminals		mm	45 x 191 x 165	90 x 191 x 165	45 x 191 x 165	90 x 191 x 165
Depth from standard mounting rail		mm	160			
Permissible ambient temperature						
• During operation (for permissible operational current, see the following section "Electrical specifications")		°C	-20 ... +70, restriction as from 60 depending on design			
• During storage		°C	-55 ... +80			
• During transport		°C	-55 ... +80			
Permissible mounting position						
Shock resistance (sine-wave pulse)			a = 60 m/s² = 6 g with 10 ms; for every 3 shocks in all axes			
Vibratory load			f = 4 ... 5.8 Hz; d =15 mm; f = 5.8 ... 500 Hz; a = 20 m/s²;10 cycles			
Degree of protection	Acc. to IEC 60947-1		IP20			
Installation altitude		m	Up to 2 000 above sea level without restriction			
Relative air humidity		%	10 ... 90			
Degree of pollution			3			
Electrical specifications						
Device standard			IEC 60947-6-2			
Maximum rated operational voltage U_e		V V	690 400 at 3RA6250-.E... and 3RA6500-.E... (Reversing starter 32 A designs)			
Rated frequency		Hz	50/60			
Rated insulation voltage U_i (pollution degree 3)		V	690			
Rated impulse withstand voltage U_{imp}		kV	6			
Rated operational current I_e [1] and setting range for overload release	0.1 ... 0.4 A 0.32 ...1.25 A 1 ... 4 A 3 ... 12 A 8 ... 32 A	A A A A A	0.4 1.25 4 12 32			
Permissible operational current of the compact starter [2] Wen several compact starters are mounted side-by-side in the infeed system for 3RA6 (for more details on the various design variants, see System Manual "SIRIUS 3RA6 Compact Feeders", https://support.industry.siemens.com/cs/ww/en/view/27865747)						
• For a control cabinet inside temperature of	+40 °C	%	100			
• For a control cabinet inside temperature of	+60 °C	%	80			
• For a control cabinet inside temperature of	+70 °C	%	60			
Trip class (CLASS)	Acc. to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)		10/20			
Overload function Ratio of lower to upper current mark			1:4			
Rated service short-circuit breaking capacity I_{CS} at 50/60 Hz, 400 V AC		kA	53			
Rated service short-circuit breaking capacity I_{CSIT} at 50/60 Hz 400/690 V AC in IT systems		kA	1.5			

[1] For use of 3RA6 compact starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring in the "Application Manual for Controls with IE3/IE4 Motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820.

[2] Details about installation conditions and the use of the compact starters, and particularly about the derating of the rated current, can be found in the System Manual "SIRIUS Compact Starters and Accessories".

Type			**3RA61**	**3RA62**	**3RA64**	**3RA65**
Size			**S0**			
Number of poles			**3**			
Electrical specifications (continued)						
Power loss $P_{V\ max}$ of all main current paths	0.4 A	mW	10			
Dependent on rated current I_e	1.25 A	mW	100			
(upper setting range)	4 A	W	1			
	12 A	W	1.8			
	32 A	W	5.4			
Max. switching frequency	AC-41	1/h	750			
	AC-43	1/h	250			
	AC-44	1/h	15			
No-load switching frequency		1/h	3 600		3 600, depending on the IO-Link communication time	
Touch protection	Acc. to DIN VDE 0106, Part 100		Finger-safe			
Isolating features of the compact starter	Acc. to IEC 60947-3		✓ Isolation is assured only by moving the actuator into the "OFF" position.			
Main and EMERGENCY-STOP switch characteristics of the compact starter and accessories	Acc. to IEC 60204		✓			
Protective separation	Acc. to IEC 60947-2					
Control circuit to auxiliary circuit						
• Horizontal standard mounting rail		V	Up to 400			
• Other mounting position		V	Up to 250			
Auxiliary circuit to auxiliary circuit						
• Horizontal standard mounting rail		V	Up to 400			
• Other mounting position		V	Up to 250			
Main circuit to auxiliary circuit						
• Any mounting position		V	Up to 400			
EMC interference immunity	Acc. to IEC 60947-1		Corresponds to degree of severity 3			
Conducted interference	BURST acc. to IEC 61000-4-4					
• In the main circuit		kV	4		4	
• In the auxiliary circuit		kV	3		2	
Conducted interference	SURGE acc. to IEC 61000-4-5					
• In the main circuit						
- Conductor - Ground		kV	4		2	
- Conductor - Conductor		kV	2		1	
• In the auxiliary circuit						
- Conductor - Ground		kV	2		0.5[1]	
- Conductor - Conductor		kV	1		0.5[1]	
Auxiliary switches						
• Integrated						
- Position of the main contacts			1 NO + 1 NC	2 NO	1 NO + 1 NC	2 NO
- Overload/short circuit and malfunction signal			1 CO/1 NO			
• Expandable						
- Position of the main contacts			2 NO, 2 NC, 1 NO + 1 NC			
Surge suppressors			Integrated (varistor)			
Electromagnetic operating mechanisms						
Control voltage		V	24 AC/DC		24 DC	
		V	110 ... 240 AC/DC		--	
Frequency	At AC	Hz	50/60 (± 5 %)			
Operating range			0.7 ... 1.25 U_s		0.85 ... 1.2 U_s	
No-load switching frequency		1/h	3 600			
Line protection	At 10 kA	mm²	2.5			
	At 50 kA	mm²	4			
Shock resistance						
• Breaker mechanism OFF		*g*	25			
• Breaker mechanism ON		*g*	15			
Normal switching duty						
Making capacity			12 x I_n			
Breaking capacity			10 x I_n			
Switching capacity dependent on rated current	Up to 12 A	kW	5.5			
	Up to 32 A	kW	15			
Endurance in operating cycles						
• Electrical endurance	At I_e = 0.9 x I_n and 400 V		3 ... 10 000 000	2 x 3 ... 10 000 000	3 000 000	2 x 1 500 000

✓ Function available

[1] To maintain maximum interference immunity in a harsh electromagnetic environment, additional overvoltage protection should be provided in the control circuit. The 5SD7432-4 plug-in surge arrester with remote signaling, for instance, is suitable. See Catalog LV 10.

General data

Type		**3RA6120-.☐B3., 3RA6250-.☐B3.** **☐ = A, B, C or D** **Rated operational current ≤ 12 A**		**3RA6120-.EB3., 3RA6250-.EB3.** **Rated operational current 32 A**	
Rated control supply voltage	**V**	**24 AC**	**24 DC**	**24 AC**	**24 DC**
Inrush peak current	A	0.59	0.47	0.59	0.47
Hold current	A	0.13	0.12	0.17	0.14
Closed	W	2.8	2.9	3.5	3.1
Operating times, typical					
• On	ms	< 160	< 140	< 160	< 140
• Off	ms	< 35	< 35	< 30	< 30

Type		**3RA6 20-.☐P3., 3RA6250-.☐P3.** **☐ = A, B, C or D** **Rated operational current ≤ 12 A**				**3RA6120-.EP3., 3RA6250-.EP3.** **Rated operational current 32 A**			
Rated control supply voltage	**V**	**110 AC**	**240 AC**	**110 DC**	**240 DC**	**110 AC**	**240 AC**	**110 DC**	**240 DC**
Inrush peak current	A	0.24	0.40	0.17	0.29	0.24	0.40	0.17	0.29
Hold current	A	0.06	0.08	0.03	0.02	0.06	0.07	0.04	0.03
Closed	W	3.8	6	3.1	5.1	3.7	5.2	3.4	5.8
Operating times, typical									
• On	ms	< 160	< 140	< 150	< 140	< 160	< 140	< 150	< 140
• Off	ms	< 50	< 80	< 50	< 70	< 40	< 60	< 40	< 60

Type		**3RA6400-.☐B4., 3RA6500-.☐B4.** **☐ = A, B, C or D** **Rated operational current ≤ 12A**	**3RA6400-.EB4., 3RA6500-.EB4.** **Rated operational current 32 A**
Rated control supply voltage	**V**	**24 DC**	**24 DC**
Inrush peak current	A	0.39	0.53
Hold current	A	0.13	0.15
Closed	W	2.9	3.4
Operating times, typical [1]			
• On	ms	< 140	< 140
• Off	ms	< 35	< 30

[1] Plus IO-Link communication

Type			**3RA61**	**3RA62**	**3RA64**	**3RA65**
Size			**S0**			
Number of poles			**3**			
Control circuit						
Rated operational voltage						
• External auxiliary switch block		V	400/690			
• Internal auxiliary switch		V	400/690			
• Short-circuit signaling switch		V	400			
• Overload signaling switch		V	400			
Switching capacity						
• External auxiliary switch block	**AC-15**					
	• Up to U_e = 230 V	A	6			
	• Up to U_e = 400 V	A	3			
	• Up to U_e = 289/500 V	A	2			
	• Up to U_e = 400/690 V	A	1			
	DC-13					
	• Up to U_e = 24 V	A	6			
	• Up to U_e = 60 V	A	0.9			
	• Up to U_e = 125 V	A	0.55			
	• Up to U_e = 250 V	A	0.27			
• Internal auxiliary switch	**AC-15**					
	• Up to U_e = 230 V	A	6			
	• Up to U_e = 400 V	A	3			
	• Up to U_e = 289/500 V	A	2			
	• Up to U_e = 400/690 V	A	1			
	DC-13					
	• Up to U_e = 24 V	A	10			
	• Up to U_e = 60 V	A	2			
	• Up to U_e = 125 V	A	1			
	• Up to U_e = 250 V	A	0.27			
	• Up to U_e = 480 V	A	0.1			
• Signaling switch	**AC-15**					
	• Up to U_e = 230 V	A	3			
	• Up to U_e = 400 V	A	1			
	DC-13					
	• Up to U_e = 24 V	A	2			
	• Up to U_e = 250 V	A	0.11			
External auxiliary switch blocks, internal auxiliary switches						
Endurance in operating cycles						
• Mechanical endurance			10 000 000		3 000 000	
• Electrical endurance	**AC-15, 230 V**					
	• Up to 6 A		200 000			
	• Up to 3 A		500 000			
	• Up to 1 A		2 000 000			
	• Up to 0.3 A		10 000 000			
	DC-13, 24 V					
	• Up to 6 A		30 000			
	• Up to 3 A		100 000			
	• Up to 0.5 A		2 000 000			
	• Up to 0.2 A		10 000 000			
	DC-13, 110 V					
	• Up to 1 A		40 000			
	• Up to 0.55 A		100 000			
	• Up to 0.3 A		300 000			
	• Up to 0.1 A		2 000 000			
	• Up to 0.04 A		10 000 000			
	DC-13, 220 V					
	• Up to 0.3 A		110 000			
	• Up to 0.1 A		650 000			
	• Up to 0.05 A		2 000 000			
	• Up to 0.018 A		10 000 000			
Contact reliability	At 17 V and 5 mA	Operating cycles	1 faulty switching operation per 100 000 000			
Short-circuit protection						
• Short-circuit current $I_K \leq$ 1.1 kA	Fuse links, operational class gG - NEOZED Type 5SE - DIAZED Type 5SB - LV HRC Type 3NA	A	10			
• Short-circuit current $I_K <$ 400 A	Miniature circuit breaker up to 230 V with C characteristic	A	10			

8

General data

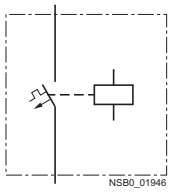
Type			**3RA61**	**3RA62**	**3RA64**	**3RA65**
Size			**S0**			
Number of poles			**3**			
Signaling switches						
Endurance in operating cycles						
• Mechanical endurance			20 000			
• Electrical endurance AC-15	At 230 V and 3 A		6 050			
Contact reliability	At 17 V and 5 mA	Operating cycles	1 incorrect switching operation per 100 000 000			
Short-circuit protection						
• Short-circuit current $I_K \leq 1.1$ kA	Fuse links, operational class gG - NEOZED Type 5SE - DIAZED Type 5SB - LV HRC Type 3NA	A	6			
• Short-circuit current $I_K < 400$ A	Miniature circuit breaker up to 230 V with C characteristic	A	6			
Overload (short-circuit current $I_K \leq 1.1$ kA)	Fuse links, operational class gG - NEOZED Type 5SE - DIAZED Type 5SB - LV HRC Type 3NA	A	4			

Selection and ordering data

3RA6120-1CB32

3RA6120-2EB32

Direct-on-line start



Width 45 mm

Rated short-circuit current I_{CS} = 53 kA at 400 V

A set of 3A6940-0A adapters is required for screw fixing.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42F

Standard three-phase motor 4-pole at 400 V AC[1] Standard output *P*	Setting range for electronic overload release	Instantaneous overcurrent release	SD[2]	Article No.	Price per PU	SD[2]	Article No.	Price per PU
kW	A	A	d			d		
For use in the infeed system for 3RA6 and with AS-i add-on module or as a replacement device, without main and control circuit terminals								
0.09	0.1 ... 0.4	56	10	**3RA6120-0A□30**			**--**	
0.37	0.32 ... 1.25	56	10	**3RA6120-0B□30**			**--**	
1.5	1 ... 4	56	2	**3RA6120-0C□30**			**--**	
5.5	3 ... 12	168	2	**3RA6120-0D□30**			**--**	
15	8 ... 32	448	2	**3RA6120-0E□30**			**--**	
				Screw terminals			**Spring-type terminals**	
For standard mounting rail or screw fixing, including 1 pair of main circuit terminals and 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	2	**3RA6120-1A□32**		2	**3RA6120-2A□32**	
0.37	0.32 ... 1.25	56	2	**3RA6120-1B□32**		2	**3RA6120-2B□32**	
1.5	1 ... 4	56	2	**3RA6120-1C□32**		2	**3RA6120-2C□32**	
5.5	3 ... 12	168	2	**3RA6120-1D□32**		2	**3RA6120-2D□32**	
15	8 ... 32	448	2	**3RA6120-1E□32**		2	**3RA6120-2E□32**	
For use in the infeed system for 3RA6, without main circuit terminals with 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	10	**3RA6120-1A□33**		10	**3RA6120-2A□33**	
0.37	0.32 ... 1.25	56	2	**3RA6120-1B□33**		10	**3RA6120-2B□33**	
1.5	1 ... 4	56	2	**3RA6120-1C□33**		2	**3RA6120-2C□33**	
5.5	3 ... 12	168	2	**3RA6120-1D□33**		2	**3RA6120-2D□33**	
15	8 ... 32	448	2	**3RA6120-1E□33**		2	**3RA6120-2E□33**	
Article No. supplements for rated control supply voltage								
• 24 V AC/DC				**B**			**B**	
• 110 ... 240 V AC/DC				**P**			**P**	
For standard mounting rail or screw fixing for use with AS-i add-on module with 1 pair of main circuit terminals without control circuit terminals Rated control supply voltage 24 V AC/DC								
0.09	0.1 ... 0.4	56	10	**3RA6120-1AB34**		10	**3RA6120-2AB34**	
0.37	0.32 ... 1.25	56	10	**3RA6120-1BB34**		10	**3RA6120-2BB34**	
1.5	1 ... 4	56	10	**3RA6120-1CB34**		10	**3RA6120-2CB34**	
5.5	3 ... 12	168	2	**3RA6120-1DB34**		10	**3RA6120-2DB34**	
15	8 ... 32	448	10	**3RA6120-1EB34**		10	**3RA6120-2EB34**	

1) The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Standard delivery times apply for a rated control supply voltage of 24 V AC/DC. For the other rated control supply voltages, longer delivery times are possible.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

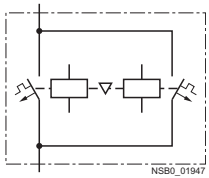
3RA62 reversing starters *IE3/IE4* ready

Selection and ordering data

3RA6250-1CP32

3RA6250-2DP32

Reversing duty



Width 90 mm

Rated short-circuit current I_{CS} = 53 kA at 400 V

Two sets of 3RA6940-0A adapters are required for screw fixing.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42F

Standard three-phase motor 4-pole at 400 V AC[1] Standard output *P*	Setting range for electronic overload release	Instantaneous overcurrent release	SD[2]	Article No.	Price per PU	SD[2]	Article No.	Price per PU
kW	A	A	d			d		
For use in the infeed system for 3RA6 and with AS-i add-on module or as a replacement device, without main and control circuit terminals								
0.09	0.1 ... 0.4	56	10	**3RA6250-0A□30**			**--**	
0.37	0.32 ... 1.25	56	10	**3RA6250-0B□30**			**--**	
1.5	1 ... 4	56	10	**3RA6250-0C□30**			**--**	
5.5	3 ... 12	168	10	**3RA6250-0D□30**			**--**	
15	8 ... 32	448	10	**3RA6250-0E□30**			**--**	
				Screw terminals			**Spring-type terminals**	
For standard mounting rail or screw fixing, including 1 pair of main circuit terminals and 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	10	**3RA6250-1A□32**		10	**3RA6250-2A□32**	
0.37	0.32 ... 1.25	56	2	**3RA6250-1B□32**		2	**3RA6250-2B□32**	
1.5	1 ... 4	56	2	**3RA6250-1C□32**		2	**3RA6250-2C□32**	
5.5	3 ... 12	168	2	**3RA6250-1D□32**		2	**3RA6250-2D□32**	
15	8 ... 32	448	2	**3RA6250-1E□32**		10	**3RA6250-2E□32**	
For use in the infeed system for 3RA6, without main circuit terminals with 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	10	**3RA6250-1A□33**		10	**3RA6250-2A□33**	
0.37	0.32 ... 1.25	56	10	**3RA6250-1B□33**		10	**3RA6250-2B□33**	
1.5	1 ... 4	56	10	**3RA6250-1C□33**		10	**3RA6250-2C□33**	
5.5	3 ... 12	168	10	**3RA6250-1D□33**		10	**3RA6250-2D□33**	
15	8 ... 32	448	10	**3RA6250-1E□33**		10	**3RA6250-2E□33**	
Article No. supplements for rated control supply voltage								
• 24 V AC/DC				**B**			**B**	
• 110 ... 240 V AC/DC				**P**			**P**	
For standard mounting rail or screw fixing for use with AS-i add-on module with 1 pair of main circuit terminals without control circuit terminals Rated control supply voltage 24 V AC/DC								
0.09	0.1 ... 0.4	56	10	**3RA6250-1AB34**		10	**3RA6250-2AB34**	
0.37	0.32 ... 1.25	56	10	**3RA6250-1BB34**		10	**3RA6250-2BB34**	
1.5	1 ... 4	56	10	**3RA6250-1CB34**		10	**3RA6250-2CB34**	
5.5	3 ... 12	168	10	**3RA6250-1DB34**		10	**3RA6250-2DB34**	
15	8 ... 32	448	10	**3RA6250-1EB34**		10	**3RA6250-2EB34**	

1) The actual starting and rated data of the motor to be protected must be considered when selecting the units.

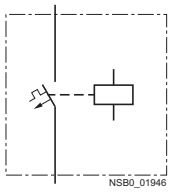
2) Standard delivery times apply for a rated control supply voltage of 24 V AC/DC. For the other rated control supply voltages, longer delivery times are possible.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Selection and ordering data

3RA64 with 3RA6911-1A auxiliary switch block

Direct-on-line start



Rated control supply voltage 24 V DC

Width 45 mm

Rated short-circuit current I_{CS} = 53 kA at 400 V

A set of 3A6940-0A adapters is required for screw fixing.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42F

Standard three-phase motor 4-pole at 400 V AC[1] Standard output *P*	Setting range for electronic overload release	Instantaneous overcurrent release	SD	Article No.	Price per PU	SD	Article No.	Price per PU
kW	A	A	d	**Screw terminals**		d	**Spring-type terminals**	
For standard mounting rail or screw fixing, including 1 pair of main circuit terminals and 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	10	**3RA6400-1AB42**		10	**3RA6400-2AB42**	
0.37	0.32 ... 1.25	56	10	**3RA6400-1BB42**		10	**3RA6400-2BB42**	
1.5	1 ... 4	56	2	**3RA6400-1CB42**		2	**3RA6400-2CB42**	
5.5	3 ... 12	168	2	**3RA6400-1DB42**		2	**3RA6400-2DB42**	
15	8 ... 32	448	10	**3RA6400-1EB42**		10	**3RA6400-2EB42**	
For use in the infeed system for 3RA6, without main circuit terminals with 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	10	**3RA6400-1AB43**		10	**3RA6400-2AB43**	
0.37	0.32 ... 1.25	56	2	**3RA6400-1BB43**		2	**3RA6400-2BB43**	
1.5	1 ... 4	56	2	**3RA6400-1CB43**		2	**3RA6400-2CB43**	
5.5	3 ... 12	168	2	**3RA6400-1DB43**		2	**3RA6400-2DB43**	
15	8 ... 32	448	10	**3RA6400-1EB43**		10	**3RA6400-2EB43**	

[1] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

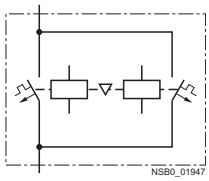
8

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Selection and ordering data

3RA65 with 3RA6911-1A auxiliary switch blocks

Reversing duty



Rated control supply voltage 24 V DC

Width 90 mm

Rated short-circuit current I_{CS} = 53 kA at 400 V

Two sets of 3RA6940-0A adapters are required for screw fixing.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42F

Standard three-phase motor 4-pole at 400 V AC[1] Standard output *P*	Setting range for electronic overload release	Instantaneous overcurrent release	SD	Article No.	Price per PU	SD	Article No.	Price per PU
				Screw terminals			**Spring-type terminals**	
kW	A	A	d			d		
For standard mounting rail or screw fixing, including 1 pair of main circuit terminals and 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	10	**3RA6500-1AB42**		10	**3RA6500-2AB42**	
0.37	0.32 ... 1.25	56	2	**3RA6500-1BB42**		10	**3RA6500-2BB42**	
1.5	1 ... 4	56	2	**3RA6500-1CB42**		10	**3RA6500-2CB42**	
5.5	3 ... 12	168	10	**3RA6500-1DB42**		10	**3RA6500-2DB42**	
15	8 ... 32	448	10	**3RA6500-1EB42**		10	**3RA6500-2EB42**	
For use in the infeed system for 3RA6, without main circuit terminals with 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	10	**3RA6500-1AB43**		10	**3RA6500-2AB43**	
0.37	0.32 ... 1.25	56	10	**3RA6500-1BB43**		10	**3RA6500-2BB43**	
1.5	1 ... 4	56	10	**3RA6500-1CB43**		10	**3RA6500-2CB43**	
5.5	3 ... 12	168	10	**3RA6500-1DB43**		10	**3RA6500-2DB43**	
15	8 ... 32	448	10	**3RA6500-1EB43**		10	**3RA6500-2EB43**	

[1] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

Overview

Accessories for SIRIUS 3RA6 compact starters

The following accessories are available specially for the 3RA6 compact starters:

- Infeed system for 3RA6: see page 8/79 onwards
- AS-i add-on modules: see page 8/77 onwards "AS-Interface add-on modules"
- External auxiliary switch blocks: Snap-on auxiliary switch as versions 2 NO, 2 NC and 1 NO + 1 NC with screw or spring-type terminals; the contacts of the auxiliary switch block open and close jointly with the main contacts of the compact starter. The NC contacts are designed as mirror contacts.
- Control kit: Aid for manually closing the main contacts to check the wiring and motor direction under conditions of short-circuit protection
- Adapter for screw fixing the compact starter, including push-in lugs
- Main circuit terminal: Available with screw and spring-type terminals
- Main circuit terminal for mixed connection methods: Using the main circuit terminal for mixed connection methods it is also possible to switch from screw connection on the input side to spring-type connection on the outgoing side in the main circuit.
  This means for example that several compact starters can be mounted side by side and be cost-efficiently connected using the three-phase busbars on the infeed side. The motors are then connected directly by the quick and reliably contacting spring-type connection method.

Accessories for UL applications

The terminal block for "Self-Protected Combination Motor Controller", type E is available for complying with the clearance and creepage distances demanded according to UL 508.

Accessories for infeed using three-phase busbar systems

The three-phase busbars can be used as an easy, time-saving and clearly arranged means of feeding SIRIUS 3RA6 compact starters with screw connection. Motor starter protector sizes S00 and S0 can also be integrated.

The busbars are suitable for between two and five devices. However, any kind of extension up to a maximum summation current of 63 A is possible by clamping the tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last motor starter protector.

Motor starter protectors S00 and S0 of the 3RV2 series can be combined in any way (without a special connecting piece). The motor starter protectors are supplied by appropriate infeed terminals. Special infeed terminals are required for constructing "Type E Starters" according to UL/CSA.

The three-phase busbar systems are finger-safe but empty connection tags must be fitted with covers. They are designed for any short-circuit stress which can occur at the output side of connected SIRIUS 3RA6 compact starters or motor starter protectors.

Busbar adapters for 60 mm systems

The compact starters are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs. These feeders are suitable for copper busbars with a width from 12 to 30 mm. The busbars can be 4 to 5 mm or 10 mm thick.

The 8US busbar system can be loaded with a maximum summation current of 630 A.

The "reversing starter" version requires a device holder along side the busbar adapter for lateral mounting.

The compact starters are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

For more accessories such as incoming and outgoing terminals, flat copper profiles etc., see Catalog LV 10.

Accessories for operation with closed control cabinet doors

Door-coupling rotary operating mechanisms for standard and emergency-stop applications are available for operating the compact starter with closed control cabinet doors.

Accessories for SIRIUS 3RA6 compact starters in IO-Link version

The following accessories are available specially for the 3RA64, 3RA65 compact starters:

- The 4SI SIRIUS electronic module as IO-Link master allows for the simple and economical connection of SIRIUS controls with IO-Link (e. g. up to four groups of 4 compact starters) to the multifunctional SIMATIC ET 200S distributed I/O system.
- Additional connection cables for side-by-side mounting of up to four compact starters
- Operator panel for on-site control and diagnostics of up to four compact starters coupled to each other

Selection and ordering data

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories specially for 3RA6 compact starters						
 3RA6950-0A **Control kit** For mechanical actuation of the compact starter	2	**3RA6950-0A**		1	1 unit	42F
 3RA6940-0A **Adapters for screw fixing the compact starter** (set including push-in lugs) Direct-on-line starters require one set, reversing starters two sets.	2	**3RA6940-0A**		1	1 unit	42F
		Screw terminals				
Auxiliary switch blocks for compact starters						
 3RA6911-1A • 2 NO	2	**3RA6911-1A**		1	1 unit	42F
• 2 NC	2	**3RA6912-1A**		1	1 unit	42F
• 1 NO +1 NC (these auxiliary contacts are positively driven)	2	**3RA6913-1A**		1	1 unit	42F
 3RA6920-1A **Main circuit terminals** (input and output sides)	2	**3RA6920-1A**		1	1 unit	42F
Control circuit terminals						
 3RA6920-1B • For 3RA61	2	**3RA6920-1B**		1	1 unit	42F
• For 3RA62	2	**3RA6920-1C**		1	1 unit	42F
		Spring-type terminals				
Auxiliary switch blocks for compact starters						
 3RA6911-2A • 2 NO	2	**3RA6911-2A**		1	1 unit	42F
• 2 NC	2	**3RA6912-2A**		1	1 unit	42F
• 1 NO +1 NC (these auxiliary contacts are positively driven)	2	**3RA6913-2A**		1	1 unit	42F
 3RA6920-2A **Main circuit terminals** (input and output sides)	2	**3RA6920-2A**		1	1 unit	42F
Control circuit terminals						
 3RA6920-2B • For 3RA61	2	**3RA6920-2B**		1	1 unit	42F
• For 3RA62	2	**3RA6920-2C**		1	1 unit	42F

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories specially for 3RA6 compact starters (continued)						
 3RA6920-3A **Main circuit terminals, mixed connection method** 1 set comprises: • 1 joint block on the line side with screw terminals • 1 joint block on the outgoing side with spring-type terminals	15	**3RA6920-3A**		1	1 unit	42F

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories specially for 3RA64, 3RA65 compact starters for IO-Link						
 3RA6931-0A **Additional connection cables (flat)** for side-by-side mounting of up to 4 compact starters						
• 10-pole						
- 8 mm[1]	2	**3RA6932-0A**		1	5 units	42F
- 200 mm[1]	2	**3RA6933-0B**		1	5 units	42F
• 14-pole						
- 8 mm[2]	2	**3RA6931-0A**		1	5 units	42F
- 200 mm	2	**3RA6933-0C**		1	5 units	42F
 3RA6935-0A **Operator panels (set)** • 1 operator panel • 1 enabling module • 1 interface cover • 1 fixing terminal	10	**3RA6935-0A**		1	1 unit	42F
Enabling modules (replacement)	10	**3RA6936-0A**		1	1 unit	42F
Interface covers (replacement)	10	**3RA6936-0B**		1	5 units	42F
Connection cables (round) for connecting the operator panel 10-pole, 2 000 mm	2	**3RA6933-0A**		1	1 unit	42F

[1] 10-pole connection cables are required for EMERGENCY-STOP group concepts.

[2] Is included in the scope of supply of the SIRIUS 3RA6 compact starter in IO-Link version.

For matching IO-Link masters, see page 2/108 onwards.

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminals for "Self-Protected Combination Motor Controllers (Type E)" acc. to UL 508 for infeed through parallel wiring with compact starters						
 3RV2928-1H Note: UL 508 demands 1-inch clearance and 2-inch creepage distance at line side for "Combination motor controller type E". Terminal blocks are not required for use according to CSA. These terminal blocks cannot be used in combination with 3RV19.5 three-phase busbars.						
Terminal blocks type E For extended clearance and creepage distances (1 and 2 inch)	►	**3RV2928-1H**		1	1 unit	41E

Accessories

Three-phase busbars for infeed with 3RA6


3RV1915-1AB


3RV1915-1BB


3RV1915-1CB


3RV1915-1DB

For feeding several compact starters and/or motor starter protectors with screw terminals, mounted side-by-side on standard mounting rails, insulated, with touch protection.

Number of compact starters and motor starter protectors Without lateral accessories	Modular spacing	Rated current I_n at 690 V	For motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm	A	Size	d					
2	45	63	S00, S0[1]	▶	**3RV1915-1AB**		1	1 unit	41E
3	45	63	S00, S0[1]	▶	**3RV1915-1BB**		1	1 unit	41E
4	45	63	S00, S0[1]	▶	**3RV1915-1CB**		1	1 unit	41E
5	45	63	S00, S0[1]	▶	**3RV1915-1DB**		1	1 unit	41E

[1] Not suitable for 3RV21 motor starter protectors for motor protection with overload relay function and for 3RV27 and 3RV28 circuit breakers according to UL 489/CSA C22.2 No. 5.

Covers for connection tags of the three-phase busbars


3RV1915-6AB

Version	Modular spacing	For motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm	Size	d					
Touch protection for empty positions	--	S00, S0	▶	**3RV1915-6AB**		1	10 units	41E

Three-phase infeed terminals for three-phase busbars[1]


3RV1925-5AB


3RV2915-5B

Conductor cross-section: Solid or stranded	Conductor cross-section: Finely stranded with end sleeve	Conductor cross-section: AWG cables, solid or stranded	Tightening torque	For compact starters and motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
mm²	mm²	AWG	Nm	Size	d					
Connection from top										
2.5 … 25	2.5 … 16	10 … 4	3 … 4	S00, S0	2	**3RV1925-5AB**		1	1 unit	41E
Connection from below[2]										
2.5 … 25	2.5 … 16	10 … 4	Input: 4; Output: 2 … 2.5	S00, S0	▶	**3RV2915-5B**		1	1 unit	41E

Three-phase infeed terminals for constructing "Type E Starters" according to UL 508 for three-phase busbars


3RV2925-5EB

Connection from top										
2.5 … 25	2.5 … 16	10 … 4	3 … 4	S00, S0	2	**3RV2925-5EB**		1	1 unit	41E

[1] The 3RV2925-5AB three-phase infeed terminals cannot be used with the 3RA6.

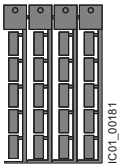
[2] This terminal is connected in place of a compact starter, please take the space requirement (45 mm) into account.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Busbar adapters for 60 mm systems							
 8US1211-1NS10	For flat copper profiles according to DIN 46433 Width: 12 ... 30 mm Thickness: 4 ... 5 mm or 10 mm	2	**8US1211-1NS10**		1	1 unit	14O
Device holders for lateral mounting along side the busbar adapter for 60 mm systems							
 8US1250-1AA10	Required in addition to the busbar adapter for mounting a reversing starter	2	**8US1250-1AA10**		1	1 unit	14O

	Version	Color of actuator	Version of extension shaft	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			mm	d					
Door-coupling rotary operating mechanisms for operating the compact starter with closed control cabinet doors									
 3RV2926-0B	The door-coupling rotary operating mechanisms consist of a knob, a coupling driver and a 130 mm long extension shaft (6 mm x 6 mm). The door-coupling rotary operating mechanisms are designed to degree of protection IP64. The door interlocking prevents accidental opening of the control cabinet door in the ON position of the motor starter protector. The OFF position can be locked with up to 3 padlocks.								
	Door-coupling rotary operating mechanisms	Black	130	►	**3RV2926-0B**		1	1 unit	41E
	EMERGENCY-STOP door-coupling rotary operating mechanisms	Red/yellow	130	►	**3RV2926-0C**		1	1 unit	41E

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Tools for opening spring-type terminals							
			Spring-type terminals				
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals Length, approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B
Blank labels							
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices 20 mm x 7 mm, titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
System Manual "SIRIUS Compact Starters and Accessories"							
	System Manual see http://support.industry.siemens.com/cs/ww/en/view/27865747.						

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/20).

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

Various AS-i add-on modules are available for communication of the 3RA6 compact starter with the control system using AS-Interface:

- Standard version
- With two local inputs
- With two free external inputs
- With one free external input and one free external output
- With two free external outputs
- For local control

The AS-i add-on modules can be combined only in connection with compact starters with a rated control supply voltage of 24 V AC/DC.

AS-i add-on module for local control

With this new module it is also possible for the connected compact starter to be operated directly using simple switches, i.e. without recourse to AS-i communication, if required.

"Automatic" mode

NC contacts can be connected to the inputs Y2 and Y4 through the local terminals on the AS-i add-on module. If the "+" terminals are connected simultaneously to both local inputs, the AS-i add-on module will be in "Automatic" mode, i.e. it will communicate with the control system through AS-Interface.

Local control

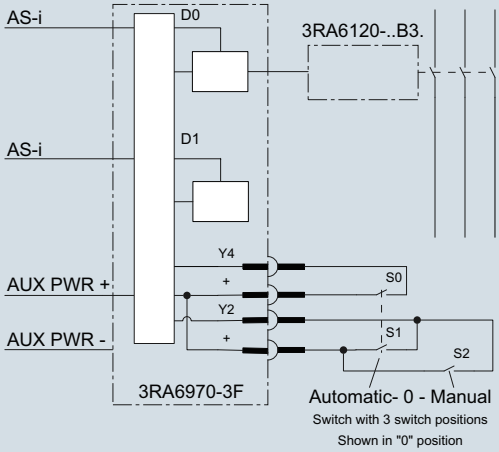
Opening the two inputs Y2 and Y4 will result in the direct disconnection of the compact starter. Operation through AS-i communication is finished and the compact starter can now be switched on and off directly using NO contacts (one NO contact per direction of rotation on the reversing starter).

"LED AUX Power" must light up green, the 24 V DC supply must be ensured and the AS-i control supply voltage must no longer be applied.

Resetting to "Automatic" mode

If a "1" signal is simultaneously applied at the local inputs, the availability bit DI 0 is switched to a "1" signal.

If AS-i communication is reset, the motor is first switched off and then on again when requested by the control system.



Switch with 3 switch positions			
Switch	Automatic	0	Manual
S0	Closed	Open	Open
S1	Closed	Open	Open
S2	Open	Open	Closed

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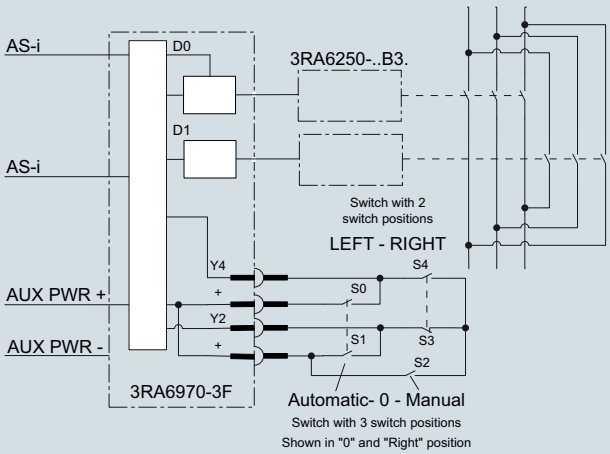
Circuit diagram example for controlling a 3RA6120 direct-on-line starter using an AS-i add-on module for local control



Switch with 3 switch positions			
Switch	Automatic	0	Manual
S0	Closed	Open	Open
S1	Closed	Open	Open
S2	Open	Open	Closed

Switch with 2 switch positions		
Switch	Left	Right
S3	Open	Closed
S4	Closed	Open

NSB0_02097a

Circuit diagram example for controlling a 3RA6250 reversing starter using an AS-i add-on module for local control

Selection and ordering data

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-i add-on modules							
 3RA6970-3A	**Standard version** For communication of the compact starter with the control system using AS-Interface	2	**3RA6970-3A**		1	1 unit	42F
	With two local inputs For safe disconnection through local safety relays, e.g. cable-operated switches	2	**3RA6970-3B**		1	1 unit	42F
 3RA6970-3B to -3F	**With two free external inputs** Replaces the digital standard inputs "Motor On" and "Group warning"	2	**3RA6970-3C**		1	1 unit	42F
	With one free external input and one free external output Replaces the digital standard input "Group warning"	2	**3RA6970-3D**		1	1 unit	42F
	With two free external outputs Only for direct-on-line starters, replaces the digital standard input "Motor left"	2	**3RA6970-3E**		1	1 unit	42F
	For local control Control of the compact starter optionally using AS-Interface or local switches	2	**3RA6970-3F**		1	1 unit	42F
Spare parts for AS-i add-on modules							
 3RK1901-0NA00, 3RK1901-0PA00	**Connectors for data and auxiliary supply cable** With 2 insulation displacement terminations for standard stranded wires measuring 2 x 0.5 ... 0.75 mm^2						
	• Flat, yellow, extender	10	**3RK1901-0NA00**		1	5 units	42C
	• Flat, black, extender	10	**3RK1901-0PA00**		1	5 units	42C
Accessories for AS-i add-on modules							
 3RK1904-2AB02	**AS-Interface addressing unit V3.0** • For AS-Interface modules and sensors and actuators with integrated AS-Interface in accordance with AS-i Specification V3.0 • For setting the AS-i address of standard slaves, and slaves with extended addressing mode (A/B slaves) • With input/output test function and many other commissioning functions • Battery operation with four batteries type AA (IEC LR6, NEDA 15) • Scope of supply: - Addressing unit with four batteries - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5 m	2	**3RK1904-2AB02**		1	1 unit	42C

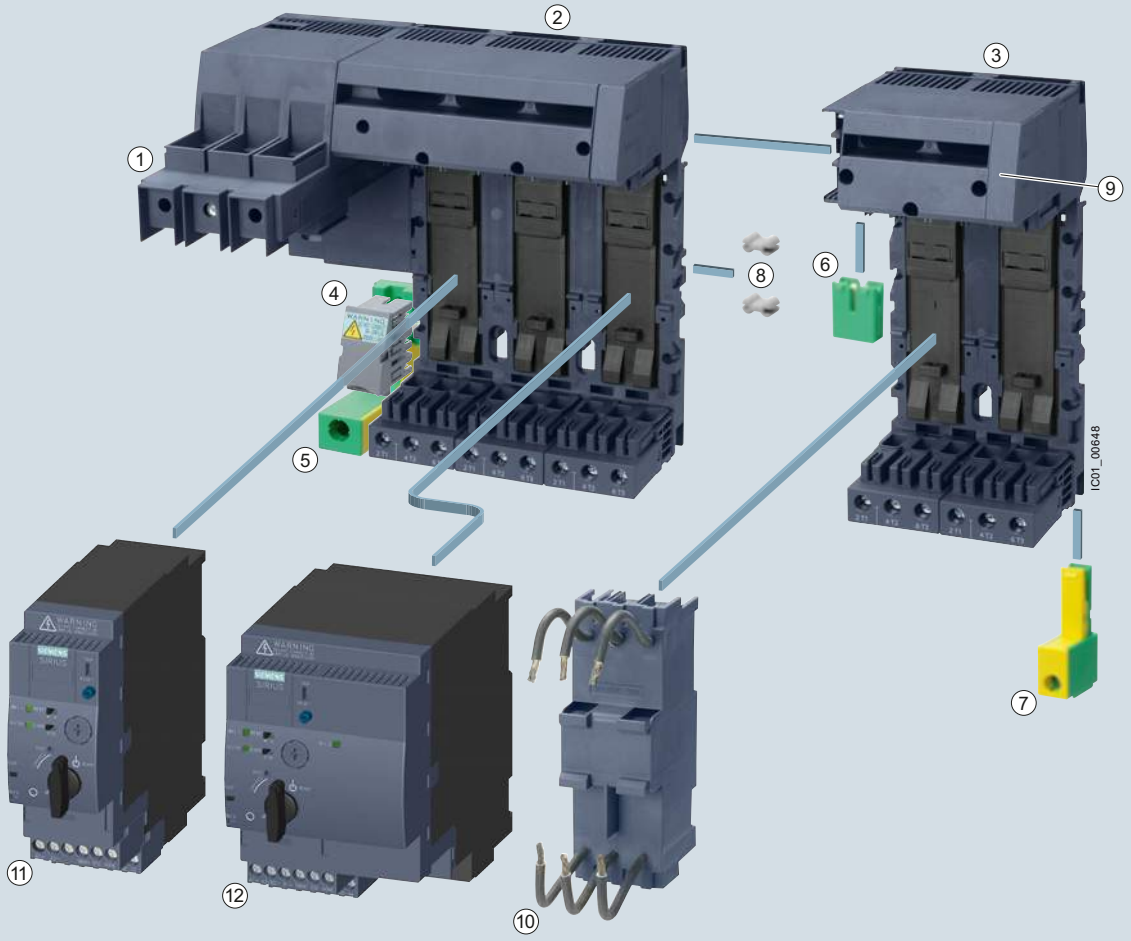
For matching AS-Interface masters, network transitions and power supply units, see pages 2/36, 2/43 and 2/82 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

More information	
Home page, see www.siemens.com/compactstarter Industry Mall, see www.siemens.com/product?3RA68	Online configurator, see www.siemens.com/sirius/configurators

The infeed system for 3RA6 compact starters enables far less wiring in the main circuit and, thanks to the easy exchangeability of the compact starters, reduces the usual downtimes for maintenance work during the plant's operating phase. The infeed system provides the possibility of completely prewiring the main circuit without a compact starter needing to be connected at the same time. As the result of the removable terminals in the main circuit, compact starters can be integrated in an infeed system in easy manner (without the use of tools).



1 Feeder terminal
2 Three-socket expansion module
3 Two-socket expansion module
4 Expansion plug
5 PE infeed
6 PE expansion plug
7 PE pick-off
8 Connecting wedges
9 End cover
10 45 mm adapter for SIRIUS motor starter protector size S0
11 3RA61 direct-on-line starter
12 3RA62 reversing starter

Infeed system for 3RA6 compact starters

Infeed system for 3RA6

In addition, the integrated PE bar means it is optionally possible to connect the motor cable directly to the infeed system without additional intermediate terminals. The infeed system for 3RA6 compact starters is designed for summation currents up to 100 A with a maximum conductor cross-section of up to 70 mm² on the infeed terminal block.

The infeed system can be mounted on a standard mounting rail or flat surfaces.

① *Infeed*

The three-phase infeed is available as a screw-type infeed (25/35 mm² up to 63 A or 50/70 mm² up to 100 A) and as a spring-loaded infeed (25/35 mm² up to 63 A).

The infeed with spring-type terminal can be fitted on the left as well on as the right to an expansion module.

The infeed with screw terminal is supplied only with a 3-socket expansion module and permanently fitted on the left side.

The screw-type infeeds enable connection of the main conductors (L1, L2, L3) either from above or from below.

The screw-type infeed is supplied complete with one end cover, the spring-loaded infeed complete with two end covers.

② *3-socket expansion module*

The expansion module with three sockets for compact starters is available with screw connection and with spring-type connection.

Expansion modules enable the infeed system to be expanded and can be fitted to each other in any number.

Two expansion modules are held together with the help of two connecting wedges and one expansion plug. These assembly parts are included in the scope of supply of the respective expansion module.

When the infeed system for 3RA6 is used, the compact starters (plug-in modules) are easily assembled and disassembled even when live.

Optional possibilities:
- PE connection on motor outgoing side
- Outfeed for external auxiliary devices
- Connection to 3RV29 infeed system
- Integration of SIRIUS 3RV1 and 3RV2 motor starter protectors size S0 up to 25 A (using 3RA6890-0BA adapter)

③ *2-socket expansion module*

If only two instead of three additional sockets are required, then the 2-socket expansion module is the right choice. It has the same functionality as the 3-socket expansion module.

④ *Expansion plug*

Two expansion modules can be connected together using the expansion plug. Flexible expansion of the infeed system is thus possible.

⑤ *PE infeed*

This module enables a PE cable to be connected.

The PE infeed can be ordered with screw connection and spring-type connection (35 mm²) and can be fitted on the left or right of the expansion block.

⑥ *PE expansion plug*

The PE expansion plug is inserted from below and enables two PE bars to be connected.

⑦ *PE pick-off*

The PE pick-off is available with screw connection and spring-type connection (6/10 mm²). It is snapped into the infeed system from below.

⑧ *Connecting wedges*

Two connecting wedges are used to hold together two expansion modules.

⑨ *End covers*

On the last expansion module of a row, the socket provided for the expansion plug can be covered by inserting the end cover.

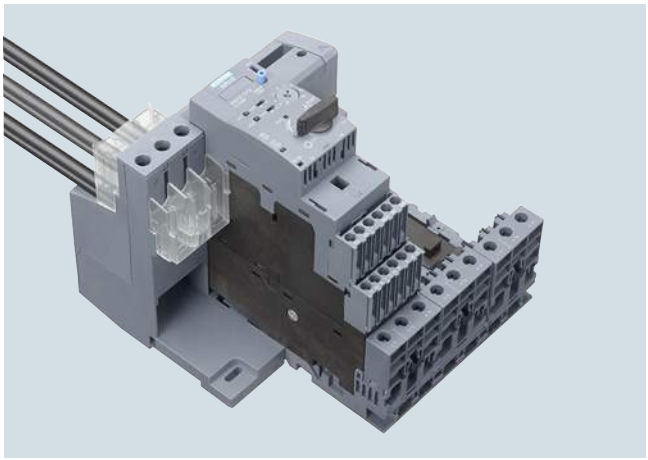
⑩ *45 mm adapters for SIRIUS 3RV1/3RV2 motor starter protectors*

SIRIUS 3RV1 and 3RV2 motor starter protectors size S0 with screw connection can be fitted to the adapter, enabling them to be plugged into the infeed system.

IP20 terminal covers for increasing finger-safety

Universally configured terminal covers are available for the 25/35 mm² and 50/70 mm² three-phase screw-type infeeds:
- 3RA6880-2AB terminal covers for screw-type infeeds 25/35 mm² (3RA6812-8AB/AC)
- 3RA6880-3AB terminal covers for screw-type infeeds 50/70 mm² (3RA6813-8AB/AC)

The terminal covers can be used in two ways on the infeed terminals of the screw-type infeeds 25/35 mm² and 50/70 mm² (see illustration):
- If the terminals are connected, the cables are also covered:
  - by approx. 14 mm with the 3RA6880-2AB
  - by approx. 18 mm with the 3RA6880-3AB
- On clamping points without connected cables, the covers can be turned once and then pushed over the clamping points for finger-safe covering of the metal parts.



Use of the 3RA6880-2AB terminal cover on the screw-type infeed 25/35 mm² (3RA6812-8AB/AC). The upper cover increases the finger-safety for the connected conductors. The identical lower cover is turned for use and prevents touching of the voltage-carrying metal parts of the infeed terminal. For better recognition, the covers are shown as transparent in this illustration and not in their original color.

Terminal blocks

Using the terminal block the three phases can be fed out of the system; this means that single-phase, two-phase and three-phase components can also be integrated in the system.

After the end cover is pulled out, the terminal block can be plugged onto an expansion module.

Expansion plug for SIRIUS 3RV29 infeed systems

After the end cover is pulled out, the expansion plug for the SIRIUS 3RV29 infeed system can be plugged onto an expansion module. It connects the infeed system for 3RA6 compact starters with the SIRIUS 3RV29 infeed system.

Maximum rated operational current

The following maximum rated operational currents apply for the components of the infeed system for 3RA6:

Component	Maximum rated operational current A
Screw-type infeed 50/70 mm²	100
Screw-type infeed 25/35 mm²	63
Spring-loaded infeed 25/35 mm²	63
Expansion plug	63

With side-by-side mounting of several expansion modules, the maximum rated operational current from the second expansion module to the end of the row is 63 A.

Proposal for upstream short-circuit protection devices

The following short-circuit data apply for the components of the infeed system for 3RA6 compact starters:

Conductor cross-section mm²	Maximum let-through current $I_{d,\,max}$ and current integral I^2t	Proposal for upstream short-circuit protection device
Short-circuit protection for 3RA681.-8A. screw-type infeed (25/35 mm² and 50/70 mm²)		
2.5 … 35, 2.5 … 70	$I_{d,\,max}$ < 21 kA, I^2t = 530 kA²s	**3RV1041-4MA10** (NH gG 3NA3; 315 A)
Short-circuit protection for spring-loaded infeed 25/35 mm², 3RA6830-5AC		
4	$I_{d,\,max}$ < 9.5 kA, I^2t = 85 kA²s	**3RV1021-4DA10**
6	$I_{d,\,max}$ < 12.5 kA, I^2t = 140 kA²s	**3RV1031-4EA10**
10	$I_{d,\,max}$ < 15 kA, I^2t = 180 kA²s	**3RV1031-4HA10**
16/25	$I_{d,\,max}$ < 19 kA, I^2t = 440 kA²s	**3RV1041-4JA10**
35	$I_{d,\,max}$ < 21 kA, I^2t = 530 kA²s	**3RV1041-4MA10** (NH gG 3NA3; 315 A)
Short-circuit protection for terminal block, 3RV2917-5D		
1.5	$I_{d,\,max}$ < 7.5 kA	**5SY...** [1]
2.5	$I_{d,\,max}$ < 9.5 kA	
4	$I_{d,\,max}$ < 9.5 kA	
6	$I_{d,\,max}$ < 12.5 kA	

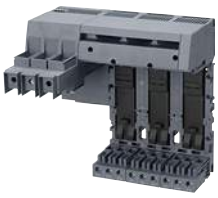
[1] To prevent the possibility of short circuits, the cables on the terminal block must be installed so that they are short-circuit proof.

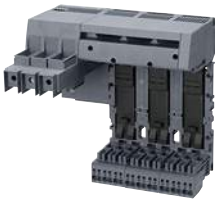
Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Three-phase infeeds and expansion modules						
Screw-type infeeds 25/35 mm² left						
Screw-type infeed at line side with a permanently fitted **3-socket expansion module with screw or spring-type terminals on the outgoing side and integrated PE bar** **Expansion module** with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter		**Screw terminals**				
• Screw terminals on the outgoing side	2	**3RA6812-8AB**		1	1 unit	42F
• Spring-type terminals on the outgoing side	2	**3RA6812-8AC**		1	1 unit	42F
Screw-type infeeds 50/70 mm² left						
Screw-type infeed at line side with a permanently fitted **3-socket expansion module with screw or spring-type terminals on the outgoing side and integrated PE bar** **Expansion module** with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter, suitable for UL operation according to UL 508 Type E		**Screw terminals**				
• Screw terminals on the outgoing side	2	**3RA6813-8AB**		1	1 unit	42F
• Spring-type terminals on the outgoing side	2	**3RA6813-8AC**		1	1 unit	42F
Spring-loaded infeed 25/35 mm² left or right						
		Spring-type terminals				
Up to 63 A	2	**3RA6830-5AC**		1	1 unit	42F


3RA6812-8AB


3RA6812-8AC


3RA6813-8AB


3RA6813-8AC


3RA6830-5AC

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Expansion modules

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
 3RA6822-0AB	***Two-socket expansion modules*** **With screw or spring-type connection and integrated PE bar** With 2 sockets for 2 direct-on-line starters or 1 reversing starter Expansion plug and 2 connecting wedges included in the scope of supply. • Screw terminals	2	**3RA6822-0AB**		1	1 unit	42F
 3RA6822-0AC	• Spring-type terminals	2	**3RA6822-0AC**		1	1 unit	42F
 3RA6823-0AB	***Three-socket expansion modules*** **With screw or spring-type connection and integrated PE bar** With 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter Expansion plug and 2 connecting wedges included in the scope of supply. • Screw terminals	2	**3RA6823-0AB**		1	1 unit	42F
 3RA6823-0AC	• Spring-type terminals	2	**3RA6823-0AC**		1	1 unit	42F

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* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Infeed system for 3RA6

Accessories for infeed systems for 3RA6

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	PE infeeds, 25/35 mm²						
 3RA6860-6AB			**Screw terminals**				
	• Screw terminals	2	**3RA6860-6AB**		1	1 unit	42F
 3RA6860-5AC			**Spring-type terminals**				
	• Spring-type terminals	2	**3RA6860-5AC**		1	1 unit	42F
	PE pick-offs 6/10 mm²						
 3RA6870-4AB			**Screw terminals**				
	• Screw terminals	2	**3RA6870-4AB**		1	1 unit	42F
 3RA6870-3AC			**Spring-type terminals**				
	• Spring-type terminals	2	**3RA6870-3AC**		1	1 unit	42F
	Expansion plugs						
 3RA6890-0EA	**PE expansion plugs**	2	**3RA6890-0EA**		1	1 unit	42F
 3RA6890-1AB	**Expansion plugs** Between 2 expansion modules Included in the scope of supply of the expansion modules.	2	**3RA6890-1AB**		1	1 unit	42F
 3RA6890-1AA	**Expansion plug for SIRIUS 3RV29 infeed systems** Connect infeed system for 3RA6 to 3RV29 infeed system	2	**3RA6890-1AA**		1	1 unit	42F

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for infeed systems for 3RA6 (continued)							
 3RA6890-0BA	***45 mm adapters*** For SIRIUS 3RV1.2 and 3RV2.2 circuit breakers/ motor starter protectors size S0 up to 25 A • Screw terminals (conductor cross-section AWG 10)	2	**Screw terminals** **3RA6890-0BA**		1	1 unit	42F
 3RA6880-2AB	***Terminal covers for screw-type infeeds*** **IP20 terminal covers for screw-type infeeds 25/35 mm² (3RA6812-8AB/AC)** (2 units per pack)	2	**3RA6880-2AB**		1	1 unit	42F
 3RA6880-3AB	**IP20 terminal covers for screw-type infeeds 50/70 mm² (3RA6813-8AB/AC)** (2 units per pack)	2	**3RA6880-3AB**		1	1 unit	42F
 3RV2917-5D	***Terminal blocks*** For integration of single-phase, two-phase and three-phase external components • Spring-type terminals	2	**Spring-type terminals** **3RV2917-5D**		1	1 unit	41E
Tools for opening spring-type terminals							
 3RA2908-1A	***Screwdrivers*** For all SIRIUS devices with spring-type terminals Length, approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	2	**Spring-type terminals** **3RA2908-1A**		1	1 unit	41B
System Manual "SIRIUS 3RA6 Compact Feeders"							
	System Manual, see http://support.industry.siemens.com/cs/ww/en/view/27865747.						

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RM1 motor starters

Overview

3RM13 motor starter with reversing functionality, electronic overload protection and safety-related shutdown

More information

Home page, see www.siemens.com/motorstarter/3RM1

Industry Mall, see www.siemens.com/product?3RM1

SIRIUS 3RM1 motor starters are compact devices, 22.5 mm wide, combining a large number of functions in a single enclosure. They consist of combinations of relay contacts, power semiconductors (hybrid technology), and an electronic overload relay for operational switching of three-phase motors up to 3 kW (at 400 V) and resistive loads up to 10 A at AC voltages up to 500 V.

The 3RM1 motor starters with overload protection with wide setting range are available as direct-on-line starters and reversing starters and as versions with safety-related shutdown up to SIL 3/PL e.

Product versions		Article number								
Product function	Direct-on-line starters	**3RM10**	**0**	**□**	**–**	**□**	**AA**	**□**	**4**	
	Failsafe direct-on-line starters	**3RM11**	**0**	**□**	**–**	**□**	**AA**	**□**	**4**	with ATEX certification and safety-related shutdown
	Reversing starters	**3RM12**	**0**	**□**	**–**	**□**	**AA**	**□**	**4**	
	Failsafe reversing starters	**3RM13**	**0**	**□**	**–**	**□**	**AA**	**□**	**4**	with ATEX certification and safety-related shutdown
Wide setting range for electronic overload release	0.1 ... 0.5 A			**1**						for motor standard output 0 ... 0.12 kW[2]
	0.4 ... 2.0 A			**2**						for motor standard output 0.09 ... 0.75 kW[2]
	1.6 ... 7.0 A (10 A)[1]			**7**						for motor standard output 0.55 ... 3 kW[2]
Connection method	Screw terminals				**1**					
	Spring-type terminals (push-in)				**2**					
	Mixed connection method				**3**					Spring-type terminals (push-in)
Rated control supply voltage U_s	24 V DC							**0**		
	110 ... 230 V AC; 110 V DC							**1**		
Example		**3RM13**	**0**	**1**	**–**	**2**	**AA**	**0**	**4**	

1) Operation of resistive loads with maximum 10 A.

2) Standard three-phase motor, basis 4-pole at 400 V AC; the actual startup characteristics of the motor as well as its rated data are important factors here.

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers. For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

Product advantages

- Less space required in the control cabinet (20 to 80 %) thanks to high functional density, which also means reduced wiring and testing
- Greater endurance and reduced heat losses thanks to hybrid technology; see www.siemens.com/sirius/energysaving
- Lower costs for stock keeping and configuration as a result of the wide setting range of the electronic overload release (up to 1:5)
- Fast wiring without tools for rigid conductors or conductors equipped with end sleeves thanks to spring-type terminals (push-in)
- Safety-related shutdown in accordance with SIL 3/PL e by shutting down the control supply voltage without additional devices in the main circuit
- The motor starters can be ideally combined with 3SK safety relays for safety-related shutdown (see page 11/10)
- Motor status feedback to the higher-level control system in the case of 3RM10 and 3RM12 motor starters in the 24 V DC version
- Virtually error-free wiring on the mains connection side and reduction in short-circuit protective devices by means of 3RM19 infeed system
- ATEX certification of the overload protection of the 3RM1 Failsafe motor starters: "Increased safety" type of protection EEx e according to ATEX directive 94/9/EC
- The 3RM1 motor starters can be used with highly energy-efficient IE3/IE4 motors. In this regard, please observe the information on dimensioning and configuring; see "Application Manual for SIRIUS Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820. For more information on IE3/IE4, see the Preface, page 7.

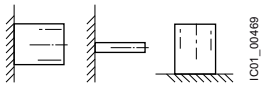
Standards and approvals

- IEC/EN 60947-4-2
- UL 508 / CSA
- ATEX
- IEC 61508-1: SIL 3
- ISO 13849: PL e
- CCC approval for China

Technical specifications

More information	
Industry Mall, see www.siemens.com/product?3RM1	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16311/faq
Manual, see https://support.industry.siemens.com/cs/ww/en/view/66295730	

Article number		3RM10, 3RM12	3RM11, 3RM13
General technical specifications:			
Dimensions (W x H x D)	mm	22.5 x 100 x 141.6	
Ambient temperature			
• During operation	°C	-25 … +60	
• During storage	°C	-40 … +70	
• During transport	°C	-40 … +70	
Installation altitude at height above sea level maximum	m	4 000	2 000
Shock resistance		6 *g* / 11 ms	
Vibration resistance		1 ... 6 Hz, 15 mm; 20 m/s², 500 Hz	
IP degree of protection		IP20	
Mounting position		Vertical, horizontal, standing	



Article number		3RM1.01	3RM1.02	3RM1.07
Main circuit:				
Operational voltage rated value maximum	V	500		
Operating frequency	Hz	50/60		
Operational current at AC-53a at 400 V at an ambient temperature of 40 °C	A	0.5	2	7
Minimum load [% of IM]	%	20		
Adjustable current response value of the inverse-time delayed overload release	A	0.1 ... 0.5	0.4 ... 2	1.6 ... 7

Article number		3RM1.0.-.AA04	3RM1.0.-.AA14
Control circuit:			
Type of voltage of the control supply voltage		DC	AC/DC
Control supply voltage			
• At DC	V	24	110
• At AC at 50 Hz	V	--	110 … 230
Frequency of the control supply voltage	Hz	--	50/60

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Type		3RM1.0.-1AA..	3RM1.0.-3AA..	3RM1.0.-2AA..
Connections/terminals:				
Type of electrical connection for the main circuit		Screw terminals		Spring-type terminals (push-in)
Connectable conductor cross-section for main contacts				
• Solid	mm²	1x (0.5 ... 4), 2x (0.5 ... 2.5)		1x (0.5 ... 4)
• Finely stranded				
- With end sleeve	mm²	1x (0.5 ... 2.5), 2x (0.5 ... 1.5)		1x (0.5 ... 2.5)
- Without end sleeve	mm²	--		1x (0.5 ... 4)
Type of electrical connection for auxiliary and control circuits		Screw terminals	Spring-type terminals (push-in)	
Connectable conductor cross-section for auxiliary contacts				
• Solid	mm²	1x (0.5 ... 2.5), 2x (1.0 ... 1.5)	1x (0.5 ... 1.5), 2x (0.5 ... 1.5)	
• Finely stranded				
- With end sleeve	mm²	1x (0.5 ... 2.5), 2x (0.5 ... 1)	1x (0.5 ... 1.0), 2x (0.5 ... 1.0)	
- Without end sleeve	mm²	--	1x (0.5 ... 1.5), 2x (0.5 ... 1.5)	
AWG number as coded connectable conductor cross-section				
• For main contacts		1x (20 ... 12), 2x (20 ... 14)		1x (20 ... 12)
• For auxiliary contacts		1x (20 ... 14), 2x (18 ... 16)	1x (20 ... 16), 2x (20 ... 16)	

Accessories

More information

Manual, see
https://support.industry.siemens.com/cs/ww/en/view/66295730

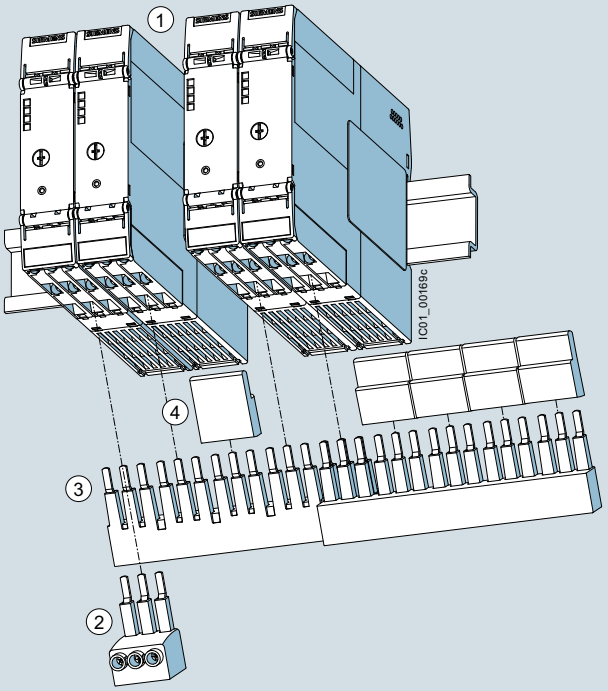
Three-phase infeed system (3RM19 three-phase busbar system)

The system permits an easy, time-saving and safe means of feeding two or more 3RM1 motor starters. It can be used only with motor starters with screw terminals and in combination with 8US1716-0RK00 adapters for mounting rails in the main circuit.

The maximum summation current must not exceed 25 A. The primary infeed is connected via a three-phase infeed terminal.

The busbars are available in three lengths, for two, three or five motor starters. More than five devices can be connected by clamping the connection tags of a second busbar rotated by 180°.

The three-phase busbars are finger-safe but empty connection tags must be fitted with covers.



1 Four 3RM1 motor starters on standard mounting rail with one free slot

2 3RM1920-1AA three-phase infeed terminal

3 Two 3RM1910-1DA three-phase busbars rotated through 180° for the connection of up to nine motor starters

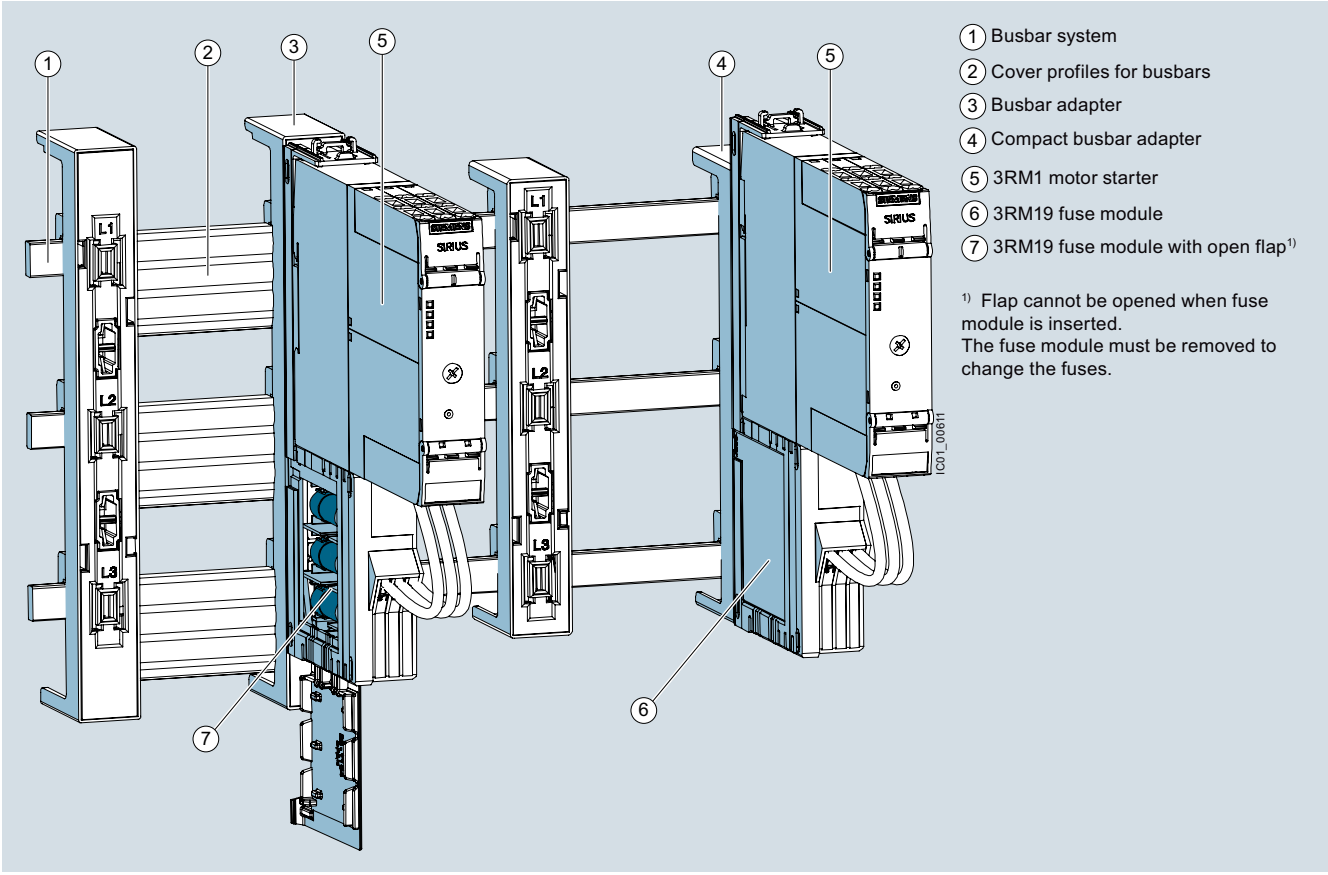
4 Covers for three 3RM1910-6AA connection tags for unoccupied positions

3RM19 infeed system with three-phase infeed terminal: In the above example, two three-phase busbars (5-pole busbars) rotated through 180° allow up to nine 3RM1 motor starters to be connected. Contact with the unused connection tags in unoccupied positions is prevented safely by the covers.

Fuse module for the use of 3RM1 motor starters on 8US busbar systems and mounting rails

The fuse module permits the very compact construction of a load feeder with a maximum width of 22.5 mm. The 3RM1 motor starter in combination with the integrated fuses for short-circuit protection can thus be used in this way on 8US busbar systems. By means of different adapters, the fuse module can be used in all 60 mm busbar systems and also in compact busbar systems, as well as on mounting rails. The interface to the adapter also permits a simple and secure replacement of the load feeder.

The fuse module can be combined with all 3RM1 motor starters. The easily replaceable fuses protect the connected motor and the cables.

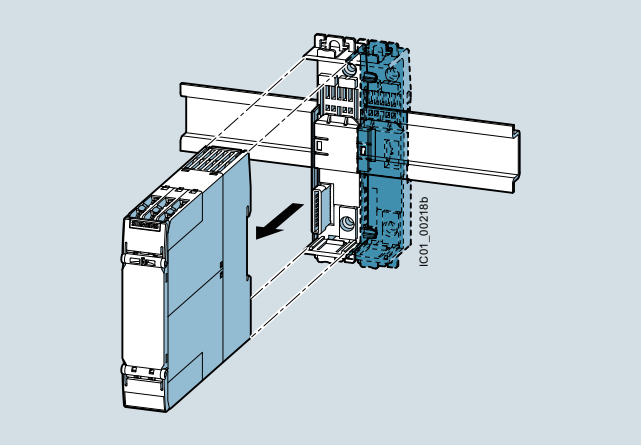


By means of the fuse module, 3RM1 motor starters can be used in busbar systems and 8US compact busbar systems as well as on mounting rails

SIRIUS 3RM1 motor starters

Device connectors for the control circuit

The device connectors for 3RM1 motor starters (24 V DC control supply voltage only) reduce the outlay for cabling by looping through the control supply voltage. The device connectors can be snapped onto a standard mounting rail or fixed to a level mounting panel using screws.



Device connectors with 3RM1 motor starter

Using the device connectors exclusively for feeding in the control supply voltage

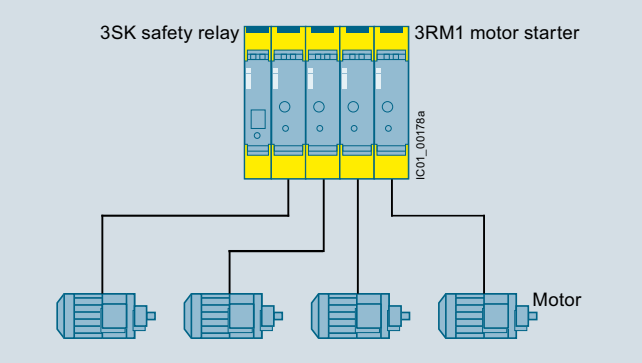
By using device connectors, a maximum of five motor starters can be supplied with 24 V DC control supply voltage. This requires the control supply voltage to be applied to the A1 and A2 terminals of only one motor starter.

Device daisy chain connectors can be be used for gaps between two motor starters. Device termination connectors terminate a group.

Using the device connectors for safe group shutdown

In combination with the 3RM11 and 3RM13 Failsafe motor starters, the device connector can also be used for safety-related shutdown. For this application, groups of no more than five Failsafe motor starters can be connected using a device connector, and the group must be terminated with a terminating connector. Removing the control voltage supply from the first motor starter will safely shut down the whole group.

Safe group shutdown can be implemented particularly easily in conjunction with 3SK safety relays. In this case, up to five motor starters can be directly connected to 3SK safety relays via the device connector and then safely shut down (see page 11/10).



Ideal connection: Combination of four SIRIUS 3RM1 Failsafe motor starters with SIRIUS 3SK safety relays

Selection and ordering data

More information

Industry Mall, see www.siemens.com/product?3RM1 ⚙ Configurator

	Rating for three-phase motor at 400 V[1]	Adjustable current response value of the inverse-time delayed overload release	Control supply voltage At DC	Control supply voltage At AC at 50 Hz	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	kW	A	V	V	d					
Direct-on-line starters										
 3RM1001-1AA04	0 … 0.12	0.1 … 0.5	24	--	2	**3RM1001-□AA04**		1	1 unit	41D
	0.09 … 0.75	0.4 … 2	24	--	2	**3RM1002-□AA04**		1	1 unit	41D
	0.55 … 3	1.6 … 7	24	--	2	**3RM1007-□AA04**		1	1 unit	41D
	0 … 0.12	0.1 … 0.5	110	110 … 230	2	**3RM1001-□AA14**		1	1 unit	41D
	0.09 … 0.75	0.4 … 2	110	110 … 230	2	**3RM1002-□AA14**		1	1 unit	41D
	0.55 … 3	1.6 … 7	110	110 … 230	2	**3RM1007-□AA14**		1	1 unit	41D
Reversing starters										
 3RM1201-1AA04	0 … 0.12	0.1 … 0.5	24	--	2	**3RM1201-□AA04**		1	1 unit	41D
	0.09 … 0.75	0.4 … 2	24	--	2	**3RM1202-□AA04**		1	1 unit	41D
	0.55 … 3	1.6 … 7	24	--	2	**3RM1207-□AA04**		1	1 unit	41D
	0 … 0.12	0.1 … 0.5	110	110 … 230	2	**3RM1201-□AA14**		1	1 unit	41D
	0.09 … 0.75	0.4 … 2	110	110 … 230	2	**3RM1202-□AA14**		1	1 unit	41D
	0.55 … 3	1.6 … 7	110	110 … 230	2	**3RM1207-□AA14**		1	1 unit	41D
Failsafe direct-on-line starters										
 3RM1101-1AA04	0 … 0.12	0.1 … 0.5	24	--	2	**3RM1101-□AA04**		1	1 unit	41D
	0.09 … 0.75	0.4 … 2	24	--	2	**3RM1102-□AA04**		1	1 unit	41D
	0.55 … 3	1.6 … 7	24	--	2	**3RM1107-□AA04**		1	1 unit	41D
	0 … 0.12	0.1 … 0.5	110	110 … 230	2	**3RM1101-□AA14**		1	1 unit	41D
	0.09 … 0.75	0.4 … 2	110	110 … 230	2	**3RM1102-□AA14**		1	1 unit	41D
	0.55 … 3	1.6 … 7	110	110 … 230	2	**3RM1107-□AA14**		1	1 unit	41D
Failsafe reversing starters										
 3RM1301-1AA04	0 … 0.12	0.1 … 0.5	24		2	**3RM1301-□AA04**		1	1 unit	41D
	0.09 … 0.75	0.4 … 2	24		2	**3RM1302-□AA04**		1	1 unit	41D
	0.55 … 3	1.6 … 7	24		2	**3RM1307-□AA04**		1	1 unit	41D
	0 … 0.12	0.1 … 0.5	110	110 … 230	2	**3RM1301-□AA14**		1	1 unit	41D
	0.09 … 0.75	0.4 … 2	110	110 … 230	2	**3RM1302-□AA14**		1	1 unit	41D
	0.55 … 3	1.6 … 7	110	110 … 230	2	**3RM1307-□AA14**		1	1 unit	41D

Type of electrical connection

- Screw terminals for main circuit, screw terminals for control circuit **1**
- Spring-type terminals (push-in) for main circuit, spring-type terminals (push-in) for control circuit **2**
- Screw terminals for main circuit, spring-type terminals (push-in) for control circuit **3**

[1] The actual startup characteristics of the motor as well as its rated data are important factors here.

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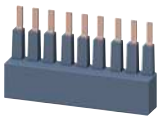
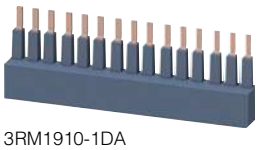
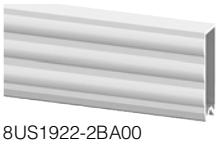
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate.

SIRIUS 3RM1 motor starters

	Product designation	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Three-phase infeed system for 3RM1 with screw terminals							
 3RM1920-1AA	**Three-phase infeed terminals** • for three-phase busbars	2	**3RM1920-1AA**		1	1 unit	41D
	Three-phase busbars						
 3RM1910-1AA	• For 2 motor starters	2	**3RM1910-1AA**		1	1 unit	41D
 3RM1910-1BA	• For 3 motor starters	2	**3RM1910-1BA**		1	1 unit	41D
 3RM1910-1DA	• For 5 motor starters	2	**3RM1910-1DA**		1	1 unit	41D
 3RM1910-6AA	**Covers** For 3 connection tags of the three-phase busbars	2	**3RM1910-6AA**		1	10 units	41D
Fuse modules for 3RM1 for use on busbars or mounting rails	NEW						
 3RM1932-1AB	**Fuse module with 3NW6007-1 fuse**	2	**3RM1932-1AB**		1	1 unit	41D
	Fuse module without fuse[1]	2	**3RM1930-1AA**		1	1 unit	41D
Adapters	NEW						
 8US1216-0AS00	**Adapters for busbar systems** 22.5 mm x 200 mm x 41.5 mm	5	**8US1216-0AS00**		1	1 unit	14O
 8US1616-0AK02	**Adapters for compact busbar systems** 22.5 mm x 160 mm x 41.5 mm	5	**8US1616-0AK02**		1	1 unit	14O

[1] For details of alternative fuses see manual https://support.industry.siemens.com/cs/ww/en/view/66295730.

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

	Product designation	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Adapters		NEW					
 8US1716-0RK00	**Adapters for mounting rails** 22.5 mm x 185 mm x 23.5 mm	5	**8US1716-0RK00**		1	1 unit	14O
Cover profiles[1)2)]							
Cover profiles for busbars							
 8US1922-2CA00	12 mm x 5 mm x 1 000 mm 40 mm or 60 mm center-to-center busbar clearance depending on busbar system	2	**8US1922-2CA00**		1	10 units	14O
 8US1922-2AA00	15 mm x 5 mm x 1 000 mm 20 mm x 5 mm x 1 000 mm 25 mm x 5 mm x 1 000 mm 30 mm x 5 mm x 1 000 mm 40 mm or 60 mm center-to-center busbar clearance depending on busbar system	2	**8US1922-2AA00**		1	10 units	14O
 8US1922-2BA00	12 mm x 10 mm x 1 000 mm 15 mm x 10 mm x 1 000 mm 20 mm x 10 mm x 1 000 mm 25 mm x 10 mm x 1 000 mm 30 mm x 10 mm x 1 000 mm 60 mm center-to-center busbar clearance	2	**8US1922-2BA00**		1	10 units	14O
Device connectors							
 3ZY1212-2EA00	**Device connectors** For 3RM1 motor starters, 24 V DC, 22.5 mm	2	**3ZY1212-2EA00**		1	1 unit	41L
 3ZY1212-2AB00	**Device daisy chain connectors** For 3RM1 motor starters 24 V DC, 22.5 mm for gaps without motor starters in assemblies	2	**3ZY1212-2AB00**		1	1 unit	41L
 3ZY1212-2FA00	**Device termination connectors** For 3RM1 motor starters, 24 V DC, 22.5 mm	2	**3ZY1212-2FA00**		1	1 unit	41L

1) The cover profiles for busbars can be used for maintaining minimum spacing between the load feeders.

2) For further accessories for the configuration of a busbar system, see Catalog LV10, www.siemens.com/industry/infocenter.

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SIRIUS 3RM1 motor starters

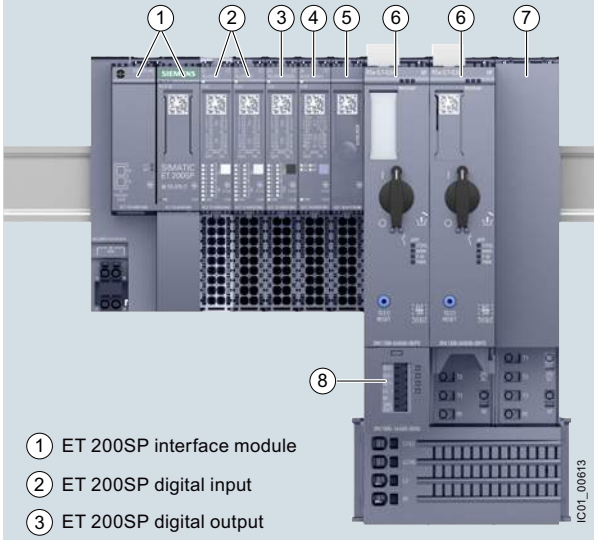
	Product designation	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Removable terminals							
 3ZY1122-1BA00	**Terminal for main circuit, 2-pole**						
	• Screw terminals, 1 x 4 mm²	2	**3ZY1122-1BA00**		1	6 units	41L
	• Spring-type terminals (push-in), 1 x 4 mm²	2	**3ZY1122-2BA00**		1	6 units	41L
 3ZY1131-1BA00	**Terminal for control circuit, 3-pole**						
	• Screw terminals, 1 x 2.5 mm²	2	**3ZY1131-1BA00**		1	6 units	41L
	• Spring-type terminals (push-in), 1 x 2.5 mm²	2	**3ZY1131-2BA00**		1	6 units	41L
Further accessories							
 3ZY1311-0AA00	**Push-in lugs for wall mounting** 2 lugs per device are required	2	**3ZY1311-0AA00**		1	10 units	41L
 3ZY1321-2AA00	**Sealable covers, 22.5 mm** For simple protection against unauthorized access	2	**3ZY1321-2AA00**		1	5 units	41L
 3ZY1440-1AA00	**Coding pins for removable terminals** For mechanical coding of the terminals	2	**3ZY1440-1AA00**		1	12 units	41L

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview

1 ET 200SP motor starter
2 BaseUnit for ET 200SP motor starter
3 3DI/LC module

Motor starter, BaseUnit and 3DI/LC control module



1 ET 200SP interface module
2 ET 200SP digital input
3 ET 200SP digital output
4 ET 200SP analog input
5 Dummy module consisting of BaseUnit + BU cover, 15 mm
6 ET 200SP motor starter
7 Dummy module consisting of BaseUnit + BU cover, 30 mm
8 3DI/LC module

3RK1308 motor starter in the ET 200SP I/O system

More information

Home page, see www.siemens.com/ET200SP-motorstarter
Further components in the ET 200SP distributed I/O system
- Catalog ST 70, see www.siemens.com/industry/infocenter
- Industry Mall, see www.siemens.com/product?ET200SP

ET 200SP motor starters

ET 200SP is a scalable and extremely flexible modular I/O system with IP20 degree of protection.

As I/O modules, the ET 200SP motor starters are an integral part of this I/O system. They are switching and protection devices for single and three-phase loads and are available as direct-on-line or reversing starters.

Basic functionality

All versions of the ET 200SP motor starter feature the following functionality:

- Fully pre-wired motor starters for switching and protecting any AC loads up to 4 kW at 400 V AC and 500 V AC
- With self-assembling 32 A power bus, i.e. the load voltage is only fed in once for a group of motor starters
- All control supply voltages connected only once, i.e. when modules are added they are automatically connected to the next module
- Hot swapping is permissible
- Digital inputs can optionally be used via a 3DI/LC module
- Control of the motor starter from the control system and extensive diagnostics status via the cyclic process image
- Diagnostics capability for active monitoring of the switching and protection functions
- The signal states in the process image of the motor starter provide information about protective devices (short circuit or overload), the switching states of the motor starter, and system faults.

Designing interference-free motor starters

For interference-free operation of the ET 200SP station in accordance with IEC 60947-4-2 standard, use a dummy module before the first motor starter. The dummy module consists of the 6ES7193-6BP00-0BA0 BaseUnit and the 6ES7133-6CV15-1AM0 BU cover 15 mm.

The 15 mm BU cover protects the plug contacts of the BaseUnit against dirt.

Both can be ordered as accessories. See also Catalog ST 70.

ET 200SP motor starters NEW

Article No. scheme

Product versions		Article number														
Motor starters		**3RK1308**	**–**	**0**	**□**	**□**	**0**	**0**	**–**	**0**	**C**	**P**	**0**		
Product function	Direct-on-line starter				**A**										for motor standard output 0.12 ... 4 kW1)
	Reversing starter				**B**										for motor standard output 0.12 ... 4 kW1)
Current range	0.3 ... 1 A					**B**									
	0.9 ... 3 A					**C**									
	2.8 ... 9 A					**D**									
Example		**3RK1308**	**–**	**0**	**A**	**D**	**0**	**0**	**–**	**0**	**C**	**P**	**0**		

1) For standard motors: Single- or three-phase asynchronous motors, single-phase AC motors, single-phase asynchronous motors, at 400 V AC and 500 V AC; the actual startup characteristics of the motor as well as its rated data are important factors here.

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

BaseUnits for motor starters

BaseUnits are components for accommodating the ET 200SP I/O modules. The self-assembling voltage buses integrated into the terminal modules reduce wiring outlay to the single infeed (both of auxiliary and load voltage).

All modules following on the right are automatically supplied upon plugging the BaseUnits together, if BaseUnits are inserted with routing. The rugged design and keyed connection technology enables use in harsh industrial conditions.

The BaseUnits are available with various infeeds for the motor starters.

Article No. scheme

Product versions		Article number														
BaseUnit		**3RK1908**	**–**	**0**	**A**	**P**	**0**	**0**	**–**	**0**	**□**	**P**	**0**		
BU infeed	24 V and 500 V										**A**				
	500 V										**B**				
	24 V										**C**				
	None										**D**				
Example		**3RK1908**	**–**	**0**	**A**	**P**	**0**	**0**	**–**	**0**	**A**	**P**	**0**		

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

3DI/LC control module

This is a digital input module with three inputs for local motor starter functions such as "manual local control", implementation of fast inputs or "end position disconnection".
For a list of all the functions permitted by the 3DI/LC module, see Manual "ET 200SP Motor Starters", "Function overview" section https://support.industry.siemens.com/cs/ww/en/view/109479973.

The module is plugged into the front of the motor starter from which it is supplied with a 24 V DC operating voltage.

Benefits

Product advantages

The ET 200SP motor starters offer a number of advantages:

- Fully integrated into the ET 200SP I/O system (including TIA Selection Tool and TIA Portal)
- Simple, integrated current value transmission
- Extensive parameterization by means of TIA Portal
- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Greater endurance and reduced heat losses thanks to hybrid technology
- Less space required in the control cabinet (20 to 80 %) as a result of greater functional density (direct-on-line and reversing starters in same width)
- Extensive diagnostics and information for preventive maintenance
- Parameterizable inputs via 3DI/LC control module
- Less wiring and testing required as a result of integrating several functions into a single device
- Lower overheads for stock keeping and configuration as a result of the wide setting range of the electronic overload release (up to 1:3)
- Technology-reduced inherent power loss as speed-controlled drive systems, enabling also lower cooling effort required (and enabling a more compact design)

The ET 200SP motor starters can be used with highly energy-efficient IE3/IE4 motors.

For more information on IE3/IE4, see the Preface, page 7.

Standards and approvals

- IEC/EN 60947-4-2
- UL 508
- CCC approval for China

Application

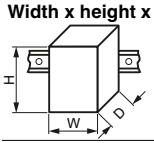
The ET 200SP motor starters are suitable for the following applications:

- Switching and monitoring of
  - three-phase motors with overload and short-circuit protection (e.g. 400 V asynchronous motors for secondary drives in conveyor systems)
  - single-phase motors with overload and short-circuit protection (e.g. 250 V motors for pump applications)
  - resistive loads by means of current value and diagnosis via the maintenance function (e.g. for heaters)
- Plant monitoring and energy management in conveyor systems:
  By means of the phase unbalance and zero current detection, for example, it is possible to monitor drive belts and blocking.
- Track switching and lifting table control in conveyor systems:
  Track switches can be implemented by means of the quick stop function and lifting table controls by means of the "immediate end position disconnection" function without any laborious programming.
- Safe isolation of drive from main power supply:
  The isolating functions in accordance with IEC 60947-1 offer protection against inadvertent activation during plant maintenance.

Technical specifications

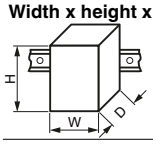
More information	
Industry Mall, see www.siemens.com/product?3RK1308	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/21800/faq
Manual, see https://support.industry.siemens.com/cs/ww/en/view/109479973	

ET 200SP motor starters

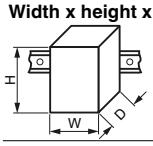
Article number		3RK1308-0.B00-0CP0	3RK1308-0.C00-0CP0	3RK1308-0.D00-0CP0
Product designation		**Motor starters**		
General technical specifications:				
Width x height x depth	mm	30 × 142 × 150		
				
Design of the switch contact		Hybrid		
Design of the motor protection		Electronic		
Installation altitude at height above sea level maximum	m	2 000		
Mounting position		Vertical, horizontal, flat (observe derating)		
Type of mounting		Can be plugged into BaseUnit		
Ambient temperature				
• During operation	°C	-25 ... +60		
• During transport	°C	-40 ... +70		
• During storage	°C	-40 ... +70		
Relative humidity during operation	%	10 ... 95		
Vibration resistance		15 mm up to 6 Hz; 2 *g* up to 500 Hz		
Shock resistance		6 *g* / 11 ms		
IP degree of protection		IP20		
Type of coordination		1		
Electrical data:				
Operating frequency, rated value	Hz	50 ... 60		
Ultimate short-circuit current breaking capacity (I_{cu})				
• at 400 V rated value	kA	55		
• at 500 V rated value	kA	55		
Adjustable current response value of the inverse-time delayed overload release	A	0.3 ... 1	0.9 ... 3	2.8 ... 9
Maximum permissible voltage for protective separation				
• between main and auxiliary circuit	V	500		
• between control and auxiliary circuit	V	75		
Insulation voltage, rated value	V	500		
Trip class		CLASS 5 and 10 adjustable		

ET 200SP motor starters NEW

BaseUnits for motor starters

Article number		3RK1908-0AP00-0AP0	3RK1908-0AP00-0BP0	3RK1908-0AP00-0CP0	3RK1908-0AP00-0DP0
Product designation		**BaseUnit**			
General technical specifications:					
Width x height x depth	mm	30 × 217 × 75			
					
Ambient temperature					
• During operation	°C	-25 ... +60			
• During transport	°C	-40 ... +70			
• During storage	°C	-40 ... +70			
IP degree of protection		IP20			
Touch protection against electric shock		Finger-safe			
Connections / terminals:					
Connectable conductor cross-section for main contacts					
• Solid or stranded	mm²	1 ... 6			
• Finely stranded with end sleeve	mm²	1 ... 6			
• Finely stranded without end sleeve	mm²	1 ... 6			
Connectable conductor cross-section at DC input					
• Solid or stranded	mm²	0.5 ... 2.5		--	
• Finely stranded with end sleeve	mm²	0.5 ... 2.5		--	
• Finely stranded without end sleeve	mm²	0.5 ... 2.5		--	
AWG number as coded connectable conductor cross-section					
• For main contacts		18 ... 10			
• At DC input		20 ... 12		--	
Type of electrical connection for auxiliary and control circuits		Spring-type terminals (push-in)			
Miscellaneous:					
Type of screwdriver tip		Slotted			
Size of screwdriver tip		Standard screwdriver 0.6 mm x 3.5 mm			

3DI/LC control module

Article number		3RK1908-1AA00-0BP0
Product designation		**3DI/LC control module**
General technical specifications:		
Width x height x depth	mm	30 × 54.5 × 42.3
		
Number of digital inputs		4
Installation altitude at height above sea level maximum	m	2000
Mounting position		Vertical, horizontal, flat
Type of mounting		Can be plugged onto motor starter
Ambient temperature		
• During operation	°C	-25 ... +40
• During transport	°C	-40 ... +70
• During storage	°C	-40 ... +70
Connections / terminals:		
Connectable conductor cross-section for auxiliary contacts		
• Solid or stranded	mm²	0.2 ... 1.5
• Finely stranded with end sleeve	mm²	0.2 ... 1.5
• Finely stranded without end sleeve	mm²	0.2 ... 1.5
AWG number as coded connectable conductor cross-section		24 ... 16
Type of electrical connection for the auxiliary and control circuits		Spring-type terminals (push-in)
Electrical data:		
Type of voltage of the control supply voltage		DC
Control voltage 1 at DC rated value	V	20.4 ... 28.8
Miscellaneous:		
Type of screwdriver tip		Slotted
Size of screwdriver tip		Standard screwdriver 0.6 mm x 3.5 mm

Selection and ordering data

	Rating for AC-3 at 400 V rated value	Adjustable current response value of the inverse-time delayed overload release	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	kW	A	d					
Motor starters								
Direct-on-line starters								
 3RK1308-0AB00-0CP0	0.25	0.3 ... 1	2	**3RK1308-0AB00-0CP0**		1	1 unit	42D
	1.1	0.9 ... 3	2	**3RK1308-0AC00-0CP0**		1	1 unit	42D
	4	2.8 ... 9	2	**3RK1308-0AD00-0CP0**		1	1 unit	42D
Reversing starters								
 3RK1308-0BB00-0CP0	0.25	0.3 ... 1	2	**3RK1308-0BB00-0CP0**		1	1 unit	42D
	1.1	0.9 ... 3	2	**3RK1308-0BC00-0CP0**		1	1 unit	42D
	4	2.8 ... 9	2	**3RK1308-0BD00-0CP0**		1	1 unit	42D

	Type of product	Operational voltage Maximum rated value	Control supply voltage at DC rated value	SD	**Spring-type terminals (push-in)** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V	V	d					
BaseUnits[1]									
 3RK1908-0AP00-0AP0	for AC/DC infeed	500	20.4 ... 28.8	2	**3RK1908-0AP00-0AP0**		1	1 unit	42D
	for AC infeed	500	20.4 ... 28.8	2	**3RK1908-0AP00-0CP0**		1	1 unit	42D
	for DC infeed	500	20.4 ... 28.8	2	**3RK1908-0AP00-0BP0**		1	1 unit	42D
	without infeed	500	20.4 ... 28.8	2	**3RK1908-0AP00-0DP0**		1	1 unit	42D

[1] The voltage is looped-through from BaseUnits with infeed to subsequent BaseUnits.

	Control supply voltage at DC rated value	Product function: Local control	Product function: Digital inputs parameterizable	SD	**Spring-type terminals (push-in)** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V			d					
3DI/LC control module									
 3RK1908-1AA00-0BP0	20.4 ... 28.8	Yes	Yes	2	**3RK1908-1AA00-0BP0**		1	1 unit	42D

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

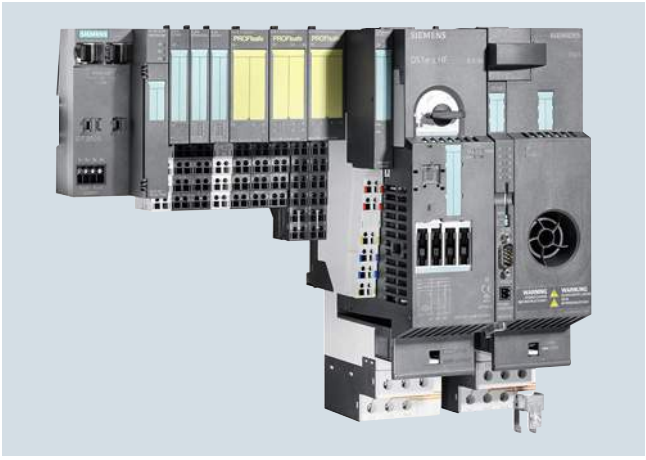
ET 200SP motor starters NEW

	Product designation	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories							
 3RK1908-1CA00-0BP0	**BaseUnit cover**	2	**3RK1908-1CA00-0BP0**		1	1 unit	42D
 3RK1908-1DA00-2BP0	**Infeed bus cover**	2	**3RK1908-1DA00-2BP0**		1	10 units	42D
 3RK1908-1EA00-1BP0	**Mechanical bracket**	2	**3RK1908-1EA00-1BP0**		1	5 units	42D
 3RW4928-8VB00	**Fan**	►	**3RW4928-8VB00**		1	1 unit	42G

8

* You can order this quantity or a multiple thereof.
Illustrations are approximate.

Overview



The SIMATIC ET 200SP, the successor system of the proven SIMATIC ET 200S, which has been established since 2012, offers a number of advantages.

This is why we advise you to use the successor system SIMATIC ET 200SP for new automation concepts.

Besides the well-known positive system characteristics of the SIMATIC ET 200S such as:

- Bit-modular design for exact adaptation to the automation task
- Permanent wiring (replacement of I/O modules without influencing the wiring, even during operation)
- Connection to PROFINET and PROFIBUS

the SIMATIC ET 200SP offers further innovative system advantages over the SIMATIC ET 200S:

- Faster and more compact setup
  - Space savings of up to 50 % in the control cabinet with unchanged conductor cross-section range
  - Tool-free one-handed wiring through push-in terminals
  - Reduced variety of parts with increased scope of functions
  - System-integrated self-assembling load group formation without power modules
  - Up to 16 channels per module and 1024 channels per station
  - Flexible PROFINET connection via bus adapters (RJ45, FastConnect, plastic or glass fiber optic cables) also as an integrated media converter
  - System-integrated shield terminal
- Enhanced performance
  - Short response times and isochronous mode for motion applications
  - Fast data acquisition (digital as from 1 µs, analog as from 50 µs) and transmission (up to 100 Mbit/s): For digital signals with time-based IO for exactly timed control independently of bus cycles; Oversampling for analog and digital signals: n-fold acquisition or output of signals within one PN cycle

More information

Homepage:

- ET200S motor starters: see www.siemens.com/ET200S-motorstarter
- ET200SP motor starters: see www.siemens.com/ET200SP-motorstarter

Further components in the ET 200S/ET 200SP distributed I/O system

- Catalog ST 70, see www.siemens.com/industry/infocenter
- Industry Mall
  - SIMATIC ET200S: see www.siemens.com/product?ET200S
  - SIMATIC ET200SP: see www.siemens.com/product?ET200SP

- Additional functions
  - Recording a machine's consumption, e.g. power, with integrated energy meter (up to 480 V)
  - Comprehensive diagnostics functions (e.g. open-circuit and short-circuit) already in the modules belonging to the standard function class
  - System-integrated fail-safe modules (PROFIsafe) with simplified switchless address setting
  - Extended configuration control for easy handling of options
  - Operation with gaps
  - Multi Hot Swapping
  - Broader module spectrum (AS-i, AS-i Safety, additional CPU versions, Open Controller, etc.)
  - MSI/MSO: simultaneous access to input and output data of up to four controllers
  - Range adaptation: Enhanced resolution thanks to adjustment of the measuring range to a limited section of a measuring range supported by the analog input module
  - Station expansion by system-integrated IP67 components (ET 200AL)

Notes

Note:
For the conversion tool, see www.siemens.com/sirius/conversion-tool

Introduction

Overview

3RK1304

3RK1315

		Article No.	Page
ET 200pro motor starters			
Motor starters in the I/O system SIMATIC ET 200pro up to 5.5 kW			
Standard motor starters		**3RK1304**	9/8
High Feature motor starters		**3RK1304**	9/9
ET 200pro isolator modules	• With switch disconnector function for safe disconnection	**3RK1304**	9/10
Safety modules local	• Isolator module, 400 V disconnecting module	**3RK1304**	9/11
Safety modules PROFIsafe	• F-Switch PROFIsafe	**6ES7148**	9/14
Accessories for ET 200pro motor starters	• Incoming power supply, power loop-through connection on the field device, motor cable, power bus with power terminal connectors	**3RK19**	9/15
ET 200pro – interface modules	• For communication with PROFIBUS, PROFINET and IWLAN	**6ES71**	9/20
ET 200pro CPUs	• Standard CPUs, fail-safe CPUs	**6ES71**	9/24
ET 200pro – I/O modules	• Digital/analog expansion modules, fail-safe expansion modules, power modules, ET 200pro pneumatic interfaces	**6ES71**	9/30
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SIRIUS M200D Motor Starters			
Distributed motor starters up to 5.5 kW			
M200D AS-i Basic motor starters		**3RK1315**	9/44
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M200D communication modules for PROFIBUS		**3RK1305**	9/52
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M200D motor starter modules		**3RK1395**	9/52
Accessories	• Incoming power supply, motor cable, power bus with power terminal connectors	**3RK1911**	9/56
	• Motor control with I/O communication	**3RK1902**	9/58
	• Motor control with AS-i communication	**3RK1902**	9/59
	• Motor control with PROFIBUS	**3RK1902**	9/61
	• Motor control with PROFINET	**3RK1902**	9/62
Motor starters for AS-Interface, 24 V DC			
	• For the low-end performance range up to 70 W		
	• Quick and easy connection of 24 V DC motors and related sensors directly on-site to AS-Interface		
3 versions	• Single direct-on-line starters, double direct-on-line starters, reversing starters	**3RK1400-1**	9/65
Hybrid fieldbus connections			
	• Passive and active	**3RK1911**	9/67

Flexible and cost-efficient distributed starter solutions

Be it their high degree of protection, compact design or integrated multifunctionality – our motor starters and soft starters for use in the field are ideal for realizing distributed drive solutions. The modular concepts, distributed power distribution and integrated safety technology of our portfolio for a high degree of protection consistently supports current trends in drive technology.

Overview

ET 200pro motor starters in I/O system ET 200pro

SIMATIC ET 200pro is the modular I/O system with high IP65/66/67 degree of protection for local, cabinet-free use. The ET 200pro motor starters with the high degree of protection IP65 are an integral part of ET 200pro.

ET 200pro motor starter: Isolator module, Standard starter and High Feature starter mounted on a wide module rack

ET 200pro motor starters

- Only two variants up to 5.5 kW
- All settings can be parameterized by bus
- Comprehensive diagnostic signals
- Support for PROFIenergy
- Overload can be acknowledged by remote reset
- Current unbalance monitoring
- Stall protection
- EMERGENCY START function on overload
- Current value transmission by bus
- Current limit monitoring
- Full support of acyclic services
- Direct-on-line or reversing starters
- Power bus connection can be plugged in using Han Q4/2 plug-in connectors
- Motor feeder with Han Q8/0 connector
- Conductor cross-section up to 6 x 4 mm^2
- 25 A per segment (power looped through using jumper plug)
- In the Standard and High Feature versions (with 4 DI onBoard)
- Electromechanical switching and electronic switching
- Electronic starter for direct activation or with integrated soft starter function
- Supplied with 400 V AC brake contact as an option
- Temperature sensor can be connected (Thermoclick or PTC type A)
- Provision of the motor current in PROFIenergy format to higher-level systems, motor current shutdown in dead times using PROFIenergy

ET 200pro isolator modules (see page 9/10)

The isolator module with switch disconnector function is used for safe disconnection of the 400 V operational voltage during repair work in the plant and provides an integrated group fusing function (i.e. additional group short-circuit protection for all subsequently supplied motor starters).

Depending on the power distribution concept, all stations can be equipped with an isolator module as an option.

More information

Home page, see www.siemens.com/ET200pro
Industry Mall, see www.siemens.com/product?3RK1304
Further components in the ET 200pro distributed I/O system:
- Catalog ST 70, see www.siemens.com/industry/infocenter
- Industry Mall, see www.siemens.com/product?ET200pro

Safety applications

Safety Solution local (see page 9/11)

With the Safety local modules
- Safety local isolator module and
- 400 V disconnecting module

with an appropriate connection, safety level PL e (according to ISO 13849-1) can be reached.

Safety Solution PROFIsafe (see page 9/14)

With the Safety PROFIsafe modules
- F-Switch and
- 400 V disconnecting module

With an appropriate connection, safety levels SIL 3 (according to IEC 62061) and PL e (according to ISO 13849-1) can also be reached.

Functionality

With the ET 200pro motor starters, any three-phase loads can be protected and switched.

The ET 200pro motor starters are available with mechanical and also electronic contacts.

The ET 200pro electromechanical starters are offered as direct-on-line starters (DSe) and reversing starters (RSe) as **Standard** and **High Feature** versions. There are device versions with or without control for externally fed brakes with 400 V AC.

Compared with the Standard motor starters, the **High Feature, mechanical** motor starter also has:
- Four digital inputs
- Advanced parameterization options

The ET 200pro electronic starters are offered as direct-on-line starters (sDSSte/sDSte) and reversing starters (sRSSte/sRSte) in the High Feature version:

Compared with the High Feature mechanical motor starters, the **High Feature electronic** motor starter also has:
- Soft starting and smooth ramp-down function
- Deactivated soft start function as an electronic starter for applications with a high switching frequency
- Advanced parameterization options

As a result of the protection concept with solid-state overload evaluation and the use of SIRIUS switching devices, size S00, additional advantages are realized on the Standard and High Feature motor starters - advantages that soon make themselves positively felt particularly in manufacturing processes with high plant stoppage costs:
- Configuration is made easier by the fine modular structure with ET 200pro. When using ET 200pro motor starters, the parts list per load feeder is reduced to two main items: the bus module and the motor starter. This makes the ET 200pro ideal for modular machine concepts or solutions for conveying systems and in machine-tool building.

General data

- Expansions are easily possible through the subsequent adding of modules. The innovative plug-in technology also does away with the wiring needed up to now. Through the hot swapping function (disconnection and connection during operation) a motor starter can be replaced within seconds if necessary, without having to shut down the ET 200pro station and with it the process in the plant. The motor starters are therefore recommendable in particular for applications with special demands on availability. Storage costs are also optimized by the low level of variance (two units up to 5.5 kW).

With four locally acting inputs available on the High Feature motor starter it is possible to realize autonomous special functions that work independently of the bus and the higher level control system, e.g. as a quick stop on gate valve controls or limit position disconnectors. In parallel with this, the states of these inputs are signaled to the control system.

Article No. scheme

Product versions		**Article number**									
Motor starters		**3RK1304**	**–**	**5**	**□**	**S**	**□**	**0**	**–**	**□**	**A A**	**□**	
Setting range	0.15 ... 2.0 A				**K**								
	1.5 ... 12 A				**L**								
Product function	Direct-on-line starters DSe						**4**			**4**			Standard
	Reversing starters RSe						**4**			**5**			Standard
	Direct-on-line starters DSe						**4**			**2**			High Feature
	Reversing starters RSe						**4**			**3**			High Feature
	Direct-on-line starter sDSSSte/sDSte						**7**			**2**			High Feature
	Reversing starter sDSSSte/sDSte						**7**			**3**			High Feature
Inputs/outputs	Without brake output											**0**	
	With brake output											**3**	400 V AC, with High Feature + 4 inputs
Example		**3RK1304**	**–**	**5**	**K**	**S**	**4**	**0**	**–**	**4**	**A A**	**0**	

Product versions		**Article number**										
Modules		**3RK1304**	**–**	**0**	**H**	**S**	**0**	**0**	**–**	**□**	**A A**	**0**	
Product function	Isolator modules									**6**			
	Isolator modules									**7**			Safety modules local
	400 V disconnecting module									**8**			Safety modules local/PROFIsafe
Example		**3RK1304**	**–**	**0**	**H**	**S**	**0**	**0**	**–**	**6**	**A A**	**0**	

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Type		Standard motor starters	High Feature motor starters	
Technology designation[1]		DSe, RSe	DSe, RSe	sDSSte, sDSte, sRSSte, sRSte
Device functions (firmware features)				
Parameterizable rated operational current		✓		
Integrated short-circuit protection		✓		
Parameterizable current limit values		--	✓ 2 limit values	
Parameterizable response in case of current limit violation		--	✓	
Zero current monitoring		✓		
Parameterizable response in case of zero current violation		✓		
Parameterizable current unbalance limit	%	-- Fixed limit value (30 x I_e)	✓ 30 ... 60 x I_e	
Parameterizable response in case of unbalance limit violation		✓		
Motor blocking monitoring		--	✓	
Parameterizable blocking current limit	%	--	✓ 150 ... 1 000 x I_e	
Parameterizable blocking time limit	s	--	✓ 1 ... 5	
Current value transmission		✓		
Group warning diagnostics		--	✓ Parameterizable	
Group diagnostics		✓ Parameterizable		
EMERGENCY START		✓		
Digital inputs		--	✓ 4 inputs	
• Parameterizable input signal		--	✓ Latching/non-latching	
• Parameterizable input level		--	✓ NC/NO	
• Parameterizable input signal delay	ms	--	✓ 10 ... 80	
• Parameterizable input signal extension	ms	--	✓ 0 ... 200	
• Parameterizable input control actions		--	✓ 12 different actions	
Brake output (400 V AC)		✓ Order option		
Parameterizable brake enabling delay	s	✓ -2.5 ... +2.5		
Parameterizable holding time of the brake during stopping	s	✓ 0 ... 25		
Parameterizable start up type		--		✓
Parameterizable ramp-down time		--		✓
Parameterizable starting voltage		--		✓
Parameterizable stopping voltage		--		✓
Local device interface		✓		
Firmware update		✓ By specialists		
Thermal motor model		✓		
Parameterizable trip class		-- CLASS 10 fixed	✓ CLASS 5, 10, 15, 20	
Parameterizable response in case of overload of thermal motor model		--	✓ 3 possible states	
Advance warning limit for motor heating	%	--	✓ Parameterizable 0 ... 95	
Advance warning limit time-related trip reserve	s	--	✓ Parameterizable 0 ... 500	
Parameterizable recovery time	min	--	✓ 1 ... 30	
Parameterizable protection against voltage failure		-- Permanently integrated	✓	
Reversing start function		✓ Order option		
Parameterizable interlock time for reversing starters		-- 150 ms fixed	✓ 0 ... 60 s	
Integrated logbook functions		✓ 3 device logbooks		
Integrated statistics data memory		✓		
Parameterizable response in case of CPU/master stop		✓		
PROFIenergy profile support				
• Disconnection of the motor current during idle times		✓		
• Measured motor current values		✓		
Device indications				
• Group fault		SF LED (red)		
• Switching state		STATE LED (red, yellow, green)		
• Device status		DEVICE LED (red, yellow, green)		
• Digital inputs		--	IN 1 ... IN 4, LED	

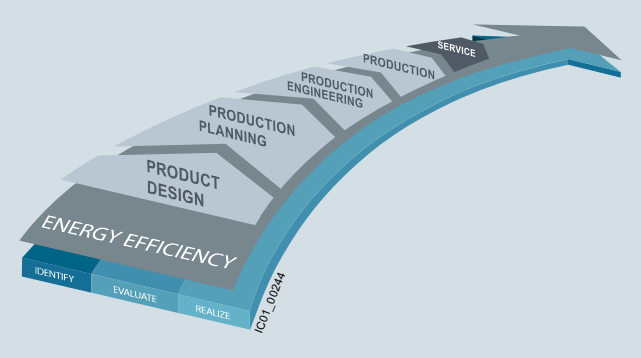
✓ Function available

-- Function not available

[1] DS .... Direct-on-line starters
RS .... Reversing starters
DSS .. Direct-on-line soft starters
RSS .. Reversing soft starters
e ..... Electronic motor protection
te ..... Full motor protection (thermal + electronic)
s ..... Electronic switching with semiconductor.

Benefits

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see www.siemens.com/sirius/energysaving).

SIMATIC ET 200pro motor starters contribute to energy efficiency as follows:

- Energy management:
  Provision of energy data (current) by bus to higher-level systems using PROFIenergy
- Elimination of energy consumption in dead times through disconnection using PROFIenergy
- Current management:
  With the electronic soft starter, avoidance of current peaks, thus reducing the load on the grid and the mechanical system
- Depending on technology, lower intrinsic power loss than speed-controlled drive systems
- Solid-state modules equipped with soft start technology with bypass contactor, resulting in lower power losses than with conventional soft starters after start up

Product advantages

ET 200pro motor starters provide the following advantages:

- High flexibility thanks to a modular and compact design
- Little variance among all motor starter versions
  (two units up to 5.5 kW)
- Extensive parameterization using STEP 7 HW Config
- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Extensive diagnostics and information for preventive maintenance
- Parameterizable inputs for on-site control functions
  (High Feature)
- Cabinet-free design thanks to high degree of protection IP65

Application

The SIMATIC ET 200pro motor starters are ideal for the use of several spatially concentrated distributed drive solutions in which several motors, or digital or analog sensors and actuators are addressed from a distributed station. They are perfectly suited for protecting and switching any AC loads.

Use of ET 200pro motor starters in conjunction with IE3/IE4 motors

Note:

For the use of ET 200pro motor starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring; see "Application Manual for SIRIUS Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820.

For more information see Preface, page 7.

Application areas

The SIMATIC ET 200pro motor starters are suitable for numerous sectors of industry, e.g. machinery and plant engineering or conveying applications.

Technical specifications

More information	
"AS-Interface Basic" manual, see https://support.industry.siemens.com/cs/ww/en/view/35016496 "AS-Interface Standard" manual, see https://support.industry.siemens.com/cs/ww/en/view/38722160	Note on security: For plant networking, suitable protective measures (including IT security, e. g. network segmentation) must be taken to ensure safe operation of the plant. For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Type		Standard motor starters	High Feature motor starters	
		Mechanically switching without inputs	Mechanically switching with inputs	Mechanically switching with inputs and soft starter function
Technology designation[1]		**DSe, RSe**	**DSe, RSe**	**sDSSte, sDSte, sRSSte, sRSte**
Mechanics and environment				
Motor starters or modules that can be connected to ET 200pro with 110 mm width		max. 8		
Mounting dimensions (W x H x D)				
• Direct-on-line starters and reversing starters	mm	110 x 230 x 150		110 x 230 x 160
Permissible ambient temperature				
• During operation	°C	-25 ... +55, from +40 with derating		
• During storage	°C	-40 ... +70		
Permissible mounting position		Vertical, horizontal		
Vibration resistance acc. to IEC 60068, Part 2-6	*g*	2		
Shock resistance acc. to IEC 60068, Part 2-27	*g*/ms	Half-sine 15/11		
Degree of protection		IP65		
Pollution degree		3, IEC 60664 (IEC 61131)		
Electrical specifications				
Current consumption at 24 V DC				
• From auxiliary circuit L+/M (U1)	mA	Approx. 40		
• From auxiliary circuit A1/A2 (U2)	mA	Approx. 200		
Rated operational current I_e for power bus	A	25		
Rated operational voltage U_e	V AC	400 (50/60 Hz)		
• Approval according to EN 60947-1, Appendix N	V AC	Up to 400 (50/60 Hz)		Up to 400 (50/60 Hz)
• Approval according to CSA and UL	V AC	Up to 600 (50/60 Hz)		Up to 480 (50/60 Hz)
Approval				
• DIN VDE 0106, Part 101	V	Up to 400		Up to 480
• CSA and UL approval	V	Up to 600		Up to 480
Conductor cross-sections				
• Incoming power supply	mm^2	max. 6 x 4		
Touch protection		Finger-safe		
Rated impulse withstand voltage U_{imp}	kV	6		
Rated insulation voltage U_i	V	400		
Rated operational current for starters I_e				
• AC-1/2/3 at 40 °C				
- At 400 V	A	0.15 ... 2.0/1.5 ... 12.0		0.15 ... 2.0/1.5 ... 12.0[2]
- At 500 V	A	0.15 ... 2.0/1.5 ... 9.0		
• AC-4 at 40 °C				
- At 400 V	A	0.15 ... 2.0/1.5 ... 4.0		
Rated short-circuit breaking capacity	kA	100 at 400 V		
Type of coordination acc. to IEC 60947-4-1		1		
Power of three-phase motors at 400 V	kW	Max. 5.5		Max. 5.5/4[3]
Utilization categories		AC-1, AC-2, AC-3, AC-4		AC-53a[4] (max. 9 A with deactivated soft start function up to CLASS 10)
Protective separation between main and auxiliary circuits	V	400, acc. to EN 60947-1, Appendix N		
Endurance of contactor				
• Mechanical	Operating cycles	30 million		--
• Electrical	Operating cycles	Up to 10 million; depending on the current loading (see manual[5])		--
Permissible switching frequency		Depending on the current load, motor starting time, and relative ON period (see manual[5])		
Switching times at 0.85 ... 1.1 x U_e				
• Closing delay	ms	11 ... 50		--
• Opening delay	ms	5 ... 45		--

[1] DS .... Direct-on-line starters
RS .... Reversing starters
DSS .. Direct-on-line soft starters
RSS .. Reversing soft starters
e ..... Electronic motor protection
te ..... Full motor protection (thermal + electronic)
s ..... Electronic switching with semiconductor.

[2] If the soft starter control function is deactivated, the permissible rated operational current is reduced to 9 A up to CLASS 10.

[3] With parameterization as electronic starter max. 4 kW.

[4] 8-hour operation.

[5] https://support.industry.siemens.com/cs/ww/en/view/22332388.

Overview

The functionality, device functions, and technical specifications of the Standard motor starter are described in "ET 200pro Motor Starters, General Data" (see from page 9/3).

Selection and ordering data

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Standard motor starters, mechanical Motor protection: thermal model						
Direct-on-line starters DSe[1]						
• Without brake output	2	**3RK1304-5□S40-4AA0**		1	1 unit	42D
• With brake output 400 V AC	2	**3RK1304-5□S40-4AA3**		1	1 unit	42D
Reversing starters RSe[1]						
• Without brake output	2	**3RK1304-5□S40-5AA0**		1	1 unit	42D
• With brake output 400 V AC	2	**3RK1304-5□S40-5AA3**		1	1 unit	42D
Setting range Rated operational current			Additional price			
• 0.15 ... 2.0 A		**K**	None			
• 1.5 ... 12.0 A		**L**	✓			

DSe Standard

[1] Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters", page 9/19).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

The functionality, device functions, and technical specifications of the High Feature motor starter are described in "ET 200pro Motor Starters, General Data" (see from page 9/3).

The High Feature motor starter differs from the Standard motor starter in having more parameters and four integrated, freely-parameterizable digital inputs.

Selection and ordering data

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
High Feature motor starters, mechanical Motor protection: thermal model						
 RSe High Feature	**Direct-on-line starters DSe[1]**					
• Without brake output and with 4 inputs	2	**3RK1304-5□S40-2AA0**		1	1 unit	42D
• With brake output 400 V AC and 4 inputs	5	**3RK1304-5□S40-2AA3**		1	1 unit	42D
	Reversing starters RSe[1]					
• Without brake output and with 4 inputs	2	**3RK1304-5□S40-3AA0**		1	1 unit	42D
• With brake output 400 V AC and 4 inputs	2	**3RK1304-5□S40-3AA3**		1	1 unit	42D
Setting range Rated operational current			Additional price			
• 0.15 ... 2.0 A		**K**	None			
• 1.5 ... 12.0 A		**L**	✓			
High Feature motor starters[2], electronic Full motor protection, comprising thermal motor protection and thermistor motor protection						
 sRSSte High Feature	**Direct-on-line starters sDSSte/sDSte[1][2]**					
• Without brake output and with 4 inputs	2	**3RK1304-5□S70-2AA0**		1	1 unit	42D
• With brake output 400 V AC and 4 inputs	5	**3RK1304-5□S70-2AA3**		1	1 unit	42D
	Reversing starters sRSSte/sRSte[1][2]					
• Without brake output and with 4 inputs	2	**3RK1304-5□S70-3AA0**		1	1 unit	42D
• With brake output 400 V AC and 4 inputs	2	**3RK1304-5□S70-3AA3**		1	1 unit	42D
Setting range Rated operational current			Additional price			
• 0.15 ... 2.0 A		**K**	None			
• 1.5 ... 12.0 A		**L**	✓			

1) Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro Motor Starters" on page 9/19).

2) The solid-state motor starters can be used not only as solid-state motors starters with a high level of switching frequency but also as fully fledged soft starters for soft starting and stopping. The changeover from motor starter to soft starter takes place through reparameterization in HW Config. Depending on the setting, this results in the following current ranges:
- Parameterization as solid-state motor starter: 0.15 to 2 A and 1.5 to 9 A (4 kW)
- Parameterization as soft starter: 0.15 to 2 A and 1.5 to 12 A (5.5 kW).

ET 200pro isolator modules *IE3/IE4* ready

Overview

The isolator module with integrated group fusing function (i.e. additional group short-circuit protection for all subsequently supplied motor starters) and switch disconnector function is used for safe disconnection of the 400 V operational voltage in the plant.

Depending on the power distribution concept, all stations can be equipped with an isolator module as an option.

The following properties apply to the isolator module:

- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Cabinet-free design thanks to high degree of protection IP65

The isolator module is available in addition in a safety version (see page 9/11, "Safety local Isolator Modules").

Technical specifications

Type		Isolator modules
General data		
Mounting dimensions (W x H x D)		
• Direct-on-line starters and reversing starters	mm	110 x 230 x 170
Permissible ambient temperature		
• During operation	°C	-25 ... +55
• During storage	°C	-40 ... +70
Permissible mounting position		Any
Vibration resistance acc. to IEC 60068 Part 2-6	*g*	2
Shock resistance acc. to IEC 60068 Part 2-27	*g*/ms	Half-sine 15/11
Power consumption		
• From auxiliary circuit L+/M (U1)	mA	Approx. 20
• From auxiliary circuit A1/A2 (U2)		--
Rated operational current I_e for power bus	A	25
Rated operational voltage U_e	V	400
Approvals according to		
• DIN VDE 0106, Part 101	V	Up to 500
• CSA and UL	V	Up to 600
Conductor cross-sections		
• Incoming power supply	mm^2	max. 6 x 4

Type		Isolator modules
Degree of protection		IP65
Touch protection		Finger-safe
Pollution degree		3, IEC 60664 (IEC 61131)
Rated impulse withstand voltage U_{imp}	kV	6
Rated insulation voltage U_i	V	400
Rated operational current for starters I_e		
• AC-1/2/3 at 40 °C		
- At 400 V	A	25
- At 500 V	A	25
Rated short-circuit breaking capacity	kA	50 at 400 V
Type of coordination acc. to IEC 60947-4-1		2
Protective separation between main and auxiliary circuits	V	400, Acc. to DIN VDE 0106 Part 101
Device functions		
• Group diagnostics		Yes, parameterizable
Device indications		
• Group fault		SF LED (red)

Selection and ordering data

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
ET 200pro isolator modules, mechanical						
Isolator modules[1] Rated operational current 25 A	2	**3RK1304-0HS00-6AA0**		1	1 unit	42D

3RK1304-0HS00-6AA0

[1] Only functions when used together with the related 110 mm backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see page 9/19, "Accessories for ET 200pro Motor Starters").

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Safety Solution local

With the Safety local modules
- Safety local isolator module and
- 400 V disconnecting module

with an appropriate connection, safety level PL e (according to ISO 13849-1) can be reached.

ET 200pro motor starters (Safety Solution local):
Safety local isolator module, disconnecting module, Standard starter and High Feature starter mounted on a wide module rack

Safety local isolator module

The Safety local isolator module is a repair switch with integrated safety evaluation functions that can be parameterized using DIP switches.

It is used for
- Connection of a 1 or 2-channel EMERGENCY-STOP circuit up to PL e (protective door or EMERGENCY-STOP pushbuttons) and parameterizable start behavior
- For controlling the 400 V disconnecting module by means of a safety rail signal

400 V disconnecting module

The 400 V disconnecting module enables the safe disconnection of an operational voltage of 400 V up to PL e. For operation in a Safety Solution local application, it functions only in combination with the Safety local isolator module.

For operation in a Safety PROFIsafe application it functions only in combination with the F-Switch.

Functionality

Safety local isolator module

The Safety local isolator module features the same functions as a standard isolator module with an additional local safety function.

The Safety local isolator module contains a 3TK2841 module and is equipped with M12 terminals for the connection of external safety components.

Terminals 1 and 2 can be used to connect either 1-channel or 2-channel EMERGENCY-STOP circuits or protective door circuits (IN 1, IN 2).

For monitored starts, an external START switch can be connected to terminal 3.

The required safety functions can be set using two slide switches located under the left M12 opening.

In the event of an EMERGENCY-STOP, the Safety local isolator module trips the downstream 400 V disconnecting module. This safely separates the 400 V circuit up to PL e.

In combination with the 400 V disconnecting module, the Safety local isolator module can be used for safety applications up to PL e.

400 V disconnecting module

The 400 V disconnecting module can be used together with the Safety local isolator module for local safety applications and together with the F-Switch for PROFIsafe safety applications.

It contains two contactors connected in series for safety-related disconnection of the main circuit.

The auxiliary circuit supply of the device is over a safety power rail in the backplane bus module.

The 400 V disconnecting module can be used in conjunction with the Safety local isolator module or with the F-Switch for safety applications up to PL e.

Technical specifications

Type		Safety local isolator module	400 V disconnecting module
General data			
Mounting dimensions (W x H x D) in mm			
• Direct-on-line starters and reversing starters	mm	110 x 230 x 170	110 x 230 x 150
Permissible ambient temperature			
• During operation	°C	-25 ... +55	
• During storage	°C	-40 ... +70	
Permissible mounting position		Any	
Vibration resistance acc. to IEC 60068, Part 2-6		2 *g*	
Shock resistance acc. to IEC 60068, Part 2-27		Half-sine 15 *g*/11 ms	
Power consumption			
• From auxiliary circuit L+/M (U1)	mA	Approx. 20	
• From auxiliary circuit A1/A2 (U2)		--	
Rated operational current I_e for power bus	A	25	
Rated operational voltage U_e	V	400 (50/60 Hz)	
Approval DIN VDE 0106, Part 101	V	Up to 500	
CSA and UL approval	V	Up to 600	
Conductor cross-sections			
Incoming power supply	mm^2	max. 6 x 4	
Degree of protection		IP65	
Touch protection		Finger-safe	
Pollution degree		3, IEC 60664 (IEC 61131)	
Rated impulse withstand voltage U_{imp}	kV	6	
Rated insulation voltage U_i	V	400	
Rated operational current I_e for starters			
• AC-1/2/3 at 40 °C			
- At 400 V	A	16	25
- At 500 V	A	16	25
Rated short-circuit breaking capacity	kA	50 at 400 V	
Type of coordination acc. to IEC 60947-4-1		2	
Protective separation between main and auxiliary circuits	V	400, Acc. to DIN VDE 0106 Part 101	
Switching times at 0.85 ... 1.1 x U_e			
• Closing delay	ms	--	25 ... 100
• Opening delay	ms	--	7 ... 10
Device functions			
• Group diagnostics		Yes, parameterizable	
Device indications			
• Group fault		SF LED (red)	

Selection and ordering data

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Safety modules local							
 3RK1304-0HS00-7AA0	**Safety local isolator module**[1)2)] Rated operational current 16 A	5	**3RK1304-0HS00-7AA0**		1	1 unit	42D
 3RK1304-0HS00-8AA0	**400 V disconnecting module**[3)4)] Rated operational current 25 A	2	**3RK1304-0HS00-8AA0**		1	1 unit	42D

1) The Safety local isolator module only functions when used together with the 400 V disconnecting module.
2) Only in combination with the special backplane bus module for the Safety local isolator module (see page 9/19, "Accessories for ET 200pro Motor Starters").
3) The 400 V disconnecting module functions only when used together with the Safety local isolator module or with the F-Switch.
4) The 400 V disconnecting module functions only when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see page 9/19, "Accessories for ET 200pro Motor Starters").

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Safety modules PROFIsafe ***IE3/IE4* ready**

Overview

Safety Solution PROFIsafe

With the Safety PROFIsafe modules
- F-Switch and
- 400 V disconnecting module

With an appropriate connection, safety levels SIL 3 (according to IEC 62061) and PL e (according to ISO 13849-1) can be reached.

F-Switch PROFIsafe

Fail-safe digital inputs/outputs in degrees of protection IP65 to IP67 for near-machine, cabinet-free use.

Fail-safe digital inputs

- For fail-safe reading in of sensor information (1/2-channel)
- Including integrated discrepancy evaluation for 2v2 signals
- Internal sensor supplies (incl. testing) available

Fail-safe digital outputs

- Three fail-safe PP-switching outputs for safe switching of the backplane busbars

The F-Switch is certified up to SIL 3/PL e and has detailed diagnostics.

It supports PROFIsafe in PROFIBUS configurations as well as in PROFINET configurations.

Note:

For safety characteristics, see page 16/10.

400 V disconnecting module

See "Safety modules local", Overview, on page 9/11 and Technical specifications, page 9/12.

Functionality

The PROFIsafe F-Switch is a fail-safe electronic module for PROFIsafe safety applications. It has two fail-safe inputs and outputs for safe switching of the 24 V supply over backplane busbars. In combination with the 400 V disconnecting module, fail-safe disconnection of ET 200pro motor starters is possible in PROFIsafe applications up to SIL 3/PL e.

Selection and ordering data

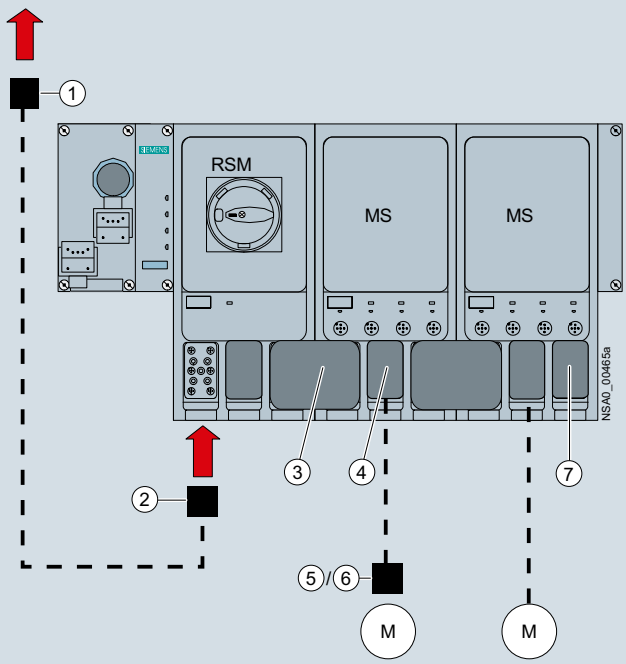
	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
ET 200pro safety modules							
 3RK1304-0HS00-8AA0	**400 V disconnecting module**[1)2)] Rated operational current 25 A	2	**3RK1304-0HS00-8AA0**		1	1 unit	42D
 6ES7148-1FS00-0AB0	**F-Switch PROFIsafe** 24 V DC, including bus module Connection module must be ordered separately	1	**6ES7148-4FS00-0AB0**		1	1 unit	241
	Connection modules for F-Switch 24 V DC	1	**6ES7194-4DA00-0AA0**		1	1 unit	241

1) The 400 V disconnecting module functions only when used together with the Safety local isolator module or with the F-Switch.

2) The 400 V disconnecting module functions only when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see page 9/19, "Accessories for ET 200pro Motor Starters").

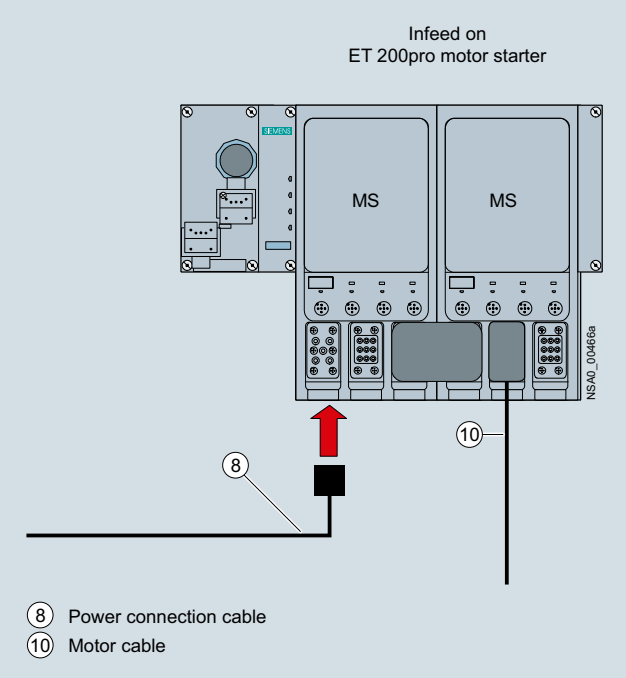
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview



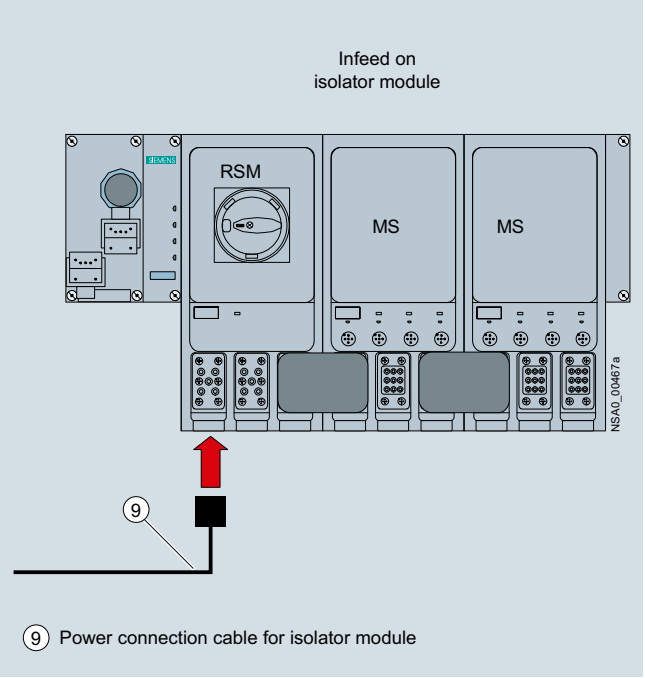
1 Power feeder plug
2 Power connection plug
3 Power jumper plug
4 Motor connection plug
5 Motor plug
6 Motor plug with EMC suppressor circuit
7 Power loop-through plug

Basic design of an ET 200pro version with (from the left) connection module for IM, interface module for communication (IM), RSM isolator module, two ET 200pro motor starters (MS), and connections for energy



8 Power connection cable
10 Motor cable

Infeed on the ET 200pro motor starter



9 Power connection cable for isolator module

Infeed on the RSM isolator module

Legend:
1 Power feeder plug (see page 9/17)
2 Power connection plug (see page 9/17)
3 Power jumper plug (see page 9/17)
4 Motor connection plug (see page 9/17)
5 Motor plug (see page 9/17)
6 Motor plug with EMC suppressor circuit (see page 9/17)
7 Power loop-through plug (see page 9/17)
8 Power connection cable (see page 9/17)
9 Power connection cable for isolator modules (see page 9/17)
10 Motor cable (see page 9/18)

Accessories for ET 200pro motor starters

Power bus

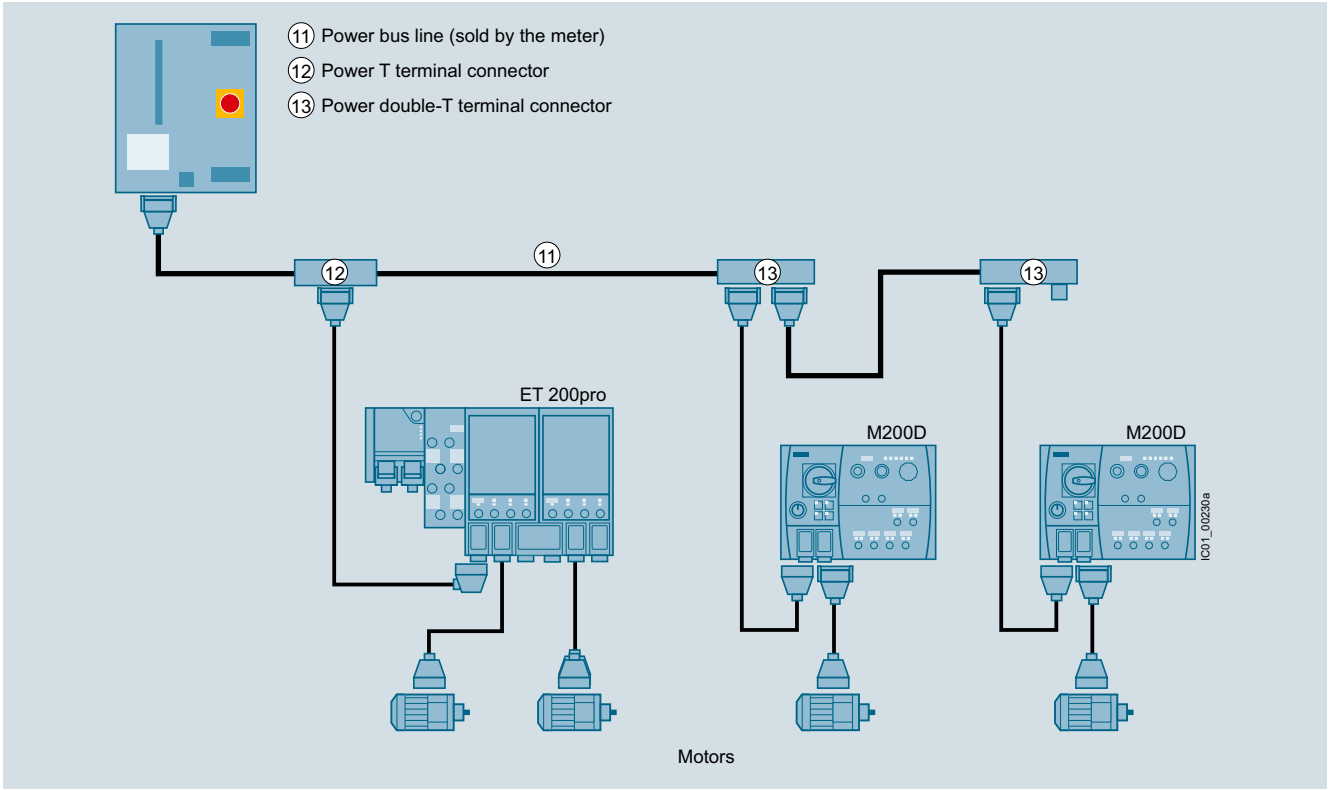
The power supply to the field devices (ET 200pro motor starters, M200D motor starters) is provided via the power bus, in which the power T terminal connectors or power double-T terminal connectors are connected by power bus cables.

Feeders

From the terminal connectors, spur lines with Han Q4/2 plugs lead to the field devices, from which the motors are supplied with power via motor connection cables.

Interruption-free thanks to power terminal connectors

In finger-safe connection technology the power T terminal connectors and power double-T terminal connectors connect the components of a feeder to the power bus. They ensure interruption-free operation, i.e. the power bus is not interrupted when the components are plugged in.



Power supply to the motors via the power bus with power T and double-T terminal connectors linked by power bus cables, spur lines to the field devices (motor starters), and power loop-through connections to the motors via motor connection cables

Motor control via PROFIBUS

The interface modules (IM) for PROFIBUS can be combined with three different connection modules for connecting PROFIBUS DP and the power supply:

- Direct connection with cable glands
- ECOFAST connection with hybrid fieldbus cables (with two copper cores for data transfer with PROFIBUS DP, and four copper cores for the power supply), and ECOFAST connectors (HanBrid)[1)]
- M12, 7/8" connection
  - with M12 connecting cable and M12 plugs for data transmission with PROFIBUS DP
  - with 7/8" connecting cable and 7/8" plugs for the power supply[2)]

For the connection modules with the associated accessories, see "Accessories ET 200pro interface modules IM 154-1 and IM 154-2, page 9/20).

1) Hybrid fieldbus connections with HanBrid sockets designed as cabinet bushings transmit data and energy from the control cabinet (IP20) to the field (IP65). They are the interface for jointly routing PROFIBUS DP and the auxiliary voltages into the hybrid fieldbus cable (see page 9/66).

2) On the control cabinet bushings with two M12 sockets for the PROFIBUS M12 connecting cables, (see page 9/66), the 24 V supply of the motor starters is implemented via separate 7/8" connecting cables.

Motor control via PROFINET

For the connection modules with the associated accessories, see "Accessories ET 200pro interface module IM 154-4, page 9/22.

Selection and ordering data

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Incoming power supply						
① **Power feeder plugs** Connector set for energy supply, e.g. for connecting to T terminal connectors, comprising a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. gland						
• 5 male contacts, 2.5 mm²	5	**3RK1911-2BS60**		1	1 unit	42D
• 5 male contacts, 4 mm²	5	**3RK1911-2BS20**		1	1 unit	42D
• 5 male contacts, 6 mm²	5	**3RK1911-2BS40**		1	1 unit	42D
② **Power connection plugs** Connector set for energy supply for connection to ET 200pro motor starters/ET 200pro isolator modules, comprising a cable-end connector hood, angular outgoing feeder, female insert for HAN Q4/2, incl. gland						
• 5 female contacts, 2.5 mm²	5	**3RK1911-2BE50**		1	1 unit	42D
• 5 female contacts, 4 mm²	5	**3RK1911-2BE10**		1	1 unit	42D
• 5 female contacts, 6 mm²	5	**3RK1911-2BE30**		1	1 unit	42D
⑧ **Power connection cables, assembled at one end** Power connection cable for ET 200pro motor starters, open at one end, for HAN Q4/2, angular, insert turned at isolator module end, 4 x 4 mm²						
• Length 1.5 m	5	**3RK1911-0DB13**		1	1 unit	42D
• Length 5.0 m	5	**3RK1911-0DB33**		1	1 unit	42D
⑨ **Power connection cables for isolator module, assembled at one end** Power connection cable for ET 200pro isolator modules, open at one end, for HAN Q4/2, angular, insert turned at isolator module end, 4 x 4 mm²						
• Length 1.5 m	15	**3RK1911-0DF13**		1	1 unit	42D
• Length 5.0 m	15	**3RK1911-0DF33**		1	1 unit	42D
Power loop-through on the field device						
③ **Power jumper plugs**	2	**3RK1922-2BQ00**		1	1 unit	42D
⑦ **Power loop-through plugs** Connector set for power loop-through for connection to ET 200pro motor starters/ET 200pro isolator modules, comprising a cable-end connector hood, angular outgoing feeder, male insert for HAN Q4/2, incl. gland						
• 4 male contacts, 2.5 mm²	5	**3RK1911-2BF50**		1	1 unit	42D
• 4 male contacts, 4 mm²	5	**3RK1911-2BF10**		1	1 unit	42D
Motor cables						
④ **Motor connection plugs** Connector set for motor cable for connection to ET 200pro motor starters, comprising a cable-end connector hood, angular outgoing feeder, pin insert for HAN Q8/0, incl. gland						
• 8 male contacts, 1.5 mm²	5	**3RK1902-0CE00**		1	1 unit	42D
• 6 male contacts, 2.5 mm²	5	**3RK1902-0CC00**		1	1 unit	42D
⑤ **Motor plugs** Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e, incl. star jumper, incl. gland						
• 7 female contacts, 1.5 mm²	15	**3RK1911-2BM21**		1	1 set	42D
• 7 female contacts, 2.5 mm²	15	**3RK1911-2BM22**		1	1 set	42D
⑥ **Motor plugs with EMC suppressor circuit** Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e with EMC suppressor circuit, incl. star jumper, incl. gland						
• 7 female contacts, 1.5 mm²	15	**3RK1911-2BL21**		1	1 set	42D
• 7 female contacts, 2.5 mm²	15	**3RK1911-2BL22**		1	1 set	42D

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories for ET 200pro motor starters

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor cables (continued)						
⑩ **Motor cables, assembled at one end** Open at one end, HAN Q8, angular, length 5 m						
• Motor cable for motor without brake, for ET 200pro, 4 x 1.5 mm²	15	**3RK1911-0EB31**		1	1 unit	42D
• Motor cable for motor with brake for ET 200pro, 6 x 1.5 mm²	15	**3RK1911-0ED31**		1	1 unit	42D
• Motor cables for motor without brake with thermistor for ET 200pro, 6 x 1.5 mm²	15	**3RK1911-0EF31**		1	1 unit	42D
• Motor cables for motor with brake with thermistor for ET 200pro, 8 x 1.5 mm²	15	**3RK1911-0EG31**		1	1 unit	42D
Power bus						
⑫ **Power T terminal connectors** For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments						
• 2.5 mm² / 4 mm²	5	**3RK1911-2BF01**		1	1 unit	42D
• 4 mm² / 6 mm²	5	**3RK1911-2BF02**		1	1 unit	42D
⑬ **Power double-T terminal connectors** For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments, connection of two motor starters possible						
• 4 mm² / 6 mm²	5	**3RK1911-2BG02**		1	1 unit	42D
Sealing set (comprising 2 seals) For power T/power double-T terminal connectors						
• For power cables with Ø 10 ... 13 mm	5	**3RK1911-5BA00**		1	1 unit	42D
• For power cables with Ø 13 ... 16 mm	5	**3RK1911-5BA10**		1	1 unit	42D
• For power cables with Ø 16 ... 19 mm	5	**3RK1911-5BA20**		1	1 unit	42D
• For power cables with Ø 19 ... 22 mm	5	**3RK1911-5BA30**		1	1 unit	42D
• Blanking plugs	5	**3RK1911-5BA50**		1	1 unit	42D
Further accessories for power connections						
Crimping tool for pins/sockets, 4 mm² and 6 mm²	15	**3RK1902-0CW00**		1	1 unit	42D
Dismantling tools						
• For male and female contacts for 9-pole HAN Q4/2 inserts	15	**3RK1902-0AB00**		1	1 unit	42D
• For male and female contacts for 9-pole HAN Q8 inserts	5	**3RK1902-0AJ00**		1	1 unit	42D
Sealing caps For 9-pole power socket connectors						
• 1 unit per pack	5	**3RK1902-0CK00**		1	1 unit	42D
• 10 units per pack	5	**3RK1902-0CJ00**		1	10 units	42D


3RK1902-0CW00


3RK1902-0CK00

For more connection technology products,
see "Siemens Solution Partners Automation"
under the "Distributed Field Installation System" technology:
www.siemens.com/partnerfinder.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Further accessories							
	Module racks, wide[1]						
	• Length 500 mm	1	**6ES7194-4GB00-0AA0**		1	1 unit	250
	• Length 1 000 mm	1	**6ES7194-4GB60-0AA0**		1	1 unit	250
	• Length 2 000 mm	1	**6ES7194-4GB20-0AA0**		1	1 unit	250
	Module racks, wide, compact[1]						
	• Length 500 mm	1	**6ES7194-4GD00-0AA0**		1	1 unit	250
	• Length 1 000 mm	1	**6ES7194-4GD10-0AA0**		1	1 unit	250
	• Length 2 000 mm	1	**6ES7194-4GD20-0AA0**		1	1 unit	250
	Backplane bus modules 110 mm[2]	2	**3RK1922-2BA00**		1	1 unit	42D
	Backplane bus module for Safety local isolator modules	2	**3RK1922-2BA01**		1	1 unit	42D
 3RK1922-3BA00	**Hand-held devices** For ET 200pro motor starters (or for ET 200S High Feature and M200D motor starters) for local operation. The motor-starter-specific serial interface cables must be ordered separately. The RS 232 interface cable 3RK1922-2BP00 is used for the MS ET 200pro.	5	**3RK1922-3BA00**		1	1 unit	42D
	RS 232 interface cable Serial data connection between ET 200pro (or M200D) motor starters and the RS 232 interface of a PC/PG/laptop (with the Motor Starter ES software) or the handheld device 3RK1922-3BA00.	5	**3RK1922-2BP00**		1	1 unit	42D
	USB interface cables, 2.5 m Serial data connection between ET 200pro (or M200D) motor starters and the USB interface of a PC/PG/laptop (with the Motor Starter ES software).	3	**6SL3555-0PA00-2AA0**		1	1 unit	346
 3RK1901-1KA00	**M12 sealing caps** For sealing unused M12 input or output sockets (one set contains ten sealing caps)	►	**3RK1901-1KA00**		100	10 units	42C
Motor control with PROFIBUS							
	See page 9/20						
Motor control with PROFINET							
	See page 9/22						
SIMATIC ET 200pro Motor Starters manual							
	See https://support.industry.siemens.com/cs/ww/en/view/22332388						

[1] The wide module rack can accommodate all ET 200pro motor starters and any optional modules (isolator module, Safety local isolator module and 400 V disconnecting module).

[2] The backplane bus module is a prerequisite for operation of the ET 200pro motor starter and the optional module.

Selection and ordering data

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-1 and IM 154-2 interface modules						
IM 154-1 interface modules For ET 200pro; for communication between ET 200pro and higher-level masters over PROFIBUS DP	1	**6ES7154-1AA01-0AB0**		1	1 unit	250
IM 154-2 DP High Feature interface module For ET 200pro; for communication between ET 200pro and higher-level masters over PROFIBUS DP; support of PROFIsafe	1	**6ES7154-2AA01-0AB0**		1	1 unit	250
Accessories						
CM IM DP ECOFAST connection modules For connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, 2 ECOFAST Cu connections	1	**6ES7194-4AA00-0AA0**		1	1 unit	250
CM IM DP direct connection modules For direct connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, up to 6 M20 screwed cable glands	1	**6ES7194-4AC00-0AA0**		1	1 unit	250
CM IM DP M12 7/8" connection module For connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, 2 x M12 and 2 x 7/8"	1	**6ES7194-4AD00-0AA0**		1	1 unit	250
Accessories for CM IM DP ECOFAST						
PROFIBUS ECOFAST hybrid cables, assembled With 2 ECOFAST connectors, trailing cable With 2 x Cu 0.64 mm^2 and 4 x Cu 1.5 mm^2, in different lengths:						
• 1.5 m	1	**6XV1830-7BH15**		1	1 unit	5K2
• 3.0 m	1	**6XV1830-7BH30**		1	1 unit	5K2
• 5.0 m	1	**6XV1830-7BH50**		1	1 unit	5K2
• 10 m	1	**6XV1830-7BN10**		1	1 unit	5K2
• 15 m	1	**6XV1830-7BN15**		1	1 unit	5K2
• 20 m	1	**6XV1830-7BN20**		1	1 unit	5K2
• 25 m	1	**6XV1830-7BN25**		1	1 unit	5K2
• 30 m	1	**6XV1830-7BN30**		1	1 unit	5K2
• 35 m	1	**6XV1830-7BN35**		1	1 unit	5K2
• 40 m	1	**6XV1830-7BN40**		1	1 unit	5K2
• 45 m	20	**6XV1830-7BN45**		1	1 unit	5K2
• 50 m	1	**6XV1830-7BN50**		1	1 unit	5K2
PROFIBUS ECOFAST hybrid cables GP, assembled With 2 ECOFAST connectors, trailing cable With 2 x Cu 0.64 mm^2 and 4 x Cu 1.5 mm^2, in different lengths:						
• 1.5 m	1	**6XV1860-3PH15**		1	1 unit	5K2
• 3.0 m	1	**6XV1860-3PH30**		1	1 unit	5K2
• 5.0 m	1	**6XV1860-3PH50**		1	1 unit	5K2
• 10 m	1	**6XV1860-3PN10**		1	1 unit	5K2
• 15 m	1	**6XV1860-3PN15**		1	1 unit	5K2
• 20 m	1	**6XV1860-3PN20**		1	1 unit	5K2
• 25 m	1	**6XV1860-3PN25**		1	1 unit	5K2
• 30 m	20	**6XV1860-3PN30**		1	1 unit	5K2
• 35 m	20	**6XV1860-3PN35**		1	1 unit	5K2
• 40 m	20	**6XV1860-3PN40**		1	1 unit	5K2
• 45 m	20	**6XV1860-3PN45**		1	1 unit	5K2
• 50 m	20	**6XV1860-3PN50**		1	1 unit	5K2
PROFIBUS ECOFAST hybrid cables, non-assembled Trailing cable with 2 x Cu 0.64 mm^2 and 4 x Cu 1.5 mm^2, in the following lengths:						
• 50 m	1	**6XV1830-7AN50**		1	1 unit	5K2
• 100 m	1	**6XV1830-7AT10**		1	1 unit	5K2
PROFIBUS ECOFAST hybrid cables GP, non-assembled Trailing cable with 2 x Cu 0.64 mm^2 and 4 x Cu 1.5 mm^2, in the following lengths:						
• 50 m	20	**6XV1860-4PN50**		1	1 unit	5K2
• 100 m	1	**6XV1860-4PT10**		1	1 unit	5K2
PROFIBUS ECOFAST hybrid connectors 180 ECOFAST Cu, 2 x Cu, 4 x 1.5 mm^2, HANBRID connectors						
• With pin insert, pack of 5	1	**6GK1905-0CA00**		1	5 units	5K2
• With female insert, pack of 5	1	**6GK1905-0CB00**		1	5 units	5K2
PROFIBUS ECOFAST hybrid connectors, angular ECOFAST Cu, 2 x Cu, 4 x 1.5 mm^2, HANBRID connectors						
• With pin insert, pack of 5	1	**6GK1905-0CC00**		1	5 units	5K2
• With female insert, pack of 5	1	**6GK1905-0CD00**		1	5 units	5K2

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-1 and IM 154-2 interface modules (continued)						
Accessories for CM IM DP Direct						
PROFIBUS trailing cables Max. acceleration 4 m/s^2, at least 3 000 000 bending cycles, bending radius at least 60 mm, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-3EH10**		1	1 m	5K2
PROFIBUS FC Food bus cable With PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-0GH10**		1	1 m	5K2
PROFIBUS FC Robust bus cable With PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-0JH10**		1	1 m	5K2
Power cable 5-core, 5 x 1.5 mm^2, trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-8AH10**		1	1 m	5K2
Accessories for CM IM DP M12 7/8"						
PROFIBUS M12 connecting cables Preassembled with two M12 plugs, 5-pole, in different lengths:						
• 1.5 m	1	**6XV1830-3DH15**		1	1 unit	5K1
• 2.0 m	1	**6XV1830-3DH20**		1	1 unit	5K1
• 3.0 m	1	**6XV1830-3DH30**		1	1 unit	5K1
• 5.0 m	1	**6XV1830-3DH50**		1	1 unit	5K1
• 10 m	1	**6XV1830-3DN10**		1	1 unit	5K1
• 15 m	1	**6XV1830-3DN15**		1	1 unit	5K1
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm^2, trailing, pre-assembled, with two 7/8" plugs, 5-pole, in different lengths:						
• 1.5 m	1	**6XV1822-5BH15**		1	1 unit	5K1
• 2.0 m	1	**6XV1822-5BH20**		1	1 unit	5K1
• 3.0 m	1	**6XV1822-5BH30**		1	1 unit	5K1
• 5.0 m	1	**6XV1822-5BH50**		1	1 unit	5K1
• 10 m	1	**6XV1822-5BN10**		1	1 unit	5K1
• 15 m	1	**6XV1822-5BN15**		1	1 unit	5K1
M12 connectors For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	**6GK1905-0EA00**		1	5 units	5K2
• With female insert, pack of 5	1	**6GK1905-0EB00**		1	5 units	5K2
PROFIBUS M12 bus termination plugs With pin insert	1	**6GK1905-0EC00**		1	5 units	5K2
7/8" connectors For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	**6GK1905-0FA00**		1	5 units	5K2
• With female insert, pack of 5	1	**6GK1905-0FB00**		1	5 units	5K2
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9802-0AA00**		100	10 units	42C
7/8" sealing caps For protection of unused 7/8" terminals on ET 200pro, pack of 10 units per packing unit	1	**6ES7194-3JA00-0AA0**		1	10 units	250
General accessories						
ET 200pro module racks						
• Narrow, for interface, solid-state and power modules						
- 500 mm	1	**6ES7194-4GA00-0AA0**		1	1 unit	250
- 1 000 mm	1	**6ES7194-4GA60-0AA0**		1	1 unit	250
- 2 000 mm, can be cut to length	1	**6ES7194-4GA20-0AA0**		1	1 unit	250
• Compact, for interface, solid-state and power modules						
- 500 mm	1	**6ES7194-4GC70-0AA0**		1	1 unit	250
- 1 000 mm	1	**6ES7194-4GC60-0AA0**		1	1 unit	250
- 2 000 mm, can be cut to length	1	**6ES7194-4GC20-0AA0**		1	1 unit	250
• Wide, for interface, solid-state, power modules and motor starters						
- 500 mm	1	**6ES7194-4GB00-0AA0**		1	1 unit	250
- 1 000 mm	1	**6ES7194-4GB60-0AA0**		1	1 unit	250
- 2 000 mm, can be cut to length	1	**6ES7194-4GB20-0AA0**		1	1 unit	250
• Wide, for I/O modules and motor starters						
- 500 mm	1	**6ES7194-4GD00-0AA0**		1	1 unit	250
- 1 000 mm	1	**6ES7194-4GD10-0AA0**		1	1 unit	250
- 2 000 mm	1	**6ES7194-4GD20-0AA0**		1	1 unit	250
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	1	**6ES7194-4HB00-0AA0**		1	10 units	250
PROFIBUS FastConnect bus cables Standard type with special design for fast installation, 2-core, shielded, sold by the meter; max. length 1 000 m, minimum order 20 m	1	**6XV1830-0EH10**		1	1 m	5K1

* You can order this quantity or a multiple thereof.
Illustrations are approximate

ET 200pro – interface modules

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-1 and IM 154-2 interface modules (continued)						
General accessories *(continued)*						
PROFIBUS hybrid standard cables GP Standard PROFIBUS hybrid cable with 2 power cores (1.5 mm^2) for supplying data and power to the ET 200pro	1	**6XV1860-2R**		1	1 m	5K2
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	5	**6ES7998-8XC01-8YE0**		1	1 unit	215
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	5	**6ES7998-8XC01-8YE2**		1	1 unit	215
IM 154-4 PN interface modules						
IM 154-4 PN High Feature interface modules For communication between ET 200pro and a higher-level controller via PROFINET IO; support of PROFIsafe	1	**6ES7154-4AB10-0AB0**		1	1 unit	250
Accessories						
CM IM PN M12 connection modules, 7/8" For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x M12 and 2 x 7/8"	1	**6ES7194-4AJ00-0AA0**		1	1 unit	250
CM IM PN 2xRJ45 connection modules For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x RJ45 and 2 x push-pull power connector	1	**6ES7194-4AF00-0AA0**		1	1 unit	250
CM IM PN 2xSCRJ FO connection modules For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x SCRJ FO and 2 x push-pull power connector	1	**6ES7194-4AG00-0AA0**		1	1 unit	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9802-0AA00**		100	10 units	42C
IE M12 connecting cables Preassembled with two M12 plugs, up to 85 m, in different lengths:						
• 0.3 m	1	**6XV1870-8AE30**		1	1 unit	5K1
• 0.5 m	1	**6XV1870-8AE50**		1	1 unit	5K1
• 1.0 m	1	**6XV1870-8AH10**		1	1 unit	5K1
• 1.5 m	1	**6XV1870-8AH15**		1	1 unit	5K1
• 2.0 m	1	**6XV1870-8AH20**		1	1 unit	5K1
• 3.0 m	1	**6XV1870-8AH30**		1	1 unit	5K1
• 5.0 m	1	**6XV1870-8AH50**		1	1 unit	5K1
• 10 m	1	**6XV1870-8AN10**		1	1 unit	5K1
• 15 m	1	**6XV1870-8AN15**		1	1 unit	5K1
• For more special lengths with 90° or 180° cable feeder, see https://support.industry.siemens.com/cs/ww/en/view/26999294.						
7/8" sealing caps 1 pack = 10 units	1	**6ES7194-3JA00-0AA0**		1	10 units	250
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm^2, trailing, pre-assembled, with two 7/8" plugs, 5-pole, up to 50 m, in different lengths:						
• 1.5 m	1	**6XV1822-5BH15**		1	1 unit	5K1
• 2.0 m	1	**6XV1822-5BH20**		1	1 unit	5K1
• 3.0 m	1	**6XV1822-5BH30**		1	1 unit	5K1
• 5.0 m	1	**6XV1822-5BH50**		1	1 unit	5K1
• 10 m	1	**6XV1822-5BN10**		1	1 unit	5K1
• 15 m	1	**6XV1822-5BN15**		1	1 unit	5K1
• For more special lengths with 90° or 180° cable feeder, see https://support.industry.siemens.com/cs/ww/en/view/26999294.						
Power cable 5-core, 5 x 1.5 mm^2, trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-8AH10**		1	1 m	5K2
7/8" connectors For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	**6GK1905-0FA00**		1	5 units	5K2
• With female insert, pack of 5	1	**6GK1905-0FB00**		1	5 units	5K2

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Illustrations are approximate

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-4 PN interface modules (continued)						
Industrial Ethernet FastConnect installation cables						
• **IE FC TP standard cables GP 2 x 2**; Sold by the meter, max. length 1 000 m, minimum order 20 m	1	**6XV1840-2AH10**		1	1 m	5K1
• **IE FC TP trailing cables 2 x 2**; Sold by the meter, max. length 1 000 m, minimum order 20 m	1	**6XV1840-3AH10**		1	1 m	5K1
• **IE FC TP trailing cables GP 2 x 2**; Sold by the meter, max. length 1 000 m, minimum order 20 m	1	**6XV1870-2D**		1	1 m	5K2
• **IE TP torsion cables GP 2 x 2**; Sold by the meter, max. length 1 000 m, minimum order 20 m	1	**6XV1870-2F**		1	1 m	5K2
• **IE FC TP marine cable 2 x 2**; Sold by the meter, max. length 1 000 m, minimum order 20 m	1	**6XV1840-4AH10**		1	1 m	5K1
IE RJ45 Plug PRO RJ45 plug-in connector for field assembly in degree of protection IP65/IP67, plastic enclosure, insulation displacement method, for SCALANCE X-200IRT PRO and ET 200pro 1 pack = 1 unit	1	**6GK1901-1BB10-6AA0**		1	1 unit	5K2
IE SC RJ POF Plug PRO SC RJ plug-in connector for field assembly for POF fibers in degree of protection IP65/IP67, plastic enclosure, for SCALANCE X-200IRT PRO and ET 200pro 1 pack = 1 unit	1	**6GK1900-0MB00-6AA0**		1	1 unit	5K2
IE SC RJ PCF Plug PRO SC RJ plug-in connector for field assembly for PCF fibers in degree of protection IP65/IP67, plastic enclosure, for SCALANCE X-200IRT PRO 1 pack = 1 unit	1	**6GK1900-0NB00-6AA0**		1	1 unit	5K2
Power Plug PRO 5-pole power plug-in connector for field assembly for 2 x 24 V power supply in degree of protection IP65/IP67, plastic enclosure, for SCALANCE X-200IRT and ET 200pro 1 pack = 1 unit	1	**6GK1907-0AB10-6AA0**		1	1 unit	5K2
IE Panel Feedthrough Control cabinet bushing for transition from M12 connection method (D-coded, IP65) to RJ45 connection method (IP20) 1 pack = 5 units	1	**6GK1901-0DM20-2AA5**		1	5 units	5K2
Push-pull connectors For 1L+/ 2L+, non-assembled	1	**6GK1907-0AB10-6AA0**		1	1 unit	5K2
Covers for RJ45 push-pull sockets 5 units per pack	1	**6ES7194-4JD50-0AA0**		1	5 units	250
General accessories						
ET 200pro module racks						
• Narrow, for interface, solid-state and power modules						
- 500 mm	1	**6ES7194-4GA00-0AA0**		1	1 unit	250
- 1 000 mm	1	**6ES7194-4GA60-0AA0**		1	1 unit	250
- 2 000 mm, can be cut to length	1	**6ES7194-4GA20-0AA0**		1	1 unit	250
• Compact, for interface, solid-state and power modules						
- 500 mm	1	**6ES7194-4GC70-0AA0**		1	1 unit	250
- 1 000 mm	1	**6ES7194-4GC60-0AA0**		1	1 unit	250
- 2 000 mm, can be cut to length	1	**6ES7194-4GC20-0AA0**		1	1 unit	250
• Wide, for interface, solid-state, power modules and motor starters						
- 500 mm	1	**6ES7194-4GB00-0AA0**		1	1 unit	250
- 1 000 mm	1	**6ES7194-4GB60-0AA0**		1	1 unit	250
- 2 000 mm, can be cut to length	1	**6ES7194-4GB20-0AA0**		1	1 unit	250
• Wide, for I/O modules and motor starters						
- 500 mm	1	**6ES7194-4GD00-0AA0**		1	1 unit	250
- 1 000 mm	1	**6ES7194-4GD10-0AA0**		1	1 unit	250
- 2 000 mm	1	**6ES7194-4GD20-0AA0**		1	1 unit	250
Spare fuses 12.5 A quick, for interface and power modules, pack of 10 units per packing unit	1	**6ES7194-4HB00-0AA0**		1	10 units	250
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	5	**6ES7998-8XC01-8YE0**		1	1 unit	215
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	5	**6ES7998-8XC01-8YE2**		1	1 unit	215

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Illustrations are approximate

Standard CPUs

Selection and ordering data

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 PN/DP CPU interface modules						
IM 154-8 PN/DP CPU interface modules, V3.2 PROFINET IO controller for operating distributed I/Os on PROFINET, with integrated PLC functionality	1	**6ES7154-8AB01-0AB0**		1	1 unit	250
Accessories						
MMC 64 KB[1] For program backups	1	**6ES7953-8LF30-0AA0**		1	1 unit	230
MMC 128 KB[1] For program backups	1	**6ES7953-8LG30-0AA0**		1	1 unit	230
MMC 512 KB[1] For program backups	1	**6ES7953-8LJ30-0AA0**		1	1 unit	230
MMC 2 MB[1] For program backups and/or firmware updates	1	**6ES7953-8LL31-0AA0**		1	1 unit	230
MMC 4 MB[1] For program backups	1	**6ES7953-8LM31-0AA0**		1	1 unit	230
MMC 8 MB[1] For program backups	1	**6ES7953-8LP31-0AA0**		1	1 unit	230
Connection modules For CPU IM 154-8 PN/DP, with 4 x M12 and 2 x 7/8" For connection of PROFINET and PROFIBUS DP	1	**6ES7194-4AN00-0AA0**		1	1 unit	250
SCALANCE X-200 Industrial Ethernet switches With integrated SNMP access, web diagnostics, copper cable diagnostics and PROFINET diagnostics, SCALANCE X208PRO for configuring line, star and ring structures, in degree of protection IP65, with eight 10/100 Mbit/s M12 ports, including eleven M12 dust covers	1	**6GK5208-0HA10-2AA6**		1	1 unit	5N2
Industrial Ethernet FC RJ45 Plug 180 RJ45 plug connector for Industrial Ethernet with robust metal casing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet						
• 1 unit	1	**6GK1901-1BB10-2AA0**		1	1 unit	5K1
• 10 units	1	**6GK1901-1BB10-2AB0**		1	10 units	5K1
• 50 units	1	**6GK1901-1BB10-2AE0**		1	50 units	5K1
Industrial Ethernet FastConnect installation cables						
• FastConnect standard cable	1	**6XV1840-2AH10**		1	1 m	5K1
• FastConnect trailing cable	1	**6XV1840-3AH10**		1	1 m	5K1
• FastConnect marine cable	1	**6XV1840-4AH10**		1	1 m	5K1
• IE FC TP trailing cables GP 2 x 2; sold by the meter, delivery unit max. 1 000 m; minimum order 20 m	1	**6XV1870-2D**		1	1 m	5K2
• IE TP torsion cables GP 2 x 2; sold by the meter, delivery unit max. 1 000 m; minimum order 20 m	1	**6XV1870-2F**		1	1 m	5K2
Industrial Ethernet FastConnect Stripping tools	1	**6GK1901-1GA00**		1	1 unit	5K2
IE connecting cables M12-180/M12-180 in various lengths:						
• Factory-fitted IE FC TP trailing cables GP 2 x 2 (PROFINET type C) with two 4-pole M12 plugs (4-pole, D-coded), degree of protection IP65/IP67:						
- 0.3 m	1	**6XV1870-8AE30**		1	1 unit	5K1
- 0.5 m	1	**6XV1870-8AE50**		1	1 unit	5K1
- 1.0 m	1	**6XV1870-8AH10**		1	1 unit	5K1
- 1.5 m	1	**6XV1870-8AH15**		1	1 unit	5K1
- 2.0 m	1	**6XV1870-8AH20**		1	1 unit	5K1
- 3.0 m	1	**6XV1870-8AH30**		1	1 unit	5K1
- 5.0 m	1	**6XV1870-8AH50**		1	1 unit	5K1
- 10 m	1	**6XV1870-8AN10**		1	1 unit	5K1
- 15 m	1	**6XV1870-8AN15**		1	1 unit	5K1
• PROFINET M12 connecting cables, trailing, preassembled at both ends with M12 plugs, angular (pin):						
- 3.0 m	15	**3RK1902-2NB30**		1	1 unit	42D
- 5.0 m	15	**3RK1902-2NB50**		1	1 unit	42D
- 10 m	15	**3RK1902-2NC10**		1	1 unit	42D
• PROFINET M12 connecting cables, trailing, preassembled at one end with M12 plugs, angular (one end with pin, one end open):						
- 3.0 m	15	**3RK1902-2HB30**		1	1 unit	42D
- 5.0 m	15	**3RK1902-2HB50**		1	1 unit	42D
- 10 m	15	**3RK1902-2HC10**		1	1 unit	42D
IE FC M12 Plug PRO PROFINET M12 plug-in connectors, D-coded with quick-connect technology, axial outgoing feeder						
• 1 unit	1	**6GK1901-0DB20-6AA0**		1	1 unit	5K1
• 8 units	1	**6GK1901-0DB20-6AA8**		1	8 units	5K1
PROFINET M12 connectors, D-coded, angular	5	**3RK1902-2DA00**		1	1 unit	42D

[1] For operation of the CPU, an MMC is essential.

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Illustrations are approximate

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 PN/DP CPU interface modules (continued)						
IE Panel Feedthrough						
Control cabinet bushing for transition from M12 connection method (D-coded, IP65/IP67) to RJ45 connection method (IP20), 1 pack = 5 units	1	**6GK1901-0DM20-2AA5**		1	5 units	5K2
7/8" connecting cables for power supply in various lengths						
• 5-core, 5 x 1.5 mm^2, trailing, pre-assembled, with two 7/8" connectors (axial outgoing feeder), 5-pole, up to 50 m:						
- 1.5 m	1	**6XV1822-5BH15**		1	1 unit	5K1
- 2.0 m	1	**6XV1822-5BH20**		1	1 unit	5K1
- 3.0 m	1	**6XV1822-5BH30**		1	1 unit	5K1
- 5.0 m	1	**6XV1822-5BH50**		1	1 unit	5K1
- 10 m	1	**6XV1822-5BN10**		1	1 unit	5K1
- 15 m	1	**6XV1822-5BN15**		1	1 unit	5K1
- For more special lengths with 90° or 180° cable feeder, see https://support.industry.siemens.com/cs/ww/en/view/26999294.						
• Trailing power cables, 5 x 1.5 mm^2, preassembled at both ends with 7/8" connectors, angular (one end with socket, one end with pin):						
- 3.0 m	15	**3RK1902-3NB30**		1	1 unit	42D
- 5.0 m	15	**3RK1902-3NB50**		1	1 unit	42D
- 10 m	15	**3RK1902-3NC10**		1	1 unit	42D
• Trailing power cables, 5 x 1.5 mm^2, preassembled at one end with 7/8" connector with female insert, angular (one end with socket, one end open):						
- 3.0 m	15	**3RK1902-3GB30**		1	1 unit	42D
- 5.0 m	15	**3RK1902-3GB50**		1	1 unit	42D
- 10 m	15	**3RK1902-3GC10**		1	1 unit	42D
Power cable 5-core, 5 x 1.5 mm^2, trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-8AH10**		1	1 m	5K2
7/8" connectors for ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	**6GK1905-0FA00**		1	5 units	5K2
• With female insert, pack of 5	1	**6GK1905-0FB00**		1	5 units	5K2
• Angular, with female insert, 1 unit	5	**3RK1902-3DA00**		1	1 unit	42D
• Angular with pin insert, 1 unit	5	**3RK1902-3BA00**		1	1 unit	42D
7/8" covers, pack of 10	1	**6ES7194-3JA00-0AA0**		1	10 units	250
Twisted pair connecting cables 4 x 2 with RJ45 connectors in various lengths:						
• 0.5 m	1	**6XV1870-3QE50**		1	1 unit	5K1
• 1 m	1	**6XV1870-3QH10**		1	1 unit	5K1
• 2 m	1	**6XV1870-3QH20**		1	1 unit	5K1
• 6 m	1	**6XV1870-3QH60**		1	1 unit	5K1
• 10 m	1	**6XV1870-3QN10**		1	1 unit	5K1
Crossed twisted pair connecting cables 4 x 2 with RJ45 connectors in various lengths:						
• 0.5 m	1	**6XV1870-3RE50**		1	1 unit	5K1
• 1 m	1	**6XV1870-3RH10**		1	1 unit	5K1
• 2 m	1	**6XV1870-3RH20**		1	1 unit	5K1
• 6 m	1	**6XV1870-3RH60**		1	1 unit	5K1
• 10 m	1	**6XV1870-3RN10**		1	1 unit	5K1
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9802-0AA00**		100	10 units	42C
M12 sealing caps with female thread (5 units)	1	**6ES7194-4JD60-0AA0**		1	5 units	250

Standard CPUs

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 PN/DP CPU interface modules (continued)						
PROFIBUS M12 connecting cables Preassembled with two 5-pole M12 plugs/sockets, up to max. 100 m in various lengths:						
• 1.5 m	1	**6XV1830-3DH15**		1	1 unit	5K1
• 2 m	1	**6XV1830-3DH20**		1	1 unit	5K1
• 3 m	1	**6XV1830-3DH30**		1	1 unit	5K1
• 5 m	1	**6XV1830-3DH50**		1	1 unit	5K1
• 10 m	1	**6XV1830-3DN10**		1	1 unit	5K1
• 15 m	1	**6XV1830-3DN15**		1	1 unit	5K1
For more special lengths with 90° or 180° cable feeder, see https://support.industry.siemens.com/cs/ww/en/view/26999294.						
PROFIBUS M12 bus termination plugs						
• Female contact insert	1	**6GK1905-0ED00**		1	5 units	5K2
• Pin insert	1	**6GK1905-0EC00**		1	5 units	5K2
M12 plug-in connectors, axial outgoing feeder, with pin insert	1	**6GK1905-0EA00**		1	5 units	5K2
PROFIBUS FC Standard Cable GP Standard type with special design for fast installation, 2-core, shielded, sold by the meter: max. length 1 000 m, minimum order 20 m	1	**6XV1830-0EH10**		1	1 m	5K1
PROFIBUS FC Trailing Cable 2-core, shielded Sold by the meter: max. length 1 000 m, minimum order 20 m	1	**6XV1830-3EH10**		1	1 m	5K2
PROFIBUS FC Food Cable 2-core, shielded Sold by the meter: max. length 1 000 m, minimum order 20 m	1	**6XV1830-0GH10**		1	1 m	5K2
PROFIBUS FC Robust Cable 2-core, shielded Sold by the meter: max. length 1 000 m, minimum order 20 m	1	**6XV1830-0JH10**		1	1 m	5K2
PROFIBUS M12 connectors 5-pole, B-coded, metal enclosure, female insert, 1 pack = 5 units	1	**6GK1905-0EB00**		1	5 units	5K2

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 F PN/DP CPU interface modules						
IM 154-8 F PN/DP CPU interface modules, V3.2 Fail-safe PROFINET IO Controller for operating distributed I/Os on PROFINET, with integrated PLC functionality						
• 512 Kbyte RAM	1	**6ES7154-8FB01-0AB0**		1	1 unit	241
• 1.5 Mbyte RAM	1	**6ES7154-8FX00-0AB0**		1	1 unit	241
S7 Distributed Safety V5.4 programming tool Task: Configuration software for configuring fail-safe user programs for SIMATIC S7-300F, S7-400F, WinAC RTX F, ET 200S, ET 200M, ET 200iSP, ET 200pro, ET 200eco Requirement: STEP 7 V5.3 SP3 and higher						
• Floating license	1	**6ES7833-1FC02-0YA5**		1	1 unit	241
• Floating license for 1 user, license key download without software and documentation [1]; Email address required for delivery	1	**6ES7833-1FC02-0YH5**		1	1 unit	241
Distributed Safety upgrade From V5.x to V5.4; floating license for 1 user	5	**6ES7833-1FC02-0YE5**		1	1 unit	241
STEP 7 Safety Advanced V13 SP1 Task: Engineering tool for configuring fail-safe user programs for SIMATIC S7-1200 FC, SIMATIC S7-1500F, S7-300F, S7-400F, WinAC RTX F, ET 200SP F Controller, ET 200SP, ET 200S, ET 200M, ET 200iSP, ET 200pro, ET 200eco Requirement: STEP 7 Professional V13 SP1						
• Floating license for 1 user	5	**6ES7833-1FA13-0YA5**		1	1 unit	218
• Floating license for 1 user, license key download without software and documentation [1]; Email address required for delivery	1	**6ES7833-1FA13-0YH5**		1	1 unit	218
Accessories						
MMC 64 KB [2] for program backup	1	**6ES7953-8LF30-0AA0**		1	1 unit	230
MMC 128 KB [2] for program backup	1	**6ES7953-8LG30-0AA0**		1	1 unit	230
MMC 512 KB [2] for program backup	1	**6ES7953-8LJ30-0AA0**		1	1 unit	230
MMC 2 MB [2] for program backups and/or firmware updates	1	**6ES7953-8LL31-0AA0**		1	1 unit	230
MMC 4 MB [2] for program backup	1	**6ES7953-8LM31-0AA0**		1	1 unit	230
MMC 8 MB [2] for program backup	1	**6ES7953-8LP31-0AA0**		1	1 unit	230
Connection modules For CPU IM 154-8 PN/DP, with 4 x M12 and 2 x 7/8" For connection of PROFINET and PROFIBUS DP	1	**6ES7194-4AN00-0AA0**		1	1 unit	250
SCALANCE X-200 Industrial Ethernet switches With integrated SNMP access, web diagnostics, copper cable diagnostics and PROFINET diagnostics, SCALANCE X208PRO for configuring line, star and ring structures, in degree of protection IP65, with eight 10/100 Mbit/s M12 ports, including eleven M12 dust covers	1	**6GK5208-0HA10-2AA6**		1	1 unit	5N2
Industrial Ethernet FC RJ45 Plug 90 RJ45 plug connector for Industrial Ethernet with robust metal casing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 90° cable outlet						
• 1 unit	1	**6GK1901-1BB20-2AA0**		1	1 unit	5K1
• 10 units	1	**6GK1901-1BB20-2AB0**		1	10 units	5K1
Industrial Ethernet FC RJ45 Plug 180 RJ45 plug connector for Industrial Ethernet with robust metal casing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet						
• 1 unit	1	**6GK1901-1BB10-2AA0**		1	1 unit	5K1
• 10 units	1	**6GK1901-1BB10-2AB0**		1	10 units	5K1
• 50 units	1	**6GK1901-1BB10-2AE0**		1	50 units	5K1

[1] Up-to-date information and availability for downloading, see http://www.siemens.com/tia-online-software-delivery.

[2] For operation of the CPU, an MMC is essential.

Fail-safe CPUs

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 F PN/DP CPU interface modules (continued)						
Industrial Ethernet FastConnect installation cables						
• FastConnect standard cables	1	**6XV1840-2AH10**		1	1 m	5K1
• FastConnect trailing cables	1	**6XV1840-3AH10**		1	1 m	5K1
• FastConnect marine cables	1	**6XV1840-4AH10**		1	1 m	5K1
• IE FC TP trailing cables GP 2 x 2; sold by the meter, delivery unit max. 1 000 m; minimum order 20 m	1	**6XV1870-2D**		1	1 m	5K2
• IE TP torsion cables GP 2 x 2; sold by the meter, delivery unit max. 1 000 m; minimum order 20 m	1	**6XV1870-2F**		1	1 m	5K2
Industrial Ethernet FastConnect Stripping tools	1	**6GK1901-1GA00**		1	1 unit	5K2
IE connecting cables M12-180/M12-180 in various lengths:						
• Factory-fitted IE FC TP trailing cables GP 2 x 2 (PROFINET type C) with two 4-pole M12 plugs (4-pole, D-coded), degree of protection IP65/IP67:						
- 0.3 m	1	**6XV1870-8AE30**		1	1 unit	5K1
- 0.5 m	1	**6XV1870-8AE50**		1	1 unit	5K1
- 1.0 m	1	**6XV1870-8AH10**		1	1 unit	5K1
- 1.5 m	1	**6XV1870-8AH15**		1	1 unit	5K1
- 2.0 m	1	**6XV1870-8AH20**		1	1 unit	5K1
- 3.0 m	1	**6XV1870-8AH30**		1	1 unit	5K1
- 5.0 m	1	**6XV1870-8AH50**		1	1 unit	5K1
- 10 m	1	**6XV1870-8AN10**		1	1 unit	5K1
- 15 m	1	**6XV1870-8AN15**		1	1 unit	5K1
• PROFINET M12 connecting cables, trailing, preassembled at both ends with M12 plugs, angular (pin):						
- 3.0 m	15	**3RK1902-2NB30**		1	1 unit	42D
- 5.0 m	15	**3RK1902-2NB50**		1	1 unit	42D
- 10 m	15	**3RK1902-2NC10**		1	1 unit	42D
• PROFINET M12 connecting cables, trailing, preassembled at one end with M12 plugs, angular (one end with pin, one end open):						
- 3.0 m	15	**3RK1902-2HB30**		1	1 unit	42D
- 5.0 m	15	**3RK1902-2HB50**		1	1 unit	42D
- 10 m	15	**3RK1902-2HC10**		1	1 unit	42D
IE FC M12 Plug PRO PROFINET M12 plug-in connectors, D-coded with quick-connect technology, axial outgoing feeder						
• 1 unit	1	**6GK1901-0DB20-6AA0**		1	1 unit	5K1
• 8 units	1	**6GK1901-0DB20-6AA8**		1	8 units	5K1
PROFINET M12 connectors, D-coded, angular	5	**3RK1902-2DA00**		1	1 unit	42D
IE Panel Feedthrough Control cabinet bushing for transition from M12 connection method (D-coded, IP65/IP67) to RJ45 connection method (IP20), 1 pack = 5 units	1	**6GK1901-0DM20-2AA5**		1	5 units	5K2
7/8" connecting cables for power supply in various lengths:						
• 5-core, 5 x 1.5 mm^2, trailing, pre-assembled, with two 7/8" connectors (axial outgoing feeder), 5-pole, up to 50 m						
- Length 1.5 m	1	**6XV1822-5BH15**		1	1 unit	5K1
- Length 2.0 m	1	**6XV1822-5BH20**		1	1 unit	5K1
- Length 3.0 m	1	**6XV1822-5BH30**		1	1 unit	5K1
- Length 5.0 m	1	**6XV1822-5BH50**		1	1 unit	5K1
- Length 10 m	1	**6XV1822-5BN10**		1	1 unit	5K1
- Length 15 m	1	**6XV1822-5BN15**		1	1 unit	5K1
For more special lengths with 90° or 180° cable feeder, see https://support.industry.siemens.com/cs/ww/en/view/26999294.						
• Trailing power cables, 5 x 1.5 mm^2, preassembled at both ends with 7/8" connectors, angular (one end with socket, one end with pin):						
- Length 3.0 m	15	**3RK1902-3NB30**		1	1 unit	42D
- Length 5.0 m	15	**3RK1902-3NB50**		1	1 unit	42D
- Length 10 m	15	**3RK1902-3NC10**		1	1 unit	42D
• Trailing power cables, 5 x 1.5 mm^2, preassembled at one end with 7/8" connector with female insert, angular (one end with socket, one end open):						
- Length 3.0 m	15	**3RK1902-3GB30**		1	1 unit	42D
- Length 5.0 m	15	**3RK1902-3GB50**		1	1 unit	42D
- Length 10 m	15	**3RK1902-3GC10**		1	1 unit	42D
Power cable 5-core, 5 x 1.5 mm^2, trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-8AH10**		1	1 m	5K2

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Illustrations are approximate

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 F PN/DP CPU interface modules (continued)						
7/8" connectors For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	**6GK1905-0FA00**		1	5 units	5K2
• With female insert, pack of 5	1	**6GK1905-0FB00**		1	5 units	5K2
• Angular, with female insert, 1 unit	5	**3RK1902-3DA00**		1	1 unit	42D
• Angular with pin insert, 1 unit	5	**3RK1902-3BA00**		1	1 unit	42D
7/8" covers, pack of 10	1	**6ES7194-3JA00-0AA0**		1	10 units	250
Twisted pair connecting cables 4 x 2 with RJ45 connectors in various lengths:						
• Length 0.5 m	1	**6XV1870-3QE50**		1	1 unit	5K1
• Length 1 m	1	**6XV1870-3QH10**		1	1 unit	5K1
• Length 2 m	1	**6XV1870-3QH20**		1	1 unit	5K1
• Length 6 m	1	**6XV1870-3QH60**		1	1 unit	5K1
• Length 10 m	1	**6XV1870-3QN10**		1	1 unit	5K1
Crossed twisted pair connecting cables 4 x 2 with RJ45 connectors in various lengths:						
• Length 0.5 m	1	**6XV1870-3RE50**		1	1 unit	5K1
• Length 1 m	1	**6XV1870-3RH10**		1	1 unit	5K1
• Length 2 m	1	**6XV1870-3RH20**		1	1 unit	5K1
• Length 6 m	1	**6XV1870-3RH60**		1	1 unit	5K1
• Length 10 m	1	**6XV1870-3RN10**		1	1 unit	5K1
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9802-0AA00**		100	10 units	42C
M12 sealing caps with female thread 5 units	1	**6ES7194-4JD60-0AA0**		1	5 units	250
PROFIBUS M12 connecting cables Preassembled with two 5-pole M12 plugs/sockets, up to max. 100 m in various lengths:						
• Length 1.5 m	1	**6XV1830-3DH15**		1	1 unit	5K1
• Length 2 m	1	**6XV1830-3DH20**		1	1 unit	5K1
• Length 3 m	1	**6XV1830-3DH30**		1	1 unit	5K1
• Length 5 m	1	**6XV1830-3DH50**		1	1 unit	5K1
• Length 10 m	1	**6XV1830-3DN10**		1	1 unit	5K1
• Length 15 m	1	**6XV1830-3DN15**		1	1 unit	5K1
• For more special lengths with 90° or 180° cable feeder, see https://support.industry.siemens.com/cs/ww/en/view/26999294.						
PROFIBUS M12 bus termination plugs						
• Female contact insert	1	**6GK1905-0ED00**		1	5 units	5K2
• Pin insert	1	**6GK1905-0EC00**		1	5 units	5K2
M12 plug-in connectors, axial outgoing feeder, with pin insert	1	**6GK1905-0EA00**		1	5 units	5K2
PROFIBUS FC Standard Cable GP Standard type with special design for fast installation, 2-core, shielded, sold by the meter: max. length 1 000 m, minimum order 20 m	1	**6XV1830-0EH10**		1	1 m	5K1
PROFIBUS FC Trailing Cable 2-core, shielded Sold by the meter: max. length 1 000 m, minimum order 20 m	1	**6XV1830-3EH10**		1	1 m	5K2
PROFIBUS FC Food Cable 2-core, shielded Sold by the meter: max. length 1 000 m, minimum order 20 m	1	**6XV1830-0GH10**		1	1 m	5K2
PROFIBUS FC Robust Cable 2-core, shielded Sold by the meter: max. length 1 000 m, minimum order 20 m	1	**6XV1830-0JH10**		1	1 m	5K2
PROFIBUS M12 connectors 5-pole, B-coded, metal enclosure, female insert 1 pack = 5 units	1	**6GK1905-0EB00**		1	5 units	5K2

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Selection and ordering data

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Digital expansion modules						
8 DI digital input modules 24 V DC, with module diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7141-4BF00-0AA0**		1	1 unit	250
8 DI High Feature digital input modules 24 V DC, with channel diagnostics, including bus module Connection module must be ordered separately.	1	**6ES7141-4BF00-0AB0**		1	1 unit	250
16 DI digital input modules 24 V DC, with module diagnostics, including bus module. Connection module 6ES7194-4CB50-0AA0 must be ordered separately.	1	**6ES7141-4BH00-0AA0**		1	1 unit	250
4 DO digital output modules 24 V DC, 2 A, with module diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7142-4BD00-0AA0**		1	1 unit	250
4 DO High Feature digital output modules 24 V DC, 2 A, with channel diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7142-4BD00-0AB0**		1	1 unit	250
8 DO digital output modules 24 V DC, 0.5 A, with module diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7142-4BF00-0AA0**		1	1 unit	250
4 DI/4 DO digital input and output modules 24 V DC, 0.5 A, with module diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7143-4BF50-0AA0**		1	1 unit	250
4 DIO / 4 DO digital input and output modules 24 V DC, 0.5 A, with module diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7143-4BF00-0AA0**		1	1 unit	250
Accessories						
CM IO 4 x M12 connection modules 4 M12 sockets for connection of digital or analog sensors or actuators to ET 200pro	1	**6ES7194-4CA00-0AA0**		1	1 unit	250
CM IO 4 x M12 Invers connection modules 4 M12 sockets for connection of digital actuators to ET 200pro (4 DO and 4 DO HF); 2 x M12 with single assignment, 2 x M12 with double assignment	1	**6ES7194-4CA50-0AA0**		1	1 unit	250
CM IO 4 x M12 P connection modules 4 M12 sockets for connection of digital sensors or actuators to ET 200pro; plastic version	1	**6ES7194-4CA10-0AA0**		1	1 unit	250
CM IO 8 x M12 connection modules 8 M12 sockets for connection of digital sensors or actuators to ET 200pro	1	**6ES7194-4CB00-0AA0**		1	1 unit	250
CM IO 8 x M12 P connection modules 8 M12 sockets for connection of digital sensors or actuators to ET 200pro; plastic version	1	**6ES7194-4CB10-0AA0**		1	1 unit	250
CM IO 8 x M12D connection modules 8 M12 sockets for connection of digital sensors or actuators to ET 200pro	1	**6ES7194-4CB50-0AA0**		1	1 unit	250
CM IO 8 x M8 connection modules 8 M8 sockets for connection of digital sensors or actuators to ET 200pro	1	**6ES7194-4EB00-0AA0**		1	1 unit	250
CM IO 2 x M12 connection modules 2 M12 8-pole sockets; to be used with: EM 8 DI 24 V DC and 8 DO 24 V DC/0.5 A	1	**6ES7194-4FB00-0AA0**		1	1 unit	250
CM IO 1 x M23 connection modules 1 M23 socket, to be used with: EM 8 DI, 24 V DC and 8 DO 24 V DC/0.5 A	1	**6ES7194-4FA00-0AA0**		1	1 unit	250
Module labeling plates For color coding of CM IOs in the colors white, red, blue and green; pack of 100	1	**6ES7194-4HA00-0AA0**		1	500 units	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9802-0AA00**		100	10 units	42C
Labels 20 x 7 mm, pastel turquoise, pack of 340	20	**3RT1900-1SB20**		100	340 units	41B
M12 Y-shaped coupler plugs For double connection of sensors with a single cable, 5-pole; cannot be used for F-DI4/8	1	**6ES7194-1KA01-0XA0**		1	1 unit	250
M12 Y-cables For double connection of I/Os with a single cable to ET 200, 5-pole	1	**6ES7194-6KA00-0XA0**		1	1 unit	250
M8 sealing caps For IP67 modules	2	**3RK1901-1PN00**		100	10 units	42C

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Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Analog expansion modules						
4AI U analog input modules High Feature, ±10 V; ±5 V; 0 ... 10 V; 1 ... 5 V, channel diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7144-4FF01-0AB0**		1	1 unit	250
4AI I analog input modules High Feature, ±20 mA; 0 ... 20 mA; 4 ... 20 mA, channel diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7144-4GF01-0AB0**		1	1 unit	250
4AI RTD analog input modules High Feature; resistors: 150, 300, 600 and 3 000 Ω; resistance thermometers: Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni200, Ni500 and Ni1000; channel diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7144-4JF00-0AB0**		1	1 unit	250
4AI TC analog input modules High Feature; thermocouples: Types B, E, J, K, L, N, R, S, T; voltage measurement: ±80 mV; channel diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7144-4PF00-0AB0**		1	1 unit	250
4AO U analog output modules High Feature, ±10 V; 0 ... 10 V; 1 ... 5 V, channel diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7145-4FF00-0AB0**		1	1 unit	250
4AO I analog output modules High Feature, ±20 mA; 0 ... 20 mA; 4 ... 20 mA, channel diagnostics, including bus module. Connection module must be ordered separately.	1	**6ES7145-4GF00-0AB0**		1	1 unit	250
Accessories						
CM IO 4 x M12 connection modules 4 M12 sockets for connection of digital or analog sensors or actuators to ET 200pro	1	**6ES7194-4CA00-0AA0**		1	1 unit	250
M12 compensation plugs With integrated Pt100 for reference point compensation when connecting thermocouples	1	**6ES7194-4AB00-0AA0**		1	1 unit	250
Module labeling plates For color coding of CM IOs in the colors white, red, blue and green; pack of 100	1	**6ES7194-4HA00-0AA0**		1	500 units	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9802-0AA00**		100	10 units	42C
Fail-safe digital expansion modules						
8/16 F-DI PROFIsafe fail-safe digital input modules 24 V DC, including bus module. Connection module must be ordered separately.	1	**6ES7148-4FA00-0AB0**		1	1 unit	241
4/8 F-DI, 4 F-DO 2 A fail-safe digital input/output modules 24 V DC, including bus module. Connection module must be ordered separately.	1	**6ES7148-4FC00-0AB0**		1	1 unit	241
F-Switch PROFIsafe fail-safe solid-state modules Three fail-safe PP-switching outputs for safe switching of the backplane busbars (2L+, F0, F1); two fail-safe digital inputs, 45 mm; usable up to SIL3 (IEC 61508)	1	**6ES7148-4FS00-0AB0**		1	1 unit	241
Accessories						
Connection modules For F-Switch PROFIsafe fail-safe solid-state modules	1	**6ES7194-4DA00-0AA0**		1	1 unit	241
Connection modules For the 4/8 F-DI/4 F-DO, 24 V DC/2 A fail-safe solid-state module	1	**6ES7194-4DC00-0AA0**		1	1 unit	241
Connection modules For the 8/16 F-DI, 24 V DC/2 A fail-safe solid-state module	1	**6ES7194-4DD00-0AA0**		1	1 unit	241
PROFIBUS DP IM 154-2 interface modules Including termination module	1	**6ES7154-2AA01-0AB0**		1	1 unit	250
PROFINET IM154-4 PN interface modules Including termination module	1	**6ES7154-4AB10-0AB0**		1	1 unit	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9802-0AA00**		100	10 units	42C

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Illustrations are approximate

ET 200pro – I/O modules

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
PM-E power modules						
PM-E power modules 24 V DC For resupply and group formation of the 24 V DC load voltage for solid-state modules within an ET 200pro station	1	**6ES7148-4CA00-0AA0**		1	1 unit	250
Accessories						
CM PM-E ECOFAST connection modules For resupply of 24 V load voltage 1 ECOFAST Cu terminal	1	**6ES7194-4BA00-0AA0**		1	1 unit	250
CM PM-E Direct connection modules For resupply of 24 V load voltage Up to two M20 screwed cable glands	1	**6ES7194-4BC00-0AA0**		1	1 unit	250
CM PM-E 7/8" connection modules For resupply of 24 V load voltage, 1 x 7/8"	1	**6ES7194-4BD00-0AA0**		1	1 unit	250
CM PM-E PP connection modules For resupply of 24 V load voltage, 2 x push-pull, with spare fuse	1	**6ES7194-4BE00-0AA0**		1	1 unit	250
Spare fuses 12.5 A quick, for interface and power modules, pack of 10 units per packing unit	1	**6ES7194-4HB00-0AA0**		1	10 units	250
PROFIBUS ECOFAST Hybrid Cable – copper Trailing cables (PUR sheath) with two copper conductors, shielded, for PROFIBUS DP and four copper cores with 1.5 mm^2, in different lengths:						
• Non-assembled						
- 50 m	1	**6XV1830-7AN50**		1	1 unit	5K2
- 100 m	1	**6XV1830-7AT10**		1	1 unit	5K2
• Assembled With ECOFAST plug and socket						
- 1.5 m	1	**6XV1830-7BH15**		1	1 unit	5K2
- 3 m	1	**6XV1830-7BH30**		1	1 unit	5K2
- 5 m	1	**6XV1830-7BH50**		1	1 unit	5K2
- 10 m	1	**6XV1830-7BN10**		1	1 unit	5K2
- 15 m	1	**6XV1830-7BN15**		1	1 unit	5K2
- 20 m	1	**6XV1830-7BN20**		1	1 unit	5K2
- 25 m	1	**6XV1830-7BN25**		1	1 unit	5K2
- 30 m	1	**6XV1830-7BN30**		1	1 unit	5K2
- 35 m	1	**6XV1830-7BN35**		1	1 unit	5K2
- 40 m	1	**6XV1830-7BN40**		1	1 unit	5K2
- 5 m	20	**6XV1830-7BN45**		1	1 unit	5K2
- 50 m	1	**6XV1830-7BN50**		1	1 unit	5K2
PROFIBUS ECOFAST Hybrid Cable GP Trailing cable with 4 x Cu and 2 x Cu, shielded with UL approval, in various lengths:						
• Non-assembled						
- 50 m	20	**6XV1860-4PN50**		1	1 unit	5K2
- 100 m	1	**6XV1860-4PT10**		1	1 unit	5K2
• Assembled With ECOFAST plug and socket						
- 1.5 m	1	**6XV1860-3PH15**		1	1 unit	5K2
- 3 m	1	**6XV1860-3PH30**		1	1 unit	5K2
- 5 m	1	**6XV1860-3PH50**		1	1 unit	5K2
- 10 m	1	**6XV1860-3PN10**		1	1 unit	5K2
- 15 m	1	**6XV1860-3PN15**		1	1 unit	5K2
- 20 m	1	**6XV1860-3PN20**		1	1 unit	5K2
- 25 m	1	**6XV1860-3PN25**		1	1 unit	5K2
- 30 m	20	**6XV1860-3PN30**		1	1 unit	5K2
- 35 m	20	**6XV1860-3PN35**		1	1 unit	5K2
- 40 m	20	**6XV1860-3PN40**		1	1 unit	5K2
- 45 m	20	**6XV1860-3PN45**		1	1 unit	5K2
- 50 m	20	**6XV1860-3PN50**		1	1 unit	5K2
ECOFAST plug connectors, can be preassembled Sockets; Order unit 5 units	1	**6GK1905-0CB00**		1	5 units	5K2
PROFIBUS ECOFAST hybrid plugs, angular With 2 x Cu shielded and 4 x Cu 1.5 mm^2; 5 units; with mounting instructions; female insert	1	**6GK1905-0CD00**		1	5 units	5K2
Push-pull connectors For 1L+/ 2L+, non-assembled	1	**6GK1907-0AB10-6AA0**		1	1 unit	5K2
Covers for push-pull sockets 5 units	1	**6ES7194-4JA50-0AA0**		1	5 units	250

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
PM-E power modules (continued)						
Accessories for CM PM-E Direct						
Power cable 5-core, 5 x 1.5 mm^2, trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-8AH10**		1	1 m	5K2
Accessories for CM PM-E 7/8"						
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm^2, trailing, preassembled with two 7/8" plugs, 5-pole, in various lengths:						
• 1.5 m	1	**6XV1822-5BH15**		1	1 unit	5K1
• 2.0 m	1	**6XV1822-5BH20**		1	1 unit	5K1
• 3.0 m	1	**6XV1822-5BH30**		1	1 unit	5K1
• 5.0 m	1	**6XV1822-5BH50**		1	1 unit	5K1
• 10 m	1	**6XV1822-5BN10**		1	1 unit	5K1
• 15 m	1	**6XV1822-5BN15**		1	1 unit	5K1
7/8" connectors With axial cable feeder						
• With female insert, pack of 5	1	**6GK1905-0FB00**		1	5 units	5K2
PM-O power module outputs						
PM-O power modules 2 x 24 V DC For tapping the 24 V load voltage 2L+ and the solid-state/sensor supply voltage 1L+ within an ET 200pro station	1	**6ES7148-4CA60-0AA0**		1	1 unit	250
Accessories						
CM PM-O PP connection modules For tapping 24 V load voltage and solid-state/sensor supply voltage, 2 x push-pull plug-in connectors	1	**6ES7194-4BH00-0AA0**		1	1 unit	250
Push-pull connectors For 1L+/ 2L+, non-assembled	1	**6GK1907-0AB10-6AA0**		1	1 unit	5K2
Covers for push-pull sockets 5 units	1	**6ES7194-4JA50-0AA0**		1	5 units	250
ET 200pro pneumatic interfaces						
EM 148-P pneumatic interfaces						
• DO 16 x P/CPV 10 for direct connection of the FESTO valve terminals CPV 10 16 DO x P	1	**6ES7148-4EA00-0AA0**		1	1 unit	250
• DO 16 x P/CPV 14 for direct connection of the FESTO valve terminals CPV 14 16 DO x P	1	**6ES7148-4EB00-0AA0**		1	1 unit	250
• FESTO CPV 10 valve terminals		Available from Festo				
• FESTO CPV 14 valve terminals		Available from Festo See page 16/20				

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

ET 200pro – I/O modules

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIMATIC RF170C						
SIMATIC RF170C communication modules For connection to the distributed ET 200pro I/O system	1	**6GT2002-0HD00**		1	1 unit	572
Accessories						
Connection blocks for SIMATIC RF170C For connecting 2 readers through M12 plug-in connectors	1	**6GT2002-1HD00**		1	1 unit	572
Reader cables for MOBY U Material PUR, CMG approval, trailing, in different lengths:						
• 2 m	1	**6GT2091-4FH20**		1	1 unit	572
• 5 m	1	**6GT2091-4FH50**		1	1 unit	572
Reader cables for MOBY D Material PUR, CMG approval, trailing, 2 m	1	**6GT2691-4FH20**		1	1 unit	572
Reader cables for SIMATIC RF200/RF300/RF600/MV400 Or MOBY U/D extension cable and SIMATIC RF200 / RF300 / RF600 / MV400, material PUR, CMG approval, trailing, in different lengths:						
• Straight connector						
- 2 m	1	**6GT2891-4FH20**		1	1 unit	572
- 5 m	1	**6GT2891-4FH50**		1	1 unit	572
- 10 m	1	**6GT2891-4FN10**		1	1 unit	572
- 20 m	1	**6GT2891-4FN20**		1	1 unit	572
- 50 m	1	**6GT2891-4FN50**		1	1 unit	572
• Plug angular at the reader						
- 2 m	1	**6GT2891-4JH20**		1	1 unit	572
- 5 m	1	**6GT2891-4JH50**		1	1 unit	572
- 10 m	1	**6GT2891-4JN10**		1	1 unit	572
M12 sealing caps for unused reader connections Minimum order quantity 10 units, price per 100 units	►	**3RX9802-0AA00**		100	10 units	42C
DVD "RFID Systems Software & Documentation"	5	**6GT2080-2AA20**		1	1 unit	572

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Stabilized power supplies						
SIMATIC ET 200pro PS Stabilized power supply in the construction and design of the distributed I/O system, with the option of looping the power to other modules; with degree of protection IP67 Input: 3 AC 400-480 V Output: 24 V DC/8 A	1	**6ES7148-4PC00-0HA0**		1	1 unit	589
Accessories						
Power connection plugs For connection to the distributed I/O system						
• for X1 (6 mm^2)	5	**3RK1911-2BE30**		1	1 unit	42D
• for X2 (6 mm^2)	5	**3RK1911-2BF10**		1	1 unit	42D
Sealing caps For 9-pole power socket connectors						
• X2 (pack of 1)	5	**3RK1902-0CK00**		1	1 unit	42D
• X2 (pack of 10)	5	**3RK1902-0CJ00**		10	1 unit	42D

* You can order this quantity or a multiple thereof.
Illustrations are approximate

ET 200pro FC-2 frequency converters

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
ET 200pro FC-2 frequency converters						
380 ... 480 V 3 AC, +10 %/-10 %, 47 ... 63 Hz Overload: 150 %, 60 s; 200 %, 3 s Power: 1.1 kW (0 ... +55 °C), 1.5 kW (0 ... +45 °C)						
ET 200pro FC-2 frequency converters with integrated safety functions	10	**6SL3514-1KE13-5AE0**		1	1 unit	337
Accessories for ET 200pro FC-2 frequency converters						
Backplane bus modules for accommodating the frequency converter[1]	X	**6SL3260-2TA00-0AA0**		1	1 unit	337
Connector set for energy supply, HAN Q4/2						
• 2.5 mm²	5	**3RK1911-2BE50**		1	1 unit	42D
• 4.0 mm²	5	**3RK1911-2BE10**		1	1 unit	42D
• 6.0 mm²	5	**3RK1911-2BE30**		1	1 unit	42D
Motor cables pre-assembled at one end For motors with brake and temperature sensor with HAN Q8 connector, shielded Cross-section 1.5 mm²						
• Length 1.5 m		**ZKT: 70020501000150** **HTG: 61 88 201 0288**				
• Length 3 m		**ZKT: 70020501000300** **HTG: 61 88 201 0289**				
• Length 5 m		**ZKT: 70020501000500** **HTG: 61 88 201 0290**				
• Length 10 m		**ZKT: 70020501001000** **HTG: 61 88 201 0299**				
Frequency converter plugs For motor cable, shielded, HAN Q8 Cross-section 1.5 mm²		**ZKT:10032001** **HTG: 61 83 401 0131** ZKT: Available from KnorrTec See page 16/20 HTG: Available from Harting, See page 16/20				
Further selected accessories are available from Siemens Solution Partners. Select "Distributed Field Installation System" as technology in the "Solution Partner Finder". www.siemens.com/partnerfinder.						
Power jumper plugs For 400 V power loop-through connection to the following 400 V modules	2	**3RK1922-2BQ00**		1	1 unit	42D
IOP Handheld For use with SINAMICS G120, SINAMICS G120C, SINAMICS G120P, SINAMICS G110D, SINAMICS G120D, SINAMICS G110M, SINAMICS S110 or SIMATIC ET 200pro FC-2 Included in the scope of supply: • IOP (6SL3255-0AA00-4JA1) • Handheld enclosure • Batteries (4 × AA) • Charger (international) • RS 232 connecting cable (length 3 m, only used in combination with SINAMICS G120, SINAMICS G120C, SINAMICS G120P and SINAMICS S110 [2]) • USB cable (length 1 m)	3	**6SL3255-0AA00-4HA0**		1	1 unit	343
RS 232 interface cable With optical interface for connection of the ET 200pro FC-2 frequency converter to the IOP Handheld (length 2.5 m) [2]	5	**3RK1922-2BP00**		1	1 unit	42D
PC inverter connection kit 2 (mini USB interface cable for communication with a PC) For controlling and commissioning an inverter directly from a PC via a point-to-point connection if the appropriate software (STARTER commissioning tool [3], V4.3 and higher) has been installed; including USB cable (length 3 m)	3	**6SL3255-0AA00-2CA0**		1	1 unit	343
Memory card (SD card) For the parameter settings of ET 200pro FC-2 If required, the complete parameter settings of the frequency converter can be saved on the memory card. During servicing, the plant is immediately ready for use again after replacing the frequency converter and inserting the memory card.	5	**6SL3054-4AG00-2AA0**		1	1 unit	753

[1] Absolutely essential for operation of the converter.

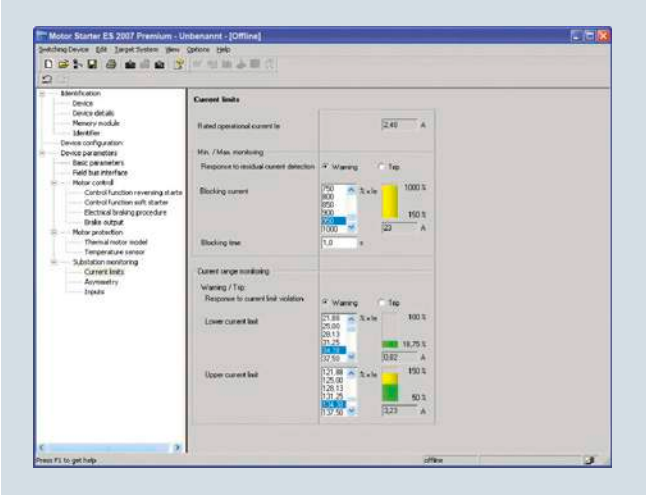
[2] For use in combination with SINAMICS G110D, SINAMICS G120D, SINAMICS G110M or SIMATIC ET 200pro FC-2, the RS232 connecting cable with optical interface is required (Article No.: 3RK1922-2BP00). The cable must be ordered separately.

[3] The STARTER commissioning tool is available online at www.siemens.com/starter.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

Motor Starter ES

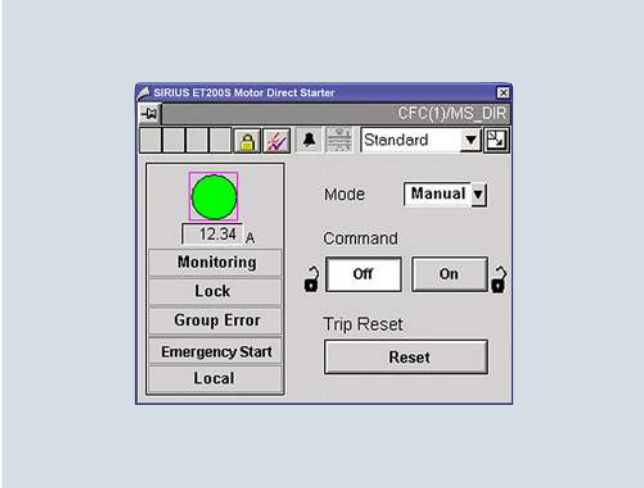


Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

Motor Starter ES is used for start up, parameterization, diagnostics, documentation and the preventative maintenance of the motor starters in the SIMATIC ET 200pro, SIMATIC ET 200S and SIRIUS M200D product families.

For detailed information on the Motor Starter ES software, see page 14/15.

SIRIUS motor starter block library for SIMATIC PCS 7



Faceplate of the motor block

With the SIRIUS motor starter PCS 7 function block library, SIRIUS ET 200S and ET 200pro motor starters can be easily and simply integrated into the SIMATIC PCS 7 process control system.

The SIRIUS motor starter PCS 7 function block library contains the diagnostics and driver blocks corresponding to the SIMATIC PCS 7 diagnostics and driver concept as well as the elements (symbols and faceplates) required for operator control and process monitoring.

For detailed information on the SIRIUS motor starter block library for SIMATIC PCS 7, see page 14/18.

Overview

SIRIUS M200D AS-i Basic motor starters with manual local operation

The intelligent and highly flexible SIRIUS M200D motor starters for distributed installation start, monitor and protect motors and loads up to 5.5 kW.

The M200D motor starters are available in four versions:

M200D AS-i Basic	M200D AS-i Standard	M200D PROFIBUS	M200D PROFINET
Motor control with AS-i communication		PROFIBUS	PROFINET
Mechanical or electronic switching			
✓	✓	✓	✓
Electronic switching with soft starter functionality			
--	✓	✓	✓

✓ Function available
-- Function not available

More information

Home page, see www.siemens.com/motorstarter
Industry Mall, see www.siemens.com/product?M200D

Basic functionality

The versions of the M200D motor starter are equipped with the following properties and functions:

- Available as direct-on-line and reversing starters in a rugged design
- Electromechanical or electronic switching version
- Low variance - only two device versions up to 5.5 kW thanks to wide range setting
- All versions have the same enclosure size.
- Degree of protection IP65
- Quick and failsafe wiring of system and motor cables using ISO 23570 plug-in connector technology (Q4/2 and Q8/0)
- Robust and widely used M12 connection method for digital inputs and outputs
- Integrated feeder connector monitoring
- Full motor protection through overload protection and a temperature sensor (PTC, TC)
- Short-circuit and overload protection integrated
- Integrated repair switch lockable with three locks (multi-level service)
- Uniform wiring to the SINAMICS G110D, SINAMICS G110M and SINAMICS G120D frequency inverters and to the ET 200pro distributed I/O system
- Extensive diagnostics concept using LEDs
- Optional integrated manual local control with key-operated switch (ordering option)
- Optionally available brake actuation with voltages from 180 V DC (no rectifier needed in motor) or 230/400 V AC (order versions)

Article No. scheme

Product versions		Article number													
Motor starters		**3RK13**	**□**	**5**	**–**	**6**	**□**	**S**	**□**	**0**	**–**	**□**	**A**	**□**	**□**
Type	AS-i Basic		**1**										**A**		
	AS-i Standard		**2**										**A**		
	PROFIBUS/PROFINET		**9**										**D**		
Setting range for rated operational current I_A	0.15 ... 2 A						**K**								
	1.5 ... 9 A						**N**								
	1.5 ... 12 A						**L**								
Starter version	Electromechanical starters								**4**						with integrated contactor
	Electronic starters								**7**						with thyristors
Product function	Direct-on-line starters									**0**					
	Reversing starter									**1**					
	Direct-on-line starters									**2**					with manual local operation
	Reversing starter									**3**					with manual local operation
Brake actuation	None													**0**	
	230/400 V AC													**3**	
	180 V DC													**5**	
Example		**3RK13**	**1**	**5**	**–**	**6**	**K**	**S**	**4**	**0**	**–**	**3**	**A**	**A**	**0**

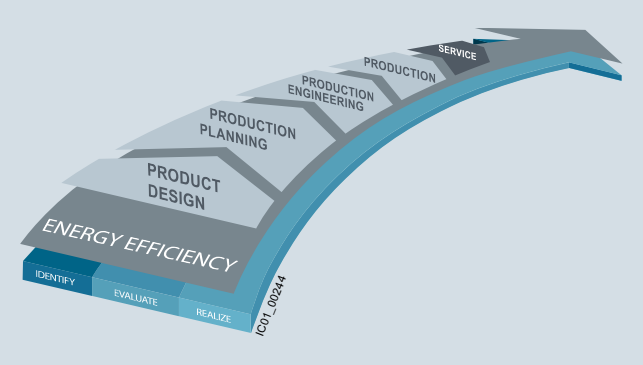
Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative SIRIUS industrial controls products can also make a major contribution to the energy efficiency of a plant (see www.siemens.com/sirius/energysaving).

M200D motor starters contribute to energy efficiency as follows:

- Energy management:
  Provision of energy data (current) by bus to higher-level systems using PROFIenergy (see "PROFINET M200D Motor Starters", page 9/47)
- Elimination of energy consumption in dead times through disconnection using PROFIenergy (see "PROFINET M200D Motor Starters", page 9/47)
- Current management:
  With the electronic soft starter, avoidance of current peaks, thus reducing the load on the grid and the mechanical system
- Depending on technology, lower intrinsic power loss than speed-controlled drive systems
- Solid-state modules equipped with soft start technology with bypass contactor, resulting in lower power losses than with conventional soft starters after start up

Product advantages

M200D motor starters provide the following advantages for customers:

- High plant availability through plug-in capability of the main circuit, communication and I/Os – relevant for installing and replacing devices
- Cabinet-free construction and near-motor installation thanks to the high degree of protection IP65
- The motor starters record the actual current flow for the parameterizable electronic motor overload protection. Reliable messages concerning the overshooting or undershooting of setpoint values for comprehensive motor protection. All motor protection functions can be defined by simple parameterization
- Low stock levels and low order costs thanks to a wide setting range for the electronic motor protection of 1:10 (only two device versions up to 5.5 kW)
- The integrated wide range for the current enables a single device to cover numerous standard motors of different sizes
- Comprehensive offering of accessories, including ready-assembled cables
- The M200D motor starters can be installed with a few manual steps. The integrated plug-in technology enables far lower wiring outlay: preassembled cables can be plugged directly onto the motor starter module
- Easy and user-friendly installation because all versions have the same enclosure dimensions
- Fast and user-friendly commissioning using optional manual local operation
- Increase of process speed through integrated functions such as "Quick Stop" and "Disable Quick Stop", e.g. at points and crossings
- Optional manual local control with momentary-contact and latching operation for easier start up and easier servicing

Application

The high degree of protection IP65 makes the M200D motor starters suitable in particular for use on extensive conveying systems such as are found in mail sorting centers, airports, automotive factories and the packing industry.

For simple drive tasks, particularly in conveyor applications, the new SINAMICS G110D frequency inverter series with a performance range from 0.75 kW to 7.5 kW and degree of protection IP65 is the ideal partner for the M200D motor starters.

SINAMICS G110D allow for stepless speed control of three-phase asynchronous motors and comply with the requirements for materials handling applications with frequency control (for further information see catalog D 31).

For simple operating mechanism tasks in conveyor applications in which a frequency inverter integrated into the motor is required, the SINAMICS G110M frequency inverter with a performance range from 0.37 kW to 4 kW and degree of protection IP65/66 is the ideal partner. The SINAMICS G110M is available individually as a frequency inverter for self-assembly and premounted on SIMOGEAR geared motors, and with its conveyor-specific functions it satisfies the requirements of conveyor technology applications (for further information, see Catalog D 31).

Use of SIRIUS M200D motor starters in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS M200D motor starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring; see "Application Manual for SIRIUS Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820.

For more information see Preface, page 7.

Overview

For motor control using AS-Interface there are the following M200D motor starter versions: SIRIUS M200D AS-i Basic and SIRIUS M200D AS-i Standard (basic functionality, see page 9/38 "SIRIUS M200D Motor Starters" → "General Data" → "Overview").

SIRIUS M200D AS-i Basic

Functionality

- Easy and fast on-site start up through parameterization of local setting knobs (DIP switches) and rotary coding switches for adjusting the rated operational current. The rotary coding switch has an OFF position for deactivating the overload protection with the help of the thermal motor model when using a temperature sensor.

Communications

- AS-i communication with A/B addressing according to Spec V2.1
- The AS-i bus is connected cost-effectively using an M12 connection on the device. Of the four digital inputs, two are contained in the process image and can therefore be used in the PLC program. The other two inputs are locally effective and permanently assigned with functions.
- The LEDs can provide comprehensive diagnostics of the device on the spot. In addition to diagnostics using the PAE process image, the device can create up to 15 different diagnostic signals per slave. The message with the highest priority can be read out through the AS-i communication. This is yet another new development which distinguishes the M200D AS-i Basic motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the system.

SIRIUS M200D AS-i Standard

The intelligent and highly flexible M200D AS-i standard motor starter in A/B technology starts and protects motors and loads up to 5.5 kW. They are available in direct-on-line or reversing starter versions, in a mechanical version and also an electronic version (the latter with soft start function).

The M200D AS-i Standard motor starter is the most functional member of the SIRIUS motor starter family in the high degree of protection IP65 for AS-i communication. Consistency with other products of the SIRIUS M200D motor starter range and with the frequency converter and ET 200pro I/O system is assured.

Functionality

- AS-i communication with A/B addressing according to Spec 3.0
- Electronic version also with soft start function
- AS-i slave profile 7AE/7A5 with process image 6E/4A
- Full TIA integration: All digital inputs and outputs exist in the cyclic process image and are visible through AS-i, providing maximum flexibility and best adaptability to the application.
- Additionally expanded diagnostics using data record through AS-i bus
- Complete plant monitoring using statistics data record and current value monitoring by means of data records
- Parameterization through AS-i bus with the help of data records or an expanded process image from the user program
- Control of the motor starter using a command data record from the user program
- Flexible assignment of the digital inputs and outputs with all available assignable input actions
- Parameterization using Motor Starter ES at the local interface (ordering option for start up software)
- Diagnostics with the help of Motor Starter ES (ordering option for start up software)

Mounting and Installation

The M200D motor starters can be installed with a few manual steps. The integrated plug-in technology enables far lower wiring outlay. Connecting cables can be plugged directly onto the motor starter module. Swapping of the connecting wires and malfunctions within the plant are prevented by preassembled cables. The AS-i bus is connected cost-effectively using an M12 connection on the device. All versions feature identical enclosure sizes, which simplifies system design and conversion.

Parameterization and configuration

The particularly robust M200D AS-i Standard motor starter is characterized by numerous functions which can be flexibly parameterized. It enables highly flexible parameterization through the AS-i bus using data records from the user program as well as user-friendly local parameterization using the Motor Starter ES start up software through the local point-to-point interface.

Functions can be flexibly assigned to the digital inputs and outputs, adapting them to all possible conveyor applications. All motor protection functions, limit values and reactions can be defined by parameterization. The AS-i Standard is unique. In its 6E/4A process image the motor starter sends all four digital inputs and the digital output via the process image to the PLC in cyclic mode. System configuration and system documentation are facilitated not least by a number of CAX data.

Operation

The new generation of motor starters is characterized by its advanced functionality, maximum flexibility and extremely high degree of automation.

All digital inputs and outputs exist in the cyclic process image. All limit values for monitoring functions and their reactions are parameterizable and therefore adaptable to the application. The motor starters record the actual current flow. Evaluating the current of the parameterizable solid-state overload protection increases the availability of the drives, as do reliable messages concerning the overshooting or undershooting of setpoint values.

Diagnostics and maintenance

The M200D sets new standards for diagnostics. In addition to diagnostics using the PAE process image and diagnostics by "parameter echo" (up to 15 different diagnostic signals per slave can be read out via AS-i communication), the possibility of reading out diagnostic data records is unique on the market.

The AS-i Standard is recommended in particular for expansive and highly automated system components because the possibility of monitoring devices and systems with data records (statistical data, measured values and device diagnostics) provides an in-depth view of the plant from the control room, guaranteeing the monitoring process and increasing plant availability.

Preventive maintenance can be carried out with the integrated maintenance timer and plant downtimes prevented as a result in advance.

Local control of a drive is possible using the ordering option with integrated manual operation. This is yet another new development which distinguishes the M200D AS-i Standard motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the plant.

	SIRIUS M200D AS-i Basic	SIRIUS M200D AS-i Standard
Device functions (firmware features)		
Slave on the bus		
Fieldbus	✓ AS-i	
Slave type	✓ A/B acc. to Spec 2.1	✓ A/B acc. to Spec 3.0
Profile	✓ 7.A.E	✓ 7.A.E & 7.A.5
Number of assigned AS-i addresses on the bus	✓ 1	✓ 2
Number of stations per AS-i master	✓ Max. 62 devices	✓ Max. 31 devices
AS-i master profile	✓ M3 and higher	✓ M4 and higher
Parameter assignment		
DIP switches	✓	--
Potentiometer for rated operational current	✓	--
Motor Starter ES	--	✓
Data records through AS-i	--	✓
Diagnostics		
Diagnostics through parameter channel	✓	
Acyclic through data records	--	✓
Expanded process image PAE 4 bytes	--	✓
Process image		
Process image	✓ 4E/3A	✓ 6E/4A
Data channels		
Local optical interface (manual local)	✓	
AS-i bus	✓	
Motor Starter ES through local interface	--	✓
Motor Starter ES through bus	--	
Data records[1] (acyclic)		
Parameterization	--	✓
Diagnostics	--	✓
Measured values	--	✓
Statistics	--	✓
Commands	--	✓
Inputs		
Number	✓ 4	
• Of these in the process image	✓ 2 through AS-i	✓ 4 through AS-i
Input action	✓ Permanently assigned functions, see manual[2]	✓ Parameterizable: flexible
Quick Stop	✓ Permanent function: latching, edge-triggered	✓ Parameterizable function: latching (edge-triggered), non-latching (level-triggered)
Outputs		
Number	✓ 1	
Output action	✓ Permanent function: assigned with group fault	✓ Parameterizable: For function, see manual[3]
Brake output		
180 V DC /230/400 V AC / none	✓	
Motor protection		
Overload protection	✓ Electronic, wide range 1:10	
Short-circuit protection	✓	
Full motor protection	✓	
Temperature sensor	✓ Parameterizable using DIP switches: PTC or Thermoclick or deactivated	✓ Parameterizable using Motor Starter ES, data record: PTC or Thermoclick or deactivated

✓ Function available
-- Function not available

1) The data records are a reduced selection compared with PROFIBUS/PROFINET.
2) https://support.industry.siemens.com/cs/ww/en/view/35016496.
3) https://support.industry.siemens.com/cs/ww/en/view/38722160.

General data

	SIRIUS M200D AS-i Basic	SIRIUS M200D AS-i Standard
Device functions (firmware features)		
Device function		
Repair switch	✓	
Current limit monitoring bottom	--	✓ Parameterizable
Current limit monitoring top	--	✓ Parameterizable
Zero current detection	✓ Permanent function: disconnection, less than 18.75 % of the rated operational current I_e	✓ Parameterizable
Blocking current	✓ Permanent function: starting up of the motor: Tripping limit up to 800 % of the rated operational current I_e for 10 s Active operation: Threshold for tripping "blocking current" up to 400 % of the rated operational current I_e	✓ Parameterizable
Asymmetry	✓ Permanent function: up to 30 % of the rated operational current I_e (only mechanical MS)	✓ Parameterizable
Load type	✓ Permanent function: 3-phase	✓ Parameterizable: Single-phase and three-phase
Shutdown class	✓ Parameterizable using DIP switches: CLASS 10/deactivated	Parameterizable using Motor Starter ES, data record: CLASS 5, 10, 15, 20
Protection against voltage failure	✓	✓ Parameterizable: activated/deactivated
Soft starter control function		
Soft start function	--	✓ Only solid-state version
Bypass function	--	✓ Only solid-state version

✓ Function available
-- Function not available

Application

The M200D AS-i standard is particularly suitable for highly automated applications in conveyor systems requiring devices and systems to be monitored to prevent or limit plant downtime. The option of planning the functions of the motor starter or its interfaces also creates the prerequisite for fine-adjustment to the function of the motor starter in the application and hence provides for extreme flexibility.

For the use of SIRIUS M200D motor starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring; see "Application Manual for SIRIUS Controls with IE3/IE4 Motors", https://support.industry.siemens.com/cs/ww/en/view/94770820.

For more information see Preface, page 7.

Technical specifications

More information	
Device manuals for SIRIUS M200D AS-i Basic and Standard, see https://support.industry.siemens.com/cs/ww/en/view/35016496 https://support.industry.siemens.com/cs/ww/en/view/38722160 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16324/faq	Note on security: In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions only represent one component of such a concept. For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Type		M200D motor starters			
		AS-i Basic Electromechanical switching	AS-i Basic Electronic switching	AS-i Standard Electromechanical switching	AS-i Standard Electronic switching
Technology designation[1]		DSte / RSte	sDSte / sRSte	DSte / RSte	sDSSte / sRSSte
Mechanics and environment					
Mounting dimensions (W x H x D)	mm	294 x 215 x 159			
Permissible ambient temperature					
• During operation	°C	-25 ... +55			
• During storage	°C	-40 ... +70			
Weight	g	2 880/3 130	3 220/3 420	2 880/3 130	3 220/3 420
Permissible mounting position		Vertical, horizontal, lying			
Vibration resistance acc. to IEC 60068 Part 2-6	*g*	2			
Shock resistance					
• Acc. to IEC 60068 Part 2-27	*g*/ms	12/11 half-sine			
• Without influencing the contact position	*g*/ms	9.8/5 or 5.9/10			
Degree of protection acc. to IEC 529		IP65			
Installation altitude					
• Up to 1 000 m		No derating			
• Up to 2 000 m		1 % per 100 m			
Cooling		Convection			
Protection class IEC 536 (VDE 0106-1)		1			
Electrical specifications					
Control circuit					
Operating voltage U_{As-i}	V DC	26.5 ... 31.6			
Supply voltage U_{aux}	V DC	20.4 ... 28.8			
Power consumption from AS-i (incl. 200 mA sensor supply)	mA	< 300			
Current consumption from U_{aux} (without digital output)					
• Max.	mA	155	15 (direct-on-line)/ 175 (reversing)	155	15 (direct-on-line)/ 175 (reversing)
• Typ.	mA	75	10 (direct-on-line)/ 75 (reversing)	75	10 (direct-on-line)/ 75 (reversing)
Main circuit					
Maximum power of three-phase motors at 400 V AC	kW	5.5	4	5.5	5.5
Rated operational voltage U_e					
• Approval acc. to EN 60947-1	V AC	400 (50/60 Hz)			
• Approval acc. to UL and CSA	V AC	600 (50/60 Hz)	480 (50/60 Hz)	600 (50/60 Hz)	480 (50/60 Hz)
• Rated operational current range	A	0.15 ... 2 / 1.5 ... 12	--	0.15 ... 2 / 1.5 ... 12	--
• Rated operational current range for soft start	A	--			0.15 ... 2 / 1.5 ... 12
• Rated operational current range for direct start	A	--	0.15 ... 2 /1.5 ... 9	--	0.15 ... 2 /1.5 ... 9
Rated operational current for starters I_e at 400 V AC					
• 400 V at AC-1 / 2 / 3	A	12	--	12	--
• 500 V at AC-1 / 2 / 3	A	9	--	9	--
• 400 V at AC-4	A	4	--	4	--
• 400 V at AC-53a	A	--	9	--	12 for soft start 9 for direct start
Mechanical endurance of contactor	Operating cycles	30 million	--	30 million	--
Trip class		CLASS 10		CLASS 5, 10, 15, 20	
Type of coordination acc. to IEC 60947-4-1		1 (2 for device version 2A)	1	1 (2 for device version 2A)	1
Permissible switching frequency		See manual[2)3)]			
Rated ultimate short-circuit breaking capacity I_q					
• At 400 V AC	kA	50			
• At 500 V AC	kA	50[4)]	20[4)]	50	20[4)]
Short-circuit protection					
• At I_{emax} = 2 A		integrated, 2 x13 I_e = 26 A			
• At I_{emax} = 9 /12 A		integrated, 2 x13 I_e = 208 A			
Brake actuation (option)					
Operational voltage	V	230/400 AC or 180 DC			
Uninterrupted current	A	< 0.5 at 230/400 V AC < 0.8 at 180 V DC			
Short-circuit protection		Yes, 1 A melting fuse			

1) DS .... Direct-on-line starters
RS .... Reversing starters
DSS .. Direct-on-line soft starters
RSS .. Reversing soft starters
te ..... Full motor protection (thermal + electronic)
s ..... Electronic switching with semiconductor.

2) https://support.industry.siemens.com/cs/ww/en/view/35016496.

3) https://support.industry.siemens.com/cs/ww/en/view/38722160.

4) Only systems with grounded neutral point permitted.

M200D Basic motor starters *IE3/IE4* ready

Selection and ordering data

M200D AS-i Basic without manual local operation

M200D AS-i Basic with manual local operation

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Electromechanical starters (with integrated contactor)						
	15	**3RK1315-6□S41-□AA□**		1	1 unit	42D
Rated operational current setting range/A			Additional price			
• 0.15 ... 2		**K**	None			
• 1.5 ... 12		**L**	✓			
Direct-on-line starters/reversing starters						
• Direct-on-line starters		**0**	None			
• Reversing starters		**1**	✓			
• Direct-on-line starters with manual local operation		**2**	✓			
• Reversing starters with manual local operation		**3**	✓			
Brake actuation						
• Without brake actuation		**0**	None			
• Brake actuation (230/400 V AC)		**3**	✓			
• Brake actuation (180 V DC)		**5**	✓			
Electronic starters (with thyristors)						
	15	**3RK1315-6□S71-□AA□**		1	1 unit	42D
Rated operational current setting range/A			Additional price			
• 0.15 ... 2		**K**	None			
• 1.5 ... 9		**N**	✓			
Direct-on-line starters/reversing starters						
• Direct-on-line starters		**0**	None			
• Reversing starters		**1**	✓			
• Direct-on-line starters with manual local operation		**2**	✓			
• Reversing starters with manual local operation		**3**	✓			
Brake actuation						
• Without brake actuation		**0**	None			
• Brake actuation (230/400 V AC)		**3**	✓			
• Brake actuation (180 V DC)		**5**	✓			

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

M200D AS-i Standard without manual local operation

M200D AS-i Standard with manual local operation

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Electromechanical starters (with integrated contactor)						
	15	**3RK1325-6□S41-□AA□**		1	1 unit	42D
Rated operational current setting range/A			Additional price			
• 0.15 ... 2		**K**	None			
• 1.5 ... 12		**L**	✓			
Direct-on-line starters/reversing starters						
• Direct-on-line starters		**0**	None			
• Reversing starters		**1**	✓			
• Direct-on-line starters with manual local operation		**2**	✓			
• Reversing starters with manual local operation		**3**	✓			
Brake actuation						
• Without brake actuation		**0**	None			
• Brake actuation (230/400 V AC)		**3**	✓			
• Brake actuation (180 V DC)		**5**	✓			
Electronic starters (with thyristors)						
	15	**3RK1325-6□S71-□AA□**		1	1 unit	42D
Rated operational current setting range/A			Additional price			
• 0.15 ... 2		**K**	None			
• 1.5 ... 12		**L**	✓			
Direct-on-line starters/reversing starters						
• Direct-on-line starters		**0**	None			
• Reversing starters		**1**	✓			
• Direct-on-line starters with manual local operation		**2**	✓			
• Reversing starters with manual local operation		**3**	✓			
Brake actuation						
• Without brake actuation		**0**	None			
• Brake actuation (230/400 V AC)		**3**	✓			
• Brake actuation (180 V DC)		**5**	✓			

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

The intelligent, highly flexible M200D PROFIBUS/PROFINET motor starters are the most functional motor starters of the SIRIUS motor starter family in the high degree of protection IP65 for PROFIBUS/PROFINET communication.

They start and protect motors and loads up to 5.5 kW. Direct-on-line and reversing starter versions are available, in a mechanical version and also an electronic version (the latter with soft start function).

The particularly robust M200D PROFIBUS/PROFINET motor starters are characterized by numerous functions that can be flexibly parameterized. Their modular design comprises a motor starter module and a communication module.

The M200D PROFINET motor starters enable TIA-integrated parameterization through PROFINET from STEP 7 – in familiar, user-friendly manner with the look and feel of PROFIBUS.

Functionality

- For basic functionality, see page 9/38 "M200D motor starters" → "General Data" → "Overview"
- Electronic version also with soft start function
- Robust and widely used M12 connection method for the digital inputs and outputs and the PROFIBUS/PROFINET bus connection
- All four digital inputs and two digital outputs exist in the cyclic process image. This provides complete transparency of the process on the control level
- Full TIA integration: All digital inputs and outputs exist in the cyclic process image and are visible through the bus, providing maximum flexibility and excellent adaptability to the application
- Flexible assignment of the digital inputs and outputs with all available assignable input actions
- Extensive diagnostics concept using LEDs and through the bus with the TIA-compatible mechanisms
- Expanded diagnostics using data records
- Complete plant monitoring using statistics data record and current value monitoring by means of data records
- Parameterization through PROFIBUS/PROFINET bus with the help of data records from the user program
- Control of the motor starter using a command data record from the user program
- Removable modular control unit – quicker device replacement and therefore lower costs when device outages occur – since existing wiring is on the control unit and only one device needs to be replaced
- Parameterization in STEP 7 HW Config using Motor Starter ES (ordering option for start up software)
- Start up and diagnostics with the help of Motor Starter ES (ordering option for start up software)
- Trace function through Motor Starter ES for optimized start up and tracking of process and device values

Only with PROFINET:

- Just one bus system from the MES level to the devices – no routers
- More stations on the bus and possible configuration of flexible bus structures
- Automatic re-parameterization in case of device replacement thanks to proximity detection
- Wireless integration of plant segments in difficult environments using WLAN
- Easier expansion of the system thanks to a higher number of stations on the bus and elimination of terminating resistors

M200D motor starter modules for PROFIBUS/PROFINET (without communication module)

M200D communication module for PROFIBUS

M200D communication module for PROFINET

Mounting and installation

The M200D PROFIBUS/PROFINET motor starter is comprised of the communication module and the motor starter module. Only the motor starter module has to be replaced therefore when replacing devices. This saves time and money. The communication module remains as an active station on the bus and all other system components continue running. This prevents downtimes.

The integrated plug-in technology enables far lower wiring outlay: Connecting cables can be plugged directly onto the motor starter module. The PROFINET bus is connected cost-effectively using an M12 connection on the device. All versions have identical enclosure dimensions for easier system design and conversion.

Parameterization and configuration

All motor protection functions, limit values and reactions can be defined by parameterization.

The user has several user-friendly options for the parameterization. In addition to parameterization directly from STEP 7, which also permits automatic re-parameterization in case of device replacement, it is possible to use the user-friendly Motor Starter ES start up software. By connecting a programming device directly to PROFIBUS/PROFINET and the Motor Starter ES start up software, the devices can also be conveniently programmed from a central point through the bus. Also, parameters can be changed during operation from the user program using the data record mechanism so that the function of the motor starter is adapted to the process when required. With the help of a PC and the Motor Starter ES software it is also possible to perform the parameterization through the local point-to-point interface on-site.

Functions can be flexibly assigned to the digital inputs and outputs, adapting them to all possible conveyor applications. All digital inputs and outputs exist in the cyclic process image. All limit values for monitoring functions and their reactions are parameterizable and therefore adaptable to the application. Consistency with other products of the SIRIUS M200D motor starter range and with the frequency converter and ET 200pro I/O system is assured.

Only with M200D PROFINET motor starters

Thanks to the integrated proximity detection, the device name does not need to be issued manually when a device is replaced. The name is issued automatically by the neighboring devices which note the "names" of the devices in their proximity. No additional start up measures are required therefore when replacing a device.

The new motor starter generation is characterized by high functionality, maximum flexibility and the highest level of automation. PROFINET is especially recommended for large-scale and highly automated system components, since the possibility of monitoring the devices or plants with data records (statistical data, measured values and devices diagnoses) ensures a broader insight into the plant by the control room, and hence increases the availability of the plant sustainably.

Operation

The motor starters record the actual current flow. Evaluating the current of the parameterizable solid-state overload protection increases the availability of the drives, as do reliable signals concerning the overshooting or undershooting of setpoint values.

Diagnostics and maintenance

Diagnostics is provided through numerous mechanisms – and can be used as the customer prefers.

The motor starter is TIA-diagnostics compatible, which means that when a fault is identified, a diagnostics alarm is distributed, which invokes the diagnostics OB in the case of a SIMATIC control. The fault can be evaluated as usual in the user program.

The M200D motor starter offers a large variety of diagnostics data through data records. Its functionality is without equal on the market. There are extensive options for reading out data from the motor starter for monitoring devices, systems or processes.

The motor starter is equipped internally with three logbooks for device faults, motor starter trips and events that are issued with a time stamp. These logbooks can be read out of the motor starter at any time in the form of data records and provide the plant operator with plenty of information about the state of his plant and process which he can use to carry out improvements.

With the slave pointer and statistical data functions it is possible to read out, for example, the maximum internal current values or the number of motor starter connection operations for plant monitoring purposes. This allows deviations in the process to be monitored, but also optimum initial commissioning to take place. The user can draw conclusions about the actual load conditions of the devices in his process and on this basis can optimize his plant maintenance intervals.

The device diagnostics data record contains details of all the states of the motor starter, the device configuration and the communication status as a basis for central device and plant monitoring.

With installation and maintenance functions (I&M), information on modules employed and data specified by the user during configuration, such as location designations, are stored in the motor starter. I&M functions are used for troubleshooting faults and localizing changes in hardware in a plant or checking the system configuration. Reordering a device is particularly easy as the result.

The integrated maintenance timer can be used to implement preventative maintenance and avoid plant downtimes through look-ahead servicing.

Another new addition is the TRACE integrated into the ES motor starter software. It can be used to record measured values as a function of time following a trigger event. This enables process flows to be recorded and their timing optimized.

Local control of a drive is possible using the ordering option with integrated manual operation. This is yet another new development which distinguishes the M200D PROFIBUS/PROFINET motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the system.

M200D PROFINET motor starters with PROFIenergy

Increasing energy prices, far-reaching ecological problems worldwide and the threat of climate change make it necessary for you to be more conscious about your use of energy.

Active and effective energy management is possible with PROFIenergy.

PROFIenergy is a manufacturer-independent profile on PROFINET, which can be used by all manufacturers, has been standardized by PNO[1)] and supports switching off electrical devices during dead times and measuring the energy flow.

[1)] In the PNO (PROFIBUS Nutzerorganisation e. V. – PROFIBUS User Organization), manufacturers and users have come together to agree on the PROFIBUS and PROFINET standardized communication technologies.

General data

Switching off during dead times

PROFIenergy supports the targeted switching-off of loads during dead time.

These can be planned short breaks of a few minutes (such as lunch breaks), longer dead times (such as nights) or unplanned dead times. Energy is always saved when no power is required.

Measuring and visualizing the energy flow as a basis of energy management

The objective of energy management is to optimize the use of energy in a company – from the purchasing of energy through to the consumption of energy – economically and ecologically.

Analyses of energy consumption over time can be used to control energy flows, avoid energy peaks, improve ratings and thus save costs.

PROFIenergy enables consumption data to be read off from the devices in a unified form. This is recorded during operation and can be displayed on a control panel, for example, or sent to overlying energy management software packages. This ensures that the measured variables are in a uniform manufacturer-independent form and structure that is available to the user for further processing. These PROFIenergy functions thus provide the basis for active load and energy management during operation.

PROFIenergy in the M200D PROFINET motor starter

The M200D PROFINET motor starter supports the "switching during dead times" and "current measurement values" functions of the motor current using PROFIenergy. These are called commands, because they trigger a reaction in the M200D motor starter.

	SIRIUS M200D PROFIBUS	SIRIUS M200D PROFINET
Device functions (firmware features)		
Slave on the bus		
Fieldbus	✓ PROFIBUS to M12	✓ PROFINET to M12
Adjustable number of stations	✓ 1 ... 125	✓ 1 ... 128 for CPU 315, CPU 317 1 ... 1256 for CPU 319
Parameter assignment		
DIP switches	✓ For address setting and terminating resistor	--
Motor Starter ES	✓ Through bus, optical interface	
PROFIBUS/PROFINET data records	✓	
From STEP 7/HW Config	✓	
Diagnostics		
Acyclic through data records	✓	
Diagnostic interrupt support	✓	
Process image		
Process image	✓ 2 bytes PAE/ 2 bytes PAA	
Data channels		
Local optical interface (manual local)	✓	
Motor Starter ES through local interface	✓	
Using Motor Starter ES through bus	✓	
Data records (acyclic)		
Parameterization	✓ Using DS 131 (DS = data record)	
Diagnostics	✓ Device-specific DS 92	
Measured values	✓ Measured values DS 94	
Statistics	✓ Statistical data DS 95	
Commands	✓ Using DS 93	
Slave pointer	✓ Slave pointer DS 96	
Logbook	✓ Using Motor Starter ES and data records: device faults DS 72, tripping operation DS 73, events DS 75	
Device identification	✓ Using DS 100	
I&M data	✓ Using DS 231 ... 234	✓ Using data records 0xAFF0 ... 0xAFF3
Inputs		
Number	✓ 4	
• Of these in the process image	✓ 4	
Input action	✓ Parameterizable: flexibly assignable action; see manual[1)]	
Quick stop	✓ Parameterizable: latching, non-latching	

✓ Function available
-- Function not available

1) https://support.industry.siemens.com/cs/ww/en/view/38823402.

	SIRIUS M200D PROFIBUS	SIRIUS M200D PROFINET
Device functions (firmware features)		
Outputs		
Number	✓ 2	
• Of these in the process image	✓ 2	
Output action	✓ Parameterizable: flexibly assignable action; see manual[1)]	
Brake output		
180 V DC /230/400 V AC / none	✓	
Motor protection		
Overload protection	✓ Electronic, wide range 1:10	
Short-circuit protection	✓	
Full motor protection	✓	
Temperature sensor	✓ Parameterizable using Motor Starter ES, data record: PTC or Thermoclick or deactivated	
Device function		
Repair switch	✓	
Current limit monitoring bottom	✓ Parameterizable	
Current limit monitoring top	✓ Parameterizable	
Zero current detection	✓ Parameterizable: tripping, warning	
Blocking current	✓ Parameterizable	
Asymmetry	✓ Parameterizable	
Load type	✓ Parameterizable: single-phase and three-phase	
Shutdown class	✓ Parameterizable using Motor Starter ES, data record: CLASS 5, 10, 15, 20	
Protection against voltage failure	✓ Parameterizable: activated/deactivated	
Support for PROFIenergy profile		
Switching during dead times	--	✓
Measured motor current values	--	✓
Soft starter control function		
Soft start function	✓	
Bypass function	✓ Only solid-state version	

✓ Function available
-- Function not available
1) https://support.industry.siemens.com/cs/ww/en/view/38823402.

Benefits

M200D PROFINET motor starters with PROFIenergy

Both standards and laws are making environmental protection and energy management increasingly important, as is the desire to cut energy costs in production facilities and thus ensure a sustainable competitive advantage.

It is thus an objective within the industry to save energy and actively reduce CO_2 emissions. By the careful use of valuable resources, the manufacturer-independent PROFIenergy profile on PROFINET can make an active contribution to environmental protection.

Application

M200D PROFIBUS/PROFINET motor starters are particularly suitable for fully TIA-integrated, highly automated conveyor applications that meet all needs with regard to the monitoring of devices and systems and preventive maintenance.

Adaptability of the motor starter functions and maximum flexibility of the device enable a broad range of application without any limits. The PROFINET-specific expansions are the best assurance of a future-proof investment.

General data

Technical specifications

More information	
Device manual for M200D PROFIBUS/PROFINET, see https://support.industry.siemens.com/cs/ww/en/view/38823402 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16325/faq	Note on security: In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions only represent one component of such a concept. For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Type		M200D PROFIBUS/PROFINET motor starter modules	
		Electromechanical switching	Electronic switching
Technology designation[1]		DSte/RSte	sDSSte/sRSSte
Mechanics and environment			
Mounting dimensions (W x H x D)			
• Without communication module	mm	294 x 215 x 159	
• With communication module	mm	295 x 215 x 163	
Permissible ambient temperature			
• During operation	°C	-25 ... +55	
• During storage	°C	-40 ... +70	
Weight	g	2 820/3 080	3 160/3 360
Permissible mounting position		Vertical, horizontal, lying	
Vibration resistance acc. to IEC 60068 Part 2-6	*g*	2	
Shock resistance			
• Acc. to IEC 60068 Part 2-27	*g*/ms	12/11 half-sine	
• Without influencing the contact position	*g*/ms	9.8/5 or 5.9/10	
Degree of protection acc. to IEC 529		IP65	
Installation altitude			
• Up to 1 000 m		No derating	
• Up to 2 000 m		1 % per 100 m	
Cooling		Convection	
Protection class IEC 536 (VDE 0106-1)		1	
Electrical specifications			
Main circuit			
Maximum power of three-phase motors at 400 V AC	kW	5.5	
Rated operational voltage U_e			
• Approval acc. to EN 60947-1	V AC	400 (50/60 Hz)	
• Approval acc. to UL and CSA	V AC	600 (50/60 Hz)	480 (50/60 Hz)
• Rated operational current range	A	0.15 ... 2 / 1.5 ... 12	--
• Rated operational current range for soft start	A	--	0.15 ... 2 / 1.5 ... 12
• Rated operational current range for direct start	A	--	0.15 ... 2 /1.5 ... 9
Rated operational current for starters I_e at 400 V AC			
• 400 V at AC-1 / 2 / 3	A	12	--
• 500 V at AC-1 / 2 / 3	A	9	--
• 400 V at AC-4	A	4	--
• 400 V at AC-53a	A	--	12 for soft starting, 9 for direct-on-line starting
Mechanical endurance of contactor	Operating cycles	30 million	--
Trip class		CLASS 5, 10, 15, 20	
Permissible switching frequency		See manual[2]	
Rated ultimate short-circuit breaking capacity I_q			
• At 400 V AC	kA	50	
• At 500 V AC	kA	50	20[3]
Short-circuit protection			
• At I_{emax} = 2 A		integrated, 2 x13 I_e = 26 A	
• At I_{emax} = 9 /12 A		integrated, 2 x13 I_e = 208 A	

1) DS .... Direct-on-line starters
RS .... Reversing starters
DSS .. Direct-on-line soft starters
RSS .. Reversing soft starters
te ..... Full motor protection (thermal + electronic)
s ..... Electronic switching with semiconductor.

2) https://support.industry.siemens.com/cs/ww/en/view/38823402.

3) Only systems with grounded neutral point permitted.

		Line voltage				
		380 V AC	**400 V AC**	**440 V AC**	**480 V AC**	**500 V AC**
Brake voltage with brake control 180 V DC[1]						
Operational voltage	V	230/400 AC or 180 DC				
Uninterrupted current	A	< 0.5 at 230/400 V AC, < 0.8 at 180 V DC				
Short-circuit protection		Yes, 1 A melting fuse				
Rectified brake voltage		171 V DC	180 V DC	198 V DC	216 V DC	225 V DC
Recommended brake coil voltage for Siemens motors		170 ... 200 V DC	170 ... 200 V DC	184 ... 218 V DC	184 ... 218 V DC	--

[1] Integrated brake control supplies DC power supply for the brake.

Type		**M200D communication modules**	
		For PROFIBUS	**For PROFINET**
Mechanics and environment			
Mounting dimensions (W x H x D)	mm	174 x 139 x 40	
Permissible ambient temperature			
• During operation	°C	-25 ... +55	
• During storage	°C	-40 ... +70	
Weight	g	300	
Permissible mounting position		Vertical, horizontal, lying	
Vibration resistance acc. to IEC 60068 Part 2-6	*g*	2	
Shock resistance			
• Acc. to IEC 60068 Part 2-27	*g*/ms	12/11 half-sine	
• Without influencing the contact position	*g*/ms	9.8/5 or 5.9/10	
Degree of protection acc. to IEC 529		IP65	
Installation altitude			
• Up to 1 000 m		No derating	
• Up to 2 000 m		1 % per 100 m	
Cooling		Convection	
Protection class IEC 536 (VDE 0106-1)		1	
Electrical specifications			
Control circuit			
Operational voltage			
• $U_{DC24V-NS}$	V DC	20.4 ... 28.8	
• $U_{DC24V-S}$	V DC	20.4 ... 28.8	
Power consumption from			
• $U_{DC24V-NS}$	mA	< 300	
• $U_{DC24V-S}$	mA	< 100	

Selection and ordering data

M200D motor starter modules
PROFIBUS / PROFINET
(without communication module)

Motor starters
M200D PROFIBUS

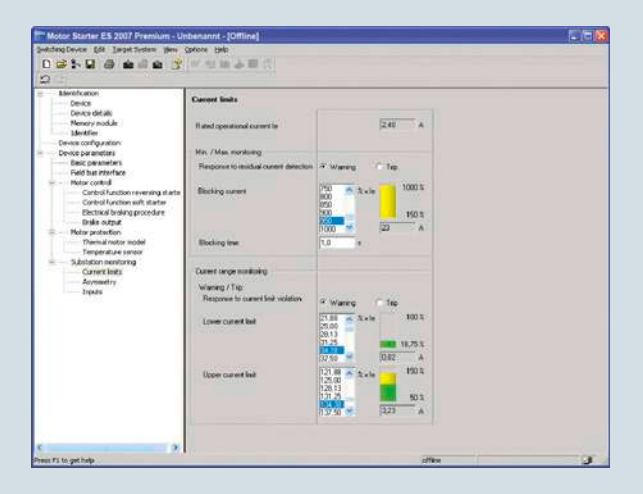
Motor starters
M200D PROFINET

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
M200D communication module for PROFIBUS						
Communication module for PROFIBUS M12 connection for communication, 7/8" for 24 V power supply	15	**3RK1305-0AS01-0AA0**		1	1 unit	42D
M200D communication module for PROFINET						
Communication module for PROFINET M12 connection for communication, 7/8" for 24 V power supply	15	**3RK1335-0AS01-0AA0**		1	1 unit	42D
M200D motor starter modules for PROFIBUS/PROFINET						
Electromechanical starters (with integrated contactor)						
	15	**3RK1395-6□S41-□AD□**		1	1 unit	42D
Rated operational current setting range/A			Additional price			
• 0.15 ... 2		**K**	None			
• 1.5 ... 12		**L**	✓			
Direct-on-line starters/reversing starters						
• Direct-on-line starters		**0**	None			
• Reversing starters		**1**	✓			
• Direct-on-line starters with manual local operation		**2**	✓			
• Reversing starters with manual local operation		**3**	✓			
Brake actuation						
• Without brake actuation		**0**	None			
• Brake actuation (230/400 V AC)		**3**	✓			
• Brake actuation (180 V DC)		**5**	✓			
Electronic starters (with thyristors)						
	15	**3RK1395-6□S71-□AD□**		1	1 unit	42D
Rated operational current setting range/A			Additional price			
• 0.15 ... 2		**K**	None			
• 1.5 ... 12		**L**	✓			
Direct-on-line starters / reversing starters						
• Direct-on-line starters		**0**	None			
• Reversing starters		**1**	✓			
• Direct-on-line starters with manual local operation		**2**	✓			
• Reversing starters with manual local operation		**3**	✓			
Brake actuation						
• Without brake actuation		**0**	None			
• Brake actuation (230/400 V AC)		**3**	✓			
• Brake actuation (180 V DC)		**5**	✓			

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Motor Starter ES



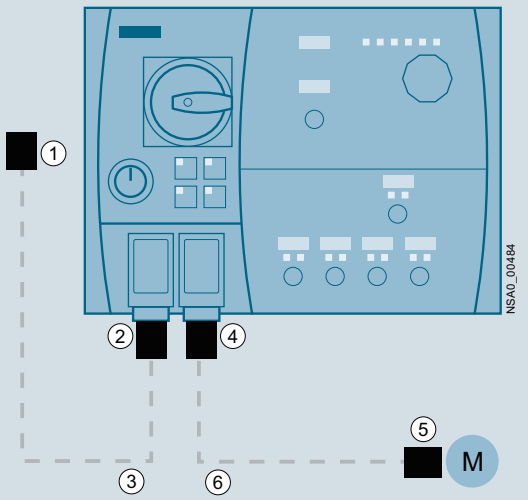
Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

Motor Starter ES is used for start up, parameterization, diagnostics, documentation and the preventative maintenance of the motor starters in the SIMATIC ET 200pro, SIMATIC ET 200S and SIRIUS M200D product families (for M200D AS-i Standard, M200D PROFIBUS and M200D PROFINET versions).

For detailed information on the Motor Starter ES software, see page 14/15.

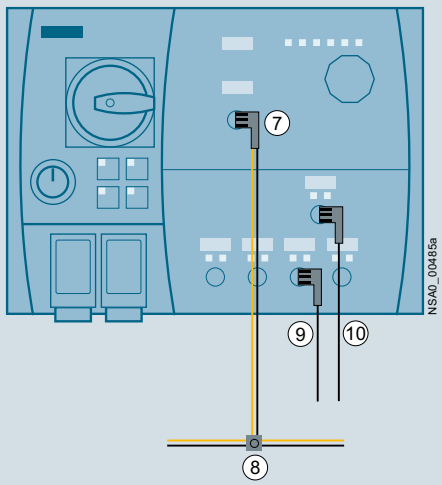
For all M200D motor starters

Overview



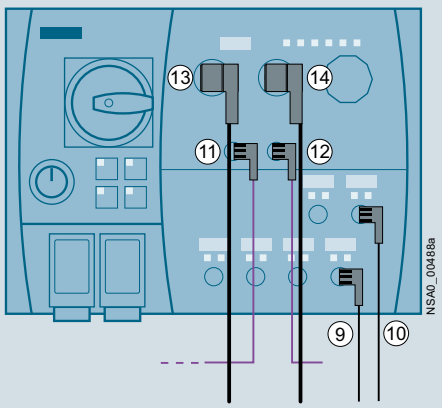
1. Power feeder plug
2. Power connection plug
3. Incoming energy supply cable
4. Motor connection plug
5. Motor plug
6. Motor cable

Power and motor connection on the M200D motor starter (in this example: M200D for AS-i)



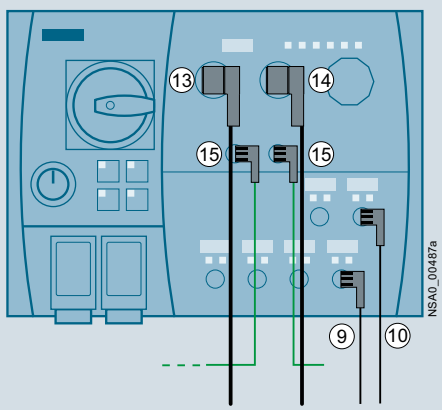
7. Connection for motor control with AS-i communication
8. AS-Interface M12 feeder
9. Connection for digital input (IO communication, 5-pole)
10. Connection for digital output (IO communication, 4 or 5-pole)

Communication connection using AS-Interface and digital inputs and outputs



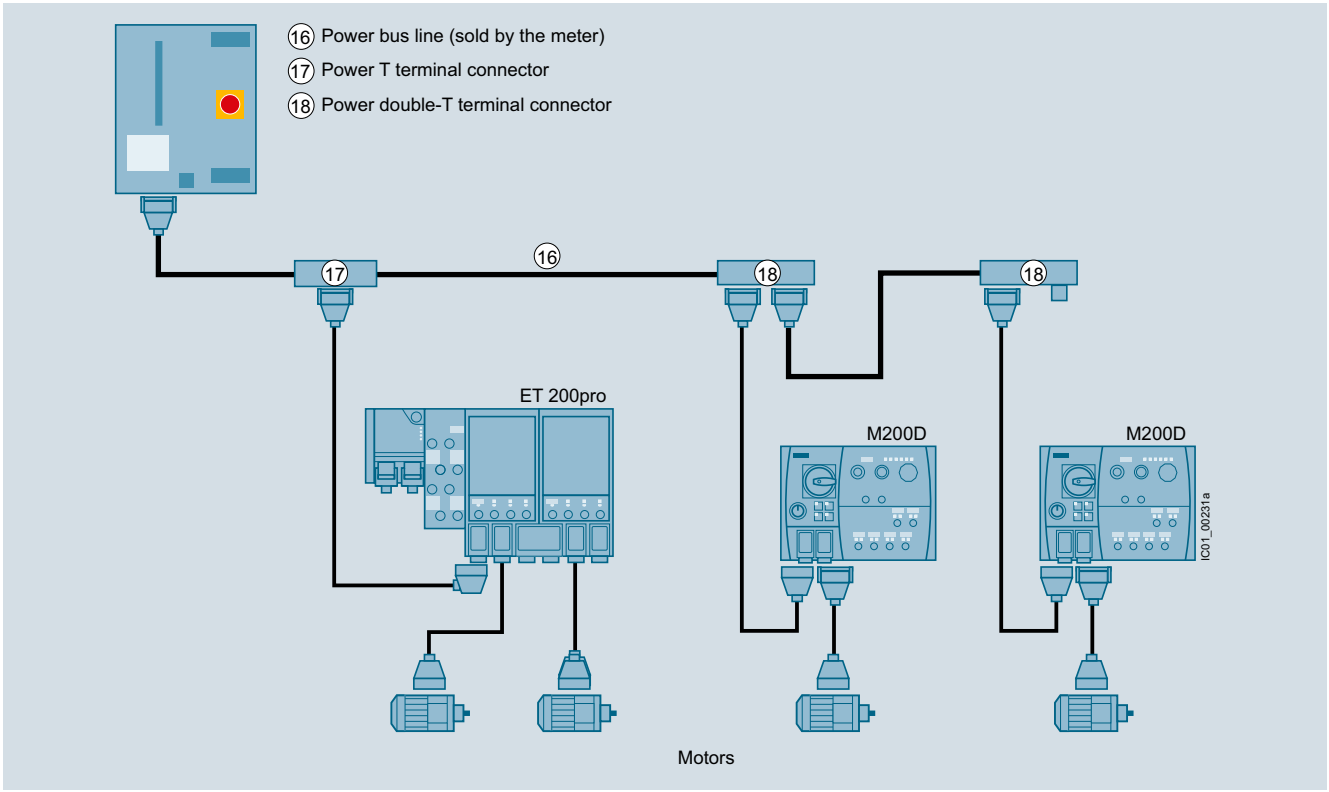
9. Connection for digital input (IO communication, 5-pole)
10. Connection for digital output (IO communication, 4- or 5-pole)
11. PROFIBUS connection (input)
12. PROFIBUS connection (loop)
13. Connection for 24 V supply (infeed)
14. Connection for 24 V supply (loop)

Communication connection using PROFIBUS and digital inputs and outputs



9. Connection for digital input (IO communication, 5-pole)
10. Connection for digital output (IO communication, 4- or 5-pole)
13. Connection for 24 V supply (infeed)
14. Connection for 24 V supply (loop)
15. Connection with PROFINET (input on the left, loop on the right)

Communication connection using PROFINET and digital inputs and outputs



Power supply to the motors via the power bus with power T and double-T terminal connectors linked by power bus cables, spur lines to the field devices (motor starters), and power loop-through connections to the motors via motor connection cables

Power bus

The power supply to the field devices (ET 200pro motor starters, M200D motor starters) is provided via the power bus, in which the power T terminal connectors or power double-T terminal connectors are connected by power bus cables.

Feeders

From the terminal connectors, spur lines with Han Q4/2 plugs lead to the field devices, from which the motors are supplied with power via motor connection cables.

Interruption-free thanks to power terminal connectors

In finger-safe connection technology the power T terminal connectors and power double-T terminal connectors connect the components of a feeder to the power bus. They ensure interruption-free operation, i.e. the power bus is not interrupted when the components are plugged in.

For all M200D motor starters

Selection and ordering data

The accessories listed below represent a basic selection sorted by:

- Accessories for all M200D motor starters
- Accessories for M200D motor starters for AS-interface
- Accessories for M200D motor starters for PROFIBUS
- Accessories for M200D motor starters for PROFINET

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mountable accessories						
M200D protective brackets	5	**3RK1911-3BA00**		1	1 unit	42D
Incoming power supply						
① **Power feeder plugs** Connector set for energy supply, e.g. for connecting to T terminal connectors, comprising a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. gland						
• 5 male contacts, 2.5 mm^2	5	**3RK1911-2BS60**		1	1 unit	42D
• 5 male contacts, 4 mm^2	5	**3RK1911-2BS20**		1	1 unit	42D
• 5 male contacts, 6 mm^2	5	**3RK1911-2BS40**		1	1 unit	42D
② **Power connection plugs** Connector set for energy supply for connection to M200D motor starters, comprising a cable-end connector hood, angular outgoing feeder, female insert for HAN Q4/2, incl. gland						
• 5 female contacts, 2.5 mm^2 2 female contacts, 0.5 mm^2	5	**3RK1911-2BE50**		1	1 unit	42D
• 5 female contacts, 4 mm^2 2 female contacts, 0.5 mm^2	5	**3RK1911-2BE10**		1	1 unit	42D
• 5 female contacts, 6 mm^2 2 female contacts, 0.5 mm^2	5	**3RK1911-2BE30**		1	1 unit	42D
② + ③ **Power connection cable** Assembled at one end with "N" and jumper pin 11 and 12 for plug monitoring, with HAN Q4/2, angular; open at one end; 5 x 4 mm^2						
• Length 1.5 m	10	**3RK1911-0DC13**		1	1 unit	42D
• Length 5.0 m	10	**3RK1911-0DC33**		1	1 unit	42D
Motor cables						
④ **Motor connection plugs** Connector set for motor cable for connection to M200D motor starters, comprising a cable-end connector hood, angular outgoing feeder, pin insert for HAN Q8/0, incl. gland						
• 8 male contacts, 1.5 mm^2	5	**3RK1902-0CE00**		1	1 unit	42D
• 6 male contacts, 2.5 mm^2	5	**3RK1902-0CC00**		1	1 unit	42D
⑤ **Motor plugs** Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e, incl. star jumper, incl. gland						
• 7 female contacts, 1.5 mm^2	15	**3RK1911-2BM21**		1	1 set	42D
• 7 female contacts 2.5 mm^2	15	**3RK1911-2BM22**		1	1 set	42D
④ + ⑥ **Motor cables, assembled at one end** For connection to M200D motor starters, HAN Q8/0, angular, length 5 m						
• Motor cables for motor without brake, 4 x 1.5 mm^2	15	**3RK1911-0EB31**		1	1 unit	42D
• Motor cables for motor without brake with thermistor, 6 x 1.5 mm^2	15	**3RK1911-0EF31**		1	1 unit	42D
• Motor cable for motor with brake actuation, braking voltage 400 V AC or 180 V DC, 6 x 1.5 mm^2	15	**3RK1911-0ED31**		1	1 unit	42D
• Motor cable for motor with brake actuation, braking voltage 400 V AC or 180 V DC and thermistor, 8 x 1.5 mm^2	15	**3RK1911-0EG31**		1	1 unit	42D
• Motor cable for motor with brake actuation, braking voltage 230 V AC, 6 x 1.5 mm^2	15	**3RK1911-0EH31**		1	1 unit	42D
• Motor cable for motor with brake actuation, braking voltage 230 V AC and thermistor, 8 x 1.5 mm^2	15	**3RK1911-0EE31**		1	1 unit	42D

* You can order this quantity or a multiple thereof.
Illustrations are approximate

For all M200D motor starters

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power bus							
	⑰ **Power T terminal connectors** For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments						
	• 2.5 mm² / 4 mm²	5	**3RK1911-2BF01**		1	1 unit	42D
	• 4 mm² / 6 mm²	5	**3RK1911-2BF02**		1	1 unit	42D
	⑱ **Power double-T terminal connector** For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments Connection of two motor starters possible						
	• 4 mm² / 6 mm²	5	**3RK1911-2BG02**		1	1 unit	42D
	Sealing set (comprising 2 seals) For power T/power double-T terminal connectors						
	• For power cables with Ø 10 ... 13 mm	5	**3RK1911-5BA00**		1	1 unit	42D
	• For power cables with Ø 13 ... 16 mm	5	**3RK1911-5BA10**		1	1 unit	42D
	• For power cables with Ø 16 ... 19 mm	5	**3RK1911-5BA20**		1	1 unit	42D
	• For power cables with Ø 19 ... 22 mm	5	**3RK1911-5BA30**		1	1 unit	42D
	• Blanking plugs	5	**3RK1911-5BA50**		1	1 unit	42D
Further accessories for power connections							
 3RK1902-0CW00	**Crimping tools for pins/sockets 4 mm² and 6 mm²**	15	**3RK1902-0CW00**		1	1 unit	42D
	Dismantling tools						
	• For male and female contacts for 9-pole HAN Q4/2 inserts	15	**3RK1902-0AB00**		1	1 unit	42D
	• For male and female contacts for 9-pole HAN Q8 inserts	5	**3RK1902-0AJ00**		1	1 unit	42D
 3RK1902-0CK00	**Sealing caps** For 9-pole power socket connectors						
	• 1 unit per pack	5	**3RK1902-0CK00**		1	1 unit	42D
	• 10 units per pack	5	**3RK1902-0CJ00**		1	10 units	42D

More connection technology products and accessories (e.g. crimping tools) are obtainable from our "Siemens Solution Partners Automation" under the "Distributed Field Installation System" technology: www.siemens.com/partnerfinder.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

For all M200D motor starters

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor control with I/O communication							
 3RK1902-4BA00-5AA0	**M12 plugs, straight** Screw mounting, 5-pole screw terminal, max. 0.75 mm², A-coded, max. 4 A	10	**3RK1902-4BA00-5AA0**		1	1 unit	42D
 3RK1902-4DA00-5AA0	⑩ **M12 plugs, angular** Screw mounting, 5-pole screw terminal, max. 0.75 mm², A-coded, max. 4 A	10	**3RK1902-4DA00-5AA0**		1	1 unit	42D
 3RK1902-4H...-5AA0	⑨, ⑩ **Control cable, assembled at one end** M12 plugs, angular, screw fixing, 5-pole, 5 x 0.34 mm², A-coded, black PUR sheath, max. 4 A						
	• Cable length 1.5 m	10	**3RK1902-4HB15-5AA0**		1	1 unit	42D
	• Cable length 5 m	10	**3RK1902-4HB50-5AA0**		1	1 unit	42D
	• Cable length 10 m	10	**3RK1902-4HC01-5AA0**		1	1 unit	42D
 3RK1902-4PB15-3AA0	**Control cable, assembled at both ends** M12 plugs, straight, M12 socket straight, screw fixing, 3-pole, 3 x 0.34 mm², A-coded, black PUR sheath, max. 4 A						
	• Cable length 1.5 m	10	**3RK1902-4PB15-3AA0**		1	1 unit	42D
Further accessories							
 3RK1922-3BA00	**Hand-held devices** For M200D motor starters (or for ET 200pro and ET 200S High Feature motor starters) for local operation. The motor-starter-specific serial interface cables must be ordered separately. The RS 232 interface cable 3RK1922-2BP00 is used for the MS M200D.	5	**3RK1922-3BA00**		1	1 unit	42D
	RS 232 interface cable Serial data connection between M200D (or ET 200pro) motor starters and the RS 232 interface of a PC/PG/laptop (with the Motor Starter ES software) or the handheld device 3RK1922-3BA00	5	**3RK1922-2BP00**		1	1 unit	42D
	USB interface cables, 2.5 m Serial data connection between M200D (or ET 200pro) motor starters and the USB interface of a PC/PG/laptop (with the Motor Starter ES software).	3	**6SL3555-0PA00-2AA0**		1	1 unit	346
 3RK1901-1KA00	**M12 sealing caps** For sealing unused M12 input or output sockets – not for M12 AS-i communications interface for motor control ⑦ (one set contains ten sealing caps)	►	**3RK1901-1KA00**		100	10 units	42C
 3SU1950-0FB80-0AA0	**RONIS SB30 keys** Replacement key for M200D for "manual local control" ordering option	►	**3SU1950-0FB80-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Version				SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Motor control with AS-i communication									
 3RK1902-4GB50-4AA0	⑦ **Control cables, assembled at one end** M12 socket, angular, screw fixing, 4-pole, 4 x 0.34 mm², A-coded, black PUR sheath, max. 4 A								
	• Cable length 5 m			10	**3RK1902-4GB50-4AA0**		1	1 unit	42D
 3RK1902-4CA00-4AA0	⑦ **M12 socket, angular** Screw mounting, 4-pole screw terminal, max. 0.75 mm², A-coded, max. 4 A			10	**3RK1902-4CA00-4AA0**		1	1 unit	42D
 3RK1901-1NR21	⑧ **AS-Interface M12 feeder**								
	For flat cable	For	Cable length	Cable end in feeder					
	AS-i / U_{aux}	M12 socket	--	Not available	2	**3RK1901-1NR20**		1	1 unit	42C
		M12 cable box	1 m	Not available	2	**3RK1901-1NR21**		1	1 unit	42C
			2 m	Not available	2	**3RK1901-1NR22**		1	1 unit	42C
 3RK1901-1MN00	**Cable terminating piece** For sealing of open cable ends (shaped AS-Interface cable) in IP67			►	**3RK1901-1MN00**		1	10 units	42C
 3RX90..-0AA00	**AS-Interface shaped cables**[1]								
	Material	Color	Quantity						
	Rubber	Yellow (AS-Interface)	100 m roll	2	**3RX9010-0AA00**		1	1 unit	42C
			1 km drum	5	**3RX9012-0AA00**		1	1 unit	42C
		Black (24 V DC)	100 m roll	2	**3RX9020-0AA00**		1	1 unit	42C
			1 km drum	5	**3RX9022-0AA00**		1	1 unit	42C
	TPE	Yellow (AS-Interface)	100 m roll	2	**3RX9013-0AA00**		1	1 unit	42C
			1 km drum	5	**3RX9014-0AA00**		1	1 unit	42C
		Black (24 V DC)	100 m roll	2	**3RX9023-0AA00**		1	1 unit	42C
			1 km drum	5	**3RX9024-0AA00**		1	1 unit	42C
	TPE special version according to UL Class 2	Yellow (AS-Interface)	100 m roll	5	**3RX9017-0AA00**		1	1 unit	42C
		Black (24 V DC)	100 m roll	5	**3RX9027-0AA00**		1	1 unit	42C
	PUR	Yellow (AS-Interface)	100 m roll	2	**3RX9015-0AA00**		1	1 unit	42C
			1 km drum	5	**3RX9016-0AA00**		1	1 unit	42C
		Black (24 V DC)	100 m roll	2	**3RX9025-0AA00**		1	1 unit	42C
			1 km drum	5	**3RX9026-0AA00**		1	1 unit	42C

[1] See also page 2/89.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

For M200D motor starters for AS-Interface

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Further accessories							
 3RK1904-2AB02	**AS-Interface addressing unit V 3.0** • For AS-Interface modules and sensors and actuators with integrated AS-Interface in accordance with AS-i Specification V3.0 • For setting the AS-i address of standard slaves, and slaves with extended addressing mode (A/B slaves) • With input/output test function and many other commissioning functions • Battery operation with four batteries type AA (IEC LR6, NEDA 15) • Scope of supply: - Addressing unit with four batteries - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5 m	2	**3RK1904-2AB02**		1	1 unit	42C
 3RK1902-4PB15-3AA0	**M12 addressing cables to M12** • Standard M12 cable for addressing slaves with M12 connection, e.g. K60R modules • When using the current version of the 3RK1904-2AB01 addressing unit • 1.5 m	10	**3RK1902-4PB15-3AA0**		1	1 unit	42D
"SIRIUS M200D Motor Starter" manuals							
	Manual - SIRIUS M200D Motor Starter AS-Interface Basic See https://support.industry.siemens.com/cs/ww/en/view/35016496						
	Manual - SIRIUS M200D Motor Starter AS-Interface Standard See https://support.industry.siemens.com/cs/ww/en/view/38722160						

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor control with PROFIBUS							
 3RK1902-1DA00	**M12 plugs, angular** Screw mounting, 5-pole screw terminal, max. 0.75 mm², B-coded, no terminating resistor						
	• ⑪ 5 female contacts	5	**3RK1902-1DA00**		1	1 unit	42D
 3RK1902-1BA00	• ⑫ 5 male contacts	5	**3RK1902-1BA00**		1	1 unit	42D
 3RK1902-1G.	**Control cable, assembled at one end** M12, screw fixing, angular, B-coded, no terminating resistor						
	• ⑪ 5 female contacts, 3 m	15	**3RK1902-1GB30**		1	1 unit	42D
	• ⑪ 5 female contacts, 5 m	15	**3RK1902-1GB50**		1	1 unit	42D
	• ⑪ 5 female contacts, 10 m	15	**3RK1902-1GC10**		1	1 unit	42D
 3RK1902-1N.	⑪ ⑫ **Control cables, assembled at both ends** M12, for screw fixing, angular, pin-socket 5-pole, B-coded, no terminating resistor						
	• 3.0 m	15	**3RK1902-1NB30**		1	1 unit	42D
	• 5.0 m	15	**3RK1902-1NB50**		1	1 unit	42D
	• 10.0 m	15	**3RK1902-1NC10**		1	1 unit	42D
Further accessories							
	PROFIBUS trailing cables Max. acceleration 4 m/s², at least 3 000 000 bending cycles, bending radius at least 60 mm, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-3EH10**		1	1 m	5K2
	PROFIBUS FC Food bus cable With PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-0GH10**		1	1 m	5K2
	PROFIBUS FC Robust bus cable With PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-0JH10**		1	1 m	5K2
	Power cable 5-core, 5 x 1.5 mm², trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-8AH10**		1	1 m	5K2
Connection for 24 V power supply of the M200D PROFIBUS/PROFINET							
	See page 9/62						
"SIRIUS M200D Motor Starter PROFIBUS / PROFINET" manual							
	See https://support.industry.siemens.com/cs/ww/en/view/38823402						

* You can order this quantity or a multiple thereof.
Illustrations are approximate

For M200D motor starters for PROFINET

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Motor control with PROFINET						
 3RK1902-2H. **⑮ M12 plugs, angular** Screw mounting, 4-pole screw terminal, max. 0.75 mm², angular, D-coded, • 4 male contacts	5	**3RK1902-2DA00**		1	1 unit	42D
⑮ Control cables, assembled at one end M12 for screw fixing, angular, 4-pole, D-coded, • 4 male contacts, 3 m	15	**3RK1902-2HB30**		1	1 unit	42D
• 4 male contacts, 5 m	15	**3RK1902-2HB50**		1	1 unit	42D
• 4 male contacts, 10 m	15	**3RK1902-2HC10**		1	1 unit	42D
 3RK1902-2N. **⑮ Control cables, assembled at both ends** M12 for screw fixing, angular at both ends, 4-pole, D-coded, male contacts at both ends						
• 3 m	15	**3RK1902-2NB30**		1	1 unit	42D
• 5 m	15	**3RK1902-2NB50**		1	1 unit	42D
• 10 m	15	**3RK1902-2NC10**		1	1 unit	42D
Further accessories						
PROFINET IE FC TP Standard Cable GP 2 x 2 Sold by the meter	1	**6XV1840-2AH10**		1	1 m	5K1
PROFINET IE FC TP Trailing Cable 2 x 2 Sold by the meter	1	**6XV1840-3AH10**		1	1 m	5K1
PROFINET IE FC TP Trailing Cable GP 2 x 2 Sold by the meter	1	**6XV1870-2D**		1	1 m	5K2
PROFINET IE FC TP Torsion Cable 2 x 2 Sold by the meter	1	**6XV1870-2F**		1	1 m	5K2
PROFINET IE FC TP Marine Cable 4-core Sold by the meter	1	**6XV1840-4AH10**		1	1 m	5K1
Power cable 5-core, 5 x 1.5 mm², trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	**6XV1830-8AH10**		1	1 m	5K2

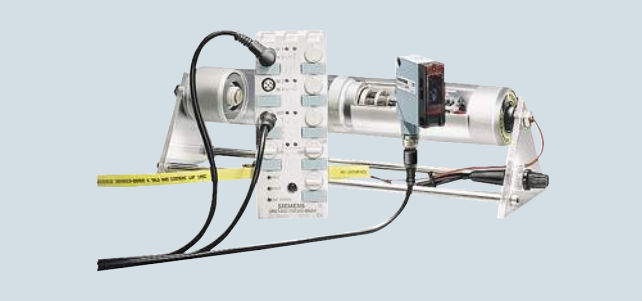
Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Connection for 24 V power supply of the M200D PROFIBUS/PROFINET						
 3RK1902-3DA00 **Plugs** On M200D, 7/8" for screw fixing, angular, screw terminal, 1.5 mm² • ⑬ 5 female contacts	5	**3RK1902-3DA00**		1	1 unit	42D
 3RK1902-3BA00 • ⑭ 5 male contacts	5	**3RK1902-3BA00**		1	1 unit	42D
 3RK1902-3G. **⑬ Supply lines, assembled at one end** 7/8" for screw fixing, angular, 1.5 mm² • 5 female contacts, 3 m	15	**3RK1902-3GB30**		1	1 unit	42D
• 5 female contacts, 5 m	15	**3RK1902-3GB50**		1	1 unit	42D
• 5 female contacts, 10 m	15	**3RK1902-3GC10**		1	1 unit	42D
 3RK1902-3N. **⑬ ⑭ Supply lines, assembled at both ends** 7/8", for screw fixing, angular at both ends, male/female, 5-pole, 1.5 mm²						
• 3 m	15	**3RK1902-3NB30**		1	1 unit	42D
• 5 m	15	**3RK1902-3NB50**		1	1 unit	42D
• 10 m	15	**3RK1902-3NC10**		1	1 unit	42D
 6ES7194-3JA00-0AA0 **7/8" sealing caps** 1 pack = 10 units	1	**6ES7194-3JA00-0AA0**		1	10 units	250
"SIRIUS M200D Motor Starter PROFIBUS / PROFINET" manual						
See page 9/61						

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

AS-Interface 3RK1400-1MQ01-0AA4 double direct-on-line starter 24 V DC

With the K60 AS-Interface 24 V DC motor starters for the low-end performance range up to 70 W, it is now possible to connect 24 V DC motors and the associated sensors directly to the AS-Interface quickly and easily.



Connection of an actuator roller with integrated DC motor to an AS-Interface 24 V DC motor starter

Three different versions are available:

- Single direct-on-line starters (without brake and reversible quick-stop function)
- Double direct-on-line starters (with brake and reversible quick-stop function)
- Reversing starters (with brake and reversible quick-stop function)

DC motors are connected to the module using M12 plug-in connections. The sensors and the module electronics can be supplied from the yellow AS-Interface cable. An auxiliary voltage (24 V DC), which is supplied via the black AS-Interface cable, is required for supplying the outputs only.

Quick stop function

All AS-Interface 24 V DC motor starters feature a quick stop function which can be switched on and off as required using a switch integrated into the module. The quick stop function allows a connected motor to be disconnected immediately using an applied sensor signal (High). The switch for the quick stop function is located alongside the input sockets and is protected by an M12 sealing cap.

Brake

The double direct-on-line starter and the single reversing starter versions feature an integrated permanently set brake function, i.e. as soon as the output signal is set to "0", the motor is braked.

Start-up using integrated buttons

Buttons integrated into the module (below the output sockets) can be used to set the motor used. The buttons are protected by an M12 sealing cap.

Note concerning double and reversing starters:

If an input with the quick-stop function receives a "High" signal, the corresponding output (e.g. quick-stop input 1 → output 1) is switched off within the device (the motor is braked). The manual key function (Key 1/2) for local operation is only permitted to be used during "CPU Stop" in the higher-level PLC.

Note concerning single direct-on-line starters:

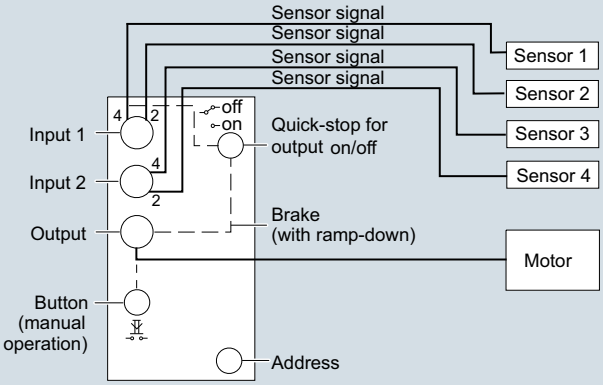
If an input with the quick-stop function receives a "High" signal, the corresponding output (e.g. quick-stop input 1 → output 1) is switched off within the device (the motor coasts to a standstill without braking). The manual key function (Key 1) for local operation is only permitted to be used and defined during "CPU Stop" in the higher-level PLC.

Motor starters for AS-Interface, 24 V DC

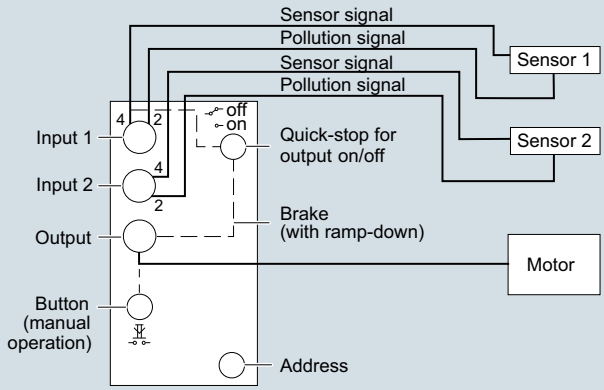
Applications

Single direct-on-line starter without brake (with adjustable quick-stop function)

1st possibility: Connection to a maximum of four sensors without pollution indication

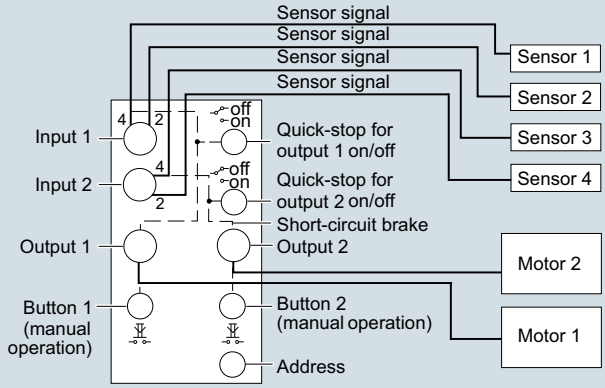


2nd possibility: Connection to a maximum of two sensors with pollution indication

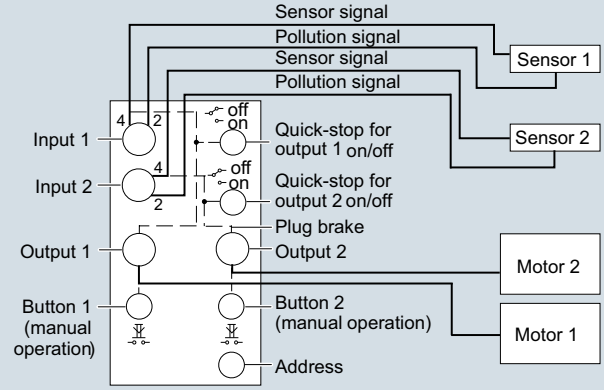


Double direct-on-line starter with brake (with adjustable quick-stop function)

1st possibility: Connection to a maximum of four sensors without pollution indication

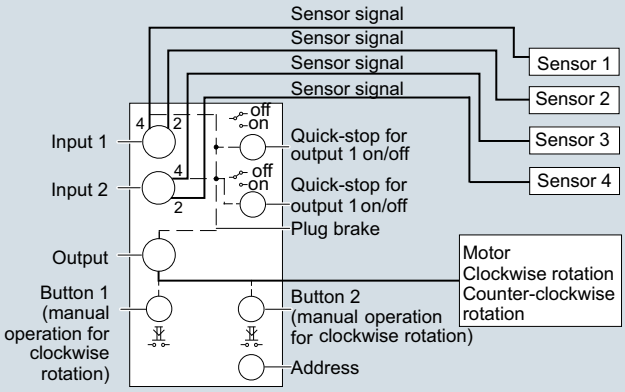


2nd possibility: Connection to a maximum of two sensors with pollution indication

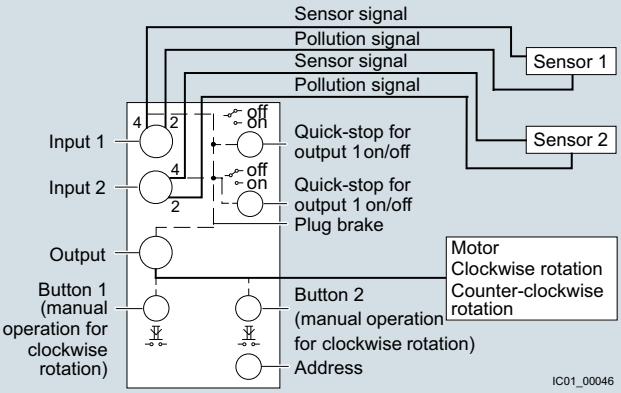


Single reversing starter with brake (with adjustable quick-stop function)

1st possibility: Connection to a maximum of four sensors without pollution indication



2nd possibility: Connection to a maximum of two sensors with pollution indication



Selection and ordering data

	Version	Inputs/ outputs	Current carrying capacity Outputs	Slave type	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			A		d					
Motor starters (width 60 mm)										
 3RK1400-1MQ01-0AA4	**Single direct-on-line starters**[1]	4 inputs/ 1 output	3	Standard	10	**3RK1400-1NQ01-0AA4**		1	1 unit	42C
	Double direct-on-line starters[1]	4 inputs/ 2 outputs	1 x 3 or 2 x 2	Standard	10	**3RK1400-1MQ01-0AA4**		1	1 unit	42C
	Single reversing starters[1]	4 inputs/ 1 output	2.5	Standard	10	**3RK1400-1MQ03-0AA4**		1	1 unit	42C

[1] Modules supplied without mounting plate.

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Accessories							
 3RK1901-0CA00	**K60 mounting plates** Suitable for all K60 compact modules						
	• Wall mounting	▶	**3RK1901-0CA00**		1	1 unit	42C
	• Standard rail mounting	▶	**3RK1901-0CB01**		1	1 unit	42C
 3RK1901-1KA00	**AS-Interface sealing caps M12** For free M12 sockets	▶	**3RK1901-1KA00**		100	10 units	42C
3RK1901-1KA01	**AS-Interface sealing caps M12, tamper-proof** For free M12 sockets	2	**3RK1901-1KA01**		100	10 units	42C
 3RK1902-0AR00	**Sealing sets** • For K60 mounting plate and standard distributor • Cannot be used for K45 mounting plate • Set contains one straight and one shaped seal	2	**3RK1902-0AR00**		100	5 units	42D

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Hybrid fieldbus connection with two HanBrid sockets

Control cabinet bushing with two M12 sockets

Hybrid fieldbus connections with HanBrid sockets designed as cabinet bushings transmit data and energy from the control cabinet (IP20) to the field (IP65). They are the interface for jointly routing PROFIBUS DP and the auxiliary voltages into the hybrid fieldbus cable.

On the cabinet bushings with two M12 sockets for the PROFIBUS M12 connecting cables, the 24 V supply of the motor starters is implemented via separate 7/8" connecting cables.

Passive and active hybrid fieldbus connections

The hybrid fieldbus connections are available in two versions which differ in their functionality. They are:

- The passive version
- The active version with signal refresher function to considerably increase the maximum PROFIBUS cable length

Connection methods

The field side is connected using HanBrid or M12 plug-in connectors.

In the case of HanBrid, the following versions are available:

- Socket/socket for infeeding into the field
- Pin/socket for looping in the field

The M12 version is generally configured with socket/socket.

Following connections are available at the rear (cabinet side) in the case of the passive glands:

- Direct connection
- FastConnect connection

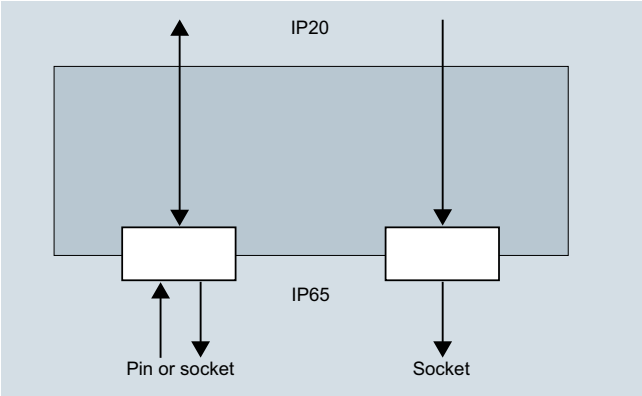
The active gland with refresher function has 9-pole Sub-D sockets for the rear connection.

Auxiliary power infeed

HanBrid plug-in connection technology offers the option of feeding in or looping through two separate auxiliary voltages of 24 V DC (switched/unswitched) into the field in addition to the PROFIBUS signal. The terminal block with spring-type terminals on the rear (cabinet side) of the hybrid fieldbus connection provides a variety of interconnecting options for these auxiliary voltages.

Passive hybrid fieldbus connections

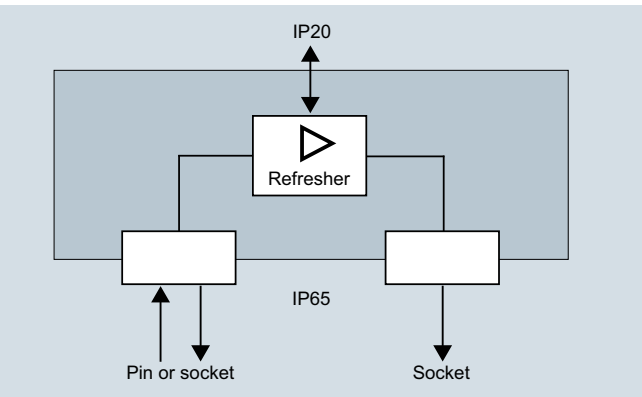
- Gland from the control cabinet (IP20) into the field (IP65)
- HanBrid plug-in design socket/socket or pin/socket
- Direct connection or FastConnect connection for PROFIBUS at the rear
- Terminal block with cage clamp (0.25 to 2.5 mm^2) for infeeding or forwarding the auxiliary currents



Hybrid fieldbus connection as passive cabinet bushing

Active hybrid fieldbus connections with refresher function

- Gland from the control cabinet (IP20) into the field (IP65)
- Three independent, electrically separated PROFIBUS segments
- Signal refresher function from and to all segments
- Automatic continuous baud rate detection
- Status/diagnostics displays with LEDs
- Cascading depth of a maximum nine hybrid fieldbus connections
- HanBrid plug-in design socket/socket and pin/socket
- M12 plug-in design socket/socket
- 9-pole Sub D socket connection for PROFIBUS at the rear
- Terminal block with cage clamp (0.25 to 2.5 mm^2) for infeeding or forwarding the auxiliary currents



Hybrid fieldbus connection as active control cabinet bushing with refresher function

Technical specifications

Type		Passive hybrid fieldbus connections	Active hybrid fieldbus connections
Mechanics and environment			
Dimensions (W x H x D)	mm	93 x 103 x 65	
Cutout (W x H)	mm	80 x 90	
Temperature range	°C	-25 ... +60	
Degree of protection		IP20 internal / IP65 on field side	
Material/enclosure	mm	Plastic (black PC), flame retardant	
Electrical specifications			
Rated operational voltage • 24 V DC not switched (NS) • 24 V DC switched (S)	 V DC V DC	 24, ± 25 % 24, ± 25 %	
Max. rated current	A	10	
Power supply		--	From 24 V DC not switched (NS)
Max. power consumption	mA	--	130
Mains buffering	ms	--	> 20
Baud rate detection		--	Automatic
Maximum cascading depth		--	9 hybrid fieldbus connections
Baud rates	kbit/s	9.6/19.2/45.45/93.75/187.5/500/1 500/3 000/6 000 /12 000	
Electrical separation	V DC	500	

Selection and ordering data

Hybrid fieldbus connection on field side:
With socket/socket (HanBrid)

With pin/socket (HanBrid)

Control cabinet bushing on field side
With socket/socket (M12)

Link type / function	Connection IP65	Connection IP20 (PROFIBUS)	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Hybrid fieldbus connections								
Passive								
• Cu/Cu, for feeding into the field	Socket/socket (2 x HanBrid)	Direct connection	5	**3RK1911-1AA22**		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	Direct connection	5	**3RK1911-1AA32**		1	1 unit	42D
• Cu/Cu, for feeding into the field	Socket/socket (2 x HanBrid)	PROFIBUS FastConnect bus connector	5	**3RK1911-1AF22**		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	PROFIBUS FastConnect bus connector	5	**3RK1911-1AF32**		1	1 unit	42D
Active (refresher)								
• Cu/Cu, for feeding into the field	Socket/socket (2 x HanBrid)	9-pole Sub D socket	5	**3RK1911-1AJ22**		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	9-pole Sub D socket	5	**3RK1911-1AJ32**		1	1 unit	42D
• Cu/Cu, for feeding into the field	Socket/socket (2 x M12)	9-pole Sub D socket	5	**3RK1911-1AK22**		1	1 unit	42D

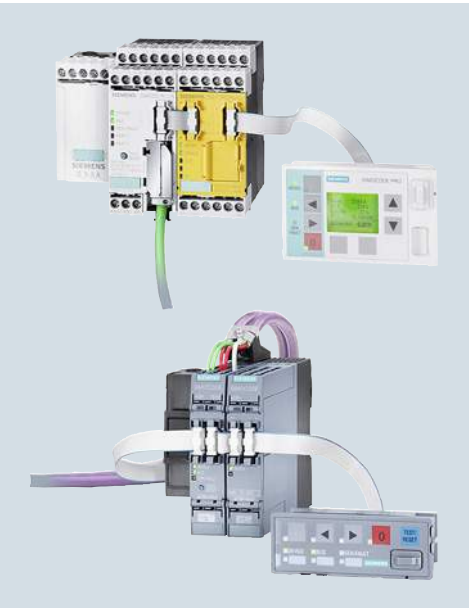
Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories						
Sealing caps for HanBrid Protective cover for bus and power supply connection (pack of 10)	1	**6ES7194-1JB10-0XA0**		1	10 units	250

6ES7194-1JB10-0XA0

PROFIBUS ECOFAST hybrid cables: see page 9/20.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Notes



Notes:

3RT191. function modules can be found

- in the Catalog Add-On IC 10 AO · 2016 in the Information and Download Center
- in the interactive Catalog CA 01
- in the Industry Mall

Conversion tool, e.g. from 3UG3 to 3UG4 or from 3RS17 to 3RS70: see www.siemens.com/sirius/conversion-tool

1) See Catalog ST 70 "Products for Totally Integrated Automation".

Introduction

Overview



Type	SIMOCODE pro C	SIMOCODE pro S	SIMOCODE pro V/ SIMOCODE pro V PROFINET/ SIMOCODE pro V Modbus RTU	Page
SIMOCODE pro 3UF7 motor management and control devices				
Basic units	✓	✓	✓	10/14
Current measuring modules	✓	✓	✓	10/15
Current/voltage measuring modules	--	--	✓	10/15
Decoupling modules	--	--	✓	10/15
Operator panels	✓	✓	✓	10/15
Operator panels with display	--	--	✓	10/15
Expansion modules	--	✓	✓	10/16
Fail-safe expansion modules	--	--	✓	10/18
Current transformers	✓	✓	✓	10/22
SIMOCODE ES (TIA Portal)	✓	✓	✓	10/21
SIMOCODE ES 2007	✓	✓	✓	10/21
SIMOCODE pro block library for SIMATIC PCS 7	✓	✓	✓	10/21

✓ Available
-- Not available



Type	Basic units	Expansion modules	Software	Page
LOGO! logic modules				
LOGO! Modular basic versions	✓	--	--	10/24
LOGO! Modular pure versions	✓	--	--	10/25
LOGO! Modular expansion modules	--	✓	--	10/26
LOGO! CMK2000 communication modules	--	✓	--	10/27
LOGO! CSM unmanaged	--	✓	--	10/28
LOGO! CMR (mobile wireless communication)	--	✓	--	10/29
LOGO!Contact	--	✓	--	10/33
LOGO! Software	--	--	✓	10/34

✓ Corresponds to
-- Does not correspond to




Type	3RP25	3RP20	7PV15	3RT19
Timing relays				
Enclosures:				
• 17.5 mm industry and household equipment installation	✓	--	✓	--
• 22.5 mm industry	✓	--	--	--
• 45 mm industry	--	✓	--	--
• For contactor sizes S0 to S12	--	--	--	✓
Monofunction	✓	✓	✓	✓
Multifunction	✓	✓	✓	--
Monovoltage	--	--	--	✓
Combination voltage	✓	✓	✓	--
Wide voltage range	✓	✓	✓	--
Application:	--	--	--	--
• Control systems and mechanical engineering	✓	✓	✓	✓
• Infrastructure	--	--	✓	--
• Mounting onto contactors	--	--	--	✓
Page	10/36	10/48	10/54	10/59

✓ Corresponds to or possible

-- Does not correspond to or not possible








Type	3UG451., 3UG461.	3UG463.	3RR21, 3RR22, 3UG4621, 3UG4622	3UG4641	3UG4625 with 3UL23	3UG458.	3UG4501	3UG4651	Page
Monitoring relays									
Line monitoring	✓	--	--	--	--	--	--	--	10/80
Voltage monitoring	--	✓	--	--	--	--	--	--	10/85
Current monitoring	--	--	✓	--	--	--	--	--	10/62, 10/88
Active current monitoring	--	--	3RR22 ✓	✓	--	--	--	--	10/62, 10/90
Power factor monitoring	--	--	--	✓	--	--	--	--	10/90
Residual current monitoring	--	--	--	--	✓	--	--	--	10/93
Insulation monitoring	--	--	--	--	--	✓	--	--	10/98, 10/100
Level monitoring	--	--	--	--	--	--	✓	--	10/103
Speed monitoring	--	--	--	--	--	--	--	✓	10/107

✓ Available

-- Not available

Introduction







Type	3UG481.	3UG4832	3RR24	3UG4822	3UG4841	3UG4825 with 3UL23	3UG4851	Page
Monitoring relays for IO-Link								
Line monitoring	✓	--	--	--	--	--	--	10/114
Voltage monitoring	--	✓	--	--	--	--	--	10/117
Current monitoring	--	--	✓	✓	--	--	--	10/70, 10/120
Power factor and active current monitoring	--	--	✓	--	✓	--	--	10/70, 10/123
Residual current monitoring	--	--	--	--	--	✓	--	10/127
Speed monitoring	--	--	--	--	--	--	✓	10/130

✓ Available
-- Not available




Type	3RS10, 3RS11, 3RS20, 3RS21	3RS14, 3RS15	3RN2	3RS70	Page
Temperature monitoring relays					
Temperature monitoring	✓	--	--	--	10/138, 10/140, 10/142
Temperature monitoring relays for IO-Link					
Temperature monitoring for IO-Link	--	✓	--	--	10/151, 10/154
Thermistor motor protection					
Thermistor motor protection	--	--	✓	--	10/157
Signal converters					
Single-range converters	--	--	--	✓	10/171
Multi-range converters	--	--	--	✓	10/171
Universal converters	--	--	--	✓	10/171

✓ Available
-- Not available

Connection methods

The monitoring and control devices are available with screw or spring-type terminals.

SIRIUS 3RP25 timing relays, SIRIUS 3RN2 thermistor motor protection and SIRIUS 3RS70 signal converters are available with screw terminals or spring-type terminals (push-in).

Screw terminals

Spring-type terminals (push-in)

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

"Increased safety" type of protection EEx e/d according to ATEX directive 94/9/EC

The communication-capable, modularly designed SIMOCODE pro motor management system (SIRIUS Motor Management and Control Devices) protects motors of types of protection EEx e and EEx d in potentially explosive areas.

"Increased safety" type of protection EEx e/d according to ATEX directive 2014/34/EU

The SIRIUS 3RN2 thermistor motor protection relay protects motors with types of protection EEx e and EEx d in hazardous areas.

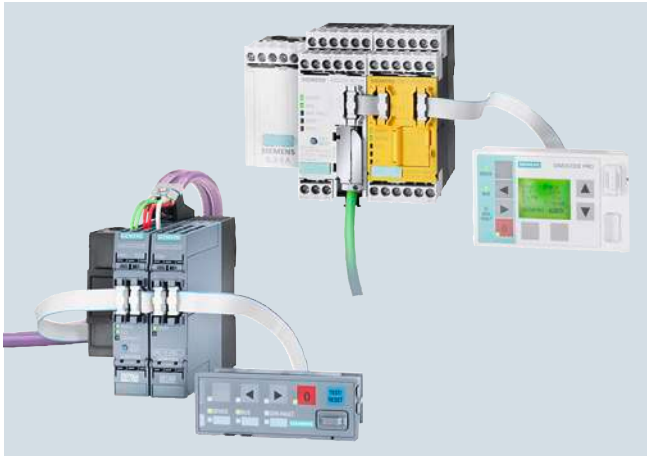
ATEX approval for operation in areas subject to explosion hazard

The SIRIUS 3RN2011, 3RN2012-...30, 3RN2013, 3RN2023 thermistor motor protection relays for PTC sensors are certified according to ATEX Ex II (2) G and D for environments with explosive gas or dust loads.

The SIRIUS SIMOCODE pro 3UF7 motor management system is certified for the protection of motors in areas subject to explosion hazard according to

- ATEX Ex I (M2); equipment group I, category M2 (mining)
- ATEX Ex II (2) GD; equipment group II, category 2 in area GD.

Overview



SIMOCODE pro S for efficient entry into motor management and SIMOCODE pro V for maximum functionality

More information

Home page, see www.siemens.com/sirius
Industry Mall, see www.siemens.com/product?3UF7

SIMOCODE pro is a flexible, modular motor management system for motors with constant speeds in the low-voltage performance range. It optimizes the connection between I&C and motor feeder, increases plant availability and allows significant savings to be made for installation, commissioning, operation and maintenance of a system.

When SIMOCODE pro is installed in the low-voltage switchboard, it is the intelligent interface between the higher-level automation system and the motor feeder and includes the following:

- Multifunctional, solid-state full motor protection that is independent of the automation system
- Integrated control functions instead of hardware for the motor control
- Detailed operational, service and diagnostics data
- Open communication through PROFIBUS DP, PROFINET, Modbus RTU and OPC UA
- Safety relay function for the fail-safe disconnection of motors up to SIL 3 (IEC 61508, IEC 62061) or PL e with Category 4 (EN ISO 13849-1)
- SIMOCODE ES is the software package for SIMOCODE pro parameterization, start up and diagnostics.

Device series

SIMOCODE pro is structured into several functionally tiered series:

- SIMOCODE pro C, as a compact system for direct-on-line starters and reversing starters or for controlling a motor starter protector.
- SIMOCODE pro S – the smart system for direct-on-line, reversing, and wye-delta starters or for controlling a motor starter protector or soft starter. Its expandability with a multifunction module provides comprehensive input/output project data volume, precise ground-fault detection via the 3UL23 residual-current transformers and temperature measurement.
- SIMOCODE pro V, as a variable system with all control functions and with the possibility of expanding the inputs, outputs and functions of the system at will using expansion modules.

Expansion possibilities	SIMOCODE			
	pro C	pro S	pro V[1]	
	PROFIBUS	PROFIBUS	PROFIBUS[2] Modbus RTU[2]	PROFINET
Operator panels	✓	✓	✓	✓
Operator panels with display	--	--	✓	✓
Current measuring modules	✓	✓	✓	✓
Current/voltage measuring modules	--	--	✓	✓
Decoupling modules	--	--	✓	✓
Expansion modules:				
• Digital modules	--	--	2	2
• Fail-safe digital modules[3]	--	--	1	1
• Analog module	--	--	1	2
• Ground-fault module	--	--	1	1
• Temperature module	--	--	1	2
• Multifunction modules	--	1	--	--

✓ Available
-- Not available

1) Maximum of 5 expansion modules.

2) When an operator panel with display and/or a decoupling module are used, more restrictions on the number of expansion modules connectable per basic unit must be observed; see page 10/13.

3) The fail-safe digital module can be used instead of one of the two digital modules.

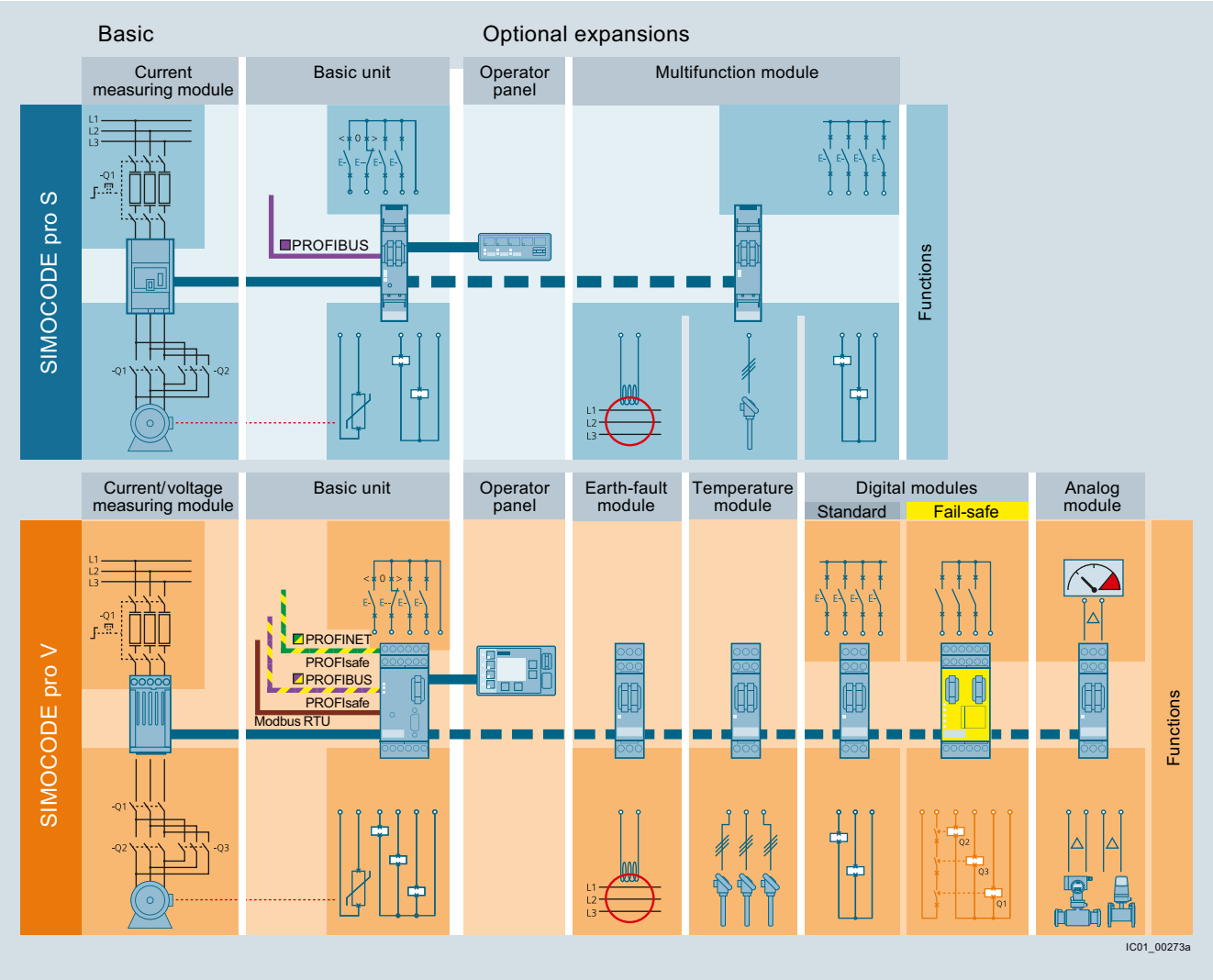
Per feeder each system always comprises one basic unit and one separate current measuring module. The two modules are connected together electrically through the system interface with a connection cable and can be mounted mechanically connected as a unit (one behind the other) or separately (side by side). The motor current to be monitored is decisive only for the choice of the current measuring module.

An operator panel for mounting in the control cabinet door is optionally connectable through a second system interface on the basic unit. Both the current measuring module and the operator panel are electrically supplied by the basic unit through the connection cable. More inputs, outputs and functions can be added to the SIMOCODE pro V and SIMOCODE pro S by means of optional expansion modules, thus supplementing the inputs and outputs already existing on the basic unit. With the DM-F Local and DM-F PROFIsafe fail-safe digital modules it is also possible to integrate the fail-safe disconnection of motors in the SIMOCODE pro V motor management system.

All modules are connected by connection cables. The connection cables are available in various lengths. The maximum distance between modules (e.g. between the basic unit and the current measuring module) must not exceed 2.5 m. The total length of all the connection cables per system interface of the basic unit may be up to 3 m.

Note:

SIMOCODE pro can also be found in the TIA Selection Tool. The various system components can therefore be conveniently selected. See www.siemens.com/tia-selection-tool.



SIMOCODE pro S and SIMOCODE pro V: System structure

Article No. scheme

Product versions		Article number
SIMOCODE pro motor management system		**3UF7** □□□ – 1 □□0 □ – 0
Type of unit/module	e. g. 0 = basic unit	□
Functional version of the module	e. g. 00 = SIMOCODE pro C	□□
Connection type of the current transformer		□
Voltage version	e.g. B = 24 V DC	□
Enclosure color	e. g. 0 = light gray	□
Example		**3UF7 0 0 0 – 1 A B 0 0 – 0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

General customer benefits

- Integrating the whole motor feeder into the process control by means of PROFIBUS DP, PROFINET, Modbus RTU or OPC UA significantly reduces the wiring outlay between the motor feeder and PLC.
- Decentralization of the automated processes by means of configurable control and monitoring functions in the feeder saves resources in the automation system and ensures full functionality and protection of the feeder even if the I&C or bus system fails
- The acquisition and monitoring of operating, service and diagnostics data in the feeder and process control system increases plant availability as well as maintenance and service-friendliness
- The high degree of modularity allows users to perfectly implement their plant-specific requirements for each motor feeder
- The SIMOCODE pro system offers functionally graded and space-saving solutions for each customer application
- The replacement of the control circuit hardware with integrated control functions decreases the number of hardware components and wiring required and in this way limits stock keeping costs and potential wiring errors
- The use of electronic full motor protection permits better utilization of the motors and ensures long-term stability of the tripping characteristic and reliable tripping even after years of service

Multifunctional, electronic full motor protection for rated motor currents up to 820 A

SIMOCODE pro offers comprehensive protection of the motor feeder by means of a combination of different, multi-step and delayable protection and monitoring functions:

- Inverse-time delayed electronic overload protection (CLASS 5E to 40E)
- Thermistor motor protection
- Phase failure/asymmetry protection
- Stall protection
- Monitoring of adjustable limit values for the motor current
- Voltage and power monitoring
- Monitoring of the power factor (motor idling/load shedding)
- Ground-fault monitoring
- Temperature monitoring, e.g. via PT100/PT1000
- Monitoring of operating hours, downtime and number of starts etc.

Recording of measuring curves

SIMOCODE pro can record measuring curves and therefore is able, for example, to present the progression of motor current during motor start up.

Flexible motor control implemented with integrated control functions (instead of comprehensive hardware interlocks)

Many predefined motor control functions have already been integrated into SIMOCODE pro, including all necessary logic operations and interlocks:

- Overload relays
- Direct-on-line and reversing starters
- Wye/delta starters (also with direction reversal)
- Two speeds, motors with separate windings (pole-changing starter); also with direction reversal
- Two speeds, motors with separate Dahlander windings (also with direction reversal)
- Positioner actuation
- Solenoid valve actuation
- Actuation of a motor starter protector
- Soft starter actuation (also with direction reversal)

These control functions are predefined in SIMOCODE pro and can be assigned to the inputs and outputs of the PROFIBUS/PROFINET device (including the process image).

These predefined control functions can also be flexibly adapted to each customized configuration of a motor feeder by means of freely configurable logic modules (truth tables, counters, timers, edge evaluation, etc.) and with the help of standard functions (power failure monitoring, emergency start, external faults, etc.), without additional auxiliary relays being necessary in the control circuit.

SIMOCODE pro makes a lot of additional hardware and wiring in the control circuit unnecessary, which results in a high level of standardization of the motor feeder in terms of its design and circuit diagrams.

General data

Detailed operational, service and diagnostics data

SIMOCODE pro makes different operational, service and diagnostics data available and helps to detect potential faults in time and to prevent them by means of preventative measures. In the event of a malfunction, a fault can be diagnosed, localized and rectified very quickly – there are no or very short downtimes.

Operating data

- Motor switching state derived from the current flow in the main circuit
- All phase currents
- All phase voltages and phase-to-phase voltages
- Active power, apparent power and power factor
- Phase asymmetry and phase sequence
- Ground-fault current
- Time to trip
- Motor temperature
- Remaining cooling time etc.

Service data

- Motor operating hours
- Motor stop times
- Number of motor starts
- Number of overload trips
- Interval for compulsory testing of the enabling circuits
- Energy consumed
- Internal comments stored in the device etc.

Diagnostics data

- Numerous detailed early warning and fault messages
- Internal device fault logging with time stamp
- Time stamping of freely selectable status, alarm or fault messages etc.

Easy operation and diagnostics

Operator panel

The operator panel is used to control the motor feeder and can replace all conventional pushbuttons and indicator lights to save space. It makes SIMOCODE pro or the feeder directly operable in the control cabinet. It features all the status LEDs available on the basic unit and externalizes the system interface for simple parameterization or diagnosis on a PC/PG.

Operator panel with display

As an alternative to the 3UF720 standard operator panel for SIMOCODE pro V, a 3UF721 operator panel with display is also available. This can additionally indicate current measured values, operational and diagnostics data or status information of the motor feeder at the control cabinet. The pushbuttons of the operator panel can be used to control the motor. Also, when SIMOCODE pro V PROFINET is used it is possible to set parameters such as rated motor current, limit values, etc. directly via the operator panel with display.

Communication

SIMOCODE pro has either an integrated PROFIBUS DP or Modbus RTU interface (SUB-D or terminal connection) or a PROFINET interface (2 x RJ45).

Fail-safe disconnection through PROFIBUS or PROFINET with the PROFIsafe profile is also possible in conjunction with a fail-safe controller (F-CPU) and the DM-F PROFIsafe fail-safe digital module.

SIMOCODE pro for PROFIBUS

SIMOCODE pro for PROFIBUS supports for example:

- Cyclic services (DPV0) and acyclic services (DPV1)
- Extensive diagnostics and hardware interrupts
- Time stamp with high timing precision (SIMATIC S7) for SIMOCODE pro V
- DPV1 communication after the Y-Link

SIMOCODE pro for PROFINET

SIMOCODE pro for PROFINET supports for example:

- Line and ring bus topology thanks to an integrated switch
- Media redundancy via MRP protocol
- Operating, service and diagnostics data via standard web browser
- OPC UA server for open communication with visualization and control system
- NTP-synchronized time
- Interval function and measured values for power management via PROFIenergy
- Module exchange without PC/memory module through proximity detection
- Extensive diagnostics and maintenance alarms

System redundancy with SIMOCODE pro for PROFINET

The device supports the system redundancy mechanisms of PROFINET IO and therefore can be operated directly on fault-tolerant systems such as SIMATIC S7-400 H. As such, SIMOCODE pro can provide decisive added value also for the field level of plants in which plant availability and control system redundancy are priorities.

SIMOCODE pro for Modbus RTU

SIMOCODE pro for Modbus RTU supports, for example:

- Communication at baud rates 1200/2400/4800/9600/19200/57600
- Access to freely parameterizable process image via Modbus RTU
- Access to all operating, service and diagnostics data via Modbus RTU

Notes on safety

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information on Industrial Security, see www.siemens.com/industrialsecurity.

For SIMOCODE pro motor management and control devices with communication function, see page 10/14 onwards.

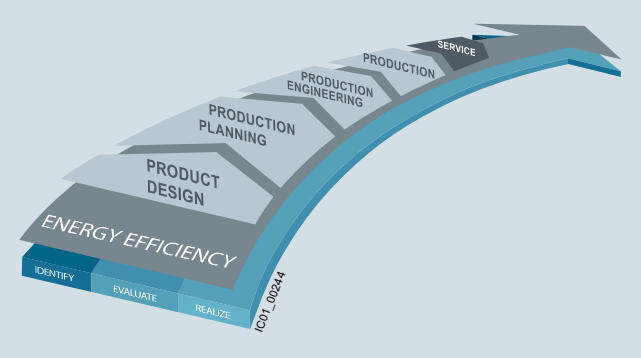
For accessories, see page 10/19 onwards.

For more information, e.g. on software, see page 14/1.

Autonomous operation

An essential feature of SIMOCODE pro is the autonomous execution of all protection and control functions, even when communication to the I&C system is interrupted. This means that even in the event of bus system or automation system failure, full functionality of the feeder is ensured or a specific behavior can be parameterized in case of such a fault, e.g. targeted shutdown of the feeder or execution of particular parameterized control mechanisms (such as reversal of the direction of rotation).

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative SIRIUS industrial controls products can also make a major contribution to the energy efficiency of a plant (www.siemens.com/sirius/energysaving).

The SIMOCODE pro 3UF7 motor management system makes the following contribution to the energy efficiency of the plant as a whole:

- Energy consumption:
  Clear display of the energy consumption of a motor feeder or process element by means of the acquisition and transmission of all operating and consumption data, such as current, voltage, active and reactive power, energy consumption, motor temperature, etc.
- Energy management:
  Evaluation of measured energy values (e.g. limit value monitoring) with exporting of local or central actions (= forwarding to higher-level)
- PROFIenergy:
  SIMOCODE pro V PROFINET supports the PROFIenergy functions. Reduced energy consumption thanks to automatic disconnection in the intervals and forwarding of the measured values for higher-level energy management systems.

Advantages from integrated energy management

siemens.com/energysuite

Ready for SIMATIC Energy Suite

As an integrated option for the TIA Portal, the SIMATIC Energy Suite couples energy management with automation efficiently, making energy consumption at your production facility transparent.

Thanks to the simplified configuration of energy-measuring components, e.g. SIMOCODE pro V, configuration effort is also clearly reduced.

Thanks to end-to-end connection with higher-level energy management systems or cloud-based services, you can seamlessly expand the recorded energy data to create a cross-site energy management system.

The advantages at a glance:

- Automatic generation of energy management data
- Integration into TIA Portal and into automation
- Simple configuration

For more information, see www.siemens.com/energysuite.

Application

SIMOCODE pro is often used for automated processes where plant downtimes are very expensive (e.g. chemical, oil/gas, water/wastewater, steel or cement industries) and where it is important to prevent plant downtimes through detailed operational, service and diagnostics data or to localize faults very quickly when they occur.

SIMOCODE pro is modular and space-saving and suited especially for operation in motor control centers (MCCs) in the process industry and for power plant technology.

Applications

Protection and control of motors in hazardous areas for types of protection EEx e/d according to ATEX guideline 94/9/EC

- With heavy starting (paper, cement, metal and water industries)
- In high-availability plants (chemical, oil, raw material processing industries, power plants)

Use of SIMOCODE pro 3UF7 with IE3/IE4 motors

Note:

When using the SIMOCODE pro 3UF7 in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring; see Application Manual "SIRIUS Controls with IE3/IE4 motors", https://support.industry.siemens.com/cs/ww/en/view/94770820.

For more information, see Preface, page 7.

Safety technology for SIMOCODE pro

The safe disconnection of motors in the process industry is becoming increasingly important as the result of new and revised standards and requirements in the safety technology field.

With the DM-F Local and DM-F PROFIsafe fail-safe expansion modules it is easy to integrate functions for fail-safe disconnection in the SIMOCODE pro V motor management system while retaining service-proven concepts. The strict separation of safety functions and operational functions proves particularly advantageous for planning, configuring and construction. Seamless integration in the motor management system leads to greater transparency for diagnostics and during operation of the system.

Suitable components for this purpose are the DM-F Local and DM-F PROFIsafe fail-safe expansion modules, depending on the requirements:

- The DM-F Local fail-safe digital module for when direct assignment between a fail-safe hardware shutdown signal and a motor feeder is required, or
- The DM-F PROFIsafe fail-safe digital module for when a fail-safe controller (F-CPU) creates the signal for disconnection and transmits it in a fail-safe manner through PROFIBUS/PROFIsafe or PROFINET/PROFIsafe to the motor management system

General data

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16337/td	"SIMOCODE pro Modbus RTU" Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/108681641
"SIMOCODE pro PROFIBUS" System Manual, see https://support.industry.siemens.com/cs/ww/en/view/20017780	"SIMOCODE pro Safety Fail-Safe Digital Modules" System Manual, see https://support.industry.siemens.com/cs/ww/en/view/50564852
"SIMOCODE pro V PROFINET" System Manual, see https://support.industry.siemens.com/cs/ww/en/view/61896631	Application Manual "SIRIUS Controls with IE3/IE4 motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820

General data		
Type		**3UF7**
Permissible ambient temperature		
• During operation	°C	-25 ... +60; 3UF721: 0 ... +60
• During storage and transport	°C	-40 ... +80; 3UF721: -20 ... +70
Degree of protection (acc. to IEC 60529)		
• Measurement modules with busbar connection		IP00
• Operator panel (front) and door adapter (front) with cover		IP54
• Other components		IP20
Shock resistance (sine pulse)	*g*/ms	15/11
Mounting position		Any
Frequency	Hz	50/60 ± 5 %
EMC interference immunity (according to IEC 60947-1)		Corresponds to degree of severity 3
• Conducted interference, burst acc. to IEC 61000-4-4	kV	2 (power ports)
	kV	1 (signal ports)
• Conducted interference, high frequency acc. to IEC 61000-4-6	V	10
• Conducted interference, surge acc. to IEC 61000-4-5	kV	2 (line to ground); 3UF7320-1AB, 3UF7330-1AB: 1 (line to ground)
	kV	1 (line to line); 3UF7320-1AB, 3UF7330-1AB: 0.5 (line to line)
• Electrostatic discharge, ESD acc. to IEC 61000-4-2	kV	8 (air discharge); 3UF7020: Operator input during operation only on the front
	kV	6 (contact discharge); 3UF721: 4 (contact discharge)
• Field-related interference acc. to IEC 61000-4-3	V/m	10
EMC emitted interference (according to IEC 60947-1)		
• Conducted and radiated interference emission		EN 55011/EN 55022 (CISPR 11/CISPR 22) (Corresponds to degree of severity A)
Protective separation (acc. to IEC 60947-1)		All circuits in SIMOCODE pro are safely separated from each other according to IEC 60947-1, i.e. they are designed with doubled creepage paths and clearances. In this context, compliance with the instructions in the test report "Safe Isolation" No. 2668 is required.

Basic units			
Type		**3UF7000-1AU00-0, 3UF7010-1AU00-0 3UF7011-1AU00-0, 3UF7020-1AU01-0 3UF7012-1AU00-0**	**3UF7000-1AB00-0, 3UF7010-1AB00-0 3UF7011-1AB00-0, 3UF7020-1AB01-0 3UF7012-1AB00-0**
Control circuit			
Rated control supply voltage U_s (acc. to IEC 61131-2)		110 ... 240 AC/DC; 50/60 Hz	24 V DC
Operating range			
• SIMOCODE pro C (3UF7000) and SIMOCODE pro V (3UF7010/3UF7012)		0.85 ... 1.1 x U_s	0.80 ... 1.2 × U_s
• SIMOCODE pro V PN (3UF7011) and SIMOCODE pro S (3UF7020)			
- Operation		0.85 ... 1.1 x U_s	0.80 ... 1.2 × U_s
- Start up		0.85 ... 1.1 x U_s	0.85 ... 1.2 × U_s
Power consumption			
• SIMOCODE pro C (3UF7000) and SIMOCODE pro S (3UF7020)		7 VA/5 W	5 W
• SIMOCODE pro V (3UF7010/3UF7012) incl. two connected expansion modules		10 VA/7 W	7 W
• SIMOCODE pro V PN (3UF7011) incl. two connected expansion modules		11 VA/8 W	8 W
Rated insulation voltage U_i	V	300 (for pollution degree 3)	
Rated impulse withstand voltage U_{imp}	kV	4	
Relay outputs			
• Number			
- SIMOCODE pro C, SIMOCODE pro V, SIMOCODE pro V PN		3 monostable relay outputs	
- SIMOCODE pro S		2 monostable relay outputs	
• Specified short-circuit protection for auxiliary contacts (relay outputs)			
- Fuse links		6 A operational class gG; 10 A quick-response (IEC 60947-5-1)	
- Miniature circuit breaker		1.6 A, C characteristic (IEC 60947-5-1); 6 A, C characteristic (Ik < 500 A)	
• Rated uninterrupted current	A	6	
• Rated switching capacity			
- AC-15		6 A/24 V AC 6 A/ 120 V AC 3 A/ 230 V AC	
- DC-13		2 A/24 V DC 0.55 A/60 V DC 0.25 A/125 V DC	
Inputs (binary)		4 inputs supplied internally by the device electronics (with 24 V DC) and connected to a common potential	
Thermistor motor protection (binary PTC)			
• Summation cold resistance	kΩ	≤ 1.5	
• Response value	kΩ	3.4 ... 3.8	
• Return value	kΩ	1.5 ... 1.65	

Current measuring modules or current/voltage measuring modules						
Type		**3UF71.0**	**3UF71.1**	**3UF71.2**	**3UF71.3**	**3UF71.4**
Main circuit						
Set current I_e	A	0.3 ... 3	2.4 ... 25	10 ... 100	20 ... 200	63 ... 630
Rated insulation voltage U_i	V	690; 3UF7103 and 3UF7104: 1 000 (at pollution degree 3)				
Rated operational voltage U_e	V	690				
Rated impulse withstand voltage U_{imp}	kV	6; 3UF7103 and 3UF7104: 8				
Rated frequency	Hz	50/60				
Type of current		Three-phase current				
Short circuit		Additional short-circuit protection is required in the main circuit				
Accuracy of current measurement (in the range of 1 x minimum current setting I_u to 8 x max. current setting I_o)	%	± 3				
Typical voltage measuring range						
• Phase-to-phase voltage/line-to-line voltage (e.g. $U_{L1\,L2}$)	V	110 ... 690				
• Phase voltage (e.g. $U_{L1\,N}$)	V	65 ... 400				
Accuracy						
• Voltage measurement (phase voltage U_L in the range 230 ... 400 V)	%	± 3 (typical)				
• Power factor measurement (in the rated load range p.f. = 0.4 ... 0.8)	%	± 5 (typical)				
• Apparent power measurement (in the rated load range)	%	± 5 (typical)				
Notes on voltage measurement • In insulated, high-resistance or asymmetrically grounded forms of power supply system and for single-phase systems • Supply lines for voltage measurement		In these networks the current/voltage measuring module can be used only with an upstream decoupling module on the system interface. In the supply lines from the main circuit for voltage measurement of SIMOCODE pro it may be necessary to provide additional line protection!				
Digital modules or multifunction modules						
Type		**3UF7300, 3UF7310, 3UF7600**				
Control circuit						
Rated insulation voltage U_i	V	300 (at pollution degree 3)				
Rated impulse withstand voltage U_{imp}	kV	4				
Relay outputs						
• Number		2 monostable or bistable relay outputs (depending on the version)				
• Specified short-circuit protection for auxiliary contacts (relay outputs)						
- Fuse links		6 A operational class gG; 10 A quick-response (IEC 60947-5-1)				
- Miniature circuit breaker		1.6 A, C characteristic (IEC 60947-5-1); 6 A, C characteristic (Ik <500 A)				
• Rated uninterrupted current	A	6				
• Rated switching capacity						
- AC-15		6 A/24 V AC	6 A/ 120 V AC	3 A/ 230 V AC		
- DC-13		2 A/24 V DC	0.55 A/60 V DC	0.25 A/125 V DC		
Inputs (binary)		4 inputs, electrically isolated, supplied externally with 24 V DC or 110 ... 240 V AC/DC depending on the version, connected to a common potential				
Ground-fault modules or multifunction modules						
Type		**3UF7510, 3UF7600**				
Control circuit						
Connectable residual-current transformer		3UL23				
Type of current for monitoring		Type A (AC and pulsating DC residual currents)				
Adjustable response value		30 mA ... 40 A				
Relative measurement error	%	7.5				
Temperature modules or multifunction modules						
Type		**3UF7600, 3UF7700**				
Sensor circuit						
Number of temperature sensors						
• 3UF7700		3 temperature sensors				
• 3UF7600		1 temperature sensor				
Typical sensor current						
• PT100	mA	1 (typical)				
• PT1000/KTY83/KTY84/NTC	mA	0.2 (typical)				
Open-circuit/short-circuit detection						
• Sensor type		PT100/PT1000	KTY83-110	KTY84	NTC	
- Open circuit		✓	✓	✓	--	
- Short circuit		✓	✓	✓	✓	
- Measuring range	°C	-50 ... +500	-50 ... +175	-40 ... +300	80 ... 160	
Measuring accuracy at 20 °C ambient temperature (T20)	K	< ± 2				
Deviation due to ambient temperature (in % of measuring range)	%	0.05 per K deviation from T20				
Conversion time	ms	500				
Connection type		Two- or three-wire connection				

✓ Detection possible

-- Detection not possible

General data

Analog module

Type		3UF74
Control circuit		
Inputs		
• Channels		2 (passive)
• Parameterizable measuring ranges	mA	0/4 ... 20
• Shielding		Up to 30 m shield recommended, from 30 m shield required
• Max. input current (destruction limit)	mA	40
• Accuracy	%	± 1
• Input resistance	Ω	50
• Conversion time	ms	150
• Resolution	Bit	12
• Open-circuit detection		With measuring range 4 ... 20 mA
Outputs		
• Channels		1
• Parameterizable output range	mA	0/4 ... 20
• Shielding		Up to 30 m shield recommended, from 30 m shield required
• Max. voltage at output	V DC	30
• Accuracy	%	± 1
• Max. output load	Ω	500
• Conversion time	ms	25
• Resolution	Bit	12
• Short-circuit proof		Yes
Connection type		Two-wire connection
Electrical separation of inputs/output to the device electronics		No

Fail-safe digital modules

Type		3UF7320-1AB00-0	3UF7320-1AU00-0	3UF7330-1AB00-0	3UF7330-1AU00-0
Control circuit					
Rated control supply voltage U_s	V	24 DC	110 ... 240 AC/DC; 50/60 Hz	24 DC	110 ... 240 AC/DC; 50/60 Hz
Power consumption		3 W	9.5 VA/4.5 W	4 W	11 VA/5.5 W
Rated insulation voltage	V	300			
Rated impulse withstand voltage U_{imp}	kV	4			
Relay outputs					
• Number		2 relay enabling circuits, 2 relay outputs			
Version of the fuse link For short-circuit protection of the relay enabling circuit	A	4, operational class gG			
Rated uninterrupted current	A	5			
Rated switching capacity					
• AC-15		3 A/24 V AC; 3 A/120 V AC; 1.5 A/230 V AC			
• DC-13		4 A/24 V DC; 0.55 A/60 V DC; 0.22 A/125 V DC			
Inputs (binary)		5 (with internal power supply from the device electronics)			
Cable length					
• Between sensor/start signal and evaluation electronics	m	1 500			
• For further digital signals	m	300			
Safety data[1]					
SIL level max. according to IEC 61508		3			
Performance level PL according to EN ISO 13849-1		e			
Category according to EN ISO 13849-1		4			
Stop category according to EN 60204-1		0			
Probability of a dangerous failure (at 40 °C) for SIL 3 applications					
• Per hour (PFH_d) at a high demand rate according to IEC 62061	1/h	4.5×10^{-9}	4.6×10^{-9}	4.4×10^{-9}	4.4×10^{-9}
• On demand (PFD_{avg}) at a low demand rate according to IEC 61508		5.4×10^{-6}	5.5×10^{-6}	5.1×10^{-6}	5.2×10^{-6}
T1 value for proof-test interval or service life according to IEC 61508	a	20			

[1] More safety data, see system manual "SIMOCODE pro Safety Fail-Safe Digital Modules", https://support.industry.siemens.com/cs/ww/en/view/50564852.

More information

Configuration instructions when using an operator panel with display and/or a decoupling module with SIMOCODE pro V with PROFIBUS or Modbus RTU

If you want to use an operator panel with display and/or a decoupling module in the SIMOCODE pro V system with PROFIBUS or Modbus RTU, then the following configuration instructions concerning the type and number of connectable expansion modules must be observed.

The following tables show the maximum possible configuration of the expansion modules for the various combinations.
These are also conveniently stored in the TIA Selection Tool.
See www.siemens.com/tia-selection-tool.

The DM-F Local and DM-F PROFIsafe fail-safe expansion modules behave in this connection like digital modules for standard applications.

Use of an operator panel with display

Digital module 1	Digital module 2	Analog module	Temperature modules	Ground-fault module
Only operator panel with display for SIMOCODE pro V (24 V DC or 110 ... 240 V AC/DC)				
Max. 4 expansion modules can be used				
Operator panels with display and current/voltage measurement with SIMOCODE pro V (110 ... 240 V AC/DC)				
Max. 3 expansion modules can be used or:				
--	--	✓	✓	--

✓ Available
-- Not available

Use of a decoupling module
(voltage measurement in insulated networks)

Digital module 1	Digital module 2	Analog module	Temperature modules	Ground-fault module
SIMOCODE pro V (24 V DC)				
✓[1)]	✓[1)]	✓	✓	✓
SIMOCODE pro V (110 ... 240 V AC/DC)				
✓	✓	--	✓	✓
✓[1)]	✓[1)]	✓	✓	--
✓	--	✓	✓	--
✓	--	✓	--	✓

✓ Available
-- Not available
1) No bistable relay outputs and no more than 5 of 7 relay outputs active simultaneously (> 3 s).

Use of a decoupling module
(voltage measurement in insulated networks)
in combination with an operator panel with display

Digital module 1	Digital module 2	Analog module	Temperature modules	Ground-fault module
SIMOCODE pro V (24 V DC)				
✓	--	✓	✓	✓
✓	✓	--	✓	✓
SIMOCODE pro V (110 ... 240 V AC/DC)				
✓[1)]	--	✓	✓	✓
✓	✓	--	--	--
✓[2)]	✓[2)]	✓[3)]	--	--
✓	--	--	✓	✓

✓ Available
-- Not available
1) No bistable relay outputs and no more than 3 of 5 relay outputs active simultaneously (> 3 s).
2) No bistable relay outputs and no more than 5 of 7 relay outputs active simultaneously (> 3 s).
3) Analog module output is not used.

Protective separation

All circuits in SIMOCODE pro are safely isolated from each other in accordance with IEC 60947-1. That is, they are designed with double creepages and clearances. In the event of a fault, therefore, no parasitic voltages can be formed in neighboring circuits. The instructions of Test log No. 2668 must be complied with.

Types of protection EEx e and EEx d

The overload protection and the thermistor motor protection of the SIMOCODE pro system comply with the requirements for overload protection of explosion-proof motors to the type of protection:

- EEx d "flameproof enclosure" e.g. according to IEC 60079-1
- EEx e "increased safety" e.g. according to IEC 60079-7

When using SIMOCODE pro devices with a 24 V DC control voltage, electrical separation must be ensured using a battery or a safety transformer according to IEC 61558-2-6.
EC type test certificate: BVS 06 ATEX F 001
Test report: BVS PP 05.2029 EC.

Selection data for type-tested assemblies/load feeders

For configuration tables according to type of coordination "1" or "2", see:

- Manual "Configuring SIRIUS", https://support.industry.siemens.com/cs/ww/en/view/40625241
- Manual "Configuring SIRIUS Innovations", https://support.industry.siemens.com/cs/ww/en/view/39714188
- System Manual "SIMOCODE pro PROFIBUS", https://support.industry.siemens.com/cs/ww/en/view/20017780
- System Manual "SIMOCODE pro PROFINET", https://support.industry.siemens.com/cs/ww/en/view/61896631
- Configuration Manual "SIMOCODE pro Modbus RTU", https://support.industry.siemens.com/cs/ww/en/view/108681641

System manual

The SIMOCODE pro system manual describes the motor management system and its functions in detail. It provides information on configuration, start up, servicing and maintenance.
A typical example of a reversing starter application is used to teach the user quickly and practically how to use the system. In addition to help on how to identify and rectify faults in the event of a malfunction, the manual also contains special information for servicing and maintenance. For selection of equipment and for configuration, it is recommended to consult the system manual.

For a detailed description of the DM-F Local and DM-F PROFIsafe fail-safe expansion modules, see System Manual "SIMOCODE pro Safety Fail-Safe Digital Modules", https://support.industry.siemens.com/cs/ww/en/view/50564852.

Internet

For more information, see www.siemens.com/simocode.

Selection and ordering data

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No. / Price per PU			
SIMOCODE pro PROFIBUS					
 3UF7000-1A.00-0					
SIMOCODE pro C					
PROFIBUS DP interface, 12 Mbit/s, RS 485 4 I/3 O freely assignable, input for thermistor connection, monostable relay outputs					
Rated control supply voltage U_s:					
• 24 V DC	►	**3UF7000-1AB00-0**	1	1 unit	42J
• 110 ... 240 V AC/DC	►	**3UF7000-1AU00-0**	1	1 unit	42J
 3UF7020-1A.01-0					
SIMOCODE pro S[1]					
PROFIBUS DP interface, 1.5 Mbit/s, RS 485					
4 I/2 O freely assignable, input for thermistor connection, monostable relay outputs, can be expanded by a multifunction module					
Rated control supply voltage U_s:					
• 24 V DC	►	**3UF7020-1AB01-0**	1	1 unit	42J
• 110 ... 240 V AC/DC	►	**3UF7020-1AU01-0**	1	1 unit	42J
 3UF7010-1A.00-0					
SIMOCODE pro V					
PROFIBUS DP interface, 12 Mbit/s, RS 485 4 I/3 O freely assignable, input for thermistor connection, monostable relay outputs, can be expanded by expansion modules,					
Rated control supply voltage U_s:					
• 24 V DC	►	**3UF7010-1AB00-0**	1	1 unit	42J
• 110 ... 240 V AC/DC	►	**3UF7010-1AU00-0**	1	1 unit	42J
SIMOCODE pro PROFINET					
 3UF7011-1A.00-0					
SIMOCODE pro V PROFINET					
ETHERNET/PROFINET IO, OPC UA server and web server, 100 Mbit/s, 2 x connection to bus through RJ45, PROFINET system redundancy, media redundancy protocol, 4 I/3 O freely assignable, input for thermistor connection, monostable relay outputs, can be expanded by expansion modules, web server in German/English/Chinese/Russian					
Rated control supply voltage U_s:					
• 24 V DC	►	**3UF7011-1AB00-0**	1	1 unit	42J
• 110 ... 240 V AC/DC	►	**3UF7011-1AU00-0**	1	1 unit	42J
SIMOCODE pro Modbus RTU					
 3UF7012-1A.00-0					
SIMOCODE pro V Modbus RTU[2]					
Modbus RTU interface, 57.6 kbit/s, RS485; 4I/3O freely parameterizable; input for thermistor connection; monostable relay outputs; can be expanded using expansion modules					
Rated control supply voltage U_s:					
• 24 V DC	►	**3UF7012-1AB00-0**	1	1 unit	42J
• 110 ... 240 V AC/DC	►	**3UF7012-1AU00-0**	1	1 unit	42J

1) The connection cable to the current measuring module must be at least 30 cm.

2) When using an operator panel with display, the product version must be E09 or higher (from 05/2015). The SIMOCODE ES (TIA Portal) V14 software is necessary for parameterization. See page 10/21.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Version	Current setting	Width	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
				Article No. Price per PU			
	A	mm	d				
SIMOCODE pro (continued)							
Current measuring modules							
• Straight-through transformers	0.3 ... 3	45	▶	**3UF7100-1AA00-0**	1	1 unit	42J
	2.4 ... 25	45	▶	**3UF7101-1AA00-0**	1	1 unit	42J
	10 ... 100	55	▶	**3UF7102-1AA00-0**	1	1 unit	42J
	20 ... 200	120	▶	**3UF7103-1AA00-0**	1	1 unit	42J
• Bus connection	20 ... 200	120	▶	**3UF7103-1BA00-0**	1	1 unit	42J
	63 ... 630	145	▶	**3UF7104-1BA00-0**	1	1 unit	42J
Current/voltage measuring modules for SIMOCODE pro V							
Voltage measurement up to 690 V If required in connection with a decoupling module							
• Straight-through transformers	0.3 ... 3	45	▶	**3UF7110-1AA00-0**	1	1 unit	42J
	2.4 ... 25	45	▶	**3UF7111-1AA00-0**	1	1 unit	42J
	10 ... 100	55	▶	**3UF7112-1AA00-0**	1	1 unit	42J
	20 ... 200	120	▶	**3UF7113-1AA00-0**	1	1 unit	42J
• Bus connection	20 ... 200	120	▶	**3UF7113-1BA00-0**	1	1 unit	42J
	63 ... 630	145	▶	**3UF7114-1BA00-0**	1	1 unit	42J
Decoupling modules							
For connecting upstream from a current/voltage measuring module on the system interface when using voltage detection in insulated, high-resistance or asymmetrically grounded systems and in single-phase systems			2	**3UF7150-1AA00-0**	1	1 unit	42J
Operator panels							
Installation in control cabinet door or front plate, for plugging into all SIMOCODE pro basic units, 10 LEDs for status indication and user-assignable buttons for controlling the motor							
• Light gray			▶	**3UF7200-1AA00-0**	1	1 unit	42J
• Titanium gray			▶	**3UF7200-1AA01-0**	1	1 unit	42J
Operator panels with display for SIMOCODE pro V							
Installation in control cabinet door or front plate, for plugging into SIMOCODE pro V and SIMOCODE pro V PN, 7 LEDs for status indication and user-assignable buttons for controlling the motor, multilingual display, e.g. for indication of measured values, status information or fault messages							
English/German/French/Spanish/Portuguese/ Italian/Polish/Finnish			▶	**3UF7210-1AA00-0**	1	1 unit	42J
English/Chinese/Russian			▶	**3UF7210-1BA00-0**	1	1 unit	42J


3UF7100-1AA00-0


3UF7110-1AA00-0


3UF7150-1AA00-0


3UF7200-1AA00-0


3UF7200-1AA01-0


3UF7210-1.A00-0

Note:

SIMOCODE pro V basic unit in a hardened version via SIPLUS extreme upon request.

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Selection and ordering data

Version	SD	Screw terminals ⊕ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Expansion modules for SIMOCODE pro V						
With SIMOCODE pro V, it is possible to expand the type and number of inputs and outputs in steps. Each expansion module has two system interfaces on the front. Through the one system interface the expansion module is connected to the system interface of the SIMOCODE pro V using a connection cable; through the second system interface, further expansion modules or the operator panel can be connected. The power supply for the expansion modules is provided by the connection cable through the basic unit. Note: Please order connection cable separately, see page 10/19.						
Digital modules Up to two digital modules can be used to add additional binary inputs and relay outputs to the basic unit. The input circuits of the digital modules are supplied from an external power supply. 4 binary inputs and 2 relay outputs, up to 2 digital modules can be connected						
Relay outputs / Input voltage						
Monostable / 24 V DC	▶	**3UF7300-1AB00-0**		1	1 unit	42J
Monostable / 110 ... 240 V AC/DC	▶	**3UF7300-1AU00-0**		1	1 unit	42J
Bistable / 24 V DC	▶	**3UF7310-1AB00-0**		1	1 unit	42J
Bistable / 110 ... 240 V AC/DC	▶	**3UF7310-1AU00-0**		1	1 unit	42J
Analog module By means of the analog module, the basic unit can be optionally expanded with analog inputs and outputs (0/4 ... 20 mA). 2 inputs (passive) for input and 1 output for output of 0/4 ... 20 mA signals, max. 1 analog module can be connected per pro V basic unit and max. 2 analog modules per pro V PN basic unit	▶	**3UF7400-1AA00-0**		1	1 unit	42J
Ground-fault modules[1] Ground-fault monitoring using 3UL23 residual-current transformers and ground-fault modules is used in cases where precise detection of the ground-fault current is required or power systems with high impedance are grounded. With the ground-fault module, it is possible to determine the precise fault current as a measured value, and to define freely selectable warning and trip limits in a wide range from 30 mA ... 40 A. 1 input for connecting a 3UL23 residual-current transformer, up to 1 ground-fault module can be connected Note: For corresponding residual-current transformers, see page 10/95.	▶	**3UF7510-1AA00-0**		1	1 unit	42J
Temperature modules Independently of the thermistor motor protection of the basic units, up to 3 analog temperature sensors can be evaluated using a temperature module. Sensor types: PT100/PT1000, KTY83/KTY84 or NTC 3 inputs for connecting up to 3 analog temperature sensors, up to 1 temperature module can be connected per pro V basic unit and up to 2 temperature modules per pro V PN basic unit	▶	**3UF7700-1AA00-0**		1	1 unit	42J


3UF7300-1AU00-0


3UF7400-1AA00-0


3UF7510-1AA00-0


3UF7700-1AA00-0

[1] Possible with pro V basic unit from product version E10 or pro V PN basic unit from product version E04, operator panels with display from product version E07.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No. Price per PU			

Expansion modules for SIMOCODE pro S

With SIMOCODE pro S, it is possible to expand the type and number of inputs and outputs. The expansion module has two system interfaces on the front. Through the one system interface the expansion module is connected to the system interface of the SIMOCODE pro S using a connection cable; through the second system interface, the operator panel can be connected. The power supply for the expansion module is provided by the connection cable through the basic unit.

Note:

Please order connection cable separately, see page 10/19.

3UF7600-1AU01-0

Multifunction modules

The multifunction module is the expansion module of the SIMOCODE pro S device series with the following functions:

- Digital module function with four digital inputs and two monostable relay outputs
- Ground-fault module function with an input for the connection of a 3UL23 residual-current transformer with freely selectable warning and trip limits in a wide zone of 30 mA ... 40 A
- Temperature module function with an input for connecting an analog temperature sensor PT100, PT1000, KTY83, KTY84, or NTC

Max. 1 multifunction module can be connected per pro S basic unit

Input voltage of the digital inputs:

• 24 V DC	►	**3UF7600-1AB01-0**	1	1 unit	42J
• 110 ... 240 V AC/DC	►	**3UF7600-1AU01-0**	1	1 unit	42J

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Selection and ordering data

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No. / Price per PU			
Fail-safe expansion modules for SIMOCODE pro V					
Thanks to the fail-safe expansion modules, SIMOCODE pro V can be expanded with the function of a safety relay for the fail-safe disconnection of motors. A maximum of 1 fail-safe digital module can be connected; it can be used instead of a digital module. The fail-safe expansion modules are equipped likewise with two system interfaces at the front for making the connection to other system components. Unlike other expansion modules, power is supplied to the modules through a separate terminal connection. Note: Please order connection cable separately, see page 10/19.					
DM-F Local fail-safe digital modules[1]					
For fail-safe disconnection using a hardware signal 2 relay enabling circuits, joint switching; 2 relay outputs, common potential disconnected fail-safe; inputs for sensor circuit, start signal, cascading and feedback circuit, safety function adjustable using DIP switches Rated control supply voltage U_s:					
• 24 V DC	►	**3UF7320-1AB00-0**	1	1 unit	42J
• 110 ... 240 V AC/DC	►	**3UF7320-1AU00-0**	1	1 unit	42J
DM-F PROFIsafe fail-safe digital modules[1)2)]					
For fail-safe disconnection using PROFIBUS/PROFIsafe or PROFINET/PROFIsafe 2 relay enabling circuits, joint switching; 2 relay outputs, common potential disconnected fail-safe; 1 input for feedback circuit; 3 binary standard inputs Rated control supply voltage U_s:					
• 24 V DC	►	**3UF7330-1AB00-0**	1	1 unit	42J
• 110 ... 240 V AC/DC	►	**3UF7330-1AU00-0**	1	1 unit	42J


3UF7320-1AB00-0


3UF7330-1AB00-0

1) Possible with SIMOCODE pro V basic unit, product version E07 and higher (from 05/2011) or SIMOCODE pro V PN basic unit.

2) Cannot be used in conjunction with SIMOCODE pro V for Modbus RTU communication

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

	Version		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Connection cables (essential accessory)								
 3UF7932-0AA00-0	**Connection cables** In different lengths for connecting basic unit, current measuring module, current/voltage measuring module, operator panel or expansion modules or decoupling module							
	Version	Length						
	Flat	0.025 m	►	**3UF7930-0AA00-0**		1	1 unit	42J
	Flat	0.1 m	►	**3UF7931-0AA00-0**		1	1 unit	42J
	Flat	0.3 m	►	**3UF7935-0AA00-0**		1	1 unit	42J
	Flat	0.5 m	►	**3UF7932-0AA00-0**		1	1 unit	42J
	Round	0.5 m	►	**3UF7932-0BA00-0**		1	1 unit	42J
	Round	1.0 m	►	**3UF7937-0BA00-0**		1	1 unit	42J
	Round	2.5 m	►	**3UF7933-0BA00-0**		1	1 unit	42J
PC cables and adapters								
 3UF7941-0AA00-0	**USB PC cables** For connecting to the USB interface of a PC/PG, for communication with SIMOCODE pro through the system interface		►	**3UF7941-0AA00-0**		1	1 unit	42J
	USB/serial adapters To connect an RS 232 PC cable to to the USB interface of a PC, recommended for use in conjunction with SIMOCODE pro 3UF7		5	**3UF7946-0AA00-0**		1	1 unit	42J
Memory modules								
	Enable transmission to a new system, e. g. when a device is replaced, without the need for additional aids or detailed knowledge of the device.							
 3UF7900-0AA00-0	**Memory module for SIMOCODE pro C, SIMOCODE pro S and SIMOCODE pro V** For saving the complete parameterization of a SIMOCODE pro C, SIMOCODE pro S or SIMOCODE pro V system		►	**3UF7900-0AA00-0**		1	1 unit	42J
	Memory module for SIMOCODE pro V PROFINET For saving the complete parameterization of a SIMOCODE pro V PROFINET system		►	**3UF7901-0AA00-0**		1	1 unit	42J
Interface covers								
 3UF7950-0AA00-0	**Interface covers** For system interface							
	• Light gray		►	**3UF7950-0AA00-0**		1	5 units	42J
	• Titanium gray		10	**3RA6936-0B**		1	5 units	42F
Addressing plugs								
 3UF7910-0AA00-0	**Addressing plugs** For assigning the PROFIBUS or Modbus RTU address without using a PC/PG to SIMOCODE pro through the system interface		►	**3UF7910-0AA00-0**		1	1 unit	42J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

	Version		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Accessories for motor control centers								
	With the draw-out technology often used in motor control centers it is possible to integrate a SIMOCODE pro initialization module in the switchboard on a permanent basis. Feeder-related parameter and address data can then be permanently assigned to this feeder.							
 3UF7902-0AA00-0	**Initialization module** For automatic parameterization of: • pro V basic unit, product version E09 or higher (11/2012) • pro S basic unit • pro V PROFINET basic unit • pro V Modbus RTU basic unit			**3UF7902-0AA00-0**		1	1 unit	42J
	Y connection cable For use in conjunction with the initialization module; connects the basic unit, current measuring module or current/voltage measuring module, and initialization module							
	System interface length	Open cable end						
	0.1 m	1.0 m		**3UF7931-0CA00-0**		1	1 unit	42J
	0.5 m	1.0 m		**3UF7932-0CA00-0**		1	1 unit	42J
	1.0 m	1.0 m		**3UF7937-0CA00-0**		1	1 unit	42J
Bus connection terminals								
 3UF7960-0AA00-0	**Bus connection terminals** For shield support and strain relief of the PROFIBUS cable on a SIMOCODE pro S			**3UF7960-0AA00-0**		1	1 unit	42J
Door adapters								
 3UF7920-0AA00-0	**Door adapters** For external connection of the system interface, e.g. outside a control cabinet			**3UF7920-0AA00-0**		1	1 unit	42J
Adapters for operator panel								
 3UF7922-0AA00-0	**Adapters for operator panel** The adapter enables the smaller 3UF7200 operator panel from SIMOCODE pro to be used in a front panel cutout in which previously, e.g. after a change of system, a larger 3UF52 operator panel from SIMOCODE-DP had been used, degree of protection IP54			**3UF7922-0AA00-0**		1	1 unit	42J
Labeling strips								
 3UF7925-0AA02-0	**Labeling strips**							
	• For pushbuttons of the 3UF720 operator panel			**3UF7925-0AA00-0**		100	400 units	42J
	• For pushbuttons of the 3UF721 operator panel with display			**3UF7925-0AA01-0**		100	600 units	42J
	• For LEDs of the 3UF720 operator panel			**3UF7925-0AA02-0**		100	1 200 units	42J
Push-in lugs								
 3RV2928-0B	**Push-in lugs for screw fixing** e. g. on mounting plate; 2 units required per device							
	• Can be used for 3UF71.0, 3UF71.1 and 3UF71.2		2	**3RV2928-0B**		100	10 units	41E
	• Can be used for 3UF700, 3UF701, 3UF73, 3UF74, 3UF75 and 3UF77		5	**3RP1903**		1	10 units	41H
	• Can be used for 3UF7020, 3UF7600		2	**3ZY1311-0AA00**		1	10 units	41L

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Terminal covers							
 3RT1956-4EA1	**Covers for cable lugs and busbar connections**						
	• Length 100 mm, can be used for 3UF71.3-1BA00-0	▶	**3RT1956-4EA1**		1	1 unit	41B
	• Length 120 mm, can be used for 3UF71.4-1BA00-0	▶	**3RT1966-4EA1**		1	1 unit	41B
	Covers for box terminals						
	• Length 25 mm, can be used for 3UF71.3-1BA00-0	▶	**3RT1956-4EA2**		1	1 unit	41B
	• Length 30 mm, can be used for 3UF71.4-1BA00-0	▶	**3RT1966-4EA2**		1	1 unit	41B
 3RT1956-4EA2	**Covers for screw terminals**						
	Between contactor and current measuring module or current/voltage measuring module for direct mounting						
	• Can be used for 3UF71.3-1BA00-0	▶	**3RT1956-4EA3**		1	1 unit	41B
	• Can be used for 3UF71.4-1BA00-0	▶	**3RT1966-4EA3**		1	1 unit	41B
Box terminal blocks							
 3RT195.-4G	**Box terminal blocks**						
	For round and ribbon cables						
	• Up to 70 mm^2, can be used for 3UF71.3-1BA00-0	▶	**3RT1955-4G**		1	1 unit	41B
	• Up to 120 mm^2, can be used for 3UF71.3-1BA00-0	▶	**3RT1956-4G**		1	1 unit	41B
	• Up to 240 mm^2, can be used for 3UF71.4-1BA00-0	▶	**3RT1966-4G**		1	1 unit	41B
Bus termination modules							
 3UF1900-1KA00	**Bus termination modules**						
	With separate supply voltage for bus termination following the last unit on the bus line						
	Supply voltage:						
	• 115/230 V AC	5	**3UF1900-1KA00**		1	1 unit	42J
	• 24 V DC	5	**3UF1900-1KB00**		1	1 unit	42J
Software							
 3ZS1322-.C.12-0Y.5	**SIMOCODE ES (TIA Portal)**						
	Software for configuring, commissioning, operating and diagnosing SIMOCODE pro based on the TIA Portal, see page 14/20.						
 3ZS1312-.C.10-0Y.5	**SIMOCODE ES**						
	Software for configuring, commissioning, operating and diagnosing SIMOCODE pro in Version 2007, see page 14/24.						
 3ZS1632-.XX02-0Y.0	**SIMOCODE pro function block library for SIMATIC PCS 7**						
	The PCS 7 block library can be used for simple and convenient integration of SIMOCODE pro into the SIMATIC PCS 7 process control system, see page 14/28.						

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

3UF18 current transformers for overload protection

Overview

More information

Home page, see www.siemens.com/sirius
Industry Mall, see www.siemens.com/product?3UF18

The 3UF18 current transformers are protection transformers and are used for actuating overload relays. Protection transformers are designed to ensure proportional current transfer up to a multiple of the primary rated current. The 3UF18 current transformers convert the maximum current of the corresponding operating range into the standard value of 1 A secondary.

Selection and ordering data

Type of mounting	Operating range A	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
For stand-alone installation							
 3UF1843							
Screw fixing and snap-on mounting onto TH 35 standard mounting rail according to IEC 60715	0.25 … 2.5[1]	20	**3UF1843-1BA00**		1	1 unit	42J
	1.25 … 12.5[1]	20	**3UF1843-2AA00**		1	1 unit	42J
	2.5 … 25[1]	20	**3UF1843-2BA00**		1	1 unit	42J
	12.5 ... 50	20	**3UF1845-2CA00**		1	1 unit	42J
	16 … 65	20	**3UF1847-2DA00**		1	1 unit	42J
	25 … 100	20	**3UF1848-2EA00**		1	1 unit	42J
For mounting onto contactors and stand-alone installation							
 3UF1868							
Screw fixing	32 … 130	20	**3UF1850-3AA00**		1	1 unit	42J
	50 … 200	20	**3UF1852-3BA00**		1	1 unit	42J
	63 … 250	20	**3UF1854-3CA00**		1	1 unit	42J
	100 … 400	20	**3UF1856-3DA00**		1	1 unit	42J
	125 … 500	20	**3UF1857-3EA00**		1	1 unit	42J
	160 … 630	20	**3UF1868-3FA00**		1	1 unit	42J
	205 … 820	20	**3UF1868-3GA00**		1	1 unit	42J

[1] The following setting ranges for the protection of EEx e motors are applicable:
3UF1843-1BA00: 0.25 … 1.25 A;
3UF1843-2AA00. 1.25 … 6.3 A;
3UF1843-2BA00: 2.5 ... 12.5 A.

Accessories

For contactor type	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal covers						
 3TX7466-0A						
For transformer/contactor combinations and stand-alone installation for transformer (cover required per connection side)						
3UF1845	20	**3TX7446-0A**		1	1 unit	41B
3UF1848	20	**3TX7466-0A**		1	1 unit	41B
3UF1850, 3UF1852	5	**3TX7506-0A**		1	1 unit	41B
3UF1854 to 3UF1857	5	**3TX7536-0A**		1	2 units	41B
3UF1868-3FA00	5	**3TX7686-0A**		1	1 unit	41B
3UF1868-3GA00	5	**3TX7696-0A**		1	1 unit	41B
For covering the screw terminal for direct mounting on contactor (cover required per contactor/transformer combination)						
3UF1848	20	**3TX7466-0B**		1	1 unit	41B
3UF1850, 3UF1852	20	**3TX7506-0B**		1	1 unit	41B
3UF1854 to 3UF1857	20	**3TX7536-0B**		1	1 unit	41B
3UF1868-3FA00	15	**3TX7686-0B**		1	1 unit	41B
3UF1868-3GA00	15	**3TX7696-0B**		1	1 unit	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

LOGO! logic modules

More information

Home page, see www.siemens.com/LOGO

Industry Mall, see www.siemens.com/product?logo

LOGO! in Catalog ST 70 "Products for Totally Integrated Automation", see www.siemens.com/simatic/printmaterial

To download brochures, see www.siemens.com/simatic/printmaterial

- The compact, user-friendly, and low-cost solution for simple control tasks
- Compact, user-friendly, can be used universally without accessories
- All in one: The display and operator panel are integrated
- 36 different functions can be linked at a press of a button or with PC software; up to 130 times in total
- LOGO! 8: 38/43 different functions can be linked at a press of a button or with PC software; up to 200/400 times in total
- Functions can be changed simply with the press of a button. No complicated rewiring

Application

The LOGO! logic module is the user-friendly, low-cost solution for simple control tasks.

LOGO! is universally applicable, e.g.:

- Building installation and wiring (lighting, shutters, awnings, doors, access control, barriers, ventilation systems, etc.)
- Control cabinet installation
- Machine and device construction (pumps, small presses, compressors, hydraulic lifts, conveyors, etc.)
- Special controls for conservatories and greenhouses
- Signal preprocessing for other controllers

LOGO! Modular logic modules can be expanded easily for each application.

Marine approvals

American Bureau of Shipping, Bureau Veritas, Det Norske Veritas, Germanischer Lloyd, Lloyds Register of Shipping, Polski Rejestr Statków, etc.

LOGO! Modular basic versions

Overview

LOGO! Modular basic versions

- The space-saving basic versions
- Interface for connecting expansion modules, max. 24 digital inputs, 20 (16) digital outputs, 8 analog inputs and 8 (2) analog outputs can be addressed
- With connection option for LOGO! TD text display (can be connected to all LOGO! 0BA6 and LOGO! 0BA7 Basic versions), LOGO! TDE can be connected to LOGO! 8 and higher

LOGO! 8

- All basic units with integrated web server
- Enclosure width same as LOGO! 0BA6 (4 MW)
- All basic units with Ethernet interface for communication with LOGO!, SIMATIC controllers, SIMATIC panels and PCs
- Use of standard micro SD cards

Selection and ordering data

Version	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU			
LOGO! 8 logic modules						
LOGO! logic module 24CE 24 V DC supply voltage 8 digital inputs, 24 V DC, of which 4 can be used as analog inputs (0 ... 10 V), 4 digital outputs, 24 V DC, 0.3 A, with integrated time switch, Ethernet interface, 400 function blocks can be linked, modular expandability	1	**6ED1052-1CC01-0BA8**		1	1 unit	200
LOGO! logic modules 12/24RCE 12/ 24 V DC supply voltage, 8 digital inputs, 12/24 V DC, of which 4 can be used as analog inputs (0 ... 10 V), 4 relay outputs, 10 A, with integrated time switch, Ethernet interface, 400 function blocks can be linked, modular expandability	1	**6ED1052-1MD00-0BA8**		1	1 unit	200
LOGO! logic modules 24RCE 24 V AC/DC supply voltage, 8 digital inputs, 24 V AC/DC, 4 relay outputs, 10 A, with integrated time switch, Ethernet interface, 400 function blocks can be linked, modular expandability	1	**6ED1052-1HB00-0BA8**		1	1 unit	200
LOGO! logic modules 230RCE 115 ... 230 V AC/DC supply voltage, 8 digital inputs, 115 ... 230 V AC/DC, 4 relay outputs, 10 A, with integrated time switch, Ethernet interface, 400 function blocks can be linked, modular expandability	1	**6ED1052-1FB00-0BA8**		1	1 unit	200

For accessories, see page 10/31 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

LOGO! Modular pure version

- The cost-optimized basic versions
- Interface for connecting expansion modules, max. 24 digital inputs, 16 (20) digital outputs, 8 analog inputs and 2 (8) analog outputs can be addressed
- With connection option for LOGO! TD text display (can be connected to all LOGO! 0BA6 Basic versions)

LOGO! 8

- All basic units with integrated web server
- Enclosure width as LOGO! 0BA6 (4 MW)
- All basic units with Ethernet interface for communication with LOGO!, SIMATIC controllers, SIMATIC panels and PCs
- Use of standard micro SD cards

Selection and ordering data

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No. / Price per PU			
LOGO! 8 logic modules					
LOGO! logic module 24CEo 24 V DC supply voltage 8 digital inputs, 24 V DC, of which 4 can be used as analog inputs (0 ... 10 V), 4 digital outputs, 24 V DC, 0.3 A, with integrated time switch, Ethernet interface, without display and keyboard, 400 function blocks can be linked, modular expandability	1	**6ED1052-2CC01-0BA8**	1	1 unit	200
LOGO! logic modules 12/24RCEo 12 ... 24 V DC supply voltage, 8 digital inputs, 12 ... 24 V DC, of which 4 can be used as analog inputs (0 ... 10 V), 4 relay outputs, 10 A, with integrated time switch, Ethernet interface, without display and keyboard, 400 function blocks can be linked, modular expandability	1	**6ED1052-2MD00-0BA8**	1	1 unit	200
LOGO! logic modules 24RCEo 24 V AC/DC supply voltage, 8 digital inputs, 24 V AC/DC, 4 relay outputs, 10 A, integrated time switch, without display and keyboard, Ethernet interface, 400 function blocks can be linked, modular expandability	1	**6ED1052-2HB00-0BA8**	1	1 unit	200
LOGO! logic modules 230RCEo 115 ... 230 V AC/DC supply voltage, 8 digital inputs, 115 ... 230 V AC/DC, 4 relay outputs, 10 A, with integrated time switch, Ethernet interface, without display and keyboard, 400 function blocks can be linked, modular expandability	1	**6ED1052-2FB00-0BA8**	1	1 unit	200

For accessories, see page 10/31 onwards.

LOGO! Modular expansion modules

Overview

LOGO! Modular expansion modules

- Expansion modules for connection to LOGO! Modular
- With digital inputs and outputs, analog inputs or analog outputs

Selection and ordering data

Version	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU			
LOGO! 8 expansion modules						
LOGO! DM8 24 24 V DC supply voltage 4 digital inputs, 24 V DC, 4 digital outputs, 24 V DC, 0.3 A	1	**6ED1055-1CB00-0BA2**		1	1 unit	200
LOGO! DM16 24 24 V DC supply voltage 8 digital inputs, 24 V DC, 8 digital outputs, 24 V DC, 0.3 A	1	**6ED1055-1CB10-0BA2**		1	1 unit	200
LOGO! DM8 12/24R 12 ... 24 V DC supply voltage, 4 digital inputs, 12 ... 24 V DC, 4 relay outputs, 5 A	1	**6ED1055-1MB00-0BA2**		1	1 unit	200
LOGO! DM8 24R 24 V AC/DC supply voltage, 4 digital inputs, 24 V AC/DC, 4 relay outputs, 5 A	1	**6ED1055-1HB00-0BA2**		1	1 unit	200
LOGO! DM16 24R 24 V DC supply voltage 8 digital inputs, 24 V DC, 8 relay outputs, 5 A	1	**6ED1055-1NB10-0BA2**		1	1 unit	200
LOGO! DM8 230R 115 ... 230 V AC/DC supply voltage, 4 digital inputs, 115 ... 230 V AC/DC, 4 relay outputs, 5 A	1	**6ED1055-1FB00-0BA2**		1	1 unit	200
LOGO! DM16 230R 115 ... 230 V AC/DC supply voltage, 8 digital inputs, 115 ... 230 V AC/DC, 8 relay outputs, 5 A	1	**6ED1055-1FB10-0BA2**		1	1 unit	200
LOGO! AM2 12 ... 24 V DC supply voltage, 2 analog inputs 0 ... 10 V or 0 ... 20 mA, 10 bits resolution	1	**6ED1055-1MA00-0BA2**		1	1 unit	200
LOGO! AM2 PT 100 12 ... 24 V DC supply voltage, 2 analog inputs Pt100, temperature range -50 °C ... +200 °C	1	**6ED1055-1MD00-0BA2**		1	1 unit	200
LOGO! AM2 AQ 24 V DC supply voltage 2 analog outputs, 0 ... 10 V, 0/4 ... 20 mA	1	**6ED1055-1MM00-0BA2**		1	1 unit	200

For accessories, see page 10/31 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

NEW **LOGO! CMK2000 communication modules**

Overview

LOGO! CMK2000 communication modules

- Expansion module for the LOGO! 8 basic versions
- For integration of LOGO! 8 in KNX installations
- 24 digital inputs, 20 digital outputs and 8 analog inputs and outputs each for processing of process signals via KNX

Note:

The CMK2000 communication module can be used with LOGO! ... 0BA8.

Application

With the LOGO! CMK2000 communication modules, the LOGO! 8 logic module series can be integrated in the KNX building system bus.

Designed for small-scale automation solutions, LOGO! 8 can be used in combination with the new communication module for building automation tasks, for example for monitoring, access control, air conditioning, lighting, shading and watering, even extending to pump control.

Selection and ordering data

Version	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU			
LOGO! CMK2000 communication module						
For integration of LOGO! 8 in the KNX building system bus, up to 50 communication objects can be configured; RJ45 port for Ethernet; 24 V DC/40 mA supply voltage	1	**6BK1700-0BA20-0AA0**		1	1 unit	470

For accessories, see page 10/31 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

LOGO! CSM unmanaged

Overview

LOGO! CSM unmanaged

The module is used for the connection of a LOGO! and up to three additional nodes to an Industrial Ethernet network with 10/100 Mbit/s in an electrical line, tree or star structure.

Key features of the LOGO! CSM are:

- Unmanaged 4-port switch, of which one port on the front side is for simple diagnostics access
- Two versions for the voltage ranges 12/24 V DC or 230 V AC/DC
- It is easy to connect via four RJ45 standard plug-in connections
- Space-saving, optimized for connection to LOGO!
- Economical solution for creating small, local Ethernet networks
- Stand-alone use for networking any number of Ethernet devices

Note:

LOGO! CSM 12/24 can be used with LOGO! ...0BA7/...0BA8.

Benefits

- Savings on installation costs and installation space compared to using external network components
- Fast commissioning since configuring is not necessary
- Fast and uncomplicated diagnostics access in the control cabinet
- Flexible expansion of the network thanks to simple connection of the CSM

Application

LOGO! CSM is an Industrial Ethernet switch in a compact, modular design for use in devices of the new LOGO! generation with Industrial Ethernet connection. With the LOGO! CSM, the Ethernet interface of the SIMATIC LOGO! can be multiplied to enable simultaneous communication with control panels, programming devices, other controllers, or the office world.

External access (e.g. for diagnostics purposes) is possible without problems via the four Ethernet ports.

LOGO!CSM 12/24 (LOGO! 8 design)

For operation with direct current at a voltage of 12 and 24 V

Selection and ordering data

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No. / Price per PU			
LOGO! CSM compact switch module					
Unmanaged switch for connection to a LOGO! and up to three additional nodes in the Industrial Ethernet with 10/100 Mbit/s; 4 x RJ45 ports; LED diagnostics, LOGO! module					
LOGO! CSM 12/24 External 12 V DC or 24 V DC power supply; for LOGO! ...0BA7/...0BA8	1	**6GK7177-1MA20-0AA0**	1	1 unit	5P1

For accessories, see page 10/31 onwards.

More information

Selection Tools

To assist in selecting the right Industrial Ethernet switches as well as in the configuration of modular variants, the SIMATIC NET Selection Tool and the TIA Selection Tool are available.

SIMATIC NET Selection Tool, see

- Online version: www.siemens.com/snst
- Offline version: www.siemens.com/snst-download

TIA Selection Tool, see www.siemens.com/tia-selection-tool

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

LOGO! CMR

LOGO! CMR is suitable in combination with the LOGO! module as a low-cost remote signaling system for monitoring and controlling distributed plants and systems via SMS.

The LOGO! CMR can send text messages to pre-defined mobile network numbers and also receive text messages from pre-defined mobile network numbers.

Sending of a text message can be triggered by events in the LOGO! basic module in the same way as via the two digital alarm inputs of the LOGO! CMR. Values in the LOGO! basic module can be influenced immediately by receiving a text message.

The two digital outputs can also be connected remotely via incoming text messages/e-mails.

The LOGO! CMR determines the current position of the module using the GPS signal received via the GPS antenna. Furthermore, the LOGO! BM can also be synchronized by means of the time-of-day contained in the GPS signal.

Further options for synchronizing the LOGO! BM with the current time-of-day are calculation of the time-of-day via an NTP server or from the data of the mobile wireless service provider.

Product versions

- LOGO! CMR2020 for use in GSM/GPRS mobile wireless networks
- LOGO! CMR2040 for use in LTE mobile wireless networks

Notes:

LOGO! CMR2020 and LOGO! CMR2040 can be used with LOGO! ...0BA8.

Caution! Observance of national mobile wireless approvals is mandatory:

www.siemens.com/mobilenetwork-approvals

Benefits

- Low-cost alarm signaling system
- Low-cost remote access via SMS for monitoring and controlling the LOGO! 8 logic module
- Internationally applicable thanks to the use of GPRS/LTE and GPS
- Synchronization of systems with UTC (Universal Time Coordinated)
- Industrial design of the new LOGO! 8 generation
- Functionally matched to the LOGO! 8 series
- Space-saving installation, optimized for connection to LOGO! 8
- Simple configuring of wirelessly connected plants without specialist wireless know-how
- Fast installation thanks to standard rail mounting
- Low operating costs

Application

In industrial environments

- Simple remote diagnostics and remote control tasks in LOGO! applications in the plant and machine environment, e.g. gate controls, ventilation systems, industrial water pumps, automatic dry feeders in agriculture
- Simple building automation including building equipment, e.g. for HVAC (Heating, Ventilation and Air Conditioning), pump controller
- Remote control and monitoring of, e.g. level, pressure, temperature, flow, and valve control in the water/wastewater industry
- Position monitoring in the logistics industry, e.g. for vehicles, refrigeration transporters, containers
- Simplest possible metering and energy management systems in distributed buildings controlled with LOGO!
- Design of systems for monitoring and controlling simple telecontrol stations
- Remote connection of distributed local controllers via LOGO!
- Remote control and monitoring of low-end machine controls (usually discrete logic)

In non-industrial environments

- Remote control and monitoring of automation tasks in domestic building and installation systems, e.g. stairway lighting, external lighting, awnings, shutters, shop window lighting
- Remote control of HVAC in dwellings, greenhouses, etc.

Selection and ordering data

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No. / Price per PU			
LOGO! CMR Communication Module Radio					
Communication modules for connecting LOGO! ...0BA8 to a GSM/GPRS or LTE network; 1x RJ45 port for Ethernet connection; 2 x digital input; 2 x digital output; read/write access to LOGO! variables; SMS sending/receiving; GPS position detection; time-of-day synchronization/forwarding with real-time clock; configuration and diagnostics via a web interface; observe national approval!					
LOGO! CMR2020 For connecting LOGO! ...0BA8 to GSM/GPRS networks	1	**6GK7142-7BX00-0AX0**	1	1 unit	5P1
LOGO! CMR2040 For connecting LOGO! ...0BA8 to LTE network	5	**6GK7142-7EX00-0AX0**	1	1 unit	5P1

For accessories, see page 10/31 onwards.

More information

Selection Tools

To assist in selecting the right Industrial Ethernet switches as well as in the configuration of modular variants, the TIA Selection Tool is available.

TIA Selection Tool, see www.siemens.com/tia-selection-tool.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Accessories for LOGO! 8						
LOGO! TD text displays						
LOGO! 8 TDE text display 6-line text display, can be connected to all LOGO! 8 Basic and Pure versions, with 2 Ethernet interfaces; including installation accessories Note: Requires additional 12 V DC power supply or 24 V AC/DC power supply.	1	**6ED1055-4MH00-0BA1**		1	1 unit	200
LOGO! 8 Starter Kits in TANOS box, with LOGO! 8, LOGO!Soft Comfort V8, WinCC Basic V13, Ethernet cable						
LOGO! 8 12/24 V Starter Kit With LOGO! 12/24 RCE, LOGO! Power 24 V 1.3 A	1	**6ED1057-3BA00-0AA8**		1	1 unit	2SP
LOGO! 8 230 V Starter Kit With LOGO! 230 RCE	1	**6ED1057-3BA02-0AA8**		1	1 unit	2SP
LOGO! 8 TDE Starter Kit With LOGO! 12/24 RCEO, LOGO! Power 24 V, 1.3 A, LOGO! TDE	1	**6ED1057-3BA10-0AA8**		1	1 unit	2SP
LOGO! 8 KP300 Basic Starter Kit With LOGO! 12/24 RCE, LOGO! Power 24 V 1.3 A, KP300 Basic mono PN	1	**6AV2132-0HA00-0AA1**		1	1 unit	2SP
LOGO! 8 KP400 Basic Starter Kit With LOGO! 12/24 RCE, LOGO! Power 24 V 1.3 A, KTP400 Basic	1	**6AV2132-0KA00-0AA1**		1	1 unit	2SP
LOGO! 8 KTP700 Basic Starter Kit With LOGO! 12/24 RCE, LOGO! Power 24 V 1.3 A, KTP700 Basic	1	**6AV2132-3GB00-0AA1**		1	1 unit	2SP
Front panel assembly kits						
Front panel assembly kits						
• Width: 4 MW	22	**6AG1057-1AA00-0AA0**		1	1 unit	470
• Width: 4 MW, with pushbuttons	22	**6AG1057-1AA00-0AA3**		1	1 unit	470
• Width: 8 MW	22	**6AG1057-1AA00-0AA1**		1	1 unit	470
• Width: 8 MW, with pushbuttons	22	**6AG1057-1AA00-0AA2**		1	1 unit	470
Accessories for LOGO! CMS unmanaged						
SIMATIC NET cables						
IE TP Cord RJ45/RJ45 TP cable 4 x 2 with 2 RJ45 connectors						
• 0.5 m	1	**6XV1870-3QE50**		1	1 unit	5K1
• 1 m	1	**6XV1870-3QH10**		1	1 unit	5K1
• 2 m	1	**6XV1870-3QH20**		1	1 unit	5K1
• 6 m	1	**6XV1870-3QH60**		1	1 unit	5K1
• 10 m	1	**6XV1870-3QN10**		1	1 unit	5K1
IE FC Outlet RJ45 For connection of industrial Ethernet FC cables and TP cords; scaled pricing from 10 and 50 units	1	**6GK1901-1FC00-0AA0**		1	1 unit	5K1

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Accessories for LOGO! CMR						
Mobile wireless antennas						
ANT794-4MR	1	**6NH9860-1AA00**		1	1 unit	5T1
Resistant in the indoor and outdoor areas; 5 m connection cable permanently connected to the antenna; SMA connector; including mounting bracket, screws, plugs						
ANT896-4MA	1	**6GK5896-4MA00-0AA3**		1	1 unit	5M2
Rod antenna for mounting directly on the device; SMA male connector						
ANT896-4ME	1	**6GK5896-4ME00-0AA0**		1	1 unit	5M2
Cylindrical antenna for detached mounting, e. g. on a control cabinet; N-Connect female connector						
GPS antennas						
ANT895-6ML	1	**6GK5895-6ML00-0AA0**		1	1 unit	5M2
GPS/Glonass antenna for detached mounting in the indoor and outdoor areas, magnetic holder or screw holder, cable 30 cm with N-Connect female connector						
Antenna adapter cable						
N-Connect/SMA male/male flexible connection cable, pre-assembled connecting cable; suitable from 0 ... 6 GHz, IP68						
• 0.3 m	1	**6XV1875-5LE30**		1	1 unit	5M2
• 1 m	1	**6XV1875-5LH10**		1	1 unit	5M2
• 2 m	1	**6XV1875-5LH20**		1	1 unit	5M2
• 5 m	1	**6XV1875-5LH50**		1	1 unit	5M2
IWLAN RCoax/antenna N-Connect male/male flexible connection cable						
Flexible connecting cable for connecting an RCoax cable or an antenna to a SCALANCE W-700 access point with N-Connect terminals; pre-assembled with two connectors N-Connect male; suitable from 0 ... 6 GHz, IP68						
• 1 m	1	**6XV1875-5AH10**		1	1 unit	5W3
• 2 m	1	**6XV1875-5AH20**		1	1 unit	5W3
• 5 m	1	**6XV1875-5AH50**		1	1 unit	5W3
• 10 m	1	**6XV1875-5AN10**		1	1 unit	5W3
Control cabinet bushing	1	**6GK5798-2PP00-2AA6**		1	1 unit	5W3
IWLAN RCOAX N-Connect/N-Connect female/female panel feedthrough; cabinet bushing for panel thicknesses up to 4.5 mm; 2.4 GHz and 5 GHz, suitable from 0 ... 6 GHz, IP67						
LP798-2N lightning protector	1	**6GK5798-2LP00-2AA6**		1	1 unit	5W3
Lightning protector with N/N female/female connector for the antennas ANT 790, IP67 (-40 ... +85 °C), frequency range: 0 ... 6 GHz						
Patch cables						
IE TP Cord RJ45/RJ45						
TP cable 4 x 2 with 2 RJ45 connectors						
• 0.5 m	1	**6XV1870-3QE50**		1	1 unit	5K1
• 1 m	1	**6XV1870-3QH10**		1	1 unit	5K1
• 2 m	1	**6XV1870-3QH20**		1	1 unit	5K1
• 6 m	1	**6XV1870-3QH60**		1	1 unit	5K1
• 10 m	1	**6XV1870-3QN10**		1	1 unit	5K1
IE FC Outlet RJ45	1	**6GK1901-1FC00-0AA0**		1	1 unit	5K1
For connection of Industrial Ethernet FC cables and TP cords; scaled pricing from 10 and 50 units						

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

LOGO!Contact

Switching module for switching resistive loads and motors directly

Application

LOGO!Contact is a switching module for direct switching of resistive loads (up to 20 A) and motors (up to 4 kW). LOGO!Contact operates hum-free without noise pollution.

LOGO!Contact is universally applicable:

- Buildings/electrical installations
- Industry and commerce

Selection and ordering data

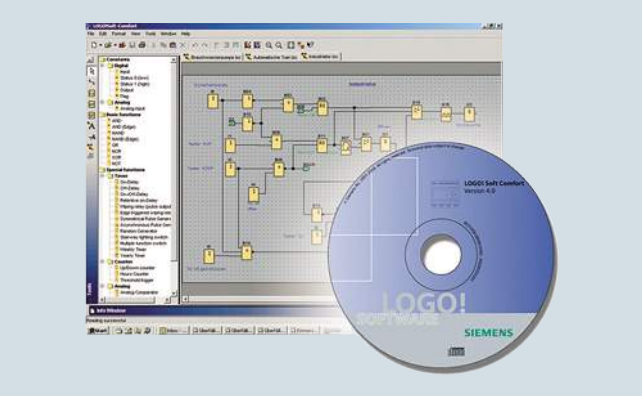
Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No. / Price per PU			
LOGO!Contact					
Switching module for direct switching of resistive loads up to 20 A and motors up to 4 kW					
Switching voltage:					
• 24 V	1	**6ED1057-4CA00-0AA0**	1	1 unit	200
• 230 V	1	**6ED1057-4EA00-0AA0**	1	1 unit	200

For accessories, see page 10/31 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

LOGO! Software

Overview



LOGO!Soft Comfort

- The user-friendly software for switching program generation on the PC for single mode and network mode
- Switching program generation for function diagrams (FBD) or contact diagrams (LAD)
- Additional testing, simulation, online testing and archiving of the switching programs
- Professional documentation with the help of various comment and print functions

The connection between LOGO! and the PC is made with the LOGO! PC cable (serial interface) or the LOGO! USB PC cable (USB interface).

With LOGO! 0BA7 and LOGO! 8, the connection is made via the integrated Ethernet interface.

Minimum system requirements

Windows XP (32-bit), 7 (32/64-bit) or 8 (32/64-bit)

- PC Pentium IV
- 150 MB free on hard disk
- 256 MB RAM
- SVGA graphics card with minimum resolution of 800 x 600 (256 colors)
- DVD ROM

Mac OS X

- Mac OS X 10.4

Linux

- Tested with SUSE Linux 11.3 SP2, Kernel 3.0.76
- Runs on all Linux distributions on which Java 2 runs.
- For hardware requirements, please consult your Linux release.

Application

LOGO!Soft Comfort is the multilingual software for switching program generation with LOGO! on the PC. LOGO!Soft Comfort can be used to program all devices of the LOGO! family.

Selection and ordering data

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
LOGO!Soft Comfort						
LOGO!Soft Comfort V8 For programming on the PC in LAD/FBD; runs on Windows 8, 7, XP, Linux and Mac OSX; on DVD	1	**6ED1058-0BA08-0YA1**		1	1 unit	200
LOGO!Soft Comfort V8 Upgrade Upgrade from V1.0 to V8.0	1	**6ED1058-0CA08-0YE1**		1	1 unit	200

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

7PV15, SIRIUS 3RP25 and SIRIUS 3RP20 timing relays

More information

Home page, see www.siemens.com/relays

Industry Mall see www.siemens.com/product?3RP

Electronic timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. Their fully developed concept and space-saving, compact design make the SIRIUS 3RP timing relays ideal modules for control cabinet, switchgear and control manufacturers in the industry.

With their narrow design, the 7PV15 timing relays are ideal in particular for use in heating, ventilation and air-conditioning systems and in compressors. All 7PV15 timing relays in this enclosure version are suitable for snap-on mounting onto TH 35 standard mounting rails according to IEC 60175. The enclosure complies with DIN 43880.

Benefits

- Clear-cut basic range with five basic units in the case of the 7PV15 timing relays, and seven basic units in the case of the 3RP timing relays
- Logistic advantages provided by versions with wide voltage range and wire setting range
- No tools required for assembly or disassembly on standard mounting rails
- Cadmium-free relay contacts
- Recyclable, halogen-free enclosure
- Optimum price/performance ratio
- Versions with logical separation
- Low variance: One design for distribution boards and for control cabinets
- Compliance with EMC requirements for buildings
- Environmentally friendly laser inscription instead of printing containing solvents
- Timing relays suitable for the 3RT miniature contactors allow smaller tier spacing
- Versions with screw terminals or alternatively with spring-type terminals

Application

Timing relays with ON-delay

- Interference pulse suppression (gating of interference pulses)
- Gradual startup of motors so as not to overload the power supply

Timing relays with OFF-delay

- Generation of overtravel functions following removal of voltage
- Gradual, delayed shutdown, e.g. of motors or fans, to allow a plant to be shut down selectively

Wye-delta timing relays

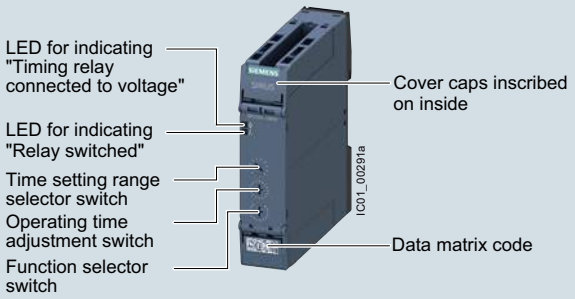
- Switching over motors from Wye to delta with a dead interval of 50 ms to prevent phase-to-phase short circuits

Multifunctional timing relays

- Maximum flexibility, with a device for every application
- Available with relay and semiconductor output

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Overview



SIRIUS 3RP25 timing relays

More information

Home page, see www.siemens.com/relays
Industry Mall, see www.siemens.com/product?3RP25
Conversion tool, e.g. from 3RP15 to 3RP25, see www.siemens.com/sirius/conversion-tool

Electronic timing relays for general use in control systems and mechanical engineering with:

- 1 or 2 CO, 1 NO (semiconductor) or 3 NO
- Monofunction or multifunction
- Combination voltage or wide voltage range
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

Article No. scheme

Product versions		Article number								
Timing relays		**3RP25**	□	□	–	□	□	□	□	**0**
Product function/ time setting ranges	Multifunction		**0**	**5**						7 time ranges 0.05 s ... 100 h
	ON-delay		**1**	**1**						1 time range 0.5 ... 10 s
			1	**2**						1 time range 1 ... 30 s
			1	**3**						1 time range 5 ... 100 s
			2	**5**						7 time ranges 0.05 s ... 100 h
			2	**7**						4 time ranges 0.05 s... 240 s
	OFF-delay with control signal		**3**	**5**						7 time ranges 0.05 s ... 100 h
	OFF-delay without control signal, non-volatile, passing make contact		**4**	**0**						7 time ranges 0.05 s... 600 s
	Clock-pulse relay, flashing, asymmetrical		**5**	**5**						7 time ranges 0.05 s ... 100 h
	Wye-delta function with coasting function (idling)		**6**	**0**						Wye-delta 1 ... 20 s, coasting time (idling) 600 s
	Wye-delta function		**7**	**4**						1 time range 1 ... 20 s
			7	**6**						1 time range 3 ... 60 s
Connection type	Screw terminals					**1**				
	Spring-type terminals (push-in)					**2**				
Contacts	1 CO						**A**			
	2 CO						**B**			
	Semiconductors (transistor NPN)						**C**			
	Semiconductors (thyristor), two-wire						**E**			
	1 NO + 1 NO (wye-delta)						**N**			
	2 CO positively driven						**R**			
	3 NO						**S**			
Control supply voltage	24 V AC/DC							**B**	**3**	
	200 … 240 V/380 … 440 V AC							**M**	**2**	
	400 ... 440 V AC							**T**	**2**	
	12 ... 240 V AC/DC or 24 ... 240 V AC/DC (3RP2505-.RW30)							**W**	**3**	
Example		**3RP25**	**0**	**5**	**–**	**1**	**A**	**B**	**3**	**0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

3RP2505 multifunctional timing relays

Two setting options for implementing the multifunctions (A-M):

(1) Determination of 13 functions by the setting A to M, with 1 CO, 1 NO, 2 CO that switch in parallel.

(2) Extended function variance by selecting the time range and determining, whether 2 CO switch in parallel or whether 1 CO switches with delay + 1 CO switches immediately (1 CO + 1 CO)

Setting the functions on the device

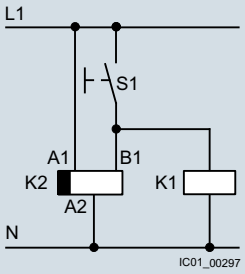
The functions of the 3RP2505 multifunctional timing relays can be set by means of the function selector switch. Whether both CO contacts are switched in parallel or one CO contact with a delay and one instantaneously and the choice of time setting range are set by means of the time setting range selector switch. The exact operating time can be adjusted with the operating time switch.

With a set of foil labels the timing relay can be legibly marked with the functions which can be selected on the timing relay. This is supplied together with the multifunctional timing relay.

The same potential must be applied to terminals A. and B.

Note:

The activation of loads parallel to the start input is permissible when using AC/DC control voltage (see circuit diagram).



Diagram

Overview of functions

Identification letter	**13 functions** 1 CO, 1 NO (semiconductor), 2 CO switched in parallel, or 2 CO positively driven and switched in parallel with delay	**27 functions** 13 functions (A - M) 2 CO switched in parallel + 13 functions (A - M) 1 CO delayed + 1 CO instantaneous (1 CO + 1 CO) and wye-delta function
A	ON-delay	ON-delay and instantaneous contact
B	OFF-delay with control signal	OFF-delay with control signal and instantaneous contact
C	ON-delay/OFF-delay with control signal	ON-delay/OFF-delay with control signal and instantaneous contact
D	Flashing, symmetrical, starting with interval	Flashing, symmetrical, starting with interval and instantaneous contact
E	Passing make contact, interval relay	Passing make contact, interval relay and instantaneous contact
F	Retriggerable interval relay with deactivated control signal (passing break contact with control signal)	Retriggerable interval relay with deactivated control signal (passing break contact with control signal) and instantaneous contact
G	Passing make contact, with control signal, not retriggerable (pulse-forming with control signal)	Passing make contact, with control signal, not retriggerable (pulse-forming with control signal) and instantaneous contact
H	Additive ON-delay, instantaneous OFF with control signal	Additive ON-delay, instantaneous OFF with control signal and instantaneous contact
I	Additive ON-delay with control signal	Additive ON-delay with control signal and instantaneous contact
J	Flashing, symmetrical, starting with pulse	Flashing, symmetrical, starting with pulse and instantaneous contact
K	Pulse-delayed (fixed pulse (at 1 s) and settable pulse delay)	Pulse-delayed (fixed pulse (at 1 s) and settable pulse delay) and instantaneous contact
L	Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay)	Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay) and instantaneous contact
M	Retriggerable interval relay with activated control signal (watchdog)	Retriggerable interval relay with activated control signal and instantaneous contact (watchdog)
--	--	Wye-delta function

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Benefits

- Easy stock keeping and logistics thanks to low variance of devices
- Reduced space requirement in the control cabinet thanks to variants in width 17.5 mm and 22 mm
- Consistent for all functions thanks to wide voltage range from 12 to 240 V AC/DC
- Up to 27 functions according to IEC 61812 in the multifunctional timing relay with wide voltage range
- Multifunctional timing relay with semiconductor output for high switching frequencies, bounce-free and wear-free switching

Standards and approvals

- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1/DIN VDE 0435 Part 2021 "Specified time relays for industrial use"
- IEC 61000-6-2, IEC 61000-6-3 and IEC 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"

Application

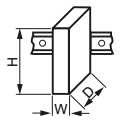
Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. They guarantee a high level of functionality and a high repeat accuracy of timer settings.

Enclosure version

All timing relays are suitable for snap-on mounting onto TH 35 standard mounting rails according to IEC 60715 or for screw fixing.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16354/td	Internal circuit diagrams, see CAx Download Manager https://support.industry.siemens.com/my/ww/en/CAxOnline#CAxOnline
Manual, see https://support.industry.siemens.com/cs/ww/en/view/103532830	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16354/faq

Article number		**3RP2505-.A, 3RP2505-.C, 3RP251., 3RP2525-.A, 3RP2527, 3RP253., 3RP255.**	**3RP2505-.B, 3RP2505-.R, 3RP2525-.B, 3RP254., 3RP256., 3RP257.**
Width x height x depth 	mm	17.5 x 100 x 90	22.5 x 100 x 90

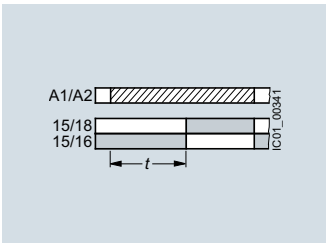
Article number		**3RP25..-.AB30, 3RP25..-.AW30, 3RP25..-.BB30, 3RP25..-.BW30, 3RP25..-.NW30, 3RP25..-.SW30**	**3RP25..-.BT20, 3RP25..-.NM20**	**3RP25..-.CW30**	**3RP25..-.EW30**	**3RP25..-.RW30**
General technical specifications:						
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3, rated value	V AC	300	500	300	--	300
Ambient temperature						
• During operation	°C	-25 ... +60				-40 ... +70
• During storage	°C	-40 ... +85				
Operating range factor of the control supply voltage, rated value						
• At AC						
- At 50 Hz		0.85 ... 1.1				0.7 ... 1.1
- At 60 Hz		0.85 ... 1.1				0.7 ... 1.1
• At DC		0.85 ... 1.1	--	0.85 ... 1.1	0.85 ... 1.1	0.7 ... 1.1
Switching capacity current With inductive load	A	0.01 ... 3	0.01 ... 3	0.01 ... 1	0.01 ... 0.6	0.01 ... 3
Operational current of the auxiliary contacts						
• At AC-15						
- At 24 V	A	3	3	1	--	3
- At 250 V	A	3	3	1	--	3
- At 400 V	A	--	3	--	--	--
• At DC-12						
- At 24 V	A	--	--	1	--	--
- At 125 V	A	--	--	1	--	--
- At 250 V	A	--	--	1	--	--
• At DC-13						
- At 24 V	A	1	1	--	--	1
- At 125 V	A	0.2	0.2	--	--	0.2
- At 250 V	A	0.1	0.1	--	--	0.1
Thermal current	A	5	5	1	0.6	5
Mechanical endurance Operating cycles, typical		10 000 000				
Electrical endurance (operating cycles) for AC-15 at 230 V, typical		100 000		300 000	100 000	

Article number	**3RP25..-1....**	**3RP25..-2....**
Type of electrical connection for auxiliary and control circuits	**Screw terminals**	**Spring-type terminals (push-in)**
Design of thread of connection screw	M3	--
Tightening torque	0.6 … 0.8 Nm	--
Type of connectable conductor cross-sections		
• Solid	1x (0.5 ... 4 mm²), 2 x (0.5 ... 2.5 mm²)	1x (0.5 ... 4 mm²)
• Finely stranded with end sleeve	1x (0.5 ... 4 mm²), 2 x (0.5 ... 1.5 mm²)	1x (0.5 ... 2.5 mm²)
• For AWG cables		
- Solid	1x (20 ... 12), 2 x (20 ... 14)	1x (20 ... 12)
- Stranded	1x (20 ... 12), 2 x (20 ... 14)	1x (20 ... 12)

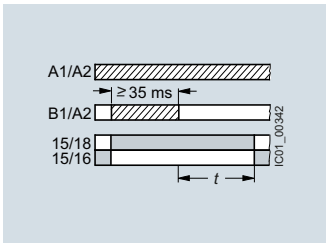
SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

3RP25 function diagrams

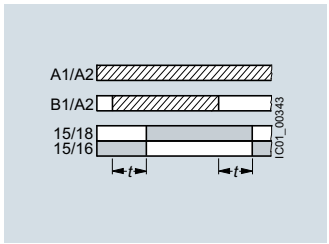
Multifunction 3RP2505-.A, 1 CO, 13 functions and 3RP2505-.C, 1 NO (semiconductor), 13 functions



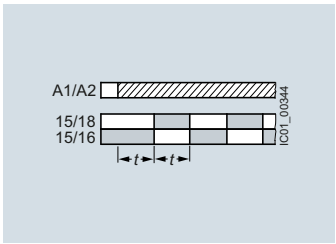
A
ON-delay



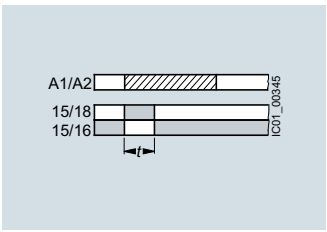
B
OFF-delay with control signal



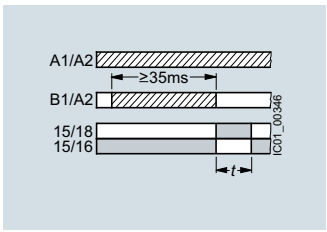
C
ON-delay/OFF-delay
with control signal



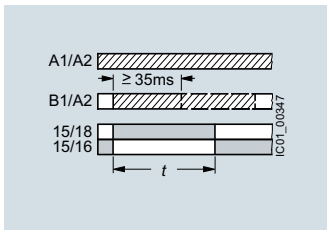
D
Flashing, symmetrical,
starting with interval



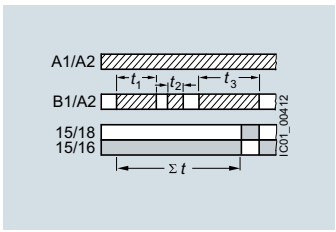
E
Passing make contact, interval relay



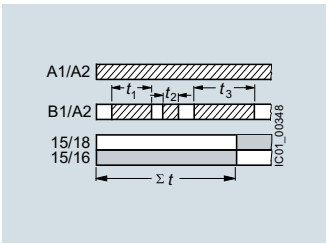
F
Retriggerable interval relay with
deactivated control signal (passing
break contact with control signal)



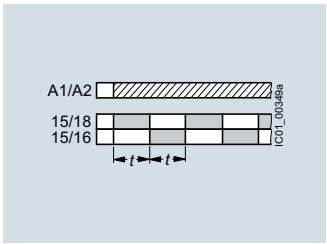
G
Passing make contact with control
signal, not retriggerable
(pulse-forming with control signal)



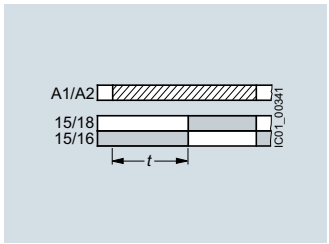
H
Additive ON-delay,
instantaneous OFF with control signal



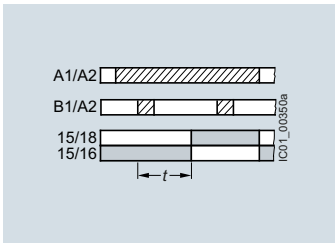
I
Additive ON-delay,with control signal



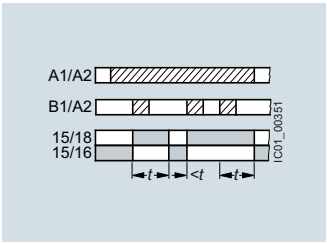
J
Flashing, symmetrical,
starting with pulse



K
Pulse-delayed (fixed pulse (at 1 s)
and settable pulse delay)



L
Pulse-delayed with control signal (fixed
pulse (at 1 s) and settable pulse delay)



M
Retriggerable interval relay with
activated control signal (watchdog)

Legend

A ... M identification letters

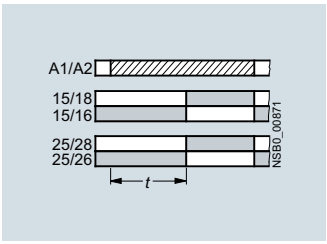
▨ Timing relay energized

▭ Contact closed

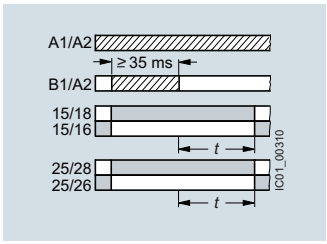
▭ Contact open

10

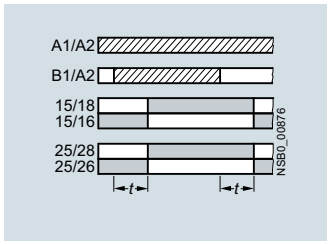
Multifunction 3RP2505-.B, 13 functions, 2 CO positively driven and switched in parallel with delay



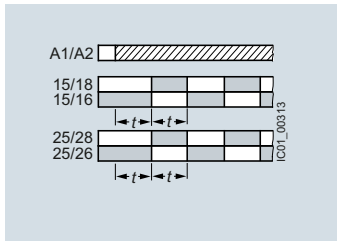
A
ON-delay



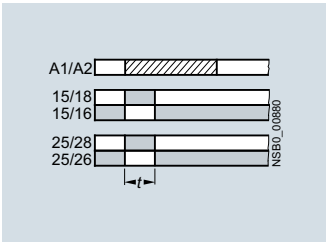
B
OFF-delay with control signal



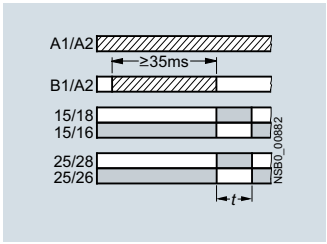
C
ON-delay/OFF-delay with control signal



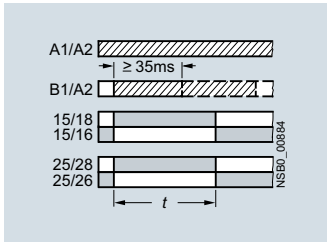
D
Flashing, symmetrical, starting with interval



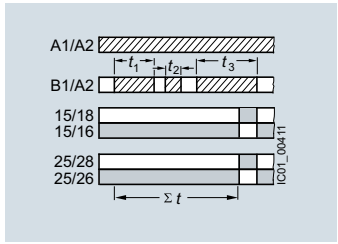
E
Passing make contact, interval relay



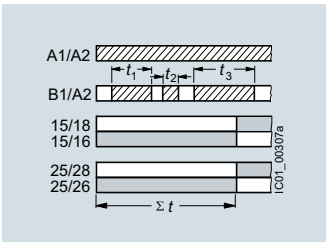
F
Retriggerable interval relay with deactivated control signal (passing break contact with control signal)



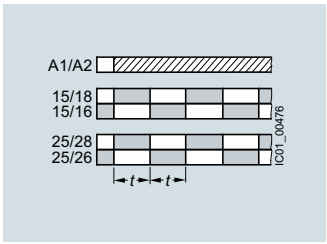
G
Passing make contact with control signal, not retriggerable (pulse-forming with control signal)



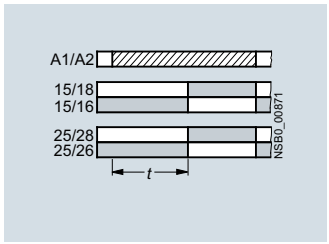
H
Additive ON-delay, instantaneous OFF with control signal



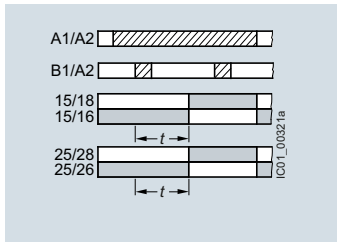
I
Additive ON-delay with control signal



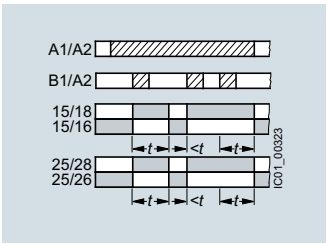
J
Flashing, symmetrical, starting with pulse



K
Pulse-delayed (fixed pulse at 1 s and settable pulse delay)



L
Pulse-delayed with control signal (fixed pulse at 1 s and settable pulse delay)



M
Retriggerable interval relay with activated control signal (watchdog)

Legend

A ... M identification letters

Timing relay energized

Contact closed

Contact open

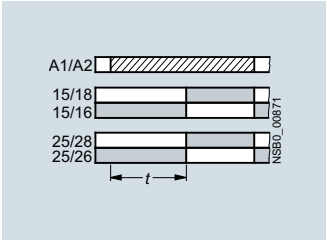
10

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Multifunction 3RP2505-.B, 27 functions, 2 CO

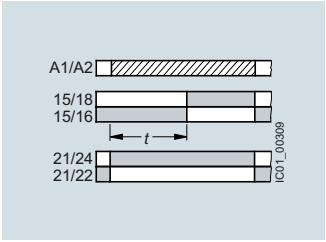
A

2 CO switched in parallel



ON-delay

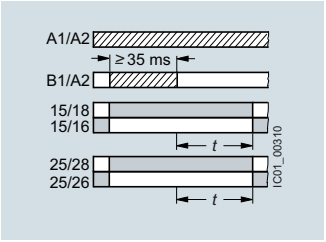
1 CO delayed +
1 CO instantaneous



ON-delay and instantaneous contact

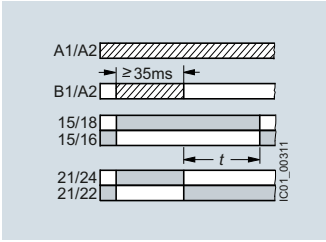
B

2 CO switched in parallel



OFF-delay with control signal

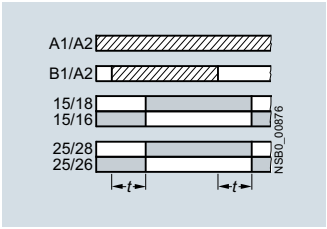
1 CO delayed +
1 CO instantaneous



OFF-delay with control signal and instantaneous contact

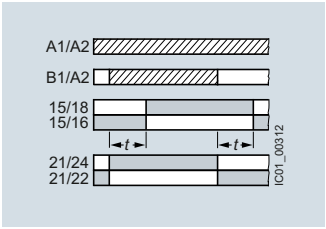
C

2 CO switched in parallel



ON-delay/OFF-delay
with control signal

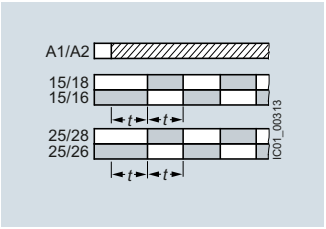
1 CO delayed +
1 CO instantaneous



ON-delay/OFF-delay with control signal and instantaneous contact

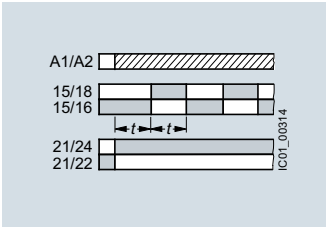
D

2 CO switched in parallel



Flashing, symmetrical, starting with interval

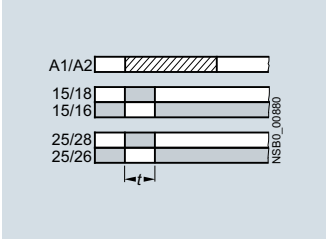
1 CO delayed +
1 CO instantaneous



Flashing, symmetrical, starting with interval and instantaneous contact

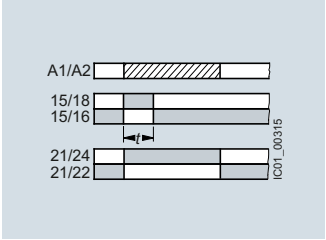
E

2 CO switched in parallel



Passing make contact, interval relay

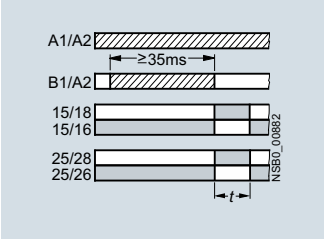
1 CO delayed +
1 CO instantaneous



Passing make contact, interval relay and instantaneous contact

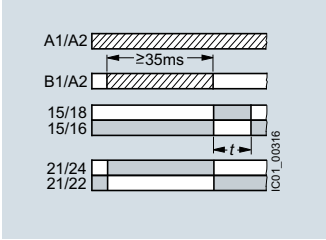
F

2 CO switched in parallel



Retriggerable interval relay with deactivated control signal (passing break contact with control signal)

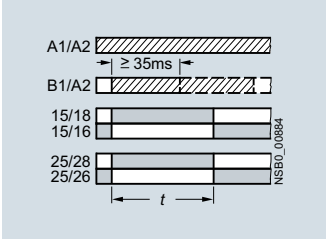
1 CO delayed +
1 CO instantaneous



Retriggerable interval relay with deactivated control signal (passing break contact with control signal) and instantaneous contact

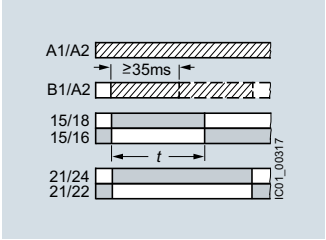
G

2 CO switched in parallel



Passing make contact with control signal, not retriggerable (pulse-forming with control signal)

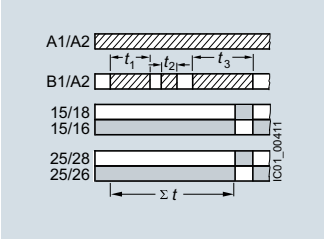
1 CO delayed +
1 CO instantaneous



Passing make contact with control signal, not retriggerable (pulse-forming with control signal) and instantaneous contact

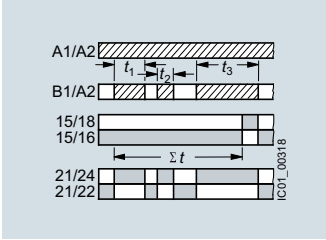
H

2 CO switched in parallel



Additive ON-delay, instantaneous OFF with control signal

1 CO delayed +
1 CO instantaneous



Additive ON-delay, instantaneous OFF with control signal and instantaneous contact

Legend

A ... H identification letters

Timing relay energized

Contact closed

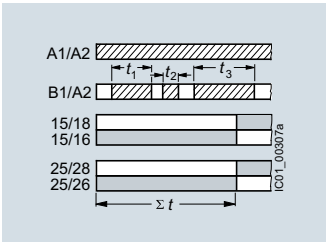
Contact open

10

Multifunction 3RP2505-.B, 27 functions, 2 CO (continued)

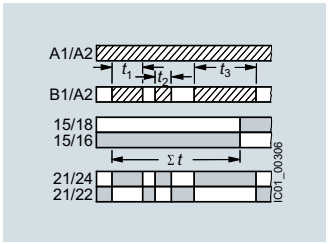
I

2 CO switched in parallel



Additive ON-delay with control signal

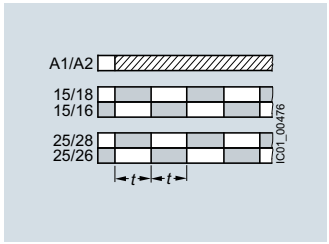
1 CO delayed +
1 CO instantaneous



Additive ON-delay with control signal and instantaneous contact

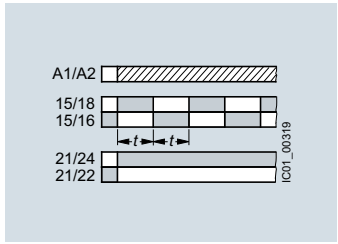
J

2 CO switched in parallel



Flashing, symmetrical, starting with pulse

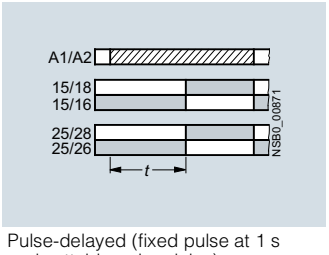
1 CO delayed +
1 CO instantaneous



Flashing, symmetrical, starting with pulse and instantaneous contact

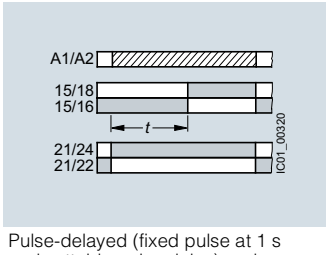
K

2 CO switched in parallel



Pulse-delayed (fixed pulse at 1 s and settable pulse delay)

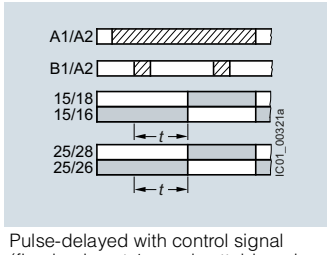
1 CO delayed +
1 CO instantaneous



Pulse-delayed (fixed pulse at 1 s and settable pulse delay) and instantaneous contact

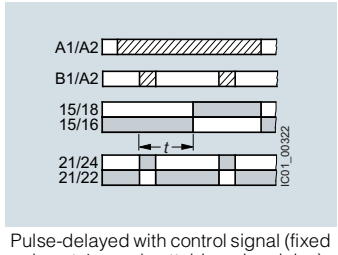
L

2 CO switched in parallel



Pulse-delayed with control signal (fixed pulse at 1 s and settable pulse delay)

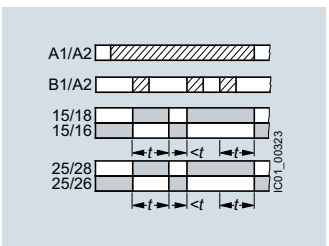
1 CO delayed +
1 CO instantaneous



Pulse-delayed with control signal (fixed pulse at 1 s and settable pulse delay) and instantaneous contact

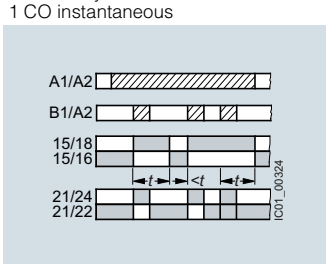
M

2 CO switched in parallel



Retriggerable interval relay with activated control signal (watchdog)

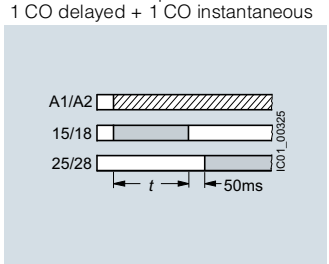
1 CO delayed +
1 CO instantaneous



Retriggerable interval relay with activated control signal and instantaneous contact (watchdog)

YΔ

2 CO switched in parallel or
1 CO delayed + 1 CO instantaneous



Wye-delta function

Legend

I ... M identification letters

Timing relay energized

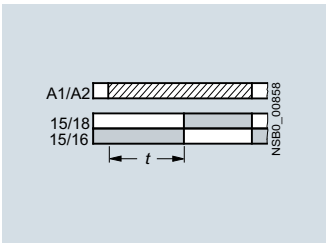
Contact closed

Contact open

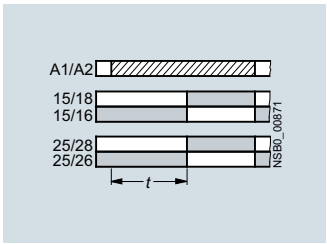
10

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

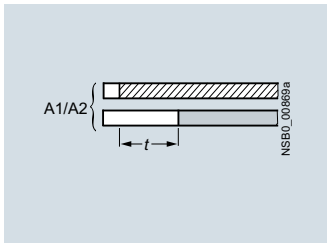
Monofunctions 3RP251. to 3RP257.[1)]



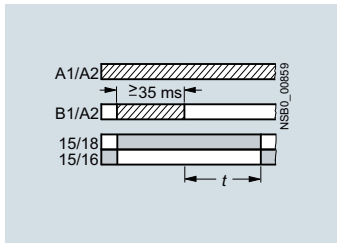
3RP251.-.AW30, 1 CO, ON-delay



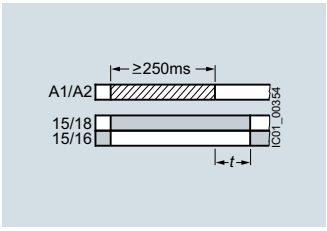
3RP2525-..W30, 2 CO, ON-delay



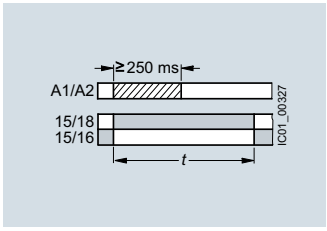
3RP2527-.EW30, 1 NO (semiconductor), ON-delay



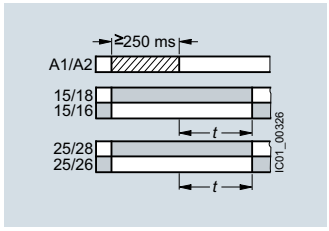
3RP2535-.AW30, 1 CO, OFF-delay with control signal



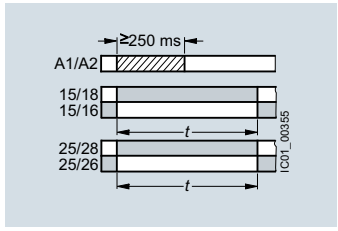
3RP2540-.A.30, 1 CO,
OFF-delay (N)[1)]



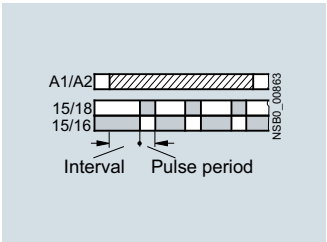
3RP2540-.A.30, 1 CO,
positive passing make contact (O)[1)]



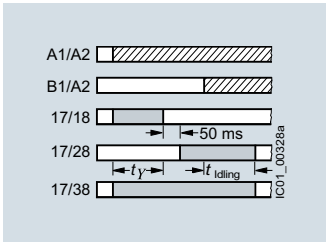
3RP2540-.B.30, 2 CO,
OFF-delay (N)[1)]



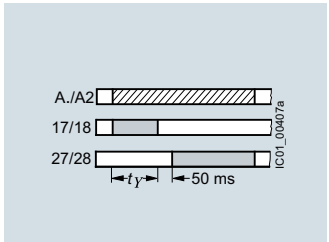
3RP2540-.B.30, 2 CO,
positive passing make contact (O)[1)]



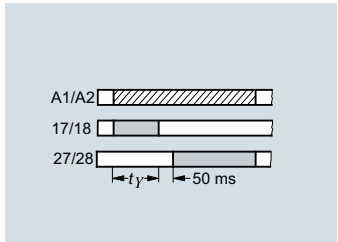
3RP2555-.AW30, 1 CO, flashing, asymmetrical, starting with interval (clock-pulse relay)



3RP2560-.SW30, 3 NO,
wye-delta function
with overtravel function (idling)



3RP257.-.NM20, 2 NO,
wye-delta function



3RP257.-.NM30, 2 NO,
wye-delta function

Legend

- Timing relay energized
- Contact closed
- Contact open

[1)] 3RP2540 has a double function:
Function N = OFF-delay
Function O = Positive passing make contact.

10

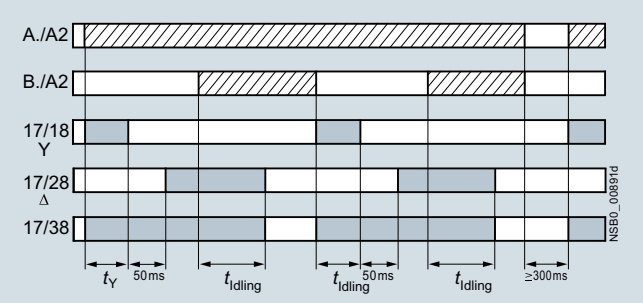
Possibilities of operation of the 3RP2560-.SW30 timing relay

Operation 1: Start contact B./A2 is open when control supply voltage A./A2 is applied

The control supply voltage is applied to A./A2 and there is no control signal on B./A2. This starts the Y/Δ timing. The idling time (coasting time) is started by applying a control signal to B./A2. When the set time t_{Idling} (30 ... 600 s) has elapsed, the output relays (17/38 and 17/28) are reset. If the control signal on B./A2 is switched off (minimum OFF period 270 ms), a new timing is started.

Note:

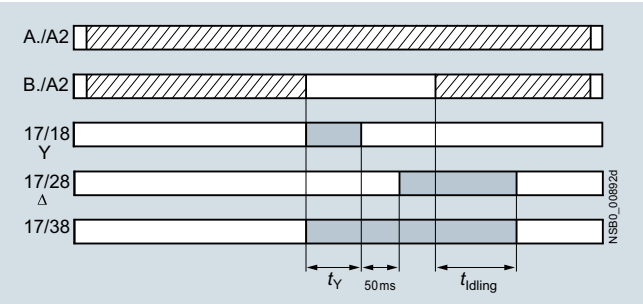
Observe response time (dead time) of 400 ms on energizing control supply voltage until contacts 17/18 and 17/16 close.



Operation 1

Operation 2: Start contact B./A2 is closed when control supply voltage A./A2 is applied

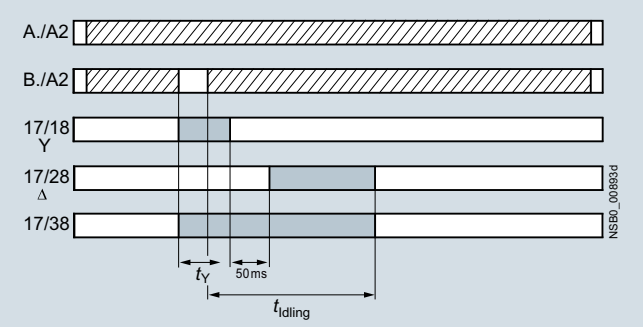
if the control signal B./A2 is already present when the control supply voltage A./A2 is applied, **no** timing is started. The timing is only started when the control signal B./A2 is switched off.



Operation 2

Operation 3: Start contact B./A2 closes while star time is running

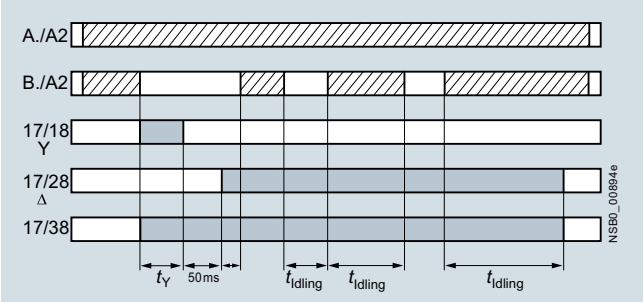
If the control signal B./A2 is applied again during the star time, the idling time starts and the timing is terminated normally.



Operation 3

Operation 4: Start contact B./A2 opens while delta time is running and is applied again

If the control signal on B./A2 is applied and switched off again during the delta time, although the idling time has not yet elapsed, the idling time (coasting time) is reset to zero. If the control signal is re-applied to B./A2, the idling time is restarted.



Operation 4

Legend

- Timing relay energized
- Contact closed
- Contact open

t_Y = Star time 1 ... 20 s

t_{Idling} = Idling time (coasting time) 30 ... 600 s

Note:

The following applies to all operations:
The pressure switch controls the timing via B./A2.

Application example based on standard operation (Operation 1): For example, use of 3RP2560 for compressor control

Frequent starting of compressors strains the network, the machine, and the increased costs for the operator. The new timing relay prevents frequent starting at times when there is high demand for compressed air. A special control circuit prevents the compressor from being switched off immediately when the required air pressure in the tank has been reached. Instead, the valve in the intake tube is closed and the compressor runs in "Idling" mode, i. e. in no-load operation for a specific time which can be set from 30 ... 600 s.

If the pressure falls within this time, the motor does not have to be restarted again, but can return to nominal load operation from no-load operation.

If the pressure does not fall within this idling time, the motor is switched off.

The pressure switch controls the timing via B./A2.

The control supply voltage is applied to A./A2 and the start contact B./A2 is open, i.e. there is no control signal on B./A2 when the control supply voltage is applied. The pressure switch signals "too little pressure in system" and starts the timing by way of terminal B./A2. The compressor is started, enters Y/Δ operation, and fills the pressure tank.

When the pressure switch signals "sufficient pressure", the control signal B./A2 is applied, the idling time (coasting time) is started, and the compressor enters no-load operation for the set period of time from 30 ... 600 s. The compressor is then switched off. The compressor is only restarted if the pressure switch responds again (low pressure).

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Selection and ordering data


3RP2505-2AB30


3RP2505-2BB30


3RP2525-2AW30


3RP2540-2AW30


3RP2555-2AW30


3RP2576-2NW30

Number of NO contacts		Number of CO contacts		Semi-conductor output	Adjustable time	Control supply voltage		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Instantaneous switching	Delayed switching	Instantaneous switching	Delayed switching			At AC 50/60 Hz	At DC						
						V	V	d					
13 functions													
0	0	0	1	No	0.05 s ... 100 h	24	24	2	**3RP2505-□AB30**		1	1 unit	41H
						12 ... 240	12 ... 240	2	**3RP2505-□AW30**		1	1 unit	41H
0	1	0	0	Yes	0.05 s ... 100 h	12 ... 240	12 ... 240	2	**3RP2505-□CW30**		1	1 unit	41H
13 functions, suitable for railway applications													
0	0	--	2[1]	No	0.05 s ... 100 h	24 ... 240	24 ... 240	2	**3RP2505-□RW30**		1	1 unit	41H
27 functions													
0	0	--	2[2]	No	0.05 s ... 100 h	24	24	2	**3RP2505-□BB30**		1	1 unit	41H
						400 ... 440	--	2	**3RP2505-□BT20**		1	1 unit	41H
						12 ... 240	12 ... 240	2	**3RP2505-□BW30**		1	1 unit	41H
ON-delay													
0	0	0	1	No	0.5 ... 10 s	12 ... 240	12 ... 240	2	**3RP2511-□AW30**		1	1 unit	41H
					1 ... 30 s	12 ... 240	12 ... 240	2	**3RP2512-□AW30**		1	1 unit	41H
					5 ... 100 s	12 ... 240	12 ... 240	2	**3RP2513-□AW30**		1	1 unit	41H
					0.05 s ... 100 h	12 ... 240	12 ... 240	2	**3RP2525-□AW30**		1	1 unit	41H
0	0	0	2	No	0.05 s ... 100 h	24	24	2	**3RP2525-□BB30**		1	1 unit	41H
						12 ... 240	12 ... 240	2	**3RP2525-□BW30**		1	1 unit	41H
0	1	0	0	Yes	0.05 s... 240 s	12 ... 240	12 ... 240	2	**3RP2527-□EW30**		1	1 unit	41H
OFF-delay with control signal													
0	0	0	1	No	0.05 s ... 100 h	12 ... 240	12 ... 240	2	**3RP2535-□AW30**		1	1 unit	41H
OFF-delay without control signal, non-volatile, passing make contact													
0	0	0	1	No	0.05 s ... 600 s	24	24	2	**3RP2540-□AB30**		1	1 unit	41H
						12 ... 240	12 ... 240	2	**3RP2540-□AW30**		1	1 unit	41H
0	0	0	2	No	0.05 s ... 600 s	24	24	2	**3RP2540-□BB30**		1	1 unit	41H
						12 ... 240	12 ... 240	2	**3RP2540-□BW30**		1	1 unit	41H
Clock-pulse relay, flashing, asymmetrical													
0	0	0	1	No	0.05 s ... 100 h	12 ... 240	12 ... 240	2	**3RP2555-□AW30**		1	1 unit	41H
Wye-delta function with coasting function (idling)													
1	2	0	0	No	1 ... 20 s	12 ... 240	12 ... 240	2	**3RP2560-□SW30**		1	1 unit	41H
Wye-delta function													
1	1	0	0	No	1 ... 20 s	380 ... 440[3]	--	2	**3RP2574-□NM20**		1	1 unit	41H
						12 ... 240	12 ... 240	2	**3RP2574-□NW30**		1	1 unit	41H
1	1	0	0	No	3 ... 60 s	380 ... 440[3]	--	2	**3RP2576-□NM20**		1	1 unit	41H
						12 ... 240	12 ... 240	2	**3RP2576-□NW30**		1	1 unit	41H

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

[1] Positively-driven contacts.

[2] Optionally 1 CO delayed + 1 CO instantaneous.

[3] With 3RP2574-.NM20 and 3RP2576-.NM20, connection of 200 ... 240 V AC, 50/60 Hz control voltage is also possible.

Notes:

For accessories, see page 10/47.

In the case of 3RP2505, the functions can be adjusted by means of function selector switches on the device. With a set of foil labels the timing relay can be legibly marked with the functions which can be selected on the timing relay. This is included in the scope of supply. The same potential must be applied to terminals A. and B.
For functions, see the overview of functions on page 10/37.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Accessories

More information

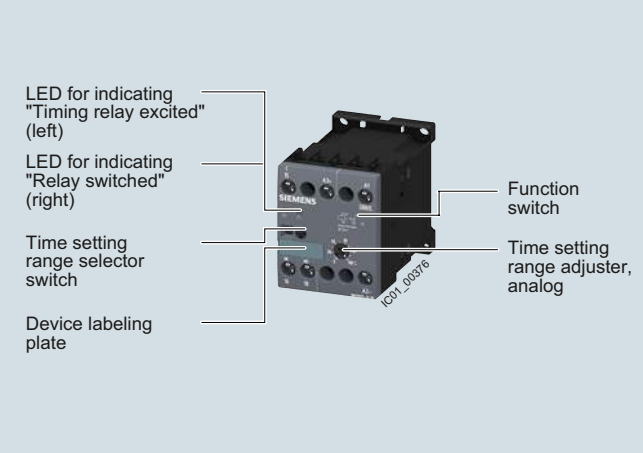
You can find information on configuring and dimensioning the accessories in the manual, see https://support.industry.siemens.com/cs/ww/en/view/103532830

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for enclosures							
 3ZY1321-1AA00	**Sealing covers** • 17.5 mm	2	**3ZY1321-1AA00**		1	5 units	41L
 3ZY1321-2AA00	• 22.5 mm	2	**3ZY1321-2AA00**		1	5 units	41L
 3ZY1311-0AA00	**Push-in lugs** For wall mounting	2	**3ZY1311-0AA00**		1	10 units	41L
 3ZY1440-1AA00	**Coding pins** For removable terminals of SIRIUS devices in the industrial standard mounting rail enclosure. They enable mechanical coding of terminals	2	**3ZY1440-1AA00**		1	12 units	41L
Terminals for SIRIUS devices in the industrial standard mounting rail enclosure							
 3ZY1122-1BA00	**Removable terminals** • 2-pole, 1 x 4 mm²	2	**Screw terminals** **3ZY1122-1BA00**		1	6 units	41L
 3ZY1122-2BA00	• 2-pole, 1 x 4 mm²	2	**Spring-type terminals (push-in)** **3ZY1122-2BA00**		1	6 units	41L
Tools for opening spring-type terminals							
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	2	**Spring-type terminals (push-in)** **3RA2908-1A**		1	1 unit	41B

10

SIRIUS 3RP20 timing relays, 45 mm

Overview



SIRIUS 3RP20 timing relays

SIRIUS 3RP20 electronic timing relays for use in control systems and mechanical engineering with:

- 1 or 2 CO contacts
- Multifunction or monofunction
- Wide voltage range or combination voltage
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

Standards

The timing relays comply with:

- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1 "Specified time relays for industrial use"
- IEC 61000-6-2 and EN 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"
- IEC 60947-1, Appendix N "Protective separation"

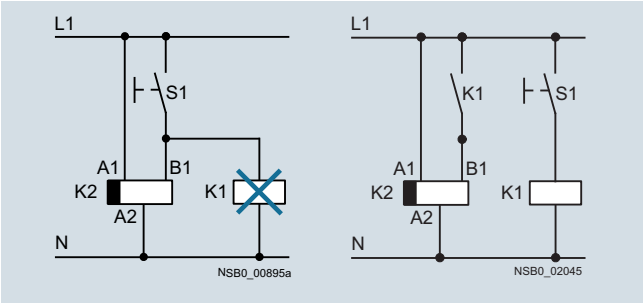
Multifunction

The functions of the 3RP2005 multifunctional timing relays can be set by means of the function selector switch. Insert labels can be used to adjust different functions of the timing relay clearly and unmistakably. The corresponding labels can be ordered as an accessory. The same potential must be applied to terminals A. and B.

For functions, see 3RP2901 label set, page 10/53.

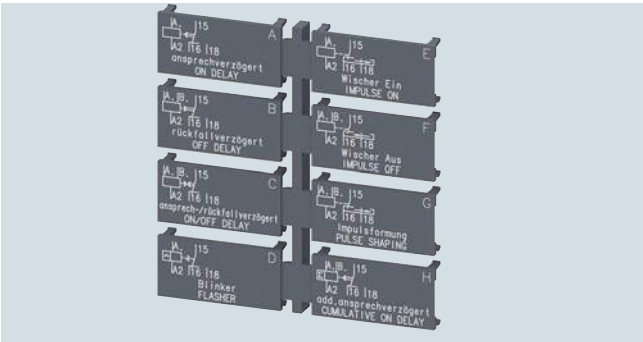
Note:

The activation of loads parallel to the start input is not permissible when using AC control voltage (see diagrams).



Diagrams

Accessories



Label set for marking the multifunctional relay

Article No. scheme

Product versions		Article number									
SIRIUS timing relays, 45 mm enclosure		**3RP20**	□	□	–	□	□	□	**3**	**0**	
Product function/ time setting ranges	Multifunction		**0**	**5**							15 time ranges 0.05 s... 100 h
	ON-delay		**2**	**5**							15 time ranges 0.05 s... 100 h
Connection type	Screw terminals					**1**					
	Spring-type terminal					**2**					
Contacts	1 CO						**A**				
	2 CO						**B**				
Control supply voltage	24 V AC/DC/100 ... 127 V AC							**Q**			Combination voltage
	24 V AC/DC/200 ... 240 V AC							**P**			Combination voltage
	24 ... 240 V AC/DC							**W**			Wide voltage range
Example		**3RP20**	**0**	**5**	**–**	**1**	**A**	**P**	**3**	**0**	

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

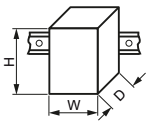
- Suitable for 3RT miniature contactors
- Uniform design
- Ideal for small distance between standard mounting rails and/or for low mounting depth, e.g. in control boxes

Application

Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. They guarantee a high level of functionality and a high repeat accuracy of timer settings.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16356/td	Internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/11647144
Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/view/11647144	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16356/faq

Type			**3RP2005, 3RP2025**
Dimensions (W x H x D)		mm	45 x 57 x 73
Rated insulation voltage Pollution degree 3 Overvoltage category III		V AC	300
Permissible ambient temperature			
• During operation		°C	-25 ... +60
• During storage		°C	-40 ... +85
Operating range of excitation[1]			0.85 ... 1.1 x U_s at AC; 0.8 ... 1.25 x U_s at DC; 0.95 ... 1.05 times the rated frequency
Mechanical endurance		Operating cycles	10 x 10^6
Electrical endurance at I_e		Operating cycles	1 x 10^5
Connection type			**Screw terminals**
• Terminal screw			M3 (for standard screwdriver, size 2 and Pozidriv 2)
• Solid		mm^2	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]
• Stranded		AWG	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]
• AWG cables		AWG	2 x (18 ... 14)
• Tightening torque		Nm	0.8 ... 1.2
Connection type			**Spring-type terminals**
• Solid		mm^2	2 x (0.25 ... 2.5)
• Finely stranded with end sleeve		mm^2	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve		mm^2	2 x (0.25 ... 2.5)
• AWG cables, solid or stranded		AWG	2 x (24 ... 14)
• Max. external diameter of the conductor insulation		mm	3.6

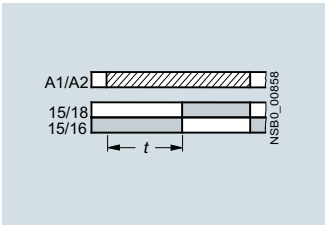
1) If nothing else is stated.

2) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

SIRIUS 3RP20 timing relays, 45 mm

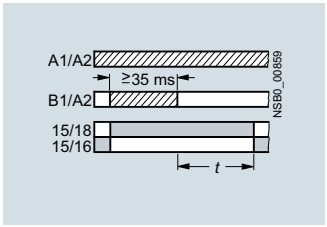
3RP20 function diagrams and 3RP2901 label set

1 CO contact



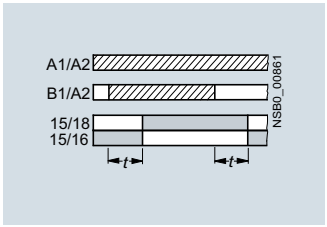
A

3RP2005-.A, 3RP2025
ON-delay



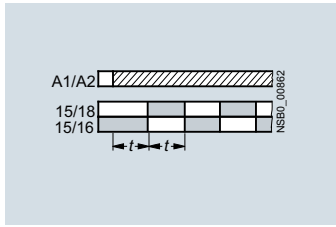
B[1)]

3RP2005-.A
OFF-delay with control signal



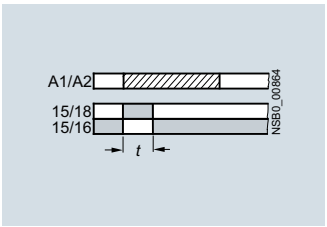
C[1)]

3RP2005-.A
ON and OFF-delay
with control signal ($t = t_{on} = t_{off}$)



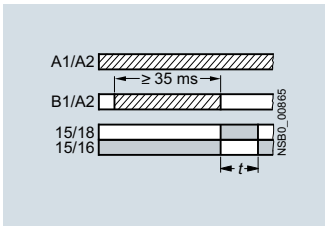
D

3RP2005-.A
Flashing, starting with interval
(pulse/interval 1:1)



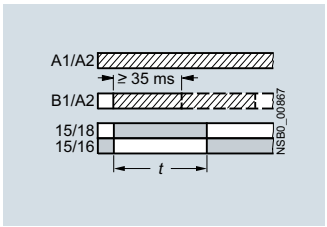
E

3RP2005-.A
Passing make contact



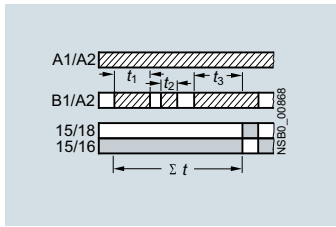
F[1)]

3RP2005-.A
Passing break contact with control signal



G[1)]

3RP2005-.A
Pulse-forming with control signal
(pulse generation at the output does not depend on duration of energizing)



H[1)]

3RP2005-.A
Additive ON-delay with control signal

Legend

A ... H Identification letters for 3RP2005

Timing relay energized

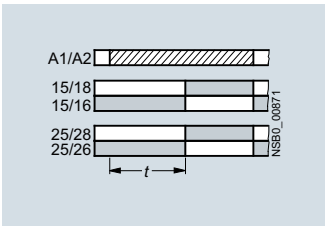
Contact closed

Contact open

1) Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable). This does not apply to G, G● and H●, which are not retriggerable.

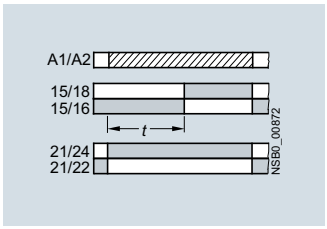
10

2 CO contacts



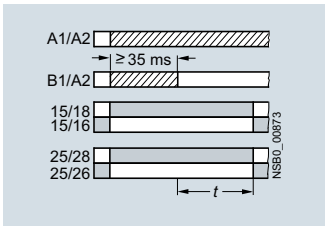
A

3RP2005-.B
ON-delay



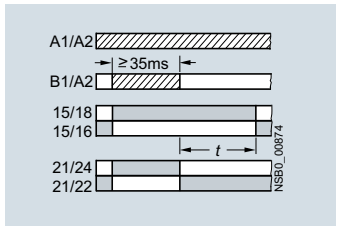
A●

3RP2005-.B
ON-delay and instantaneous contact



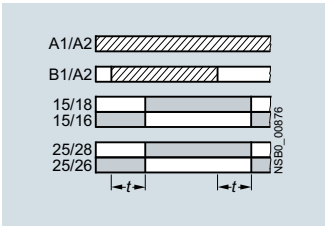
B[1)]

3RP2005-.B
OFF-delay with control signal



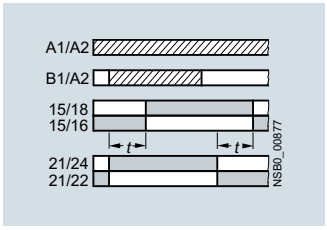
B●[1)]

3RP2005-.B
OFF-delay with control signal and instantaneous contact



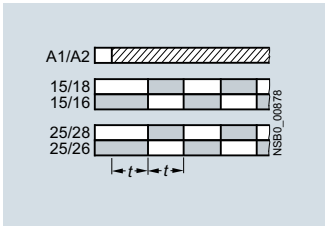
C[1)]

3RP2005-.B
ON and OFF-delay
with control signal ($t = t_{on} = t_{off}$)



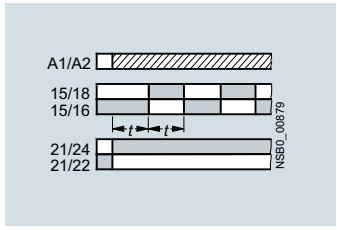
C●[1)]

3RP2005-.B
ON and OFF-delay with control signal and instantaneous contact
($t = t_{on} = t_{off}$)



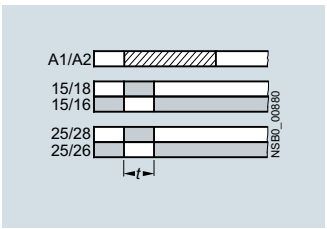
D

3RP2005-.B
Flashing, starting with interval (pulse/interval 1:1)



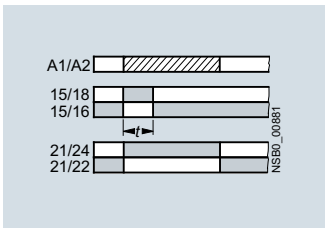
D●

3RP2005-.B
Flashing, starting with interval (pulse/interval 1:1) and instantaneous contact



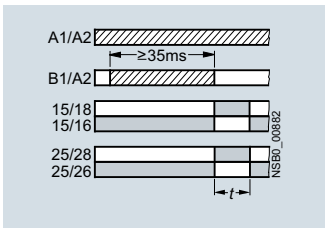
E

3RP2005-.B
Passing make contact



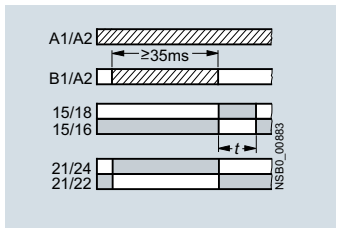
E●

3RP2005-.B
Passing make contact and instantaneous contact



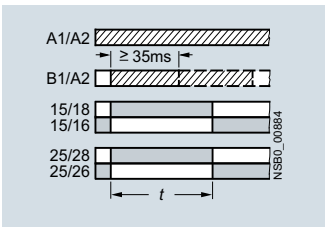
F[1)]

3RP2005-.B
Passing break contact with control signal



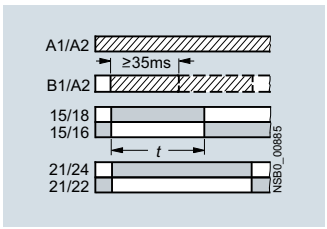
F●[1)]

3RP2005-.B
Passing break contact with control signal and instantaneous contact



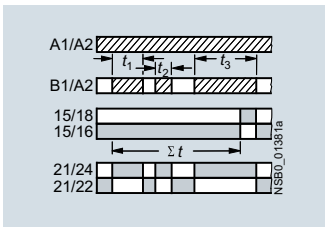
G[1)]

3RP2005-.B
Pulse-forming with control signal (pulse generation at the output does not depend on duration of energizing)



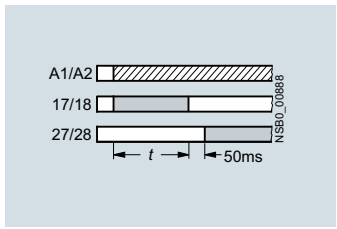
G●[1)]

3RP2005-.B
Pulse-forming with control signal and instantaneous contact (pulse generation at the output does not depend on duration of energizing)



H●[1)]

3RP2005-.B
Additive ON-delay with control signal and instantaneous contact



Y Δ

3RP2005-.B
Wye-delta function

Legend

A ... H Identification letters for 3RP2005

Timing relay energized

Contact closed

Contact open

[1)] Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable). This does not apply to G, G● and H●, which are not retriggerable.

SIRIUS 3RP20 timing relays, 45 mm

Selection and ordering data

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H


3RP2005-1AP30


3RP2005-1BW30


3RP2005-2AP30


3RP2025-2BW30

Version	Time setting range t	Rated control supply voltage U_s 50/60 Hz AC V	Rated control supply voltage U_s DC V	SD d	Screw terminals Article No.	Price per PU	SD d	Spring-type terminals Article No.	Price per PU
3RP2005 timing relays, multifunction, 15 time setting ranges									
The functions can be adjusted by means of rotary switches. Insert labels can be used to adjust different functions of the 3RP2505 timing relay clearly and unmistakably. The corresponding labels can be ordered as an accessory. The same potential must be applied to terminals A. and B. For functions, see 3RP2901 label set, page 10/53.									
With LED and 1 CO contact[1], 8 functions	0.05 ... 1 s 0.15 ... 3 s 0.5 ... 10 s 1.5 ... 30 s 0.05 ... 1 min 5 ... 100 s 0.15 ... 3 min 0.5 ... 10 min 1.5 ... 30 min 0.05 ... 1 h 5 ... 100 min 0.15 ... 3 h 0.5 ... 10 h 1.5 ... 30 h 5 ... 100 h ∞ [2]	24/100 ... 127 24/200 ... 240	24 24	▶ ▶	**3RP2005-1AQ30** **3RP2005-1AP30**		2 ▶	**3RP2005-2AQ30** **3RP2005-2AP30**	
With LED and 2 CO contacts, 16 functions		24 ... 240[3]	24 ... 240[4]	▶	**3RP2005-1BW30**		2	**3RP2005-2BW30**	
3RP2025. timing relays, ON-delay, 15 time setting ranges									
With LED and 1 CO[1]	0.05 ... 1 s 0.15 ... 3 s 0.5 ... 10 s 1.5 ... 30 s 0.05 ... 1 min 5 ... 100 s 0.15 ... 3 min 0.5 ... 10 min 1.5 ... 30 min 0.05 ... 1 h 5 ... 100 min 0.15 ... 3 h 0.5 ... 10 h 1.5 ... 30 h 5 ... 100 h ∞ [2]	24/100 ... 127 24/200 ... 240	24 24	▶ ▶	**3RP2025-1AQ30** **3RP2025-1AP30**		▶ ▶	**3RP2025-2AQ30** **3RP2025-2AP30**	

For accessories, see page 10/53.

1) Units with protective separation.

2) With ∞ switch position no timing. For test purposes (ON/OFF function) on site. Relay is constantly on when activated, or relay remains constantly off when activated. Depending on which function is set.

3) Operating range 0.8 to 1.1 x U_s.

4) Operating range 0.7 to 1.1 x U_s.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

	Version	Function	Identification letter	Use	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Label sets for 3RP20										
	Accessories for 3RP20 (not included in the scope of supply). The label set can be used to label timing relays with the set function in English and German.									
 3RP2901-0A	1 label set (1 unit) with 8 functions	ON-delay	A	For devices: With 1 CO	10	**3RP2901-0A**		1	5 units	41H
		OFF-delay with control signal	B							
		ON-delay and OFF-delay with control signal	C							
		Flashing, starting with interval	D							
		Passing make contact	E							
		Passing break contact with control signal	F							
		Pulse-forming with control signal	G							
		Additive ON-delay with control signal	H							
 3RP2901-0B	1 label set (1 unit) with 16 functions	ON-delay	A	For devices: with 2 CO	10	**3RP2901-0B**		1	5 units	41H
		OFF-delay with control signal	B							
		ON-delay and OFF-delay with control signal	C							
		Flashing, starting with interval	D							
		Passing make contact	E							
		Passing break contact with control signal	F							
		Pulse-forming with control signal	G							
		ON-delay and instantaneous contact	A•							
		OFF-delay with control signal and instantaneous contact	B•							
		ON-delay and OFF-delay with control signal and instantaneous contact	C•							
		Flashing, starting with interval, and instantaneous contact	D•							
		Passing make contact and instantaneous contact	E•							
		Passing break contact with control signal and instantaneous contact	F•							
		Pulse-forming with control signal and instantaneous contact	G•							
		Additive ON-delay with control signal and instantaneous contact	H•							
		Wye-delta function	Y Δ							
Blank inscription labels for 3RP20										
	Blank labels, 20 mm × 7 mm, pastel turquoise[1)]			For 3RP20	20	**3RT1900-1SB20**		100	340 units	41B

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/20.

7PV15 timing relays, 17.5 mm

Overview

7PV15 timing relay

Electronic timing relays for general use and in control systems, mechanical engineering and infrastructure with:

- 1 or 2 CO contacts
- Multifunction or monofunction
- Wide voltage range or combination voltage
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

Standards

The timing relays comply with:

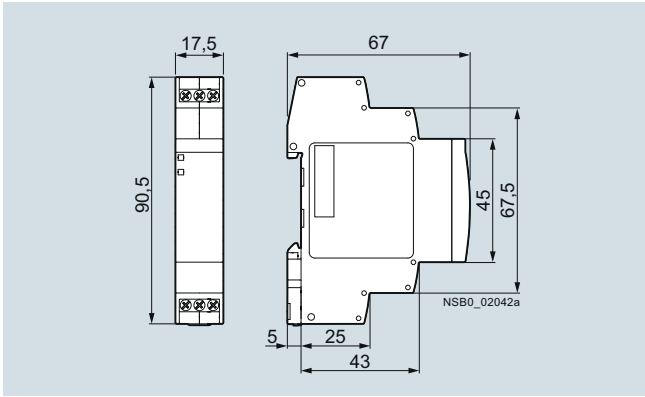
- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1 "Specified time relays for industrial use"
- IEC 61000-6-2 and EN 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"
- DIN 43880 "Built-in equipment for electrical installations; overall dimensions and related mounting dimensions"

Multifunction

The functions of the 7PV1508-1A multifunctional timing relays can be set by means of rotary switches. The identification letters A to G are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

Enclosure version

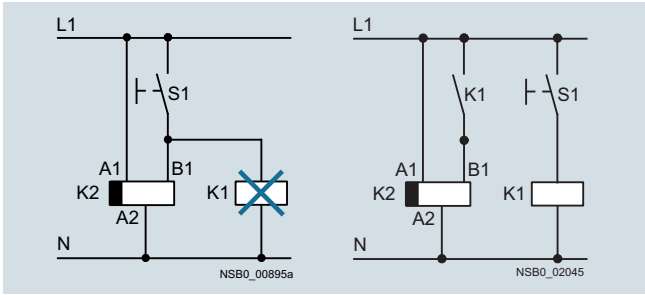
All timing relays are suitable for snap-on mounting onto TH 35 standard mounting rails according to IEC 60715. The enclosure complies with DIN 43880, 1 MW.



Dimensions

Note:

The activation of loads parallel to the start input is not permissible when using AC control voltage (see diagrams).



Diagrams

Article No. scheme

Product versions		Article number								
Timing relays in industrial enclosure, 17.5 mm		**7PV15**	□	□	–	□	□	□	**3**	**0**
Product function/ time setting ranges	Multifunction		**0**	**8**						7 time ranges 0.05 s ... 100 h
	ON-delay		**1**	**1**						1 time range 0.05 ... 1 s
			1	**2**						1 time range 0.5 ... 10 s
			1	**3**						1 time range 5 ... 100 s
			1	**8**						7 time ranges 0.05 s ... 100 h
	OFF-delay with control signal		**3**	**8**						7 time ranges 0.05 s ... 100 h
	OFF-delay without control signal		**4**	**0**						7 time ranges 0.05 s ... 100 s
	Clock-pulse relay		**5**	**8**						7 time ranges 0.05 s ... 100 h
	Wye-delta function		**7**	**8**						7 time ranges 0.05 s ... 100 h
Connection type	Screw terminals					**1**				
	Spring-type terminal					**2**				
Contacts	e.g. A = 1 CO contact						□			
Control supply voltage	e.g. W = 12 ... 240 V AC/DC							□		Combination voltage
Example		**7PV15**	**0**	**8**	**–**	**1**	**A**	**W**	**3**	**0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Wide voltage range 12 to 240 V AC/DC
- High switching capacity, e.g. AC-15 at 230 V, 3 A
- Combination voltage, e.g. 24 V AC/DC and 200 to 240 V AC
- Changes to the time setting range during operation
- Changes to the function in the de-energized state
- High level of functionality and a high repeat accuracy of timer settings
- Integrated surge suppressor
- Function charts printed on the side of the device for reliable device adjustment

Application

Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays,

e. g. in functional buildings, airports, building industry, etc.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16358/td	Operating instructions and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/35210295

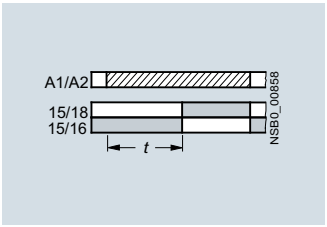
Type		7PV15
Rated insulation voltage Pollution degree 2, overvoltage category III	V AC	300
Permissible ambient temperature		
• During operation	°C	-25 ... +55
• During storage	°C	-40 ... +70
Operating range of excitation[1]		0.85 ... 1.1 x U_s at V AC/DC, 50/60 Hz 0.8 ... 1.25 x U_s at 24 V DC 0.95 ... 1.05 times the rated frequency
Rated operational current I_e		
• AC-15 at 24 ... 240 V, 50 Hz	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
Uninterrupted thermal current I_{th}	A	5
Mechanical endurance	Operating cycles	1 x 10^6
Electrical endurance at I_e	Operating cycles	1 x 10^5
Connection type		**Screw terminals**
• Terminal screw		M3 (for standard screwdriver, size 2 and Pozidriv 2)
• Solid	mm^2	1 x (0.2 ... 2.5)
• Finely stranded with end sleeve	mm^2	1 x (0.25 ... 1.5)
• Finely stranded without end sleeve	mm^2	1 x (0.2 ... 1.5)
• AWG cables, solid or stranded	AWG	1 x (24 ... 14)
• Tightening torque	Nm	0.4 ... 0.5

[1] If nothing else is stated.

7PV15 timing relays, 17.5 mm

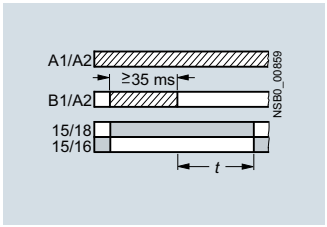
7PV15 function diagrams

1 CO contact



A

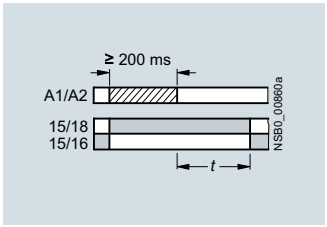
7PV1508-1A, 7PV1511, 7PV1512, 7PV1513, 7PV1518
ON-delay



B[1)]

7PV1508-1A, 7PV1538

OFF-delay with control signal



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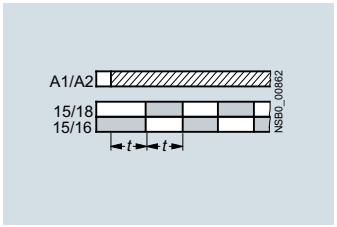
7PV1540

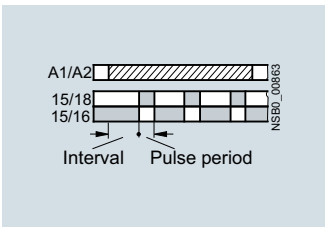
OFF-delay without control signal



C

7PV1508-1A

Flashing, starting with interval (pulse/interval 1:1)



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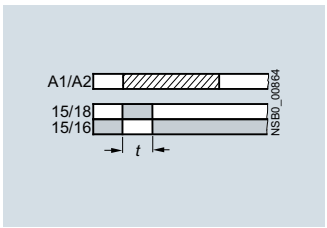
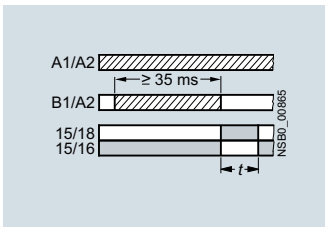
7PV1558
Clock-pulse, starting with interval (dead period, pulse time, and time setting ranges each separately adjustable)



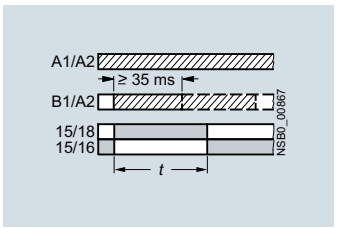
D

7PV1508-1A
Passing make contact



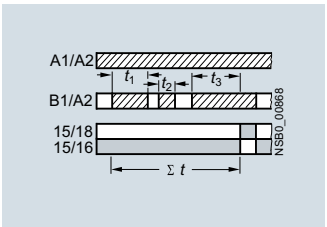
E[1)]

7PV1508-1A
Passing break contact with control signal



F[1)]

7PV1508-1A
Pulse-forming with control signal (pulse generation at the output does not depend on duration of energizing)



G[1)]

7PV1508-1A
Additive ON-delay with control signal

Legend

A ... G Identification letters for 7PV1508

Timing relay energized

Contact closed

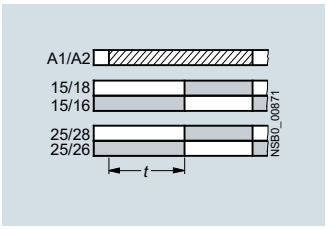
Contact open

1) Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable). This does not apply to E, F and G, which are not retriggerable.

Note:

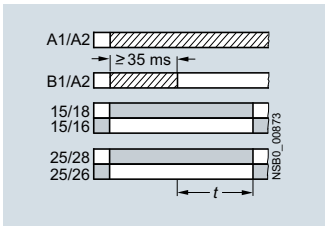
With the 7PV1508-1A multifunctional relay the identification letters A to G are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

2 CO contacts



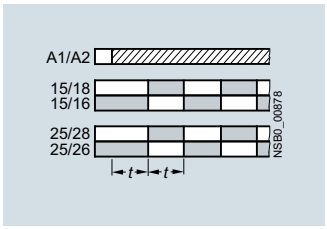
A

7PV1508-1B
ON-delay



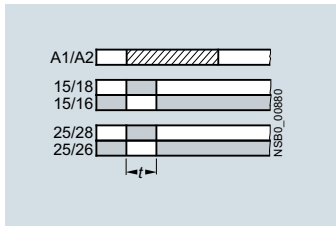
B[1)]

7PV1508-1B
OFF-delay with control signal



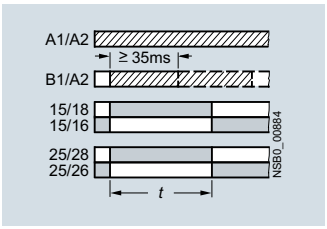
C

7PV1508-1B
Flashing, starting with interval (pulse/interval 1:1)



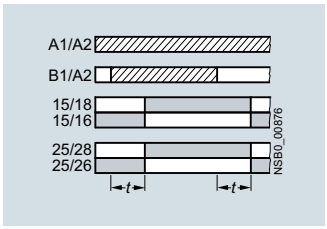
D

7PV1508-1B
Passing make contact



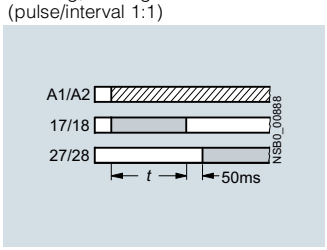
F[1)]

7PV1508-1B
Pulse-forming with control signal (generation of a pulse at the output independently of the on duration of energizing)



H[1)]

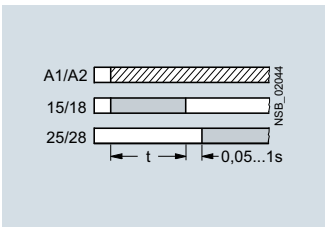
7PV1508-1B
ON-delay and OFF-delay with control signal



I

7PV1508-1B
Fixed pulse after ON-delay

2 NO contacts



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7PV1578
Wye-delta function[2)]

Legend

A ... D, F, H, I Identification letters for 7PV1508

Timing relay energized

Contact closed

Contact open

1) Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable). This does not apply to E, F and G, which are not retriggerable.

2) With 7PV1578 the contacts 16 and 26 are not needed for the wye-delta function.

Note:

With the 7PV1508-1B multifunctional relay the identification letters A to D, F, H, I are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

7PV15 timing relays, 17.5 mm

Selection and ordering data


7PV1508-1AW30


7PV1512-1AP30


7PV1518-1AW30


7PV1538-1AW30


7PV1540-1AW30


7PV1558-1AW30


7PV1578-1BW30

Version	Time setting range *t* adjustable by rotary switch to	Rated control supply voltage U_s 50/60 Hz AC V	Rated control supply voltage U_s DC V	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
7PV1508 timing relays, multifunction, 7 time setting ranges									
The functions can be adjusted by means of rotary switches. The same potential must be applied to terminals A. and B.									
With LED and 1 CO contact, 7 functions	0.05 ... 1 s 0.5 ... 10 s 5 … 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	**7PV1508-1AW30**		1	1 unit	41H
With LED and with 2 CO contacts 7 functions		12 ... 240	12 ... 240	▶	**7PV1508-1BW30**		1	1 unit	41H
7PV151. timing relays, ON-delay, 1 time setting range									
With LED and 1 CO contact	0.05 ... 1 s	24/200 ... 240	24	▶	**7PV1511-1AP30**		1	1 unit	41H
	0.5 ... 10 s	24/100 ... 127	24	▶	**7PV1512-1AQ30**		1	1 unit	41H
		24/200 ... 240	24	▶	**7PV1512-1AP30**		1	1 unit	41H
	5 … 100 s	24/100 ... 127	24	▶	**7PV1513-1AQ30**		1	1 unit	41H
		24/200 ... 240	24	▶	**7PV1513-1AP30**		1	1 unit	41H
7PV1518 timing relays, ON-delay, 7 time setting ranges									
With LED and 1 CO contact	0.05 ... 1 s 0.5 ... 10 s 5 … 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	**7PV1518-1AW30**		1	1 unit	41H
		90 ... 127	90 ... 127	▶	**7PV1518-1AJ30**		1	1 unit	41H
		180 ... 240	180 ... 240	▶	**7PV1518-1AN30**		1	1 unit	41H
7PV1538 timing relays, OFF-delay, with control signal, 7 time setting ranges									
With LED and 1 CO contact	0.05 ... 1 s 0.5 ... 10 s 5 … 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	**7PV1538-1AW30**		1	1 unit	41H
7PV1540 timing relays, OFF-delay, without control signal, 7 time setting ranges									
With LED and 1 CO contact	0.05 ... 1 s 0.15 ... 3s 0.3 ... 6 s 0.5 ... 10 s 1.5 ... 30 s 3 ... 60 s 5 … 100 s	12 ... 240	12 ... 240	▶	**7PV1540-1AW30**		1	1 unit	41H
7PV1558 timing relays, clock-pulse relay, 7 time setting ranges									
With LED and 1 CO contact	0.05 ... 1 s 0.5 ... 10 s 5 … 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	**7PV1558-1AW30**		1	1 unit	41H
7PV1578 timing relays, wye-delta function, 7 time setting ranges									
With LED and 2 NO contacts, dead interval 0.05 ... 1 s adjustable	0.05 ... 1 s 0.5 ... 10 s 5 … 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	**7PV1578-1BW30**		1	1 unit	41H

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3RT19 timing relay

SIRIUS 3RT19 electronic timing relays for mounting onto contactors with:

- 1 NO and 1 NC or 2 NO
- Monofunction
- Monovoltage
- Single or selectable time setting ranges

Simply by being plugged in place, the SIRIUS 3RT19 timing relays enable different functionalities required for the assembly of starters to be realized in the feeder. At the same time the timing relays for mounting onto contactors reduce the wiring work required within the feeder and save space in the control cabinet.

A protection circuit (varistor) is integrated in each module.

The electronic timing relay with semiconductor output uses two plug-in contacts to actuate the contactor underneath by means of a semiconductor after the set time has elapsed.

The time-delay auxiliary switch is supplied with power directly by two plug-in contacts through the coil terminals of the contactor, in parallel with A1/A2.

The switching state feedback is performed by a mechanical switching state indicator (plunger).

Article No. scheme

Product versions		Article number
Time module and contactor control unit		**3RT19 □ □ – 2 □ □ □ 1**
Size	e.g. 26 = S0 to S12	□ □
Version	e.g. E = ON-delay	□
Control supply voltage	e.g. J = 24 V AC/DC	□
Time range	e.g. 1 = 0.05 ... 1 s	□
Example		**3RT19 2 6 – 2 E J 1 1**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Technical specifications

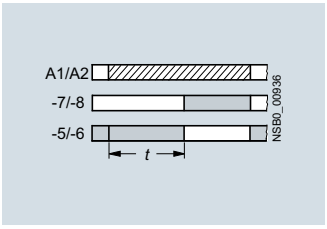
More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16361/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16361/faq
Manual and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/ps/16361/man	

According to IEC 61812-1/DIN VDE 0435-2021

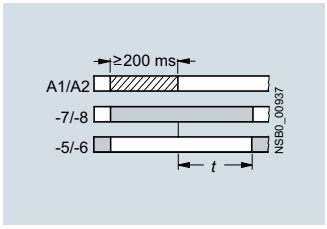
Type		Electronic timing relay blocks with semiconductor output 3RT19.6-2C 3RT19.6-2D	Solid-state time-delay auxiliary switch blocks 3RT19.6-2E 3RT19.6-2F 3RT19.6-2G
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III according to DIN VDE 0110	V AC	300	
Permissible ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-40 ... +80	
Operating range of excitation		0.8 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency	0.85 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency
Rated operational currents I_e			
• Load current	A	0.3 for 3RT1916; 0.5 for 3RT1926	--
• AC-15, 24 ... 400 V, 50 Hz	A	--	3
• DC-13, 24 V	A	--	1
• DC-13, 125 V	A	--	0.2
• DC-13, 250 V	A	--	0.1
Mechanical endurance	Operating cycles	100 x 10^6	10 x 10^6
Electrical endurance at I_e	Operating cycles	100 x 10^6	1 x 10^5
Connection type		**Screw terminals**	
• Terminal screw		M3 (for standard screwdriver, size 2 and Pozidriv 2)	
• Solid	mm^2	1 x (0.5 ... 4)/2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve	mm^2	1 x (0.5 ... 2.5)/2 x (0.5 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)	
• Tightening torque	Nm	0.8 ... 1.2	

3RT1926 function diagrams

1 NO contact + 1 NC contact

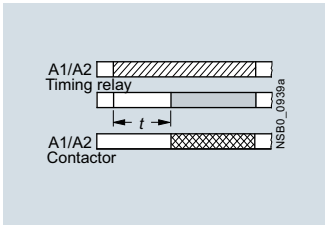


3RT1926-2E
ON-delay

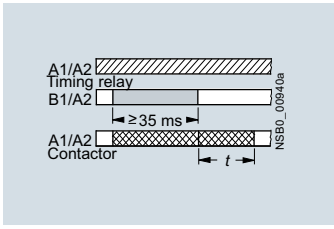


3RT1926-2F
OFF-delay without control signal

1 NO contact (semiconductor)

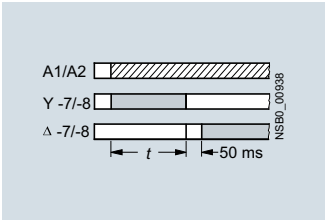


3RT1926-2C
ON-delay
two-wire design (varistor integrated)



3RT1926-2D
OFF-delay
with control signal (varistor integrated)

2 NO contacts



3RT1926-2G
Wye-delta function
1 NO delayed, 1 NO instantaneous,
dead time 50 ms (varistor integrated)

Legend
- Timing relay energized
- Contact closed
- Contact open
- Contactor coil energized

Selection and ordering data

For contactors	Version	Time setting range t	Rated control supply voltage U_s	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Type		s	V	d	Article No. Price per PU			
For sizes S0 to S12[1]								
3RT102, 3RT103, 3RT104	**Terminal designations acc. to EN 46199-5**							
	• ON-delay							
	1 NO + 1 NC	0.05 ... 1	24 AC/DC	10	**3RT1926-2EJ11**	1	1 unit	41H
		0.5 ... 10		▶	**3RT1926-2EJ21**	1	1 unit	41H
		5 ... 100		2	**3RT1926-2EJ31**	1	1 unit	41H
		0.05 ... 1	100 ... 127 AC	15	**3RT1926-2EC11**	1	1 unit	41H
		0.5 ... 10		▶	**3RT1926-2EC21**	1	1 unit	41H
		5 ... 100		10	**3RT1926-2EC31**	1	1 unit	41H
		0.05 ... 1	200 ... 240 AC	5	**3RT1926-2ED11**	1	1 unit	41H
		0.5 ... 10		▶	**3RT1926-2ED21**	1	1 unit	41H
		5 ... 100		5	**3RT1926-2ED31**	1	1 unit	41H
	• OFF-delay without control signal[2]							
	1 NO + 1 NC	0.05 ... 1	24 AC/DC	▶	**3RT1926-2FJ11**	1	1 unit	41H
		0.5 ... 10		▶	**3RT1926-2FJ21**	1	1 unit	41H
		5 ... 100		▶	**3RT1926-2FJ31**	1	1 unit	41H
		0.05 ... 1	100 ... 127 AC	5	**3RT1926-2FK11**	1	1 unit	41H
		0.5 ... 10		▶	**3RT1926-2FK21**	1	1 unit	41H
		5 ... 100		5	**3RT1926-2FK31**	1	1 unit	41H
		0.05 ... 1	200 ... 240 AC	5	**3RT1926-2FL11**	1	1 unit	41H
		0.5 ... 10		2	**3RT1926-2FL21**	1	1 unit	41H
		5 ... 100		2	**3RT1926-2FL31**	1	1 unit	41H
	• Wye-delta function (varistor integrated)							
	1 NO delayed + 1 NO instanta-neous, dead time 50 ms	1.5 ... 30	24 AC/DC	▶	**3RT1926-2GJ51**	1	1 unit	41H
			100 ... 127 AC	▶	**3RT1926-2GC51**	1	1 unit	41H
			200 ... 240 AC	▶	**3RT1926-2GD51**	1	1 unit	41H
For sizes S0 to S3, with semiconductor output								
3RT102, 3RT103, 3RT104[2]	**For mounting onto coil terminals on top of the contactors** The electrical connection between the relay block and the corresponding contactor is established by screwing the two connecting pins of the timing relay block to coil terminals A1/A2 on top of the contactor.							
	• ON-delay, two-wire design (varistor integrated)							
		0.05 ... 1	24 ... 66 AC/DC	5	**3RT1926-2CG11**	1	1 unit	41H
		0.5 ... 10		5	**3RT1926-2CG21**	1	1 unit	41H
		5 ... 100		5	**3RT1926-2CG31**	1	1 unit	41H
		0.05 ... 1	90 ... 240 AC/DC	▶	**3RT1926-2CH11**	1	1 unit	41H
		0.5 ... 10		▶	**3RT1926-2CH21**	1	1 unit	41H
		5 ... 100		▶	**3RT1926-2CH31**	1	1 unit	41H
	• OFF-delay with control signal (varistor integrated)							
		0.05 ... 1	24 ... 66 AC/DC	10	**3RT1926-2DG11**	1	1 unit	41H
		0.5 ... 10		5	**3RT1926-2DG21**	1	1 unit	41H
		5 ... 100		20	**3RT1926-2DG31**	1	1 unit	41H
		0.05 ... 1	90 ... 240 AC/DC	5	**3RT1926-2DH11**	1	1 unit	41H
		0.5 ... 10		5	**3RT1926-2DH21**	1	1 unit	41H
		5 ... 100		10	**3RT1926-2DH31**	1	1 unit	41H


3RT1926-2...


3RT1926-2C...


3RT1926-2D...

1) The terminals A1 and A2 for the rated control supply voltage of the solid-state time-delay auxiliary switch block must be connected to the corresponding contactor by connecting cables.

2) Not for 3RT104 contactor with 24 to 42 V rated control supply voltage.

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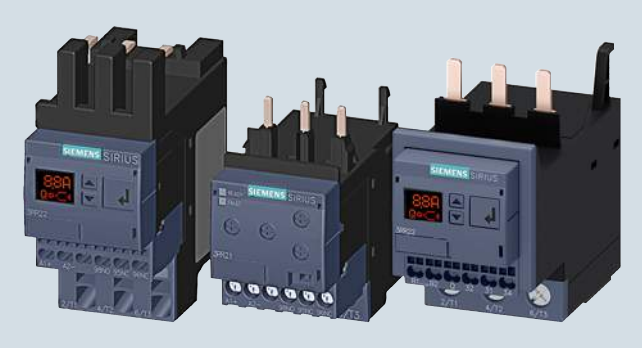
Overview



SIRIUS 3RR2242, 3RR2142, 3RR2243 current monitoring relays

More information

Home page, see www.siemens.com/relays
Industry Mall, see www.siemens.com/product?3RR21

The SIRIUS 3RR2 current monitoring relays are suitable for load monitoring of motors or other loads. In 2 or 3 phases they monitor the rms value of AC currents for overshooting or undershooting of set threshold values.

Whereas apparent current monitoring is used above all in connection with the rated torque or in case of overload, the active current monitoring option can be used to observe and evaluate the load factor over a motor's entire torque range.

The 3RR2 current monitoring relays can be integrated directly in the feeder by mounting onto the 3RT2 contactor; separate wiring of the main circuit is therefore superfluous. No separate transformers are required.

For a line-oriented configuration or simultaneous use of an overload relay, terminal supports for stand-alone installation are available for separate standard rail mounting.

Versions

Basic versions

The basic versions with two-phase apparent current monitoring, a CO contact output and analog adjustability provide a high level of monitoring reliability especially in the rated and overload range.

Standard versions

The standard versions monitor the current in three phases with selectable active current monitoring. They have additional diagnostics options such as residual current monitoring and phase sequence monitoring, and they are also suitable for monitoring motors below the rated torque. These devices have an additional independent semiconductor output, an actual value indicator, and are digitally adjustable.

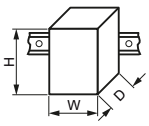
Both versions are available optionally with screw or spring-type terminals, in each case for sizes S00 and S0. With variants of size S2 the main current paths always have screw terminals; the control current side can have screw or spring-type terminals.

Note:

In addition to the features of the standard versions, 3RR24 monitoring relays for mounting onto 3RT2 contactors for IO-Link also offer the possibility of transmitting the measured values and diagnostics data to a controller via an IO-Link. Furthermore, the devices can be parameterized on the devices themselves or via IO-Link.

For more information, see page 10/70 onwards.

3RR21 and 3RR22 overview table

Features		3RR21	3RR22	Benefits
General data				
Sizes		S00, S0, S2	S00, S0, S2	• Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, soft starters, etc.) • Permit the mounting of slim-line and compact load feeders in widths of 45 mm (S00 and S0) and 55 mm (S2) • Simplify configuration
Dimensions in mm (W x H x D) • Screw terminals		S00: 45 x 79 x 80, S0: 45 x 87 x 91, S2: 55 x 99 x 112	S00: 45 x 79 x 80, S0: 45 x 87 x 91, S2: 55 x 99 x 112	
• Spring-type terminals		S00: 45 x 90 x 80, S0: 45 x 109 x 92, S2: 55 x 99 x 112	S00: 45 x 90 x 80, S0: 45 x 109 x 92, S2: 55 x 99 x 112	
Current range		S00: 1.6 ... 16 A S0: 4 ... 40 A S2: 8 ... 80 A	S00: 1.6 ... 16 A S0: 4 ... 40 A S2: 8 ... 80 A	• Is adapted to the other devices in the SIRIUS modular system • Just a single version per size with a wide setting range enables easy configuration
Permissible ambient temperature				
During operation		-25 ... +60 °C	-25 ... +60 °C	• Suitable for applications in the control cabinet, worldwide

Features	3RR21	3RR22	Benefits
Monitoring functions			
Current overshoot	✓ (Two-phase)	✓ (Three-phase)	• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload • Enables detection of filter blockages or pumping against closed gate valves • Enables drawing conclusions about wear, poor lubrication or other maintenance-relevant phenomena
Current undershoot	✓ (Two-phase)	✓ (Three-phase)	• Enables detection of overload due to a slipping or torn belt • Guarantees protection of pumps against dry running • Facilitates monitoring of the functions of resistive loads such as heaters • Permits energy savings through monitoring of no-load operation
Apparent current monitoring	✓	✓ (Selectable)	• Precision current monitoring especially in a motor's rated and upper torque range
Active current monitoring	--	✓ (Selectable)	• Optimum current monitoring over a motor's entire torque range through the patented combination of power factor and apparent current monitoring
Range monitoring	✓ (Two-phase)	✓ (Three-phase)	• Simultaneous monitoring of current overshoot and undershoot with a singe device
Phase failure, open circuit	✓ (Two-phase)	✓ (Three-phase)	• Minimizes heating of three-phase motors during phase failure through immediate disconnection • Prevents operation of hoisting equipment with reduced load carrying capacity
Phase sequence monitoring	--	✓ (Selectable)	• Prevents starting of motors, pumps or compressors in the wrong direction of rotation
Internal ground-fault detection (residual current monitoring)	--	✓ (Selectable)	• Provides optimum protection of loads against high-resistance short circuits or ground faults due to moisture, condensed water, damage to the insulation material, etc. • Eliminates the need for additional special equipment and thus space in the control cabinet • Reduces wiring overhead and costs
Blocking current monitoring	--	✓ (Selectable)	• Minimizes heating of three-phase motors when blocked during operation through immediate disconnection • Minimizes mechanical loading of the system by acting as an electronic shear pin
Features			
RESET function	✓	✓	• Allows manual or automatic resetting of the relay • Resetting directly on the device or by switching the control supply voltage off and on (remote RESET)
ON-delay time	0 ... 60 s	0 ... 99 s	• Enables motor starting without evaluation of the starting current • Can be used for monitoring motors with lengthy start up
Tripping delay time	0 ... 30 s	0 ... 30 s	• Permits brief threshold value violations during operation • Prevents frequent warnings and disconnections with currents near the threshold values
Operating and indicating elements	LEDs and rotary potentiometers	Displays and buttons	• For setting the threshold values and delay times and for fast and targeted diagnostics • For selectable functions • Displays for permanent display of measured values
Integrated contacts	1 CO contact	1 CO contact, 1 semiconductor output	• Enable disconnection of the system or process when there is an irregularity • Can be used to output signals

✓ Available
-- Not available

Current and active current monitoring

Features	3RR21	3RR22	Benefits
Design of load feeders			
Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	✓	✓	• Provides optimum protection of the loads and operating personnel in the event of short circuits due to insulation faults or faulty switching operations
Electrical and mechanical matching to 3RT2 contactors	✓	✓	• Simplifies configuration • Reduces wiring outlay and costs • Enables stand-alone installation as well as space-saving direct mounting
Spring-type terminals for main circuit (with S00, S0) and auxiliary circuits	✓ (optional)	✓ (optional)	• Enables fast connections • Permits vibration-resistant connections • Enables maintenance-free connections
Other features			
Suitable for single and three-phase loads	✓	✓	• Enables the monitoring of single-phase systems through parallel infeed at the contactor or looping the current through the three phase connections
Wide setting ranges	✓	✓	• Reduce the number of variants • Minimize the configuration outlay and costs • Minimize storage overheads, storage costs, tied-up capital
Wide-voltage supply range	✓ (optional)	✓ (optional)	• Reduces the number of versions • Minimizes the configuring overhead and costs • Minimizes storage overhead, storage costs, tied-up capital

Possible combinations of 3RR21/3RR22 monitoring relays with 3RT2 contactors

Monitoring relays	Current range	**Contactors** (type, size, rating)		
		3RT201	**3RT202**	**3RT203**
		S00	S0	S2
Type	A	3/4/5.5/7.5 kW	5.5/7.5/11/15/18.5 kW	18.5/22/30/37 kW
3RR2.41				
3RR2141	1.6 ... 16	✓	With stand-alone installation support	With stand-alone installation support
3RR2241	1.6 ... 16	✓	With stand-alone installation support	With stand-alone installation support
3RR2.42				
3RR2142	4 ... 40	With stand-alone installation support	✓	With stand-alone installation support
3RR2242	4 ... 40	With stand-alone installation support	✓	With stand-alone installation support
3RR2.43				
3RR2143	8 ... 80	With stand-alone installation support	With stand-alone installation support	✓
3RR2243	8 ... 80	With stand-alone installation support	With stand-alone installation support	✓

✓ Available

Article No. scheme

Product versions		Article number									
Monitoring relays		**3RR2**	□	**4**	□	–	□	□	□	**3**	**0**
Type of setting	Analogically adjustable, 2-phase		**1**								
	Digitally adjustable, 3-phase		**2**								
Size	S00				**1**						
	S0				**2**						
	S2				**3**						
Connection type	Screw terminals						**1**				
	Spring-type terminal						**2**				
Number and type of outputs	1 CO contact							**A**			
	1 CO contact + 1 semiconductor							**F**			
Rated control supply voltage	24 V AC/DC								**A**		
	24 ... 240 V AC/DC								**W**		
Example		**3RR2**	**1**	**4**	**1**	–	**1**	**A**	**A**	**3**	**0**

Note:

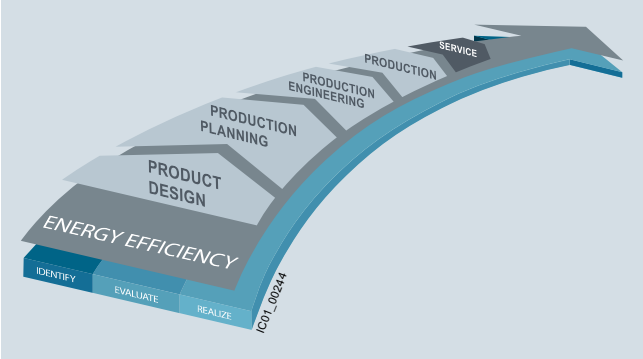
The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Can be mounted directly on 3RT2 contactors and 3RA23 reversing contactor assemblies, in other words, there is no need for additional wiring in the main circuit
- Optimally coordinated with the technical characteristics of the 3RT2 contactors
- No separate current transformer required
- Versions with wide voltage supply range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Display of ACTUAL value and status messages
- All versions with removable control current terminals
- All versions with screw terminals or spring-type terminals
- Simple determination of the threshold values through direct reference to actually measured values for setpoint loading
- Range monitoring and selectable active current measurement mean that only one device for monitoring a motor is required along the entire torque curve
- In addition to current monitoring it is also possible to monitor for broken cables, phase failure, phase sequence, residual current and motor blocking.

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative SIRIUS industrial controls products can also make a major contribution to the energy efficiency of a plant (www.siemens.com/sirius/energysaving).

The 3RR2 monitoring relays contribute to energy efficiency throughout the plant as follows:

- Shutdown in the event of no-load operation (e.g. pump no-load operation)
- Load shedding of predefined loads in the event of current overshoots

Application

- Monitoring for current overshoot and undershoot
- Monitoring of broken conductors
- Monitoring of no-load operation and load shedding, e.g. in the event of a torn V-belt or no-load operation of a pump
- Monitoring of overload, e.g. on conveyor belts or cranes due to an excessive load
- Monitoring the functionality of electrical loads such as heaters
- Monitoring of wrong phase sequence on mobile equipment such as compressors or cranes
- Monitoring of high-impedance faults to ground, e.g. caused by damaged insulation or moisture

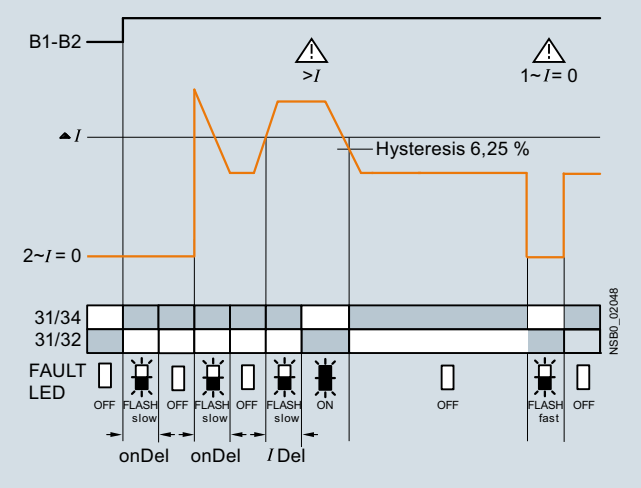
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16205/td	System Manual "SIRIUS – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318
Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", see https://support.industry.siemens.com/cs/ww/en/view/39714188	Manual "3UG4/3RR2 Monitoring Relay", see https://support.industry.siemens.com/cs/ww/en/view/54397927
	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16205/faq

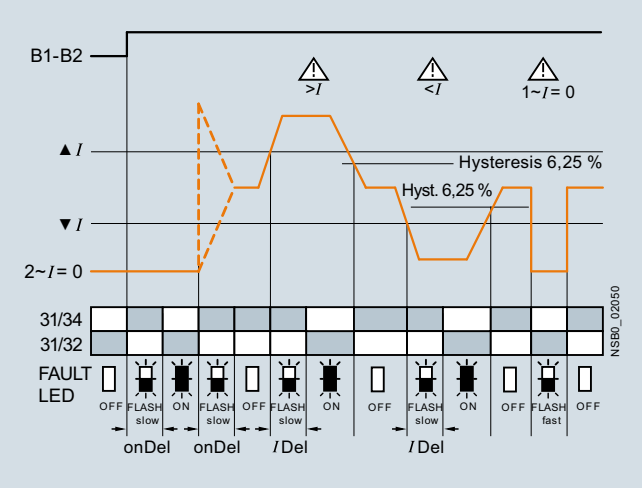
Function diagrams of 3RR214.-.A.30 basic versions, analogically adjustable

Closed-circuit principle upon application of the control supply voltage

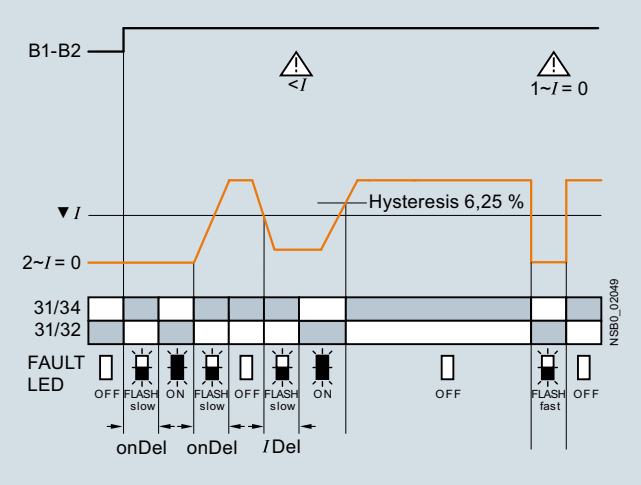
Current overshoot



Range monitoring



Current undershoot



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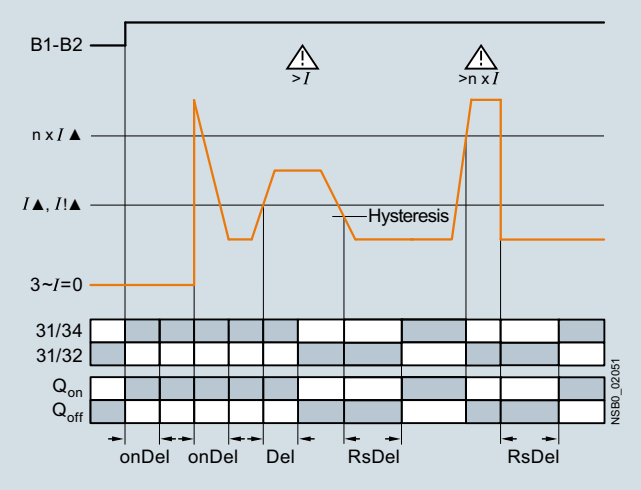
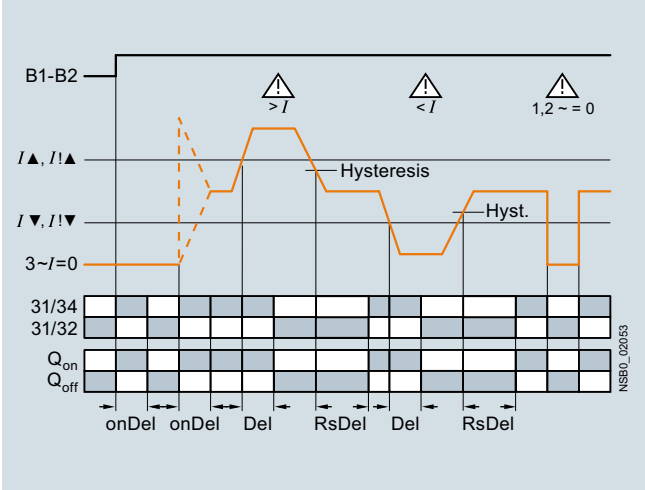
Function diagrams of 3RR224.-.F.30 standard versions, digitally adjustable

With the closed-circuit principle selected upon application of the control supply voltage

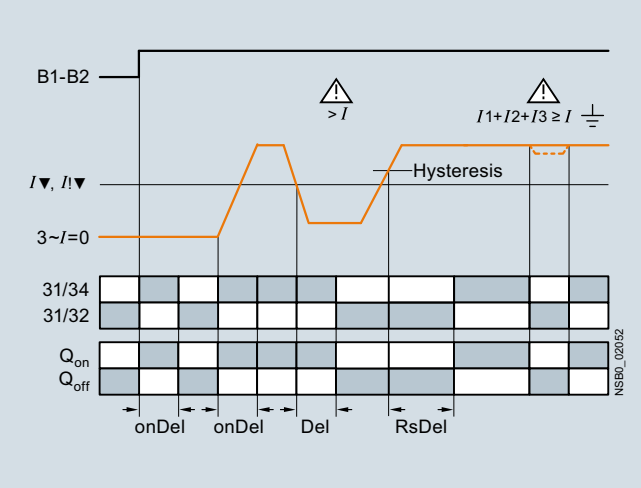
Current overshoot



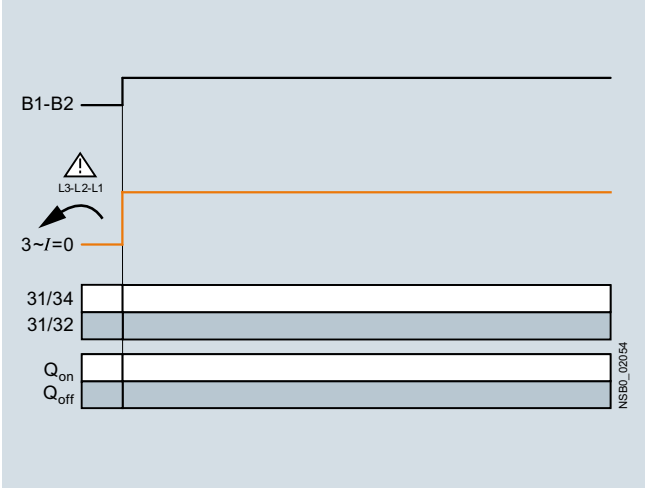
Range monitoring



Current undershoot with residual current monitoring



Phase sequence monitoring



Selection and ordering data


3RR2141-1AW30


3RR2142-1AW30


3RR2241-1FW30


3RR2242-1FW30

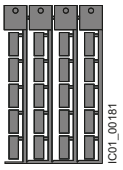

3RR2141-2AA30


3RR2243-3FW30

Size	Measuring range	Hysteresis	Supply voltage U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A	V	d					
Basic versions									
• Analogically adjustable • Closed-circuit principle • 1 CO contact • 2-phase current monitoring • Apparent current monitoring • Start-up delay 0 ... 60 s • Tripping delay 0 to 30 s									
S00	1.6 ... 16	6.25 % of threshold value	24 AC/DC	2	**3RR2141-□AA30**		1	1 unit	41H
			24 ... 240 AC/DC	2	**3RR2141-□AW30**		1	1 unit	41H
S0	4 ... 40	6.25 % of threshold value	24 AC/DC	2	**3RR2142-□AA30**		1	1 unit	41H
			24 ... 240 AC/DC	2	**3RR2142-□AW30**		1	1 unit	41H
S2	8 ... 80	6.25 % of threshold value	24 AC/DC	2	**3RR2143-□AA30**		1	1 unit	41H
			24 ... 240 AC/DC	2	**3RR2143-□AW30**		1	1 unit	41H
Standard versions									
• Digitally adjustable • LC display • Open or closed-circuit principle • 1 CO, 1 semiconductor output • 3-phase current monitoring • Active current or apparent current monitoring • Phase sequence monitoring • Residual current monitoring • Blocking current monitoring • Reclosing delay time 0 ... 300 min • Start-up delay 0 ... 99 s • Separate settings for warning and alarm thresholds • Tripping delay 0 to 30 s									
S00	1.6 ... 16	0.1 ... 3	24 AC/DC	2	**3RR2241-□FA30**		1	1 unit	41H
			24 ... 240 AC/DC	2	**3RR2241-□FW30**		1	1 unit	41H
S0	4 ... 40	0.1 ... 8	24 AC/DC	2	**3RR2242-□FA30**		1	1 unit	41H
			24 ... 240 AC/DC	2	**3RR2242-□FW30**		1	1 unit	41H
S2	8 ... 80	0.2 ... 16	24 AC/DC	2	**3RR2243-□FA30**		1	1 unit	41H
			24 ... 240 AC/DC	2	**3RR2243-□FW30**		1	1 unit	41H
Type of electrical connection									
• Screw terminals					**1**				
• Spring-type terminal					**2**				

* You can order this quantity or a multiple thereof.
Illustrations are approximate

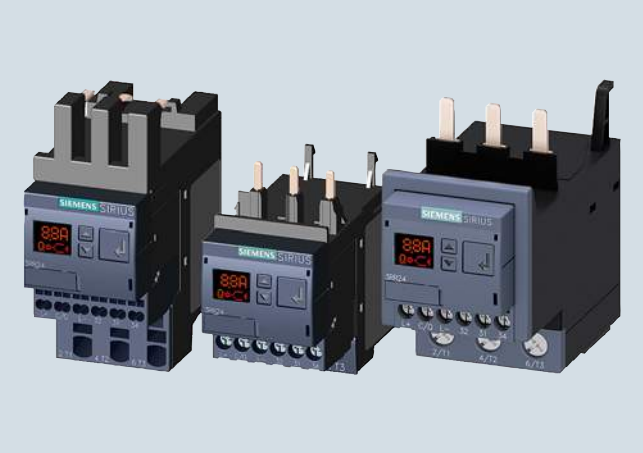
Accessories

	Use	Version	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Terminal supports for stand-alone installation[1]									
 3RU2916-3AA01	For 3RR21, 3RR22	For separate mounting of the overload relays or monitoring relays; screw and snap-on mounting onto TH 35 standard mounting rail according to IEC 60715			**Screw terminals**				
		• Screw connection	S00	▶	**3RU2916-3AA01**		1	1 unit	41F
			S0	▶	**3RU2926-3AA01**		1	1 unit	41F
 3RU2936-3AA01			S2	▶	**3RU2936-3AA01**		1	1 unit	41F
					Spring-type terminals				
 3RU2926-3AC01		• Spring-type connection	S00	5	**3RU2916-3AC01**		1	1 unit	41F
			S0	5	**3RU2926-3AC01**		1	1 unit	41F
Blank labels									
 3RT2900-1SB20	For 3RR21, 3RR22	**Unit labeling plates[2]** For SIRIUS devices							
		20 mm x 7 mm, titanium gray		20	**3RT2900-1SB20**		100	340 units	41B
Sealable covers									
 3RR2940	For 3RR21, 3RR22	**Sealable covers** For securing against unintentional or unauthorized adjustment of settings		2	**3RR2940**		1	5 units	41H
	For 3RR21	**Sealing foil** For securing against unauthorized adjustment of setting knobs		▶	**3TK2820-0AA00**		1	1 unit	41L
Tools for opening spring-type terminals									
 3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated		2	**Spring-type terminals** / **3RA2908-1A**		1	1 unit	41B

1) The accessories are exactly the same as the accessories for the 3RU21 thermal overload relay and the 3RB3 electronic overload relay, see page 7/88 onwards.

2) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/20.

Overview



SIRIUS 3RR2441, 3RR2442 and 3RR2443 current monitoring relays

More information

Home page, see www.siemens.com/relays
Industry Mall, see www.siemens.com/product?3RR24

The SIRIUS 3RR24 current monitoring relays for IO-Link are suitable for the load monitoring of motors or other loads. In three phases they monitor the rms value of AC currents for overshooting or undershooting of set threshold values.

Whereas apparent current monitoring is used above all in connection with the rated torque or in case of overload, the active current monitoring option, which is also selectable, can be used to observe and evaluate the load factor over a motor's entire torque range.

The 3RR24 current monitoring relays for IO-Link can be integrated directly in the feeder by mounting onto the 3RT2 contactor; separate wiring of the main circuit is therefore superfluous. No separate transformers are required.

For a line-oriented configuration or simultaneous use of an overload relay, terminal supports for stand-alone installation are available for separate standard rail mounting.

The SIRIUS 3RR24 current monitoring relays for IO-Link also offer many other options based upon the monitoring functions of the conventional SIRIUS 3RR2 monitoring relays:

- Measured value transmission to a controller, including resolution and unit, may be parameterizable as to which value is cyclically transmitted
- Transmission of alarm flags to a controller
- Full diagnosis capability by inquiry as to the cause of the fault in the diagnosis data record
- Remote parameterization is also possible, in addition to or instead of local parameterization
- Rapid parameterization of the same devices by duplication of the parameterization in the controller
- Parameter transmission by upload to a controller by IO-Link call or by parameter server (if IO-Link master from IO-Link Specification V 1.1 is used)
- Consistent central data storage in the event of parameter change locally or via a controller
- Automatic reparameterizing when devices are exchanged
- Blocking of local parameterization via IO-Link possible
- Faults are saved in parameterizable and non-volatile fashion to prevent an automatic start up after voltage failure and to make sure diagnostics data is not lost
- By integration into the automation level the option exists of parameterizing the monitoring relay at any time via a display unit or displaying the measured values in a control room or locally at the machine/control cabinet.

Even without communication via IO-Link the devices continue to function fully autonomously:

- Parameterization can take place locally at the device, independently of a controller.
- In the event of failure or before the controller becomes available the monitoring relays work as long as the control supply voltage (24 V DC) is present.
- If the monitoring relays are operated without the controller, the 3RR24 monitoring relays for IO-Link have, thanks to the integrated SIO mode, an additional semiconductor output, which switches when the adjustable warning threshold is exceeded.

Thanks to the combination of autonomous monitoring relay function and integrated IO-Link communication, redundant sensors and/or analog signal converters – which previously took over the transmission of measured values to a controller, leading to considerable extra cost and wiring outlay – are no longer needed.

Because the output relays are still present, the monitoring relays increase the functional reliability of the system, since only the controller can fulfill the control tasks if the current measured values are available, whereas the output relays can also be used for the disconnection of the system if limit values that cannot be reached during operation are exceeded.

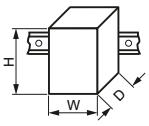
For further information on the IO-Link communication system, see page 2/101.

Notes on safety

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information on Industrial Security, see www.siemens.com/industrialsecurity.

3RR24 overview table

Features		3RR24	Benefits
General data			
Sizes Dimensions in mm (W x H x D) • Screw terminals		S00, S0, S2 S00: 45 x 79 x 80, S0: 45 x 87 x 91, S2: 55 x 99 x 112	• Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, soft starters, etc.) • Permit the mounting of slim-line and compact load feeders in widths of 45 mm (S00 and S0) and 55 mm (S2) • Simplify configuration
• Spring-type terminals		S00: 45 x 90 x 80, S0: 45 x 109 x 92, S2: 55 x 99 x 112	
Current range		S00: 1.6 ... 16 A S0: 4 ... 40 A S2: 8 ... 80 A	• Is adapted to the other devices in the SIRIUS modular system • Just a single version per size with a wide setting range enables easy configuration
Permissible ambient temperature			
During operation		-25 ... +60 °C	• Suitable for applications in the control cabinet, worldwide
Monitoring functions			
Current overshoot		✓ (Three-phase)	• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload • Enables detection of filter blockages or pumping against closed gate valves • Enables drawing conclusions about wear, poor lubrication or other maintenance-relevant phenomena
Current undershoot		✓ (Three-phase)	• Enables detection of overload due to a slipping or torn belt • Guarantees protection of pumps against dry running • Facilitates monitoring of the functions of resistive loads such as heaters • Permits energy savings through monitoring of no-load operation
Apparent current monitoring		✓ (Selectable)	• Precision current monitoring especially in a motor's rated and upper torque range
Active current monitoring		✓ (Selectable)	• Optimum current monitoring over a motor's entire torque range through the patented combination of power factor and apparent current monitoring
Range monitoring		✓ (Three-phase)	• Simultaneous monitoring of current overshoot and undershoot with a singe device
Phase failure, open circuit		✓ (Three-phase)	• Minimizes heating of three-phase motors during phase failure through immediate disconnection • Prevents operation of hoisting equipment with reduced load carrying capacity
Phase sequence monitoring		✓ (Selectable)	• Prevents starting of motors, pumps or compressors in the wrong direction of rotation
Internal ground-fault detection (residual current monitoring)		✓ (Selectable)	• Provides optimum protection of loads against high-resistance short circuits or ground faults due to moisture, condensed water, damage to the insulation material, etc. • Eliminates the need for additional special equipment • Saves space in the control cabinet • Reduces wiring overhead and costs
Blocking current monitoring		✓ (Selectable)	• Minimizes heating of three-phase motors when blocked during operation through immediate disconnection • Minimizes mechanical loading of the system by acting as an electronic shear pin
Operating hours counter		✓	• Gives the time during which there was a measurable current in at least 2 current paths • As an indicator for upcoming maintenance or replacement of machine and system components
Operating cycles counter		✓	• Is incremented by one each time a breaking operation is detected, in other words a transition from three-phase current flow to no measurable current flow • As an indicator for upcoming maintenance or replacement of contact blocks

Current and active current monitoring

Features	3RR24	Benefits
Features		
RESET function	✓	• Allows manual or automatic resetting of the relay • Resetting directly on the device, by switching the control supply voltage off and on or via IO-Link (remote RESET)
ON-delay time	0 … 999.9 s	• Enables motor starting without evaluation of the starting current • Can be used for monitoring motors with lengthy start up
Tripping delay time	0 … 999.9 s	• Permits brief threshold value violations during operation • Prevents frequent warnings and disconnections with currents near the threshold values
Operating and indicating elements	Displays and buttons	• For setting the threshold values and delay times • For selectable functions • For quick and selective diagnostics • Displays for permanent display of measured values
Integrated contacts	1 CO contact, 1 semiconductor output (in SIO mode)	• Enable disconnection of the system or process when there is an irregularity • Can be used to output signals
Design of load feeders		
Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	✓	• Provides optimum protection of the loads and operating personnel in the event of short circuits due to insulation faults or faulty switching operations
Electrical and mechanical matching to 3RT2 contactors	✓	• Simplifies configuration • Reduces wiring outlay and costs • Enables stand-alone installation as well as space-saving direct mounting
Spring-type connection system for main circuit (with S00, S0) and auxiliary circuits	✓ (Optional)	• Enables fast connections • Permits vibration-resistant connections • Enables maintenance-free connections
Other features		
Suitable for single and three-phase loads	✓	• Enables the monitoring of single-phase systems through parallel infeed at the contactor or looping the current through the three phase connections
Wide setting ranges	✓	• Reduce the number of variants • Minimize the configuration outlay and costs • Minimize storage overheads, storage costs, tied-up capital
Power supply	24 V DC	• Direct via IO-Link master or via an external auxiliary voltage independent of the IO-Link • Minimizes the configuring overhead and costs

✓ Available

Possible ways of combining the 3RR24 monitoring relay with the 3RT2 contactor for IO-Link

Monitoring relays	Current range	**Contactors** (type, size, rating)		
		3RT201	**3RT202**	**3RT203**
		S00	S0	S2
Type	A	3/4/5.5/7.5 kW	5.5/7.5/11/15/18.5 kW	18.5/22/30/37 kW
3RR2441	1.6 ... 16	✓	With stand-alone installation support	With stand-alone installation support
3RR2442	4 ... 40	With stand-alone installation support	✓	With stand-alone installation support
3RR2443	8 ... 80	With stand-alone installation support	With stand-alone installation support	✓

✓ Available

Notes:

Devices required for the communication via IO-Link:
- Any controller that supports the IO-Link (e.g. ET 200SP with CPU or S7-1200); see Catalog ST 70 "Products for Totally Integrated Automation".
- IO-Link master (e.g. CM 4xIO-Link for SIMATIC ET 200SP or SM 1278 for S7-1200); see pages 2/108, 2/109.

Each monitoring relay requires an IO-Link channel.

Article No. scheme

Product versions		Article number
3RR24 monitoring relay, digitally adjustable with IO-Link		**3RR2 4 4 □ – □ A A 4 0**
Size	S00	**1**
	S0	**2**
	S2	**3**
Connection type	Screw terminals	**1**
	Spring-type terminal	**2**
Example		**3RR2 4 4 1 – 1 A A 4 0**

Note:

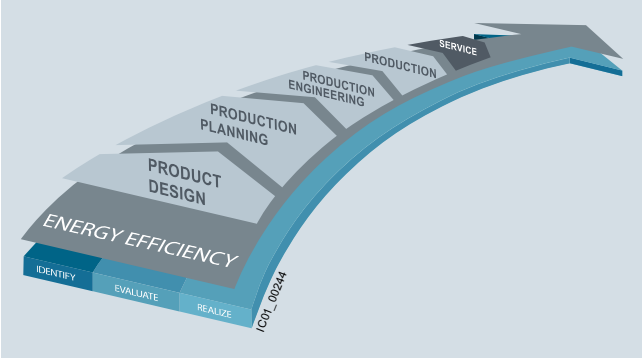
The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Can be mounted directly on 3RT2 contactors and 3RA23 reversing contactor assemblies, in other words, there is no need for additional wiring in the main circuit
- Optimally coordinated with the technical characteristics of the 3RT2 contactors
- No separate current transformer required
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Display of ACTUAL value and status messages
- All versions with removable control current terminals
- All versions with screw or spring-type terminals
- Simple determination of the threshold values through direct reference to actually measured values for setpoint loading
- Range monitoring and selectable active current measurement mean that only one device for monitoring a motor is required along the entire torque curve
- In addition to current monitoring it is also possible to monitor for current unbalance, broken cables, phase failure, phase sequence, residual current and motor blocking.
- Integrated counter for operating cycles and operating hours to support requirements-based maintenance of the monitored machine or application
- Simple cyclical transmission of the current measured values, relay switching states and events to a controller
- Remote parameterization
- Automatic reparameterizing when devices are exchanged
- Simple duplication of identical or similar parameterizations
- Reduction of control current wiring
- Elimination of testing costs and wiring errors
- Reduction of configuration work
- Integration in TIA means clear diagnostics if a fault occurs
- Cost saving and space saving in control cabinet due to the elimination of AI and IO modules as well as analog signal converters and duplicated sensors

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative SIRIUS industrial controls products can also make a major contribution to the energy efficiency of a plant (www.siemens.com/sirius/energysaving).

The 3RR2 monitoring relays contribute to energy efficiency throughout the plant as follows:

- Shutdown in the event of no-load operation (e.g. pump no-load operation)
- Load shedding of predefined loads in the event of current overshoots

Application

- Monitoring for current overshoot and undershoot
- Monitoring of broken conductors
- Monitoring of no-load operation and load shedding, e.g. in the event of a torn V-belt or no-load operation of a pump
- Monitoring of overload, e.g. on pumps due to a dirty filter system
- Monitoring the functionality of electrical loads such as heaters
- Monitoring of wrong phase sequence on mobile equipment such as compressors or cranes
- Monitoring of high-impedance faults to ground, e.g. caused by damaged insulation or moisture

The use of SIRIUS monitoring relays for IO-Link is particularly recommended for machines and plant in which these relays, in addition to their monitoring function, are to be connected to the automation level for the rapid, simple and fault-free provision of the current measured values and/or for remote parameterization.

The monitoring relays can either relieve the controller of monitoring tasks or, as a second monitoring entity in parallel to and independent of the controller, increase the reliability in the process or in the system. In addition, the elimination of AI and IO modules allows the width of the controller to be reduced despite significantly expanded functionality.

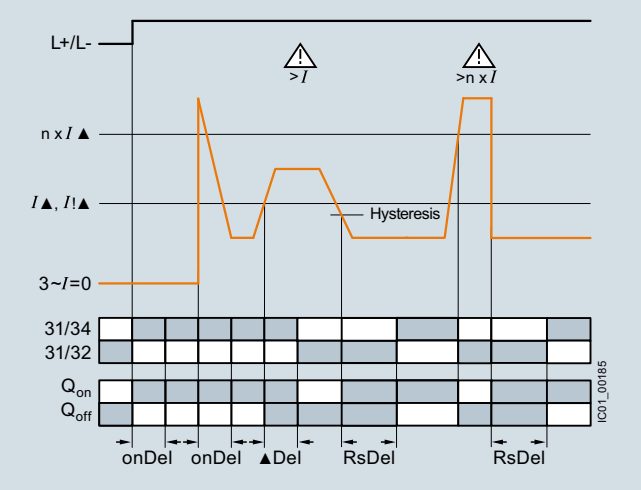
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16206/td	System Manual "SIRIUS – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318
Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", see https://support.industry.siemens.com/cs/ww/en/view/39714188	Manual "3UG4/3RR2 monitoring relays for IO-Link", see https://support.industry.siemens.com/cs/ww/en/view/54375430
	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16206/faq

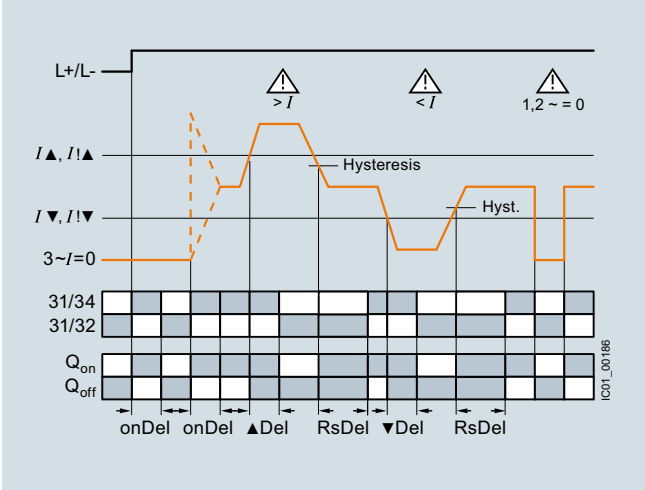
Function diagrams of 3RR24 for IO-Link, digitally adjustable

With the closed-circuit principle selected upon application of the control supply voltage

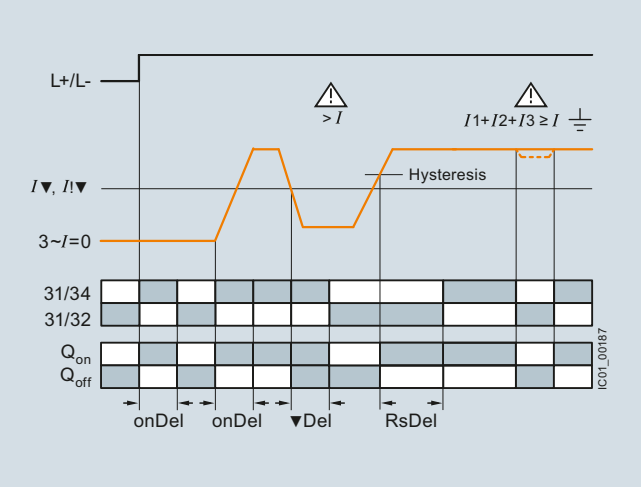
Current overshoot



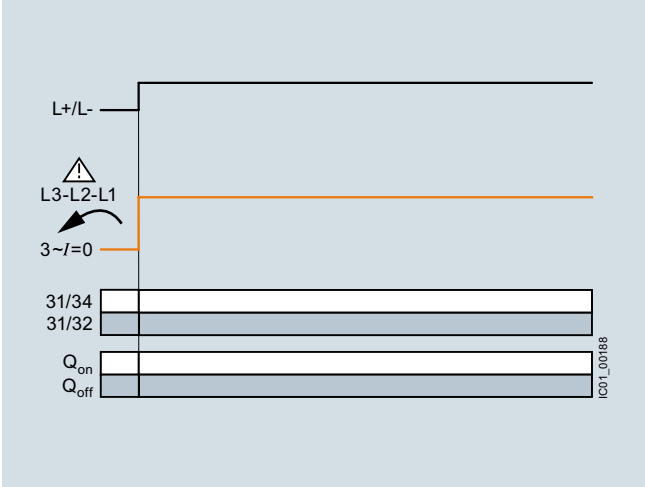
Range monitoring



Current undershoot with residual current monitoring



Phase sequence monitoring



Selection and ordering data

SIRIUS 3RR24 current monitoring relays for IO-Link


3RR2441-1AA40


3RR2442-1AA40


3RR2441-2AA40


3RR2442-2AA40


3RR2443-1AA40


3RR2443-3AA40

Size	Measuring range	Hysteresis	Supply voltage U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A	V	d					
• Digitally adjustable • LC display • Open or closed-circuit principle • 1 CO contact • 1 semiconductor output (in SIO mode) • 3-phase current monitoring • Active current or apparent current monitoring • Current unbalance monitoring • Phase sequence monitoring • Residual current monitoring • Blocking current monitoring • Operating hours counter • Operating cycles counter • Reclosing delay time 0 ... 300 min • Start-up delay 0 ... 999.9 s • Tripping delay 0 ... 999.9 s • Separate settings for warning and alarm thresholds • Auto or Manual RESET									
S00	1.6 ... 16	0.1 ... 3	24 DC	2	**3RR2441-☐AA40**		1	1 unit	41H
S0	4 ... 40	0.1 ... 8	24 DC	2	**3RR2442-☐AA40**		1	1 unit	41H
S2	8 ... 80	0.2 ... 16	24 DC	2	**3RR2443-☐AA40**		1	1 unit	41H

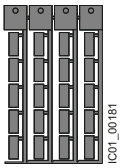
Type of electrical connection

• Screw terminals	**1**
• Spring-type terminal	**2**

10

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Accessories

	Use	Version	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Terminal supports for stand-alone installation[1]									
 3RU2916-3AA01	For 3RR24	For separate mounting of the overload relays or monitoring relays; screw and snap-on mounting onto TH 35 standard mounting rail according to IEC 60715			**Screw terminals**				
		• Screw connection	S00		**3RU2916-3AA01**		1	1 unit	41F
			S0		**3RU2926-3AA01**		1	1 unit	41F
 3RU2936-3AA01			S2		**3RU2936-3AA01**		1	1 unit	41F
					Spring-type terminals				
 3RU2926-3AC01		• Spring-type connection	S00	5	**3RU2916-3AC01**		1	1 unit	41F
			S0	5	**3RU2926-3AC01**		1	1 unit	41F
Blank labels									
 3RT2900-1SB20	For 3RR24	**Unit labeling plates[2]** For SIRIUS devices							
		20 mm x 7 mm, titanium gray		20	**3RT2900-1SB20**		100	340 units	41B
Sealable covers									
 3RR2940	For 3RR24	**Sealable covers** For securing against unintentional or unauthorized adjustment of settings		2	**3RR2940**		1	5 units	41H
Tools for opening spring-type terminals									
 3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated		2	**Spring-type terminals** **3RA2908-1A**		1	1 unit	41B

1) The accessories are exactly the same as the accessories for the 3RU21 thermal overload relay and the 3RB3 electronic overload relay, see page 7/88 onwards.

2) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/20.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3UG4 monitoring relay

More information
Home page, see www.siemens.com/relays
Industry Mall, see www.siemens.com/product?3UG45
Conversion tool, e.g. from 3UG3 to 3UG4, see www.siemens.com/sirius/conversion-tool

The field-proven SIRIUS monitoring relays for electrical and mechanical variables enable constant monitoring of all important characteristic quantities that provide information about the functional capability of a plant. Both sudden disturbances and gradual changes, which may indicate the need for maintenance, are detected. Thanks to their relay outputs, the monitoring relays permit direct disconnection of the affected system components as well as alerting (e.g. by switching a warning lamp).

Thanks to adjustable delay times the monitoring relays can respond very flexibly to brief faults such as voltage dips or load changes. This avoids unnecessary alarms and disconnections while enhancing plant availability.

The individual 3UG4 monitoring relays offer the following functions in various combinations:

- Undershooting and/or overshooting of liquid levels
- Phase sequence
- Phase failure, neutral conductor failure
- Phase asymmetry
- Undershooting and/or overshooting of limit values for voltage
- Undershooting and/or overshooting of limit values for current
- Undershooting and/or overshooting of limit values for power factor
- Monitoring of the active current or the apparent current
- Monitoring of the residual current
- Monitoring of the insulation resistance
- Undershooting and/or overshooting of limit values for speed

Article No. scheme

Product versions		Article number									
Monitoring relays		**3UG4**	□	□	□	–	□	□	□	□	**0**
Type of setting	e. g. 5 = analogically adjustable		□								
Functions	e.g. 11 = line monitoring			□	□						
Connection type	Screw terminals						**1**				
	Spring-type terminal						**2**				
Contacts	e.g. A = 1 CO contact							□			
Supply voltage	e.g. N2 = 160 ... 260 V AC								□	□	
Example		**3UG4**	**5**	**1**	**1**	**–**	**1**	**A**	**N**	**2**	**0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

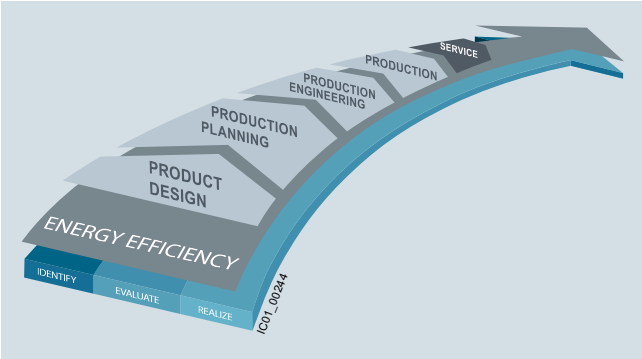
For your orders, please use the article numbers quoted in the selection and ordering data.

General data

Benefits

- Customary screw and spring-type terminals for quick and reliable wiring
- Fast commissioning thanks to menu-guided parameterization and actual value display for limit value determination
- Reduced space requirement in the control cabinet thanks to a consistent width of 22.5 mm
- Parameterizable monitoring functions, delay times, reset response, etc.
- Reduced stockkeeping thanks to minimized variance and large measuring ranges
- Wide-voltage power supply units for global applicability
- Device replacement without renewed wiring thanks to removable terminals
- Reliable system diagnostics thanks to actual value display and connectable fault memory
- Rapid diagnostics thanks to unambiguous error messages on the display

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative SIRIUS industrial controls products can also make a major contribution to the energy efficiency of a plant (www.siemens.com/sirius/energysaving).

The 3UG4 monitoring relays contribute to energy efficiency throughout the plant as follows:

- Shutdown in the event of no-load operation (e.g. pump no-load operation)
- Reactive-power compensation by means of power factor monitoring
- Load shedding of predefined loads in the event of current overshoots

Application

The SIRIUS 3UG4 monitoring relays monitor the most diverse electrical and mechanical quantities in the feeder, and provide reliable protection against damage in the plant. For this purpose, they offer freely parameterizable limit values and diverse options for adapting to the respective task, and in the event of a fault, they provide clear diagnostics information.

The digitally adjustable products also display the current measured values direct on the device. This not only facilitates the display of valuable plant status information during operation, it also enables adjustment of the monitored limit values in accordance with the actual conditions.

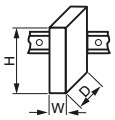
The positive result: More selective avoidance of production faults – sustained increases in availability and productivity.

The 3UG4 monitoring relays are available for the following applications:

- Line and single-phase voltage monitoring
- Single-phase current monitoring or power factor and active current monitoring
- Residual current monitoring
- Insulation monitoring
- Level monitoring
- Speed monitoring

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16367/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16367/faq
Manual and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/54397927	

Type			3UG
General data			
Dimensions (W x H x D)			
• For 2 terminal blocks			
- Screw terminals		mm	22.5 x 83 x 91
- Spring-type terminals		mm	22.5 x 84 x 91
• For 3 terminal blocks			
- Screw terminals		mm	22.5 x 92 x 91
- Spring-type terminals		mm	22.5 x 94 x 91
• For 4 terminal blocks			
- Screw terminals		mm	22.5 x 103 x 91
- Spring-type terminals		mm	22.5 x 103 x 91
Permissible ambient temperature			
• During operation		°C	-25 ... +60
Connection type			**Screw terminals**
• Terminal screw			M3 (for standard screwdriver, size 2 and Pozidriv 2)
• Solid		mm^2	1 x (0.5 ... 4)/2 x (0.5 ... 2.5)
• Finely stranded with end sleeve		mm^2	1 x (0.5 ... 2.5)/2 x (0.5 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)
Connection type			**Spring-type terminals**
• Solid		mm^2	2 x (0.25 ... 1.5)
• Finely stranded, with end sleeve acc. to DIN 46228		mm^2	2 x (0.25 ... 1.5)
• Finely stranded		mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)

Overview

SIRIUS 3UG4615 monitoring relay

Solid-state line monitoring relays provide maximum protection for mobile machines and plants or for unstable networks. Network and voltage faults can be detected early and rectified before far greater damage ensues.

Depending on the version, the relays monitor phase sequence, phase failure with and without N conductor monitoring, phase asymmetry, undervoltage or overvoltage.

Phase asymmetry is evaluated as the difference between the greatest and the smallest phase voltage relative to the greatest phase voltage. Undervoltage or overvoltage exists when at least one phase voltage deviates by 20 % from the set rated system voltage or the directly set limit values are overshot or undershot. The rms value of the voltage is measured.

With the 3UG4617 or 3UG4618 relay, a wrong direction of rotation can also be corrected automatically.

Benefits

- Can be used without auxiliary voltage in any network from 160 to 630 V AC worldwide thanks to wide voltage range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Permanent display of actual value and network fault type on the digital versions
- Automatic correction of the direction of rotation by distinguishing between power system faults and wrong phase sequence
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The relays are used above all for mobile equipment, e.g. air conditioning compressors, refrigerating containers, building site compressors and cranes.

Function	Application
Phase sequence	• Direction of rotation of the drive
Phase failure	• A fuse has tripped • Failure of the control supply voltage • Broken cable
Phase asymmetry	• Overheating of the motor due to asymmetrical voltage • Detection of asymmetrically loaded networks
Undervoltage	• Increased current on a motor with corresponding overheating • Unintentional resetting of a device • Network collapse, particularly with battery power
Overvoltage	• Protection of a plant against destruction due to overvoltage

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Technical specifications

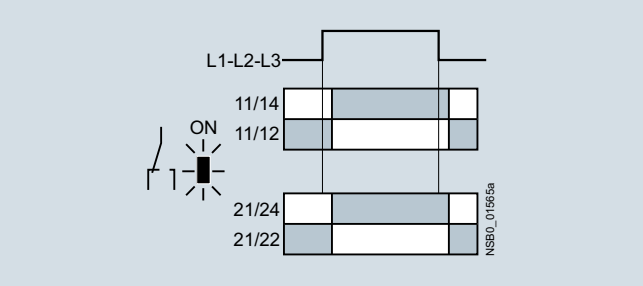
3UG4511 monitoring relays

The 3UG4511 phase sequenced relay monitors the phase sequence in a three-phase network. No adjustments are required for operation. The device has an internal power supply and works using the closed-circuit principle. If the phase sequence at the terminals L1-L2-L3 is correct, the output relay picks up after the delay time has elapsed and the LED is lit. If the phase sequence is wrong, the output relay remains in its rest position.

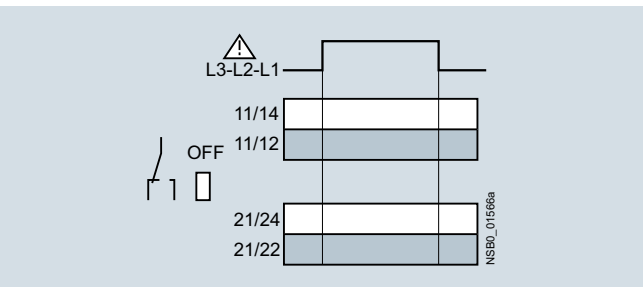
Note:

When one phase fails, connected loads (motor windings, lamps, transformers, coils, etc.) create a feedback voltage at the terminal of the failed phase due to the network coupling. Because the 3UG4511 relays are not resistant to voltage feedback, such a phase failure is not detected. Should this be required, then the 3UG4512 monitoring relay must be used.

Correct phase sequence



Wrong phase sequence



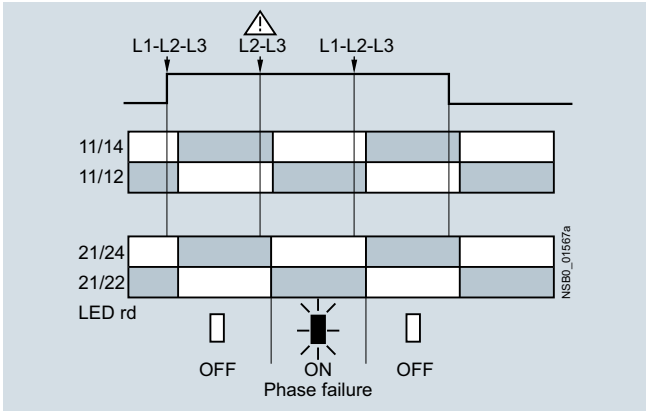
3UG4512 monitoring relays

The 3UG4512 line monitoring relay monitors three-phase networks with regard to phase sequence, phase failure and phase asymmetry of 10 %. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V AC and feedback through the load of up to 90 %. The device has an internal power supply and works using the closed-circuit principle. No adjustments are required. If the line voltage is switched on, the green LED will light up. If the phase sequence at the terminals L1-L2-L3 is correct, the output relay picks up. If the phase sequence is wrong, the red LED flashes and the output relay remains in its rest position. If a phase fails, the red LED is permanently lit and the output relay drops.

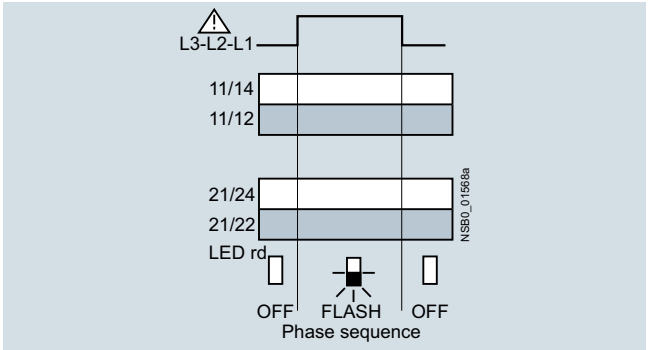
Note:

The red LED is a fault diagnostic indicator and does not show the current relay status. The 3UG4512 monitoring relay is suitable for line frequencies of 50/60 Hz.

Phase failure



Wrong phase sequence



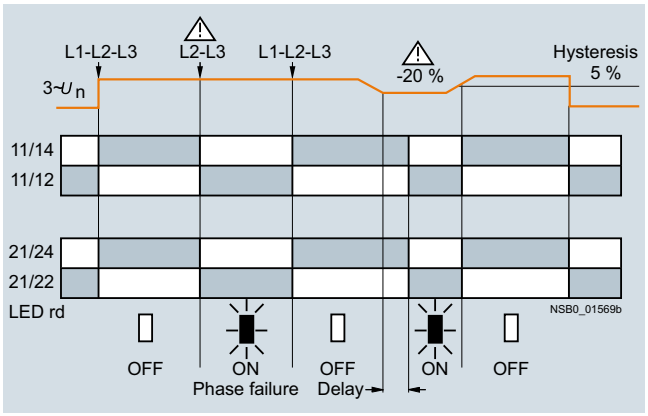
3UG4513 monitoring relays

The 3UG4513 line monitoring relay monitors three-phase networks with regard to phase sequence, phase failure, phase asymmetry and undervoltage of 20 %. The device has an internal power supply and works using the closed-circuit principle. The hysteresis is 5 %. The integrated response delay time T is adjustable from 0 to 20 s and responds to undervoltage. If the direction is incorrect, the device switches off immediately. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V and feedback through the load of up to 80 %. If the line voltage is switched on, the green LED will light up. If the phase sequence at the terminals L1-L2-L3 is correct, the output relay picks up. If the phase sequence is wrong, the red LED flashes and the output relay remains in its rest position. If a phase fails, the red LED is permanently lit and the output relay drops.

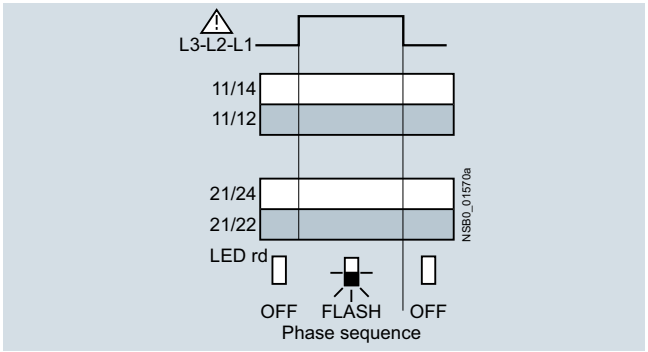
Note:

The red LED is a fault diagnostic indicator and does not show the current relay status. The 3UG4513 monitoring relay is suitable for line frequencies of 50/60 Hz.

Phase failure and undervoltage



Wrong phase sequence



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Line monitoring

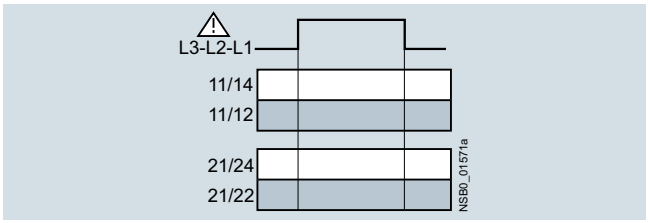
3UG4614 monitoring relays

The 3UG4614 line monitoring relay has a wide voltage range input and an internal power supply. The device is equipped with a display and is parameterized using three buttons. The unit monitors three-phase networks with regard to phase asymmetry from 5 to 20 %, phase failure, undervoltage and phase sequence. The hysteresis is adjustable from 1 to 20 V. In addition the device has a response delay and ON-delay from 0 to 20 s in each case. The integrated response delay time responds to phase asymmetry and undervoltage. If the direction is incorrect, the device switches off immediately. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V and feedback through the load of up to 80 %.

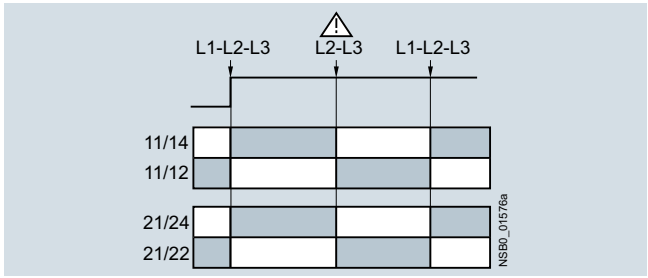
The 3UG4614 monitoring relay can be operated on the basis of either the open-circuit or closed-circuit principle and with manual or Auto RESET.

With the closed-circuit principle selected

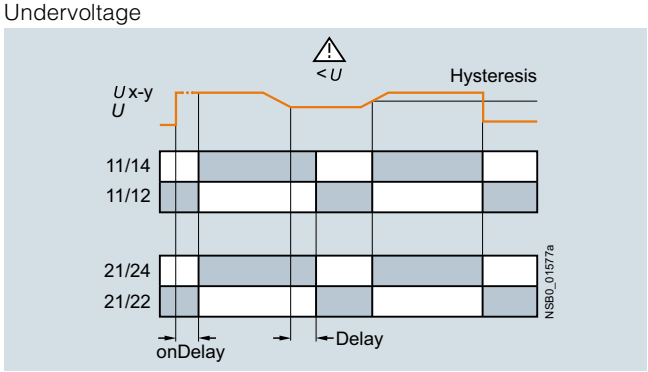
Wrong phase sequence



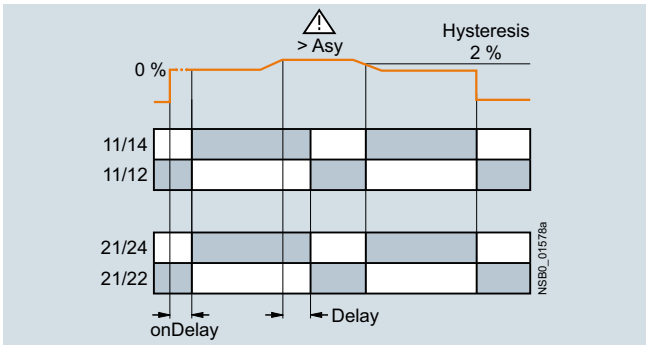
Phase failure



Undervoltage



Asymmetry



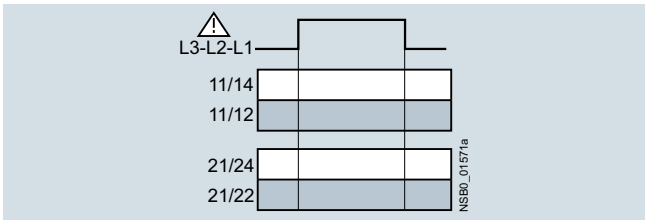
3UG4615/3UG4616 monitoring relays

The 3UG4615/3UG4616 line monitoring relay has a wide voltage range input and an internal power supply. The device is equipped with a display and is parameterized using three buttons. The 3UG4615 device monitors three-phase networks with regard to phase failure, undervoltage, overvoltage and phase sequence. The 3UG4616 monitoring relay monitors the neutral conductor as well. The hysteresis is adjustable from 1 to 20 V. In addition the device has two separately adjustable delay times for overvoltage and undervoltage from 0 to 20 s in each case. If the direction of rotation is incorrect, the device switches off immediately.
Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V and feedback through the load of up to 80 %.

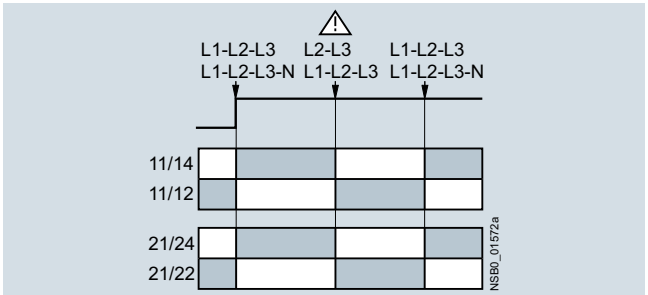
The 3UG4615/3UG4616 monitoring relay can be operated on the basis of either the open-circuit or closed-circuit principle and with manual or Auto RESET.

With the closed-circuit principle selected

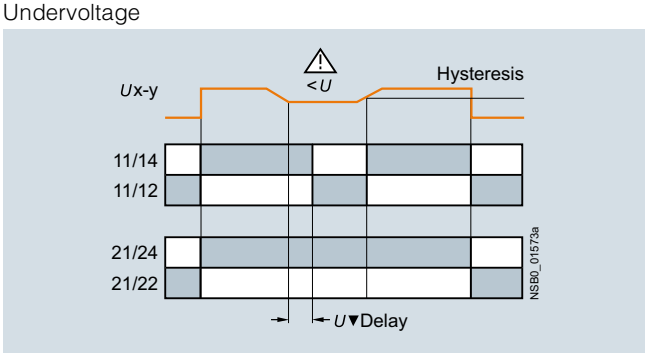
Wrong phase sequence



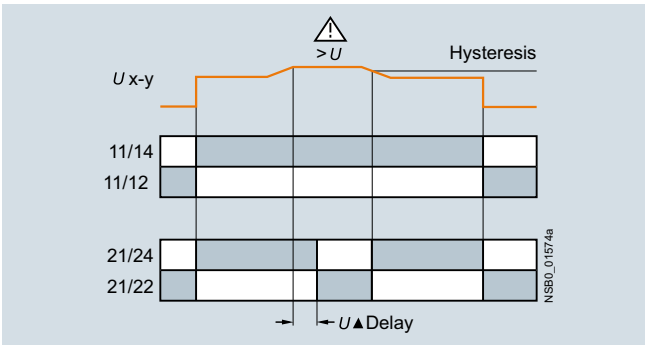
Phase failure



Undervoltage



Overvoltage

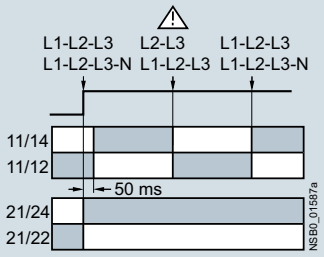


3UG4617/3UG4618 monitoring relays

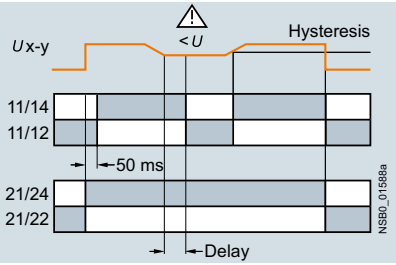
The 3UG4617/3UG4618 line monitoring relay has an internal power supply and can automatically correct a wrong direction of rotation. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V AC and feedback through the load of up to 80 %. The device is equipped with a display and is parameterized using three buttons. The 3UG4617 line monitoring relay unit monitors three-phase networks with regard to phase sequence, phase failure, phase asymmetry, undervoltage and overvoltage. The 3UG4618 monitoring relay monitors the neutral conductor as well. The hysteresis is adjustable from 1 to 20 V. In addition the device has delay times from 0 to 20 s in each case for over-voltage, undervoltage, phase failure and phase asymmetry. The 3UG4617/3UG4618 monitoring relay can be operated on the basis of either the open-circuit or closed-circuit principle and with manual or Auto RESET. The one changeover contact is used for warning or disconnection in the event of power system faults (voltage, asymmetry), the other responds only to a wrong phase sequence. In conjunction with a contactor reversing assembly it is thus possible to change the direction automatically.

With the closed-circuit principle selected

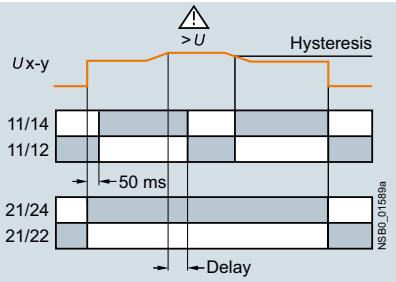
Phase failure



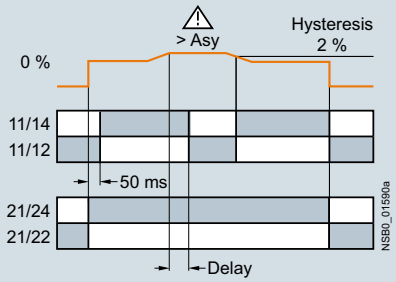
Undervoltage



Overvoltage



Asymmetry



Type		3UG4511 ... 3UG4513, 3UG4614 ... 3UG4618
General data		
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III acc. to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Load capacity of the output relay • Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V • DC-13/125 V • DC-13/250 V	 A A A A	 3 1 0.2 0.1
Minimum contact load at 17 V DC	mA	5
Electrical endurance AC-15	Million operating cycles	0.1
Mechanical endurance	Million operating cycles	10

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Selection and ordering data

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H


3UG4511-1AP20


3UG4615-1CR20


3UG4616-1CR20


3UG4617-1CR20


3UG4618-1CR20


3UG4511-2BP20


3UG4512-2BR20

Adjustable hysteresis	Under-voltage detection	Over-voltage detection	Stabilization time adjustable stDEL	Tripping delay time adjustable Del	Version of auxiliary contacts	Measurable line voltage[1]	SD	Screw terminals	SD	Spring-type terminals
			s	s	CO contact	V	d	Article No. Price per PU	d	Article No. Price per PU
Monitoring of phase sequence										
Auto RESET										
--	--	--	--	--	1	160 … 260 AC	2	**3UG4511-1AN20**	2	**3UG4511-2AN20**
					2		2	**3UG4511-1BN20**	2	**3UG4511-2BN20**
					1	320 … 500 AC	2	**3UG4511-1AP20**	2	**3UG4511-2AP20**
					2		2	**3UG4511-1BP20**	2	**3UG4511-2BP20**
					1	420 … 690 AC	2	**3UG4511-1AQ20**	5	**3UG4511-2AQ20**
					2		2	**3UG4511-1BQ20**	5	**3UG4511-2BQ20**
Monitoring of phase sequence, phase failure and phase asymmetry										
Auto RESET, closed-circuit principle, asymmetry threshold permanently 10 %										
--	--	--	--	--	1	160 … 690 AC	2	**3UG4512-1AR20**	2	**3UG4512-2AR20**
					2		2	**3UG4512-1BR20**	2	**3UG4512-2BR20**
Monitoring of phase sequence, phase failure, asymmetry and undervoltage										
Analogically adjustable, Auto RESET, closed-circuit principle, asymmetry and undervoltage threshold permanently 20 %										
5 % of set value	✓	--	--	0.1 … 20	2	160 … 690 AC	2	**3UG4513-1BR20**	2	**3UG4513-2BR20**
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle, asymmetry threshold 0 or 5 ... 20 %										
adjustable 1 ... 20 V	✓	--	0.1 ... 20	0.1 … 20	2	160 … 690 AC	2	**3UG4614-1BR20**	2	**3UG4614-2BR20**
Monitoring of phase sequence, phase failure, overvoltage and undervoltage										
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle										
adjustable 1 ... 20 V	✓	✓	--	0.1 … 20[2]	2[2]	160 … 690 AC	2	**3UG4615-1CR20**	2	**3UG4615-2CR20**
Monitoring of phase sequence, phase and N conductor failure, overvoltage and undervoltage										
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle										
adjustable 1 ... 20 V	✓	✓	--	0.1 … 20[2]	2[2]	90… 400 AC against N	2	**3UG4616-1CR20**	2	**3UG4616-2CR20**
Automatic correction of the direction of rotation in case of wrong phase sequence, phase failure, asymmetry, overvoltage and undervoltage										
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle, asymmetry threshold 0 or 5 ... 20 %										
adjustable 1 ... 20 V	✓	✓	--	0.1 … 20	2[3]	160 … 690 AC	2	**3UG4617-1CR20**	2	**3UG4617-2CR20**
Automatic correction of the direction of rotation in case of wrong phase sequence, phase and N conductor failure, phase asymmetry, overvoltage and undervoltage										
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle, asymmetry threshold 0 or 5 ... 20 %										
adjustable 1 ... 20 V	✓	✓	--	0.1 … 20	2[3]	90 … 400 AC against N	2	**3UG4618-1CR20**	2	**3UG4618-2CR20**

✓ Function available
-- Function not available

[1] Absolute limit values.
[2] 1 CO contact each and one tripping delay time each for U_{min} and U_{max}.
[3] 1 CO contact each for power system fault and phase sequence correction.

For accessories, see page 10/110.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3UG4631 monitoring relay

The relays monitor single-phase AC voltages (rms value) and DC voltages against the set threshold value for overshoot and undershoot. The devices differ with regard to their power supply (internal or external).

Benefits

- Versions with wide voltage supply range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display of ACTUAL value and status messages
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Protection of a plant against destruction due to overvoltage
- Switch-on of a plant at a defined voltage and higher
- Protection from undervoltage due to overloaded control supply voltages, particularly with battery power
- Threshold switch for analog signals from 0.1 to 10 V

Technical specifications

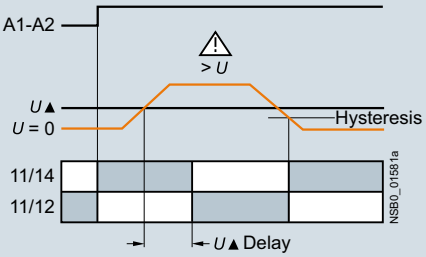
3UG4631/3UG4632 monitoring relays

The 3UG4631/3UG4632 voltage monitoring relay is supplied with an auxiliary voltage of 24 V AC/DC or 24 to 240 V AC/DC and performs overshoot, undershoot or range monitoring of the voltage depending on parameterization. The device is equipped with a display and is parameterized using three buttons.

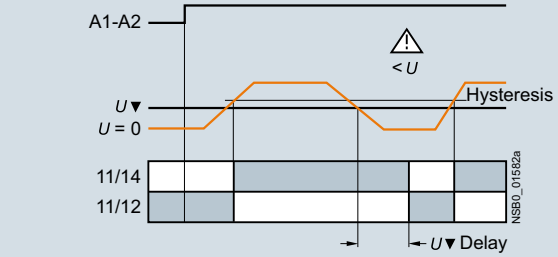
The measuring range extends from 0.1 to 60 V or 10 to 600 V AC/DC. The threshold values for overshoot or undershoot can be freely configured within this range. If one of these threshold values is reached, the output relay responds according to the set principle of operation as soon as the delay time has elapsed. This delay time U_{Del} can be adjusted between 0.1 s and 20 s. The hysteresis is adjustable from 0.1 to 30 V or 0.1 to 300 V. The device can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET. One output changeover contact is available as signaling contact.

With the closed-circuit principle selected

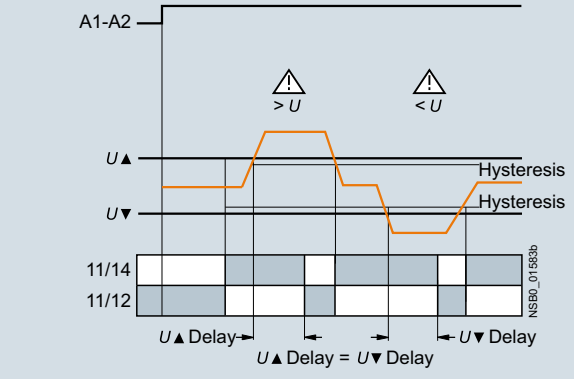
Overvoltage



Undervoltage



Range monitoring



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Voltage monitoring

3UG4633 monitoring relays

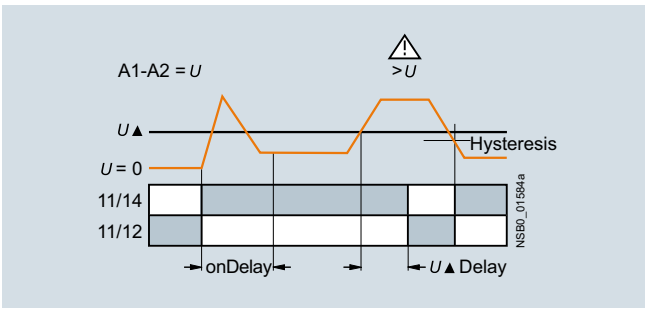
The 3UG4633 voltage monitoring relay has an internal power supply and performs overshoot, undershoot or range monitoring of the voltage depending on parameterization. The device is equipped with a display and is parameterized using three buttons.

The operating and measuring range extends from 17 to 275 V AC/DC. The threshold values for overshoot or undershoot can be freely configured within this range. If one of these threshold values is reached, the output relay responds according to the set principle of operation as soon as the tripping delay time has elapsed. This delay time U_{Del} can also be adjusted, just like the ON-delay time on_{Del}, from 0.1 to 20 s.

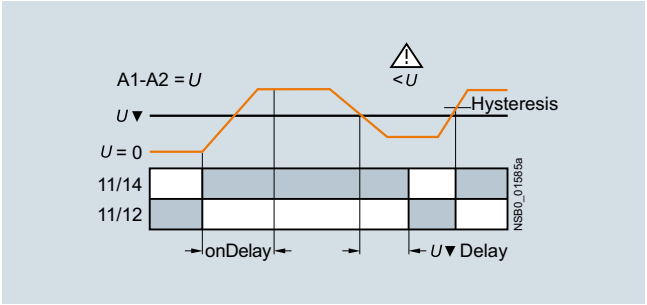
The hysteresis is adjustable from 0.1 to 150 V. The device can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET. One output changeover contact is available as signaling contact.

With the closed-circuit principle selected

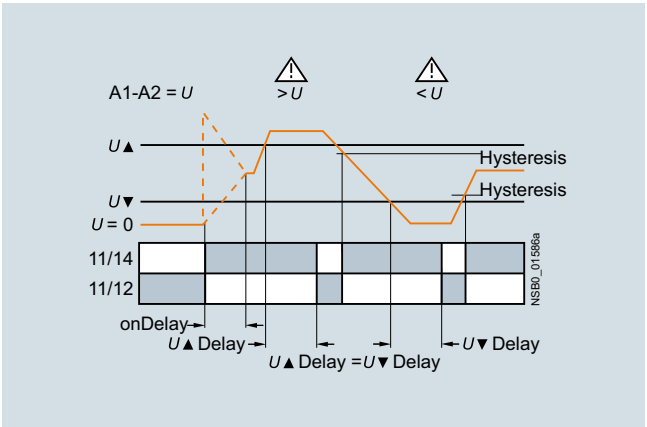
Overvoltage



Undervoltage



Range monitoring



Type		3UG4631	3UG4632	3UG4633
General data				
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III acc. to VDE 0110	V	690		
Rated impulse withstand voltage U_{imp}	kV	6		
Measuring circuit				
Permissible measuring range single-phase AC/DC voltage	V	0.1 … 68	10 … 650	17 … 275
Measuring frequency	Hz	40 ... 500		
Setting range single-phase voltage	V	0.1 ... 60	10 ... 600	17 ... 275
Control circuit				
Load capacity of the output relay • Thermal current I_{th}	A	5		
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V • DC-13/125 V • DC-13/250 V	 A A A A	 3 1 0.2 0.1		
Minimum contact load at 17 V DC	mA	5		

Selection and ordering data

- Digitally adjustable, with illuminated LCD
- Auto or Manual RESET
- Open or closed-circuit principle
- 1 CO contact

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

3UG4631-1AA30

3UG4633-2AL30

Measuring range	Hysteresis adjustable	Rated control supply voltage U_s	SD	**Screw terminals**		SD	**Spring-type terminals**	
				Article No.	Price per PU		Article No.	Price per PU
V	V	V	d			d		
Internal power supply, without auxiliary voltage, separately adjustable ON-delay and tripping delay 0.1 ... 20 s								
17 ... 275 AC/DC	0.1 ... 150	17 ... 275 AC/DC[1]	2	**3UG4633-1AL30**		2	**3UG4633-2AL30**	
Supplied from an external auxiliary voltage, tripping delay adjustable 0.1 ... 20 s								
0.1 ... 60 AC/DC	0.1 ... 30	24 AC/DC	2	**3UG4631-1AA30**		2	**3UG4631-2AA30**	
10 ... 600 AC/DC	0.1 ... 300		2	**3UG4632-1AA30**		2	**3UG4632-2AA30**	
0.1 ... 60 AC/DC	0.1 ... 30	24 ... 240 AC/DC	2	**3UG4631-1AW30**		2	**3UG4631-2AW30**	
10 ... 600 AC/DC	0.1 ... 300		2	**3UG4632-1AW30**		2	**3UG4632-2AW30**	

[1] Absolute limit values.

For accessories, see page 10/110.

Overview

SIRIUS 3UG4622 monitoring relay

The relays monitor single-phase AC currents (rms value) and DC currents against the set threshold value for overshoot and undershoot. They differ with regard to their measuring ranges and control supply voltage types.

Benefits

- Versions with wide voltage supply range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display of ACTUAL value and status messages
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Overcurrent and undercurrent monitoring
- Monitoring the functionality of electrical loads
- Open-circuit monitoring
- Threshold switch for analog signals from 4 to 20 mA

Technical specifications

3UG4621/3UG4622 monitoring relays

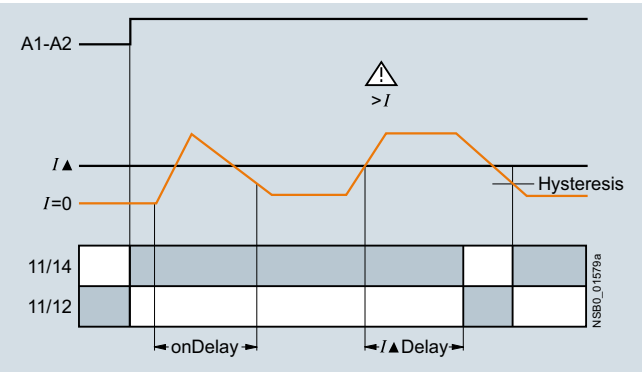
The 3UG4621 or 3UG4622 current monitoring relay is supplied with an auxiliary voltage of 24 V AC/DC or 24 to 240 V AC/DC and performs overshoot, undershoot or range monitoring of the current depending on parameterization. The device is equipped with a display and is parameterized using three buttons.

The measuring range extends from 3 to 500 mA or 0.05 to 10 A. The rms value of the current is measured. The threshold values for overshoot or undershoot can be freely configured within this range. If one of these threshold values is reached, the output relay responds according to the set principle of operation as soon as the tripping delay time I_{Del} has elapsed. This time and the ON-delay time on_{Del} are adjustable from 0.1 to 20 s.

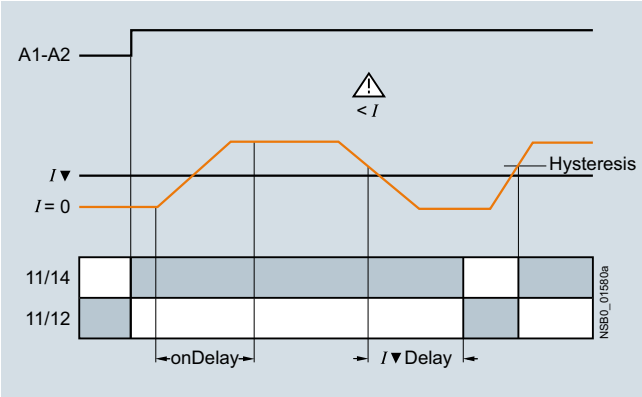
The hysteresis is adjustable from 0.1 to 250 mA or 0.01 to 5 A. The device can be operated with Manual or Auto RESET and on the basis of either the open-circuit or closed-circuit principle. The following options are available: response of the output relay when the control supply voltage U_s = ON is applied or not until the lower measuring range limit of the measuring current (I > 3 mA/50 mA) is reached. One output changeover contact is available as signaling contact.

With the closed-circuit principle selected upon application of the control supply voltage

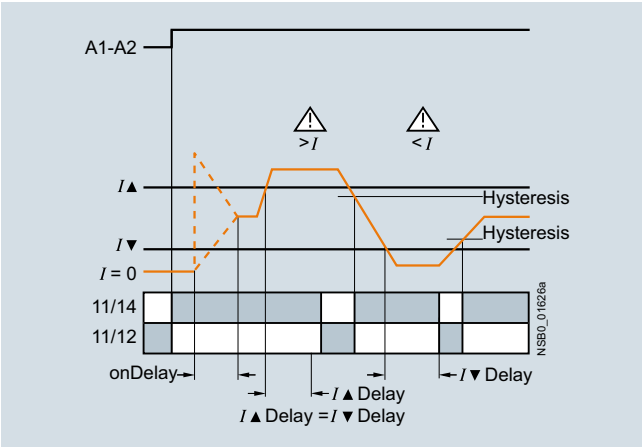
Current overshoot



Current undershoot



Range monitoring



Type		3UG4621-.AA	3UG4621-.AW	3UG4622-.AA	3UG4622-.AW
General data					
Rated insulation voltage U_i Pollution degree 3; overvoltage category III according to VDE 0110	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Measuring circuit					
Measuring range for single-phase AC/DC current	A	0.003 … 0.6		0.05 … 15	
Measuring frequency	Hz	40 ... 500			
Setting range for single-phase current	A	0.003 ... 0.5		0.05 ... 10	
Load supply voltage	V	24	max. 300[1] max. 500[2]	24	max. 300[1] max. 500[2]
Control circuit					
Load capacity of the output relay • Thermal current I_{th}	A	5			
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V • DC-13/125 V • DC-13/250 V	 A A A A	 3 1 0.2 0.1			
Minimum contact load at 17 V DC	mA	5			

1) With protective separation.

2) With simple separation.

Selection and ordering data

- Digitally adjustable, with illuminated LCD
- Auto or Manual RESET
- Open or closed-circuit principle
- 1 CO contact

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H


3UG4621-1AA30


3UG4622-2AW30

Measuring range	Hysteresis adjustable	Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals	
				Article No.	Price per PU		Article No.	Price per PU
		V	d			d		
Monitoring of undercurrent and overcurrent, start up delay and tripping delay times can be adjusted separately 0.1 ... 20 s								
3 … 500 mA AC/DC 0.05 … 10 A AC/DC	0.1 ... 250 mA 0.01 ... 5 A	24 AC/DC [1]	2 2	**3UG4621-1AA30** **3UG4622-1AA30**		2 2	**3UG4621-2AA30** **3UG4622-2AA30**	
3 … 500 mA AC/DC 0.05 … 10 A AC/DC	0.1 ... 250 mA 0.01 ... 5 A	24 ... 240 AC/DC [2]	2 2	**3UG4621-1AW30** **3UG4622-1AW30**		2 2	**3UG4621-2AW30** **3UG4622-2AW30**	

1) No electrical separation. Load supply voltage 24 V.

2) Electrical separation between control circuit and measuring circuit. Load supply voltage for protective separation max. 300 V, for simple isolation max. 500 V.

For accessories, see page 10/110.

With AC currents I > 10 A it is possible to use 4NC current transformers as an accessory; see Catalog LV 10 "Low-Voltage Power Distribution and Electrical Installation Technology".

Power factor and active current monitoring

Overview

SIRIUS 3UG4641 monitoring relay

The 3UG4641 power factor and active current monitoring device enables the load monitoring of motors.

Whereas power factor (p.f.) monitoring is used above all for monitoring no-load operation, the active current monitoring option can be used to observe and evaluate the load factor over the entire torque range.

Benefits

- Can be used worldwide thanks to wide voltage range from 90 to 690 V (absolute limit values)
- Monitoring of even small single-phase motors with a no-load supply current below 0.5 A
- Simple determination of threshold values by the direct collection of measured variables on motor loading
- Range monitoring and active current measurement enable detection of cable breaks between control cabinets and motors, as well as phase failures
- Cos φ or I_{res} (active current) can be selected as the measurement principle
- Width 22.5 mm
- All versions with removable terminals

Application

- No-load monitoring and load shedding, such as in the event of a V-belt tear
- Underload monitoring in the low-end performance range, e.g. in the event of pump no-load operation
- Monitoring of overload, e.g. due to a dirty filter system
- Simple power factor monitoring in power systems for control of compensation equipment
- Broken cable between control cabinet and motor

Technical specifications

3UG4641 monitoring relays

The 3UG4641 monitoring relay is self-powered and serves the single-phase monitoring of the power factor or performs overshoot, undershoot or range monitoring of the active current depending on how it is parameterized. The load to be monitored is connected upstream of the IN terminal. The load current flows through the terminals IN and Ly/N. The setting range for the power factor is 0.1 to 0.99 and for the active current I_{res} it is 0.2 to 10 A. If the control supply voltage is switched on and no load current flows, the display will show I < 0.2 and a symbol for overrange, underrange or range monitoring. If the motor is now switched on and the current exceeds 0.2 A, the set ON-delay time begins. During this time, if the set limit values are undershot or exceeded, this does not lead to a relay reaction of the changeover contact. If the operational flowing active current and/or the power factor value falls below or exceeds the respective set threshold value, the spike delay begins. When this time has expired, the relay changes its switch position. The relevant measured variables for overshooting and undershooting in the display flash. If monitoring for active current undershoot is switched off (I_{res}▼ = OFF), and if the load current undershoots the lower measuring range threshold (0.2 A), the CO contacts remain unchanged. If a threshold value is set for the monitoring of active current undershooting, then undershooting of the measuring range threshold (0.2 A) will result in a response of the CO contacts.

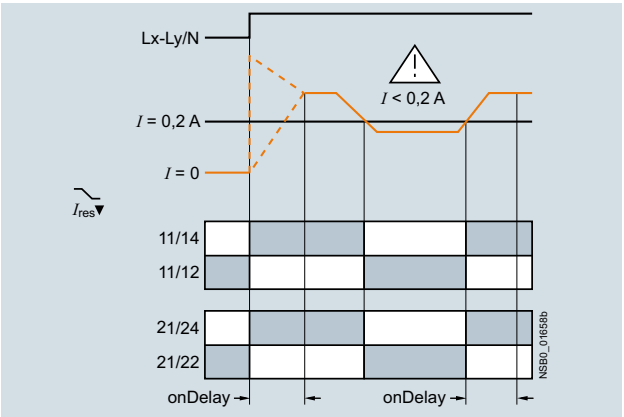
The relay operates either according to the open-circuit or closed-circuit principle. If the device is set to Auto RESET (Memory = No), depending on the set principle of operation, the switching relay returns to its initial state and the flashing ends when the hysteresis threshold is reached.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continue to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2 seconds, or by switching the supply voltage off and back on again.

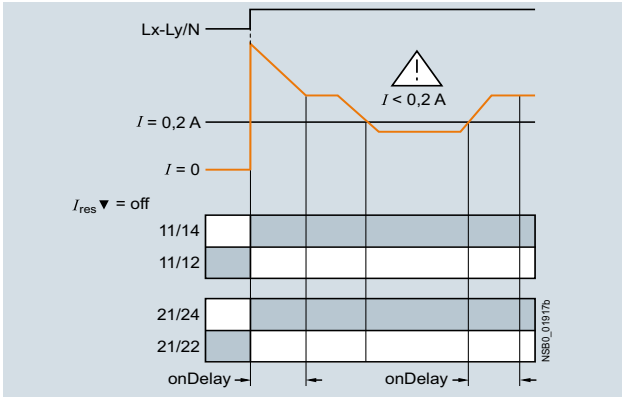
With the closed-circuit principle selected

Response in the event of undershooting the measuring range limit

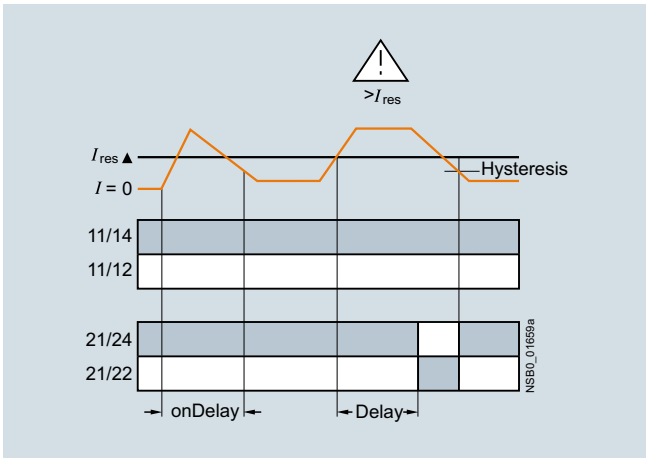
- With activated monitoring of I_{res}▼



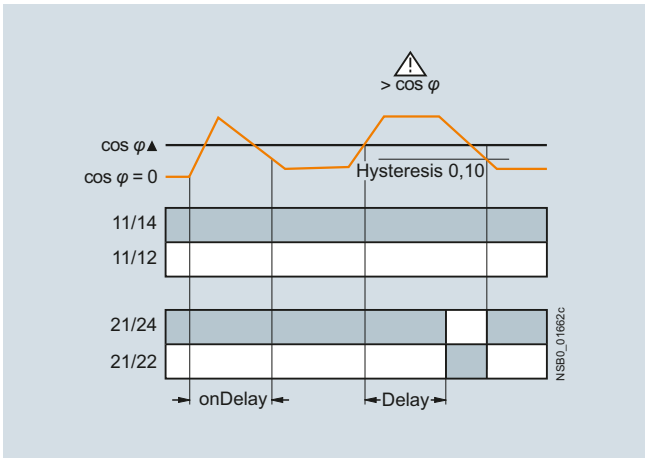
- With deactivated monitoring of active current undershooting



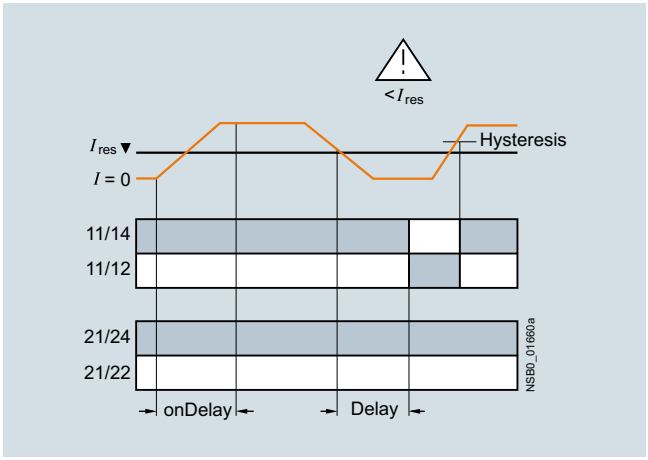
Overshooting of active current



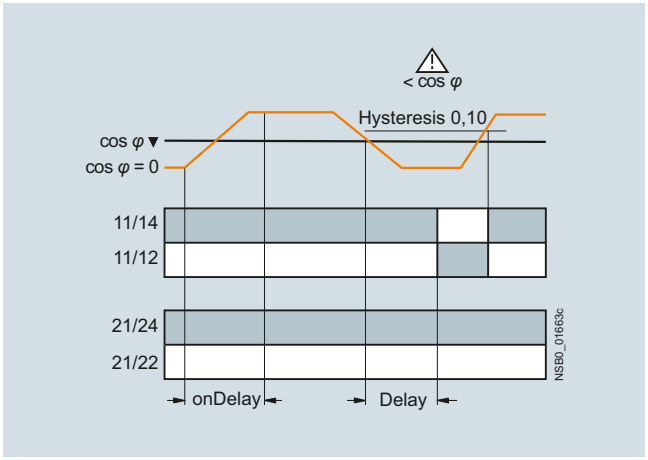
Overshooting of power factor



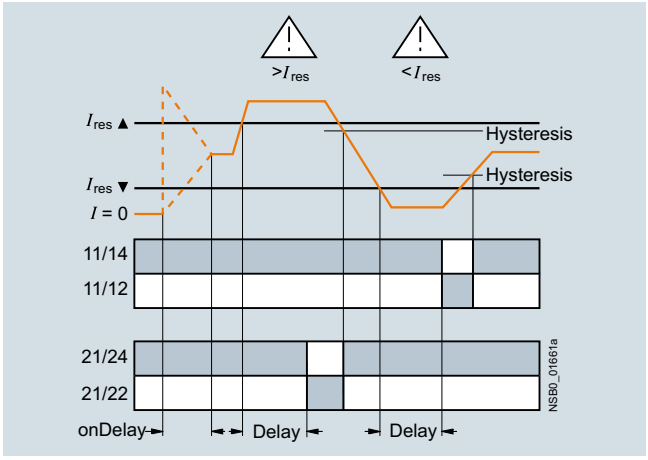
Undershooting of active current



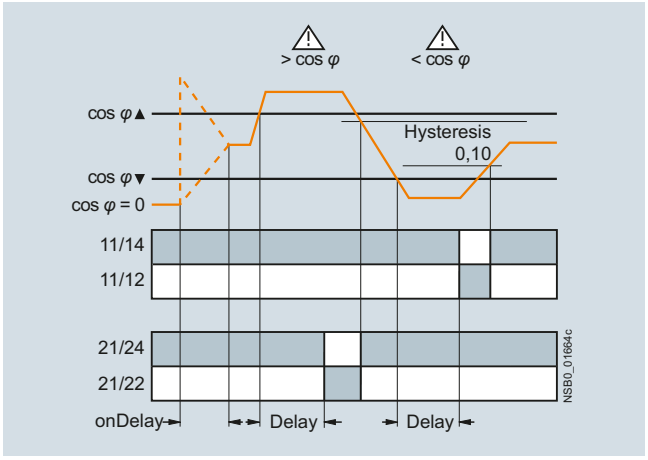
Undershooting of power factor



Range monitoring of active current



Range monitoring of power factor



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Power factor and active current monitoring

Type		3UG4641
General data		
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III acc. to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Number of CO contacts for auxiliary contacts		2
Load capacity of the output relay • Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V • DC-13/125 V • DC-13/250 V	 A A A A	 3 1 0.2 0.1
Minimum contact load at 17 V DC	mA	5

Selection and ordering data

- For monitoring the power factor and the active current I_{res} (p.f. x I)
- Suitable for single- and three-phase currents
- Digitally adjustable, with illuminated LCD
- Overshoot, undershoot or range monitoring adjustable
- Upper and lower threshold value can be adjusted separately
- Permanent display of actual value and tripping state
- 1 changeover contact each for undershoot/overshoot

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

Measuring range		Hysteresis adjustable		ON-delay time adjustable onDel	Tripping delay time adjustable I▲Del/ I▼Del, φ▲Del/ φ▼Del	Rated control supply voltage U_s [1] 50/60 Hz AC	SD	**Screw terminals**		SD	**Spring-type terminals**	
For power factor	For active current I_{res}	For power factor	For active current I_{res}					Article No.	Price per PU		Article No.	Price per PU
P.f.	A	P.f.	A	s	s	V	d			d		
0.10 ... 0.99	0.2 ... 10.0	0.1	0.1 ... 2.0	0 ... 99	0.1 ... 20.0	90 ... 690	2	**3UG4641-1CS20**		2	**3UG4641-2CS20**	

[1] Absolute limit values.

For accessories, see page 10/110.

With AC active currents I_{res} > 10 A it is possible to use 4NC current transformers as an accessory; see Catalog LV 10 "Low-Voltage Power Distribution and Electrical Installation Technology".

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3UG4625 monitoring relay

The 3UG4625 residual-current monitoring relays are used in conjunction with the 3UL23 residual-current transformers for monitoring plants in which higher residual currents are increasingly expected due to ambient conditions. Monitoring encompasses pure AC residual currents or AC residual currents with a pulsating DC fault current component (transformer type A in accordance with DIN VDE 0100-530/IEC TR 60755).

Benefits

- Worldwide use thanks to wide voltage range from 24 to 240 V AC/DC
- High measuring accuracy of ± 7.5 %
- Permanent self-monitoring
- Variable threshold values for warning and disconnection
- Freely configurable delay times and RESET response
- Permanent display of the actual value and fault diagnostics via the display
- High level of flexibility and space saving through installation of the transformer inside or outside the control cabinet
- Width 22.5 mm
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

Monitoring of plants in which residual currents can occur, e.g. due to dust deposits or moisture, porous cables and leads, or capacitive residual currents.

Technical specifications

3UG4625 monitoring relays

The main conductor, and any neutral conductor to which a load is connected, are routed through the opening of the annular ring core of a residual-current transformer. A secondary winding is placed around this annular strip-wound core to which the monitoring relay is connected.

If operation of a plant is fault-free, the sum of the inflowing and outward currents equals zero. No current is then induced in the secondary winding of the residual-current transformer.

However, if an insulation fault occurs downstream of the residual current operated circuit breaker, the sum of the inflowing currents is greater than that of the outward currents. The differential current – i.e. the residual current – induces a secondary current in the secondary winding of the transformer. This current is evaluated in the monitoring relay and is used on the one hand to display the actual residual current and on the other, to switch the relay if the set warning or tripping threshold is overshot.

If the measured residual current exceeds the set warning value, the associated changeover contact instantly changes the switching state and an indication appears on the display.

If the measured residual current exceeds the set tripping value, the set delay time begins and the associated relay symbol flashes. On expiry of this time, the associated changeover contact changes the switching state.

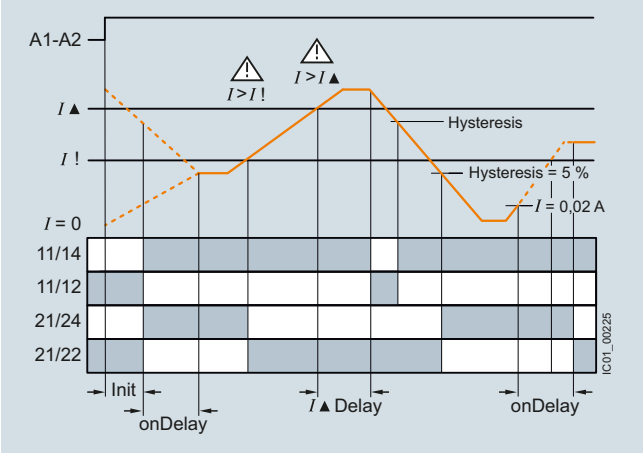
ON-delay time for motor start

To be able to start a drive when a residual current is detected, the output relays switch to the OK state for an adjustable ON-delay time depending on the selected open-circuit principle or closed-circuit principle.

The changeover contacts do not react if the set threshold values are overshot during this period.

With the closed-circuit principle selected

Residual current monitoring with Auto RESET (Memory = no)



If the device is set to Auto RESET, the relay switches back to the OK state for the tripping value once the value falls below the set hysteresis threshold and the display stops flashing.

The associated relay changes its switching state if the value falls below the fixed hysteresis value of 5% of the set warning value.

Any overshoots are therefore not stored.

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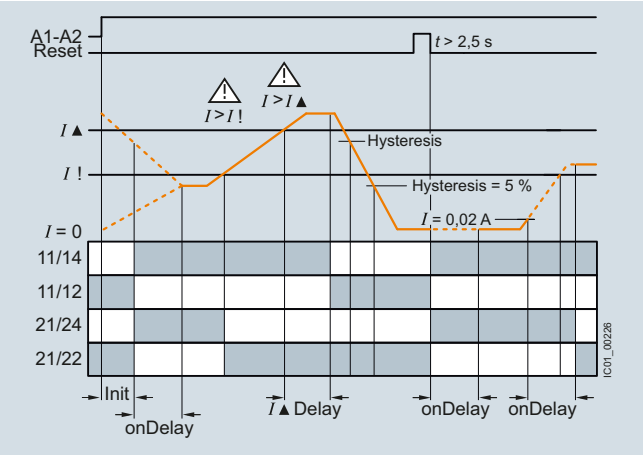
Residual-current monitoring relays

Residual current monitoring with Manual RESET (Memory = yes)



If Manual RESET is selected in the menu, the output relays remain in their current switching state and the current measured value and the symbol for overshooting continues to flash, even when the measured residual current returns to a permissible value. This stored fault status can be reset by pressing the UP▲ and DOWN▼ keys simultaneously for > 2 seconds, or by switching the supply voltage off and back on again.

Note:

Do not ground the neutral conductor downstream of the residual-current transformer as otherwise residual current monitoring functions can no longer be ensured.

Type		3UG4625-1CW30, 3UG4625-2CW30
General data		
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3, rated value	V	300
Impulse withstand voltage, rated value U_{imp}	kV	4
Control circuit		
Number of CO contacts for auxiliary contacts		2
Thermal current of the non-solid-state contact blocks, maximum	A	5
Current carrying capacity of the output relay		
• At AC-15 at 250 V at 50/60 Hz	A	3
• At DC-13		
- At 24 V	A	1
- At 125 V	A	0.2
- At 250 V	A	0.1
Operational current at 17 V, minimum	mA	5

Selection and ordering data

- For monitoring residual currents from 0.03 to 40 A, from 16 to 400 Hz
- For 3UL23 residual-current transformers with feed-through opening from 35 to 210 mm
- Permanent self-monitoring
- Certified in accordance with IEC 60947, functionality corresponds to IEC 62020
- Digitally adjustable, with illuminated LCD
- Permanent display of actual value and tripping state
- Separately adjustable limit value and warning threshold
- 1 changeover contact each for warning threshold and tripping threshold

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

3UG4625-1CW30

3UG4625-2CW30

Measurable current	Adjustable response value current	Switching hysteresis	Adjustable ON-delay time	Control supply voltage At AC At 50 Hz rated value	At AC At 60 Hz rated value	At DC rated value	SD	Screw terminals Article No.	Price per PU	SD	Spring-type terminals Article No.	Price per PU
A	A	%	s	V	V	V	d			d		
0.01 ... 43	0.03 ... 40	0 ... 50	0 ... 20	24 ... 240	24 ... 240	24 ... 240	2	**3UG4625-1CW30**		2	**3UG4625-2CW30**	

For accessories, see page 10/110.

For the 3UL23 residual-current transformers, see page 10/95.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3UL23 residual-current transformer

The 3UL23 residual-current transformers detect residual currents in machines and plants. They are suitable for pure AC residual currents or AC residual currents with a pulsating DC fault current component (transformer type A in accordance with DIN VDE 0100-530/IEC TR 60755).

Together with the 3UG4625, 3UG4825 residual-current monitoring relays for IO-Link or the SIMOCODE 3UF motor management and control device they enable residual-current and ground-fault monitoring.

The 3UL2302-1A and 3UL2303-1A residual-current transformers with a feed-through opening from 35 to 55 mm can be mounted in conjunction with the 3UL2900 accessories on a TH 35 standard mounting rail according to IEC 60715.

Selection and ordering data

Diameter of the bushing opening	Connectable cross-section of the connecting terminal	SD	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
mm	mm^2	d	Article No.	Price per PU			
Residual-current transformers (essential accessory for 3UG4625, 3UG4825 or SIMOCODE 3UF)							
35	2.5	2	**3UL2302-1A**		1	1 unit	41H
55	2.5	2	**3UL2303-1A**		1	1 unit	41H
80	2.5	2	**3UL2304-1A**		1	1 unit	41H
110	2.5	2	**3UL2305-1A**		1	1 unit	41H
140	2.5	2	**3UL2306-1A**		1	1 unit	41H
210	4	2	**3UL2307-1A**		1	1 unit	41H

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Adapters							
 3UL2900	**Adapters** For mounting onto standard rail for 3UL23 to diameter 55 mm	2	**3UL2900**		1	2 units	41H

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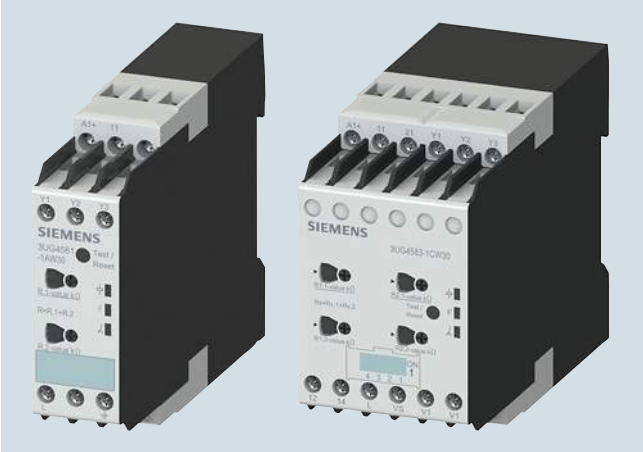
General data

Overview



SIRIUS 3UG458. insulation monitor

Insulation monitoring relays are used for monitoring the insulation resistance between ungrounded single or three-phase AC supplies and a protective conductor.

Ungrounded, i. e. isolated networks (IT networks) are always used where high demands are placed on the reliability of the power supply, e.g. emergency lighting systems. IT systems are supplied via an isolating transformer or by power supply sources such as batteries or a generator. While an initial insulation fault between a phase conductor and the ground effectively grounds the conductor, as a result no circuit has been closed, so it is possible to continue work in safety (single-fault safety). However, the fault must be rectified as quickly as possible before a second insulation fault occurs (e.g. according to DIN VDE 0100-410). For this purpose insulation monitoring relays are used, which constantly measure the resistance to ground of the phase conductor and the neutral conductor, reporting a fault immediately if insulation resistance falls below the set value so that either a controlled shutdown can be performed or the fault can be rectified without interrupting the power supply.

Two device series

- 3UG4581 insulation monitoring relays for ungrounded AC networks
- 3UG4582 and 3UG4583 insulation monitoring relays for ungrounded DC and AC networks

Benefits

- Devices for AC and DC systems
- All devices have a wide control supply voltage range
- Direct connection to networks with mains voltages of up to 690 V AC and 1 000 V DC by means of a voltage reducer module
- For AC supply systems: Frequency range 15 to 400 Hz
- Monitoring of broken conductors
- Monitoring of setting errors
- Safety in use thanks to integrated system test after startup
- Option of resetting and testing (by means of button on front or using control contact)
- New predictive measurement principle allows very fast response times

Application

IT networks are used, for example:

- In emergency power supplies
- In safety lighting systems
- In industrial production facilities with high availability requirements (chemical industry, automobile manufacturing, printing plants)
- In shipping and railways
- For mobile generators (aircraft)
- For renewable energies, such as wind energy and photovoltaic power plants
- In the mining industry

Technical specifications

More information

Manuals, see
- https://support.industry.siemens.com/cs/ww/en/view/54382552
- https://support.industry.siemens.com/cs/ww/en/view/54382528

Type	3UG4581-1AW30	3UG4582-1AW30	3UG4583-1CW30
General data			
Setting range for the setpoint response values			
• 1 ... 100 kΩ	✓	✓	✓
• 2 ... 200 kΩ	--	--	✓
Rated voltage of the network being monitored			
• 0 ... 250 V AC	--	✓	--
• 0 ... 440 V AC	✓	--	✓
• 0 ... 690 V AC	--	--	✓ 1)
• 0 … 300 V DC	--	✓	--
• 0 … 600 V DC	--	--	✓
• 0 ... 1 000 V DC	--	--	✓ 1)
Max. leakage capacitance of the system			
• 10 µF	✓	✓	--
• 20 µF	--	--	✓
Output contacts			
• 1 CO	✓	✓	--
• 2 CO or 1 CO + 1 CO, adjustable	--	--	✓
Number of limit values			
• 1	✓	✓	--
• 1 or 2, adjustable	--	--	✓
Principle of operation	Closed-circuit principle	Closed-circuit principle	Open-circuit/closed-circuit principle, adjustable
Rated control supply voltage			
• 24 ... 240 V AC/DC	✓	✓	✓
Rated frequency			
• 15 ... 400 Hz	--	✓	✓
• 50/60 Hz	✓	--	--
Auto or Manual RESET	✓ Adjustable	✓ Adjustable	✓ Adjustable
Remote RESET	✓ Via control input	✓ Via control input	✓ Via control input
Non-volatile error memory	--	--	✓ Adjustable
Broken wire detection	--	--	✓ Adjustable
Replacement for			
Rated control supply voltage U_s / Voltage range of the network being monitored			
3UG3081-1AK20 110 ... 130/220 ... 240 V AC/DC / 3 x 230/400 V AC	✓	--	--
3UG3081-1AW30 24 ... 240 V AC/DC / 3 x 230/400 V AC	✓	--	--
3UG3082-1AW30 24 ... 240 V AC/DC / 24 ... 240 V DC	--	✓	--

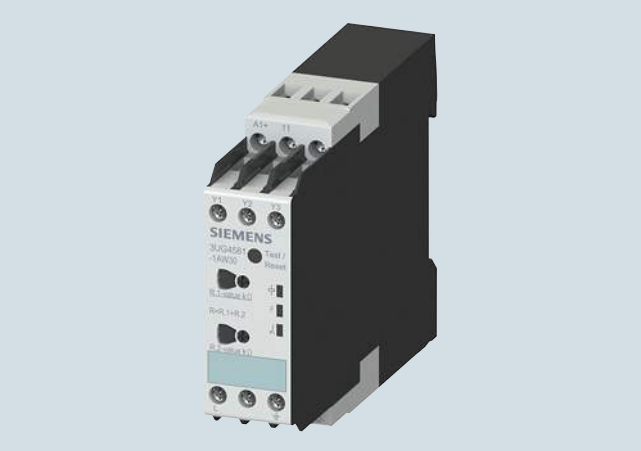
✓ Available

-- Not available

1) With voltage reducer module.

For ungrounded AC networks

Overview



SIRIUS 3UG4581 insulation monitor

The 3UG4581 insulation monitoring relays are used to monitor insulation resistance according to IEC 61557-8 in ungrounded AC networks with rated voltages of up to 400 V.

These devices can monitor control circuits (single-phase) and main circuits (three-phase).

They measure insulation resistances between system cables and system ground. If the value falls below the threshold value, the output relays are switched to fault status.

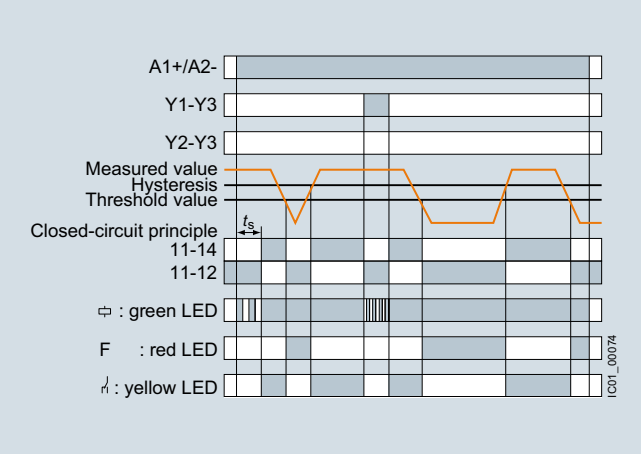
In the case of 3UG4581 a higher-level DC measuring signal is used. The higher-level DC measuring signal and the resulting current are used to determine the value of the insulation resistance of the network which is to be measured.

Technical specifications

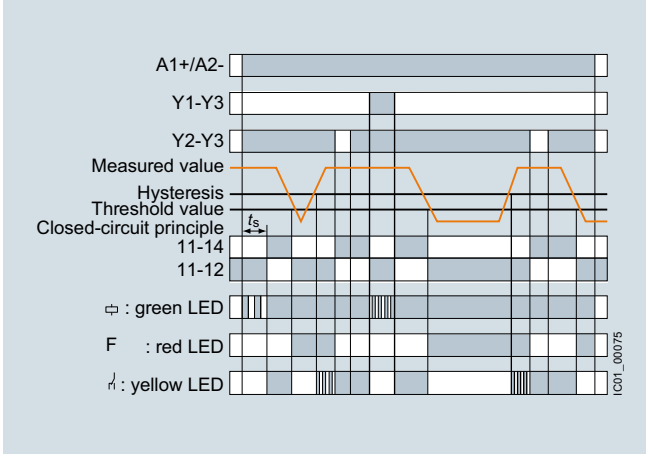
3UG4581 monitoring relays

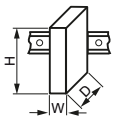
With the closed-circuit principle selected

Insulation resistance monitoring without fault storage, with Auto RESET



Insulation resistance monitoring with fault storage and Manual RESET



Type			**3UG4581**
Dimensions (W x H x D)		mm	22.5 x 100 x 100
Connection type			**Screw terminals**
• Solid • Finely stranded with end sleeve • AWG cables, solid or stranded		mm^2 mm^2 AWG	2 x (0.5 ... 4) 2 x (0.75 ... 2.5) 2 x (20 ... 14)
General data			
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III acc. to IEC 60664		V	400 supply circuit/measuring circuit 300 supply circuit/output circuit
Rated impulse withstand voltage U_{imp}		kV	6
Rated control supply voltage		V	24 ... 240 AC/DC
Rated frequency		Hz	15 ... 400
Measuring circuit			
Rated line voltage of the network being monitored		V	0 ... 400
Rated frequency of the network being monitored		Hz	50 ... 60
Setting range for insulation resistance		kΩ	1 ... 100
Control circuit			
Load capacity of the output relay • Thermal current I_{th}		A	4
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V		A A	3 2
Minimum contact load at 24 V DC		mA	10

Selection and ordering data

- Auto or Manual RESET
- Closed-circuit principle
- 1 CO contact
- Fault memory adjustable using control input (Y2-Y3)
- Reset by means of button on front or using control input (Y2-Y3)
- Test by means of button on front or using control input (Y1-Y3)

Rated line voltage U_n	Measuring range U_e	Rated control supply voltage U_s	System leakage capacitance	SD	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
					Article No.	Price per PU			
V AC	kΩ	V	µF	d					
Insulation monitors for ungrounded AC networks									
0 ... 400	1 ... 100	24 ... 240 AC/DC	Max. 10	5	**3UG4581-1AW30**		1	1 unit	41H

3UG4581-1AW30

For accessories, see page 10/110.

For ungrounded DC and AC networks

Overview

SIRIUS 3UG4582 and 3UG4583 insulation monitors

The 3UG4582 and 3UG4583 insulation monitoring relays are used to monitor insulation resistance in ungrounded IT AC or DC networks according to IEC 61557-8.

They measure insulation resistances between system cables and system ground. If the value falls below the threshold value, the output relays are switched to fault status. With these devices, which are suitable for both AC and DC networks, a pulsed test signal is fed into the network to be monitored and the isolation resistance is determined.

The pulsed test signal changes its form according to insulation resistance and network loss capacitance. The changed form is used to predict the changed insulation resistance.

If the predicted insulation resistance matches the insulation resistance calculated in the next measurement cycle, and is lower than the threshold value, the output relays are activated or deactivated, depending on the device configuration. This measurement principle is also suitable for identifying symmetrical insulation faults.

3UG4983 voltage reducer module

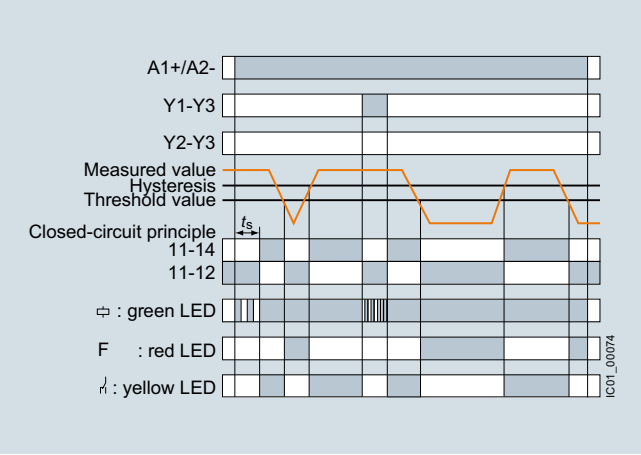
The 3UG4983 passive voltage reducer module can be used to allow the 3UG4583 insulation monitoring relay to be used for insulation monitoring of IT networks with rated voltages of up to 690 V AC and 1 000 V DC.

Technical specifications

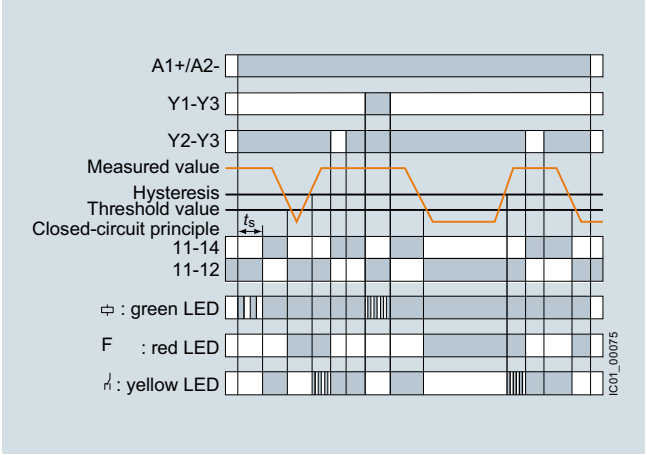
3UG4582 monitoring relays

With the closed-circuit principle selected

Insulation resistance monitoring without fault storage, with Auto RESET



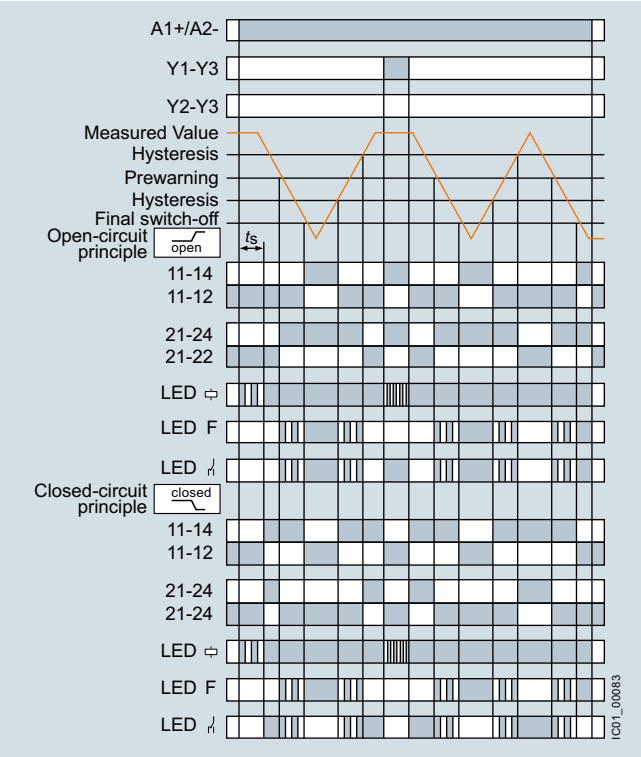
Insulation resistance monitoring with fault storage and Manual RESET



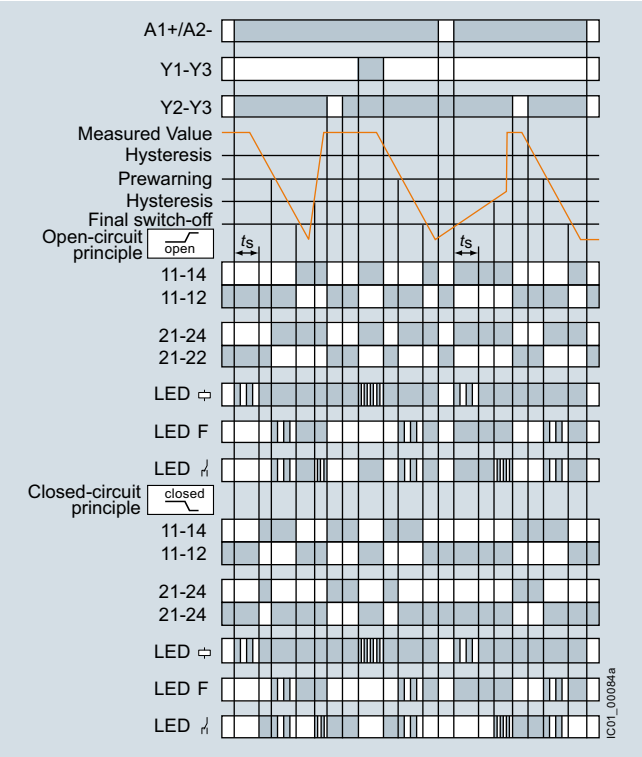
3UG4583 monitoring relays

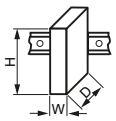
With the closed-circuit principle selected

Insulation resistance monitoring without fault storage, with Auto RESET



Insulation resistance monitoring with fault storage and Manual RESET



Type			3UG4582	3UG4583
Dimensions (W x H x D)		mm	22.5 x 100 x 100	45 x 100 x 100
Connection type			**Screw terminals**	
• Solid • Finely stranded with end sleeve • AWG cables, solid or stranded		mm^2 mm^2 AWG	2 x (0.5 ... 4) 2 x (0.75 ... 2.5) 2 x (20 ... 14)	
General data				
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III acc. to IEC 60664		V	400 supply circuit/measuring circuit, 300 supply circuit/output circuit	400 supply circuit/measuring circuit 300 supply circuit/output circuit 300 output circuit 1/output circuit 2
Rated impulse withstand voltage U_{imp}		kV	6	
Rated control supply voltage		V AC/DC	24 ... 240	
Rated frequency		Hz	15 ... 400	
Measuring circuit				
Rated line voltage of the network being monitored		V V	0 ... 250 AC 0 ... 300 DC	0 ... 300 AC, 0 ... 690 AC with 3UG49 83 0 ... 600 DC, 0 ... 1 000 DC with 3UG49 83
Rated frequency of the network being monitored		Hz	DC or 15 ... 400	
Setting range for insulation resistance		kΩ	1 ... 100	1 ... 100 2 ... 200 for 2nd limit value (disconnectable)
Control circuit				
Number of CO contacts for auxiliary contacts			1	2 or 1 + 1, adjustable
Load capacity of the output relay • Thermal current I_{th}		A	4	
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V		A A	3 2	
Minimum contact load at 24 V DC		mA	10	

For ungrounded DC and AC networks

Selection and ordering data

- Auto or Manual RESET
- Rated control supply voltage U_s 24 ... 240 V AC/DC
- 3UG4582: Closed-circuit principle
  3UG4583: Open-circuit or closed-circuit principle, adjustable
- 1 or 2 CO contacts
- Fault memory adjustable using control input (Y2-Y3)
- Reset by means of button on front or using control input (Y2-Y3)
- Test by means of button on front or using control input (Y1-Y3)
- 3UG4583: Non-volatile fault storage can be configured
- 3UG4583: 2 separate limit values (e.g. for warning and disconnection) or 2 CO contacts for one limit value (e.g. for a local alarm and signaling to the PLC via separate circuits) can be configured

Note:

With the 3UG4983-1A coupling unit, connection to networks with voltages of up to 690 V AC and 1 000 V DC is possible, see below.

	Rated line voltage U_n	System leakage capacitance	Output relays	Measuring range U_e	Broken wire detection in the measuring range	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
	V	µF		kΩ		d	Article No. / Price per PU			
3UG4582 insulation monitors										
 3UG4582-1AW30	0 ... 250 AC 0 ... 300 DC	Max. 10	1 CO	1 ... 100	✓	5	**3UG4582-1AW30**	1	1 unit	41H
3UG4583 insulation monitors										
 3UG4583-1CW30	0 ... 400 AC, 0 ... 600 DC[1)]	Max. 20	2 CO or 1 CO + 1 CO, adjustable	1 ... 100, 2 ... 200 for 2nd limit value, adjustable	✓ Adjustable	5	**3UG4583-1CW30**	1	1 unit	41H
	Voltage reducer module for 3UG4583									
 3UG4983-1A	For extending the line voltage range to max. 690 V AC and 1 000 V DC					5	**3UG4983-1A**	1	1 unit	41H

✓ Available

[1)] With 3UG4983-1A voltage reducer module suitable also for the insulation monitoring of IT networks of up to 690 V AC and 1 000 V DC.

For accessories, see page 10/110.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3UG4501 monitoring relay

The 3UG4501 level monitoring relay is used in combination with 2 or 3-pole sensors to monitor the levels of conductive liquids.

Benefits

- Can be used worldwide thanks to wide voltage range from 24 to 240 V (absolute limit values)
- Individually shortenable 2 and 3-pole wire electrodes for easy mounting from above/below
- Bow electrodes for installation from the side, for larger filling levels and minimum space requirements
- Can be flexibly adapted to different conductive liquids through analog setting of the sensitivity from 2 to 200 kΩ
- Compensation for wave movements through tripping delay times from 0.1 to 10 s
- Upstream or downstream function selectable
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Single-point and two-point level monitoring
- Overflow protection
- Dry run protection
- Leak monitoring

Technical specifications

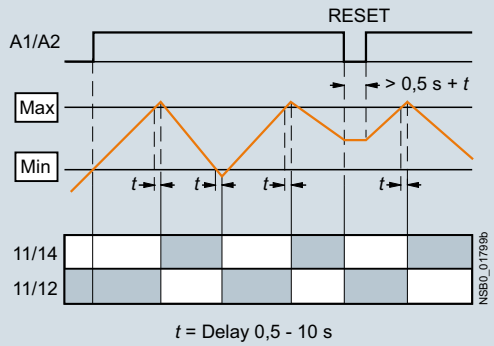
3UG4501 monitoring relays

The principle of operation of the 3UG4501 level monitoring relay is based on measuring the electrical resistance of the liquid between two immersion sensors and a reference terminal. If the measured value is lower than the sensitivity set at the front, the output relay changes its switching state. In order to exclude electrolytic phenomena in the liquid, the sensors are supplied with alternating current.

Two-point control

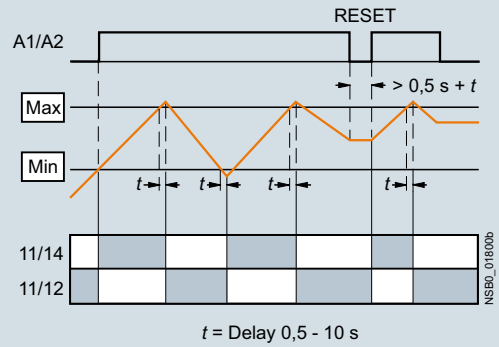
The output relay changes its switching state as soon as the liquid level reaches the maximum sensor, while the minimum sensor is submerged. The relay returns to its original switching state as soon as the minimum sensor no longer has contact with the liquid.

OVER, two-point control



t = Delay 0,5 - 10 s

UNDER, two-point control



t = Delay 0,5 - 10 s

Note:

It is also possible to connect other resistance sensors to the Min and Max terminals in the range 2 to 200 kΩ, e.g. photoresistors, temperature sensors, encoders based on resistance, etc. The monitoring relay can therefore also be used for other applications as well as for monitoring the levels of liquids.

Level monitoring relays

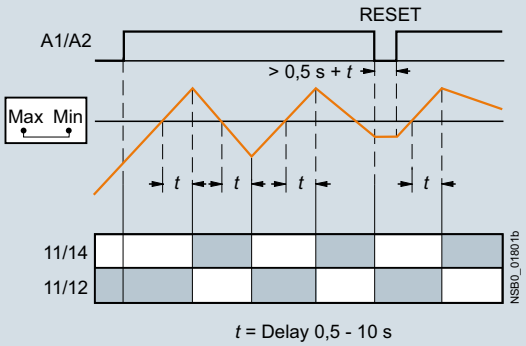
Single-point control

If only one level is being controlled, the terminals for Min and Max on the monitoring relay are bridged. The output relay changes its switching state as soon as the liquid level is reached and returns to its original switching state once the sensor no longer has contact with the liquid.

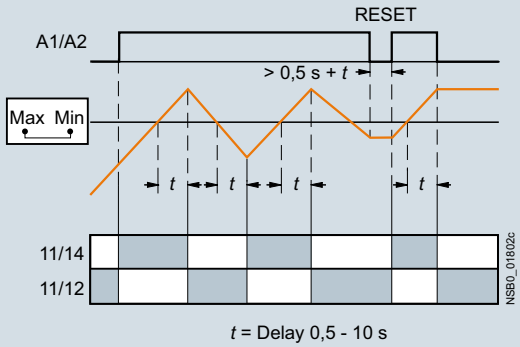
In order to prevent premature tripping of the switching function caused by wave motion or frothing, even though the set level has not been reached, it is possible to delay this function by 0.5 to 10 s.

For safe resetting, the control supply voltage must be interrupted for at least the set delay time of +0.5 s.

OVER, single-point control



UNDER, single-point control



Type		3UG4501
General data		
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III acc. to VDE 0110	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Measuring circuit		
Electrode current, max. (typ. 70 Hz)	mA	1
Electrode voltage, max. (typ. 70 Hz)	V	15
Sensor feeder cable	m	Max. 100
Conductor capacitance of sensor cable[1)]	nF	Max. 10
Control circuit		
Load capacity of the output relay Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V • DC-13/125 V • DC-13/250 V	 A A A A	 3 1 0.2 0.1
Minimum contact load at 17 V DC	mA	5

1) The sensor cable does not necessarily have to be shielded, but we do not recommend installing this cable parallel to the power supply lines. It is also possible to use a shielded cable, whereby the shield has to be connected to the M terminal.

Selection and ordering data

- For level monitoring of electrically conductive liquids
- Control principle: inlet or sequence control adjustable per rotary switch
- Single-point and two-point control possible
- Analogically adjustable sensitivity (specific resistance of the liquid)
- Analogically adjustable tripping delay time
- 1 yellow LED for displaying the relay state
- 1 green LED for displaying the applied control supply voltage
- 1 CO contact

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

Sensitivity	Tripping delay time	Rated control supply voltage U_s	SD	**Screw terminals**		SD	**Spring-type terminals**	
kΩ	s	AC/DC V	d	Article No.	Price per PU	d	Article No.	Price per PU
2 ... 200	0.5 ... 10	24[1)]	2	**3UG4501-1AA30**		2	**3UG4501-2AA30**	
		24 ... 240	2	**3UG4501-1AW30**		2	**3UG4501-2AW30**	

[1)] The rated control supply voltage and the measuring circuit are not electrically separated.

For accessories, see page 10/110.

For level monitoring sensors, see page 10/106.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Level monitoring sensors

Technical specifications

Type		3UG3207-3A Three-pole	3UG3207-2A Two-pole	3UG3207-2B Two-pole	3UG3207-1B Single-pole	3UG3207-1C Single-pole
Length	mm	500		--		
Insulation Teflon insulation (PTFE)		Yes			--	Yes
Installation		Vertical		Lateral		
Screw-in gland width A/F		22				
Thread	inch	R 3/8				
Connecting cable	mm^2	3 x 0.5, 2 m long				
Operating temperature	°C	90				
Operating pressure	bar	10				
Cable/electrode assignment						
• Cable brown		Center electrode	Not assignable	Gland		
• Cable white		Not assignable			Electrode	
• Cable green		Not assignable	--	Not assignable	--	

Selection and ordering data

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Level monitoring sensors (essential accessory)							
	The wire electrodes can be cut or bent to the required length before or after installation. The Teflon insulation must be removed over a length of approx. 5 mm.						
 3UG3207-3A	**Three-pole wire electrodes, 500 mm long** For 2-point liquid level control in an insulating tank. One electrode each for the min. and max. value and a common reference electrode.	2	**3UG3207-3A**		1	1 unit	41H
 3UG3207-2A	**Two-pole wire electrodes, 500 mm long** For alarm indication in the event of overflow or low level and for 2-point liquid level control, when the conductive tank is used as the reference electrode.	2	**3UG3207-2A**		1	1 unit	41H
 3UG3207-2B	**Two-pole bow electrodes** Thanks to the small space requirements due to lateral fitting, ideal for use in small containers and pipes, as a leak monitor and level monitor or for warning of water entering an enclosure.	2	**3UG3207-2B**		1	1 unit	41H
 3UG3207-1B	**Single-pole bow electrodes for lateral fitting** As a max. value electrode for lateral fitting or for alarm indication in conductive tanks or pipes.	2	**3UG3207-1B**		1	1 unit	41H
 3UG3207-1C	**Single-pole rod electrodes for lateral fitting** For high flow velocities or for intensively sparkling fluids.	2	**3UG3207-1C**		1	1 unit	41H

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3UG4651 monitoring relay

The 3UG4651 monitoring relay is used in combination with a sensor to monitor motor drives for overspeed and/or underspeed.

Furthermore, the monitoring relay is ideal for all functions where a continuous pulse signal needs to be monitored (e.g. belt travel monitoring, completeness monitoring, passing monitoring, clock-time monitoring).

Benefits

- Can be used worldwide thanks to wide voltage range from 24 to 240 V (absolute limit values)
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Permanent display of actual value and fault type
- Use of up to 10 sensors per rotation for extremely slowly rotating motors
- 2- or 3-wire sensors and sensors with a mechanical switching output or semiconductor output can be connected
- Auxiliary voltage for sensor integrated
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Slip or tear of a belt drive
- Overload monitoring
- Transport monitoring for completeness

Technical specifications

3UG4651 monitoring relays

The speed monitoring relay operates according to the principle of period duration measurement.

In the monitoring relay, the time between two successive rising edges of the pulse encoder is measured and compared to the minimum and/or maximum permissible period duration calculated from the set limit values for the speed.

Thus, the period duration measurement recognizes any deviation in speed after just two pulses, even at very low speeds or in the case of extended pulse gaps.

By using up to ten pulse encoders evenly distributed around the circumference, it is possible to shorten the period duration, and in turn the response time. By taking into account the number of sensors in the monitoring relay, the speed continues to be indicated in rpm.

ON-delay time for motor start

To be able to start a motor drive, and depending on whether the open-circuit or closed-circuit principle is selected, the output relay switches to the GO state during the ON-delay time, even if the speed is still below the set value.

The ON-delay time is started by either switching on the auxiliary voltage or, if the auxiliary voltage is already applied, by actuating the respective NC contact (e.g. auxiliary contact).

Speed monitoring with Auto RESET (Memory = no)

If the device is set to Auto RESET, the output relay switches to the GO state, once the adjustable hysteresis threshold is reached in the range of 0.1 to 99.9 rpm and the flashing stops. Any overshoots or undershoots are therefore not stored.

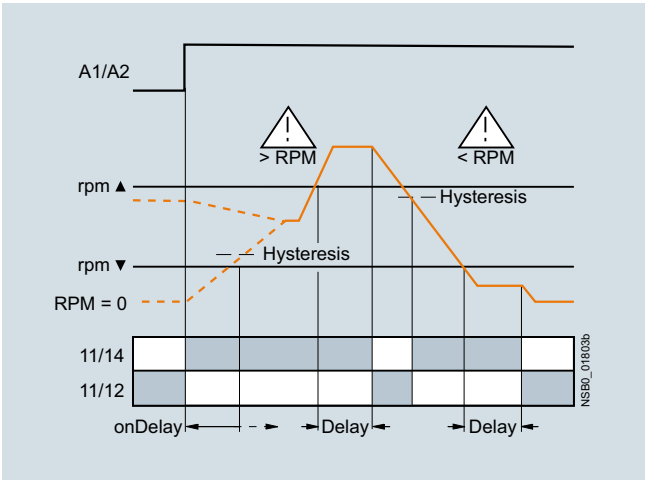
Speed monitoring with Manual RESET (Memory = yes)

If Manual RESET is selected in the menu, the output relay remains in its current switching state and the current measured value and the symbol for overshooting/undershooting continue to flash, even when the speed returns to a permissible value. This stored fault status can be reset by pressing the UP▲ and DOWN▼ buttons simultaneously for > 2 s, by connecting the RESET device terminal to 24 V DC or by switching the control supply voltage off and back on again.

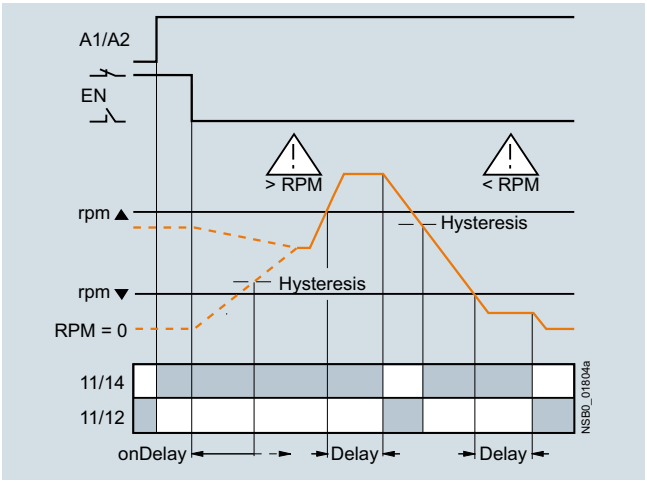
Speed monitoring

With the closed-circuit principle selected

Range monitoring without enable input



Range monitoring with enable input



Type		3UG4651
General data		
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III acc. to VDE 0110	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Measuring circuit		
Sensor supply		
• For 3-wire sensor (24 V/0 V)	mA	Max. 50
• For 2-wire NAMUR sensor (8V2)	mA	Max. 8.2
Signal input		
• IN1	kΩ	16, 3-wire sensor, pnp operation
• IN2	kΩ	1, floating contact, 2-wire NAMUR sensor
Voltage level		
• For level 1 at IN1	V	4.5 ... 30
• For level 0 at IN1	V	0 ... 1
Current level		
• For level 1 at IN2	mA	> 2.1
• For level 0 at IN2	mA	< 1.2
Minimum pulse duration of signal	ms	5
Minimum interval between 2 pulses	ms	5
Control circuit		
Number of CO contacts for auxiliary contacts		1
Load capacity of the output relay Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 400 V	A	3
• DC-13/24 V	A	1
• DC-13/125 V	A	0.2
• DC-13/250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

Selection and ordering data

- For speed monitoring in revolutions per minute (rpm)
- Two- or three-wire sensor with mechanical or electronic switching output can be connected
- Two-wire NAMUR sensor can be connected
- Sensor supply 24 V DC/50 mA integrated
- Input frequency 0.1 to 2 200 pulses rpm (0.0017 to 36.7 Hz)
- With or without enable signal for the drive to be monitored
- Digitally adjustable, with illuminated LCD
- Overshoot, undershoot or range monitoring adjustable
- Number of pulses per revolution can be adjusted
- Upper and lower threshold value can be adjusted separately
- Auto, manual or remote RESET options after tripping
- Permanent display of actual value and tripping state
- 1 CO contact

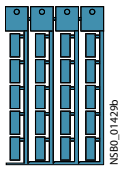
PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

Measuring range	Hysteresis	ON-delay time	Tripping delay time	Pulses per revolution	Rated control supply voltage U_s AC/DC	SD	**Screw terminals**		SD	**Spring-type terminals**	
							Article No.	Price per PU		Article No.	Price per PU
rpm	rpm	s	s		V	d			d		
0.1 ... 2 200	OFF 0.1 ... 99.9	0 ... 900	0.1 ... 99.9	1 ... 10	24[1]	2	**3UG4651-1AA30**		2	**3UG4651-2AA30**	
					24 ... 240	2	**3UG4651-1AW30**		2	**3UG4651-2AW30**	

[1] The rated control supply voltage and the measuring circuit are not electrically separated.

For accessories, see page 10/110.

Selection and ordering data

	Use	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Blank labels								
 3RT1900-1SB20	For 3UG4	**Unit labeling plates** For SIRIUS devices 20 mm x 7 mm, pastel turquoise[1]	20	**3RT1900-1SB20**		100	340 units	41B
	For 3UG4	**Adhesive labels** for SIRIUS devices						
		• 19 mm x 6 mm, pastel turquoise	15	**3RT1900-1SB60**		100	3 060 units	41B
		• 19 mm x 6 mm, zinc yellow	15	**3RT1900-1SD60**		100	3 060 units	41B
Push-in lugs and covers								
 3RP1903	For 3UG4	**Push-in lugs** For screw fixing, 2 units are required for each device	5	**3RP1903**		1	10 units	41H
 3RP1902	For 3UG4	**Sealable covers** For securing against unauthorized adjustment of setting knobs	5	**3RP1902**		1	5 units	41H
	For 3UG45	**Sealing foil** For securing against unauthorized adjustment of setting knobs	►	**3TK2820-0AA00**		1	1 unit	41L
Covers for insulation monitoring relays								
		Sealable, transparent covers						
 3UG4981-0C	For 3UG4581 and 3UG4582		5	**3UG4981-0C**		1	1 unit	41H
 3UG4983-0C	For 3UG4583		5	**3UG4983-0C**		1	1 unit	41H
Tools for opening spring-type terminals								
 3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	2	**Spring-type terminals**  **3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/20.

Note:

For products for mechanical bearing monitoring, e.g. condition monitoring systems, see www.siemens.com/siplus-cms.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3UG48 monitoring relays

More information

Home page, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3UG48

Conversion tool, e.g. from 3UG3 to 3UG4, see www.siemens.com/sirius/conversion-tool

The SIRIUS 3UG4 monitoring relays for electronic and mechanical variables monitor all important characteristics that allow conclusions to be drawn about the functionality of a plant. Both sudden disturbances and gradual changes, which may indicate the need for maintenance, are detected.

Thanks to their relay outputs, the monitoring relays permit direct disconnection of the affected system components and alerting, e.g. by the triggering of a warning light. Thanks to adjustable delay times the 3UG4 monitoring relays can respond very flexibly to brief faults such as voltage dips or load changes and can thus avoid unnecessary alarms and disconnections and increase system availability.

3UG48 monitoring relays for IO-Link

The SIRIUS 3UG48 monitoring relays for IO-Link also offer many other options based upon the monitoring functions of the tried-and-tested SIRIUS 3UG4 monitoring relays:

- Measured value transmission to a controller, including resolution and unit, may be parameterizable as to which value is cyclically transmitted
- Transmission of alarm flags to a controller
- Full diagnosis capability by inquiry as to the cause of the fault in the diagnosis data record
- Remote parameterization is also possible, in addition to or instead of local parameterization
- Rapid parameterization of the same devices by duplication of the parameterization in the controller
- Parameter transmission through uploading to a controller by IO-Link call or by parameter server (if IO-Link master from IO-Link Specification V1.1 and higher is used)
- Consistent central data storage in the event of parameter change locally or via a controller
- Automatic reparameterizing when devices are exchanged
- Blocking of local parameterization via IO-Link possible
- Faults are saved in parameterizable and non-volatile fashion to prevent an automatic start up after voltage failure and to make sure diagnostics data is not lost
- Integration into the automation level provides the option of parameterizing the monitoring relays at any time via a display unit, or displaying the measured values in a control room or locally at the machine/control cabinet.

Even without communication via IO-Link the devices continue to function fully autonomously:

- Parameterization can take place locally at the device, independently of a controller.
- In the event of failure or before the controller becomes available the monitoring relays work as long as the control supply voltage (24 V DC) is present.
- If the monitoring relays are operated without the controller, the 3UG48 monitoring relays have, thanks to the integrated SIO mode, an additional semiconductor output, which switches when the adjustable warning threshold is exceeded.

Thanks to the combination of autonomous monitoring relay function and integrated IO-Link communication, redundant sensors and/or analog signal converters – which previously took over the transmission of measured values to a controller, leading to considerable extra cost and wiring outlay – are no longer needed.

Because the output relays are still present, the monitoring relays increase the functional reliability of the system, since only the controller can fulfill the control tasks if the current measured values are available, whereas the output relays can also be used for the disconnection of the system if limit values that cannot be reached during operation are exceeded.

The individual 3UG48 monitoring relays for IO-Link offer the following functions in different combinations:

- Phase sequence
- Phase failure, neutral conductor failure
- Phase asymmetry
- Undershooting and/or overshooting of limit values for voltage
- Undershooting and/or overshooting of limit values for current
- Undershooting and/or overshooting of power factor limit values
- Monitoring of the active current or the apparent current
- Monitoring of the residual current
- Undershooting and/or overshooting of limit values for speed

Note:

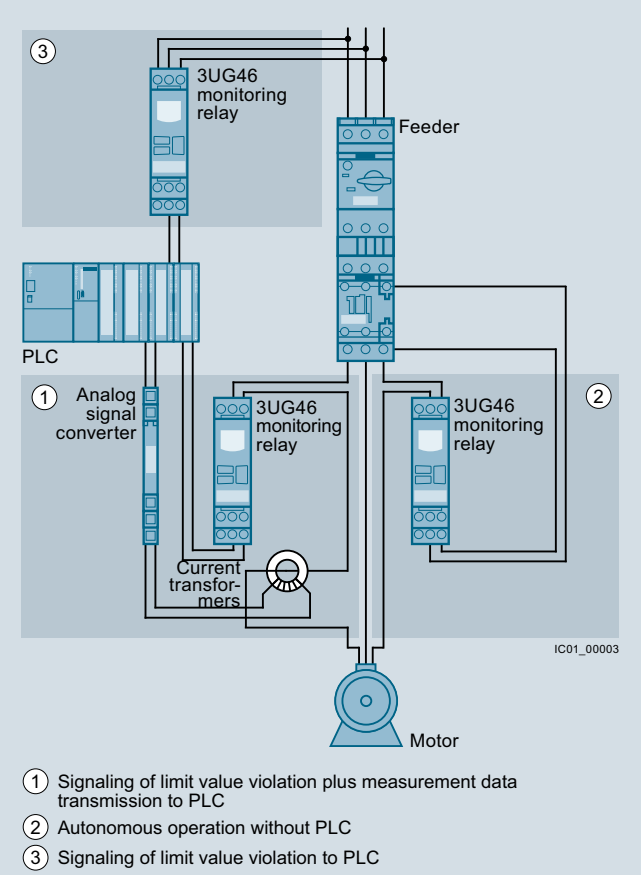
For further information on the IO-Link bus system, see page 2/101 onwards.

Notes on safety

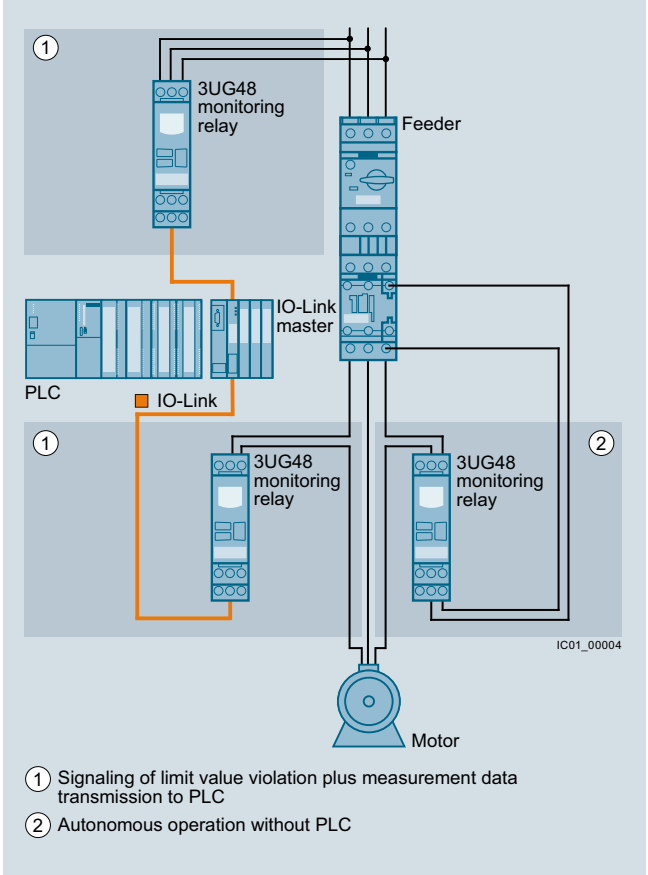
In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information on Industrial Security, see www.siemens.com/industrialsecurity.

General data



Use of conventional monitoring relays



Monitoring relays for IO-Link

Notes:

Devices required for the communication via IO-Link:
- Any controller that supports the IO-Link (e.g. ET 200SP with CPU or S7-1200); see Catalog ST 70 "Products for Totally Integrated Automation".
- IO-Link master (e.g. CM 4xIO-Link for SIMATIC ET 200SP or SM 1278 for S7-1200); see page 2/108 and page 2/109.

Each monitoring relay requires an IO-Link channel.

Article No. scheme

Product versions		Article number
3UG4 monitoring relay with IO-Link		**3UG4** □□□ – □□□□ **0**
Type of setting	e. g. 8 = analogically adjustable	□
Functions	e.g. 15 = line monitoring	□□
Connection type	Screw terminals	**1**
	Spring-type terminals (push-in)	**2**
Contacts	e.g. A = 1 CO contact	□
Supply voltage	e.g. A4 = 160 ... 690 V AC	□□
Example		**3UG4 8 1 5 – 1 A A 4 0**

Note:

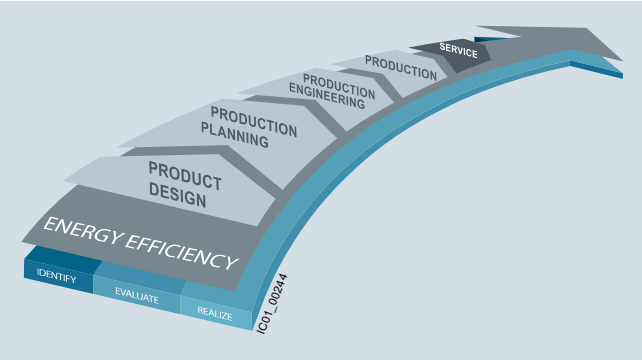
The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Simple cyclical transmission of the current measured values, relay switching states and events to a controller
- Remote parameterization
- Automatic reparameterizing when devices are exchanged
- Simple duplication of identical or similar parameterizations
- Reduction of control current wiring
- Elimination of testing costs and wiring errors
- Reduction of configuration work
- Integration in TIA means clear diagnostics if a fault occurs
- Cost saving and space saving in control cabinet due to the elimination of AI and IO modules as well as analog signal converters and duplicated sensors

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative SIRIUS industrial controls products can also make a major contribution to the energy efficiency of a plant (www.siemens.com/sirius/energysaving).

The 3UG48 monitoring relays for IO-Link contribute to the energy efficiency throughout the plant as follows:

- Shutdown in the event of no-load operation (e.g. pump no-load operation)
- Reactive-power compensation by means of power factor monitoring
- Load shedding of predefined loads in the event of current overshoots

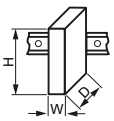
Application

The use of SIRIUS monitoring relays for IO-Link is particularly recommended for machines and plant in which these relays, in addition to their monitoring function, are to be connected to the automation level for the rapid, simple and fault-free provision of the current measured values and/or for remote parameterization.

The monitoring relays can either relieve the controller of monitoring tasks or, as a second monitoring entity in parallel to and independent of the controller, increase the reliability in the process or in the system. In addition, the elimination of AI and IO modules allows the width of the controller to be reduced despite significantly expanded functionality.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16368/td Manual and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/54375430	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16368/faq

Type			3UG48
General technical specifications			
Dimensions (W x H x D)			
• For 3 terminal blocks			
- Screw terminals		mm	22.5 x 92 x 91
- Spring-type terminals		mm	22.5 x 94 x 91
• For 4 terminal blocks			
- Screw terminals		mm	22.5 x 103 x 91
- Spring-type terminals		mm	22.5 x 103 x 91
Permissible ambient temperature			
• During operation		°C	-25 ... +60
Connection type			**Screw terminals**
• Terminal screw			M3 (for standard screwdriver, size 2 and Pozidriv 2)
• Solid		mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)
• Finely stranded with end sleeve		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)
• Tightening torque		Nm	0.8 ... 1.2
Connection type			**Spring-type terminals**
• Solid		mm^2	2 x (0.25 ... 1.5)
• Finely stranded, with end sleeve acc. to DIN 46228		mm^2	2 x (0.25 ... 1.5)
• Finely stranded		mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)

Overview

SIRIUS 3UG4815 monitoring relay

Solid-state line monitoring relays provide maximum protection for mobile machines, plants and hoisting equipment or for unstable networks. Network and voltage faults can thus be detected early and rectified before far greater damage ensues.

The line monitoring relays with IO-Link monitor phase sequence, phase failure (with or without N conductor monitoring), phase asymmetry and undervoltage and/or overvoltage.

Phase asymmetry is evaluated as the difference between the greatest and the smallest phase voltage relative to the greatest phase voltage. Undervoltage or overvoltage exist if the set limit values for at least one phase voltage are overshot or undershot. The rms value of the voltage is measured.

Benefits

- Can be used in any network from 160 to 630 V AC worldwide thanks to wide voltage range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display and transmission of actual value and network fault type to controller
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The relays are used above all for mobile equipment, e.g. air conditioning compressors, refrigerating containers, building site compressors and cranes.

Function	Application
Phase sequence	• Direction of rotation of the drive
Phase failure	• A fuse has tripped • Failure of the control supply voltage • Broken cable
Phase asymmetry	• Overheating of the motor due to asymmetrical voltage • Detection of asymmetrically loaded networks
Undervoltage	• Increased current on a motor with corresponding overheating • Unintentional resetting of a device • Network collapse, particularly with battery power
Overvoltage	• Protection of a plant against destruction due to overvoltage

Technical specifications

3UG4815/3UG4816 monitoring relays

The 3UG4815 and 3UG4816 line monitoring relays have a wide voltage range input and are supplied with power through IO-Link or from an external 24 V DC source.

The device is equipped with a display and is parameterized using three buttons. The 3UG4815 monitoring relay monitors three-phase networks with regard to phase sequence, phase failure, phase asymmetry, undervoltage and overvoltage. The 3UG4816 monitoring relay monitors the neutral conductor as well. The hysteresis is adjustable from 1 to 20 V.

The device has two separately adjustable delay times for overvoltage and undervoltage and for line stabilization. If the direction of rotation is incorrect or a phase fails, the device switches off immediately. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from and potentially high feedback through the load.

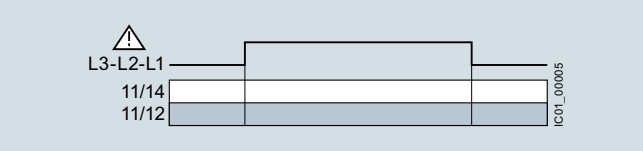
The 3UG4815 and 3UG4816 monitoring relays can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continues to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2.5 s.

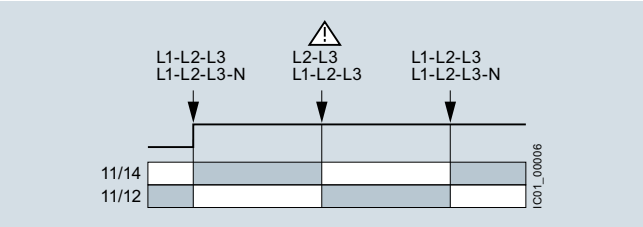
With Manual RESET through IO-Link it is possible in addition to set whether error signals are to be deleted when the control supply voltage is switched off and on (as remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

With the closed-circuit principle selected

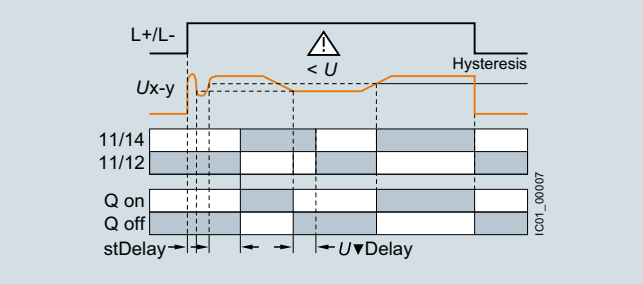
Wrong phase sequence



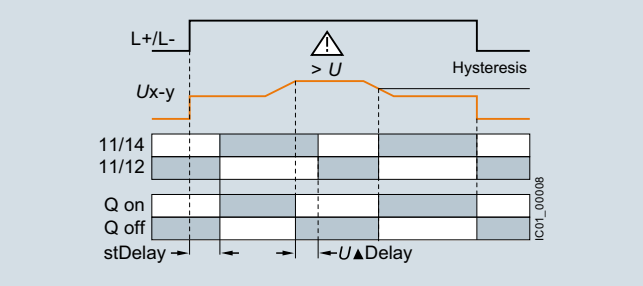
Phase failure



Undervoltage



Overvoltage



Type		3UG4815, 3UG4816
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III acc. to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Load capacity of the output relay • Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13 at - 24 V - 125 V - 250 V	A A A A	3 1 0.2 0.1
Minimum contact load at 17 V DC	mA	5
Electrical endurance AC-15	Million operating cycles	0.1
Mechanical endurance	Million operating cycles	10

Selection and ordering data

- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Auto or Manual RESET
- Open or closed-circuit principle
- 1 CO contact, 1 semiconductor output (in SIO mode)

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H


3UG4815-1AA40


3UG4816-1AA40


3UG4815-2AA40


3UG4816-2AA40

Adjustable hysteresis	Undervoltage detection	Overvoltage detection	Stabilization time adjustable stDEL	Tripping delay time adjustable Del	Version of auxiliary contacts	Measurable line voltage[1]	SD	Screw terminals Article No.	Screw terminals Price per PU	SD	Spring-type terminals Article No.	Spring-type terminals Price per PU
V			s	s		V AC	d			d		
Monitoring of phase sequence, phase failure, phase asymmetry, overvoltage and undervoltage												
1 ... 20	✓	✓	0.1 … 999.9	0.1 … 999.9	1 CO + 1 Q[2]	160 … 690	2	**3UG4815-1AA40**		2	**3UG4815-2AA40**	
Monitoring of phase sequence, phase and N conductor failure, phase asymmetry, overvoltage and undervoltage												
1 ... 20	✓	✓	0.1 … 999.9	0.1 … 999.9	1 CO + 1 Q[2]	90 … 400 to N	2	**3UG4816-1AA40**		2	**3UG4816-2AA40**	

✓ Function available

[1] Absolute limit values.
[2] In SIO mode.

For accessories, see page 10/133.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3UG4832 monitoring relays

The relays monitor single-phase AC voltages (rms value) and DC voltages against the set limit value for overshoot and undershoot.

Benefits

- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display and transmission of actual value and status messages to controller
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Protection of a plant against destruction due to overvoltage
- Switch-on of a plant at a defined voltage and higher
- Protection from undervoltage due to overloaded control supply voltages, particularly with battery power

Technical specifications

3UG4832 monitoring relays

The 3UG4832 voltage monitoring relays are supplied with power through IO-Link or with an external auxiliary voltage of 24 V DC and perform overshoot, undershoot or range monitoring of the voltage depending on parameterization. The devices are equipped with a display and are parameterized by means of three buttons or through IO-Link.

The measuring range extends from 10 to 600 V AC/DC. The limit values for overshoot or undershoot can be freely configured within this range. If one of these limit values is reached, the output relay responds according to the set principle of operation as soon as the delay time has elapsed. This tripping delay time *U*▲Del/*U*▼Del can be set from 0 to 999.9 s, as can the ON-delay time onDel. The hysteresis is adjustable from 0.1 to 300 V.

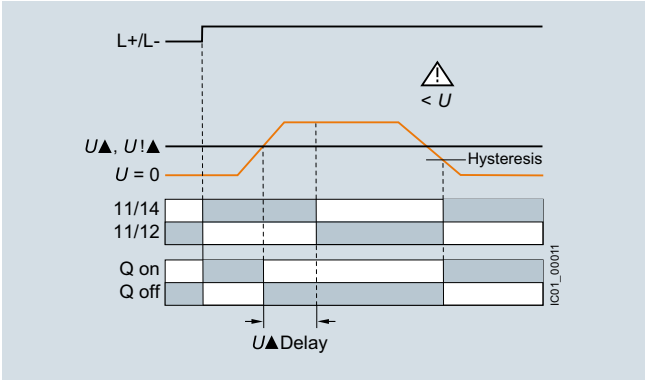
The device can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET. One output changeover contact is available as a signaling contact, and a semiconductor output is available in addition in SIO mode.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continues to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2.5 s.

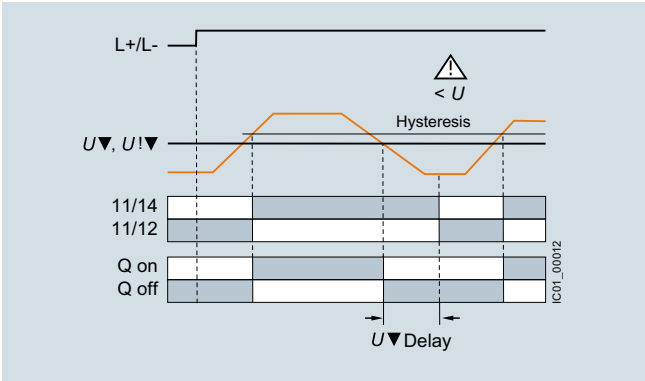
With Manual RESET through IO-Link it is possible in addition to set whether error signals are to be deleted when the control supply voltage is switched off and on (as remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

With the closed-circuit principle selected

Overvoltage



Undervoltage

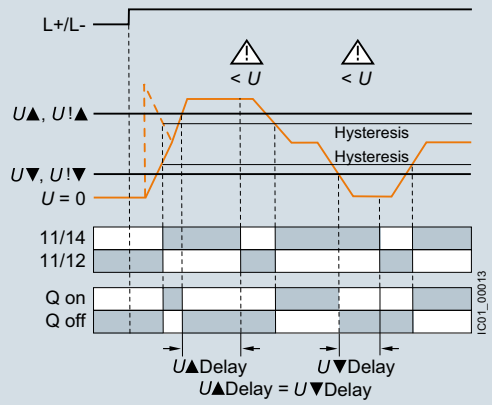


10

Voltage monitoring

With the closed-circuit principle selected

Range monitoring



Type		3UG4832
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III acc. to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Measuring circuit		
Permissible measuring range single-phase AC/DC voltage	V	10 … 690
Measuring frequency	Hz	40 ... 500
Setting range single-phase voltage	V	10 ... 600
Control circuit		
Load capacity of the output relay		
• Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 400 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

Selection and ordering data

- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Auto or Manual RESET
- Open or closed-circuit principle
- 1 CO contact, 1 semiconductor output (in SIO mode)

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

3UG4832-1AA40

3UG4832-2AA40

Measuring range	Adjustable hysteresis	Adjustable delay time onDel	Tripping delay time separately adjustable *U*▲Del/*U*▼Del	SD	**Screw terminals**		SD	**Spring-type terminals**	
					Article No.	Price per PU		Article No.	Price per PU
V AC/DC	V	s	s	d			d		
Monitoring of voltage for overshoot and undershoot									
10 … 600	0.1 ... 300	0 … 999.9	0 … 999.9	2	**3UG4832-1AA40**		2	**3UG4832-2AA40**	

For accessories, see page 10/133.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

SIRIUS 3UG4822 monitoring relays

The relays monitor single-phase AC (rms value) and DC currents against the set limit value for overshoot and undershoot.

Benefits

- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display and transmission of actual value and status messages to controller
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Overcurrent and undercurrent monitoring
- Monitoring the functionality of electrical loads
- Monitoring for broken conductors

Technical specifications

3UG4822 monitoring relays

The 3UG4822 current monitoring relays are supplied with power through IO-Link or with an external voltage of 24 V DC and perform overshoot, undershoot or range monitoring of the current depending on the parameterization. The devices are equipped with a display and are parameterized using three buttons.

The measuring range extends from 0.05 to 10 A. For larger AC currents the measuring range can be extended by using commercially available current transformers. Using the adjustable transformer factor, the display of the measured primary currents up to 750 A instead of the secondary currents (max. 1 A or 5 A) is possible.

The rms value of the current is measured. The limit values for overshoot or undershoot can be freely configured within this range. If one of these limit values is reached, the output relay responds according to the set principle of operation as soon as the delay time *I*▲Del/*I*▼Del has elapsed. This time and the ON-delay time onDel are adjustable from 0 to 999.9 s.

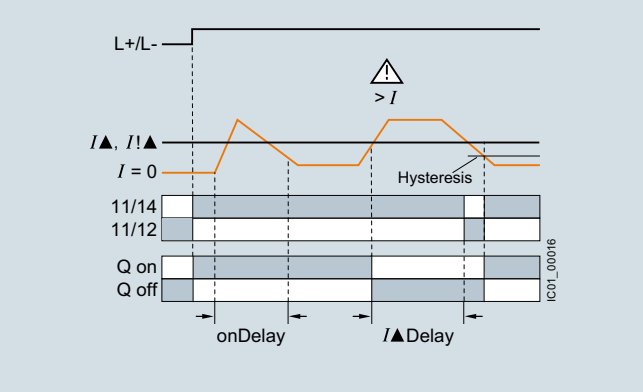
The hysteresis is adjustable from 0.01 to 5 A. The device can be operated with Manual or Auto RESET and on the basis of either the open-circuit or closed-circuit principle. You can decide here whether the output relay is to respond when the supply voltage U_S = ON is applied, or not until the lower measuring range limit of the measuring current (I > 50 mA) is reached. One output changeover contact is available as a signaling contact, and a semiconductor output is available in addition in SIO mode.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continues to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2.5 s.

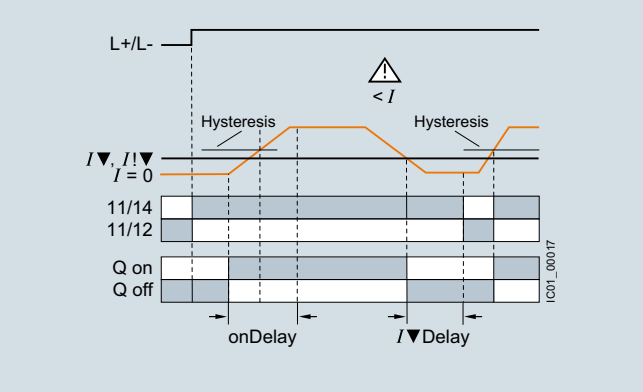
With Manual RESET through IO-Link it is possible in addition to set whether error signals are to be deleted when the control supply voltage is switched off and on (as remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

With the closed-circuit principle selected upon application of the control supply voltage

Current overshoot

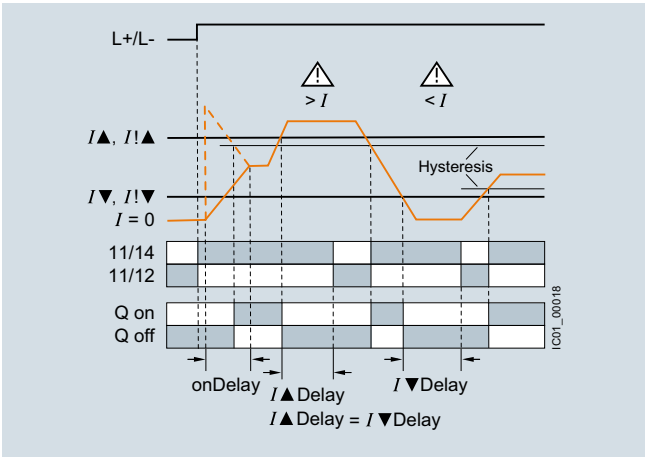


Current undershoot



With the closed-circuit principle selected
upon application of the control supply voltage

Range monitoring



Type		3UG4822
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III acc. to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Measuring circuit		
Measuring range for single-phase AC/DC current	A	0.05 … 15
Measuring frequency	Hz	40 ... 500
Setting range for single-phase current	A	0.05 ... 10
Load supply voltage	V	Max. 300 (with protective separation) Max. 500 (with simple separation)
Control circuit		
Load capacity of the output relay		
• Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 400 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

10

Selection and ordering data

- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Adjustable converter factor to display the measured primary current when an external current transformer is used
- Auto or Manual RESET
- Open or closed-circuit principle
- 1 CO contact, 1 semiconductor output (in SIO mode)

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

3UG4822-1AA40

3UG4822-2AA40

Measuring range	Adjustable hysteresis	ON-delay time adjustable onDel	Tripping delay time separately adjustable I▲Del/I▼Del	SD	**Screw terminals**		SD	**Spring-type terminals**	
					Article No.	Price per PU		Article No.	Price per PU
AC/DC A	A	s	s	d			d		
Monitoring of current for overshooting and undershooting									
0.05 … 10	0.01 ... 5	0.1 … 999.9	0.1 … 999.9	2	**3UG4822-1AA40**		2	**3UG4822-2AA40**	

For accessories, see page 10/133.

For AC currents I > 10 A it is possible to use commercially available current transformers, e.g. the Siemens 4NC current transformer, as accessories, see Catalog LV 10, "Low-Voltage Power Distribution and Electrical Installation Technology".

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3UG4841 monitoring relay

The 3UG4841 power factor and active current monitoring devices enable the load monitoring of motors.

Whereas power factor (p.f.) monitoring is used above all for monitoring no-load operation, the active current monitoring option can be used to observe and evaluate the load factor over the entire torque range.

Benefits

- Monitoring of even small single-phase motors with a no-load supply current below 0.5 A
- Simple determination of threshold values by the direct collection of measured variables on motor loading
- Range monitoring and active current measurement enable detection of cable breaks between control cabinets and motors, as well as phase failures
- Power factor (p.f.) and/or I_{res} (active current) can be selected as the measurement principle
- Width 22.5 mm
- Display and transmission of actual value and status messages to controller
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- No-load monitoring and load shedding, such as in the event of a V-belt tear
- Underload monitoring in the low-end performance range, e.g. in the event of pump no-load operation
- Monitoring of overload, e.g. due to a dirty filter system
- Power factor monitoring in networks for control of compensation equipment
- Broken cable between control cabinet and motor

Technical specifications

3UG4841 monitoring relays

The 3UG4841 monitoring relays are supplied with power through IO-Link or with an external auxiliary voltage of 24 V DC and are used for performing overshoot, undershoot or range monitoring of the power factor and/or the resulting active current, depending on parameterization. The load to be monitored is connected upstream of the IN terminal. The load current flows through the terminals IN and Ly/N. The setting range for the power factor is 0 to 0.99 and for the active current I_{res} it is 0.2 to 10 A. If the control supply voltage is switched on and no load current flows, the display will show I < 0.2 and a symbol for overrange, underrange or range monitoring. If the motor is now switched on and the current exceeds 0.2 A, the set ON-delay time onDel begins. During this time, if the set limit values are undershot or exceeded, this does not lead to a relay reaction of the changeover contact. If the operational flowing active current and/or the p.f. value falls below or exceeds the respective set threshold value, the tripping delay time begins. When this time has expired, the relay changes its switch position. The relevant measured variables for overshooting and undershooting in the display flash. If monitoring for active current undershoot is switched off (I_{res}▼= OFF), and if the load current undershoots the lower measuring range threshold (0.2 A), the CO contacts remain unchanged. If a threshold value is set for the monitoring of active current undershooting, then undershooting of the measuring range threshold (0.2 A) will result in a response of the CO contacts.

The relay operates either according to the open-circuit or closed-circuit principle.

If the device is set to Auto RESET (Memory = No), depending on the set principle of operation, the switching relay returns to its initial state and the flashing ends when the hysteresis threshold is reached.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continues to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2.5 s.

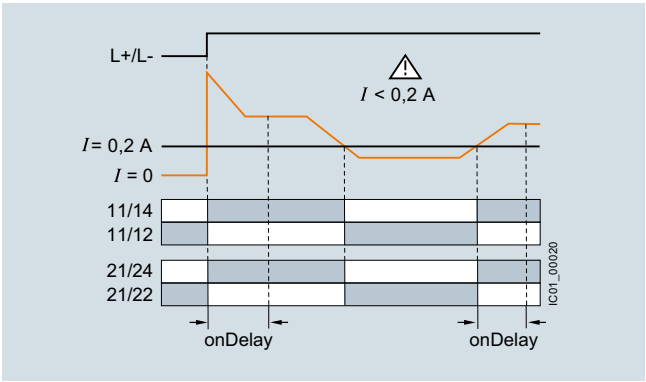
With Manual RESET through IO-Link it is possible in addition to set whether error signals are to be deleted when the control supply voltage is switched off and on (as remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

Power factor and active current monitoring

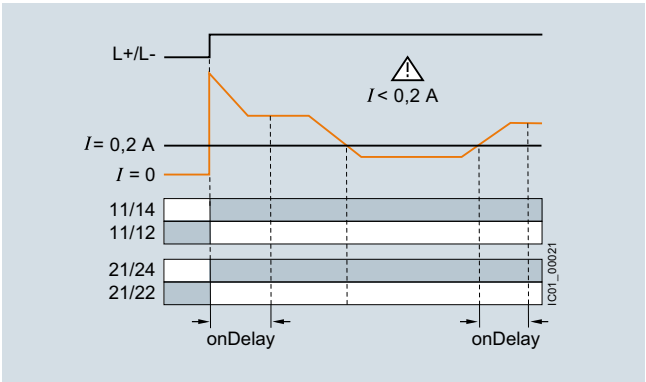
With the closed-circuit principle selected

Response in the event of undershooting the measuring range limit

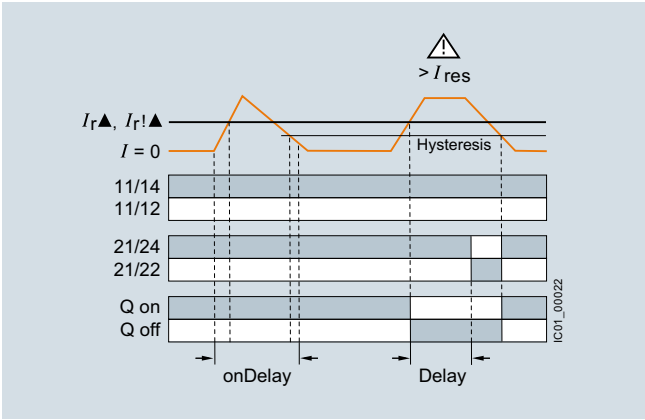
- With activated monitoring of I_{res}▼



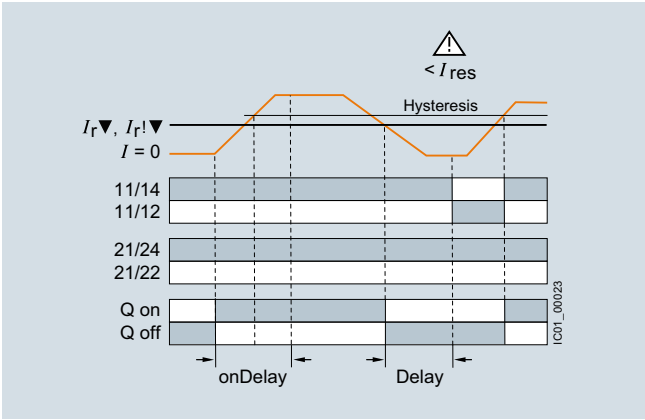
- With deactivated monitoring of active current undershooting



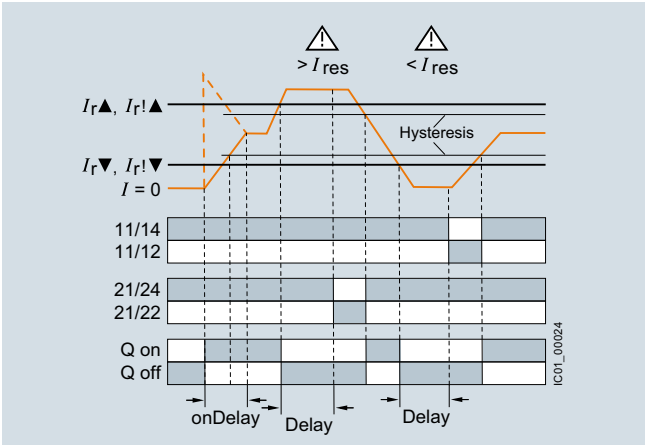
Overshooting of active current



Undershooting of active current

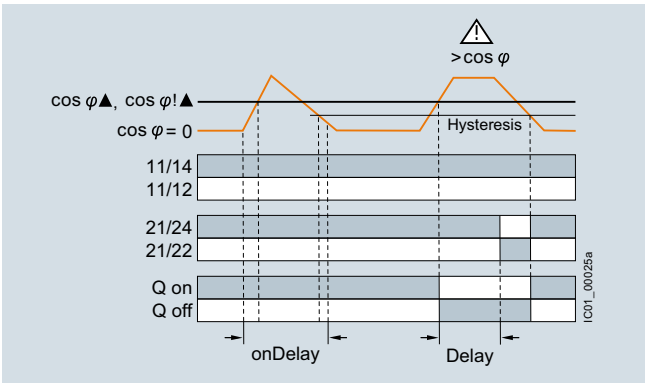


Range monitoring of active current

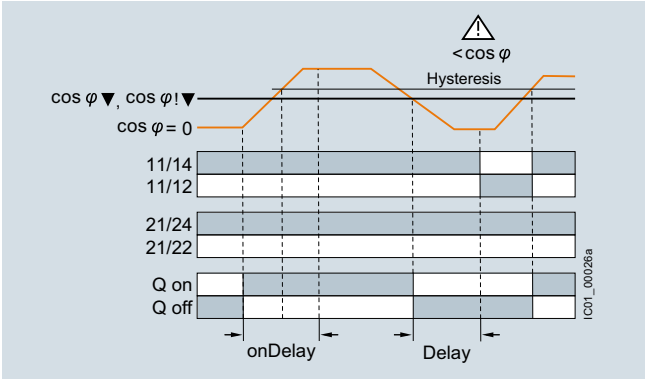


With the closed-circuit principle selected

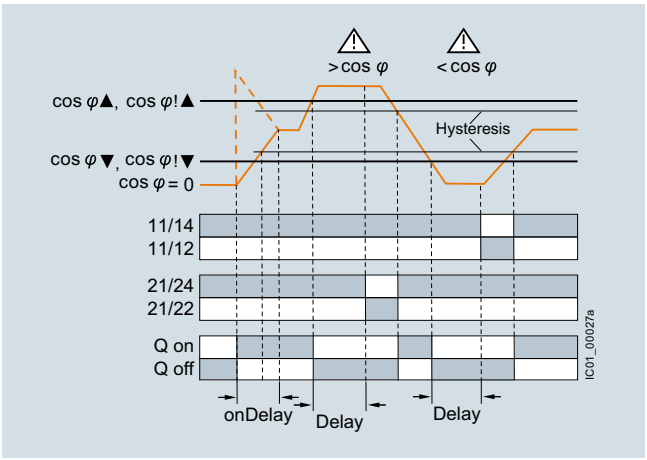
Overshooting of power factor



Undershooting of power factor



Range monitoring of power factor



Type		3UG4841
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III according to IEC 60664-1	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Number of CO contacts for auxiliary contacts		2
Load capacity of the output relay • Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13 at - 24 V - 125 V - 250 V	A A A A	3 1 0.2 0.1
Minimum contact load at 17 V DC	mA	5

Selection and ordering data

- For monitoring the power factor and the active current I_{res} (p.f. x I)
- Suitable for single- and three-phase currents
- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Overshoot, undershoot or range monitoring adjustable
- Upper and lower limit values can be adjusted separately
- Permanent display of actual value and tripping state
- 1 CO contact each for undershoot and overshoot, 1 semiconductor output (in SIO mode)

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

3UG4841-1CA40

3UG4841-2CA40

Measuring range		Voltage range of the measuring voltage[1]	Hysteresis		ON-delay time adjustable onDel	Tripping delay time separately adjustable U▲Del/ U▼Del, φ▲Del/ φ▼Del	SD	**Screw terminals**		SD	**Spring-type terminals**	
For power factor	For active current I_{res}	50/60 Hz AC	Adjustable for power factor	Adjustable for active current I_{res}				Article No.	Price per PU		Article No.	Price per PU
P.f.	A	V	P.f.	A	s	s	d			d		
Monitoring of power factor and active current for overshooting and undershooting												
0.1 ... 0.99	0.2 ... 10	90 ... 690	0.1 ... 0.2	0.1 ... 3	0 ... 999.9	0 ... 999.9	2	**3UG4841-1CA40**		2	**3UG4841-2CA40**	

[1] Absolute limit values.

For accessories, see page 10/133.

For AC active currents I_{res} > 10 A it is possible to use commercially available current transformers, e.g. Siemens 4NC current transformers, as accessories, see Catalog LV 10 "Low-Voltage Power Distribution and Electrical Installation Technology".

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3UG4825 monitoring relay

The 3UG4825 residual-current monitoring relays are used in conjunction with the 3UL23 residual current transformers for monitoring plants in which higher residual currents are increasingly expected due to ambient conditions. Monitoring encompasses pure AC residual currents or AC residual currents with a pulsating DC fault current component (transformer type A in accordance with DIN VDE 0100-530/IEC TR 60755).

Benefits

- High measuring accuracy of ± 7.5 %
- Permanent self-monitoring
- Parameterization of the devices locally or via IO-Link possible
- Variable threshold values for warning and disconnection
- Freely configurable delay times and RESET response
- Display and transmission of actual value and status messages to controller
- High level of flexibility and space saving through installation of the transformer inside or outside the control cabinet
- Width 22.5 m
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

Monitoring of plants in which residual currents can occur, e.g. due to dust deposits or moisture, porous cables and leads, or capacitive residual currents.

Technical specifications

3UG4825 monitoring relays

The main conductor, and any neutral conductor to which a load is connected, are routed through the opening of the annular ring core of a residual-current transformer. A secondary winding is placed around this annular strip-wound core to which the monitoring relay is connected.

If operation of a plant is fault-free, the sum of the inflowing and outward currents equals zero. No current is then induced in the secondary winding of the residual-current transformer.

However, if an insulation fault occurs downstream of the residual current operated circuit breaker, the sum of the inflowing currents is greater than that of the outward currents. The differential current - the residual current - induces a secondary current in the secondary winding of the transformer. This current is evaluated in the monitoring relay and is used on the one hand to display the actual residual current and on the other, to switch the relay if the set warning or tripping threshold is overshot.

If the measured residual current exceeds the set warning value, the associated changeover contact instantly changes the switching state and an indication appears on the display.

If the measured residual current exceeds the set tripping value, the set delay time begins and the associated relay symbol flashes. On expiry of this time, the associated changeover contact changes the switching state.

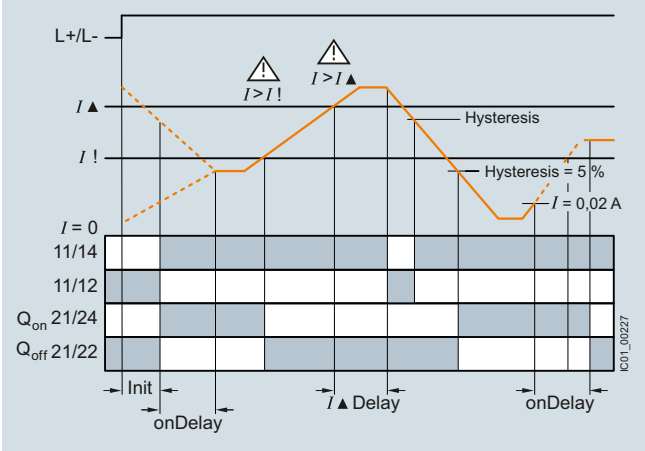
ON-delay time for motor start

To be able to start a drive when a residual current is detected, the output relays switch to the OK state for an adjustable ON-delay time depending on the selected open-circuit principle or closed-circuit principle.

The changeover contacts do not react if the set threshold values are overshot during this period.

With the closed-circuit principle selected

Residual current monitoring with Auto RESET (Memory = no)



If the device is set to Auto RESET, the relay switches back to the OK state for the tripping value once the value falls below the set hysteresis threshold and the display stops flashing.

The associated relay changes its switching state if the value falls below the fixed hysteresis value of 5 % of the warning value.

Any overshoots are therefore not stored.

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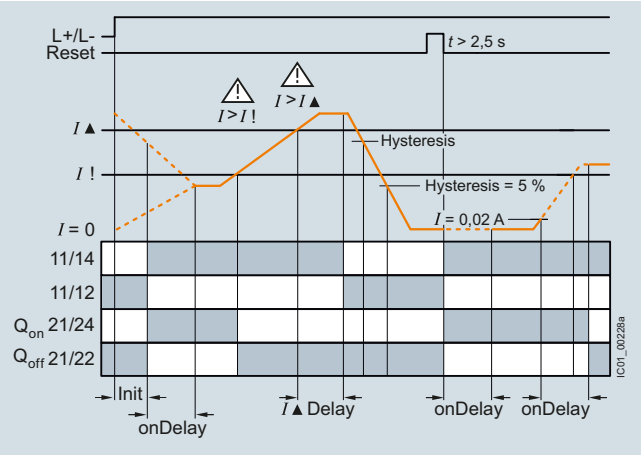
Residual-current monitoring relays

Residual current monitoring with Manual RESET (Memory = yes)



If Manual RESET is selected in the menu, the output relays remain in their current switching state and the current measured value and the symbol for overshooting continues to flash, even when the measured residual current returns to a permissible value. This stored fault status can be reset by pressing the UP▲ and DOWN▼ keys simultaneously for > 2 seconds, or by switching the supply voltage off and back on again.

Note:

The neutral conductor must not be grounded downstream of the summation current transformer as this may impair the function of the residual current monitoring device.

Type		**3UG4825-1CA40, 3UG4825-2CA40**
General data		
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3 rated value	V	300
Impulse withstand voltage, rated value U_{imp}	kV	4
Control circuit		
Number of CO contacts for auxiliary contacts		2
Thermal current of the non-solid-state contact blocks, maximum	A	5
Current carrying capacity of the output relay		
• At AC-15 at 250 V at 50/60 Hz	A	3
• At DC-13		
- At 24 V	A	1
- At 125 V	A	0.2
- At 250 V	A	0.1
Operational current at 17 V, minimum	mA	5

10

Selection and ordering data

- For monitoring residual currents from 0.03 to 40 A, from 16 to 400 Hz
- For 3UL23 residual-current transformers with feed-through opening from 35 to 210 mm
- Permanent self-monitoring
- Certified in accordance with IEC 60947, functionality corresponds to IEC 62020
- Digitally adjustable, with illuminated LCD
- Permanent display of actual value and tripping state
- Separately adjustable limit value and warning threshold
- 1 changeover contact each for warning threshold and tripping threshold

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

3UG4825-1CA40

3UG4825-2CA40

Measurable current	Adjustable response value current	Switching hysteresis	Adjustable ON-delay time	Control supply voltage At DC rated value	SD	**Screw terminals**	SD	**Spring-type terminals**
						Article No. Price per PU		Article No. Price per PU
A	A	%	s	V	d		d	
0.01 ... 43	0.03 ... 40	0 ... 50	0 ... 999.9	24	2	**3UG4825-1CA40**	2	**3UG4825-2CA40**

For accessories, see page 10/133.

For 3UL23 residual-current transformers and accessories for 3UL23, see page 10/95.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3UG4851 monitoring relay

3UG4851 monitoring relays are used in combination with a sensor to monitor drives for overspeed and/or underspeed.

Furthermore, the monitoring relays are ideal for all functions where a continuous pulse signal needs to be monitored (e.g. belt travel monitoring, completeness monitoring, passing monitoring, clock-time monitoring).

Benefits

- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Display and transmission of actual value and fault type to controller
- Use of up to 10 sensors per rotation for extremely slowly rotating motors
- 2- or 3-wire sensors and sensors with a mechanical switching output or semiconductor output can be connected
- Auxiliary voltage for sensor integrated
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Slip or tear of a belt drive
- Overload monitoring
- Transport monitoring for completeness

Technical specifications

3UG4851 monitoring relays

The speed monitoring relay operates according to the principle of period duration measurement.

In the monitoring relay, the time between two successive rising edges of the pulse encoder is measured and compared to the minimum and/or maximum permissible period duration calculated from the set limit values for the speed.

Thus, the period duration measurement recognizes any deviation in speed after just two pulses, even at very low speeds or in the case of extended pulse gaps.

By using up to ten pulse encoders evenly distributed around the circumference, it is possible to shorten the period duration, and in turn the response time. By taking into account the number of sensors in the monitoring relay, the speed continues to be indicated in rpm.

ON-delay time for motor start

To be able to start a motor drive, and depending on whether the open-circuit or closed-circuit principle is selected, the output relay switches to the GO state during the ON-delay time, even if the speed is still below the set value.

The ON-delay time is started by either switching on the auxiliary voltage or, if the auxiliary voltage is already applied, by actuating the respective NC contact (e.g. auxiliary contact).

Speed monitoring with Auto RESET (Memory = no)

If the device is set to Auto RESET, the output relay switches to the GO state, once the adjustable hysteresis threshold is reached in the range of 1 to 99.9 rpm and the flashing stops. Any overshoots or undershoots are therefore not stored.

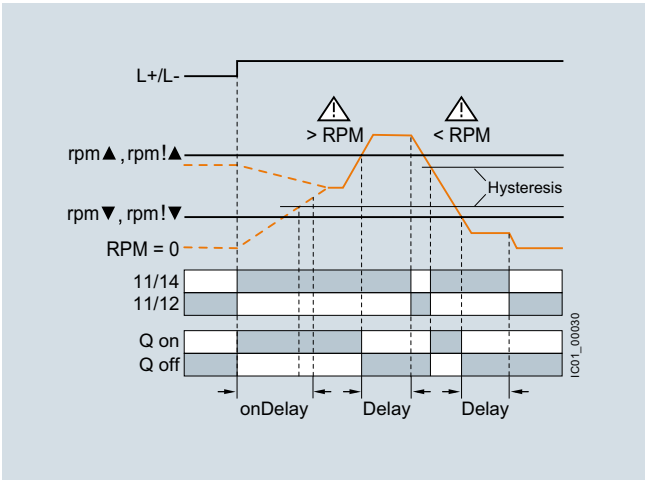
Speed monitoring with Manual RESET (Memory = yes)

If Manual RESET is selected in the menu, the output relay remains in its current switching state and the current measured value and the symbol for overshooting/undershooting continue to flash, even when the speed returns to a permissible value. This stored fault status can be reset by pressing the UP▲ and DOWN▼ buttons simultaneously for > 2.5 s or by connecting the RESET device terminal to 24 V DC.

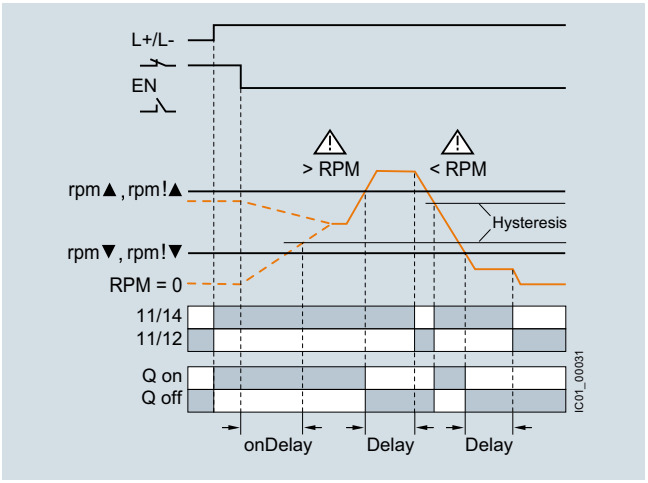
With Manual RESET through IO-Link it is possible in addition to set whether error signals are to be deleted when the control supply voltage is switched off and on (as remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

With the closed-circuit principle selected

Range monitoring without enable input



Range monitoring with enable input



Type		3UG4851
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III acc. to VDE 0110	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Measuring circuit		
Sensor supply		
• For 3-wire sensor (24 V/0 V)	mA	Max. 50
• For 2-wire NAMUR sensor (8V2)	mA	Max. 8.2
Signal input		
• IN1	kΩ	16, 3-wire sensor, pnp operation
• IN2	kΩ	1, floating contact, 2-wire NAMUR sensor
Voltage level		
• For level 1 at IN1	V	4.5 ... 30
• For level 0 at IN1	V	0 ... 1
Current level		
• For level 1 at IN2	mA	> 2.1
• For level 0 at IN2	mA	< 1.2
Minimum pulse duration of signal	ms	5
Minimum interval between 2 pulses	ms	5
Control circuit		
Number of CO contacts for auxiliary contacts		1
Load capacity of the output relay Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 250 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

10

Selection and ordering data

- For speed monitoring in revolutions per minute (rpm)
- Two- or three-wire sensor with mechanical or electronic switching output can be connected
- Two-wire NAMUR sensor can be connected
- Sensor supply 24 V DC/50 mA integrated
- Input frequency 0.1 to 2 200 pulses per minute (0.0017 to 36.7 Hz)
- With or without enable signal for the drive to be monitored
- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Overshoot, undershoot or range monitoring adjustable
- Number of pulses per revolution can be adjusted
- Upper and lower limit values can be adjusted separately
- Auto, manual or remote RESET options after tripping
- Permanent display of actual value and tripping state
- 1 CO contact, 1 semiconductor output (in SIO mode)

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H


3UG4851-1AA40

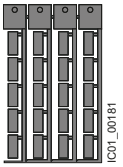

3UG4851-2AA40

Measuring range	Hysteresis adjustable	Adjustable delay time onDel	Tripping delay time separately adjustable rpm▲Del/ rpm▼Del	Pulses per revolution	SD	**Screw terminals**	SD	**Spring-type terminals**
						Article No. Price per PU		Article No. Price per PU
rpm	rpm	s	s		d		d	
Speed monitoring for overshooting and undershooting								
0.1 ... 2 200	OFF 1 ... 99.9	0 ... 999.9	0 ... 999.9	1 ... 10	2	**3UG4851-1AA40**	2	**3UG4851-2AA40**

For accessories, see page 10/133.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

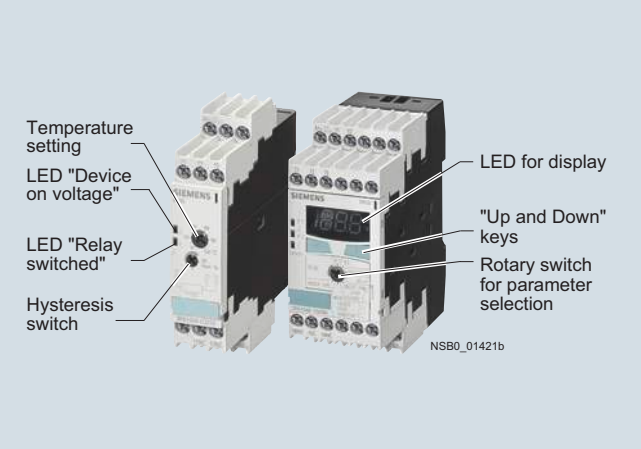
Selection and ordering data

	Use	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Blank labels								
 3RT2900-1SB20	For 3UG48	**Unit labeling plates** For SIRIUS devices						
		20 mm x 7 mm, titanium gray[1]	20	**3RT2900-1SB20**		100	340 units	41B
	For 3UG48	**Adhesive labels** for SIRIUS devices						
		• 19 mm x 6 mm, pastel turquoise	15	**3RT1900-1SB60**		100	3 060 units	41B
		• 19 mm x 6 mm, zinc yellow	15	**3RT1900-1SD60**		100	3 060 units	41B
Push-in lugs and covers								
 3RP1903	For 3UG48	**Push-in lugs** For screw fixing, 2 units are required for each device	5	**3RP1903**		1	10 units	41H
 3RP1902	For 3UG48	**Sealable covers** For securing against unauthorized adjustment of setting knobs	5	**3RP1902**		1	5 units	41H
Tools for opening spring-type terminals								
 3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-type terminals		**Spring-type terminals**				
		3.0 mm x 0.5 mm Length approx. 200 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/20.

General data

Overview



SIRIUS 3RS temperature monitoring relay

More information

Home page, see www.siemens.com/relays
Industry Mall, see www.siemens.com/product?3RS10

The 3RS10, 3RS11, 3RS20 and 3RS21 temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperatures are acquired by means of sensors in the medium, evaluated by the device and monitored for overshoot, undershoot or location within a specified range (window function).

The range comprises adjustable analog units with one or two threshold values, digital units for 1 sensor, which are also a good alternative to temperature controllers for the low-end range, and digital units for up to 3 sensors which have been optimized for monitoring large motors.

Article No. scheme

Product versions		Article number
Temperature monitoring relays		**3RS** □□□□ – □□□□ **0**
Device type	e.g. 10 = analogically adjustable, 1 sensor	□□
Version and type of sensor	e.g. 00 = one threshold value, PT100 sensor	□□
Connection type	Screw terminals	**1**
	Spring-type terminals (push-in)	**2**
Number and type of outputs	e.g. C = 1 NO + 1 NC	□
Control supply voltage	e.g. D = 24 V AC/DC	□
Measuring range	e.g. 0 = -50 ... + 50 °C	□
Example		**3RS 1 0 0 0 – 1 C D 0 0**

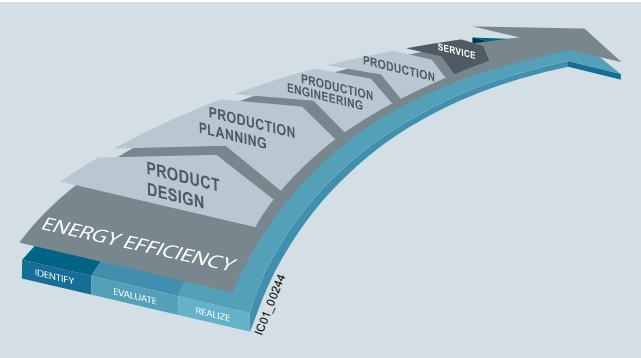
Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative SIRIUS industrial controls products can also make a major contribution to the energy efficiency of a plant (www.siemens.com/sirius/energysaving).

The 3RS10, 3RS11, 3RS20 and 3RS21 temperature monitoring relays make the following contribution to the energy efficiency of the plant as a whole:

- Demand-based control of heating and ventilation in the process and in the control cabinet

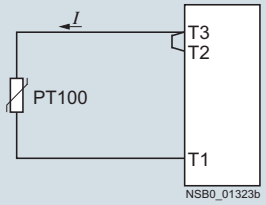
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16369/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16369/faq
Manual and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/54999309	

Connection of resistance-type thermometers

Two-wire measurement

When two-wire temperature sensors are used, the resistances of the sensor and wiring are added. The resulting systematic error must be taken into account when the signal evaluation unit is calibrated. A jumper must be clamped between terminals T2 and T3 for this purpose.



Wiring errors

The errors that are generated by the wiring comprise approximately 2.5 KΩ. If the resistance of the cable is not known and cannot be measured, the wiring errors can also be estimated using the following table.

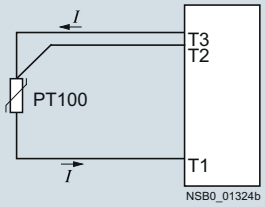
Temperature drift dependent on the length and cross-section of the cable with PT100 sensors and an ambient temperature of 20 °C, in K:

Cable length in m	Cross-section mm²			
	0.5	0.75	1	1.5
	Temperature drift in K:			
0	0	0	0	0
10	1.8	1.2	0.9	0.6
25	4.5	3.0	2.3	1.5
50	9.0	6.0	4.5	3.0
75	13.6	9.0	6.8	4.5
100	18.1	12.1	9.0	6.0
200	36.3	24.2	18.1	12.1
500	91.6	60.8	45.5	30.2

Example: On a PT100 sensor with a cable length of 10 m and a conductor cross-section of 1 mm^2 the temperature drift equals 0.9 K.

Three-wire measurement

To minimize the effects of the line resistances, a three-wire circuit is often used. Using the additional cable, two measuring circuits can be formed of which one is used as a reference. The signal evaluation unit can then automatically calculate the line resistance and take it into account.



Connection of thermocouples

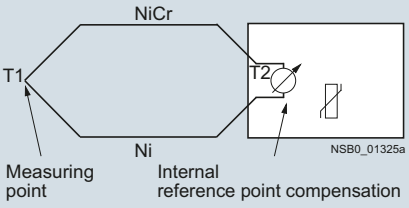
Based on the thermo-electrical effect, a differential temperature measurement will be performed between the measuring point and the signal evaluation unit.

This principle assumes that the signal evaluation unit knows the temperature at the clamping point (T2). For this reason, the 3RS11 temperature monitoring relay has an integral compensator that determines this comparison temperature and builds it into the result of the measurement. The thermal sensors and cables must be insulated therefore.

The absolute temperature is therefore calculated from the ambient temperature of the signal evaluation unit and the temperature difference measured by the thermelement.

Temperature detection is therefore possible (T1) without needing to know the precise ambient temperature of the clamping point at the signal evaluation unit (T2).

The connecting cable is only permitted to be extended using connecting leads that are made from the same material as the thermocouple. If a different type of conductor is used, an error will result in the measurement.



For more information see http://www.ephy-mess.com.

General data

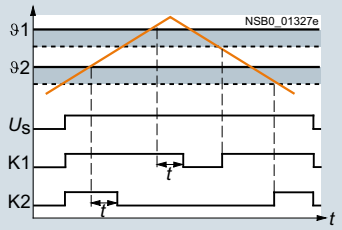
Principle of operation

Once the temperature has reached the set threshold value ϑ1, the output relay K1 changes its switching state as soon as the set time *t* has elapsed (K2 responds in the same manner to ϑ2). The delay time can only be adjusted with digital units (on analog units *t* = 0).

The relays return to their original state as soon as the temperature reaches the set hysteresis value.

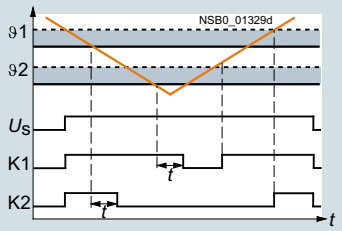
Temperature overshoot

Closed-circuit principle



Temperature undershoot

Closed-circuit principle

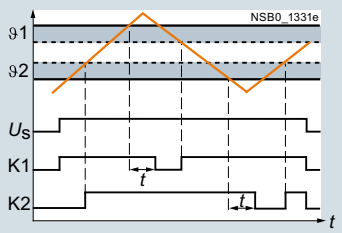


Range monitoring (digital units only)

Once the temperature has reached the upper threshold value ϑ1, the output relay K1 changes its switching state as soon as the set time *t* has elapsed. The relay returns to its original state as soon as the temperature reaches the set hysteresis value.

K2 responds in the same manner to the lower threshold value of ϑ2.

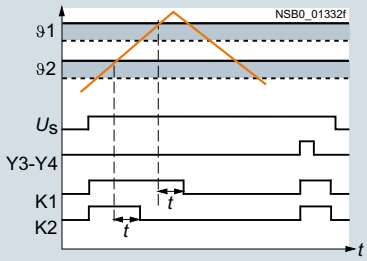
Closed-circuit principle



Principle of operation with memory function (3RS1042, 3RS1142) based on the example of temperature overshoot

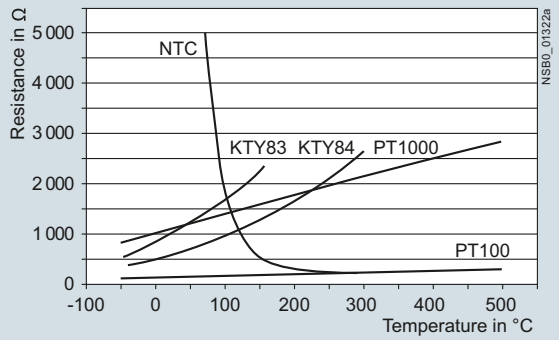
Once the temperature has reached the set threshold value ϑ1, the output relay K1 changes its switching state as soon as the set time t has elapsed (K2 responds in the same manner to ϑ2). The relays only return to the original state when the temperature falls below the set hysteresis value and when terminals Y3-Y4 have been briefly jumpered.

Closed-circuit principle



Characteristic curves

For resistance sensors



The short-circuit and open-circuit detection as well as the measuring range is limited, depending on the sensor type.

Measuring ranges in °C for resistance sensors

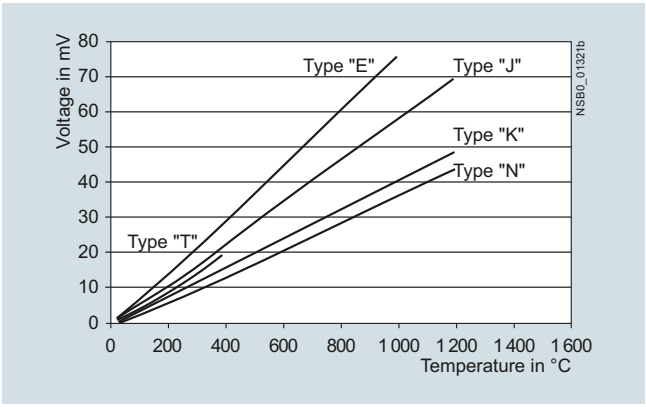
Sensor type	Short circuit	Open circuit	3RS1040/ 3RS1041 Measuring range in °C	3RS1042 Measuring range in °C
PT100	✓	✓	–50 ... +500	–50 ... +750
PT1000	✓	✓	–50 ... +500	–50 ... +500
KTY83-110	✓	✓	–50 ... +175	–50 ... +175
KTY84	✓	✓	–40 ... +300	–40 ... +300
NTC[1)]	✓	--	80 ... 160	80 ... 160

✓ Detection possible
-- Detection not possible

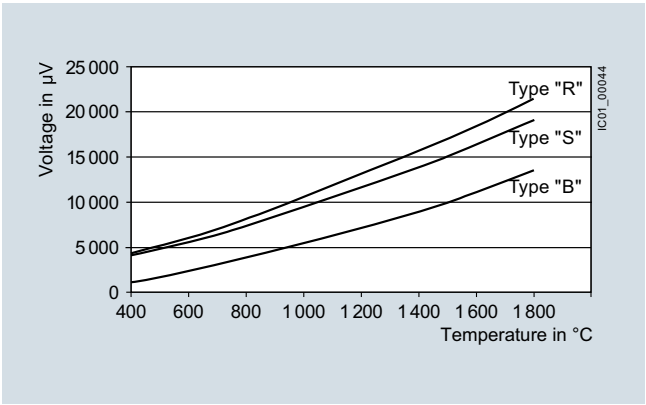
[1)] NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

Characteristic curves

For thermocouples



Characteristic curves for sensor types J, K, T, E, N

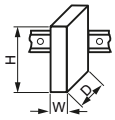


Characteristic curves for sensor types S, R and B

Measuring range in °C for thermocouples

Sensor type	Short circuit	Open circuit	3RS1140 Measuring range in °C	3RS1142 Measuring range in °C
J	--	✓	-99 ... +999	-99 ... +1200
K	--	✓	-99 ... +999	-99 ... +1350
T	--	✓	-99 ... +400	-99 ... +400
E	--	✓	-99 ... +999	-99 ... +999
N	--	✓	-99 ... +999	-99 ... +999
S	--	✓	--	0 ... 1750
R	--	✓	--	0 ... 1750
B	--	✓	--	400 ... 1800

✓ Detection possible
-- Detection not possible

Type			3RS10, 3RS11 analog	3RS10, 3RS11, 3RS20, 3RS21 digital
General technical specifications				
Dimensions (W x H x D)				
• Screw terminals		mm	22.5 x 102 x 91	45 x 106 x 91
• Spring-type terminals		mm	22.5 x 103 x 91	45 x 108 x 91
Permissible ambient temperature				
• During operation		°C	-25 ... +60	
Connection type			**Screw terminals**	
• Terminal screw			M3 (for standard screwdriver, size 2 and Pozidriv 2)	
• Solid		mm^2	1 x (0.5 ... 4)/2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve		mm^2	1 x (0.5 ... 2.5)/2 x (0.5 ... 1.5)	
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)	
Connection type			**Spring-type terminals**	
• Solid		mm^2	2 x (0.25 ... 1.5)	
• Finely stranded, with end sleeve acc. to DIN 46228		mm^2	2 x (0.25 ... 1.5)	
• Finely stranded		mm^2	2 x (0.25 ... 1.5)	
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)	

Relays, analogically adjustable for 1 sensor

Overview

SIRIUS 3RS analog temperature monitoring relays for 1 sensor

The 3RS10, 3RS11 analog temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperature is detected by the sensors in the medium, evaluated by the device and monitored for overshoot or undershoot. When the threshold values are reached, the output relay switches on or off depending on the parameterization.

Benefits

- All devices except for 24 V AC/DC feature electrical separation
- Extremely easy operation using a rotary potentiometer
- Adjustable hysteresis
- Adjustable working principle for devices with 2 threshold values
- All versions with removable terminals
- All versions with screw terminals, many versions alternatively with spring-type terminals

Application

The analogically adjustable SIRIUS 3RS10, 3RS11 temperature monitoring relays can be used in almost any application in which temperature overshoot or undershoot is not permitted, e.g. in the monitoring of set temperature limits and the output of alarm messages for:

- Motor and system protection
- Control cabinet temperature monitoring
- Freeze monitoring
- Temperature limits for process variables e.g. in the packaging industry or electroplating
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Technical specifications

Type		3RS1000, 3RS1010	3RS1100, 3RS1101	3RS1020, 3RS1030	3RS1120, 3RS1121
Auxiliary circuit					
Rated operational currents I_e					
• AC-15/24 ... 250 V	A	3			
• DC-13 at					
- 24 V	A	1			
- 125 V	A	0.2			
- 240 V	A	0.1			
Measuring accuracy at 20 °C ambient temperature (T20)		Typically < ± 5 % of upper limit of scale			
Reference point accuracy	K	--	< ± 5	--	< ± 5
Deviations due to ambient temperature In % of the measuring range		< 2	< 3	< 2	< 3
Hysteresis settings					
• For temperature 1	%	2 ... 20 from upper limit of scale			
• For temperature 2	%	5 from upper limit of scale			
Sensor circuit					
Typical sensor current					
• PT100	mA	Typically 1	--	Typically 1	--
Open-circuit detection		No			
Short-circuit detection		No			
Three-wire conductor connection[1)]		Yes	--	Yes	--
Enclosure					
Rated insulation voltage U_i (pollution degree 3)	V	300			

1) Two-wire connection of resistance sensors with wire jumper between T2 and T3.

Selection and ordering data

- For temperature monitoring with resistance sensors or thermocouples
- Temperature range -55 °C to +1 000 °C, depending on the sensor type
- Wide voltage range versions are electrically separated
- Analogically adjustable, setting accuracy ±5 %
- Versions with 2 separately adjustable threshold values and adjustable open/closed-circuit principle
- Hysteresis for threshold value 1 is adjustable (2 to 20 %), hysteresis for threshold 2 is non-adjustable (5 %)
- 1 NC + 1 NO for versions with one threshold value
- 1 CO for threshold value 1 and 1 NO for threshold value 2

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

	Sensors	Function	Measuring range	Rated control supply voltage U_s 50/60 Hz AC	SD	Screw terminals	SD	Spring-type terminals
						Article No. / Price per PU		Article No. / Price per PU
			°C	V	d		d	
Analogically adjustable, 1 threshold value, width 22.5 mm; closed-circuit principle; without memory; 1 NO + 1 NC								
 3RS1000-1CD10	PT100 (resistance sensor)	Overshoot	- 50 … + 50	24 AC/DC	10	**3RS1000-1CD00**	10	**3RS1000-2CD00**
				110/230 AC	10	**3RS1000-1CK00**	10	**3RS1000-2CK00**
			0 … + 100	24 AC/DC	10	**3RS1000-1CD10**	10	**3RS1000-2CD10**
				110/230 AC	2	**3RS1000-1CK10**	10	**3RS1000-2CK10**
			0 … + 200	24 AC/DC	10	**3RS1000-1CD20**	10	**3RS1000-2CD20**
				110/230 AC	2	**3RS1000-1CK20**	10	**3RS1000-2CK20**
		Undershoot	- 50 … + 50	24 AC/DC	10	**3RS1010-1CD00**		--
				110/230 AC	10	**3RS1010-1CK00**		--
			0 … + 100	24 AC/DC	10	**3RS1010-1CD10**		--
				110/230 AC	10	**3RS1010-1CK10**		--
			0 … + 200	24 AC/DC	10	**3RS1010-1CD20**		--
				110/230 AC	10	**3RS1010-1CK20**		--
 3RS1000-2CD10	Type J (thermocouple)	Overshoot	0 … + 200	24 AC/DC	10	**3RS1100-1CD20**	10	**3RS1100-2CD20**
				110/230 AC	10	**3RS1100-1CK20**		--
			0 … + 600	24 AC/DC	10	**3RS1100-1CD30**		--
				110/230 AC	10	**3RS1100-1CK30**		--
	Type K (thermocouple)	Overshoot	0 … + 200	24 AC/DC	10	**3RS1101-1CD20**		--
				110/230 AC	10	**3RS1101-1CK20**		--
			0 … + 600	24 AC/DC	10	**3RS1101-1CD30**		--
				110/230 AC	10	**3RS1101-1CK30**		--
			+ 500 … + 1 000	24 AC/DC	10	**3RS1101-1CD40**		--
				110/230 AC	10	**3RS1101-1CK40**		--
Analogically adjustable for warning and disconnection (2 threshold values), 22.5 mm width, open/closed-circuit principle switchable; without memory; 1 NO + 1 CO								
 3RS1020-1DD00	PT100 (resistance sensor)	Overshoot	- 50 … + 50	24 AC/DC	10	**3RS1020-1DD00**		--
				24 … 240 AC/DC	10	**3RS1020-1DW00**		--
			0 … + 100	24 AC/DC	10	**3RS1020-1DD10**		--
				24 ... 240 AC/DC	10	**3RS1020-1DW10**		--
			0 … + 200	24 AC/DC	10	**3RS1020-1DD20**		--
				24 ... 240 AC/DC	2	**3RS1020-1DW20**	10	**3RS1020-2DW20**
		Undershoot	-50 … + 50	24 AC/DC	10	**3RS1030-1DD00**		--
				24 ... 240 AC/DC	10	**3RS1030-1DW00**		--
			0 … + 100	24 AC/DC	10	**3RS1030-1DD10**		--
				24 ... 240 AC/DC	10	**3RS1030-1DW10**		--
			0 … + 200	24 AC/DC	10	**3RS1030-1DD20**	10	**3RS1030-2DD20**
				24 ... 240 AC/DC	10	**3RS1030-1DW20**		--
 3RS1120-2DD20	Type J (thermocouple)	Overshoot	0 … + 200	24 AC/DC	10	**3RS1120-1DD20**	10	**3RS1120-2DD20**
				24 ... 240 AC/DC	10	**3RS1120-1DW20**		--
			0 … + 600	24 AC/DC	10	**3RS1120-1DD30**		--
				24 ... 240 AC/DC	10	**3RS1120-1DW30**		--
	Type K (thermocouple)	Overshoot	0 ... + 200	24 ... 240 AC/DC	10	**3RS1121-1DW20**		--
			0 ... + 600	24 ... 240 AC/DC	10	**3RS1121-1DW30**		--
			+ 500 … + 1 000	24 AC/DC	10	**3RS1121-1DD40**		--

For accessories, see page 10/144.

Relays, digitally adjustable for 1 sensor

Overview

SIRIUS 3RS digital temperature monitoring relay for 1 sensor

The 3RS10, 3RS11, 3RS20 and 3RS21 temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperatures are acquired by means of sensors in the medium, evaluated by the device and monitored for overshoot, undershoot or location within a specified range (window function). The 3RS10 and 3RS11 unit indicate the measured temperature in °C, the 3RS20 and 3RS21 unit in °F.

The units are also an excellent alternative to temperature controllers in the low-end performance range (two-or three-point control).

Benefits

- Very simple operation without complicated menu selections
- Two- or three-point control can be parameterized quickly
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The temperature monitoring relays can be used in almost any application in which temperature overshoot or undershoot is not permitted, e.g. in the monitoring of set temperature limits and the output of alarm messages for:

- Plant and environment protection
- Temperature limits for process variables e.g. in the packaging industry or electroplating
- Temperature limits for district heating plants
- Exhaust temperature monitoring
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Technical specifications

Type		3RS1040, 3RS1042, 3RS2040	3RS1140, 3RS2140	3RS1142
Auxiliary circuit				
Rated operational currents I_e				
• AC-15/24 ... 250 V	A	3		
• DC-13 at:				
- 24 V	A	1		
- 125 V	A	0.2		
- 240 V	A	0.1		
Evaluation unit				
Measuring accuracy at 20 °C ambient temperature (T20)		< ± 2 K, ± 1 digit	< ± 5 K, ± 1 digit	< ± 7 K, ± 1 digit
Reference point accuracy		--	< ± 5 K	
Deviations due to ambient temperature In % of the measuring range	%	0.05 °C per K deviation from T20		
Measuring cycle	ms	500		
Hysteresis settings for temperature	K	1 ... 99, for both values		
Adjustable delay time	s	0 ... 999		
Sensor circuit				
Typical sensor current				
• PT100	mA	Typically 1	--	--
• PT1000/KTY83/KTY84/NTC	mA	Typically 0.2	--	--
Open-circuit detection		Yes[1]	Yes	Yes
Short-circuit detection		Yes	No	No
Three-wire conductor connection		Yes[2]	--	--
Enclosure				
Rated insulation voltage U_i (pollution degree 3)	V AC	300		

[1] Not for NTC type B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

[2] Two-wire connection of resistance sensors with wire jumper between T2 and T3.

Selection and ordering data

- For temperature monitoring with resistance sensors or thermocouples
- Temperature range dependent on sensor type
- Wide voltage range versions are electrically separated
- Non-volatile
- Short-circuit and open-circuit detection in sensor circuit
- Digitally adjustable, with illuminated LCD
- Overshoot, undershoot or range monitoring adjustable
- Exact sensor type can be set
- 2 separately adjustable threshold values
- 1 hysteresis applies to both thresholds (0 to 99 K)
- 1 delay time applies to both thresholds (0 to 999 s)
- Adjustable open/closed-circuit principle
- Adjustable manual/remote RESET
- Permanent display of actual value in °C or °F and tripping state
- 1 CO contact each per threshold value
- 1 NO for sensor monitoring

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

Sensors	Measuring range (measuring range limit depends on the sensor)	Rated control supply voltage U_s AC 50/60 Hz	SD	**Screw terminals**	SD	**Spring-type terminals**
		V	d	Article No. / Price per PU	d	Article No. / Price per PU
Temperature monitoring relay, digitally adjustable, 2 threshold values, width 45 mm, 1 CO + 1 CO + 1 NO, memory function possible with external jumper, device parameters are non-volatile						
PT100/1000; KTY83/84; NTC (resistance sensors)[1]	- 50 … + 500 °C	24 AC/DC	2	**3RS1040-1GD50**	2	**3RS1040-2GD50**
		24 … 240 AC/DC	2	**3RS1040-1GW50**	2	**3RS1040-2GW50**
	- 58 … + 932 °F	24 AC/DC	10	**3RS2040-1GD50**	10	**3RS2040-2GD50**
		24 … 240 AC/DC	10	**3RS2040-1GW50**	10	**3RS2040-2GW50**
TYPE J, K, T, E, N (thermocouple)	- 99 … + 999 °C	24 AC/DC	2	**3RS1140-1GD60**	10	**3RS1140-2GD60**
		24 … 240 AC/DC	2	**3RS1140-1GW60**	10	**3RS1140-2GW60**
	- 99 … + 1 830 °F	24 AC/DC	10	**3RS2140-1GD60**	15	**3RS2140-2GD60**
		24 … 240 AC/DC	10	**3RS2140-1GW60**	15	**3RS2140-2GW60**
Temperature monitoring relay, digitally adjustable, 2 threshold values, width 45 mm; 1 CO + 1 CO + 1 NO, tripping state and device parameters are non-volatile						
PT100/1000; KTY83/84; NTC (resistance sensors)[1]	- 50 … + 750 °C	24 AC/DC	10	**3RS1042-1GD70**	10	**3RS1042-2GD70**
		24 … 240 AC/DC	2	**3RS1042-1GW70**	10	**3RS1042-2GW70**
TYPE J, K, T, E, N, R, S, B (thermocouple)	- 99 … +1 800 °C	24 AC/DC	10	**3RS1142-1GD80**	10	**3RS1142-2GD80**
		24 … 240 AC/DC	2	**3RS1142-1GW80**	10	**3RS1142-2GW80**


3RS1040-1GD50


3RS1040-2GW50

[1] NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

For accessories, see page 10/144.

Relays, digitally adjustable for up to 3 sensors

Overview

SIRIUS 3RS digital temperature monitoring relay for up to 3 sensors

The 3RS10, 3RS20 temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperature is detected by the sensor in the medium, evaluated by the device and monitored for overshoot or undershoot or for staying within an operating range (window function). The 3RS10 units indicate the measured temperature in °C, the 3RS20 units in °F. The evaluation unit can evaluate up to 3 resistance sensors at the same time and is specially designed for monitoring motor windings and bearings.

Benefits

- Very simple operation without complicated menu selections
- Space-saving with 45 mm width
- Two- or three-point control can be parameterized quickly
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The 3RS10, 3RS20 temperature monitoring relays can be used in almost any application in which several temperatures have to be monitored simultaneously for overshoot or undershoot or within a range.

Monitoring of set temperature limits and output of alarm messages for:

- Plant and environment protection
- Temperature limits for process variables e.g. in the packaging industry or electroplating
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Technical specifications

Type		3RS1041, 3RS2041
Auxiliary circuit		
Rated operational currents I_e		
• AC-15/24 ... 250 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 240 V	A	0.1
DIAZED fuse protection		
• Operational class gG	A	4
Evaluation unit		
Measuring accuracy at 20°C ambient temperature (T20)		< ± 2 K, ± 1 digit
Deviations due to ambient temperature In % of the measuring range	%	0.05 per K deviation from T20
Measuring cycle	ms	500
Hysteresis settings for temperature 1		1 ... 99 K, for both values
Adjustable delay time	s	0 ... 999
Sensor circuit		
Typical sensor current		
• PT100	mA	Typically 1
• PT1000/KTY83/KTY84/NTC	mA	Typically 0.2
Open-circuit detection		Yes[1]
Short-circuit detection		Yes
Three-wire conductor connection		Yes[2]
Enclosure		
Rated insulation voltage U_i (pollution degree 3)	V AC	300

[1] Not for NTC type B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

[2] Two-wire connection of resistance sensors with wire jumper between T2 and T3.

Selection and ordering data

- For temperature monitoring of solids, liquids, and gases
- For two- and three-conductor resistance sensors or thermocouples
- Temperature range dependent on sensor type
  - 3RS10: -50 to +500 °C
  - 3RS20: -58 to +932 °F
- Wide voltage range versions are electrically separated
- Non-volatile
- Short-circuit and open-circuit detection in sensor circuit
- Digitally adjustable, with illuminated LCD
- Overshoot, undershoot or range monitoring adjustable
- Exact sensor type and number of sensors can be set
- 2 separately adjustable threshold values
- 1 hysteresis; applies to both thresholds (0 to 99 K)
- 1 delay time; applies to both thresholds (0 to 999 s)
- Adjustable open/closed-circuit principle
- With connectable and disconnectable error memory
- Permanent display of actual value in °C or °F and tripping state
- 1 CO contact each per threshold value
- 1 NO for sensor monitoring

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

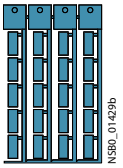
	Sensors	Number of sensors	Measuring range (limit of measuring range dependent on sensor)	Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals	
						Article No.	Price per PU		Article No.	Price per PU
				V	d			d		
Motor monitoring relays, digitally adjustable for up to 3 sensors, width 45 mm; 1 CO + 1 CO + 1 NO										
 3RS1041-1GW50	PT100/1000; KTY83/84; NTC (resistance sensors)[1]	1 ... 3 sensors	-50 ... +500 °C	24 ...240 AC/DC	2	**3RS1041-1GW50**		2	**3RS1041-2GW50**	
			-58 ... +932 °F	24 ...240 AC/DC	10	**3RS2041-1GW50**		15	**3RS2041-2GW50**	

[1] NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

For accessories, see page 10/144.

Accessories

Selection and ordering data

	Use	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Blank labels								
 3RT1900-1SB20	For 3RS10, 3RS11, 3RS20, 3RS21	**Unit labeling plates** For SIRIUS devices						
		20 mm x 7 mm, pastel turquoise[1]	20	**3RT1900-1SB20**		100	340 units	41B
	For 3RS10, 3RS11, 3RS20, 3RS21	**Adhesive labels** for SIRIUS devices						
		• 19 mm x 6 mm, pastel turquoise	15	**3RT1900-1SB60**		100	3 060 units	41B
		• 19 mm x 6 mm, zinc yellow	15	**3RT1900-1SD60**		100	3 060 units	41B
Push-in lugs and covers								
 3RP1903	For 3RS10, 3RS11, 3RS20, 3RS21	**Push-in lugs** For screw fixing, 2 units are required for each device	5	**3RP1903**		1	10 units	41H
 3RP1902	For 22.5 mm wide 3RS10, 3RS11, 3RS20, 3RS21	**Sealable covers** For securing against unauthorized adjustment of setting knobs	5	**3RP1902**		1	5 units	41H
	For 3RS10, 3RS11, 3RS20, 3RS21	**Sealing foil** For securing against unauthorized adjustment of setting knobs	►	**3TK2820-0AA00**		1	1 unit	41L
Tools for opening spring-type terminals								
 3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	2	**Spring-type terminals** **3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/20.

For matching sensors, see www.siemens.com/temperature.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3RS14, 3RS15 temperature monitoring relay

More information

Home page, see www.siemens.com/relays
Industry Mall, see www.siemens.com/product?3RS14

The temperature monitoring relays for IO-Link are used to measure temperatures in solid, liquid and gas media.

The temperature is calculated using a sensor in the medium, evaluated by the device and monitored up to two limit values for overshooting or undershooting a working range (window function).

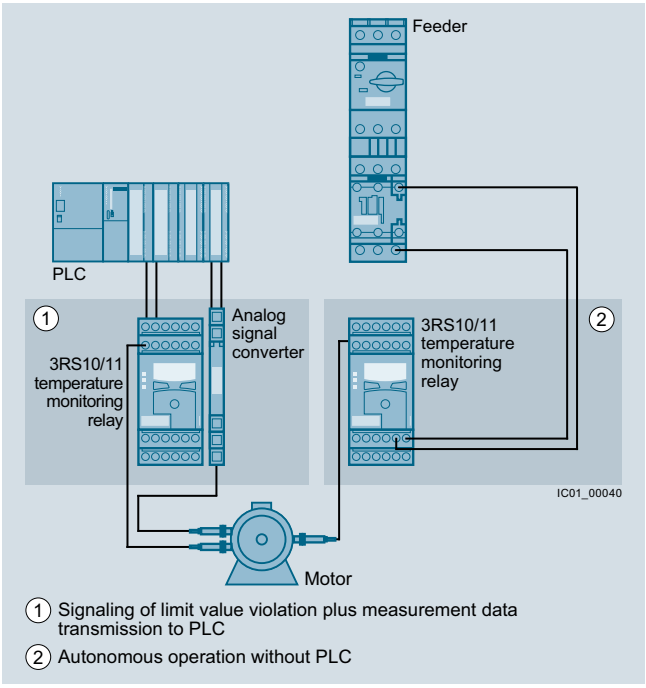
In addition to warnings and disconnection in case of temperature deviations, the devices can also be used as a temperature controller (one-point, two-point or three-point control).

The devices differ from one another in terms of the type and number of connectable temperature sensors.

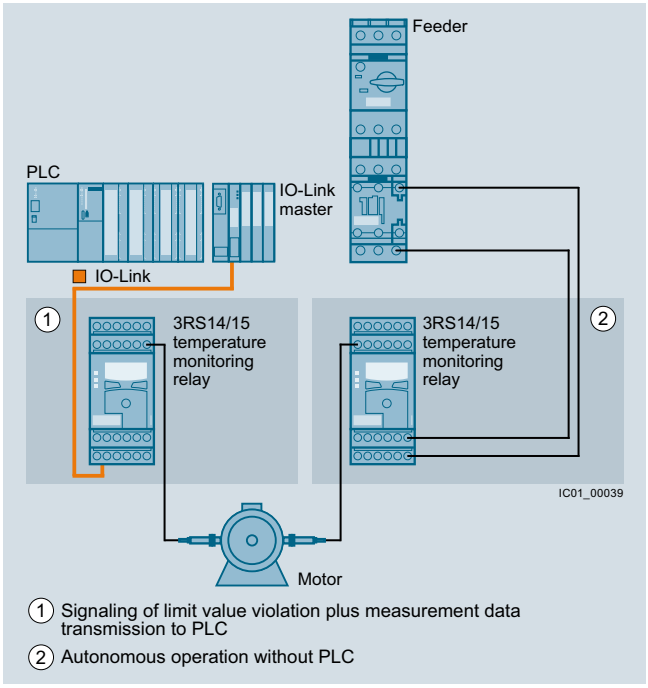
- 3RS14: Connection for resistance sensor
- 3RS15: Connection for thermocouples

Function	Temperature monitoring relays		
	3RS1440	3RS1441	3RS1540
Connectable sensor type			
Number of sensors monitored	1	3	1
Resistance sensor	✓	✓	--
Thermocouples	--	--	✓
Temperature monitoring			
Temperature monitoring – overshoot	✓	✓	✓
Temperature monitoring – undershoot	✓	✓	✓
Number of adjustable limit values	2	2	2

✓ Function supported
-- Function not supported



Conventional temperature monitoring relays



Temperature monitoring relays for IO-Link

Notes:

Devices required for the communication via IO-Link:

- Any controller that supports the IO-Link (e.g. ET 200SP with CPU or S7-1200); see Catalog ST 70 "Products for Totally Integrated Automation".
- IO-Link master (e.g. CM 4xIO-Link for SIMATIC ET 200SP or SM 1278 for S7-1200); see page 2/108 and page 2/109.

Each monitoring relay requires an IO-Link channel.

Notes on safety

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information on Industrial Security, see www.siemens.com/industrialsecurity.

General data

Article No. scheme

Product versions		Article number
Temperature monitoring relays		**3RS** □□□□ – □□□□ **0**
Device type	e.g. 14 = digitally adjustable, 1 sensor	□□
Version and type of sensor	e.g. 40 = one threshold value, PT100/PT1000, KTY83/KTY84, NTC	□□
Connection type	Screw terminals	**1**
	Spring-type terminals (push-in)	**2**
Number and type of outputs	e.g. H = 1 CO	□
Control supply voltage	e.g. B = 24 V DC	□
Measuring range	e.g. 5 = -50 ... + 750 °C	□
Example		**3RS 1 4 4 0 – 1 H B 5 0**

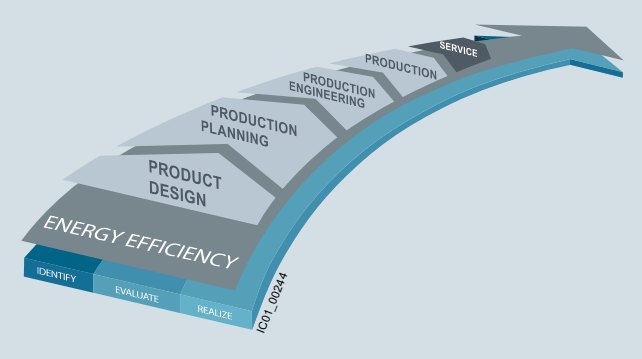
Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative SIRIUS industrial controls products can also make a major contribution to the energy efficiency of a plant (www.siemens.com/sirius/energysaving).

The 3RS14 and 3RS15 monitoring relays for IO-Link make the following contribution to the energy efficiency of the plant as a whole:

- Demand-based control of heating and ventilation in the process and in the control cabinet

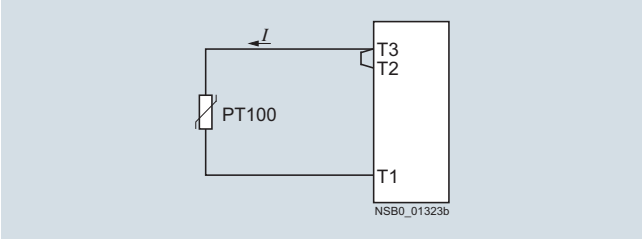
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16370/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16370/faq
Manual and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/54375463	

Connection for resistance sensors

Two-wire measurement

When two-wire temperature sensors are used, the resistances of the sensor and wiring are added. The resulting systematic error must be taken into account when the signal evaluation unit is calibrated. A jumper must be clamped between terminals T2 and T3 for this purpose.



Wiring errors

The errors that are generated by the wiring comprise approximately 2.5 KΩ. If the resistance of the cable is not known and cannot be measured, the wiring errors can also be estimated using the following table.

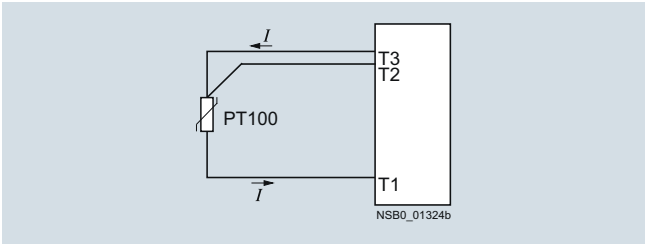
Temperature drift dependent on the length and cross-section of the cable with PT100 sensors and an ambient temperature of 20 °C, in K:

Cable length in m	Cross-section mm²			
	0.5	0.75	1	1.5
	Temperature drift in K:			
0	0	0	0	0
10	1.8	1.2	0.9	0.6
25	4.5	3.0	2.3	1.5
50	9.0	6.0	4.5	3.0
75	13.6	9.0	6.8	4.5
100	18.1	12.1	9.0	6.0
200	36.3	24.2	18.1	12.1
500	91.6	60.8	45.5	30.2

Example: On a PT100 sensor with a cable length of 10 m and a conductor cross-section of 1 mm² the temperature drift equals 0.9 K.

Three-wire measurement

To minimize the effects of the line resistances, a three-wire circuit is often used. Using the additional cable, two measuring circuits can be formed of which one is used as a reference. The signal evaluation unit can then automatically calculate the line resistance and take it into account.



Connection of thermocouples

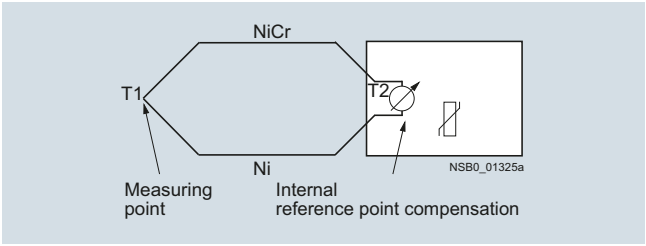
Based on the thermo-electrical effect, a differential temperature measurement will be performed between the measuring point and the signal evaluation unit.

This principle assumes that the signal evaluation unit knows the temperature at the clamping point (T2). For this reason, the 3RS15 temperature monitoring relay has an integral compensator that determines this comparison temperature and builds it into the result of the measurement. The thermal sensors and cables must be insulated therefore.

The absolute temperature is therefore calculated from the ambient temperature of the signal evaluation unit and the temperature difference measured by the thermocouple.

Temperature detection is therefore possible (T1) without needing to know the precise ambient temperature of the clamping point at the signal evaluation unit (T2).

The connecting cable is only permitted to be extended using connecting leads that are made from the same material as the thermocouple. If a different type of conductor is used, an error will result in the measurement.



For more information see http://www.ephy-mess.com.

Principle of operation

When the temperature has reached the set upper limit value ϑ1, the K1 output relay changes its switching state after the configured time *t* has expired. The delay time can be adjusted. The K2 output relay responds in the same manner to the lower limit value of ϑ2.

The output relays return immediately to their original state (the RESET response is configured at Auto RESET) once the temperature reaches the respective hysteresis value.

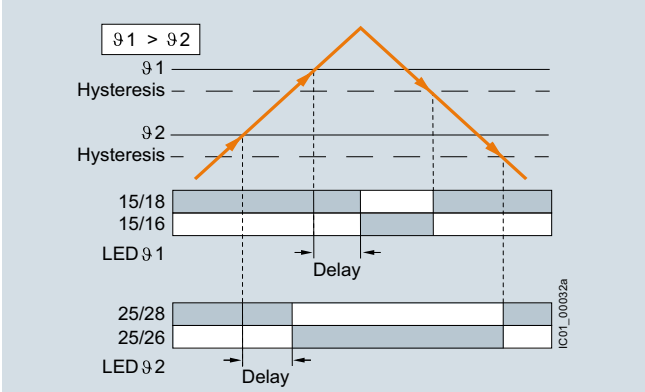
Both thresholds ϑ1 and ϑ2 can be parameterized for overshooting or undershooting. This makes it possible to use a limit value for issuing an alarm signal to announce that a limit value is about to be overshot or undershot. The other limit value can be used for disconnection or to implement two-point or three-point control.

Note:

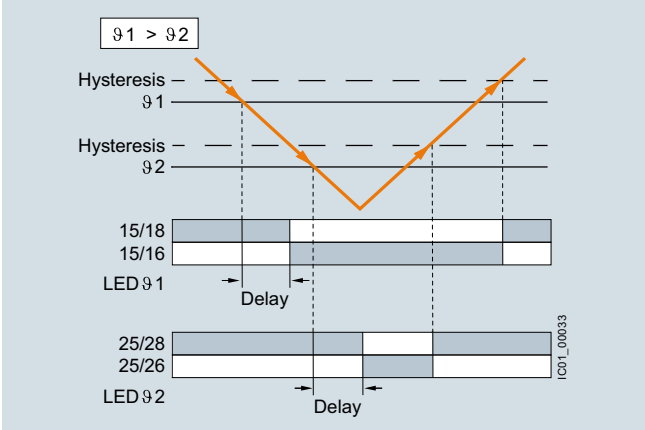
The "Temperature monitoring mode" parameter can be used to set the desired type of monitoring (monitoring for overshooting or undershooting or range monitoring).

With the closed-circuit principle selected

Temperature overshoot



Temperature undershoot

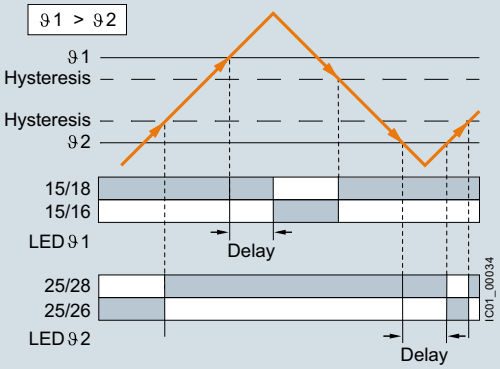


10

General data

With the closed-circuit principle selected

Range monitoring



Memory function

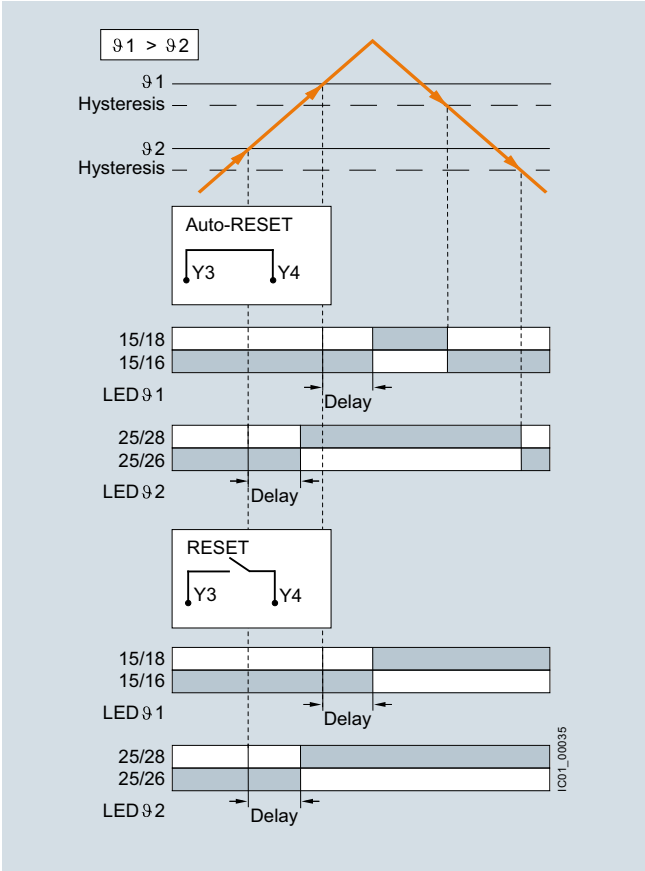
The digitally adjustable temperature monitoring relays for IO-Link have a memory function. The memory function is illustrated below by the example of a temperature overshoot.

When the temperature has reached the set limit value ϑ1, the output relay K1 changes its switching state after the configured time *t* has expired (output relay K2 responds to ϑ2 in the same way).

The temperature monitoring relays for IO-Link respond as described below:

- With temperature monitoring relays for IO-Link the memory function is activated as standard (RESET). The output relays only return to the original state when the temperature falls below the set hysteresis value and when one of the following steps is performed:
  - Brief jumpering of the Y3/Y4 terminals
  - Set the rotary knob to "RUN" position and press the right-hand arrow key
  - Perform a RESET via IO-Link
- If the Y3/Y4 terminals are permanently jumpered, the memory function is deactivated (Auto RESET). The output relays return immediately to their original state once a previously occurred fault has been rectified and the temperature falls below the respective hysteresis value.

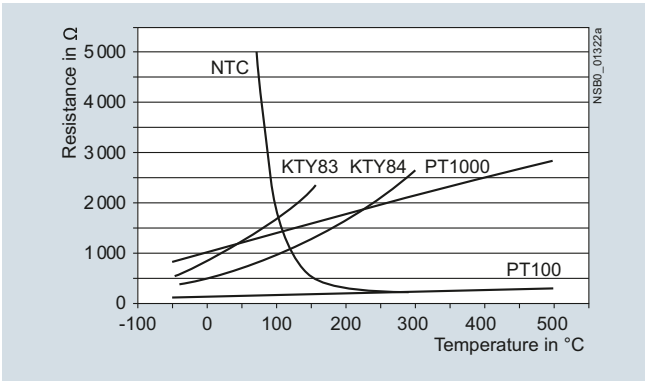
With the closed-circuit principle selected



10

Characteristic curves

For resistance sensors



The short-circuit and open-circuit detection as well as the measuring range is limited, depending on the sensor type.

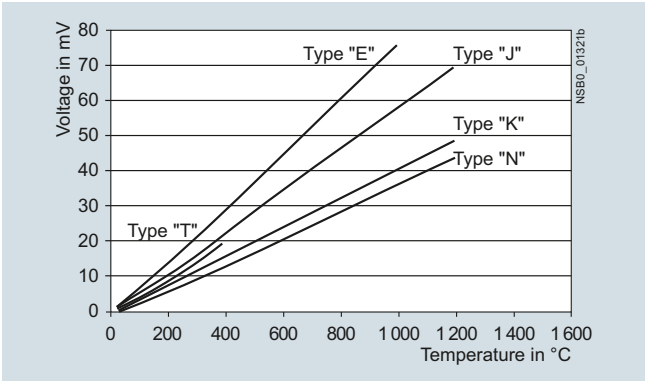
Measuring ranges for resistance sensors

Sensor type	Short circuit	Open circuit	3RS1440, 3RS1441	
			Measuring range in °C	Measuring range in °F
PT100	✓	✓	–50 ... +750	–58 ... +1 382
PT1000	✓	✓	–50 ... +500	–58 ... +932
KTY83-110	✓	✓	–50 ... +175	–58 ... +347
KTY84	✓	✓	–40 ... +300	–40 ... +572
NTC[1)]	✓	--	+80 ... +160	+176 ... +320

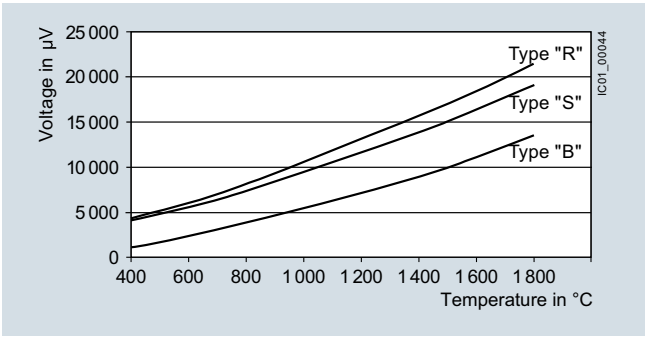
✓ Detection possible
-- Detection not possible

[1)] NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

For thermocouples



Characteristic curves for sensor types K, N, J, E and T



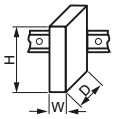
Characteristic curves for sensor types S, R and B

Measuring ranges for thermocouples

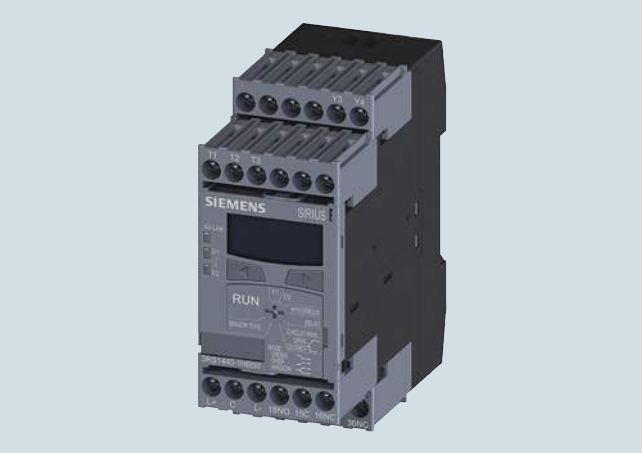
Sensor type	Short circuit	Open circuit	3RS1540	
			Measuring range in °C	Measuring range in °F
K	--	✓	-99 ... +1 350	-146.2 ... +2 462
N	--	✓	-99 ... +1 300	-146.2 ... +2 372
J	--	✓	-99 ... +1 200	-146.2 ... +2 192
E	--	✓	-99 ... +999	-146.2 ... +1 830.2
T	--	✓	-99 ... +400	-146.2 ... +752
S	--	✓	0 ... 1 750	32 ... 3 182
R	--	✓	0 ... 1 750	32 ... 3 182
B	--	✓	400 ... 1 800	752 ... 3 272

✓ Detection possible
-- Detection not possible

General data

Type			3RS14, 3RS15
General technical specifications			
Dimensions (W x H x D)			
• Screw terminals		mm	45 x 106 x 91
• Spring-type terminals		mm	45 x 108 x 91
Permissible ambient temperature			
• During operation		°C	-25 ... +60
Connection type			**Screw terminals**
• Terminal screw			M3 (for standard screwdriver, size 2 and Pozidriv 2)
• Solid		mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)
• Finely stranded with end sleeve		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)
• Tightening torque		Nm	0.8 … 1.2
Connection type			**Spring-type terminals**
• Solid		mm^2	2 x (0.25 ... 1.5)
• Finely stranded, with end sleeve acc. to DIN 46228		mm^2	2 x (0.25 ... 1.5)
• Finely stranded		mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)

Overview



SIRIUS 3RS1440 digital monitoring relay for 1 sensor

The 3RS14 and 3RS15 temperature monitoring relays for IO-Link are used to measure temperatures in solid, liquid and gas media. The temperature is calculated using a sensor in the medium, evaluated by the device and monitored for overshooting or undershooting a working range (window function). The digital temperature monitoring relays have two separately adjustable limit values, are non-volatile and can be operated as desired using the open- or closed-circuit principle.

The devices differ in terms of the number of temperature sensors which can be evaluated. The 3RS1440 and 3RS1540 for IO-Link temperature monitoring relays can be digitally adjusted for one sensor and represent an alternative to temperature controllers in the low-end range (two-point or three-point control).

The devices with two-point control can, for example, be used as a thermostat. The devices with three-point control can, for example, independently switch between heating and cooling.

The 3RS1441 temperature monitoring relays for IO-Link can be digitally adjusted to evaluate up to three resistance sensors at one time. The devices were designed specifically for monitoring motor windings and positions.

The temperature monitoring relays are powered through the control supply voltages IO-Link (L+) and ground (L-) or via an external 24 V DC power supply.

Monitoring

When the temperature has reached the set limit value $\vartheta 1$, the output relay K1 changes its switching state after the configured time *t* has expired (output relay K2 responds to $\vartheta 2$ in the same way). The delay time can be adjusted.

The output relays return immediately to their original state once the temperature reaches the respective hysteresis value.

When the temperature has reached the upper limit value $\vartheta 1$, the output relay K1 changes its switching state after the configured time *t* has expired. The output relay returns immediately to its original state once the temperature reaches the respective hysteresis value.

The K2 output relay responds in the same manner to the lower limit value of $\vartheta 2$. Both thresholds $\vartheta 1$ and $\vartheta 2$ can be parameterized for overshooting or undershooting. This makes it possible to use a limit value for issuing an alarm signal to announce that a limit value is about to be overshot or undershot.

Note:

The "Temperature monitoring mode" parameter can be used to set the desired type of monitoring (monitoring for overshooting or undershooting or range monitoring).

Benefits

- Very simple operation without complicated menu selections
- Two- or three-point control can be parameterized quickly
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The temperature monitoring relays can be used in almost any application in which temperature overshoot or undershoot is not permitted, e.g. in the monitoring of set temperature limits and the output of alarm messages for:

- Plant and environment protection
- Temperature limits for process variables e.g. in the packaging industry or electroplating
- Temperature limits for district heating plants
- Exhaust temperature monitoring
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Technical specifications

Type		3RS1440	3RS1540
Auxiliary circuit			
Rated operational currents I_e			
• AC-15/24 ... 250 V	A	3	
• DC-13 at			
- 24 V	A	1	
- 125 V	A	0.2	
- 250 V	A	0.1	
Evaluation unit			
Measuring accuracy at 20 °C ambient temperature (T20)		< ± 2 K, ± 1 digit	< ± 5 K, ± 1 digit
Reference point accuracy		--	< ± 5 K
Deviations due to ambient temperature In % of the measuring range	%	0.05 °C per K deviation from T20	
Measuring cycle	ms	500	
Hysteresis settings for temperature	K	1 ... 99, for both values	
Adjustable delay time	s	0 ... 999.9	
Sensor circuit			
Typical sensor current			
• PT100	mA	Typically 1	--
• PT1000/KTY83/KTY84/NTC	mA	Typically 0.2	--
Open-circuit detection		✓[1]	✓
Short-circuit detection		✓	--
Three-wire conductor connection		✓[2]	--
Enclosure			
Rated insulation voltage U_i Pollution degree 2	V AC	300	

✓ Available

-- Not available

[1] Not for NTC type B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

[2] Two-wire connection of resistance sensors with wire jumper between T2 and T3.

Selection and ordering data

- To monitor temperatures with a resistance sensor or thermocouple
- Temperature range dependent on sensor type - 99 to + 1 800 °C or - 146.2 to + 3 272 °F
- Short-circuit and open-circuit detection in sensor circuit
- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Overshoot, undershoot or range monitoring adjustable
- Exact sensor type can be set
- 2 limit values, can be adjusted separately
- Adjustable open/closed-circuit principle
- Can be adjusted by manual or remote RESET (via an external contact)
- Actual value, tripping state for control displayed and conveyed, adjustable in °C or °F
- 1 CO contact per limit value
- 1 CO contact for monitoring sensors and devices

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H


3RS1440-1HB50


3RS1540-1HB80


3RS1440-2HB50


3RS1540-2HB80

Sensors	Measuring range (limit of measuring range dependent on sensor)	Hysteresis can be adjusted for ϑ1 and ϑ2	Tripping delay time can be adjusted for ϑ1 and ϑ2 DELAY	Supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals	
						Article No.	Price per PU		Article No.	Price per PU
		K	s	V DC	d			d		
Temperature monitoring relay, digitally adjustable for a sensor, non-volatile fault storage can be selected										
PT100/PT1000, KTY83/KTY84, NTC (resistance sensor)[1]	- 50 … + 750 °C or - 58 … +1 382 °F	0 ... 99	0 ... + 999.9	24	2	**3RS1440-1HB50**		2	**3RS1440-2HB50**	
Type B, E, J, K, N, R, S, T (thermocouples)	- 99 … + 1 800 °C or - 146.2 … + 3 272 °F	0 ... 99	0 ... + 999.9	24	2	**3RS1540-1HB80**		2	**3RS1540-2HB80**	

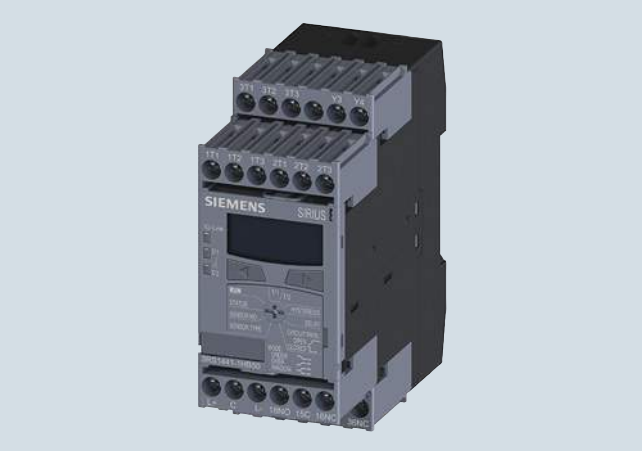
[1] NTC type B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

For accessories, see page 10/156.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Relays, digitally adjustable for up to 3 sensors

Overview



SIRIUS 3RS1441 digital temperature monitoring relay for up to 3 sensors

The 3RS14 temperature monitoring relays can be used to measure temperatures in solid, liquid and gas media. The temperature is calculated using a sensor in the medium, evaluated by the device and monitored for overshooting or undershooting a working range (window function).

The devices can be parameterized to indicate the measured temperature in °C or °F. The 3RS1441 evaluation unit can evaluate up to 3 resistance sensors at the same time.

Benefits

- Very simple operation without complicated menu selections
- Space-saving with 45 mm width
- Two- or three-point control can be parameterized quickly
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The 3RS1441 temperature monitoring relays can be used almost anywhere where several temperatures must be monitored at one time for overshooting, undershooting or staying within a certain range.

Monitoring of set temperature limits and output of alarm messages for:

- Plant and environment protection
- Temperature limits for process variables e.g. in the packaging industry or electroplating
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Technical specifications

Type		3RS1441
Auxiliary circuit		
Rated operational currents I_e		
• AC-15/24 ... 250 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
DIAZED fuse protection		
• Operational class gG	A	4
Evaluation unit		
Measuring accuracy at 20 °C ambient temperature (T20)		< ±2 K, ±1 digit
Deviations due to ambient temperature In % of the measuring range	%	0.05 per K deviation from T20
Measuring cycle	ms	500
Hysteresis settings for temperature 1	K	1 ... 99, for both values
Adjustable delay time	s	0 ... 999.9
Sensor circuit		
Typical sensor current		
• PT100	mA	Typically 1
• PT1000/KTY83/KTY84/NTC	mA	Typically 0.2
Open-circuit detection		✓ [1]
Short-circuit detection		✓
Three-wire conductor connection		✓ [2]
Enclosure		
Rated insulation voltage U_i Pollution degree 2	V AC	300

✓ Available

[1] Not for NTC type B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

[2] Two-wire connection of resistance sensors with wire jumper between T2 and T3.

Selection and ordering data

- For temperature monitoring with up to 3 resistance sensors
- Temperature range dependent on sensor type
  - 50 to + 750 °C or - 58 to + 1 382 °F
- Short-circuit and open-circuit detection in sensor circuit
- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Overshoot, undershoot or range monitoring adjustable
- Exact sensor type and number of sensors can be set
- 2 limit values, can be adjusted separately
- Adjustable open/closed-circuit principle
- Can be adjusted by manual or remote RESET (via an external contact)
- Actual value, tripping state for control displayed and conveyed, adjustable in °C or °F
- 1 CO contact per limit value
- 1 CO contact for monitoring sensors and devices

PU (UNIT, SET, M) = 1
PKG* = 1 unit
PG = 41H

3RS1441-1HB50

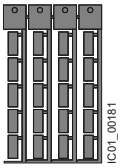
3RS1441-2HB50

Sensors	Number of sensors that can be set	Measuring range (limit of measuring range dependent on sensor)	Hysteresis can be adjusted for $\vartheta 1$ and $\vartheta 2$	Tripping delay time can be adjusted for $\vartheta 1$ and $\vartheta 2$ DELAY	Supply voltage U_s	SD	**Screw terminals**		SD	**Spring-type terminals**	
			K	s	V DC	d	Article No.	Price per PU	d	Article No.	Price per PU
Temperature monitoring relay, digitally adjustable for up to 3 sensors, non-volatile fault storage can be selected											
PT100/PT1000, KTY83/KTY84, NTC (resistance sensor)[1]	1 ... 3 sensors	- 50 ... + 750 °C or - 58 ... + 1 382 °F	0 ... 99	0 ... 999.9	24	2	**3RS1441-1HB50**		2	**3RS1441-2HB50**	

[1] NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

For accessories, see page 10/156.

Selection and ordering data

	Use	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Blank labels								
 3RT2900-1SB20	For 3RS14 and 3RS15	**Unit labeling plates** For SIRIUS devices						
		20 mm x 7 mm, titanium gray[1]	20	**3RT2900-1SB20**		100	340 units	41B
	For 3RS14 and 3RS15	**Adhesive labels** for SIRIUS devices						
		• 19 mm x 6 mm, pastel turquoise	15	**3RT1900-1SB60**		100	3 060 units	41B
		• 19 mm x 6 mm, zinc yellow	15	**3RT1900-1SD60**		100	3 060 units	41B
Push-in lugs and covers								
 3RP1903	For 3RS14 and 3RS15	**Push-in lugs** For screw fixing, 2 units are required for each device	5	**3RP1903**		1	10 units	41H
	For 3RS14 and 3RS15	**Sealing foil** For securing against unauthorized adjustment of setting knobs	►	**3TK2820-0AA00**		1	1 unit	41L
Tools for opening spring-type terminals								
 3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-type terminals		**Spring-type terminals**				
		3.0 mm x 0.5 mm Length approx. 200 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/20.

For matching sensors, see www.siemens.com/temperature.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3RN2 thermistor motor protection

More information

Home page, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RN2

Conversion tool, e.g. from 3RN1 to 3RN2, see http://www.siemens.com/sirius/conversion-tool

Thermistor motor protection devices are used for direct monitoring of the motor winding temperature. For this purpose, the motors are equipped with temperature-dependent resistors (PTC) that are directly installed in the motor winding and abruptly change their resistance at their temperature limit.

Versions

SIRIUS 3RN2 thermistor motor protection relays are available in the following versions:

- 3RN2000 compact evaluation unit
- 3RN2010 compact/standard evaluation unit
- 3RN2012-.BW31 bistable evaluation unit
- 3RN2011, 3RN2012-...30, 3RN2013 standard evaluation unit with ATEX approval
- 3RN2023 evaluation unit with ATEX approval and 2 sensor circuits for warning and disconnection

The 3RN2 thermistor motor protection relays are suitable for use in any climate and are finger-safe according to IEC 60529.

They comply with

- IEC 60947-8. Low-voltage switchgear and controlgear – Part 8: "Control units for built-in thermal protection (PTC) for rotating electrical machines"
- IEC 61000-6-2, IEC 61000-6-4. "Electromagnetic compatibility for industrial-process measurement and control equipment"

The 3RN2 thermistor motor protection relays with ATEX approval fulfill SIL1 in compliance with EN 50495.

The terminals of the auxiliary contacts are designated in accordance with EN 60947-1.

3RN2 evaluation units are suitable for snap-on mounting onto TH 35 standard mounting rails according to IEC 60715 or for screw fixing using an adapter (accessory).

Article No. scheme

Product versions		Article number									
Thermistor motor protection relay with PTC sensor, type A		**3RN20**	□	□	–	□	□	□	□	□	
Number and type of sensor circuits	1 sensor circuit, supply voltage = root voltage		**0**								
	1 sensor circuit		**1**								
	2 sensor circuits for warning and disconnection		**2**								
RESET	Auto RESET			**0**							
	Manual RESET, with open-circuit and short-circuit detection			**1**							
	Manual/Auto/Remote RESET, non-volatile, with open-circuit and short-circuit detection			**2**							
	Manual/Auto/Remote RESET, non-volatile, with open-circuit and short-circuit detection, with protective separation			**3**							
Connection method	Screw terminals					**1**					
	Spring-type terminal					**2**					
Auxiliary switches	1 CO						**A**				
	2 CO						**B**				
	1 NO + 1 NC						**C**				
	1 NO + 1 CO						**D**				
	2 CO, hard gold-plated						**G**				
Rated control supply voltage	24 V AC/DC							**A**	**3**		
	24 ... 240 V AC/DC							**W**	**3**		
Response to failure	Monostable									**0**	
	Bistable									**1**	
Example		**3RN20**	**0**	**0**	–	**1**	**A**	**A**	**3**	**0**	

Note:

The Article No. scheme is presented here merely for information purposes and for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

SIRIUS 3RN2 thermistor motor protection NEW

Benefits

- Thanks to direct motor protection, overdimensioning of the motors is not necessary
- No settings on the device are necessary
- Semiconductor compatible output thanks to versions with hard gold-plated contacts
- Rapid error diagnosis thanks to versions that indicate open and short circuits in the sensor circuit
- All versions with removable terminals
- All versions with screw or spring-type terminals with push-in functionality

Application

Direct motor protection through temperature monitoring of the motor winding offers 100 % motor protection even under the most difficult ambient conditions, without the need to make adjustments on the device. Versions with hard gold-plated contacts ensure, in addition, a high switching reliability that is even higher than an electronic control.

Direct motor protection

- At increased ambient temperatures
- When switching frequency is too high
- When start up and braking procedures are too long
- Used together with frequency converters (at low speeds)

ATEX approval for operation in areas subject to explosion hazard

The SIRIUS 3RN2011, 3RN2012-...30, 3RN2013, 3RN2023 thermistor motor protection relays for PTC sensors are certified according to ATEX Ex II (2) G and D for environments with explosive gas or dust loads.

Motor protection using current- and temperature-dependent protective devices

IEC 60204 stipulates that motors must be protected from overheating at a rating of 0.5 kW and higher. The protection can take the form of overload protection, overtemperature protection or current limiting.

For motors with frequent starting and braking and in environments where cooling may be impaired (e.g. by dust), it is recommended to use the overtemperature protection option in the form of a protective device coordinated with this mode of operation. A good choice in this case is the use of 3RN2 thermistor motor protection devices.

On rotor-critical motors, overtemperature detection in the stator windings can lead to delayed and hence inadequate protection. In this case the standards stipulate additional protection, e.g. by means of an overload relay.

This combination of thermistor motor protection and an overload relay is recommended for full motor protection in case of frequent starting and braking of motors, irregular intermittent duty or excessive switching frequency. To prevent premature tripping of the overload relay in such operating conditions, a higher setting than that normally required for the operational current is chosen. The overload relay then performs stall protection, and the 3RN2 thermistor motor protection relay monitors the temperature of the motor windings.

Application	Motor protection		
	Current-dependent only, e.g. with overload relay	Temperature-dependent only, e.g. with thermistor motor protection relay	Current- and temperature-dependent
Motor protection in case of			
Overloading in uninterrupted duty	✓	✓	✓
Long start-up and braking operations	❍	✓	✓
Irregular intermittent duty	❍	✓	✓
Excessively high switching frequency	❍	✓	✓
Single-phase operation and current unbalance	✓	✓	✓
Voltage and frequency fluctuations	✓	✓	✓
Stalling of the rotor	✓	✓	✓
Switching on a stalled rotor of a stator-critical motor	✓	✓	✓
Switching on a stalled rotor of a rotor-critical motor	✓	❍	✓
Elevated ambient temperature	--	✓	✓
Impeded cooling	--	✓	✓

✓ Full protection
❍ Partial protection
-- No protection

Technical specifications

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/24302/td

Operating instructions and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/ps/24302/man

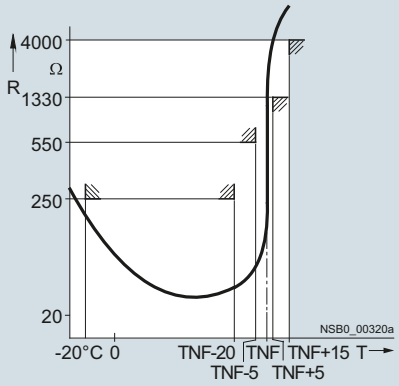
FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/24302/faq

For more information on explosion protection (ATEX), see www.siemens.com/sirius/atex

Type A PTC temperature sensor

If a Type A temperature sensor is connected to a Type A evaluation unit, compliance with the operating temperatures is assured (on pick-up and reset) according to IEC 60947-8.

The characteristic curves of the Type A temperature sensors are described in IEC 60947-8, DIN 44081 and EN 44082 standards.



Characteristic curve of the 3RN2 evaluation unit

Bimetallic switch

In some applications, bimetallic switches (e.g. Klixon, Thermoclick) are used as sensors instead of PTC temperature sensors. Bimetallic switches are temperature and current-dependent NC contacts and are available for different temperature ranges. Because bimetallic switches have practically no resistance below their opening temperature, short-circuit detection is not possible when using bimetallic switches. A bimetallic switch can be used for versions 3RN2000 and 3RN2010 on the SIRIUS thermistor motor protection relay.

Note:

Never use bimetallic switches in applications subject to an explosion hazard! Because of their non-standardized tripping characteristic, bimetallic switches must not be used in applications where there is an explosion hazard. Use type A PTC sensors instead!

Use in hazardous areas

Increased danger in hazardous areas means it is necessary to observe the following notes and standards carefully:

- EN 60079-14/VDE 0165-1 for electrical apparatus for explosive gas atmospheres
- EN 60079-17 Explosive atmospheres - Electrical installations inspection and maintenance
- EN 50495 Safety devices required for the safe functioning of equipment with respect to explosion risks

The following SIRIUS 3RN2 thermistor motor protection relays with short-circuit detection are approved for Equipment Group II, Category (2) in Area "G" (areas in which potentially explosive gas, vapor, mist, or air mixtures are present) and are additionally approved for Area "D" (areas containing combustible dust):

- 3RN2011
- 3RN2012-…30
- 3RN2013
- 3RN2023

PTB 15 ATEX 3011 ex II (2) G (Ex E) (EX d) (Ex px)
PTB 15 ATEX 3011 ex II (2) D (Ex T) (Ex p)

For 3RN2 thermistor motor protection relays, the EC type examination certificate is available for Group II, Category (2) G [Ex e] [Ex d] [Ex px] and D [Ex t] [Ex p]. The number is PTB 15 ATEX 3011.

SIRIUS 3RN2 thermistor motor protection relays are not intended for installation in hazardous areas. If they are installed in a potentially explosive atmosphere, the SIRIUS 3RN2 thermistor motor protection relays must be adapted to the applicable type of protection.

The machine or plant must shut down immediately if the SIRIUS 3RN2 thermistor motor protection relay is tripped, even if connected through a frequency converter. This must be implemented with circuitry.

SIRIUS 3RN2 thermistor motor protection relays with functional safety in accordance with EN 50495 are suitable for protecting explosion-proof motors/machines.

On evaluation units with a supply voltage of 24 V AC/DC, you must ensure galvanic separation with a battery network or a power supply unit with galvanic separation (e.g. isolating transformer) (does not apply to 3RN2013-.BA30).

A SIRIUS 3RN2 thermistor motor protection relay set to "automatic RESET" mode will be reset automatically after the recovery time has elapsed, without the RESET button being pressed. An additional ON button has to be used to ensure that the motor does not start up automatically following tripping. "Automatic RESET" mode must not be used in applications where there is a risk of personal injury or damage to property if the motor restarts unexpectedly.

SIRIUS 3RN2 thermistor motor protection NEW

⚠ CAUTION!

When used in a hazardous area, the thermistor motor protection relay must not be operated with automatic RESET (terminal Y1 and Y2 permanently jumpered).

A risk analysis must be performed for the complete plant or machine. If this analysis yields a lower hazard potential (category 1), all SIRIUS 3RN2 thermistor motor protection relays can be used, provided the safety regulations are observed.

⚠ WARNING!

All work involved in connecting, commissioning and maintenance must be carried out by qualified, responsible personnel. Improper handling may result in serious personal injury and considerable damage to property.

Cable routing

The measuring circuit leads must be routed as separate control cables. It is not permitted to use cores from the supply line of the motor or any other main supply cables. If extreme inductive or capacitive interference is expected as a result of power lines routed in parallel, shielded control cables must be used.

Maximum length of sensor circuit cables for evaluation units without short-circuit detection in the sensor circuit:

Cable cross-section	3RN2000, 3RN2010
2.5 mm²	2 x 2800 m
1.5 mm²	2 x 1500 m
0.5 mm²	2 x 500 m

Maximum length of sensor circuit cables for evaluation units with short-circuit detection [1)]

Cable cross-section	3RN2011, 3RN2012, 3RN2013, 3RN2023
2.5 mm²	2 x 250 m
1.5 mm²	2 x 150 m
0.5 mm²	2 x 50 m

1) A short circuit in the sensor circuit will be detected up to this maximum cable length.

Principle of operation

SIRIUS 3RN2 thermistor motor protection relays are thermal protection devices that are suitable, in combination with type A PTC thermistors, for monitoring temperatures of electrical drives, transformer windings, oils, bearings, air, etc.

The most frequent application is monitoring of three-phase motors in which the motor manufacturer has fitted a PTC sensor into every winding overhang and in which these PTC sensors are connected in series.

The SIRIUS 3RN2 thermistor motor protection relays operate in accordance with the closed-circuit principle and therefore monitor themselves for loss of supply voltage. The exceptions are the warning output on 3RN2023, which always works on the open-circuit principle and the bistable relays of the 3RN2012-.BW31, which always retain the last switching state.

A micro-interruption in the power supply of less than 30 ms does not change the status of the output relays.

For devices with the "Manual RESET" function, the test function can be activated and a trip simulated by pressing the blue Test/RESET button for > 2 seconds.

The 3RN2011, 3RN2012, 3RN2013 and 3RN2023 devices are additionally equipped with open-circuit and short-circuit detection in the sensor circuit. The unit will trip in the event of a short-circuit (resistance in sensor circuit < 10 Ω) or open circuit in the sensor circuit (dynamic open-circuit detection). Tripping as the result of a short-circuit in the sensor circuit is indicated by a flickering red LED (TRIPPED). In the event of short-circuit in the sensor circuit for warning on the 3RN2023, the yellow warning LED flickers (WARNING)). The devices with dynamic open-circuit detection evaluate the rise time of the sensor circuit resistance. If the sensor circuit resistance rises from 3300 Ω to 12 kΩ within 200 ms, the unit will not only trip, but also indicate the open circuit via a flashing red LED (TRIPPED). In the event of an open circuit in a sensor circuit, the yellow warning LED (WARNING) flashes for the 3RN2023.

All evaluation units (except for the 3RN2000 compact evaluation unit) feature electrical separation between the control circuit and the sensor circuit. The relay outputs are also electrically separated from all other circuits. The 3RN2013 and 3RN2023 evaluation units incorporate protective electrical isolation between all circuits up to U_i = 300 V.

3RN2000 compact evaluation unit

The compact unit, which is only 17.5 mm wide, is equipped with a red LED (TRIPPED) for the tripped indicator and a changeover contact. After the unit has tripped, it is automatically reset once the thermistors have cooled down. The root of the changeover contact is connected to the control voltage (terminal 11 is connected to terminal A1). This unit is particularly suitable in circuits in which the control circuit and signaling circuit have the same potential, e.g. in local control boxes.

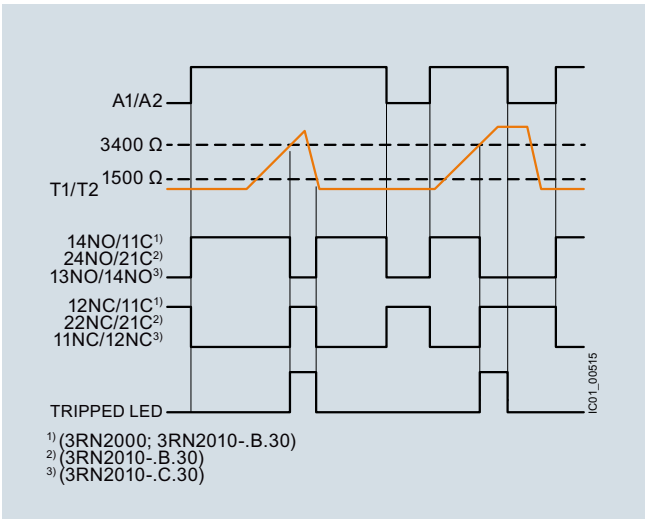
3RN2010, 3RN2011, 3RN2012, and 3RN2013 compact/standard evaluation units

The units are equipped with two LEDs (READY and TRIPPED) for an operating and tripped display and are available with either 1 NO + 1 NC contacts (3RN2010, overall width 17.5 mm) or with 2 CO contacts. Depending on the version, they are available with Auto RESET (3RN2010), Manual/Remote RESET (3RN2011) or Manual/Auto and Remote RESET (3RN2012 and 3RN2013). Remote RESET can be achieved by connecting an external pushbutton with a normally-open function to terminals Y1 and Y2. If terminals Y1 and Y2 are jumpered, the unit is automatically reset once the thermistors have cooled down (Auto RESET). 3RN2012 and 3RN2013 are non-volatile. This means a previous trip remains stored in the event of a control supply voltage failure - the thermistor motor protection relay remains in the safe state with an opened output relay until it is intentionally reset by pressing the TEST/RESET button of the unit or an external pushbutton.

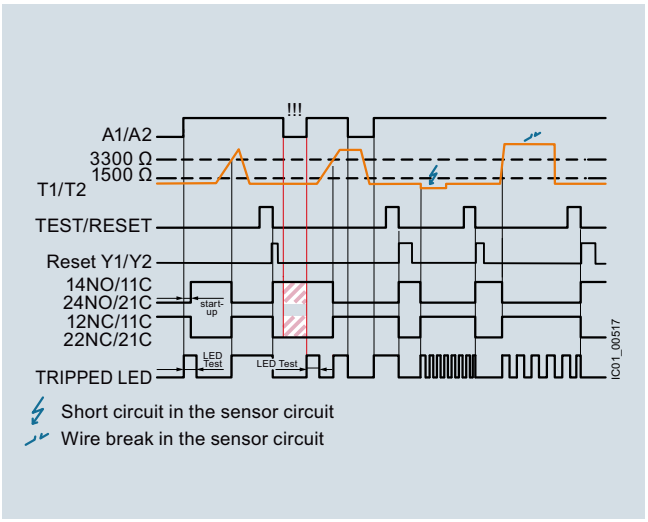
3RN2023 "Warning and disconnection"

Two sensor circuits can be connected to one 3RN2023 evaluation unit that act on two separate output relays with 1 NO contact for warning and 1 CO contact for disconnection. Thermistors with different rated response temperatures TNF are used to implement the "Warning" and "Disconnection" functions. When sensor circuit 2 for "Warning" responds, a yellow LED is lit and when the "Disconnection" circuit responds, a red LED is lit. The sensor circuits have a different reset response and operating behavior: the "Warning" thermistor sensor circuit 2 (terminals 2T1, T2) works only with Auto RESET and according to the open-circuit principle (output relay K2, NO contact). The "Disconnection" thermistor sensor circuit 1, (terminals 1T1, T2) can be changed from Manual RESET to Auto RESET by jumpering terminals Y1 and Y2. Remote RESET is implemented by connecting an external pushbutton with a normally-open function to these terminals.

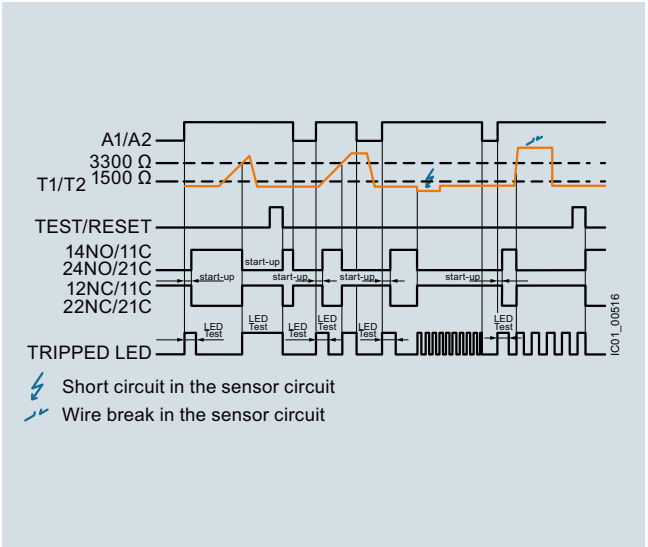
Function diagrams



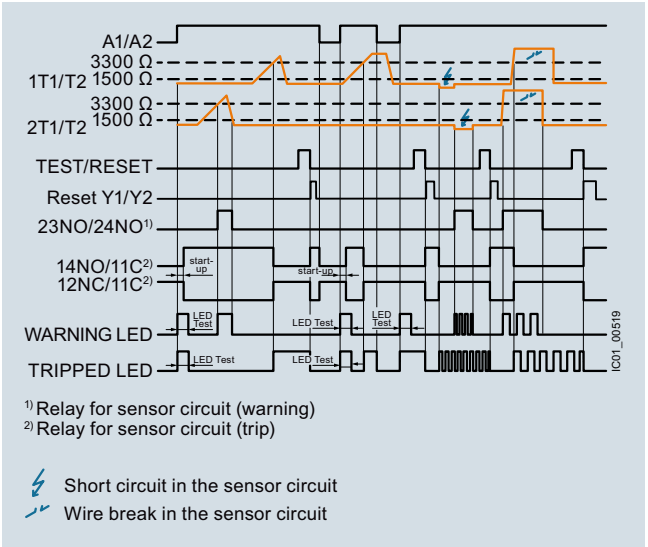
3RN2000, 3RN2010



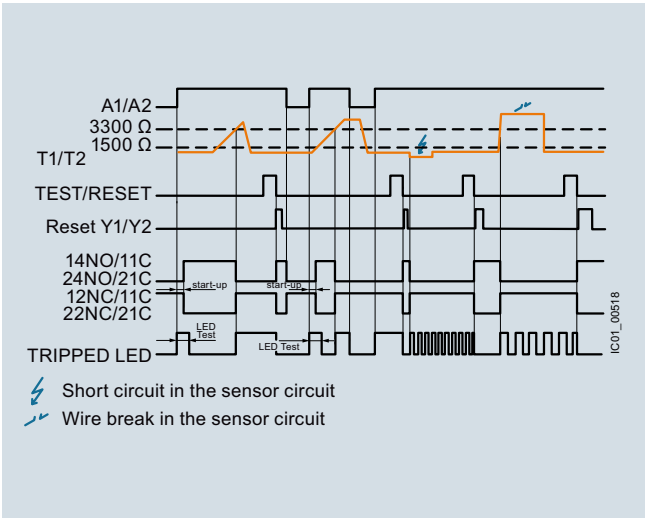
3RN2012-.BW31 - resetting via the TEST/RESET button or external pushbutton



3RN2011: resetting via external pushbutton or interruption of the supply voltage



3RN2023: resetting via the TEST/RESET button or external pushbutton



3RN2012-.B.30, 3RN2013: resetting via the TEST/RESET button or external pushbutton

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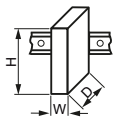
SIRIUS 3RN2 thermistor motor protection NEW

Article number		3RN2000-.A 3RN2010-.C	3RN201.-.B 3RN2013-.G 3RN2023-.D
Width x height x depth	mm	100 × 17.5 × 90	100 × 22.5 × 90



Article number		3RN2000-.AA30	3RN2000-.AW30, 3RN2010-.BW30, 3RN2010-.CW30	3RN2010-.BA30, 3RN2010-.CA30	3RN2011-.BA30, 3RN2012-.BA30	3RN2011-.BW30, 3RN2012-.BW30	3RN2012-.BW31	3RN2013-.BA30	3RN2013-.BW30, 3RN2013-.GW30	3RN2023-.DW30
General technical specifications:										
Type of electrical isolation		None	Isolated					Protective separation		
Electrical endurance (operating cycles) for AC-15 at 230 V typical		100 000								
Mechanical endurance (operating cycles) typical		10 000 000								
Insulation voltage / for overvoltage category III to IEC 60664 / for pollution degree 3 / rated value	V	300								
Impulse withstand voltage / rated value	kV	4						6		
Mains failure buffering time minimum	ms	40								30
Pollution degree		3								
IP degree of protection		IP20								
Shock resistance / according to IEC 60068-2-27		11*g*/15 ms								
Vibration resistance / according to IEC 60068-2-6		10 ... 55 Hz: 0.35 mm								
Type of mounting • Mounting position • Installation altitude / at height above sea level maximum	 m	For screw-fixing and snap-on mounting to 35 mm standard mounting rail Any 2 000								
Ambient temperature / during operation	°C	-25 ... +60								
Relative humidity / during operation / maximum	%	70								
ATEX										
Ex device group and Ex category according to ATEX product directive 2014/34/EU		--			II 2G, II 2D		--	II 2G, II 2D		
Safety device type / according to IEC 61508-2		--			Type B		--	Type B		
Safety integrity level (SIL) / according to IEC 61508		--			SIL1		--	SIL1		
Performance Level (PL) / according to EN ISO 13849-1		--			c		--	c		
T1 value / for proof test interval or service duration / according to IEC 61508		--			3 y		--	3 y		
Measuring circuit:										
Number of measuring circuits		1								2
Relative measuring accuracy	%	9			2					
Maximum number of sensors in series		6								
Cable length of sensor / maximum	m	2 800			250					
Thermistor resistance response value	Ω	1 500 ... 1 650			1 500 ... 1 550					
Thermistor resistance return value	Ω	3 400 ... 3 600			3 300 ... 3 350					

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NEW SIRIUS 3RN2 thermistor motor protection

Article number		3RN2000-.AA30	3RN2000-.AW30, 3RN2010-.BW30, 3RN2010-.CW30	3RN2010-.BA30, 3RN2010-.CA30	3RN2011-.BA30, 3RN2012-.BA30	3RN2011-.BW30, 3RN2012-.BW30	3RN2012-.BW31	3RN2013-.BA30	3RN2013-.BW30, 3RN2013-.GW30	3RN2023-.DW30
Control circuit:										
Current carrying capacity of the output relay										
• at AC-15/at 250 V/at 50/60 Hz	A	3								
• at DC-13/at 24 V	A	1								
• at DC-13/at 125 V	A	0.2								
• at DC-13/at 250 V	A	0.1								
Thermal current of the non-solid-state contact blocks, maximum	A	5								
Continuous current of the output relay's DIAZED fuse link	A	6								
Supply voltage:										
Control supply voltage										
• At AC										
- At 50 Hz rated value	V	24 ... 24	24 ... 240	24 ... 24		24 ... 240		24 ... 24	24 ... 240	
- At 60 Hz rated value	V	24 ... 24	24 ... 240	24 ... 24		24 ... 240		24 ... 24	24 ... 240	
• At DC, rated value	V	24 ... 24	24 ... 240	24 ... 24		24 ... 240		24 ... 24	24 ... 240	
Operating range factor of the control supply voltage, rated value										
• At AC / at 50 Hz		0.85 ... 1.1								
• At AC / at 60 Hz		0.85 ... 1.1								
• At DC		0.85 ... 1.1								

Article number		3RN20..-1	3RN20..-2
Type of electrical connection		Screw terminals	Spring-type terminals (push-in)
Tightening torque	Nm	0.6 ... 0.8	--
Type of connectable conductor cross-sections			
• Solid	mm^2	1x (0.5 ... 4.0 mm^2), 2x (0.5 ... 2.5 mm^2)	1x (0.5 ... 4 mm^2)
• Finely stranded with end sleeve	mm^2	1x (0.5 ... 4 mm^2), 2x (0.5 ... 1.5 mm^2)	1x (0.5 ... 2.5 mm^2)
• For AWG cables			
- Solid	AWG	1x (20 ... 12), 2x (20 ... 14)	1x (20 ... 12)
- Stranded	AWG	--	1x (20 ... 12)

SIRIUS 3RN2 thermistor motor protection NEW

Selection and ordering data


3RN2000-1AA30


3RN2010-1BA30


3RN2011-1BA30


3RN2012-1BW30


3RN2023-1DW30

Product function	Number of CO contacts for auxiliary contacts	Number of NO contacts for auxiliary contacts	Number of NC contacts	Material of switching contacts	Control supply voltage For AC at 50 Hz rated value	Control supply voltage At DC, rated value	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					V	V	d					
Compact evaluation unit, suitable for bimetallic switch												
Terminal A1 jumpered with root of changeover contact												
Auto RESET	1	0	0	AgSnO2	24 ... 24	24 ... 24	2	**3RN2000-☐AA30**		1	1 unit	41H
					24 ... 240	24 ... 240	2	**3RN2000-☐AW30**		1	1 unit	41H
	0	1	1	AgSnO2	24 ... 24	24 ... 24	2	**3RN2010-☐CA30**		1	1 unit	41H
					24 ... 240	24 ... 240	2	**3RN2010-☐CW30**		1	1 unit	41H
Standard evaluation unit, suitable for bimetallic switch												
Auto RESET	2	0	0	AgSnO2	24 ... 24	24 ... 24	2	**3RN2010-☐BA30**		1	1 unit	41H
					24 ... 240	24 ... 240	2	**3RN2010-☐BW30**		1	1 unit	41H
Bistable evaluation unit, open-circuit and short-circuit detection in the sensor circuit												
Does not trigger in the event of control supply voltage failure												
Auto RESET Manual RESET External RESET Error memory	2	0	0	AgSnO2	24 ... 240	24 ... 240	2	**3RN2012-☐BW31**		1	1 unit	41H
Standard evaluation unit with ATEX approval, open-circuit and short-circuit detection in the sensor circuit[1)]												
Manual RESET External RESET	2	0	0	AgSnO2	24 ... 24	24 ... 24	2	**3RN2011-☐BA30**		1	1 unit	41H
					24 ... 240	24 ... 240	2	**3RN2011-☐BW30**		1	1 unit	41H
Non-volatile												
Auto RESET Manual RESET External RESET Error memory	2	0	0	AgSnO2	24 ... 24	24 ... 24	2	**3RN2012-☐BA30**		1	1 unit	41H
					24 ... 240	24 ... 240	2	**3RN2012-☐BW30**		1	1 unit	41H
Protective separation, non-volatile [2)3)]												
Auto RESET Manual RESET External RESET Error memory	2	0	0	AgSnO2	24 ... 24	24 ... 24	2	**3RN2013-☐BA30**		1	1 unit	41H
					24 ... 240	24 ... 240	2	**3RN2013-☐BW30**		1	1 unit	41H
				AgSnO2 Hard gold-plated	24 ... 24	24 ... 24	2	**3RN2013-☐GW30**		1	1 unit	41H
Evaluation unit with ATEX approval and 2 sensor circuits for warning and disconnection, open-circuit and short-circuit detection in both sensor circuits												
Protective separation, non-volatile [2)3)]												
Auto RESET Manual RESET External RESET Error memory	1	1	0	AgSnO2	24 ... 24	24 ... 24	2	**3RN2023-☐DW30**		1	1 unit	41H

Type of electrical connection

- Screw terminals — **1**
- Spring-type terminals (push-in) — **2**

1) For 3RN2011: The unit can be reset with the RESET button or by disconnecting the control supply voltage.

2) Protective separation up to 300 V acc. to DIN/VDE 0160, IEC 60947-1.

3) Protection against voltage failure or non-volatile fault storage means that previous tripping due to a fault remains stored even if the control supply voltage fails. The monitoring device is not reset if the voltage fails. With an active fault, meaning a fault which has not been manually confirmed, an automatic restart of the plant upon recovery of the power is prevented therefore and plant safety increased as the result.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminals for SIRIUS devices in the industrial standard mounting rail enclosure							
 3ZY1122-1BA00	**Removable terminals**		**Screw terminals**				
	• 2-pole, up to 2 x 2.5 mm² or 1 x 4 mm²	2	**3ZY1122-1BA00**		1	6 units	41L
			Spring-type terminals (push-in)				
	• 2-pole, up to 1 x 4 mm² or 2 x 1.5 mm²	2	**3ZY1122-2BA00**		1	6 units	41L
Accessories for enclosures							
 3ZY1311-0AA00	**Push-in lugs** For wall mounting	2	**3ZY1311-0AA00**		1	10 units	41L
 3ZY1440-1AA00	**Coding pins** For removable terminals of SIRIUS devices in the industrial standard mounting rail enclosure. They enable mechanical coding of terminals, see manual for SIRIUS 3RN2 thermistor motor protection relays, https://support.industry.siemens.com/cs/ww/en/ps/24302/man	2	**3ZY1440-1AA00**		1	12 units	41L
Tools for opening spring-type terminals							
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals		**Spring-type terminals (push-in)**				
	3.0 mm x 0.5 mm Length approx. 200 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

SIRIUS 3RS70 signal converters

More information

Home page, see www.siemens.com/relays
Industry Mall, see www.siemens.com/product?3RS70
Conversion tool, e.g. from 3RS17 to 3RS70, see www.siemens.com/sirius/conversion-tool

Signal converters perform the coupling function for analog signals on both the input side and the output side. They are indispensable when processing analog values with electronic controls. Under harsh industrial conditions in particular, it is often necessary to transmit analog signals over long distances. Electrical separation is then needed as a result of the different power supplies. The resistance of the wiring causes potential differences and losses which must be prevented.

Electromagnetic disturbance and overvoltages can affect the signals on the input side in particular or even destroy the analog modules. All terminals of the 3RS70 signal converters are safe up to a voltage of 30 V DC and protected against switching poles. Short-circuit protection is an especially important function for the outputs.

The devices are EMC-tested according to

- IEC 61000-6-4 (generic standard for emitted interference)
- IEC 61000-6-2 (generic standard for interference immunity)

The analog signals comply with

- IEC 60381-1/2.

Article No. scheme

Product versions		Article number									
Signal converters		**3RS70**	□	□	–	□	□	□	0	0	
Product function/type of input signal	Single-range converters, active		**0**	**0**							3-way separation, input 0 ... 10 V
			0	**2**							3-way separation, input 0 ... 20 mA,
			0	**3**							3-way separation, input 4 ... 20 mA,
	Switchable multi-range converters, active		**0**	**5**							3-way separation, 3 standard signals can be switched 0 ... 10 V, 0/4 ... 20 mA
	Switchable universal converters, active		**0**	**6**							3-way separation, 16 signals can be switched
	Single-range converters, passive		**2**	**0**							2-way separation, 4 ... 20 mA
	Switchable multi-range converters, active		**2**	**5**							3-way separation, with manual/automatic switch and setting potentiometer
Connection type	Screw terminals					**1**					
	Spring-type terminals (push-in)					**2**					
Type of output signal	0 ... 10 V						**A**				
	0 ... 20 mA						**C**				
	4 ... 20 mA						**D**				
	Loop power isolator 4 – 20mA						**E**				
	3 standard signals can be switched						**F**				
	4 frequencies can be switched						**K**				
Supply voltage	24 V AC/DC							**E**			
	None							**T**			
	24 ... 240 V AC/DC							**W**			
Example		**3RS70**	**0**	**0**	**–**	**1**	**A**	**E**	**0**	**0**	

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Narrow width
- Easy-to-set universal converters
- Converters with frequency output
- All ranges are fully calibrated
- Universal family of devices – the perfect solution for every application
- Integrated manual/automatic switch with a setpoint generator
- Outputs are short-circuit-proof
- Up to 30 V – protected against damage caused by wiring errors

Application

Signal converters are used in analog signal processing for

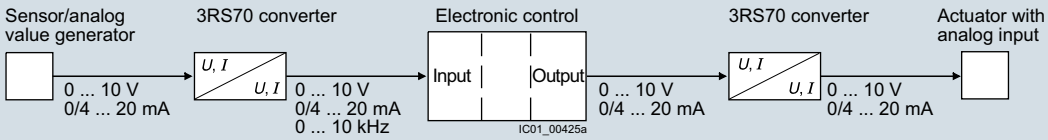
- Electrical separation
- Conversion of normalized and non-normalized signals
- Amplification and impedance adaptation
- Conversion to a frequency for processing by a digital input
- Overvoltage and EMC protection
- Short-circuit protection of the outputs

3RS7025 manual/automatic converter

For special applications in which analog signals have to be simulated, or during plant commissioning when the actual process value is not yet available, the 3RS7025 devices feature an adjustable potentiometer for manual setpoint selection and a manual/automatic switch.

The potentiometer for the 3RS7025 devices is used to simulate analog output signals when the changeover switch is set to "Manual" and the control supply voltage is applied, without the need for an analog input signal. The scale ranges from 0 ... 100 %.

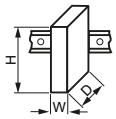
Example: When it is set for an output of 4 ... 20 mA, the left stop on the potentiometer represents an output current of 4 mA and the right stop represents an output current of 20 mA. In the "Auto" switch position, the output signal follows the input signal proportionally regardless of the potentiometer setting.

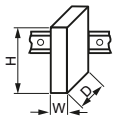


Application example of analog signal processing

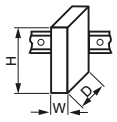
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16691/td Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/view/109475738	Circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/109475738

Article number		3RS7000-.AE00	3RS7002-.AE00, 3RS7003-.AE00	3RS7000-.CE00, 3RS7000-.DE00	3RS7002-.CE00, 3RS7002-.DE00, 3RS7003-.CE00, 3RS7003-.DE00	3RS7020-.ET00
Design of the product		Single-range converters, active				Single-range converters, passive
General technical specifications:						
Width x height x depth 	mm	6.2 × 93 × 72.5				6.2 × 93 × 71
Ambient temperature						
• During operation	°C	-25 ... +60				
• During storage	°C	-40 ... +80				
Relative humidity during operation	%	10 ... 95				
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3 rated value	V	50				
Active power input	W	0.29				--
Degree of protection		IP20				
Input:						
Input voltage						
• Max.	V	30				
Input impedance						
• Of current input, maximum	Ω	--	100	--	100	
• Of voltage input, minimum	kΩ	330	--	330		
Output:						
Load						
• Maximum at current output	Ω	--		500		1000
• Maximum at voltage output	kΩ	2		--		
Relative measuring accuracy	%	0.1				
Maximum overvoltage strength at current output	V	--				
Short-circuit-proof		Yes				No

Article number		3RS7005-.FE00	3RS7005-.KE00	3RS7005-.FW00	3RS7005-.KW00	3RS7025-.FE00	3RS7025-.FW00
Design of the product		Multi-range converters, active, switchable				Switchable multi-range converters, active, with manual/automatic switch and setting potentiometer	
General technical specifications:							
Width x height x depth 	mm	6.2 × 93 × 72.5		17.5 × 93 × 72.5		17.5 × 93 × 75	
Ambient temperature							
• During operation	°C	-25 ... +60					
• During storage	°C	-40 ... +80					
Relative humidity during operation	%	10 ... 95					
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3 rated value	V	50		300		50	300
Active power input	W	0.29		0.5	0.34	0.5	
Degree of protection		IP20					
Input:							
Input voltage							
• Max.	V	30					
Input impedance							
• Of current input, maximum	Ω	100					
• Of voltage input, minimum	kW	330					
Output:							
Load							
• Maximum at current output	kΩ	500	--	500	--	500	
• Maximum at voltage output	Ω	2	--	2	--	2	
Relative measuring accuracy	%	0.1					
Maximum overvoltage strength at current output	V	--					
Short-circuit-proof		Yes					

SIRIUS 3RS70 signal converters

Article number		3RS7006-.FE00	3RS7006-.FW00
Design of the product		Universal converters, active, switchable	
General technical specifications:			
Width x height x depth 	mm	17.5 × 93 × 72.5	
Ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-40 ... +80	
Relative humidity during operation	%	10 ... 95	
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3 rated value	V	50	300
Active power input	W	0.5	
Degree of protection		IP20	
Input:			
Input voltage			
• Max.	V	30	
Input impedance			
• Of current input, maximum	Ω	100	
• Of voltage input, minimum	kΩ	330	
Output:			
Load			
• Maximum at current output	kΩ	500	
• Maximum at voltage output	Ω	2	
Relative measuring accuracy	%	0.1	
Maximum overvoltage strength at current output	V	--	
Short-circuit-proof		Yes	

Article number	3RS70..-1....	3RS70..-2....
Type of electrical connection For auxiliary and control circuit	**Screw terminals**	**Spring-type terminals (push-in)**
Type of connectable conductor cross-sections		
• Solid	1x (0.25 ... 2.5 mm²)	
• Finely stranded		
- Without end sleeves	--	1x (0.25 ... 2.5 mm²)
- With end sleeves	1x (0.25 ... 1.5 mm²)	
• Solid for AWG cables	1x (20 ... 14)	

Selection and ordering data

Signal type		Supply voltage	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
At the input	At the output		mm	d					
Single-range converters, passive									
Type of electrical isolation, 2-way									
4 ... 20 mA	4 ... 20 mA	--	6.2	2	**3RS7020-☐ET00**		1	1 unit	41H
Single-range converters, active									
Type of electrical isolation, 3-way									
0 ... 10 V	0 ... 10 V	24 V AC/DC	6.2	2	**3RS7000-☐AE00**		1	1 unit	41H
0 ... 20 mA	0 ... 10 V	24 V AC/DC	6.2	2	**3RS7002-☐AE00**		1	1 unit	41H
4 ... 20 mA	0 ... 10 V	24 V AC/DC	6.2	2	**3RS7003-☐AE00**		1	1 unit	41H
0 ... 10 V	0 ... 20 mA	24 V AC/DC	6.2	2	**3RS7000-☐CE00**		1	1 unit	41H
0 ... 20 mA	0 ... 20 mA	24 V AC/DC	6.2	2	**3RS7002-☐CE00**		1	1 unit	41H
4 ... 20 mA	0 ... 20 mA	24 V AC/DC	6.2	2	**3RS7003-☐CE00**		1	1 unit	41H
0 ... 10 V	4 ... 20 mA	24 V AC/DC	6.2	2	**3RS7000-☐DE00**		1	1 unit	41H
0 ... 20 mA	4 ... 20 mA	24 V AC/DC	6.2	2	**3RS7002-☐DE00**		1	1 unit	41H
4 ... 20 mA	4 ... 20 mA	24 V AC/DC	6.2	2	**3RS7003-☐DE00**		1	1 unit	41H
Switchable multi-range converters, active									
Type of electrical isolation, 3-way									
0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	24 V AC/DC	6.2	2	**3RS7005-☐FE00**		1	1 unit	41H
		24 ... 240 V AC/DC	17.5	2	**3RS7005-☐FW00**		1	1 unit	41H
	0 ... 50 Hz 0 ... 100 Hz 0 ... 1 kHz 0 ... 10 kHz	24 V AC/DC	6.2	2	**3RS7005-☐KE00**		1	1 unit	41H
		24 ... 240 V AC/DC	17.5	2	**3RS7005-☐KW00**		1	1 unit	41H
Switchable multi-range converters, active, with manual/automatic switch and setting potentiometer									
Type of electrical isolation, 3-way									
0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	24 V AC/DC	17.5	2	**3RS7025-☐FE00**		1	1 unit	41H
		24 ... 240 V AC/DC	17.5	2	**3RS7025-☐FW00**		1	1 unit	41H
Switchable universal converters, active									
Type of electrical isolation, 3-way									
0 ... 60 mV, 0 ... 100 mV, 0 ... 300 mV, 0 ... 500 mV, 0 ... 1 V, 0 ... 2 V, 0 ... 5 V, 0 ... 10 V, 0 ... 20 V, 2 ... 10 V, 0 ... 5 mA, 0 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, -5 ... +5 mA, -20 ... +20 mA,	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	24 V AC/DC	17.5	2	**3RS7006-☐FE00**		1	1 unit	41H
		24 ... 240 V AC/DC	17.5	2	**3RS7006-☐FW00**		1	1 unit	41H

3RS7000-1AE00

3RS7000-2AE00

3RS7005-1FW00

3RS7006-1FE00

Type of electrical connection

- Screw terminals **1**
- Spring-type terminals (push-in) **2**

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Galvanic isolation plates							
 3RQ3900-0A	**Galvanic isolation plates** For electrical separation of different potentials when devices of different types are installed side by side	2	**3RQ3900-0A**		1	10 units	41H
Connecting combs							
 3RQ3901-0B	**Connecting combs** For linking the same potentials, current carrying capacity for infeed max. 6 A						
	• 2-pole	2	**3RQ3901-0A**		1	10 units	41H
	• 4-pole	2	**3RQ3901-0B**		1	10 units	41H
	• 8-pole	2	**3RQ3901-0C**		1	10 units	41H
	• 16-pole	2	**3RQ3901-0D**		1	10 units	41H
Clip-on labels							
	Clip-on labels For terminal marking and equipment labeling, white						
	• 5 x 5 mm	2	**3RQ3902-0A**		100	2 000 units	41H
Tools for opening spring-type terminals							
			Spring-type terminals (push-in)				
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B

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*You can order this quantity or a multiple thereof.
Illustrations are approximate

Notes:

More 3TK28 safety relays can be found
- in the Catalog Add-On IC 10 AO · 2016 in the Information and Download Center
- in the interactive Catalog CA 01
- in the Industry Mall

Conversion tool
e.g. from 3TK28 to 3SK, see www.siemens.com/sirius/conversion-tool

Overview

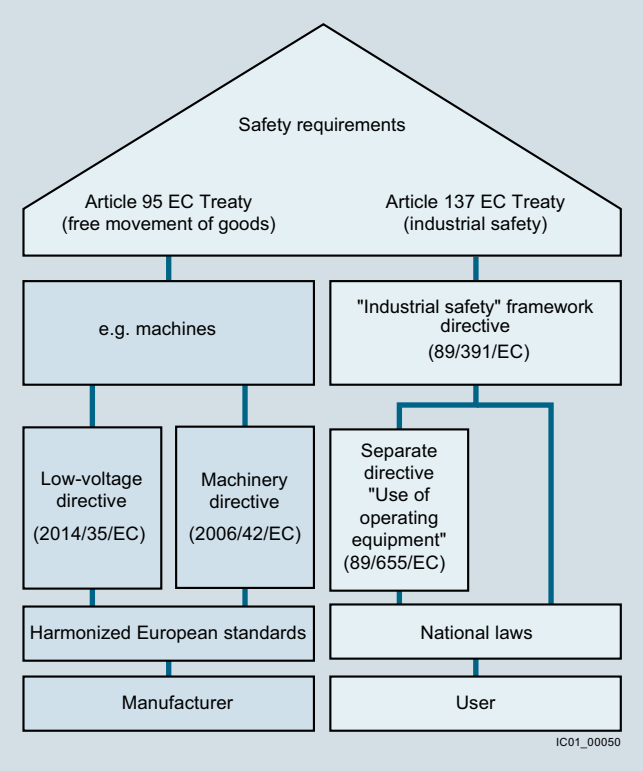
Functional safety of machines and plants – Basic safety requirements in the manufacturing industry

In order to protect people and the environment in many industrial applications in the manufacturing and process industries, machines and plants must meet the fundamental safety requirements of the EU Directives, particularly the Machinery Directive. In addition to design solutions, automation systems and components are also expected to perform safety-related tasks. This means that the life and health of people and the physical integrity of capital goods and the environment depend on the proper operation of these systems and components, on "functional safety".

With the introduction of the uniform European Single Market, national standards and regulations affecting the technical realization of machines were consistently harmonized. This involved defining basic safety requirements which address, on the one hand, machine manufacturers in terms of the free movement of goods (Article 95) and, on the other hand, machine operators in terms of industrial safety (Article 137).

The EU directives:

- Define requirements which must be met by plants and their operating companies in order to protect the health of people and the quality of the environment
- Include standards for health & safety at work (minimum requirements)
- Define product requirements (e.g. for machines) to protect the health and safety of consumers
- Differentiate between the requirements which must be met by the implementation of products in order to ensure the free movement of goods and the requirements which must be met for the use of products



Safety requirements imposed on machines and plants

Objective of the standards

It is the objective of safety technology to minimize as far as possible the hazards from technical facilities for people and the environment while restricting no more than absolutely necessary the scope of industrial production, the use of machines or the production of chemical products.

Production automation is governed in particular by the following standards:

- IEC 61508 or IEC 62061 and
- EN ISO 13849-1

The IEC 62061 standard

The IEC 62061 standard "Safety of machines - Functional safety of electrical, electronic and programmable electronic control systems" defines comprehensive requirements. It includes recommendations for the development, integration and validation of safety-related electrical, electronic and programmable electronic control systems (SRECS) for machines. With the implementation of EN 62061, for the first time, one standard covers the entire safety chain, from the sensor to the actuator. The Safety Integrity Level, or SIL for short, is defined as the application parameter for this standard.

Requirements placed on the capacity of non-electrical – e.g. hydraulic, pneumatic, or electromechanical – safety-related control elements for machines are not specified by the standard.

Safety of machines

The EN ISO 13849-1 standard

EN ISO 13849-1 "Safety of machines – Safety-related components of controls, Part 1: General principles" replaced EN 954-1 at the end of 2011. It considers the complete range of safety functions with all the devices which are involved in their performance. EN ISO 13849-1 also makes a quantitative analysis of the safety functions. The standard describes how to determine the performance level (PL) for safety-relevant parts of control systems on the basis of architectures specified for the intended service life.

When combining several safety-related parts to form a complete system, the standard explains how to determine the resulting PL. It can be applied to safety-related parts of control systems (SRP/CS) and all types of machines, regardless of the technology and energy used, e.g. electrical, hydraulic, pneumatic or mechanical.

Safety Integrated – Integrated safety technology from a single source

Safety Integrated

The following applies equally for machine manufacturers and the companies which operate their machines: Maximum possible safety for personnel and machines. The solution: our Safety Integrated concept based on Totally Integrated Automation. Whether for simple safety functions or highly complex tasks – our portfolio offers you maximum safety.

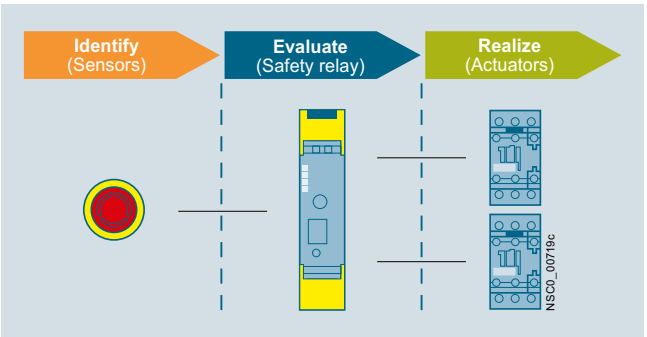
Safety Integrated is a unique, complete and consistent range of safety products covering all safety-related tasks – from identifying and evaluating to reacting, from switches and control systems to operating mechanisms (see graphic on page 11/4). Our products meet the safety requirements in force in industry, including IEC, ISO, NFPA and UL, and are certified in accordance with the latest safety standards.

All Safety Integrated products or systems can be seamlessly integrated in the standard automation environment. They are therefore particularly flexible and economical, reduce engineering time, increase plant availability and enable practice-related machine operation.

Designing a safety function

A safety chain normally comprises the following functions: identify, evaluate and realize. In detail this means:

- Identify = the detection of a safety requirement, e.g. when an EMERGENCY-STOP is actuated or someone enters a hazardous area which is protected by sensors such as light arrays or laser scanners.
- Evaluate = the detection of a safety requirement and the reliable initiation of a reaction, e.g. shutting down the enabling circuits.
- Realize = reacting to a hazard, e.g. shutting down a power supply via the downstream contactors.



Designing a safety function

Our offering

As a partner for all safety requirements, we not only support you with the respective safety-related products and systems, but also consistently provide you with the most current know-how on international standards and regulations. Machine manufacturers and plant managers are offered a comprehensive training portfolio as well as services for the entire lifecycle of safety-related systems and machines.

- A uniform, certified product range
- For courses on CE marking, risk assessment and standards, see www.siemens.com/sitrain-safetyintegrated
- For service and support worldwide, see http://support.automation.siemens.com
- For more information, see www.siemens.com/safety-integrated

Safety evaluation tool

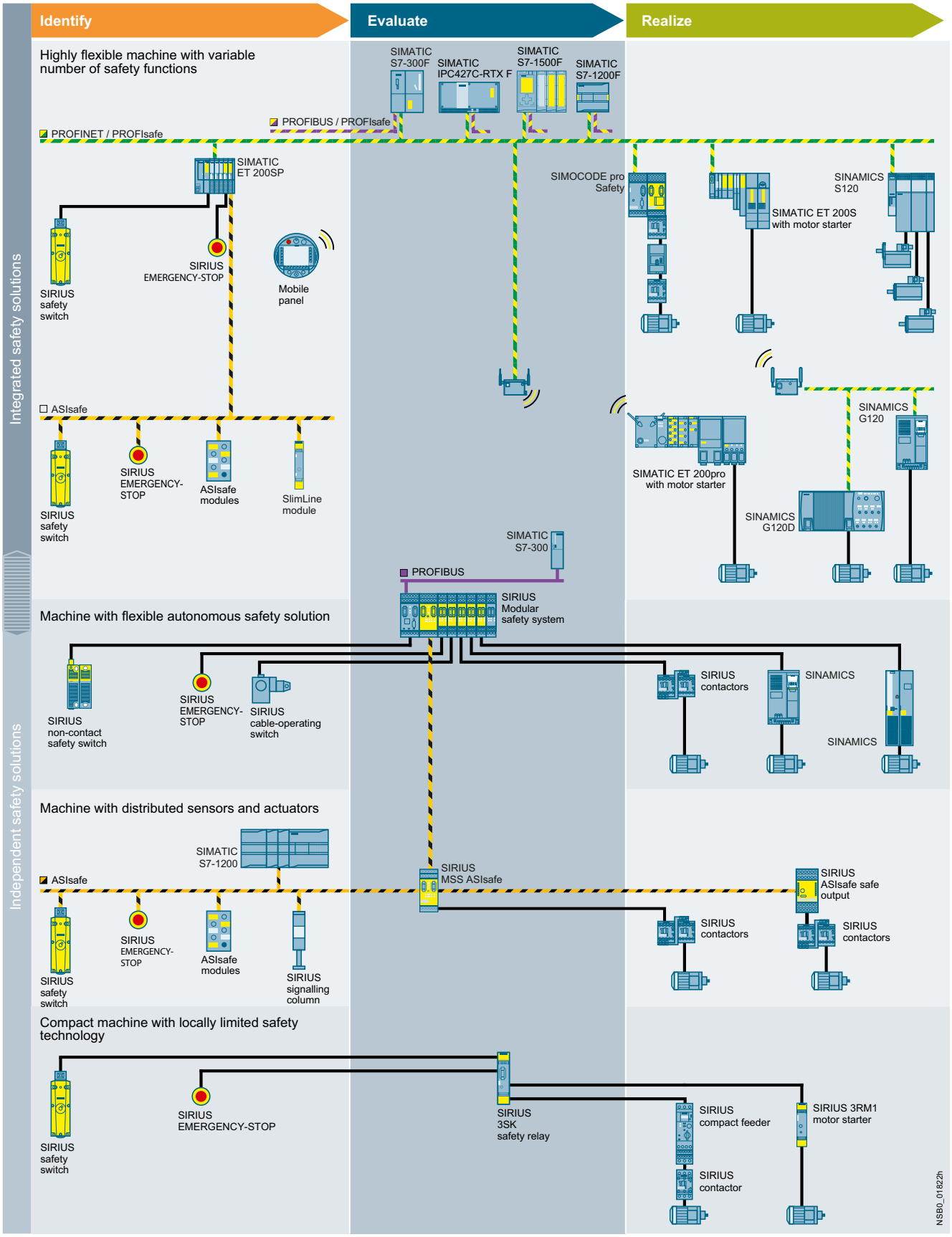
Safety Evaluation Tool

The Safety Evaluation Tool for the IEC 62061 and EN ISO 13849-1 standards guides you quickly and safely through all the calculation steps involved in implementing safety functions on a machine, from definition of the safety system structure through to selection of the components. all the way to determination of the achieved safety integrity level (SIL/PL). You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

Benefits of the Safety Evaluation Tool to you:

- Less time needed to evaluate the safety functions
- Calculation in accordance with current standards
- User-friendly archiving: Projects can be saved and called up again as required
- Fast and easy handling: comprehensive, predefined libraries of examples
- Fast access to product data
- Import function for the safety parameters of products from other manufacturers in XML format according to VDMA Specification 66413
- Selection aids for determining variables and specifying the system design
- Helpful documents which can be downloaded as PDFs
- The online tool can be used free of charge – you pay only the usual costs for accessing the Internet.

For more information, see www.siemens.com/safety-evaluation-tool.

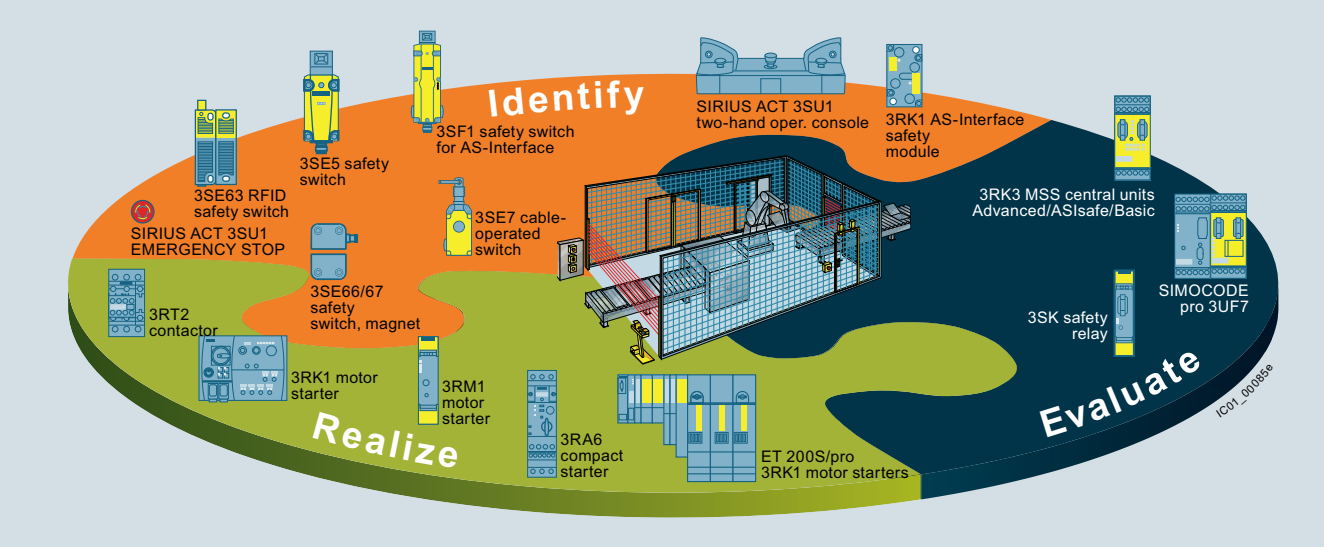


Safety Integrated

SIRIUS Safety Integrated

Our SIRIUS Safety Integrated controls are a central element of the Siemens Safety Integrated concept. Whether for fail-safe identifying, commanding and signaling, monitoring and evaluating or starting and reliable shutting down – our SIRIUS Safety Integrated controls are experts at performing safety tasks in your plant.

SIRIUS Safety Integrated uses fail-safe communication, using standard fieldbus systems, e.g. ASIsafe via AS-Interface and PROFIsafe via PROFIBUS and PROFINET, to solve even networked safety tasks of greater complexity. This opens the door for flexible safety solutions for compact machines or large-scale plants.



SIRIUS Safety Integrated

Monitoring with fail-safe evaluation units from the 3SK and 3RK3 series

Position monitoring with non-contact safety switches:

Safe evaluation units	Maximum achievable safety level according to type of switch	
	Magnetically operated switch	RFID safety switch
	 2 NC/2 NC + 1 NC (signaling contact) 3SE66/3SE67	 3SE63
 3SK1, 3SK2	SIL 3/PL e	
 3RK3		

Safe protective door tumbler with safety switches and separate actuator, in accordance with EN ISO 14119:

Safe evaluation units	Maximum achievable safety level according to type of switch	
	Safety switches with tumbler	
	 3SE53 →	 3SE53 →
 3SK2	SIL 2/PL d	SIL 3/PL e

Note:

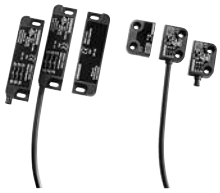
For more information, see http://support.automation.siemens.com/WW/view/en/35443942.

For information on safety switches, see page 12/1.

		Type	Page
SIRIUS Safety Integrated			
 3SK111.	**3SK safety relays** • Key modules of a consistent and cost-effective safety chain • Can be used for all safety applications thanks to compliance with the highest safety requirements (PL e according to EN ISO 13849-1 or SIL 3 according to IEC 61508) • Suitable for use all over the world through compliance with all globally established certifications SIRIUS 3SK1 Standard basic units • Simple, compact devices for all important requirements for monitoring safety sensors and actuators	**3SK111**	11/17
 3SK112.	SIRIUS 3SK1 Advanced basic units • Multifunctional series of safety relays with safe relay outputs, semiconductor outputs or time-delayed outputs for: - EMERGENCY-STOP monitoring - Protective door monitoring - Monitoring of non-floating sensors such as light arrays, laser scanners, etc. - Monitoring of two-hand operation consoles - Monitoring of equivalent (NC/NC) and antivalent (NO/NC) sensors • Setting by means of DIP switch	**3SK112**	11/18
 3SK2	SIRIUS 3SK2 basic units • Series of safety relays that can be parameterized by software, with semiconductor outputs and independent output functions for: - EMERGENCY-STOP monitoring - Protective door monitoring - Protective door monitoring with tumbler - Monitoring of non-floating sensors such as light arrays, laser scanners, etc. - Monitoring of two-hand operation consoles - Monitoring of equivalent (NC/NC) and antivalent (NO/NC) sensors - Muting	**3SK2**	11/19
 3SK121.	Expansion units • 3RO and 4RO output expansions for SIRIUS 3SK1 Standard basic units, SIRIUS 3SK1 Advanced basic units and SIRIUS 3SK2 basic units • Input expansion for SIRIUS 3SK1 Advanced basic units • Power supply for SIRIUS 3SK1 Advanced basic units • Integration of 3RM1 motor starters possible and simple integration of a main circuit component in a system configuration of the safety relays. There is no need for complex wiring between the safety evaluation unit and the actuator. • Expansion of the Standard device series by means of wiring • Expansion of the SIRIUS 3SK1 and SIRIUS 3SK2 Advanced device series by means of wiring or without wiring outlay by means of 3ZY12 device connectors	**3SK121, 3SK122, 3SK123**	11/20, 11/21
 3TK2810-1BA41	**3TK2810 safety relays** • Further modules of a consistent and cost-effective safety chain • Can be used for all safety applications thanks to compliance with the highest safety requirements (PL e according to EN ISO 13849-1 or SIL 3 according to IEC 61508) • Suitable for use all over the world through compliance with all globally established certifications Safe standstill monitoring with 3TK2810-0 • Monitoring without external sensors • Universal use in applications possible Safe speed monitoring with 3TK2810-1 • Monitoring of speed with encoders and proximity switches possible • Easy diagnostics options via display • Integrated monitoring of a spring-type locking protective door	**3TK2810**	11/25

	Type	Page
SIRIUS Safety Integrated (continued)		
 3RK3	**3RK3**	11/28
3RK3 Modular Safety System (MSS) • Freely configurable modular safety relays • Safety-related applications up to PL e according to EN ISO 13849-1 or SIL 3 according to IEC 62061 can be implemented • High flexibility and planning reliability thanks to a modular design • More space in the control cabinet and lower costs thanks to highly modular project data • More functionality and time savings thanks to a software-configurable system • Comprehensive on-site diagnostics with the SIRIUS Safety ES software and diagnostics display • Improved plant diagnostics and higher plant availability thanks to exchange of data using PROFIBUS • Automatic creation of plant documentation with regard to MSS and software parameterization • Up to 9 expansion modules can be plugged in for standard I/Os and fail-safe I/Os – optionally solid-state or relay-based fail-safe outputs • Graphic parameterization of the logic, online diagnostics, and automatic creation of documentation using SIRIUS Safety ES • Consistent further development of the safety monitors with the Advanced and ASIsafe central units of the SIRIUS 3RK3 Modular Safety System (MSS) Additionally with AS-Interface (ASIsafe): • Modularly expandable and freely configurable safety monitor • With MSS Advanced/ASIsafe up to 50 two-channel, fail-safe outputs (38 central outputs and 12 outputs via AS-i) • Safety-related and standard communication between multiple MSS devices and/or safety monitors • Distributed detection of sensors and disconnection of actuators through AS-Interface • Much more space is available without wiring outlay using AS-Interface • Ready-to-use function blocks (e.g. muting or protective door with tumbler) can also be used on AS-i		
 3RK3 MSS ASIsafe		
AS-Interface safety modules • Complete portfolio of ASIsafe modules • For connection of safety switches with contacts (e.g. position switches) as well as solid-state safety sensors (ESPE) • Degree of protection IP65/IP67 or IP20 • Particularly compact dimensions, from 17.5 mm width • Up to four safe inputs per module • Up to one safe output per module • Standard outputs are available on the module in addition • Up to Category 4, PL e, SIL 3 Advantage: Easy integration of safe signals both in the control cabinet or in the field	**3RK1**	2/29
 K45F  SC17.5F		
AS-i Master and AS-i Safety module for ET 200SP The CM AS-i Master ST and F-CM AS-i Safety ST modules are plugged into an ET 200SP configuration, and they connect an AS-i network, including safety-related inputs and outputs, with the controller. • Single, double and multiple masters possible • Up to 31 safe input signals (2-channel)/16 safe output channels possible per F-CM AS-i Safety ST module • Plant-wide safety programming of the F-CPU via SIMATIC Distributed Safety/Safety Advanced • Pre-processing safe AS-i signals directly in the ET 200SP station is possible with an ET 200SP F-CPU 1510SP F / 1512SP F (firmware V1.8 and higher), as is the configuration of an autonomous AS-i Safety station without a higher-level CPU. • Integrated diagnostics • No other programming tools required Advantage: Modular connection of fail-safe AS-i networks with system-wide programming in SIMATIC and SINUMERIK controllers	**6ES7**	2/36, 2/40
 CM AS-i Master ST and F-CM AS-i Safety ST		
3RM1 motor starters • Motor starters for safety-related shutdown as 3RM11 direct-on-line starters or 3RM13 reversing starters • Compact devices with 22.5 mm width comprising combinations of relay contacts and power semiconductors (hybrid technology) and a electronic overload relay • For switching three-phase motors up to 3 kW (at 400 V) and resistive loads up to 10 A at AC voltages up to 500 V under normal operating conditions • Safety-related shutdown according to PL e or SIL 3 by shutting down the control supply voltage possible without additional devices in the main circuit • Combination with 3SK safety relay through conventional wiring or 3ZY12 device connectors • Simple wiring and collective shutdown with device connectors in assemblies; there is no further need for complex looping of the connecting cables	**3RM1**	8/86
 3RM1		

		Type	Page
SIRIUS Safety Integrated (continued)			
 ET 200S Safety	**ET 200S Safety Motor Starter Solutions** The ET 200S Safety Motor Starter Solutions comprise: • Safety modules • Standard motor starters • High-Feature motor starters • Failsafe motor starters ET 200S Safety Motor Starter Solutions local Safety Motor Starter Solutions local are preferred from the safety technology point of view for locally restricted safety applications. These motor starters are not dependent on a safe control system. ET 200S Safety Motor Starter Solutions PROFIsafe Safety Motor Starter Solutions PROFIsafe are often found by contrast in safety applications of the more complex type that are interlinked. In this case a safe control system is used with the PROFINET or PROFIBUS bus systems with the PROFIsafe profile.	**3RK1**	8/101
 ET 200pro Safety	**ET 200pro Safety Motor Starter Solutions** The ET 200pro Safety Motor Starter Solutions comprise: • PROFIsafe modules • Safety repair switch modules • Disconnecting modules • Standard motor starters • High-Feature motor starters ET 200pro Safety Motor Starter Solutions local Safety Motor Starter Solutions local are preferred from the safety technology point of view for locally restricted safety applications. These motor starters are not dependent on a safe control system. ET 200pro Safety Motor Starter Solutions PROFIsafe Safety Motor Starter Solutions PROFIsafe are often found by contrast in safety applications of the more complex type that are interlinked. In this case a safe control system is used with the PROFINET or PROFIBUS bus systems with the PROFIsafe profile.	**3RK1**	9/11
 SIMOCODE pro V  SIMOCODE pro S	**SIMOCODE pro motor management and control devices** • Flexible, modular motor management system for motors with constant speeds in the low-voltage range • Provides an intelligent interface between the higher-level automation system and the motor feeder • Multi-functional, electronic full motor protection which is independent of the automation system • Integrated control functions for the motor control • Detailed operating, service and diagnostics data • Open communication through PROFIBUS DP and PROFINET • Safety relay function for the fail-safe disconnection of motors up to SIL 3 (IEC 61508/IEC 62061) or PL e with Category 4 (EN ISO 13849-1) Fail-safe digital modules • DM-F Local for direct assignment between a fail-safe hardware shutdown signal and a motor feeder • DM-F PROFIsafe for when a fail-safe controller (F-CPU) creates the fail-safe signal for the disconnection	**3UF7**	10/5
 3SE51	**Mechanical position switches** • Easy assembly thanks to modular design • Solid, rugged design • Special versions are easily generated and quickly available, also in combination with standard modules • With a 3SE51/3SE52 position switch it is possible to achieve Category 2 according to EN ISO 13849-1 or SIL 1 according to IEC 61508 • Categories 3 and 4 can be achieved by using a second 3SE51/3SE53 position switch	**3SE51, 3SE52**	12/5
 3SE53	**Mechanical safety switches** • With separate actuator, hinge switch, or separate actuator and tumbler • With a position switch it is possible to achieve Category 3 according to EN ISO 13849-1 or SIL 2 according to IEC 61508 • Category 4 according to EN ISO 13849-1 or SIL 3 according to IEC 61508 can be achieved by using a second 3SE51 or 3SE52 position switch • Version in various sizes made of metal or plastic • In the case of safety switches with tumbler, versions in the high IP69(K) degree of protection • Integrated ASIsafe electronics for all enclosure designs	**3SE51, 3SE52, 3SE53**	12/51

		Type	Page
SIRIUS Safety Integrated (continued)			
 3SE66, 3SE67	**Non-contact magnetically operated safety switches** • Small, compact, safe • Simple installation even in restricted spaces thanks to connector versions • Two safety contacts and one signaling contact enable simple diagnostics at the maximum safety level	**3SE66, 3SE67**	12/108
 3SE63	**Non-contact RFID safety switches** • Long service life due to non-contact switching • Only one switch required for the maximum safety level PL e or SIL 3 according to EN ISO 13849-1 and IEC 61508 • Tamper protection better than with mechanical safety switches thanks to switches and actuators with individual coding • LED status indication including threshold indication for door displacement • Degree of protection up to IP69 K and resistance to cleaning products • Greater switching displacement compared to mechanical switches; offers better mounting tolerance and sagging tolerance of the protective door	**3SE63**	12/114
 3SU1400  3SU1001	**Command devices** • Using a special F adapter, EMERGENCY-STOP devices according to ISO 13850 can be directly connected through the standard AS-Interface or PROFIsafe with safety-related communication. This F adapter/fail-safe interface module is snapped from the rear onto the EMERGENCY-STOP device, enabling the achievement of maximum performance level "e" according to EN ISO 13849-1, or SIL 3 according to IEC 62061. • EMERGENCY-STOP devices for disconnecting plants in an emergency situation • With positive latching function according to EN ISO 13850 and performance level "e" according to EN ISO 13849-1 or SIL 3 according to IEC 62061 • Various mushroom diameters (also illuminated), with lock, in plastic/metal, as individual or complete units, and in combination with 3SU1 enclosure or two-hand operation console. The 3SU1 enclosures are also optionally available with ASIsafe interface	**3SU1**	13/5
 3SE7	**Cable-operated switches** • Control functions and EMERGENCY-STOP always within reach • More safety over long distances of up to 2 x 75 m length • Easy release • Fail-safe applications with SIRIUS Safety Integrated • Status display directly on the switch • Signal display for long distances in innovative LED technology with visibility of over 50 m • Cable-operated switches with latching according to ISO 13850 (EN 418) and full EMERGENCY-STOP function with positive-opening contacts • Quick and safe mounting using uniform mounting accessories • Versions with 1 NO/2 NC with yellow lid	**3SE7**	13/147
 3SE2924-3AA20	**Safety foot switches** • Are used wherever manual operation is not possible • With hood, IP65 metal enclosure • With interlock function according to ISO 13850, manual release by pushbutton switch • With 2 NO + 2 NC, NO contacts close by momentary contact, NC contacts positively driven with independent latching (safety function)	**3SE2924-3AA20**	13/151

Connection methods

The 3SK safety relays are available with screw or spring-type terminals (push-in).

The 3TK2810 safety relays and the 3RK3 Modular Safety System are available with screw or spring-type terminals.

⊕	Screw terminals
⊞	Spring-type terminals, (push-in)
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

3SK safety relays: Spring-type terminals (push-in)

Push-in connections are a form of spring-type terminals allowing fast wiring without tools for rigid conductors or conductors equipped with end sleeves.

As with other spring-type terminals, a screwdriver (with 3.0 x 0.5 mm blade) is required to disconnect the conductor. The same tool can also be used to wire fine-stranded or stranded conductors with no end finishing.

The advantages of the push-in terminals are found, as with all spring-type terminals, in speed of assembly and disassembly and vibration-proof connection. There is no need for the checking and tightening required with screw terminals.

Overview

SIRIUS 3SK safety relays

More information

Home page, see www.siemens.com/safety-relays
Industry Mall, see www.siemens.com/product?3SK
Conversion tool e.g. from 3TK28 to 3SK, see www.siemens.com/sirius/conversion-tool

SIRIUS 3SK safety relays are the key elements of a consistent, cost-effective safety chain. Whether you need EMERGENCY-STOP functionality, protective door monitoring, light arrays, laser scanners or the protection of presses or punches – slimline SIRIUS safety relays enable all safety applications to be implemented in the best possible way in terms of engineering and price.

The following safety-related functions are available:

- Monitoring the safety functions of sensors
- Monitoring the sensor leads
- Monitoring the correct device function of the safety relay
- Monitoring the actuators in the shutdown circuit
- Safety-related disconnection when dangers arise

SIRIUS 3SK safety relays are approved for applications up to SIL 3 (IEC 61508/IEC 62061) or PL e (EN ISO 13849-1).

Device series

SIRIUS 3SK safety relays stand out due to their flexibility for both parameterization and system designs with several evaluation units. Optimized solutions when selecting components are facilitated by a clearly structured component range:

- 3SK1 Standard basic units
- 3SK1 Advanced basic units
- 3SK2 basic units
- 3SK1 output expansions
- 3SK1 input expansions
- Accessories

3SK1 Standard basic units

The 3SK1 Standard basic units are characterized by the following features:

- Compact design
- Simple operation
- Relay and semiconductor outputs
- Economical solution

3SK1 Advanced basic units

The 3SK1 Advanced basic units also offer:

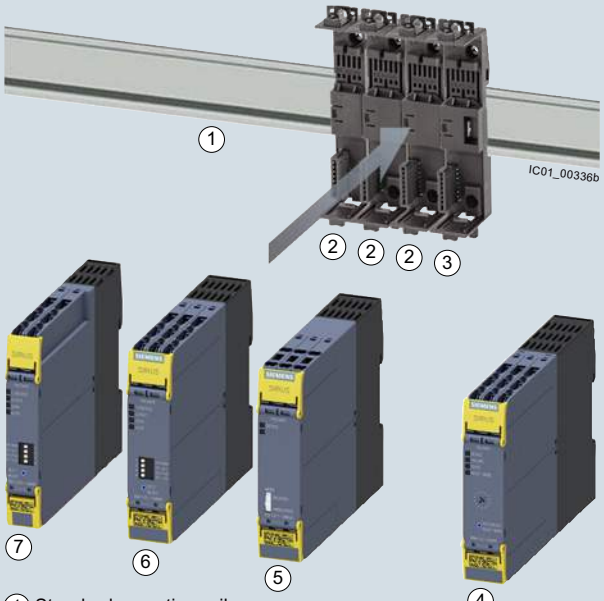
- Universal application possibilities thanks to multifunctionality
- Time-delayed outputs
- Expansion of inputs and outputs

3SK2 basic units

The 3SK2 basic units also offer:

- Up to six fail-safe, independent shutdown functions
- Flexible in use thanks to software parameterization
- Powerful semiconductor outputs
- User-friendly diagnostics using diagnostics display and configuring software

In the case of 3SK1 Advanced basic units or 3SK2 basic units, the 3ZY12 device connector allows safety functions involving several sensors and actuators to be constructed very quickly.



1 Standard mounting rail
2 Device connector
3 Device termination connector
4 SIRIUS 3RM1 motor starter
5 SIRIUS 3SK1211 output expansion
6 SIRIUS 3SK1121 Advanced basic unit
7 SIRIUS 3SK1220 sensor expansion

System configuration example

The 3SK1 and 3SK2 Standard and Advanced series are a high-quality replacement for the 3TK28 safety relays. In their narrower design, and equipped with greater functionality, they can replace every 3TK28 device. The only exception to this are the 3TK2810 devices.

Overview of functions of the 3SK series

Type	3SK1 Standard basic units		3SK1 Advanced basic units		3SK2 basic units	
					22.5 mm	45 mm
	Safe relay outputs	Safe semiconductor outputs	Safe relay outputs	Safe semiconductor outputs	Safe semiconductor outputs	Safe semiconductor outputs
Sensors						
• Mechanical	✓	✓	✓	✓	✓	✓
• Non-floating	✓[1]	✓	✓	✓	✓	✓
• Antivalent	--	--	✓	✓	✓	✓
• Expandable	--	✓ by means of cascading	✓	✓	--	--
Inputs						
• Freely parameterizable	--	--	--	--	10 single-channel, 5 two-channel	20 single-channel, 10 two-channel
Parameters						
• Start (auto/monitored)	✓	✓	✓	✓	A variety of functions can be set for each input/output by means of software parameterization.	
• Sensor connection 2 x 1-channel/ 1 x 2-channel	✓ by means of wiring	✓	✓	✓		
• Cross-circuit detection	✓ by means of wiring	✓	✓	✓		
• Start test ON/OFF	--	✓	✓	✓		
• Monitoring of two-hand operation consoles according to EN 574	--	--	✓	✓		
• Pressure-sensitive mat	--	--	✓	✓		
Safe outputs						
• Instantaneous	✓	✓	✓	✓	Parameterizable	Parameterizable
• Time-delayed	--	--	✓	✓	Parameterizable	Parameterizable
• Expandable with safe relay outputs	✓ by means of wiring	✓ by means of wiring	✓	✓	✓	✓
• Independent	--	--	--	--	✓[4]	✓[5]
• Device connectors	--	--	✓	✓	✓	✓
Options						
• External memory module	--	--	--	--	--	✓
• Display on the device	--	--	--	--	--	✓
• External diagnostics module can be connected	--	--	--	--	✓	✓
Control supply voltage						
• 24 V DC	✓[2]	✓	✓	✓	✓	✓
• 110 ... 240 V AC/DC	✓	✓[6]	✓[3]	✓[3]	--	--

✓ Available
-- Not available

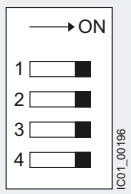
1) 24 V basic units only.
2) 24 V AC/DC.
3) Possible using 3SK1230 power supply via device connector.
4) Up to 4 independent safe outputs, two of which via device connectors.
5) Up to 6 independent safe outputs, two of which via device connectors.
6) Possible using 3SK1230 power supply by means of wiring.

General data

Parameter assignment

3SK112 and 3SK1112 with DIP switch

The 3SK112 and 3SK1112 safety relays are configurable safety relays. They are used as evaluation units for typical safety chains (identify, evaluate, realize). A number of functions can be set using the DIP switches on the front. 3SK112 and 3SK1112 are therefore universally applicable.

DIP switch No.	OFF	ON	Schematic
1	Sensor input Autostart	Sensor input Monitored start	
2	Without crossover monitoring	With crossover monitoring	
3	2 x single-channel sensor connection	1 x 2-channel sensor connection	
4	With start test	Without start test	

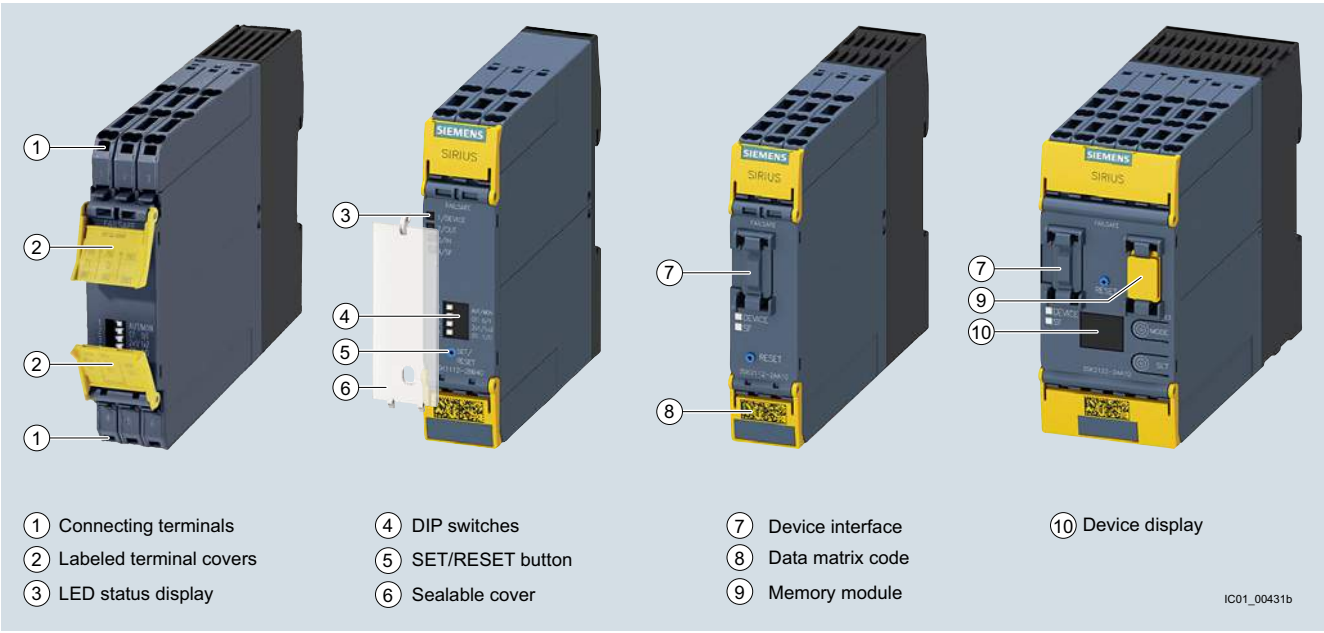
3SK2 with software

The 3SK2 safety relays are configured with the SIRIUS Safety ES software. The behavior of a 3SK2 device as well as the functioning of the individual safe outputs can thus be parameterized simply and conveniently in the logic diagram. In addition, the configuration can be printed out for documentation purposes. The software also supports users in commissioning and troubleshooting by means of online diagnostics and the option of "forcing" signals in the logic diagram. The 3SK2 safety relays thus offer maximum flexibility and universal application options.

Note:

For SIRIUS Safety ES, see page 14/34.

Enclosure concept



Innovative enclosure concept for SIRIUS 3SK safety relays

Connection methods

The 3SK safety relays are available with screw or spring-type terminals (push-in).

Spring-type terminals (push-in)

Push-in connections are a form of spring-type terminals allowing fast wiring without tools for rigid conductors or conductors equipped with end sleeves.

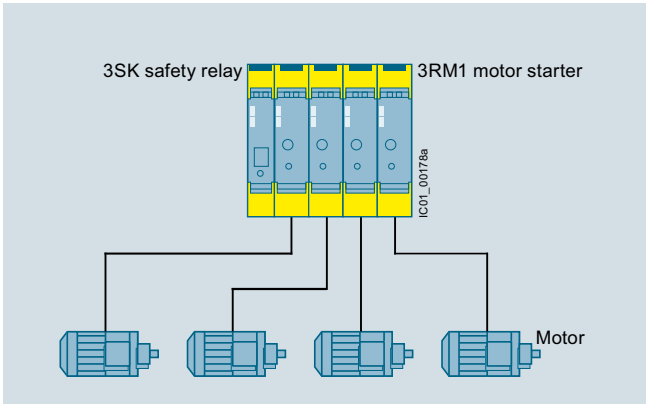
As with other spring-type terminals, a screwdriver (with 3.0 x 0.5 mm blade) is required to disconnect the conductor. The same tool can also be used to wire finely-stranded or stranded conductors with no end finishing.

The advantages of the push-in terminals are found, as with all spring-type terminals, in speed of assembly and disassembly and vibration-proof connection. There is no need for the checking and tightening required with screw terminals.

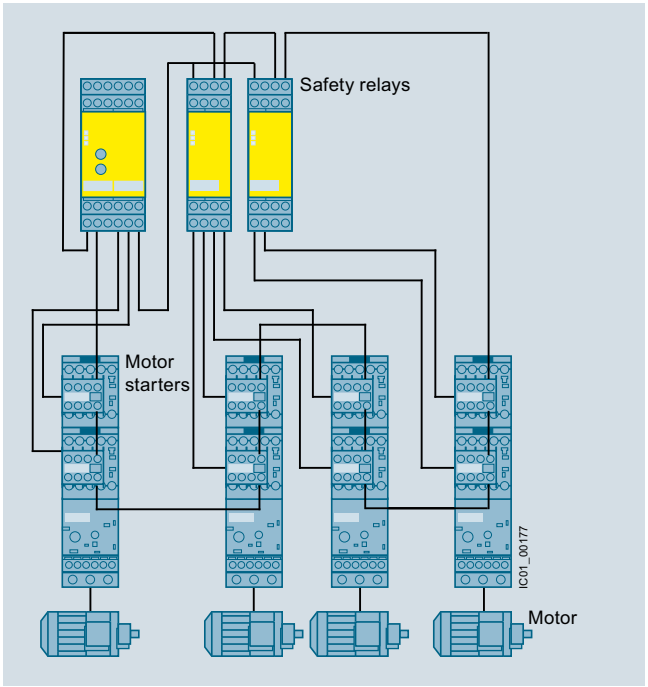
Expansion option by adding the 3RM1 motor starter

With previous safety relay and motor feeder configurations, a huge amount of wiring was required to monitor the motor feeders in safety applications.

With the integration of the SIRIUS 3RM1 motor starter into the SIRIUS 3SK safety relay system family, this wiring has been minimized for the first time. Motor starters up to 3 kW can be easily integrated into the safety relay system using SIRIUS 3ZY12 device connectors, without the need for additional wiring between the evaluation unit and the motor starter.



System design using 3SK and 3RM1



Conventional system configuration

Article No. scheme

Product versions		Article number
3SK1 safety relays		**3SK1** □ □ □ – □ □ □ □ □
Device version	Basic unit	**1**
	Expansion unit	**2**
Device variants	3SK11: Standard; 3SK12: Output expansion	**1**
	3SK11: Advanced; 3SK12: Input expansion	**2**
Type of outputs	Relay outputs	**1**
	Semiconductor outputs	**2**
	Power outputs	**3**
Connection type	Screw terminals	**1**
	Spring-type terminals (push-in)	**2**
Control circuit/actuation	3SK11: 3 enabling circuits	**A**
	3SK11: 2 enabling circuits	**B**
	3SK11: 4 enabling circuits	**C**
Type of control supply voltage	3SK1213: 24 V AC, 50/60 Hz	**B 0**
	3SK1: 24 V AC/DC, 50/60 Hz	**B 3**
	3SK1: 24 V DC	**B 4**
	3SK1213: 115 V AC, 50/60 Hz	**J 2**
	3SK1213: 230 V AC, 50/60 Hz	**L 2**
	3SK1: 110 ... 240 AC/DC; 50/60 Hz	**W 2**
Time delay	None	**0**
	0.05 ... 3 s	**1**
	0.5 ... 30 s	**2**
	5 ... 300 s	**4**
Example		**3SK1 1 1 1 – 1 A B 3 0**

Product versions		Article number
3SK2 safety relays		**3SK2 1** □ **2 –** □ **A A 1 0**
Device variants	10 F-DI, 2 F-DQ, width 22.5 mm	**1**
	20 F-DI, 4 F-DQ, width 45 mm	**2**
Connection type	Screw terminals	**1**
	Spring-type terminals (push-in)	**2**
Example		**3SK2 1 1 2 – 1 A A 1 0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

General

- Approved for all safety applications because of its compliance with the highest safety requirements (SIL 3 and PL e)
- Universally usable thanks to adjustable parameters
- Usable worldwide thanks to globally valid certificates
- Compact SIRIUS design
- Device connectors with standard rail mounting for flexible connectability and expandability
- Removable terminals for greater plant availability
- Yellow terminal covers clearly identify the device as a safety component
- Sensor cable up to 2 000 m long allows it to be used in extensive plants

Relay outputs

- Different voltages can be switched through the floating contacts.
- The power relay contacts allow currents of up to 5 A at AC-15/DC-13 to be connected.

Semiconductor outputs

- Wear-free
- Suitable for operation in frequently switching applications
- Insensitive to vibrations and dirt
- Good electrical endurance

Power outputs (3SK1213 output expansion)

- Different voltages can be switched through the floating contacts.
- The power relay contacts allow currents of up to 10 A AC-15/6 A DC-13 to be switched.
- High mechanical and electrical endurance
- Protective separation between safe outputs and electronics

Expansion option by adding the 3RM1 motor starter

SIRIUS 3SK safety relays are ideal for combining with the SIRIUS 3RM1 motor starters.

Combinations are made by means of

- SIRIUS 3ZY12 device connectors (in combination with 3SK1 Advanced/3SK2) or
- Conventional wiring (for all 3SK1 and 3SK2 basic units)

This makes collective shutdown very easy in assemblies. The wiring, and ultimately the shutting down of the control supply voltage for the expansion components in EMERGENCY-STOP situations, is performed via the device connector. There is no further need for complex looping of the connecting cables between the safety relay and the motor starters.

The 3RM1 motor starter combines the benefits of semiconductor technology and relay technology. This combination is also known as hybrid technology.

The hybrid technology in the motor starter is characterized by the following features:

- The inrush current in the case of motorized loads is conducted briefly via the semiconductors. Advantages include protection of the relay contacts and a long service life due to low wear.
- The uninterrupted current is conducted via relay contacts. Advantages include lower heat losses compared with the semiconductor.
- Shutdown is implemented again via the semiconductor. The contacts are only slightly exposed to arcs, and this results in a longer service life.
- Integrated overload protection

Note:

For SIRIUS 3RM1 motor starters, see page 8/86.

3ZY12 device connectors

Using 3ZY12 device connectors to combine devices reduces the time required to configure and wire the components. At the same time errors are avoided during wiring, and this considerably reduces the testing required for the fully-assembled application.

Configuration and stock keeping

Variable setting options by means of DIP switches or software, a wide voltage range (3SK1111) and a special power supply unit (3SK1 only) reduce the cost of keeping stocks and the considerations involved in configuration where the evaluation units to be selected are concerned.

Application

3SK1 safety relays

SIRIUS 3SK1 safety relays are used mainly in autonomous safety applications which are not connected to a safety-related bus system. Their function here is to evaluate the sensors and the safety-related shutdown of hazards. Also they check and monitor the sensors, actuators and safety-related functions of the safety relay.

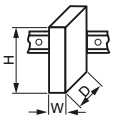
3SK2 safety relays

SIRIUS 3SK2 safety relays are used primarily in autonomous, more complex safety applications for which the functional scope of the 3SK1 devices is no longer sufficient, such as in the implementation of independent shutdown functions. Their function here is to evaluate the sensors and the safety-related shutdown of hazards. Also they check and monitor the sensors, actuators and safety-related functions of the safety relay.

Technical specifications

More information	
3SK1 manual, see https://support.industry.siemens.com/cs/ww/en/view/67585885	3SK2 manual, see https://support.industry.siemens.com/cs/ww/en/view/109444336
3SK1230 technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16389/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16382/faq

SIRIUS 3SK1 safety relays

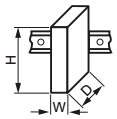
Article number		3SK1111-.AB30, 3SK1211-.BB00, 3SK1211-.BB40	3SK1111-.AW20, 3SK1121, 3SK1211-.BW20	3SK1112	3SK1120	3SK1122	3SK1213	3SK1220
General data:								
Width x height x depth 	mm	22.5 x 100 x 121.6		22.5 x 100 x 91.6	17.5 x 100 x 121.6	22.5 x 100 x 121.6	90 x 100 x 121.6	17.5 x 100 x 121.6
Ambient temperature								
• During operation	°C	-25 … +60						
• During storage	°C	-40 … +80						
Installation altitude at height above sea level maximum	m	2 000						
Air pressure according to SN 31205	kPa	90 … 106						
Shock resistance		10 *g* /11 ms					5 *g* /10 ms	10 *g* /11 ms
Vibration resistance according to IEC 60068-2-6		5 ... 500 Hz: 0.75 mm						
IP degree of protection of the enclosure		IP20						
Touch protection against electric shock		Finger-safe						
Insulation voltage, rated value	V	300		50			300	50
Impulse withstand voltage, rated value	V	4 000		500			4 000	800
Safety integrity level (SIL) according to IEC 61508		SIL 3						
Performance level (PL) according to EN ISO 13849-1		e						
T1 value for proof test interval or service duration according to IEC 61508	y	20						
EMC emitted interference		IEC 60947-5-1, class B	IEC 60947-5-1, class A				IEC 60947-5-1, class B	IEC 60947-5-1, class A
Certificate of suitability								
• UL certification		Yes						
• TÜV approval		Yes						

Article number		3SK1111, 3SK1121-.AB40, 3SK1211	3SK1112, 3SK1122	3SK1120	3SK1121-.CB4.	3SK1213
Switching capacity current of the NO contacts of the relay outputs						
• At AC-15 at 230 V	A	5	--		3	10
• At DC-13 at 24 V	A	5	--		3	6
Switching capacity current of the semiconductor outputs At DC-13 at 24 V	A	--	2	0.5	--	

Article number		3SK1111-.AB30, 3SK1211	3SK1111-.AW20	3SK1112, 3SK1220	3SK1120, 3SK1122-.AB40	3SK1121-.AB40	3SK1121-.CB4.	3SK1122-.CB4.	3SK1213
PFHD with high demand rate according to EN 62061	1/h	1.7×10^{-9}	1.5×10^{-9}	1.0×10^{-9}	1.3×10^{-9}	2.5×10^{-9}	3.7×10^{-9}	1.5×10^{-9}	1.0×10^{-9}
PFDavg at low demand rate according to IEC 61508		1.0×10^{-6}		7.0×10^{-6}					1.0×10^{-6}

General data

SIRIUS 3SK2 safety relays

Article number		3SK2112- .AA10	3SK2122- .AA10
General data:			
Width x height x depth 	mm	22.5 x 100 x 124.5	45 x 100 x 124.5
Ambient temperature • During operation • During storage	 °C °C	 -25 ... +60 -40 ... +80	
Installation altitude at height above sea level maximum	m	2 000	
Air pressure according to SN 31205	kPa	90 ... 106	
Shock resistance		15 *g* / 11 ms	
Vibration resistance according to IEC 60068-2-6		5 ... 500 Hz: 0.75 mm	
IP degree of protection of the enclosure		IP20	
Touch protection against electric shock		Finger-safe	
Insulation voltage Rated value	V	50	
Impulse withstand voltage Rated value	V	800	
Safety integrity level (SIL) according to IEC 61508		SIL 3	
Performance Level (PL) according to EN ISO 13849-1		e	
T1 value for proof test interval or service duration according to IEC 61508	y	20	
EMC emitted interference according to IEC 60947-1		Class A	
Certificate of suitability • UL certification • TÜV approval	 	 Yes Yes	
Switching capacity current of the semiconductor outputs At DC-13 at 24 V		4	
PFHD with high demand rate according to EN 62061	1/h	1.0×10^{-8}	1.2×10^{-8}
PFDavg at low demand rate according to IEC 61508		1.5×10^{-5}	1.8×10^{-5}

Overview

3SK111 Standard basic units

The 3SK111 Standard basic units are characterized by simple, variable functionality. These devices are recommended for safety functions requiring only a few sensors and a small number of outputs on the safety relay.

Note:

Use of device connectors not possible.

Selection and ordering data

3SK1111-1AB30

3SK1111-1AW20

3SK1112-1BB40

Control supply voltage		Number of outputs						SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
At AC At 50 Hz	At DC	As contacting contact block			As contactless semiconductor contact block								
		As NO contact, instantaneous switching	As NO contact, delayed switching	For signaling function, instantaneous switching	Instantaneous switching	Delayed switching	For signaling function, instantaneous switching						
V	V							d					
Standard basic units													
24	24	3	0	1	0	0	0	▶	**3SK1111-□AB30**		1	1 unit	41L
110 … 240	110 … 240	3	0	1	0	0	0	▶	**3SK1111-□AW20**		1	1 unit	41L
--	24	0	0	0	2	0	1	2	**3SK1112-□BB40**		1	1 unit	41L

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

11

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

SIRIUS 3SK1 Advanced basic units

Overview

3SK112 Advanced basic units

The 3SK112 Advanced basic units form an innovative system landscape that allows even complex safety functions with large numbers of sensors and outputs to be built up using the device connectors. It is possible to increase both the number of inputs for sensors and the number of safe outputs of the basic unit without the need for wiring outlay between the devices.

Note:

Use of device connectors possible.

Selection and ordering data

3SK1121-1AB40

3SK1120-1AB40

3SK1122-1AB40

3SK1122-1CB41

Control supply voltage at DC	Number of outputs as contacting contact block: As NO contact, instantaneous switching	As NO contact, delayed switching	As NC contact for signaling function, instantaneous switching	as contactless semiconductor contact block: Instantaneous switching	Delayed switching	For signaling function, instantaneous switching	Adjustable OFF-delay time	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V							s	d					
Advanced basic units													
24	3	0	1	0	0	0	--		**3SK1121-□AB40**		1	1 unit	41L
	2	2	0	0	0	0	0.05 ... 3	2	**3SK1121-□CB41**		1	1 unit	41L
							0.5 ... 30		**3SK1121-□CB42**		1	1 unit	41L
							5 ... 300	5	**3SK1121-□CB44**		1	1 unit	41L
24	0	0	0	1	0	0	--	2	**3SK1120-□AB40**		1	1 unit	41L
				3	0	1	--	2	**3SK1122-□AB40**		1	1 unit	41L
				2	2	0	0.05 ... 3	5	**3SK1122-□CB41**		1	1 unit	41L
							0.5 ... 30	2	**3SK1122-□CB42**		1	1 unit	41L
							5 ... 300	5	**3SK1122-□CB44**		1	1 unit	41L

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

3SK2 basic units

The 3SK2 basic units have a large number of inputs and outputs within a narrow width. In addition, demanding safety applications can be implemented simply with several independent safety functions. Flexible application options are enabled by powerful semiconductor outputs, as well as by expandability with additional 3SK output expansions and 3RM1 Failsafe motor starters. Flexible time functions and diagnostics options are available.

Starter Kit

Starter Kit

The Starter Kit is a favorably-priced complete package for the simple creation of complex safety applications and comprises:

- 3SK2112-2AA10 basic unit, 22.5 mm wide, with spring-loaded terminal (push-in)
- SIRIUS Safety ES Standard software for configuring, commissioning, operating and diagnosing
- USB PC cable for easy transmission of the configuration to the device by means of USB

Selection and ordering data

3SK2112

3SK2122

Control supply voltage At DC	Number of outputs as contactless semiconductor contact block, safety-related 2-channel	Number of outputs as contactless semiconductor contact block, non-safety-related, 2-channel	Number of outputs to the device connector, safety-related	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V				mm	d					
3SK2 basic units										
24	2	1	2	22.5	2	**3SK2112-□AA10**		1	1 unit	41L
	4	2	2	45	2	**3SK2122-□AA10**		1	1 unit	41L

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

Control supply voltage At DC	Number of outputs as contactless semiconductor contact block, safety-related 2-channel	Number of outputs as contactless semiconductor contact block, non-safety-related, 2-channel	Number of outputs to the device connector, safety-related	Width	SD	**Spring-type terminals (push-in)** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V				mm	d					
3SK2 starter kit										
Contains 3SK2112-2AA10 basic unit, SIRIUS Safety ES Standard and USB PC cable 3UF7941-0AA00-0										
24	2	1	2	22.5	2	**3SK2941-2AA10**		1	1 unit	4N1

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Output expansions

Overview

3SK121 output expansion

The 3SK121 output expansions can be used to expand all 3SK basic units.

3SK1211 output expansion

The 3SK1211 output expansion is used to expand the safe outputs of a basic unit by adding another four safe outputs. These outputs have a switching capacity of AC-15 5 A at a switching voltage of 230 V. The devices can be connected to any 3SK basic unit by means of wiring. In addition, the devices with a 24 V DC control supply voltage can also be connected to 3SK1 Advanced basic units and 3SK2 basic units by means of the 3ZY12 device connectors.

3SK1213 output expansion

The 3SK1213 output expansion is used to expand the safe outputs of a basic unit by adding three safe outputs with high switching capacity. These outputs have a switching capacity of AC-15 10 A at a switching voltage of 230 V. The devices can be connected to any 3SK basic unit by means of wiring. As with the 3SK1211, the devices with a 24 V DC control supply voltage can also be connected to 3SK1 Advanced and 3SK2 basic units by means of the 3ZY12 device connectors.

Note:

It is only possible to expand the Standard basic units by means of wiring. Advanced basic units and 3SK2 basic units can be expanded using the 3ZY12 device connector.

Benefits

- Perfect adaptation of the number of inputs
- Simple expansion of instantaneous and time-delayed safe outputs of the Advanced basic units using device connectors
- When using the device connector the outputs on the terminals of the basic device can still be used
- Another two freely parameterizable shutdown functions on 3SK2 basic units when using device connectors
- Expansion with power contacts for high AC-15/DC-13 currents in the control circuit
- No wiring of the feedback circuit to the basic units is required when using device connectors
- Shorter installation times
- Less configuring and testing required

Selection and ordering data

3SK1211-1BB40

3SK1213-1AB40

Control supply voltage		Number of outputs as contacting contact block			3ZY12 device connectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
At AC At 50 Hz	At DC	As NO contact, instantaneous switching	As NO contact, delayed switching	as NC contact Instantaneous switching for feedback circuit							
V	V					d					
Output expansions											
24	--	4	0	1	No	5	**3SK1211-□BB00**		1	1 unit	41L
--	24	4	0	1	Yes	►	**3SK1211-□BB40**		1	1 unit	41L
110 ... 240	110 ... 240	4	0	1	No	2	**3SK1211-□BW20**		1	1 unit	41L
--	24	3	0	1	Yes	5	**3SK1213-□AB40**		1	1 unit	41L
115	--	3	0	1	No	5	**3SK1213-□AJ20**		1	1 unit	41L
230	--	3	0	1	No	5	**3SK1213-□AL20**		1	1 unit	41L

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

3SK1220 sensor expansion

With the input expansions

- 3SK1220 sensor expansion
- 3SK1230 power supply

the 3SK1 Advanced basic units can be made more flexible.

3SK1220 sensor expansion

The 3SK1220 input expansion allows additional sensors to be integrated easily and flexibly. The device monitors two 1-channel sensors or one 2-channel sensor, whatever their output technology (floating/single-ended).

Note:

The 3SK1220 sensor expansion can only be connected to the 3SK1 Advanced basic units by means of the 3ZY12 device connector; see page 11/22.

3SK1230 power supply

The 3SK1230 power supply makes the 3SK1 devices universally usable, whatever control supply voltage is to be used.

Note:

Alongside the 3ZY12 device connector, the 3SK1230 power supply can also be wired to act as a power supply for 3SK1 devices.

Benefits

- A wide voltage range of 110 ... 240 V AC/DC allows the devices to be used worldwide
- Low stock keeping due to little variance
- Flexible expansion of the number of sensors without the need for additional wiring between the devices
- Perfect adaptation of the number of inputs to suit the application
- Universal use thanks to the wide range of adjustable parameters for sensor expansion (parameters as for 3SK1 Advanced basic units)

Selection and ordering data

3SK1220-1AB40

3SK1230-1AW20

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Input expansions						
Sensor expansion For safety-related expansion of the 3SK1 Advanced basic units by adding a further 2-channel sensor or two 1-channel sensors	2	**3SK1220-☐AB40**		1	1 unit	41L
Power supply For supplying 3SK1 Advanced basic units via 3ZY12 device connectors at voltages of 110 ... 240 V AC/DC	2	**3SK1230-☐AW20**		1	1 unit	41L
Type of electrical connection • Screw terminals • Spring-type terminals (push-in)		**1** **2**				

Overview

Numerous accessories are available for 3SK, such as device connectors, terminals, cables, adapters, covers, memory and diagnostics modules or software.

Device connectors for 3SK112., 3SK12.. and 3SK2

The device connector can be used to connect devices of the 3SK/3RM1 system together, with the last device in a system configuration being placed on a device termination connector. Use of device connectors not possible with 3SK1 standard.

Device connectors are available in various versions specifically for the 3SK safety relays:

For type	Device connectors				Device termination connectors	
	3ZY1212-1BA00 (for 3SK1, Width 17.5 mm)	**3ZY1212-2BA00** (for 3SK1, Width 22.5 mm)	**3ZY1212-2GA00** (for 3SK2, Width 22.5 mm)	**3ZY1212-4GA01** (for 3SK2, Width 45 mm)	**3ZY1212-2DA00** (for 3SK1, Width 22.5 mm)	**3ZY1212-0FA01** (for 3SK1, set for enclosures ≥ 45 mm)
3SK1 Advanced basic units						
3SK1120	✓	--	--	--	--	--
3SK1121	--	✓	--	--	✓	--
3SK1122	--	✓	--	--	✓	--
3SK2 basic units						
3SK2112	--	--	✓	--	--	--
3SK2122	--	--	--	✓	--	--
Output expansions						
3SK1211	--	✓	--	--	✓	--
3SK1213	--	--	--	--	--	✓
Input expansions						
3SK1220	✓	--	--	--	--	--
3SK1230	--	✓	--	--	--	--

✓ Available
-- Not available

Removable terminals for 3SK

The following removable terminals are available for the 3SK safety relays for pre-wiring of the terminals in the control cabinet, or for replacing terminals:

For type	Removable terminals			
	Screw terminals		Spring-type terminals (push-in)	
	2-pole 3ZY1121-1BA00	**3-pole 3ZY1131-1BA00**	**2-pole 3ZY1121-2BA00**	**3-pole 3ZY1131-2BA00**
3SK1 basic units				
3SK1111	--	✓	--	✓
3SK1112	✓	--	✓	--
3SK1120	--	✓	--	✓
3SK1121	--	✓	--	✓
3SK1122	✓ bottom	✓ top	✓ bottom	✓ top
3SK2 basic units				
3SK2112	--	✓	--	✓
3SK2122	--	✓[1)]	--	✓[1)]
Output expansions				
3SK1211	✓	--	✓	--
3SK1213	--	--	--	--
Input expansions				
3SK1220	--	✓ top	--	✓ top
3SK1230	✓ bottom	--	✓ bottom	--

✓ Available
-- Not available
[1)] Two sets of terminals are required for 3SK2122.

Selection and ordering data

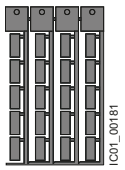
Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Device connectors for the electrical connection of SIRIUS devices in the industrial standard mounting rail enclosure						
 3ZY1212 -1BA00 3ZY1212 -2DA00						
Device connector for 3SK1						
• Width 17.5 mm	2	**3ZY1212-1BA00**		1	1 unit	41L
• Width 22.5 mm	2	**3ZY1212-2BA00**		1	1 unit	41L
Device connector for 3SK2						
• Width 22.5 mm	2	**3ZY1212-2GA00**		1	1 unit	41L
• Width 45 mm	2	**3ZY1212-4GA01**		1	1 unit	41L
Device termination connectors For 3SK1, width 22.5 mm Note: Observe positions of the slide switch, see Manual "3SK1 Safety Relays", https://support.industry.siemens.com/cs/ww/en/view/67585885	2	**3ZY1212-2DA00**		1	1 unit	41L
Device daisy chain connectors For 3RM1 and 3SK, 24 V DC, 22.5 mm, for implementation of distances between devices according to the installation guidelines	2	**3ZY1212-2AB00**		1	1 unit	41L
Device connectors For height adjustment for devices without electrical connection via device connector, with a width of 22.5 mm or greater	2	**3ZY1210-2AA00**		1	1 unit	41L
Device termination connector set For 3SK1213, width > 45 mm, comprising 3ZY1212-2FA00 and 3ZY1210-2AA00	2	**3ZY1212-0FA01**		1	1 unit	41L

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminals for SIRIUS devices in the industrial standard mounting rail enclosure							
 3ZY1121-1BA00	**Removable terminals**		**Screw terminals**				
	• 2-pole, up to 2 x 1.5 mm² or 1 x 2.5 mm²	2	**3ZY1121-1BA00**		1	6 units	41L
	• 3-pole, up to 2 x 1.5 mm² or 1 x 2.5 mm² 1)	2	**3ZY1131-1BA00**		1	6 units	41L
			Spring-type terminals (push-in)				
	• 2-pole, up to 2 x 1.5 mm²	2	**3ZY1121-2BA00**		1	6 units	41L
	• 3-pole, up to 2 x 1.5 mm² 1)	2	**3ZY1131-2BA00**		1	6 units	41L
PC cables and adapters for 3SK2 (essential accessories)							
 3UF7941-0AA00-0	**USB PC cables** For connecting to the USB interface of a PC/PG, for communication with 3SK2 through the system interface, recommended for use in connection with 3SK2	►	**3UF7941-0AA00-0**		1	1 unit	42J
	USB/serial adapters For connecting an RS 232 PC cable to the USB interface of a PC	5	**3UF7946-0AA00-0**		1	1 unit	42J
Connecting cables for 3SK2 (essential accessory for diagnostics module)							
 3UF7932-0AA00-0	**Connecting cables** For connecting diagnostics module to 3SK2 basic unit						
	• Length 0.1 m (flat)	►	**3UF7931-0AA00-0**		1	1 unit	42J
	• Length 0.3 m (flat)	►	**3UF7935-0AA00-0**		1	1 unit	42J
	• Length 0.5 m (flat)	►	**3UF7932-0AA00-0**		1	1 unit	42J
	• Length 0.5 m (round)	►	**3UF7932-0BA00-0**		1	1 unit	42J
	• Length 1.0 m (round)	►	**3UF7937-0BA00-0**		1	1 unit	42J
	• Length 2.5 m (round)	►	**3UF7933-0BA00-0**		1	1 unit	42J
Operating and monitoring modules for 3SK2 *NEW*							
 3SK2611-3AA00	**Diagnostics modules** For direct display of errors, e.g. of cross-circuits Note: The 3RK3611-3AA00 MSS diagnostics module cannot be operated on the 3SK2 devices.	2	**3SK2611-3AA00**		1	1 unit	41L
Door adapters for 3SK2							
 3UF7920-0AA00-0	**Door adapters** For external connection of the system interface, e.g. outside a control cabinet	►	**3UF7920-0AA00-0**		1	1 unit	42J
Interface covers for 3SK2							
 3UF7950-0AA00-0	**Interface covers** For system interface	►	**3UF7950-0AA00-0**		1	5 units	42J
Memory modules for 3SK2							
 3RK3931-0AA00	**Memory modules** For backing up the complete parameterization of the 3SK2 safety system without a PC/PG through the system interface	2	**3RK3931-0AA00**		1	1 unit	42C
Software for 3SK2							
 3ZS1316-.C.10-0Y.5	**SIRIUS Safety ES** Software for configuring, commissioning, operating and diagnosing of 3SK2 and 3RK3, see page 14/34.						

1) For 3SK2122 two terminal sets are required.

Accessories

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for enclosures							
 3ZY1321-2AA00	**Sealing covers** • 17.5 mm (for 3SK1120 and 3SK1220)	2	**3ZY1321-1AA00**		1	5 units	41L
	• 22.5 mm (for all 3SK1 devices except 3SK1120 and 3SK1220)	2	**3ZY1321-2AA00**		1	5 units	41L
 3ZY1311-0AA00	**Push-in lugs** For wall mounting	2	**3ZY1311-0AA00**		1	10 units	41L
 3ZY1440-1AA00	**Coding pins** For removable terminals of SIRIUS devices in the industrial standard mounting rail enclosure; enable mechanical coding of terminals, see Manual "3SK1 safety relays", https://support.industry.siemens.com/cs/ww/en/view/67585885	2	**3ZY1440-1AA00**		1	12 units	41L
Blank labels							
 3RT2900-1SB20	**Unit labeling plates** For SIRIUS devices 20 mm x 7 mm, titanium gray[1)]	20	**3RT2900-1SB20**		100	340 units	41B
Tools for opening spring-type terminals							
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	2	**Spring-type terminals (push-in)** **3RA2908-1A**		1	1 unit	41B

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH
see page 16/20.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SIRIUS 3TK2810 safety relays

More information

Home page, see www.siemens.com/sirius
Industry Mall, see www.siemens.com/product?3TK28

3TK2810-0 standstill monitors

The standstill monitor increases safety in hazardous areas. Without a sensor, it detects motor stoppage from the residual magnetization of the rotating motor. When an adjustable threshold value is undershot, it uses its outputs to allow access to hazardous areas, for example by unlocking a protective door.

3TK2810-1 speed monitors

The speed monitor combines two safety functions in one unit by continuously monitoring machines and plants for standstill and speed.

Through simple parameterization and permanent diagnosis on the display, faults can be quickly remedied at any time – often before they cause plant downtimes.

In addition to standstill and speed monitoring, the unit also features an integrated monitoring function of a protective door with spring-type interlocking. Therefore, an additional evaluation unit is not needed.

Article No. scheme

Product versions		Article number									
Safety relays with special functions		**3TK2810**	**–**	**□**	**□**	**A**	**□**	**□**			
Device version	Standstill monitor			**0**							
	Overspeed monitor for NPN/PNP proximity switches and encoders			**1**							
Type of control supply voltage	24 V DC				**B**						
	230 V AC, 50/60 Hz				**G**						
	400 V AC, 50/60 Hz				**J**						
	120 ... 240 V AC/DC; 50/60 Hz				**K**						
Time delay	0.2 ... 6 s (standstill)						**0**				
	0 … 999 s (release delay)						**4**				
Connection type	Screw terminals							**1**			
	Spring-type terminals (push-in)							**2**			
Version	Overspeed monitor for NAMUR proximity switches and encoders								**–**	**0**	**A**	**A**	**0**
Example		**3TK2810**	**–**	**0**	**B**	**A**	**0**	**1**					

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

3TK2810-0 standstill monitors

- No additional sensors required
- Signaling of faults with diagnostics display
- Standstill time can be set
- Unit can be used with frequency converters

3TK2810-1 speed monitors

- Menu-prompted, easy parameterization
- Direct diagnosis on the display means shorter downtimes thanks to early fault detection
- Integrated protective door monitoring means greater safety because access to the plant is allowed only in the safe state
- Suitable for all standard sensors, i.e. high flexibility

With special functions

Technical specifications

More information

Operating instructions 3TK2810-0, see
https://support.industry.siemens.com/cs/ww/en/view/25437254
Manual 3TK2810-1, see
https://support.industry.siemens.com/cs/ww/en/view/43707376
Technical specifications 3TK2810, see
https://support.industry.siemens.com/cs/ww/en/ps/16391/td
FAQs, see
https://support.industry.siemens.com/cs/ww/en/ps/16391/faq

Type	3TK2810-0 standstill monitors	3TK2810-1 speed monitors
Sensors		
• Inputs	3	4
• Electronic	--	3
• With contacts	--	1
• Without sensors (measuring inputs)	3	--
• Magnetically operated switch (Reed contacts)	--	--
Safety mats	--	--
Start		
• Auto	✓	✓
• Monitored	--	✓
Cascading input 24 V DC	--	--
Key-operated switch	--	--
Enabling circuit, floating		
• Stop category 0	3 NO + 1 NC	2
• Stop category 1	--	--
Enabling circuit, electronic		
• Stop category 0	--	--
• Stop category 1	--	--

Type	3TK2810-0 standstill monitors	3TK2810-1 speed monitors
Signaling outputs		
• Floating	1 CO	--
• Electronic	2	2
Standards	IEC 60204-1, EN ISO 12100, EN ISO 13849-1, IEC 61508	IEC 60947-5-1, EN ISO 13849-1, IEC 60204-1, IEC 61508
Test certificates	TÜV, UL, CSA	TÜV, UL, CSA
SIL level max. according to IEC 61508	3	3
Performance level PL according to EN ISO 13849-1	e	e
Probability of a dangerous failure per hour (PFH_d)	1.5×10^{-8} 1/h	3.38×10^{-9} 1/h
Rated control supply voltage		
• 24 V DC	✓	✓
• 230 V AC	✓	--
• 400 V AC	✓	--
• 120 ... 240 V AC/DC	--	✓

✓ Available
-- Not available

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41L


3TK2810-0BA01

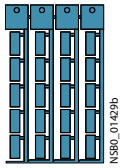

3TK2810-0GA02


3TK2810-1BA41

Rated control supply voltage U_s	Times	SD	Screw terminals	SD	Spring-type terminals
			Article No. / Price per PU		Article No. / Price per PU
V	s	d		d	
Standstill monitors					
3TK2810-0					
• 24 DC	0.2 ... 6 (standstill)	5	**3TK2810-0BA01**	15	**3TK2810-0BA02**
• 230 AC	0.2 ... 6 (standstill)	15	**3TK2810-0GA01**	15	**3TK2810-0GA02**
• 400 AC	0.2 ... 6 (standstill)	15	**3TK2810-0JA01**	15	**3TK2810-0JA02**
Speed monitors					
3TK2810-1 for NPN/PNP proximity switches and encoders					
• 24 DC	0 ... 999 (release delay)	2	**3TK2810-1BA41**	2	**3TK2810-1BA42**
• 120 ... 240 AC/DC	0 ... 999 (release delay)	5	**3TK2810-1KA41**	5	**3TK2810-1KA42**
3TK2810-1 for NAMUR proximity switches and encoders					
• 24 DC	0 ... 999 (release delay)	5	**3TK2810-1BA41-0AA0**	5	**3TK2810-1BA42-0AA0**
• 120 ... 240 AC/DC	0 ... 999 (release delay)	5	**3TK2810-1KA41-0AA0**	5	**3TK2810-1KA42-0AA0**

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Selection and ordering data

	Use	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Blank labels								
 3RT1900-1SB20	For 3TK28	**Unit labeling plates** For SIRIUS devices						
		20 mm x 7 mm, pastel turquoise[1]	20	**3RT1900-1SB20**		100	340 units	41B
	For 3TK28	**Adhesive labels** For SIRIUS devices						
		• 19 mm x 6 mm, pastel turquoise	15	**3RT1900-1SB60**		100	3 060 units	41B
		• 19 mm x 6 mm, zinc yellow	15	**3RT1900-1SD60**		100	3 060 units	41B
Push-in lugs and covers								
 3RP1903	For 3TK28	**Push-in lugs** For screw fixing, 2 units are required for each device	5	**3RP1903**		1	10 units	41H
	For 3TK28	**Sealing foil** For securing against unauthorized adjustment of setting knobs	►	**3TK2820-0AA00**		1	1 unit	41L
Adapters and connection cables for speed monitors								
	For 3TK2810-1	**Adapters** For connecting encoders of type Siemens/Heidenhain						
 3TK2810-1A		• 15-pole	2	**3TK2810-1A**		1	1 unit	41L
 3TK2810-1B		• 25-pole	2	**3TK2810-1B**		1	1 unit	41L
 3TK2810-0A	For 3TK2810-1	**Connecting cables** For connecting the speed monitor to the 3TK2810-1A or 3TK2810-1B adapter	15	**3TK2810-0A**		1	1 unit	41L
Tools for opening spring-type terminals								
				Spring-type terminals				
 3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH
see page 16/20.

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Overview

SIRIUS 3RK3 Modular Safety System

More information
Home page, see www.siemens.com/sirius-mss
Industry Mall, see www.siemens.com/product?3RK3

The 3RK3 Modular Safety System (MSS) is a freely parameterizable modular safety relay. Depending on the external circuit version, safety-related applications up to Performance Level e according to EN ISO 13849-1 or SIL 3 according to IEC 62061 can be realized.

The modular safety relay enables the interconnection of several safety applications.

The comprehensive error and status diagnostics provides the possibility of finding errors in the system and localizing signals from sensors. Plant downtimes can be reduced as the result.

The MSS comprises the following system components:

- Central units
- Expansion modules
- Interface modules
- Diagnostics modules
- Parameterization software
- Accessories

Central units

MSS Basic

The 3RK3 Basic central unit is used wherever several safety functions need to be evaluated and the wiring parameterization of safety relays would involve significant cost and effort. It reads in inputs, controls outputs and communicates through an interface module with higher-level control systems. An application's entire safety program is processed in the central unit. The 3RK3 Basic central unit is the lowest expansion level and fully functional on its own, without the optional expansion modules.

MSS Advanced

The 3RK3 Advanced central unit is the logical expansion of the Basic central unit – to include the functionality of an AS-i safety monitor. In addition to having a larger volume of project data and scope of functionality it can be integrated in AS-Interface and therefore make use of the many different possibilities offered by this bus system. The function can be optionally activated in the central unit.

The service-proven insulation piercing method of AS-Interface enables not only the distributed expansion of the project data volume using safe AS-i outputs, safe AS-i sensors and other MSS Advanced or safety monitors (F cross traffic) but also a highly flexible adaptation of the application, e.g. very fast connection of AS-i outputs, EMERGENCY STOP command devices, position switches with and without tumbler, or light curtains.

Safety-related disconnection using MSS or by distributed means using safe AS-i outputs and the formation of switch-off groups can be realized very easily. The same applies for any subsequent modifications. They are now possible by simply readdressing, meaning that rewiring is no longer necessary.

The AS-i bus is connected directly to the central unit.

MSS ASIsafe

The MSS ASIsafe basic and MSS ASIsafe extended central units are a logical development of the AS-i safety monitors based on the 3RK3 Modular Safety System.

Like MSS Advanced, MSS ASIsafe detects – in a comparable way to the safety monitors – safe sensor technology on the AS-i bus and switches actuators off in a safety-related manner via a configurable safety logic. It stands out by virtue of its greater project data volume, wider range of functions and the possibility of increasing the integrated I/O project data volume by means of expansion modules from the MSS system family. In this case the range of functions, such as the number and type of the logic elements that can be interconnected, is equivalent to that of MSS Advanced.

Expansion modules

With the optional expansion modules, both safety-related and standard, the system is flexibly adapted to the required safety applications.

Interface modules

The DP interface module is used for transferring diagnostics data and device status data to a higher-level PROFIBUS network, e.g. for purposes of visualization using HMI. When using the Basic central unit, 32-bit cyclic data can be exchanged with the control system. If an Advanced/ASIsafe central unit is used, the number is doubled to 64-bit cycle data. In acyclic mode, both central units can call up diagnostic data.

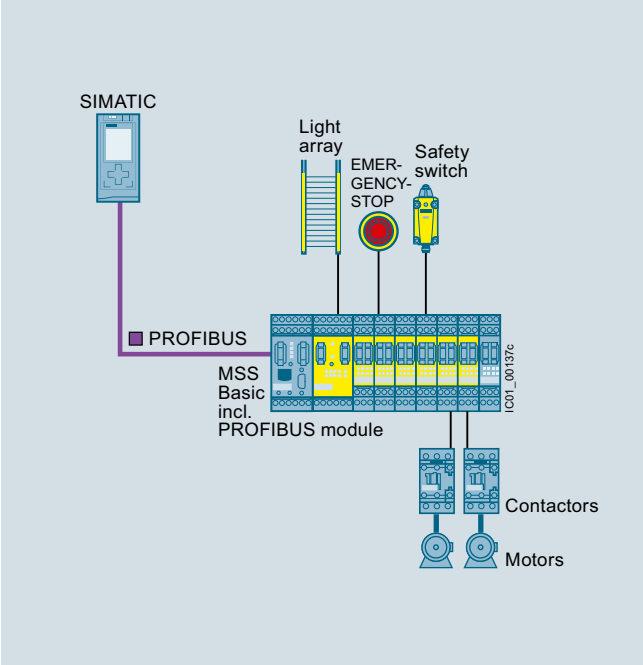
Diagnostics modules

Actuated sensors or faults, e.g. cross-circuit, are indicated directly on the diagnostics display. The fault is diagnosed directly in plain text by the detailed alarm message. The device is fully functional upon delivery. No programming is required.

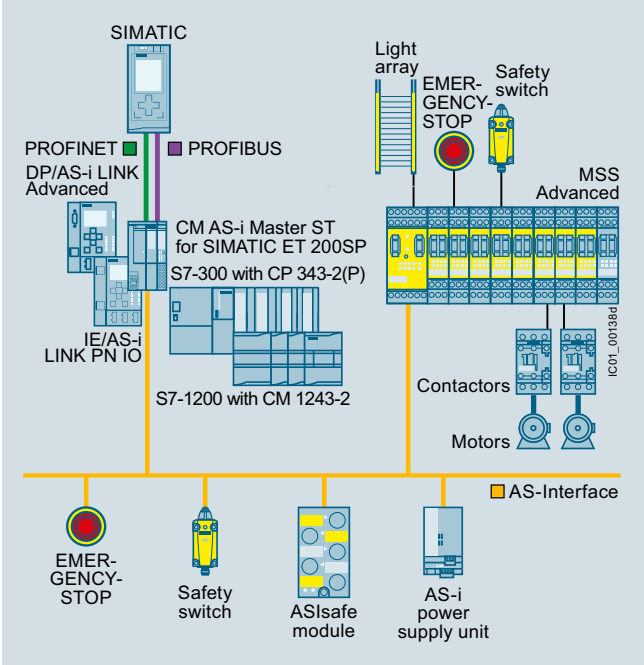
Parameterization software

Using the SIRIUS Safety ES graphical parameterization tool, it is very easy to create the safety functions as well as their logical links on the PC. You can define disconnection ranges, ON-delays, OFF-delays and other dependencies for example.

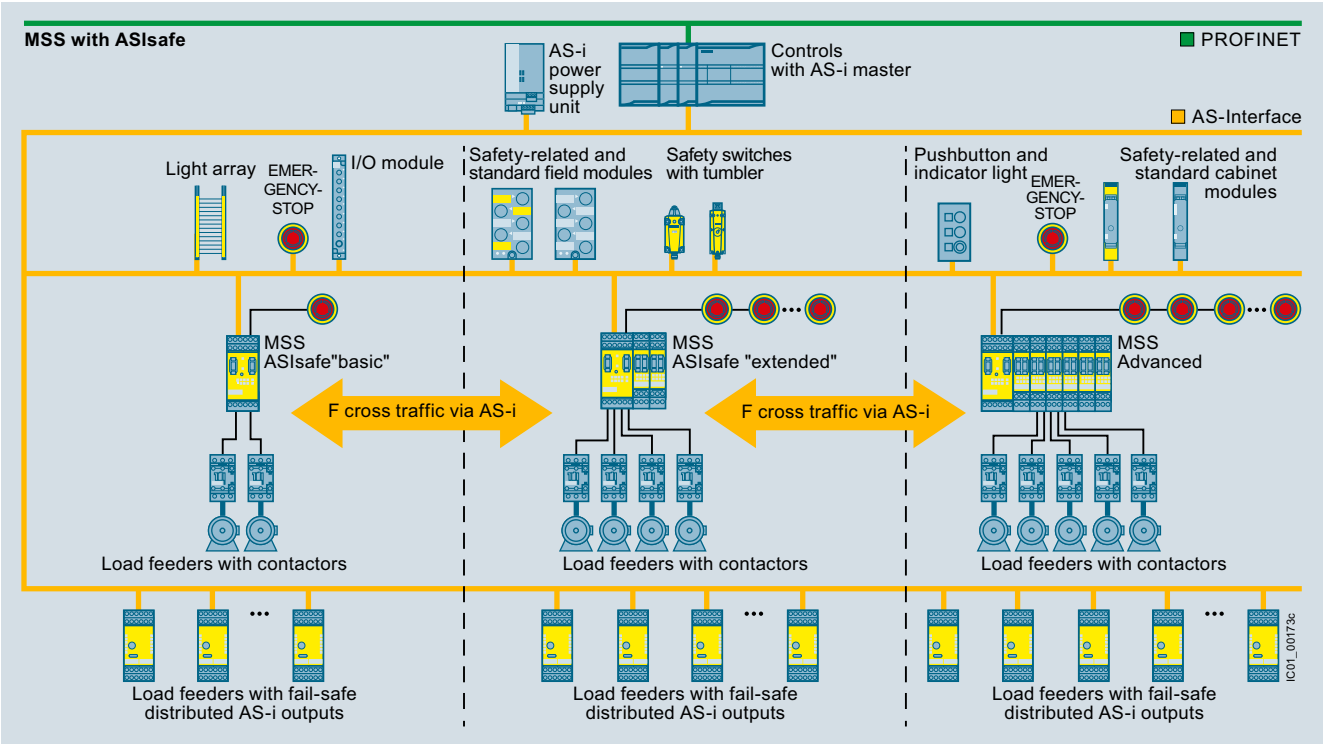
SIRIUS Safety ES also offers comprehensive functions for diagnostics and commissioning. Documentation of the MSS hardware configuration and the parameterized logic is created automatically.



System design of MSS with Basic central module



System design of MSS with Advanced central unit



System design of MSS as a combination of various central units with AS-Interface

General data

Article No. scheme

Product versions		Article number
Basic units		**3RK3 1 □ □ – □ A □ □ 0**
Device variants	3RK3 Basic	**1 1**
	3RK3 ASIsafe "basic" variant	**2 1**
	3RK3 ASIsafe "extended" variant	**2 2**
	3RK3 Advanced	**3 1**
Connection type	Screw terminals	**1**
	Spring-type terminals	**2**
Communication 1	None	**A**
	AS-Interface without master	**C**
Communication 2	3RK3122: max. 2 expansion modules can be connected	**0**
	3RK3131: max. 9 expansion modules can be connected	**1**
Example		**3RK3 1 1 1 – 1 A A 1 0**

Product versions		Article number
Expansion modules with safe inputs/outputs		**3RK3 2 □ □ – □ A A 1 0**
Device variants	4/8 F-DI	**1 1**
	2/4 F-DI 1/2 F-RO	**2 1**
	2/4 F-DI 2 F-DO	**3 1**
	4 F-DO	**4 2**
	4/8 F-RO	**5 1**
Connection type	Screw terminals	**1**
	Spring-type terminals	**2**
Example		**3RK3 2 1 1 – 1 A A 1 0**

Product versions		Article number
Expansion modules with standard inputs/outputs		**3RK3 3 □ □ – □ A A 1 0**
Device variants	8 DO	**1 1**
	8 DI	**2 1**
Connection type	Screw terminals	**1**
	Spring-type terminals	**2**
Example		**3RK3 3 1 1 – 1 A A 1 0**

Product versions		Article number
Interface modules		**3RK3 5 1 1 – □ B A 1 0**
Connection type	Screw terminals	**1**
	Spring-type terminals	**2**
Example		**3RK3 5 1 1 – 1 B A 1 0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

- More functionality and flexibility through freely configurable safety logic
- Suitable for all safety applications thanks to compliance with the highest safety standards in production automation
- For use all over the world through compliance with all product-relevant, globally established certifications
- Modular hardware configuration
- Parameterization by means of software instead of wiring
- Removable terminals for greater plant availability
- Distributed detection of sensors and disconnection of actuators through AS-Interface
- All logic functions can also be used for AS-Interface, e.g. muting, protective door with tumbler
- Up to 12 independent safe switch-off groups on the AS-i bus
- Volume of project data can be greatly increased by means of AS-Interface
- Up to 50 two-channel enabling circuits per system

Communication via PROFIBUS

The 3RK3 Modular Safety System can be connected to PROFIBUS through the DP interface and exchange data with higher-level control systems.

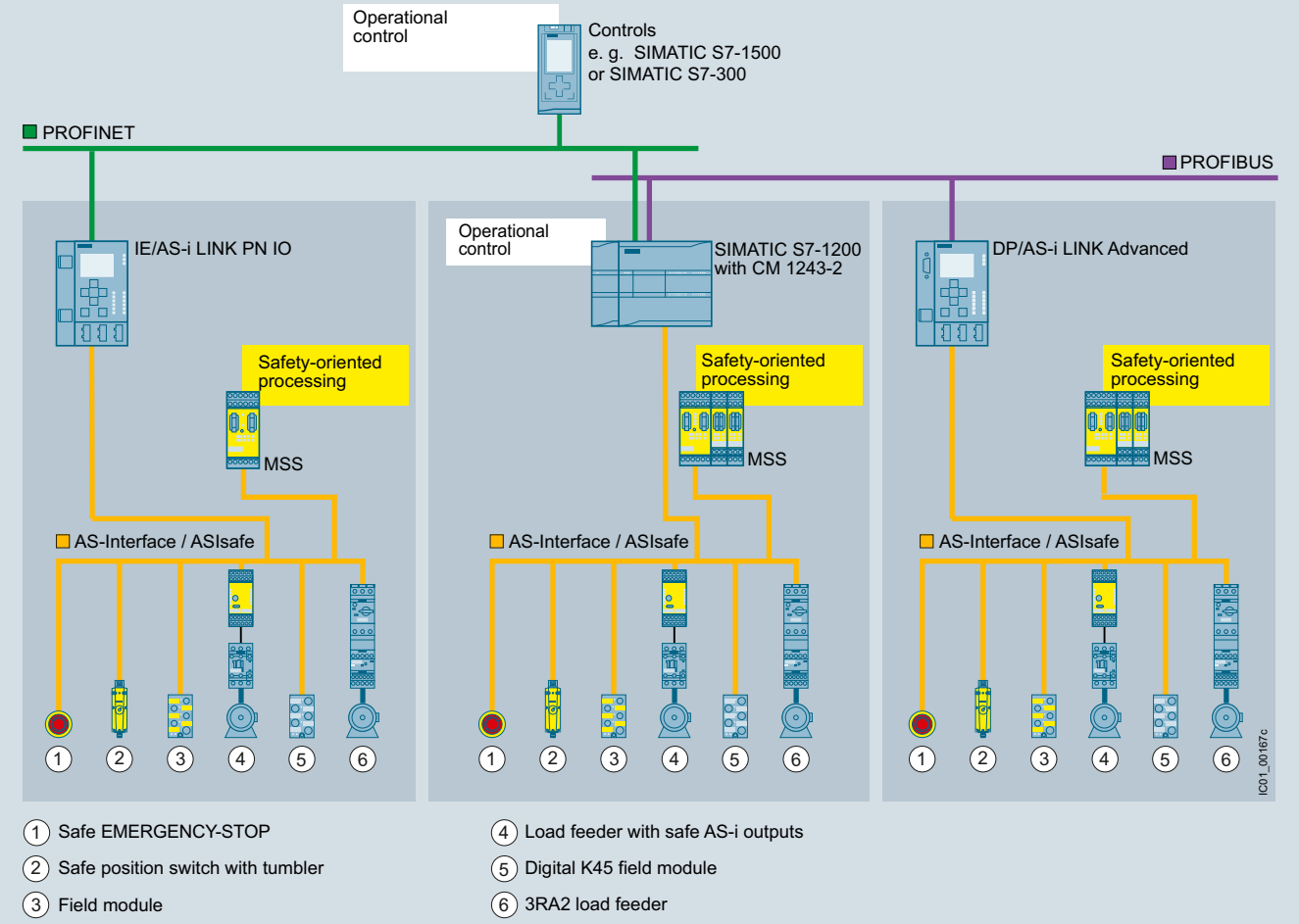
The MSS supports among other things:

- Baud rates up to 12 Mbit/s
- Automatic baud rate detection
- Cyclic services (DPV0) and acyclic services (DPV1)
- Exchange of 32-bit cyclic data with MSS Basic or 64-bit cyclic data with MSS Advanced/MSS ASIsafe
- Diagnostics using data record invocations

AS-Interface communication

Using the Advanced and ASIsafe "basic" and "extended" central units, the 3RK3 Modular Safety System can be integrated in AS-Interface.

- MSS can read and evaluate the I/O data of up to 31 AS-i modules
- Up to 12 safe output signals per MSS can be placed on the AS-i bus for switching safe AS-i output modules or for fail-safe cross traffic between multiple MSS stations
- Safe cross traffic between multiple MSS stations or between one MSS and AS-i safety monitors
- Standard signals, e. g. for acknowledgment, can also be output on the AS-i bus



Integration of the MSS into AS-Interface

Notes:

For the MSS with communication function, see page 11/36 onwards.

For accessories, see page 11/38 onwards.

For SIRIUS Safety ES, see page 14/34.

For more information on AS-Interface with ASIsafe, see also page 2/18.

Application

The 3RK3 Modular Safety System can be used for all safety-related requirements in the manufacturing industry and offers the following safety functions:

	Symbol	MSS Basic	MSS Advanced, MSS ASIsafe
Monitoring functions			
Universal monitoring Evaluation of any binary signals from single-channel and two-channel sensors		--	✓
EMERGENCY STOP Evaluation of EMERGENCY-STOP devices with positive-opening contacts		✓	✓
Safety shutdown mat Evaluation of switching mats with NC contacts and/or crossover detection		✓	✓
Protective door monitoring Evaluation of protective door signals and/or protective flap signals		✓	✓
Protective door tumbler mechanism Evaluation of protective doors with tumbler and of the actuation/release of this tumbler		--	✓
Approval switches Evaluation of OK buttons with NO contact		✓	✓
Two-hand operator controls Evaluation of two-hand operator controls		✓	✓
ESPE monitoring Evaluation of non-contact protective devices, e.g. light curtains and laser scanners		✓	✓
Muting Temporary bridging of non-contact protective devices, 2/4 sensors in parallel, 4 sensors in sequence		--	✓
Mode selector switches Evaluation of operating mode selector switches with NO contacts		✓	✓
AS-i monitoring (AS-i 2F-DI) Logic element for monitoring of AS-i input slaves		--	✓

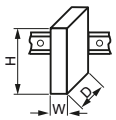
	Symbol	MSS Basic	MSS Advanced, MSS ASIsafe
Logic operation functions			
AND		✓	✓
OR		✓	✓
XOR		✓	✓
NAND		✓	✓
NOR		✓	✓
Negation		✓	✓
Flip-flop		✓	✓
Counting functions			
Counter 0 -> 1		✓	✓
Counter 1 -> 0		✓	✓
Counter 0 -> 1/1-> 0		✓	✓
Timer functions			
With ON-delay		✓	✓
Passing make contact		✓	✓
With OFF-delay		✓	✓
Clock-pulsing		✓	✓
Start functions			
Monitored start		✓	✓
Manual start		✓	✓
Output functions			
Standard output		✓	✓
F output		✓	✓
AS-i output function		--	✓
Status functions			
Element status		--	✓

✓ Available
-- Not available

Technical specifications

More information	
Manual, see https://support.industry.siemens.com/cs/ww/en/view/26493228	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16392/faq
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16392/td	

Central units and expansion modules

Type		Central units				Expansion modules						
		Basic	Advanced	ASIsafe basic	ASIsafe extended	4/8F-DI	2/4 F-DI 1/2 F-RO	2/4 F-DI 2F-DO	4/8 F-RO	4 F-DO	8 DI	8 DO
Dimensions (W x H x D) 												
• Screw terminals	mm	45 x 111 x 124				22.5 x 111 x 124			45 x 111 x 124	22.5 x 111 x 124		
• Spring-type terminals	mm	45 x 113 x 124				22.5 x 113 x 124			45 x 113 x 124	22.5 x 113 x 124		
Device data												
Shock resistance (sine pulse)	*g*/ms	15/11										
Touch protection Acc. to IEC 60529		IP20										
Permissible mounting position		Vertical mounting surface (+10°/-10°), deviating mounting positions are permitted for reduced ambient temperature										
Minimum distances		For heat dissipation through convection from the devices 25 mm to the ventilation openings (top and bottom)										
Permissible ambient temperature												
• During operation	°C	-20 ... +60										
• During storage and transport	°C	-40 ... +85										
Number of sensor inputs (1-channel)												
• Fail-safe		8	8	2	4	8	4	4	--	--	--	--
• Not fail-safe		--	--	6	4	--	--	--	--	--	8	--
Number of test outputs		2							--			
Number of outputs												
• Relay outputs												
- Single-channel		--	--	--	--	--	2	--	8	--	--	--
- Two-channel		1	1	1	1	--	--	--	--	--	--	--
• Electronic outputs												
- Single-channel		--	--	--	--	--	--	--	--	--	--	8
- Two-channel		1	1	1	1	--	--	2	--	4	--	--
Weight	g	300				160			400	135	125	160
Installation altitude above sea level	m	2 000										
Environmental data												
EMC interference immunity		IEC 60947-5-1										
Vibrations												
• Frequency	Hz	5 ... 500										
• Amplitude	mm	0.75										
Climatic withstand capability		IEC 60068-2-78										

General data

Type		Central units				Expansion modules						
		Basic	Advanced	ASIsafe basic	ASIsafe extended	4/8 F-DI	2/4 F-DI 1/2 F-RO	2/4 F-DI 2 F-DO	4/8 F-RO	4 F-DO	8 DI	8 DO
Electrical specifications												
Rated control supply voltage U_s acc. to IEC 61131-2	V	24 DC ±15 %[1]										
Operating range		0.85 ... 1.15 x U_s										
Rated insulation voltage U_i	V	300				50	300	50	300	50		
Rated impulse voltage U_{imp}	kV	4				0.5	4	0.5	4	0.5		
Total current input	mA	185				60	85		140	8	78	60
Rated power at U_s	W	4.5				1.5	2		3	4.8	1.9	1.5
Utilization category acc. to IEC 60947-5-1												
Relay outputs												
• AC-15 at 230 V	A	2				--	2	--	2	--	--	--
• DC-13 at 24 V	A	1				--	1	--	1	--	--	--
Semiconductor outputs												
• DC-13 at 24 V	A	1.5				--	--	1.2	--	2	--	0.5
Mechanical endurance During rated operation	Operating cycles (relay)	10 x 10^6				--	10 x 10^6	--	10 x 10^6	--		
Switching frequency z At rated operational current	1/h	1 000				--	1 000		360	1 000	--	1 000
Conventional thermal current I_{th}	A	2/1.5				--	1	1.2	3	2	--	0.5
Protection for output contacts Fuse links, LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE												
• Operational class gG	A	4				--	4	--	4	--		
• Operational class quick	A	6				--	6	--	6	--		
Safety specifications												
Probability of a dangerous failure												
• per hour (PFH_d)	1/h	5.14 x 10^{-9}	3.8 x 10^{-9} with AS-i, 2.8 x 10^{-9} without AS-i			1.89 x 10^{-9}	3.79 x 10^{-9}	2.7 x 10^{-9}	7.15 x 10^{-9}	3.18 x 10^{-9}	--	
• On demand (PFD)		1.28 x 10^{-5}	1.7 x 10^{-4}			4.29 x 10^{-6}	5.85 x 10^{-6}	8.34 x 10^{-6}	4.36 x 10^{-5}	2.2 x 10^{-5}	--	
Parameters for cables												
Line resistance	Ω	100							--		100	--
Cable length from terminal to terminal With Cu 1.5 mm^2 and 150 nF/km	m	1 000							--		1 000	--
Conductor capacity	nF	330							--		330	--

[1] Device current supply through a power supply unit according to IEC 60536 protection class III (SELV or PELV).

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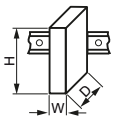
Interface and diagnostics modules

Type		Interface modules	Diagnostics modules
Dimensions (W x H x D) 			
• Screw terminals	mm	45 x 111 x 124	96 x 60 x 44
• Spring-type terminals	mm	45 x 113 x 124	--
Device data			
Shock resistance (sine pulse)	*g*/ms	15/11	
Touch protection acc. to IEC 60529		IP20	
Permissible mounting position		Vertical mounting surface (+10°/-10°), deviating mounting positions are permitted for reduced ambient temperature	
Minimum distances		For heat dissipation through convection from the devices 25 mm to the ventilation openings (top and bottom)	
Permissible ambient temperature			
• During operation	°C	-20 ... +60	
• During storage and transport	°C	-40 ... +85	
Weight	g	270	90
Installation altitude above sea level	m	2 000	
Environmental data			
EMC interference immunity		IEC 60947-5-1	
Vibrations			
• Frequency	Hz	5 ... 500	
• Amplitude	mm	0.75	
Climatic withstand capability		IEC 60068-2-78	
Electrical specifications			
Rated control supply voltage U_s acc. to IEC 61131-2	V	24 DC ± 15 %	24 DC ± 15 % via connecting cable to the central unit
Operating range		0.85 ... 1.15 x U_s	
Rated insulation voltage U_i	V	50	
Rated impulse voltage U_{imp}	kV	0.5	
Total current input	mA	--	24
Rated power at U_s	W	--	0.6

Selection and ordering data

3RK3111-1AA10

3RK3121-1AC00
3RK3122-1AC00
3RK3131-1AC10

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
3RK31 central units						
3RK3 Basic Central unit with safety-related inputs and outputs • 8 fail-safe inputs • 1 two-channel relay output • 1 two-channel electronic output Max. 7 expansion modules can be connected Note: Memory module 3RK3931-0AA00 is included in the scope of supply.	2	**3RK3111-☐AA10**		1	1 unit	42B
3RK3 Advanced Central units for connecting to AS-Interface with safety-related inputs and outputs and extended functional scope • 8 fail-safe inputs • 1 two-channel relay output • 1 two-channel electronic output Max. 9 expansion modules can be connected Note: Memory module 3RK3931-0AA00 is included in the scope of supply.	2	**3RK3131-☐AC10**		1	1 unit	42B
3RK3 ASIsafe Central units for connecting to AS-Interface with safety-related inputs and outputs and extended functional scope • 1 two-channel relay output • 1 two-channel electronic output						
"Basic" version • 2 fail-safe inputs • 6 non-fail-safe inputs No expansion modules can be connected	2	**3RK3121-☐AC00**		1	1 unit	42B
"Extended" version • 4 fail-safe inputs • 4 non-fail-safe inputs Max. 2 expansion modules can be connected Note: Memory module 3RK3931-0AA00 is included in the scope of supply.	2	**3RK3122-☐AC00**		1	1 unit	42B
Type of electrical connection • Screw terminals • Spring-type terminals (push-in)		**1** **2**				

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

3RK3211-1AA10
3RK3221-1AA10
3RK3231-1AA10
3RK3242-1AA10

3RK3251-1AA10

3RK3311-1AA10
3RK3321-1AA10

3RK3511-1BA10

3RK3611-3AA00

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK32, 3RK33 expansion modules						
4/8 F-DI Safety-related input modules • 8 inputs	2	**3RK3211-□AA10**		1	1 unit	42B
2/4 F-DI 1/2 F-RO Safety-related input/output modules • 4 inputs • 2 single-channel relay outputs	2	**3RK3221-□AA10**		1	1 unit	42B
2/4 F-DI 2F-DO Safety-related input/output modules • 4 inputs • 2 two-channel electronic outputs	2	**3RK3231-□AA10**		1	1 unit	42B
4/8 F-RO Safety-related output modules • 8 single-channel relay outputs	2	**3RK3251-□AA10**		1	1 unit	42B
4 F-DO Safety-related output modules • 4 two-channel solid-state outputs	2	**3RK3242-□AA10**		1	1 unit	42B
8 DI Standard input module • 8 inputs	2	**3RK3321-□AA10**		1	1 unit	42B
8 DO Standard output module • 8 solid-state outputs	2	**3RK3311-□AA10**		1	1 unit	42B
3RK35 interface modules						
DP interface PROFIBUS DP interface, 12 Mbit/s, RS 485, 32-bit cyclical data exchange with Basic central unit or 64-bit cyclical data exchange with Advanced and ASIsafe central unit, acyclic exchange of diagnostics data	2	**3RK3511-□BA10**		1	1 unit	42B
Type of electrical connection • Screw terminals • Spring-type terminals (push-in)		**1** **2**				
3RK36 operating and monitoring modules						
Diagnostics module	2	**3RK3611-3AA00**		1	1 unit	42B

Notes:

For the required connection cable, see page 11/38.

Selection and ordering data

	Version			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Connection cables (essential accessory)									
 3UF7932-0AA00-0	**Connection cables** For connection of								
	Central units with expansion modules or interface module	Diagnostics modules with central unit or interface module							
	✓	✓	• Length 0.025 m (flat)	►	**3UF7930-0AA00-0**		1	1 unit	42J
	--	✓	• Length 0.1 m (flat)	►	**3UF7931-0AA00-0**		1	1 unit	42J
	--	✓	• Length 0.3 m (flat)	►	**3UF7935-0AA00-0**		1	1 unit	42J
	--	✓	• Length 0.5 m (flat)	►	**3UF7932-0AA00-0**		1	1 unit	42J
	--	✓	• Length 0.5 m (round)	►	**3UF7932-0BA00-0**		1	1 unit	42J
	--	✓	• Length 1.0 m (round)	►	**3UF7937-0BA00-0**		1	1 unit	42J
	--	✓	• Length 2.5 m (round)	►	**3UF7933-0BA00-0**		1	1 unit	42J
PC cables and adapters									
 3UF7941-0AA00-0	**USB PC cables** For connecting to the USB interface of a PC/PG, for communication with 3RK3 through the system interface, recommended for use in connection with 3RK3			►	**3UF7941-0AA00-0**		1	1 unit	42J
	USB/serial adapters For connecting an RS 232 PC cable to the USB interface of a PC			5	**3UF7946-0AA00-0**		1	1 unit	42J
Door adapter									
 3UF7920-0AA00-0	**Door adapters** For external connection of the system interface, e.g. outside a control cabinet			►	**3UF7920-0AA00-0**		1	1 unit	42J
Interface covers									
 3UF7950-0AA00-0	**Interface covers** For system interface			►	**3UF7950-0AA00-0**		1	5 units	42J
Memory modules									
 3RK3931-0AA00	**Memory modules** For backing up the complete parameterization of the 3RK3 Modular Safety System without a PC/PG through the system interface			2	**3RK3931-0AA00**		1	1 unit	42C
Push-in lugs									
 3RP1903	**Push-in lugs for screw fixing** e. g. on mounting plate; 2 units required per device Can be used for 3RK3			5	**3RP1903**		1	10 units	41H
Software for 3RK3									
 3ZS1316-.C.10-0Y.5	**SIRIUS Safety ES** Software for configuring, commissioning, operating and diagnosing of 3SK2 and 3RK3, see page 14/34.								

✓ Available

-- Not available

Note:

For more accessories and components that can be combined with MSS, see page 2/31.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Note:
For conversion tools e.g. from 3SE2 to 3SE5, see www.siemens.com/sirius/conversion-tool

Overview

3SE523. 3SE521., 3SF12.4

3SE524., 3SF1244

3SE513., 3SE511., 3SF1114

3SE512. 3SF1124

3SE516.

3SE5413, 3SE5423

3SE5250

	Position switches, standard					Compact design	Open-type
Enclosure							
Plastic	✓	✓	✓	--	--	--	✓
Metal	✓	--	✓	✓	✓	✓	
Dimensions (W x H x D) in mm	31 × 68 × 33	50 × 53 × 33	40 × 78 × 38	56 × 78 × 38	56 × 100 × 38	30 × 50 × 16 40 × 50 × 16	30 × 48.5 × 20
Degree of protection	IP65, IP66/IP67	IP66/IP67	IP66/IP67	IP66/IP67	IP66/IP67	IP66/IP67	IP10 or IP20
Standards IEC 60947-5-1	Mounting and operating points acc. to EN 50047	Operating points acc. to EN 50047	Mounting and operating points acc. to EN 50041	Operating points acc. to EN 50041	Operating points acc. to EN 50047	--	Mounting and operating points acc. to EN 50047
Approvals	CE, TÜV, UL, CSA, CCC,		CE, TÜV, UL, CSA, CCC			CE, UL, CSA, CCC	CE, TÜV, UL, CSA, CCC
Contact blocks							
2 slow-action contacts	1 NO + 1 NC, 2 NC		1 NO + 1 NC, 2 NC		2 × (1 NO + 1 NC)	--	1 NO + 1 NC
2 snap-action contacts	1 NO + 1 NC		1 NO + 1 NC		2 × (1 NO + 1 NC)	1 NO + 1 NC	1 NO + 1 NC
• Short stroke	1 NO + 1 NC		✓		--	--	✓
• With 2 × 2 mm contact gap	1 NO + 1 NC		✓		--	--	✓
3 slow-action contacts	1 NO + 2 NC; 2 NO + 1 NC		1 NO + 2 NC; 2 NO + 1 NC		--	--	1 NO + 2 NC; 2 NO + 1 NC
• With make-before-break	1 NO + 2 NC		1 NO + 2 NC		2 × (1 NO + 2 NC)	--	1 NO + 2 NC
3 snap-action contacts	1 NO + 2 NC		1 NO + 2 NC		--	--	1 NO + 2 NC
Special features							
LED status display	✓		✓		--	--	--
Increased corrosion protection	✓		✓		✓	--	--
ASIsafe integrated	✓		✓		--	--	--
Electrical specifications							
Insulation voltage U_i	400 V		400 V			400 V	400 V
Conventional thermal current I_{th}	6 A/10 A (3-/2-pole)		6 A/10 A (3-/2-pole)			6 A	6 A
Connections							
Cable entry	1 × M20 × 1.5	2 × M20 × 1.5	1 × M20 × 1.5	3 × M20 × 1.5	3 × M20 × 1.5	--	--
M12 connector socket, 4-, 5- or 8-pole	✓	✓	✓	✓	✓	✓	--
Connector socket, 6-pole + PE	--	--	✓	✓	--	--	--
Molded cables	--	--	--	--	--	✓	--
Actuators							
Rounded plungers and roller plungers	✓		✓		✓	--	--
Roller levers and angular roller levers	✓		✓		✓	--	--
Spring rod	✓		✓		--	--	--
Twist levers and rod actuators	✓		✓		✓	--	--
Fork lever	--		✓		--	--	--
Hinge switches	--		--		--	--	--
Plungers, twist levers	--		--			✓	✓
Page							
Complete units	12/16, 12/30	12/26	12/22, 12/34	12/38	12/42	12/45	12/47
Modular system	12/20, 12/32	12/28	12/24, 12/36	12/40	12/43	--	--
Ambient temperature –40 °C	12/77, 12/80	12/80	12/83	12/86	12/87	--	--
ASIsafe	12/93, 12/95	12/93	12/97	12/97	--	--	--

✓ Available -- Not available

3SE5232, 3SE5212, 3SF12.4

3SE5132, 3SE5112, 3SF11.4

3SE5232, 3SE5242, 3SF12.4

3SE5112, 3SE5122, 3SF11.4

3SE5322, 3SE5312, 3SF13.4

	Safety hinge switches		Safety switches with separate actuator		Safety switches with tumbler
Enclosure					
Plastic	✓	✓	✓	✓	✓
Metal	✓	✓	✓	✓	✓
Dimensions (W x H x D) in mm	31 × 68 × 33	40 × 78 × 38	31 × 68 × 33, 50 × 53 × 33	40 × 78 × 38, 56 × 78 × 38	54 × 185 × 44
Degree of protection	IP65, IP66/IP67	IP66/IP67	IP65, IP66/IP67	IP66/IP67	IP66/IP67, IP69K
Standards IEC 60947-5-1	Mounting and operating points acc. to EN 50047	Mounting and operating points acc. to EN 50041	Mounting acc. to EN 50047	Mounting acc. to EN 50041	EN ISO 14119
Approvals	CE, TÜV, UL, CSA, CCC		CE, TÜV, UL, CSA, CCC		CE, TÜV, UL, CSA, CCC
Contact blocks/outputs					
2 slow-action contacts	--		1 NO + 1 NC, 2 NC		--
2 snap-action contacts	1 NO + 1 NC		--		--
• Short stroke	--				
• With 2 × 2 mm contact gap	--				
3 slow-action contacts	--		1 NO + 2 NC		2 × (1 NO + 2 NC)
• With make-before-break	--				
3 snap-action contacts	1 NO + 2 NC		--		--
Electron. safety outputs	--		--		--
Special features					
LED status display	✓		✓		✓
Increased corrosion protection	✓		✓		✓
ASIsafe integrated	✓		✓		✓
Electrical specifications					
Insulation voltage U_i	400 V		400 V		400 V
Conventional thermal current I_{th}	6 A/10 A (3-/2-pole)		6 A		6 A
Connections					
Cable entry	1 × M20 × 1.5	1 × M20 × 1.5	1 × M20 × 1.5, 2 × M20 × 1.5	1 × M20 × 1.5, 3 × M20 × 1.5	3 × M20 × 1.5
M12 connector socket, 4-, 5- or 8-pole	✓		✓	✓	✓
Molded cables	--		--	--	--
AS-Interface	--		✓	✓	✓
Actuators					
Plungers, twist levers	--		--	--	--
Separate actuators	--		✓	✓	✓
Hinge switches	✓		--	--	--
Page					
Complete units	12/73	12/74	12/56, 12/59	12/57, 12/60	12/67 to 12/69
Modular system	--	--	--	--	--
Ambient temperature –40 °C	12/79	--	12/89	--	12/90
ASIsafe	12/106	12/107	12/100	12/101	12/104, 12/105

✓ Available
-- Not available

Introduction

3SE66, 3SE67

3SE66, 3SE67

3SE63

	Safety switches, solenoid	Safety switches, solenoid supplementary range in new design[1]	RFID safety switches[1]
Enclosure			
Plastic	✓	✓	✓
Metal	--	--	--
Dimensions (W x H x D) in mm	M30; 25 x 88; 25 x 33	25 x 88; 26 x 36	25 × 91 × 22
Degree of protection	IP67	IP67	IP69K
Standards	IEC 60947-5-3 Category 4 according to ISO 13849-1, PL e according to ISO 13849-1, SIL 3 according to IEC 61508	IEC 60947-5-3	Category 4 according to ISO 13849-1, PL e according to ISO 13849-1, SIL 3 according to IEC 61508
Approvals	CE, TÜV, UL, CSA, CCC	CE, TÜV, UL, CSA,	CE, TÜV, UL, CSA
Contact blocks/outputs			
Reed contacts	1 NO + 1 NC 2 NC 1 NO + 1 NC (+ 1 NC signaling contact)	1 NO + 1 NC (+ 1 NC signaling contact) 2 NC 2 NC (+ 1 NC signaling contact)	
Special features			
LED status display	--	✓	✓
Increased corrosion protection	--	--	✓
ASIsafe integrated	--	--	--
Electrical specifications			
Insulation voltage U_i	100 V AC/DC 24 V DC	75 V DC 50 V AC	--
Conventional thermal current I_{th}	250 mA 400 mA	250 mA	--
Connections			
M8 plug, 4-pole	✓	✓	--
8 mm ∅, latching connection, Plug, 6-pole	--	✓	--
M12 plug, 4-pole	✓	--	✓
Molded cables	✓	✓	
AS-Interface	--	--	--
Actuators			
RFID			✓
Switching magnet	✓	✓	--
Page	12/108	12/108	12/114

✓ Available
-- Not available
[1] CCC not required for voltages < 36 V.

Note:

Safety characteristics see page 16/10.

Overview

More information
Home page, see www.siemens.com/sirius-detecting
Industry Mall, see www.siemens.com/product?3SE
Configurator, see www.siemens.com/sirius/configurators
System manual, see https://support.industry.siemens.com/cs/ww/en/view/43920150
Conversion tool, see www.siemens.com/sirius/conversion-tool

The innovative SIRIUS 3SE5 position switches are modern in design, compact, modular and simple to connect. They save time and increase flexibility during installation of a whole range of switch variants. In principle it is possible to combine any enclosure with any operating mechanism, paying due consideration to the EN 50041 and EN 50047 standards where necessary.

Complete units

Popular versions of the position switches in standard enclosures are available as complete units.

3SE5 position switches with plastic and metal enclosures

Modular system

The 3SE5 series is the modular system comprising different sizes of the basic switch and an actuator which must be ordered separately. Thanks to the modular design of the switch the user can select the right solution for his application from numerous versions and install it himself in a very short time.

Simple plug-in mounting enables fast replacement of the actuator heads.

Examples of selection options in the modular system

Design

All enclosure variants have an integrated chlorinated rubber diaphragm for high functional safety in cold and aggressive environments.

Enclosure sizes

The 3SE5 switches are available in five different enclosure sizes with 2 or 3 contacts and with the XL enclosure:

- Open-type position switch IP20 or IP10
- Plastic enclosures according to EN 50047, 31 mm wide, IP65, 1 cable entry
- Metal enclosure according to EN 50047, 31 mm wide, IP66/IP67, 1 cable entry
- Plastic and metal enclosures according to EN 50041, 40 mm wide, IP66/IP67, 1 cable entry
- Plastic enclosure, 50 mm wide, IP66/IP67, 2 cable entries
- Metal enclosure, 56 mm wide, IP66/IP67, 3 cable entries
- XL metal enclosure with 4 to 6 contacts, 56 mm wide, IP66/IP67, 3 cable entries

Enclosure versions

Various basic switches can be selected for the enclosures of the 3SE5 series:

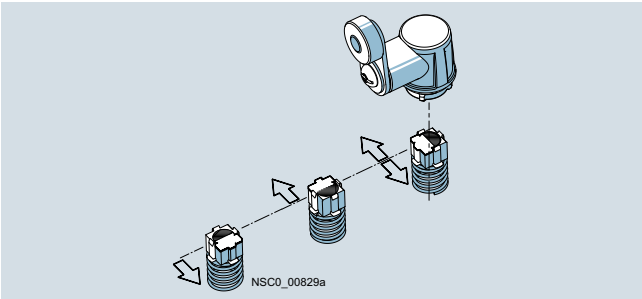
- With contact blocks with two or three contacts (screw terminals) designed as slow-action or snap-action contacts; the slow-action contacts also with make-before-break
- Optional LED status display
- With mounted four- or five-pole M12 connector socket (available for the wide enclosures as an accessory for self-assembly)
- With 6-pole connector socket + PE on the metal enclosures
- Versions with increased corrosion protection
- Versions for operating temperatures down to –40 °C
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs (see page 12/91)

Actuator variants

All operating mechanisms can be rotated around the axis in increments of 22.5°. The following actuator variants are available:

- Standard, rounded and roller plungers
- Roller levers and angular roller levers
- Spring rod
- Twist levers and rod actuators with twist lever actuator
- Fork levers with twist lever actuator

The actuator rollers are available with various materials and diameters.



Twist actuators for twist levers and rod levers,
with setting of switching direction to right, left, or right/left
(standard for all twist lever actuators except fork levers)

General data

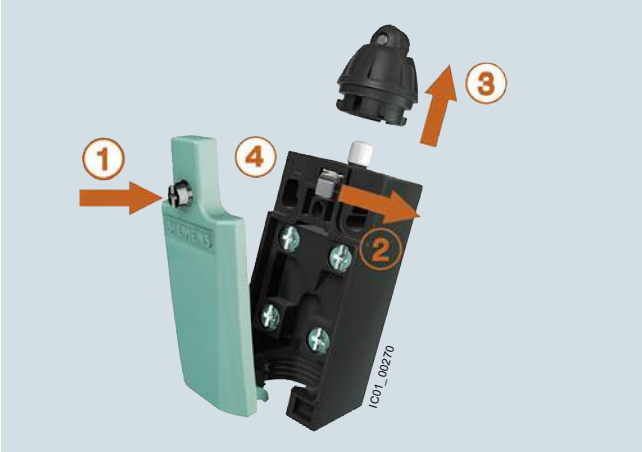
Cover design

The mechanical position switches have a turquoise cover and the mechanical safety switches have a yellow cover.

On request the switches can be delivered ex works with a yellow cover. The cover has no effect on the mode of operation. Both versions can be used in safety applications (see also page 12/18).

Mounting

Easy plug-in method for fast replacement of the actuator heads



Open the cover (1)
Actuate the locking lever (2)
Replace the head (turnable by 16 x 22.5°) (3)
Lock and close the cover (4)

Diverse contact types

Exchangeable two and three-pole contact blocks for all enclosure sizes

The three-pole contact block with snap-action or slow-action contacts is regularly available for all enclosure forms. The same installation space is required as for a two-pole block. The version with 1 NO + 2 NC offers, for example, more safety through redundant shutdowns (2 NC contacts) with simultaneous signaling (NO contact). The three-pole blocks are also available with make-before-break and with 2 NO + 1 NC.

Contact reliability

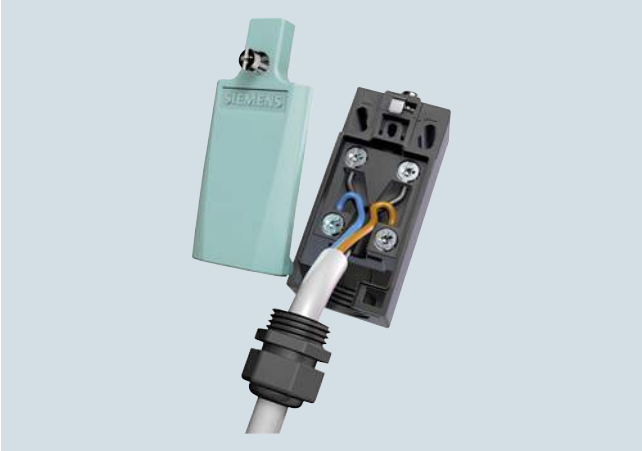
The contact blocks ensure an extremely high contact stability. This applies even when the devices are switching low voltages and currents, e. g. 1 mA at 5 V DC.

Positive opening ⊖

The NC contacts of the switch are forced open mechanically, positively-driven and reliably by the plunger. This is referred to as "positive opening".

Quick-connect technology

For plastic enclosure with a width of 31 mm



These position switches can be wired quickly and easily as an added customer benefit. The connecting cable is first connected to the terminals of the contact block and then guided through a slit into the cable gland opening. The time saved through this new connection method is approx. 20 to 25 %.

A cable gland with seal must be used with the quick-connect method.

Optional LED indicators

LED indicators are available for all enclosure sizes except for XL. The enclosures are supplied with an LED signaling indicator (1 × green + 1 × yellow). This is the first time that optical signaling equipment is also available for small standard enclosures according to EN 50047. The LEDs are implemented in 24 V DC and 230 V AC.

Article No. scheme

Product versions													
SIRIUS position and safety switches		**3SE**	☐	☐	☐	☐	–	☐	☐	☐	☐	☐
Series			**5**									
Standard	EN 50041 EN 50047 With tumbler			**1** **2** **3**								
Enclosure material and width	e.g. 1 = metal, narrow				☐							
Connection	Cable entry Connector sockets					**2** **4/5**						
LEDs	None 24 V DC 115 V AC 230 V AC							**0** **1** **2** **3**				
Version of contacts	e.g. C = snap-action 1 NO + 1 NC								☐			
Version of operating mechanism	e.g. C02 = rounded plunger									☐	☐	☐
Example		**3SE**	**5**	**1**	**1**	**2**	**–**	**0**	**C**	**C**	**0**	**2**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

The 3SE5 position switches differ from the previous series through the following new characteristics:

- The modular design of the product range allows a number of versions with a smaller number of bearing types for enclosures and operating mechanisms.
- All actuators can be turned around the axis in increments of 22.5° (see picture, page 12/6).
- Rounded and roller plungers according to EN 50041 with 3 mm overtravel (total travel 9 mm) for greater tolerance when switching.
- All enclosure sizes – now also including the small enclosure 31 mm wide – are optionally available with an LED signaling indicator (see picture, page 12/6).
- All enclosure variants have an integrated chlorinated rubber diaphragm for high functional safety in cold and aggressive environments.
- All contact blocks are replaceable (see page 12/49).
- The three-pole contact blocks are available for all enclosure sizes (see picture, page 12/6).
- Elements with 1 NO + 2 NC slow-action contacts with make-before-break and 2 NO + 1 NC.
- The short-stroke contact block 1 NO + 1 NC improves the precision of the switching operation through a reduced actuation path.
- The contact block with 1 NO + 1 NC snap-action contacts with 2 x 2 mm contact opening is suitable for simultaneous shutdown and signaling, particularly in the elevator industry.
- XL metal enclosures for accommodating two 2 or 3-pole contact blocks.
- The plastic enclosure with a width of 31 mm has simple and fast wiring equipment which saves approx. 20 to 25 % of the time when connecting (see picture, page 12/6).
- The ASIsafe electronic component is integrated in the enclosure for the versions with AS-Interface connection (see page 12/91); an additional adapter is not required.

Application

With the standard position switches, mechanical positions of moving machine parts are converted into electrical signals. Through their modular and uniform design and large number of variants, the devices can comply with practically all requirements in industry.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the best contact blocks suited for the particular purpose. And many different actuator variants are available to match the mechanical configuration of the moving machined parts. Dimensions, fixing points and characteristics are largely in accordance with the EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

IEC 60947-5-1 or DIN EN 60947-5-1

The protective measure of "total insulation" by the molded-plastic enclosure is guaranteed by the use of molded-plastic screw glands.

Safety position switches

For controls according to IEC 60204-1 or EN 60204-1 the devices can be used as a safety position switch. They comply with the standard EN ISO 14119. A TÜV certificate is available. To secure position switches against changes in their position, keyed techniques must be employed on installation.

Safety circuits

Standards IEC 60947-5-1 and EN 60947-5-1 require positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked in accordance with the standard IEC 60947-5-1 with the symbol ➔.

Category 2 according to EN ISO 13849-1 can be attained with 3SE5 position switches with ➔, and category 3 or 4 when using an additional position switch, if the corresponding fail-safe evaluation units are selected and correctly connected. Example: 3SK or 3TK28 safety relays or the corresponding devices from the ASIsafe, SIMATIC or SINUMERIK programs. The operating mechanisms (actuators) must also be connected to the enclosure by keyed techniques. The corresponding operating mechanisms are marked in the catalog with ➔.

General data

Contacts for every application

- Snap-action contacts: NC and NO contacts switch simultaneously – regardless of the actuating speed (v_{min} = 0.01 m/s) and contact erosion.
- Slow-action contacts: Difference in travel between "NC contact opens" and "NO contact closes"; the switching speed is the same as or proportional to the actuating speed (v_{min} = 0.4 m/s).
- Slow-action contacts with make-before-break: e.g. suitable for adding a second function to a sequence control.

Operating mechanisms for every application

Standard, rounded and roller plungers

- Operation in direction of the plunger axis or in case of roller plunger with bar at right angles to the plunger axis.
- The roller plunger is recommended for lateral actuation and relatively long overtravel.

Roller levers and angular roller levers

- For actuators made of finely ground steel in the form of cams, straight-edges (approach angle 30°) or cam disks.

Spring rod

- Can be used for undefined actuations and changing starting conditions
- Starting from any direction is possible

Twist levers and rod actuators

- For a high starting speeds (v = 1.5 m/s)
- Variety of starting options
- Insensitive to oil, grinding dust and coarse-grained material
- Adjustment of the lever in increments of 10°
- Can be adjusted with left or right switching

Fork lever

- Switchable in two directions
- Latching actuator
- For reciprocating movements

Monitoring with fail-safe evaluation units from the 3SK and 3RK3 series

Safe evaluation units		**Maximum achievable safety level according to type of switch**				
		Compact	Standard	Hinge	Separate actuator	Tumbler
 3SK	 3RK3	 3SE54 →	 3SE51 / 3SE52 →	 3SE51 / 3SE52 →	 3SE51 / 3SE52 →	 3SE53 →
Use of only one position switch/safety switch						
Monitoring with 1 contact: 1 x NC contact		**SIL 1 / PL c**				
Monitoring with 2 contacts: 2 x NC contact or 1 x NC contact + 1 x NO contact		**SIL 1 / PL c**		**SIL 2 / PL d**		
Use of a second position switch/safety switch						
Standard switch	3SE51 / 3SE52	**SIL 3 / PLe**				
Safety switch / hinge switch	3SE51 / 3SE52					
Safety switches with separate actuator	3SE51 / 3SE52					
Safety switches with tumbler	3SE53					

Note:

Taking account of certain fault exclusions (e.g. actuator breakage), use of just one hinge switch or a switch with separate actuator with or without tumbler up to SIL 2 or PL d is possible as described in the table.

Since the machine manufacturer must provide proof of fault exclusion, the component manufacturer is unable to carry out a definitive assessment of the measures taken.

For more information, see https://support.industry.siemens.com/cs/ww/en/view/35443942.

The maximum achievable SIL or PL always depends on other assumptions as well. Factors to be taken into account include the DC (declaration), the CCF, and the number of actuations.

For information on the safe evaluation units and an introduction to safety systems, see from page 11/1.

Technical specifications

Type		3SE51[1].., 3SE52..		3SE541.	3SE542.
General data					
Standards		IEC 60947-5-1, DIN EN 60947-5-1, DIN EN ISO 14119			
Rated insulation voltage U_i	V	400[2]		400	
Degree of pollution according to IEC 60664-1		Class 3		Class 3	
Rated impulse withstand voltage U_{imp}	kV	6		4	
Rated operational voltage U_e	V	400 AC; over 300 V AC same potential only[3]		300 AC	
Conventional thermal current I_{th}	A	10		10	
Rated operational current I_e		2-pole	3-pole	2-pole	
• With alternating current 50/60 Hz		I_e / AC-15	I_e / AC-15	I_e / AC-15	
- At 24 V	A	6	6	6	
- At 125 V	A	6	6	6	
- At 230 V	A	3	1.5	3	
• For direct current		I_e / DC-13	I_e / DC-13	I_e / DC-13	
- At 24 V	A	3	3	3	
- At 125 V	A	0.55	0.55	0.55	
- At 230 V	A	0.27	0.27	0.27	
Short-circuit protection[4]					
• With DIAZED fuse links, Operational class gG	A	6		10	
• With miniature circuit breaker, Char. C ($I_{K< 400A}$)	A	1		3	
Mechanical endurance					
• Basic switch		15 ×10^6 operating cycles		500 000 switching cycles	500 000 switching cycles
• With spring rod, 3SE5...-..R..		10 ×10^6 operating cycles		--	--
• With fork lever, 3SE51..-..T..		1 ×10^6 operating cycles		--	--
Electrical endurance					
• With 3RH.1, 3RT contactors in size S00, S0		10 ×10^6 operating cycles		10 ×10^6 operating cycles	5 ×10^6 operating cycles
• For utilization category AC-15 when switching off I_e / AC-15 at 240 V		100 000 operating cycles		--	--
• With utilization category DC-12/DC-13		For direct current depending on the loading of the switch			
Switching frequency With 3RH.1, 3RT contactors in size S00, S0		6 000 operating cycles/h		1 800 operating cycles/h	
Switching accuracy	mm	0.05		0.05	
• For repeated switching, measured at the plunger of the contact block					
• With twist actuators		1°		1°	
Rated data according to cULus and CSA					
• Rated voltage	V	300		300	
• Uninterrupted current	A	6		10	
• Switching capacity		Heavy duty, A 300 / B 300 / Q 300		A 300 / Q 300	

1) Deviations for 3SE5162* and 3SE5112*-1AA7 see datasheet.

2) For slow-action contacts 1 NO + 2 NC with make-before-break ("M") and 2 NO + 1 NC ("P") the following applies: 250 V.

3) For slow-action contacts 1 NO + 2 NC with make-before-break ("M") and 2 NO + 1 NC ("P") the following applies: Over 250 V AC same potential only.

4) Without any welds according to IEC 60947-5-1.

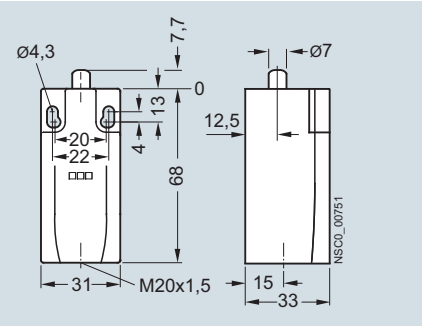
Type		3SE523.	3SE513.	3SE524.	3SE521.	3SE511.	3SE512., 3SE516.	3SE54..	3SE525.
Enclosure									
Enclosure									
• Material		Plastic P66			Zinc die-casting			Zn/Al	--
• Width	mm	31	40	50	31	40	56	30 / 40	30
Degree of protection acc. to IEC 60529		IP65	IP66/IP67[1]					IP67	IP20, IP10
Ambient temperature									
• During operation	°C	–25 ... +85; -40...+85 for 3SE5*-1AJ0 and 3SE5*-1AY0 versions						–25 ... +85	–25 ... +85
• In operation, switch with LEDs	°C	–25 ... +60						--	--
• Storage, transport	°C	–40 ... +90						–40 ... +90	–40 ... +90
Mounting position		Any							
Connection									
Cable entry		1 x (M20 x 1.5)		2 x (M20 x 1.5)	1 x (M20 x 1.5)		3 x (M20 x 1.5)	--	--
Conductor cross-sections									
• Solid	mm²	1 x (0.5 ... 1.5), 2 x (0.5 ... 0.75)							
• Finely stranded with/without end sleeve	mm²	1 x (0.5 ... 1.5), 2 x (0.5 ... 0.75)							
• AWG cables, solid or stranded	AWG	1 x (AWG 20 ... 16), 2 x (AWG 20 ... 19)							
Tightening torque, contact block	Nm	0.8 ... 1.0							
Protective conductor connection inside enclosure		--			M3.5			--	--

1) For twist actuators with spring rod and rod actuators: IP65/IP67.

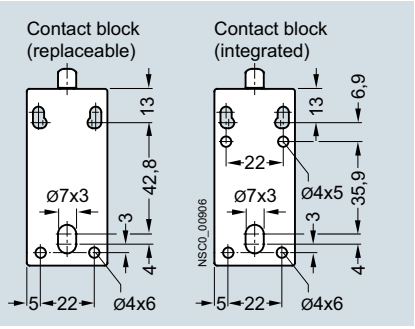
General data

Dimensions of the basic switches

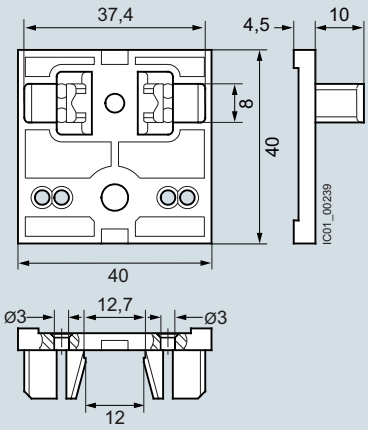
**Enclosure width 31 mm, EN 50047,
With connecting thread M20 × 1.5
3SE5232, 3SE5212**



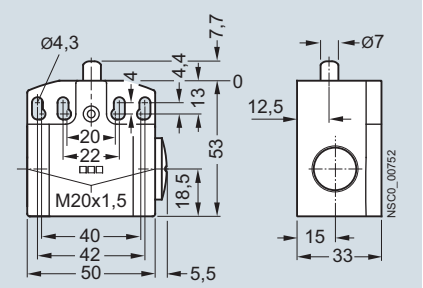
**Enclosure width 31 mm, EN 50047,
Rear side with fixing drill holes
3SE5232, 3SE5212**



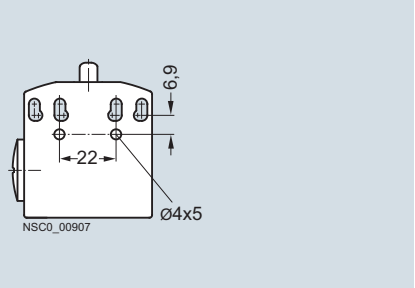
**Mounting plate
for 3SE5232, 3SE5212 position switches
3SX5100-1A**



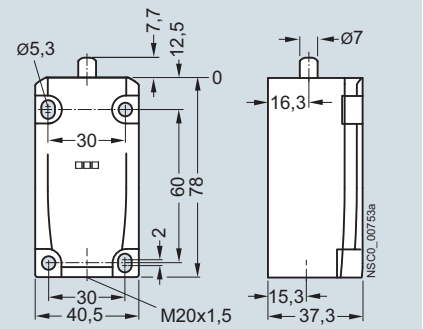
**Enclosure width 50 mm,
With connecting thread M20 × 1.5
3SE5242**



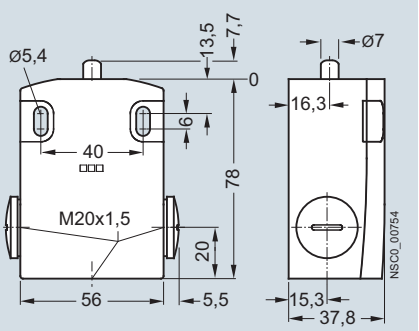
**Enclosure width 50 mm,
Rear side with fixing drill holes
3SE5242**



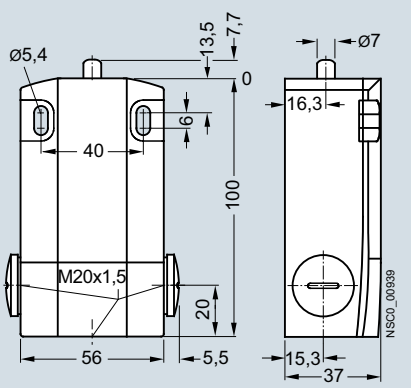
**Enclosure width 40 mm, EN 50041,
With connecting thread M20 × 1.5
3SE5112, 3SE5132**



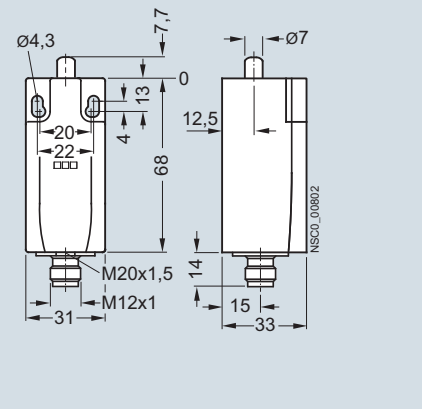
**Enclosure width 56 mm,
With connecting thread M20 × 1.5
3SE5122**



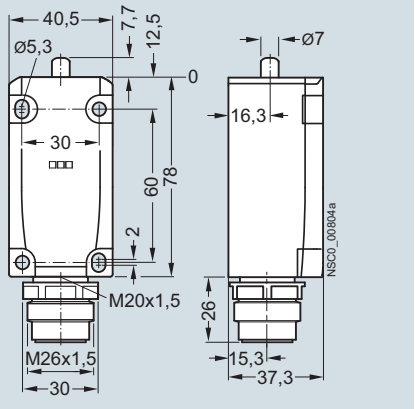
**XL enclosures, width 56 mm,
With connecting thread M20 × 1.5
3SE5162**



**Enclosure width 31 mm, EN 50047,
with M12 connector socket
3SE5234, 3SE5214**



**Enclosure width 40 mm, EN 50041,
With plug connector, 6-pole
3SE5115**



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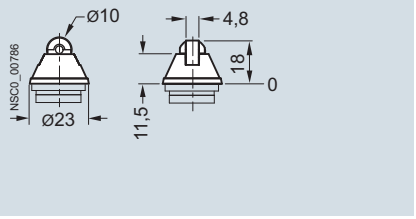
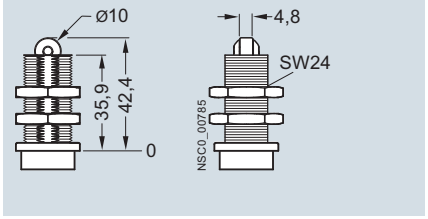
Operating mechanisms for enclosure width 31 mm and 50 mm

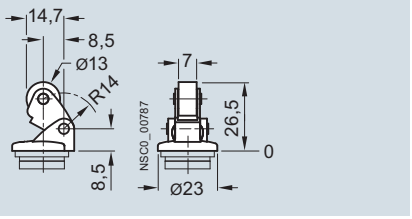
Roller plungers, type C, acc. to EN 50047



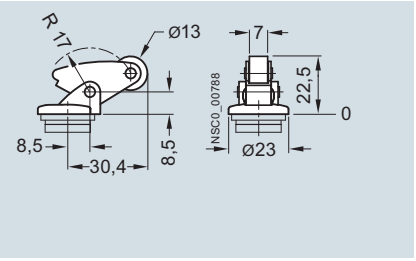
Roller plungers with central fixing



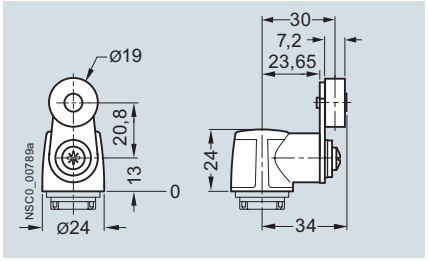
Roller levers, type E, acc. to EN 50047



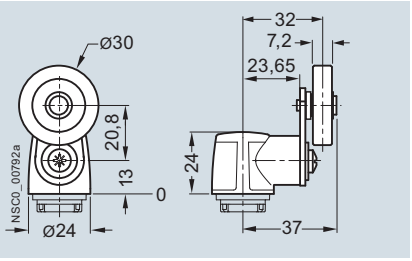
Angular roller levers



Twist levers, type A, acc. to EN 50047

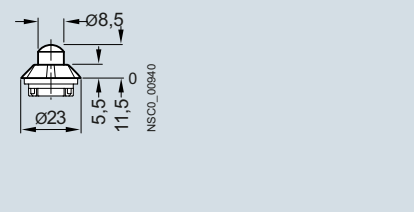


Twist levers, roller 30 mm

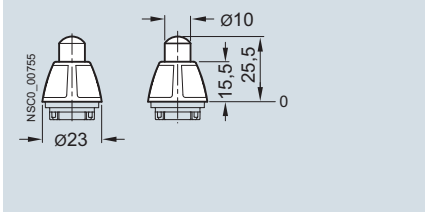


Operating mechanisms for enclosure width 40 mm and 56 mm

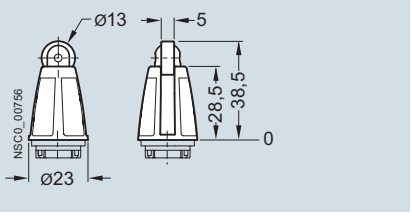
Plain plungers



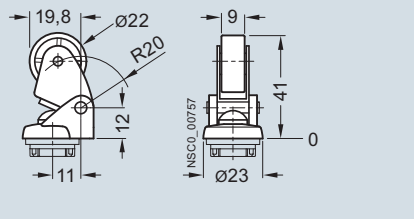
Rounded plungers, type B, acc. to EN 50041



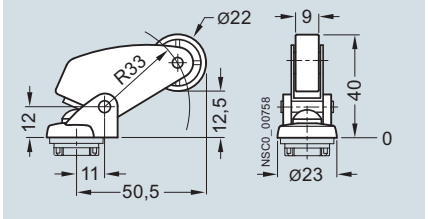
Roller plungers, type C, acc. to EN 50041



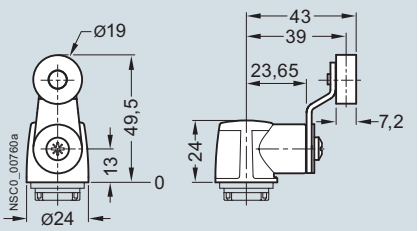
Roller levers



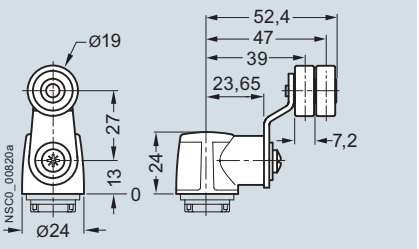
Angular roller levers



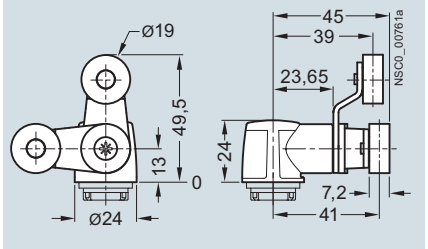
Twist levers, type A, acc. to EN 50041



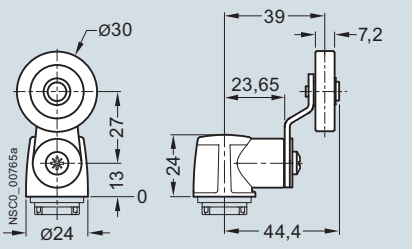
Twist levers, 2 rollers 19 mm



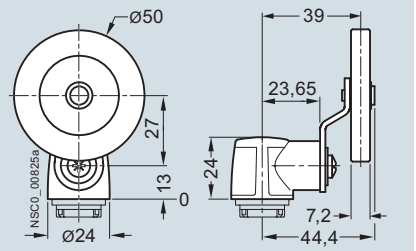
Fork levers, roller 19 mm



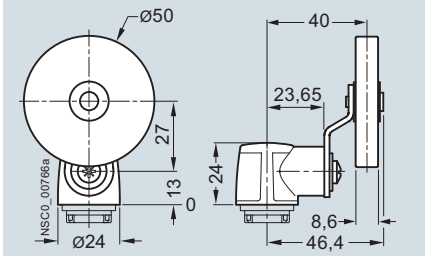
Twist levers, roller 30 mm



Twist levers, roller 50 mm



Twist levers, rubber roller 50 mm



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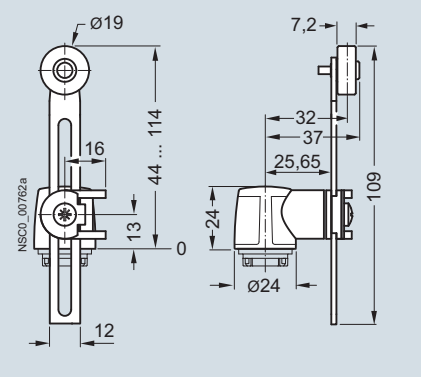
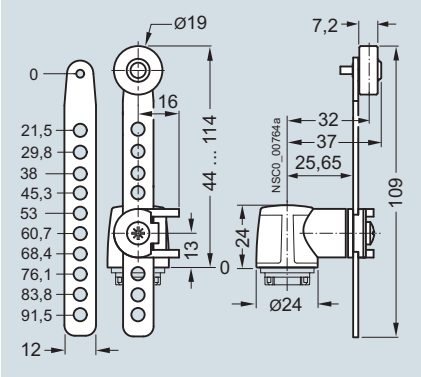
General data

Operating mechanisms for all enclosure widths

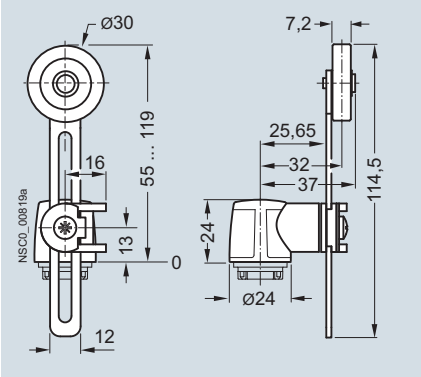
Twist levers, adjustable length roller 19 mm



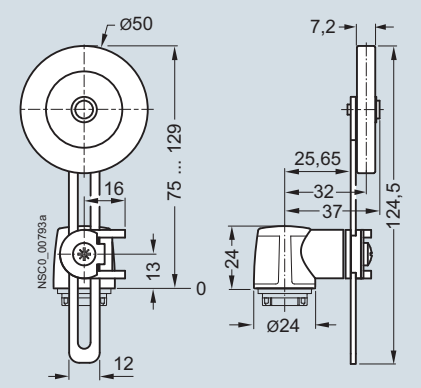
Twist levers, adjustable length, with grid hole, roller 19 mm



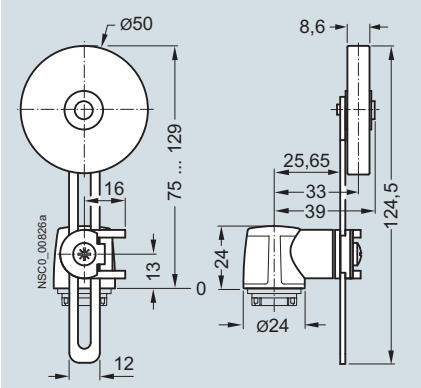
Twist levers, adjustable length, roller 30 mm



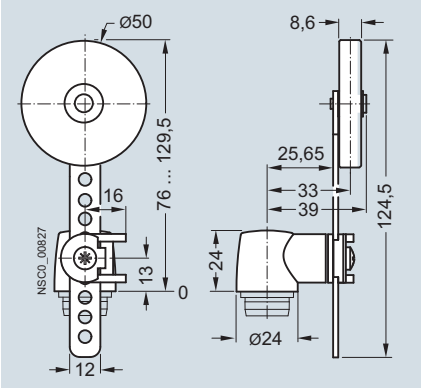
Twist levers, adjustable length roller 50 mm



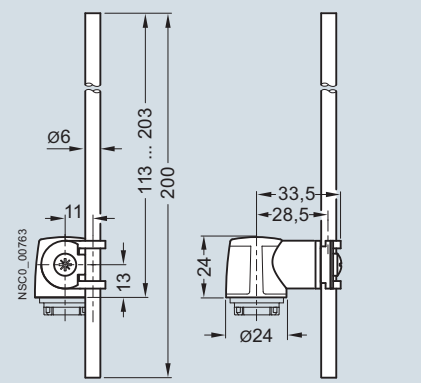
Twist levers, adjustable length rubber roller, 50 mm



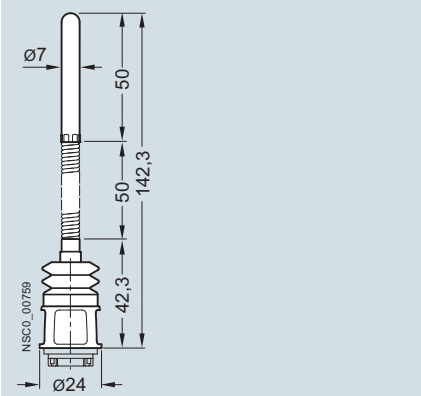
Twist levers, adjustable length with grid hole, rubber roller 50 mm



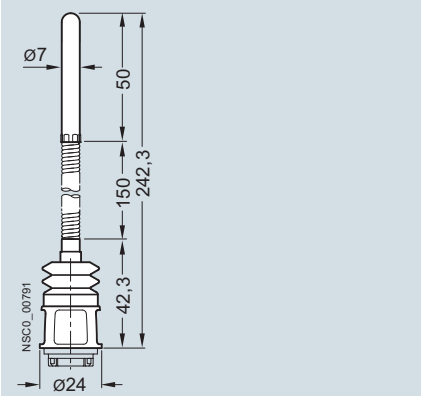
Rod actuator



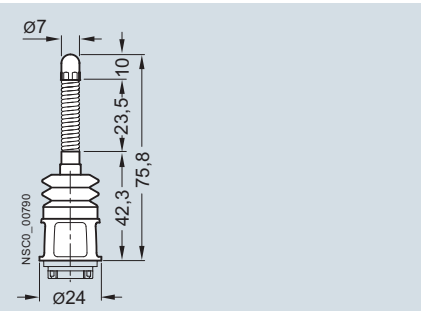
Spring rod, length 142.5 mm



Spring rod, length 242.5 mm

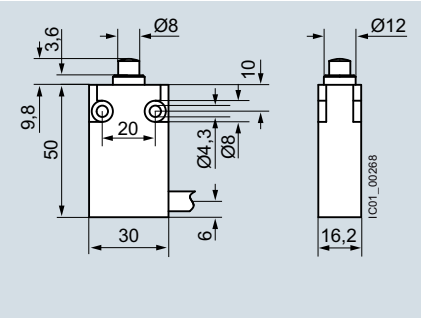


Spring rod, length 76 mm

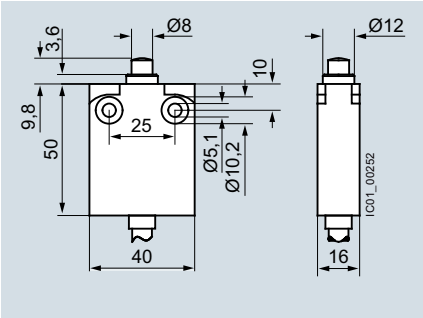


Dimensions of the switches in compact design

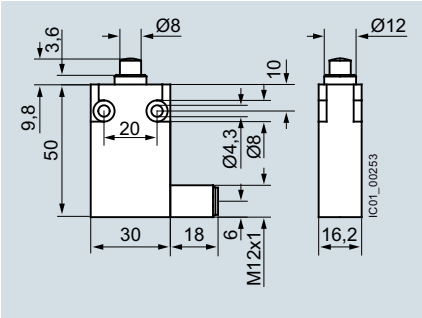
Rounded plungers, enclosure width 30 mm, with connecting cable
3SE5413-0CC20-1EA2



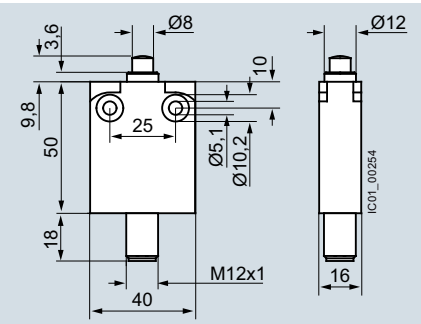
Rounded plungers, enclosure width 40 mm, with connecting cable
3SE5423-0CC20-1EA2



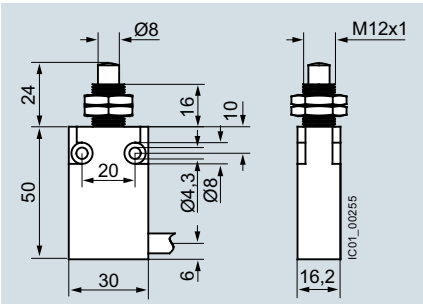
Rounded plungers, enclosure width 30 mm, with M12 connector socket
3SE5413-0CC20-1EB1



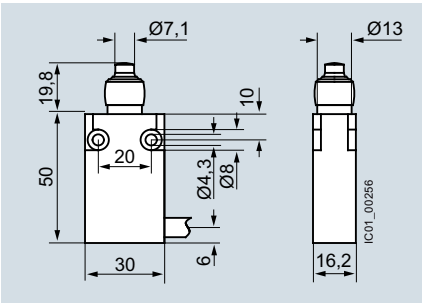
Rounded plungers, enclosure width 40 mm, with M12 connector socket
3SE5423-0CC20-1EB1



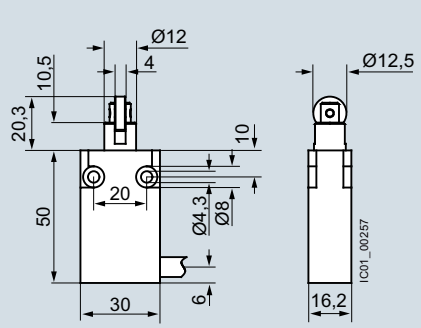
Rounded plungers, enclosure width 30 mm, with central fixing
3SE5413-0CC21-1EA2



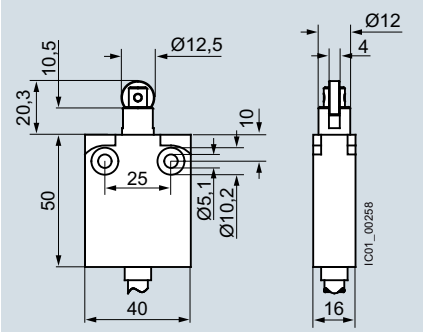
Rounded plungers, enclosure width 30 mm, with external seal
3SE5413-0CC22-1EA2



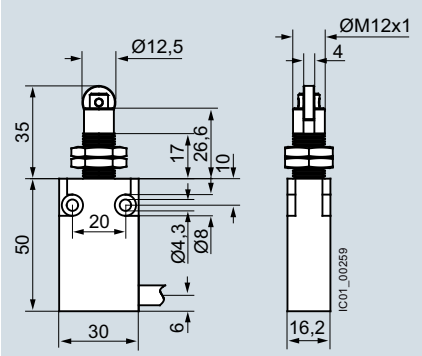
Roller plungers, enclosure width 30 mm, with connecting cable
3SE5413-0CD20-1EA2



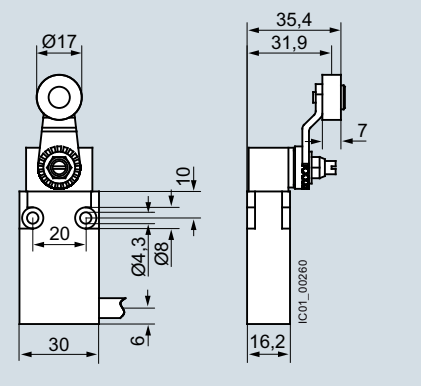
Roller plungers, enclosure width 40 mm, with connecting cable
3SE5423-0CD20-1EA2



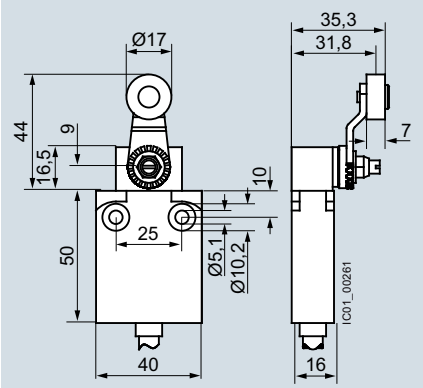
Roller plungers, enclosure width 30 mm, with central fixing
3SE5413-0CD21-1EA2



Twist levers, enclosure width 30 mm, with connecting cable
3SE5413-0CN20-1EA2



Twist levers, enclosure width 40 mm, with connecting cable
3SE5423-0CN20-1EA2

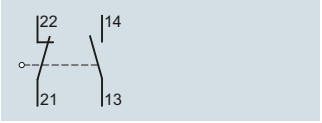


General data

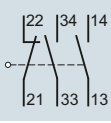
Circuit diagrams

Enclosure widths 31, 40, 50 and 56 mm

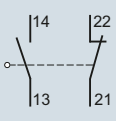
Slow-action contacts
1 NO + 1 NC
3SE5...-.B..., -.R...



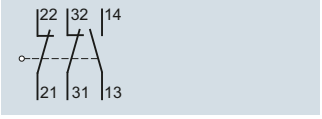
Slow-action contacts
2 NO + 1 NC
3SE5...-.P...



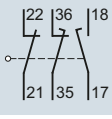
Snap-action contacts
1 NO + 1 NC
3SE5...-.C..., -.F..., -.G..., -.H..., -.N...



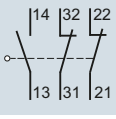
Slow-action contacts
1 NO + 2 NC
3SE5...-.K..., -.Q...



Slow-action contacts
1 NO + 2 NC with make-before-break, 3SE5...-.M...

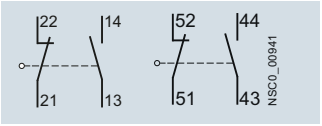


Snap-action contacts
1 NO + 2 NC
3SE5...-.L...

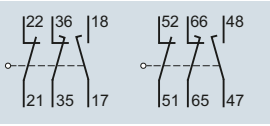


XL enclosures, width 56 mm

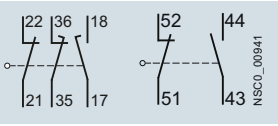
Slow-action contacts
2 × (1 NO + 1 NC)
3SE5162-0B...



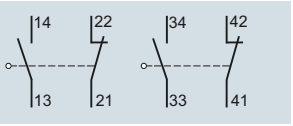
Slow-action contacts
2 x (1 NO + 2 NC) with make-before-break, 3SE5162-0D...



Slow-action contacts
1 NO + 2 NC with make-before-break,
1 NO + 1 NC
3SE5162-0E...

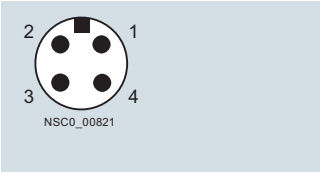


Snap-action contacts
2 × (1 NO + 1 NC)
3SE5162-0C...

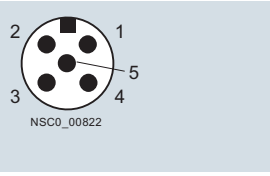


3SE5 connector assignment

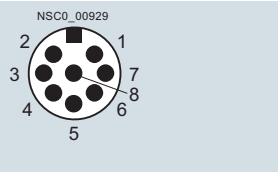
M12 connector socket, 4-pole
3SY3127



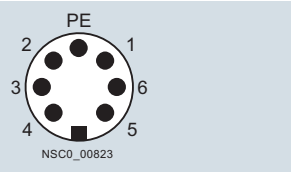
M12 connector sockets, 5-pole
3SY3128



M12 connector sockets, 8-pole
3SY3134



Connector sockets, 6-pole + PE
3SY3131



Article No.	Connector sockets	Contacts	LEDs	Connections								
	Type	Version	Version	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	PE
M12 connector sockets, 4-, 5- or 8-pole												
3SE5..4-0....-1AC4	3SY3127	1 NO + 1 NC	--	21	22	13	14	--	--	--	--	--
3SE5..4-0....-1AC5	3SY3128	1 NO + 1 NC	--	21	22	13	14	PE	--	--	--	--
3SE5..4-0....-1AE0	3SY3127	2 NC	--	21	22	31	32	--	--	--	--	--
3SE5..4-0....-1AE1	3SY3128	2 NC	--	21	22	31	32	PE	--	--	--	--
3SE5..4-1C...-1AF3	3SY3128	1 NO + 1 NC snap-action	2 LEDs	21	22	13 / LED gn	14 / LED ye	Ground LED	--	--	--	--
3SE5..4-1B...-1AF3	3SY3128	1 NO + 1 NC slow-action	2 LEDs	21	22	14 / LED gn	13/ LED ye	Ground LED	--	--	--	--
3SE5..4-1L...-1AD4	3SY3134	1 NO + 2 NC snap-action	2 LEDs	21	22	13 / LED gn	14 / LED ye	31	32	Ground LED	PE	--
3SE5..4-1K...-1AD4	3SY3134	1 NO + 2 NC slow-action	2 LEDs	21	22	14 / LED gn	13/ LED ye	31	32	Ground LED	PE	--
Connector sockets, 6-pole + PE												
3SE5..5-0....-1AD0	3SY3131	1 NO + 1 NC	--	21	22	13	14	--	--	--	--	✓
3SE5..5-0....-1AD1	3SY3131	1 NO + 2 NC	--	21	22	13	14	31	32	--	--	✓
3SE5..5-.C...-1AF2	3SY3131	1 NO + 1 NC snap-action	2 LEDs	21	22	13 / LED gn	14 / LED ye	--	Ground LED	--	--	✓
3SE5..5-.B...-1AF2	3SY3131	1 NO + 1 NC slow-action	2 LEDs	21	22	14 / LED gn	13 / LED ye	--	Ground LED	--	--	✓
3SE5..5-.L...-1AD2	3SY3131	2 NC snap-action	2 LEDs	21	22	31	32	13 / LED gn	Ground LED	--	--	✓
3SE5..5-.K...-1AD2	3SY3131	2 NC slow-action	2 LEDs	21	22	31	32	14 / LED gn	Ground LED	--	--	✓

gn Green
ye Yellow

✓ Connected
-- Not available

Options

On the following pages you will find selection tables for complete units as well as components of the modular system.

☐ Complete units

☒ Modular system

The differences between the units are indicated in the selection and ordering data by the symbols shown on orange backgrounds.

Using the modular system you can assemble switch variants which are not available as complete units. Each complete unit can also be supplied as a module.

A basic switch for the modular system comprises an enclosure with a contact block and a cover. Among the basic switches the following versions, for example, can be selected:

- Basic enclosure with teflon plunger
- Version with increased corrosion protection
- Version with M12 connector socket and/or with 2 LEDs
- Version with M12 connector socket or 6-pole + PE

Support functions

The 3SE5/3SF1 position and safety switches can also be ordered using an online configurator.

This also enables a complete documentation to be prepared:

- Product data sheets
- Dimensional drawings
- Operating travel diagrams
- CAD data in 2D and 3D model images
- Ordering data
- Product photos

For the online configurator, see www.siemens.com/sirius/configurators.

Complete units

Ordering example

Required:
- Position switch according to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Angular roller lever, metal lever and plastic roller

To be ordered:

Version	Complete units ☐
	Article No.
Complete units • Enclosure width 31 mm	
 ***Angular roller lever*** **with metal lever and Plastic roller 13mm** Slow-action contacts 1 NO + 1 NC	**3SE5232-0BF10**

Modular system

Ordering example 1

Required:
- Position switch according to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Angular roller lever, metal lever and plastic roller

To be ordered separately:

Version	Modular system ☒
	Article No.
Basic switches • Enclosure width 31 mm	
 **With teflon plunger** Slow-action contacts 1 NO + 1 NC	**3SE5232-0BC05**
+	
Operating mechanisms	
 **Angular roller levers** Metal lever, Plastic roller	**3SE5000-0AF10**

Ordering example 2

Required:
- Position switch according to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Twist levers, high-grade steel lever and plastic roller

To be ordered separately:

Version	Modular system ☒
	Article No.
Basic switches • Enclosure width 31 mm	
 **With teflon plunger** Slow-action contacts 1 NO + 1 NC	**3SE5232-0BC05**
+	
Twist actuators	
 **Twist actuators**	**3SE5000-0AK00**
 **Twist levers** Stainless steel lever, Plastic roller	**3SE5000-0AA31**

Enclosure width 31 mm acc. to EN 50047

Selection and ordering data

Complete units for installation in control cabinets

2 contacts · Degree of protection IP40 · Cable entry by means of a locking plug with ∅ 6 mm

	Version	Contacts	LEDs	SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Complete units[1] • Enclosure width 31 mm									
 3SE5232-0HC05-1AB1	***Control cabinet type, IP40, rounded plungers, type B, acc. to EN 50047*** **Flat cover** Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖ 5	**3SE5232-0HC05-1AB1**		1	1 unit	41K
 3SE5232-0HC05-1AB2	**Flat cover** With mounting plate and screws for attachment profile Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖ 5	**3SE5232-0HC05-1AB2**		1	1 unit	41K
 3SE5232-0HC05-1AB3	**Standard cover** Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖ 5	**3SE5232-0HC05-1AB3**		1	1 unit	41K
 3SE5232-0HC05-1AB4	**Standard cover** With mounting plate and screws for attachment profile Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖ 5	**3SE5232-0HC05-1AB4**		1	1 unit	41K
Accessories									
 3SX5100-1A	**Mounting plate** For 3SE523. position switches and 3SE521. position switches with a width of 31 mm	--	--	5	**3SX5100-1A**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) The control cabinet types are not basic switches for the modular system.

2) Subsequent replacement of contact blocks is not possible.

12

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Complete units

2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5[1)]

Version	Contacts	LEDs	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[2)] • Enclosure width 31 mm								
Rounded plungers, type B, acc. to EN 50047								
With teflon plunger								
Slow-action contacts	1 NO + 1 NC	--	➔ ▶	**3SE5232-0BC05**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5232-0CC05**		1	1 unit	41K
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	➔ ▶	**3SE5232-0HC05**		1	1 unit	41K
Snap-action contacts • Short stroke, integrated[3)]	1 NO + 1 NC	--	➔ 5	**3SE5232-0FC05**		1	1 unit	41K
Snap-action contacts • 2 × 2 mm contact gap	1 NO + 1 NC	--	➔ 5	**3SE5232-0GC05**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	➔ ▶	**3SE5232-0KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ ▶	**3SE5232-0LC05**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	➔ 2	**3SE5232-0MC05**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	➔ 2	**3SE5232-0PC05**		1	1 unit	41K
With increased corrosion protection								
Slow-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5232-0BC05-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5232-0CC05-1CA0**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5232-0KC05-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5232-0LC05-1CA0**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	➔ 5	**3SE5232-0MC05-1CA0**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	➔ 5	**3SE5232-0PC05-1CA0**		1	1 unit	41K
With M12 connector socket, 4-pole (250 V, 4 A)								
Slow-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5234-0BC05-1AC4**		1	1 unit	41K
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	➔ 2	**3SE5234-0HC05-1AC4**		1	1 unit	41K
Slow-action contacts	2 NC	--	➔ 5	**3SE5234-0KC05-1AE0**		1	1 unit	41K
Snap-action contacts	2 NC	--	➔ 2	**3SE5234-0LC05-1AE0**		1	1 unit	41K
With 2 LEDs, yellow/green								
Slow-action contacts	1 NO + 2 NC	24 V DC	➔ 5	**3SE5232-1KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	24 V DC	➔ 5	**3SE5232-1LC05**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	230 V AC	➔ 5	**3SE5232-3KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	230 V AC	➔ 5	**3SE5232-3LC05**		1	1 unit	41K
With M12 connector socket, 5-pole (125 V, 4 A), **and 2 LEDs**								
Slow-action contacts	1 NO + 1 NC	24 V DC	➔ 5	**3SE5234-1BC05-1AF3**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	24 V DC	➔ 5	**3SE5234-1CC05-1AF3**		1	1 unit	41K


3SE5232-0HC05-1AB1


3SE5232-0BC05-1CA0


3SE5232-1KC05

➔ Positive opening according to IEC 60947-5-1, Appendix K.

1) A cable gland with seal must be used with the quick-connect method.

2) Popular versions.

3) Subsequent replacement of contact blocks is not possible.

Enclosure width 31 mm acc. to EN 50047

2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5[1)]

Version	Contacts	LEDs	SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Complete units[2)] • Enclosure width 31 mm								
Roller plungers, type C, acc. to EN 50047								
With plastic roller 10 mm								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5232-0BD03**		1	1 unit	41K
Snap-action contacts • integrated[3)]	1 NO + 1 NC	--	⊖ ▶	**3SE5232-0HD03**		1	1 unit	41K
Snap-action contacts • Short stroke, integrated[3)]	1 NO + 1 NC	--	⊖ 5	**3SE5232-0FD03**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0KD03**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0LD03**		1	1 unit	41K
Actuator head rotated by 90°								
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0LD03-1AH0**		1	1 unit	41K
With M12 connector socket, 4-pole (250 V, 4 A)								
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖ 5	**3SE5234-0HD03-1AC4**		1	1 unit	41K
With yellow cover								
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0LD03-1AG0**		1	1 unit	41K
Roller plungers with central fixing								
With plastic roller 10 mm								
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖ 5	**3SE5232-0HD10**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0KD10**		1	1 unit	41K
Roller levers, type E acc. to EN 50047								
With metal lever and plastic roller 13 mm								
Slow-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5232-0BE10**		1	1 unit	41K
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖ ▶	**3SE5232-0HE10**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0KE10**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0LE10**		1	1 unit	41K
With increased corrosion protection, with high-grade steel lever and plastic roller 13 mm								
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5232-0CE12-1CA0**		1	1 unit	41K
With M12 connector socket, 4-pole (250 V, 4 A)								
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖ 5	**3SE5234-0HE10-1AC4**		1	1 unit	41K
With high-grade steel lever and plastic roller 13 mm								
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0LE12**		1	1 unit	41K
Angular roller lever								
With metal lever and plastic roller 13 mm								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5232-0BF10**		1	1 unit	41K
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖ 2	**3SE5232-0HF10**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0KF10**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0LF10**		1	1 unit	41K


3SE5232-0BD03


3SE5232-0LD03-1AG0


3SE5232-0HD10


3SE5232-0HE10


3SE5232-0BF10

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) A cable gland with seal must be used with the quick-connect method.

2) Popular versions.

3) Subsequent replacement of contact blocks is not possible.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5[1)]

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No. / Price per PU			
Complete units[2)] • Enclosure width 31 mm							
Spring rod							
Length 142.5 mm, with plastic plunger 50 mm							
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	2	**3SE5232-0HR01**	1	1 unit	41K
With M12 connector socket, 4-pole (250 V, 4 A)							
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	5	**3SE5234-0HR01-1AC4**	1	1 unit	41K
Twist levers, type A, acc. to EN 50047							
With metal lever 21 mm and plastic roller 19 mm							
Slow-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5232-0BK21**	1	1 unit	41K
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖ 5	**3SE5232-0HK21**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0KK21**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0LK21**	1	1 unit	41K
With M12 connector socket, 4-pole (250 V, 4 A)							
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖ 5	**3SE5234-0HK21-1AC4**	1	1 unit	41K
With metal lever 35 mm and plastic roller 19 mm							
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖ 5	**3SE5232-0HK15**	1	1 unit	41K
Twist levers, adjustable length							
With metal lever with grid hole and plastic roller 19mm							
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖ 2	**3SE5232-0HK60**	1	1 unit	41K
With metal lever and plastic roller 19 mm							
Slow-action contacts	1 NO + 1 NC	--	5	**3SE5232-0BK50**	1	1 unit	41K
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	▶	**3SE5232-0HK50**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	5	**3SE5232-0LK50**	1	1 unit	41K
With M12 connector socket, 4-pole (250 V, 4 A)							
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	5	**3SE5234-0HK50-1AC4**	1	1 unit	41K
Rod actuator							
With aluminum rod, length 200 mm							
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	5	**3SE5232-0HK80**	1	1 unit	41K
With plastic rod, length 200 mm							
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	5	**3SE5232-0HK82**	1	1 unit	41K
With M12 connector socket, 4-pole (250 V, 4 A)							
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	5	**3SE5234-0HK82-1AC4**	1	1 unit	41K


3SE5232-0HR01


3SE5232-0BK21


3SE5232-0HK60


3SE5232-0BK50


3SE5232-0HK80

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) A cable gland with seal must be used with the quick-connect method.

2) Popular versions.

3) Subsequent replacement of contact blocks is not possible.

Note:

If the device you require is not available as a complete unit, see Modular System, page 12/20.

Enclosure width 31 mm acc. to EN 50047

Modular system

2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5[1)]

Version	Contacts	LEDs		SD	Modular system	PU (UNIT, SET, M)	PS*	PG
				d	Article No.	Price per PU		
Basic switches • Enclosure width 31 mm (with rounded plunger[2)])								
Teflon plungers								
Slow-action contacts	1 NO + 1 NC	--	⊖	►	**3SE5232-0BC05**	1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5232-0CC05**	1	1 unit	41K
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖	►	**3SE5232-0HC05**	1	1 unit	41K
Snap-action contacts • Short stroke, integrated[3)]	1 NO + 1 NC	--	⊖	5	**3SE5232-0FC05**	1	1 unit	41K
Snap-action contacts • 2 × 2 mm contact gap	1 NO + 1 NC	--	⊖	5	**3SE5232-0GC05**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖	►	**3SE5232-0KC05**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖	►	**3SE5232-0LC05**	1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖	2	**3SE5232-0MC05**	1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖	2	**3SE5232-0PC05**	1	1 unit	41K
Increased corrosion protection[4)]								
Slow-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5232-0BC05-1CA0**	1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5232-0CC05-1CA0**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5232-0KC05-1CA0**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5232-0LC05-1CA0**	1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖	5	**3SE5232-0MC05-1CA0**	1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖	5	**3SE5232-0PC05-1CA0**	1	1 unit	41K
M12 connector socket, 4-pole (250 V, 4 A)								
Slow-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5234-0BC05-1AC4**	1	1 unit	41K
Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖	2	**3SE5234-0HC05-1AC4**	1	1 unit	41K
Slow-action contacts	2 NC	--	⊖	5	**3SE5234-0KC05-1AE0**	1	1 unit	41K
Snap-action contacts	2 NC	--	⊖	2	**3SE5234-0LC05-1AE0**	1	1 unit	41K
2 LEDs yellow/green								
Slow-action contacts	1 NO + 2 NC	24 V DC	⊖	5	**3SE5232-1KC05**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	24 V DC	⊖	5	**3SE5232-1LC05**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	230 V AC	⊖	5	**3SE5232-3KC05**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	230 V AC	⊖	5	**3SE5232-3LC05**	1	1 unit	41K
M12 connector socket, 5-pole (125 V, 4 A), **and 2 LEDs**								
Slow-action contacts	1 NO + 1 NC	24 V DC	⊖	5	**3SE5234-1BC05-1AF3**	1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	24 V DC	⊖	5	**3SE5234-1CC05-1AF3**	1	1 unit	41K


3SE5232-0BC05


3SE5232-0BC05-1CA0


3SE5234-0HC05-1AC4


3SE5232-1KC05


3SE5234-1BC05-1AF3

⊖ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) A cable gland with seal must be used with the quick-connect method.

2) For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

3) Subsequent replacement of contact blocks is not possible.

4) Use corresponding high-grade steel lever.

Note:

For the selection aid, see page 12/15

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
		mm	d	Article No. Price per PU			
Operating mechanisms							
 3SE5000-0AD03	**Roller plungers, type C, acc. to EN 50047**						
	Plastic rollers	10	⊖ 2	**3SE5000-0AD03**	1	1 unit	41K
	High-grade steel rollers	10	⊖ 5	**3SE5000-0AD04**	1	1 unit	41K
 3SE5000-0AD10	**Roller plungers with central fixing**						
	Plastic rollers	10	⊖ 2	**3SE5000-0AD10**	1	1 unit	41K
	High-grade steel rollers	10	⊖ 5	**3SE5000-0AD11**	1	1 unit	41K
 3SE5000-0AE10	**Roller levers, type E, acc. to EN 50047**						
	Metal lever, plastic roller	13	⊖ 2	**3SE5000-0AE10**	1	1 unit	41K
	Metal lever, high-grade steel roller	13	⊖ 5	**3SE5000-0AE11**	1	1 unit	41K
	High-grade steel lever, plastic roller	13	⊖ 5	**3SE5000-0AE12**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	13	⊖ 5	**3SE5000-0AE13**	1	1 unit	41K
 3SE5000-0AF10	**Angular roller levers**						
	Metal lever, plastic roller	13	⊖ 2	**3SE5000-0AF10**	1	1 unit	41K
	Metal lever, high-grade steel roller	13	⊖ 5	**3SE5000-0AF11**	1	1 unit	41K
	High-grade steel lever, plastic roller	13	⊖ 2	**3SE5000-0AF12**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	13	⊖ 5	**3SE5000-0AF13**	1	1 unit	41K
 3SE5000-0AR01	**Spring rod** (Only for switches with snap-action contacts)						
	Plunger made of plastic, spring of high-grade steel:	7					
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR01**	1	1 unit	41K
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	**3SE5000-0AR03**	1	1 unit	41K
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	**3SE5000-0AR04**	1	1 unit	41K
	Plunger and spring made of high-grade steel:	7					
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR02**	1	1 unit	41K
Twist actuators							
 3SE5000-0AK00	**Twist actuators**, for 31/50 mm, EN 50047						
	Switching right and/or left, adjustable		⊖ 2	**3SE5000-0AK00**	1	1 unit	41K
	Levers						
	Twist levers 21 mm, straight, type A acc. to EN 50047						
 3SE5000-0AA21	Metal lever, plastic roller	19	⊖ 2	**3SE5000-0AA21**	1	1 unit	41K
	Metal lever, high-grade steel roller	19	⊖ 5	**3SE5000-0AA22**	1	1 unit	41K
	Metal lever, high-grade steel roller with ball bearing	19	⊖ 5	**3SE5000-0AA23**	1	1 unit	41K
	Metal lever, plastic roller	30	⊖ 5	**3SE5000-0AA25**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	⊖ 5	**3SE5000-0AA31**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	⊖ 5	**3SE5000-0AA32**	1	1 unit	41K
 3SE5000-0AA60 3SE5000-0AA50	**Twist levers 30 mm, straight**						
	Metal lever, plastic roller	19	⊖ 5	**3SE5000-0AA24**	1	1 unit	41K
	Metal lever, plastic roller	30	⊖ 5	**3SE5000-0AA26**	1	1 unit	41K
	Twist levers, adjustable length, with grid hole						
	Metal lever, plastic roller	19	⊖ 5	**3SE5000-0AA60**	1	1 unit	41K
	Metal lever, high-grade steel roller	19	⊖ 5	**3SE5000-0AA61**	1	1 unit	41K
	Metal lever, plastic roller	50	⊖ 5	**3SE5000-0AA67**	1	1 unit	41K
	Metal lever, rubber roller	50	⊖ 5	**3SE5000-0AA68**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	⊖ 5	**3SE5000-0AA62**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	⊖ 5	**3SE5000-0AA63**	1	1 unit	41K
 3SE5000-0AA80	**Twist levers, adjustable length**						
	Metal lever, plastic roller	19	2	**3SE5000-0AA50**	1	1 unit	41K
	Metal lever, high-grade steel roller	19	5	**3SE5000-0AA51**	1	1 unit	41K
	Metal lever, plastic roller	30	5	**3SE5000-0AA55**	1	1 unit	41K
	Metal lever, plastic roller	50	5	**3SE5000-0AA57**	1	1 unit	41K
	Metal lever, rubber roller	50	5	**3SE5000-0AA58**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	5	**3SE5000-0AA52**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	5	**3SE5000-0AA53**	1	1 unit	41K
	Rod actuator						
	Aluminum rod, length 200 mm	6	5	**3SE5000-0AA80**	1	1 unit	41K
	Spring rod, length 200 mm	6	5	**3SE5000-0AA81**	1	1 unit	41K
	Plastic rod, length 200 mm	6	5	**3SE5000-0AA82**	1	1 unit	41K

⊖ Positively driven actuator, necessary in safety circuits.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Enclosure width 40 mm acc. to EN 50041

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/67 · Cable entry M20 × 1.5

	Version	Contacts	LEDs	SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Complete units[1] • Enclosure width 40 mm									
 3SE5132-0BB01	***Plain plungers***								
	With high-grade steel plunger								
	Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5132-0BB01**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5132-0CB01**		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0KB01**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0LB01**		1	1 unit	41K
	Slow-action contacts	2 NO + 1 NC	--	⊖ 5	**3SE5132-0PB01**		1	1 unit	41K
 3SE5132-0BC03	***Rounded plungers, type B, acc. to EN 50041***								
	With plastic plunger								
	Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5132-0BC03**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5132-0CC03**		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0KC03**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0LC03**		1	1 unit	41K
	Slow-action contacts	2 NO + 1 NC	--	⊖ 5	**3SE5132-0PC03**		1	1 unit	41K
 3SE5132-0BD05	***Roller plungers, type C, acc. to EN 50041***								
	With plastic roller 13 mm								
	Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5132-0BD05**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5132-0CD05**		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0KD05**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0LD05**		1	1 unit	41K
	Slow-action contacts	2 NO + 1 NC	--	⊖ 5	**3SE5132-0PD05**		1	1 unit	41K
 3SE5132-0BE05	***Roller levers***								
	With metal lever and plastic roller 22 mm								
	Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5132-0BE05**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5132-0CE05**		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0KE05**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0LE05**		1	1 unit	41K
	Slow-action contacts	2 NO + 1 NC	--	⊖ 5	**3SE5132-0PE05**		1	1 unit	41K
 3SE5132-0BF05	***Angular roller lever***								
	With metal lever and plastic roller 22 mm								
	Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5132-0BF05**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5132-0CF05**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0LF05**		1	1 unit	41K
 3SE5132-0CR01	***Spring rod***								
	Length 142.5 mm, with plastic plunger 50 mm								
	Snap-action contacts	1 NO + 1 NC	--	5	**3SE5132-0CR01**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	--	5	**3SE5132-0LR01**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Popular versions.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Enclosure width 40 mm acc. to EN 50041

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Complete units[1] • Enclosure width 40 mm								
Twist levers, type A, acc. to EN 50041								
With metal lever 27 mm and plastic roller 19 mm								
Slow-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5132-0BJ01**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5132-0CJ01**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0KJ01**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0LJ01**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖ 5	**3SE5132-0PJ01**		1	1 unit	41K
Twist levers, adjustable length								
With metal lever with grid hole and Plastic roller 19 mm								
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5132-0CJ60**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5132-0LJ60**		1	1 unit	41K
With metal lever and plastic roller 19 mm								
Snap-action contacts	1 NO + 1 NC	--	2	**3SE5132-0CJ50**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	5	**3SE5132-0LJ50**		1	1 unit	41K
Rod actuators, type D, acc. to EN 50041								
With aluminum rod, length 200 mm								
Snap-action contacts	1 NO + 1 NC	--	5	**3SE5132-0CJ80**		1	1 unit	41K
With plastic rod, length 200 mm								
Snap-action contacts	1 NO + 1 NC	--	2	**3SE5132-0CJ82**		1	1 unit	41K


3SE5132-0BJ01


3SE5132-0CJ60


3SE5132-0CJ50


3SE5132-0CJ80

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Popular versions.

Note:

If the device you require is not available as a complete unit, see Modular System, page 12/24.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Enclosure width 40 mm acc. to EN 50041

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs		SD	**Modular system** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Basic switches • Enclosure width 40 mm									
Connecting thread M20 × 1.5									
Slow-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5132-0BA00**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5132-0CA00**		1	1 unit	41K
• Gold-plated contacts			⊖	5	**3SE5132-0CA00-1AC1**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5132-0KA00**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5132-0LA00**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖	5	**3SE5132-0MA00**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖	5	**3SE5132-0PA00**		1	1 unit	41K
Increased corrosion protection[1]									
Slow-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5132-0BA00-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5132-0CA00-1CA0**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5132-0KA00-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5132-0LA00-1CA0**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖	5	**3SE5132-0MA00-1CA0**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖	5	**3SE5132-0PA00-1CA0**		1	1 unit	41K
M12 connector socket, 4-pole (250 V, 4 A)									
Slow-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5134-0BA00-1AC4**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5134-0CA00-1AC4**		1	1 unit	41K
Slow-action contacts	2 NC	--	⊖	5	**3SE5134-0KA00-1AE0**		1	1 unit	41K
Snap-action contacts	2 NC	--	⊖	5	**3SE5134-0LA00-1AE0**		1	1 unit	41K
2 LEDs, yellow/green									
Slow-action contacts	1 NO + 2 NC	24 V DC	⊖	5	**3SE5132-1KA00**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	24 V DC	⊖	5	**3SE5132-1LA00**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	230 V AC	⊖	5	**3SE5132-3KA00**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	230 V AC	⊖	5	**3SE5132-3LA00**		1	1 unit	41K


3SE5132-0BA00


3SE5132-0BA00-1CA0


3SE5134-0BA00-1AC4


3SE5132-1KA00

⊖ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) Use corresponding high-grade steel lever.

Note:

For the selection aid, see page 12/15.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	Diameter mm	SD d	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Operating mechanisms							
 3SE5000-0AB01	**Plain plungers**							
	High-grade steel plunger	10	⊕ 2	**3SE5000-0AB01**		1	1 unit	41K
 3SE5000-0AC03 3SE5000-0AD05	**Rounded plungers, type B, acc. to EN 50041**							
	Plastic plungers	10	⊕ 5	**3SE5000-0AC03**		1	1 unit	41K
	Roller plungers, type C, acc. to EN 50041							
	Plastic plunger, plastic roller	13	⊕ 5	**3SE5000-0AD05**		1	1 unit	41K
	Plastic plunger, high-grade steel roller	13	⊕ 5	**3SE5000-0AD06**		1	1 unit	41K
 3SE5000-0AE05	**Roller levers**							
	Metal lever with plastic roller, plastic base	22	⊕ 5	**3SE5000-0AE05**		1	1 unit	41K
 3SE5000-0AF05	**Angular roller levers**							
	Metal lever with plastic roller, plastic base	22	⊕ 5	**3SE5000-0AF05**		1	1 unit	41K
 3SE5000-0AR01	**Spring rods** (for switches with snap-action contacts only)							
	Plunger made of plastic, spring of high-grade steel:	7						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR01**		1	1 unit	41K
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	**3SE5000-0AR03**		1	1 unit	41K
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	**3SE5000-0AR04**		1	1 unit	41K
	Plunger and spring made of high-grade steel:	7						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR02**		1	1 unit	41K
	Twist actuators							
 3SE5000-0AJ00	**Twist actuators**, for 40 mm, EN 50041							
	• For twist levers and rod levers, Switching right and/or left, adjustable		⊕ 5	**3SE5000-0AJ00**		1	1 unit	41K
	Levers							
	Twist levers, offset, type A, acc. to EN 50041							
 3SE5000-0AA01	Metal lever 27 mm, plastic roller	19	⊕ 2	**3SE5000-0AA01**		1	1 unit	41K
	Metal lever 27 mm, high-grade steel roller	19	⊕ 2	**3SE5000-0AA02**		1	1 unit	41K
	Metal lever 27 mm, high-grade steel roller with ball bearing	19	⊕ 5	**3SE5000-0AA03**		1	1 unit	41K
	Metal lever 27 mm, 2 plastic rollers	19	⊕ 5	**3SE5000-0AA04**		1	1 unit	41K
	Metal lever 27 mm, plastic roller	30	⊕ 5	**3SE5000-0AA05**		1	1 unit	41K
	Metal lever 27 mm, rubber roller	50	⊕ 5	**3SE5000-0AA08**		1	1 unit	41K
 3SE5000-0AA60 3SE5000-0AA50	High-grade steel lever 27 mm, plastic roller	19	⊕ 5	**3SE5000-0AA11**		1	1 unit	41K
	High-grade steel lever 27 mm, high-grade steel roller	19	⊕ 5	**3SE5000-0AA12**		1	1 unit	41K
	Metal lever 35 mm, plastic roller	19	⊕ 5	**3SE5000-0AA15**		1	1 unit	41K
	High-grade steel lever 35 mm, plastic roller	19	⊕ 5	**3SE5000-0AA16**		1	1 unit	41K
	Twist levers 30 mm, straight							
	Metal lever, plastic roller	19	⊕ 5	**3SE5000-0AA24**		1	1 unit	41K
	Metal lever, plastic roller	30	⊕ 5	**3SE5000-0AA26**		1	1 unit	41K
	Twist levers, adjustable length, with grid hole							
	Metal lever, plastic roller	19	⊕ 5	**3SE5000-0AA60**		1	1 unit	41K
	Metal lever, high-grade steel roller	19	⊕ 5	**3SE5000-0AA61**		1	1 unit	41K
	Metal lever, rubber roller	50	⊕ 5	**3SE5000-0AA68**		1	1 unit	41K
	High-grade steel lever, plastic roller	19	⊕ 5	**3SE5000-0AA62**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	⊕ 5	**3SE5000-0AA63**		1	1 unit	41K
 3SE5000-0AA80	**Twist levers, adjustable length**							
	Metal lever, plastic roller	19	2	**3SE5000-0AA50**		1	1 unit	41K
	Metal lever, high-grade steel roller	19	5	**3SE5000-0AA51**		1	1 unit	41K
	Metal lever, plastic roller	30	5	**3SE5000-0AA55**		1	1 unit	41K
	Metal lever, rubber roller	50	5	**3SE5000-0AA58**		1	1 unit	41K
	High-grade steel lever, plastic roller	19	5	**3SE5000-0AA52**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	5	**3SE5000-0AA53**		1	1 unit	41K
	Rod actuators, type D, acc. to EN 50041							
	Aluminum rod, length 200 mm	6	5	**3SE5000-0AA80**		1	1 unit	41K
	Spring rod, length 200 mm	6	5	**3SE5000-0AA81**		1	1 unit	41K
	Plastic rod, length 200 mm	6	5	**3SE5000-0AA82**		1	1 unit	41K

⊕ Positively driven actuator, necessary in safety circuits.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Enclosure width 50 mm

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 2 × (M20 × 1.5)

Version	Contacts	LEDs		SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Complete units[1] • Enclosure width 50 mm									
 3SE5242-0BC05									
Rounded plungers									
With teflon plunger									
Slow-action contacts	1 NO + 1 NC	--	⊖	2	**3SE5242-0BC05**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5242-0CC05**		1	1 unit	41K
Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖	▶	**3SE5242-0HC05**		1	1 unit	41K
Snap-action contacts • Short stroke, integrated[2]	1 NO + 1 NC	--	⊖	5	**3SE5242-0FC05**		1	1 unit	41K
Snap-action contacts • 2 × 2 mm contact gap	1 NO + 1 NC	--	⊖	5	**3SE5242-0GC05**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5242-0KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5242-0LC05**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖	5	**3SE5242-0MC05**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖	2	**3SE5242-0PC05**		1	1 unit	41K
 3SE5242-0BC05-1CA0									
With increased corrosion protection									
Slow-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5242-0BC05-1CA0**		1	1 unit	41K
Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖	5	**3SE5242-0HC05-1CA0**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5242-0KC05-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5242-0LC05-1CA0**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖	5	**3SE5242-0MC05-1CA0**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖	5	**3SE5242-0PC05-1CA0**		1	1 unit	41K
 3SE5242-1KC05									
With 2 LEDs, yellow/green									
Slow-action contacts	1 NO + 2 NC	24 V DC	⊖	5	**3SE5242-1KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	24 V DC	⊖	5	**3SE5242-1LC05**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	230 V AC	⊖	5	**3SE5242-3KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	230 V AC	⊖	5	**3SE5242-3LC05**		1	1 unit	41K
 3SE5242-0BD03									
Roller plunger									
With plastic roller 10 mm									
Slow-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5242-0BD03**		1	1 unit	41K
Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖	5	**3SE5242-0HD03**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5242-0LD03**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.

2) Subsequent replacement of contact blocks is not possible.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 2 × (M20 × 1.5)

Version	Contacts	LEDs	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] • Enclosure width 50 mm								
Roller levers								
With metal lever and plastic roller 13 mm								
Slow-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5242-0BE10**		1	1 unit	41K
Snap-action contacts, integrated[2]	1 NO + 1 NC	--	➔ 2	**3SE5242-0HE10**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5242-0LE10**		1	1 unit	41K
With M12 connector socket, 4-pole right (250 V, 4 A)								
Snap-action contacts	2 NC	--	➔ 5	**3SE5244-0LE10-1AE0**		1	1 unit	41K
Twist levers								
With metal lever 21 mm and plastic roller 19 mm								
Slow-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5242-0BK21**		1	1 unit	41K
Snap-action contacts, integrated[2]	1 NO + 1 NC	--	➔ 5	**3SE5242-0HK21**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5242-0LK21**		1	1 unit	41K
Twist levers, adjustable length								
With metal lever and plastic roller 19 mm								
Snap-action contacts, integrated[2]	1 NO + 1 NC	--	5	**3SE5242-0HK50**		1	1 unit	41K


3SE5242-0BE10


3SE5242-0BK21


3SE5242-0HK50

➔ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.

2) Subsequent replacement of contact blocks is not possible.

Note:

If the device you require is not available as a complete unit, see Modular System, page 12/28.

Enclosure width 50 mm

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 2 × (M20 × 1.5)

Version	Contacts	LEDs	SD d	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches • Enclosure width 50 mm (with rounded plunger[1])								
Teflon plungers								
Slow-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5242-0BC05**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5242-0CC05**		1	1 unit	41K
Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖ ▶	**3SE5242-0HC05**		1	1 unit	41K
Snap-action contacts • Short stroke, integrated[2]	1 NO + 1 NC	--	⊖ 5	**3SE5242-0FC05**		1	1 unit	41K
Snap-action contacts • 2 × 2 mm contact gap	1 NO + 1 NC	--	⊖ 5	**3SE5242-0GC05**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5242-0KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5242-0LC05**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖ 5	**3SE5242-0MC05**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖ 2	**3SE5242-0PC05**		1	1 unit	41K
Increased corrosion protection[3]								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5242-0BC05-1CA0**		1	1 unit	41K
Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖ 5	**3SE5242-0HC05-1CA0**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5242-0KC05-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5242-0LC05-1CA0**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖ 5	**3SE5242-0MC05-1CA0**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖ 5	**3SE5242-0PC05-1CA0**		1	1 unit	41K
2 LEDs yellow/green								
Slow-action contacts	1 NO + 2 NC	24 V DC	⊖ 5	**3SE5242-1KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	24 V DC	⊖ 5	**3SE5242-1LC05**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	230 V AC	⊖ 5	**3SE5242-3KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	230 V AC	⊖ 5	**3SE5242-3LC05**		1	1 unit	41K


3SE5242-0BC05


3SE5242-0BC05-1CA0


3SE5242-1KC05

⊖ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) For enclosures with widths of 50 mm, the basic switch is a complete unit with rounded plungers.

2) Subsequent replacement of contact blocks is not possible.

3) Use corresponding high-grade steel lever.

Note:
For the selection aid, see page 12/15.

Version	Diameter mm	SD d	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms							
Roller plungers, type C, acc. to EN 50047							
Plastic rollers	10	⊖ 2	**3SE5000-0AD03**		1	1 unit	41K
High-grade steel rollers	10	⊖ 5	**3SE5000-0AD04**		1	1 unit	41K
Roller plungers with central fixing							
Plastic rollers	10	⊖ 2	**3SE5000-0AD10**		1	1 unit	41K
High-grade steel rollers	10	⊖ 5	**3SE5000-0AD11**		1	1 unit	41K


3SE5000-0AD03


3SE5000-0AD10

⊖ Positively driven actuator, necessary in safety circuits.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
		mm	d	Article No. / Price per PU			
	Operating mechanisms						
 3SE5000-0AE10	**Roller levers, type E, acc. to EN 50047**						
	Metal lever, plastic roller	13	➔ 2	**3SE5000-0AE10**	1	1 unit	41K
	Metal lever, high-grade steel roller	13	➔ 5	**3SE5000-0AE11**	1	1 unit	41K
	High-grade steel lever, plastic roller	13	➔ 5	**3SE5000-0AE12**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	13	➔ 5	**3SE5000-0AE13**	1	1 unit	41K
 3SE5000-0AF10	**Angular roller levers**						
	Metal lever, plastic roller	13	➔ 2	**3SE5000-0AF10**	1	1 unit	41K
	Metal lever, high-grade steel roller	13	➔ 5	**3SE5000-0AF11**	1	1 unit	41K
	High-grade steel lever, plastic roller	13	➔ 2	**3SE5000-0AF12**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	13	➔ 5	**3SE5000-0AF13**	1	1 unit	41K
 3SE5000-0AR01	**Spring rod** (Only for switches with snap-action contacts)						
	Plunger made of plastic, spring of high-grade steel:	7					
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR01**	1	1 unit	41K
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	**3SE5000-0AR03**	1	1 unit	41K
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	**3SE5000-0AR04**	1	1 unit	41K
	Plunger and spring made of high-grade steel:	7					
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR02**	1	1 unit	41K
	Twist actuators						
 3SE5000-0AK00	**Twist actuators**, for 31/50 mm, EN 50047						
	Switching right and/or left, adjustable		➔ 2	**3SE5000-0AK00**	1	1 unit	41K
	Levers						
	Twist levers 21 mm, straight, type A acc. to EN 50047						
 3SE5000-0AA21	Metal lever, plastic roller	19	➔ 2	**3SE5000-0AA21**	1	1 unit	41K
	Metal lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA22**	1	1 unit	41K
	Metal lever, high-grade steel roller with ball bearing	19	➔ 5	**3SE5000-0AA23**	1	1 unit	41K
	Metal lever, plastic roller	30	➔ 5	**3SE5000-0AA25**	1	1 unit	41K
 3SE5000-0AA60 3SE5000-0AA24	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA31**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA32**	1	1 unit	41K
	Twist levers 30 mm, straight						
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA24**	1	1 unit	41K
	Metal lever, plastic roller	30	➔ 5	**3SE5000-0AA26**	1	1 unit	41K
	Twist levers, adjustable length, with grid hole						
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA60**	1	1 unit	41K
	Metal lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA61**	1	1 unit	41K
	Metal lever, plastic roller	50	➔ 5	**3SE5000-0AA67**	1	1 unit	41K
	Metal lever, rubber roller	50	➔ 5	**3SE5000-0AA68**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA62**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA63**	1	1 unit	41K
 3SE5000-0AA50	**Twist levers, adjustable length**						
	Metal lever, plastic roller	19	2	**3SE5000-0AA50**	1	1 unit	41K
	Metal lever, high-grade steel roller	19	5	**3SE5000-0AA51**	1	1 unit	41K
	Metal lever, plastic roller	30	5	**3SE5000-0AA55**	1	1 unit	41K
	Metal lever, plastic roller	50	5	**3SE5000-0AA57**	1	1 unit	41K
	Metal lever, rubber roller	50	5	**3SE5000-0AA58**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	5	**3SE5000-0AA52**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	5	**3SE5000-0AA53**	1	1 unit	41K
	Rod actuator						
	Aluminum rod, length 200 mm	6	5	**3SE5000-0AA80**	1	1 unit	41K
	Spring rod, length 200 mm	6	5	**3SE5000-0AA81**	1	1 unit	41K
	Plastic rod, length 200 mm	6	5	**3SE5000-0AA82**	1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

	Version	Contacts	LEDs	SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Complete units[1] • Enclosure width 31 mm									
	Rounded plungers, type B, acc. to EN 50047								
	With plunger								
 3SE5212-0BC05	Slow-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5212-0BC05**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5212-0CC05**		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0KC05**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	--	⊖ 2	**3SE5212-0LC05**		1	1 unit	41K
	Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖ 2	**3SE5212-0MC05**		1	1 unit	41K
	Slow-action contacts	2 NO + 1 NC	--	⊖ 5	**3SE5212-0PC05**		1	1 unit	41K
	With increased corrosion protection								
 3SE5212-0BC05-1CA0	Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0BC05-1CA0**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0CC05-1CA0**		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0KC05-1CA0**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0LC05-1CA0**		1	1 unit	41K
	Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖ 5	**3SE5212-0MC05-1CA0**		1	1 unit	41K
	Slow-action contacts	2 NO + 1 NC	--	⊖ 5	**3SE5212-0PC05-1CA0**		1	1 unit	41K
	With M12 connector socket, 5-pole (125 V, 4 A)								
	Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5214-0BC05-1AC5**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5214-0CC05-1AC5**		1	1 unit	41K
	Slow-action contacts	2 NC	--	⊖ 5	**3SE5214-0KC05-1AE1**		1	1 unit	41K
	Snap-action contacts	2 NC	--	⊖ 5	**3SE5214-0LC05-1AE1**		1	1 unit	41K
	With 2 LEDs, yellow/green								
 3SE5212-1KC05	Slow-action contacts	1 NO + 2 NC	24 V DC	⊖ 5	**3SE5212-1KC05**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	24 V DC	⊖ 2	**3SE5212-1LC05**		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	230 V AC	⊖ 5	**3SE5212-3KC05**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	230 V AC	⊖ 5	**3SE5212-3LC05**		1	1 unit	41K
	With M12 connector socket, 5-pole (125 V, 4 A), **and 2 LEDs**								
	Slow-action contacts	1 NO + 1 NC	24 V DC	⊖ 5	**3SE5214-1BC05-1AF3**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	24 V DC	⊖ 5	**3SE5214-1CC05-1AF3**		1	1 unit	41K
	Plain plungers								
	With high-grade steel plunger								
 3SE5212-0BB01	Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0BB01**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0CB01**		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0KB01**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0LB01**		1	1 unit	41K
	Roller plungers, type C, acc. to EN 50047								
	With plastic roller 10 mm								
 3SE5212-0BD03	Slow-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5212-0BD03**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0CD03**		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0KD03**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0LD03**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No. / Price per PU			
Complete units[1] • Enclosure width 31 mm							
Roller plungers with central fixing							
With plastic roller 10 mm							
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0KD10**	1	1 unit	41K
Roller levers, type E acc. to EN 50047							
With metal lever and plastic roller 13 mm							
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0BE10**	1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0CE10**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0KE10**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0LE10**	1	1 unit	41K
Angular roller lever							
With metal lever and plastic roller 13 mm							
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0BF10**	1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0CF10**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0KF10**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0LF10**	1	1 unit	41K
Twist levers, type A, acc. to EN 50047							
With metal lever 21 mm and plastic roller 19 mm							
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0BK21**	1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0CK21**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0KK21**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0LK21**	1	1 unit	41K
Twist levers, adjustable length							
With metal lever with grid hole and plastic roller 19mm							
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0CK60**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0KK60**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0LK60**	1	1 unit	41K
With metal lever and plastic roller 19 mm							
Slow-action contacts	1 NO + 1 NC	--	5	**3SE5212-0BK50**	1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	5	**3SE5212-0CK50**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	5	**3SE5212-0LK50**	1	1 unit	41K


3SE5212-0KD10


3SE5212-0BE10


3SE5212-0BF10


3SE5212-0BK21


3SE5212-0CK60

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Popular versions.

Note:

If the device you require is not available as a complete unit, see Modular System, page 12/32.

Enclosure width 31 mm acc. to EN 50047

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD d	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches • Enclosure width 31 mm (with rounded plunger[1])								
Plunger								
Slow-action contacts	1 NO + 1 NC	--	➔ 2	**3SE5212-0BC05**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	➔ 2	**3SE5212-0CC05**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5212-0KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 2	**3SE5212-0LC05**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	➔ 2	**3SE5212-0MC05**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	➔ 5	**3SE5212-0PC05**		1	1 unit	41K
Increased corrosion protection[2]								
Slow-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5212-0BC05-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5212-0CC05-1CA0**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5212-0KC05-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5212-0LC05-1CA0**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	➔ 5	**3SE5212-0MC05-1CA0**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	➔ 5	**3SE5212-0PC05-1CA0**		1	1 unit	41K
M12 connector socket, 5-pole (125 V, 4 A)								
Slow-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5214-0BC05-1AC5**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5214-0CC05-1AC5**		1	1 unit	41K
Slow-action contacts	2 NC	--	➔ 5	**3SE5214-0KC05-1AE1**		1	1 unit	41K
Snap-action contacts	2 NC	--	➔ 5	**3SE5214-0LC05-1AE1**		1	1 unit	41K
2 LEDs yellow/green								
Slow-action contacts	1 NO + 2 NC	24 V DC	➔ 5	**3SE5212-1KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	24 V DC	➔ 2	**3SE5212-1LC05**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	230 V AC	➔ 5	**3SE5212-3KC05**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	230 V AC	➔ 5	**3SE5212-3LC05**		1	1 unit	41K
M12 connector socket, 5-pole (125 V, 4 A), and 2 LEDs								
Slow-action contacts	1 NO + 1 NC	24 V DC	➔ 5	**3SE5214-1BC05-1AF3**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	24 V DC	➔ 5	**3SE5214-1CC05-1AF3**		1	1 unit	41K


3SE5212-0BC05


3SE5212-0BC05-1CA0


3SE5214-0BC05-1AC5


3SE5212-1KC05


3SE5214-1BC05-1AF3

➔ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

2) Use corresponding high-grade steel lever.

Note:

For the selection aid, see page 12/15.

Version	Diameter mm	SD d	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms							
Plain plungers							
High-grade steel plunger	10	➔ 2	**3SE5000-0AB01**		1	1 unit	41K
Roller plungers, type C, acc. to EN 50047							
Plastic rollers	10	➔ 2	**3SE5000-0AD03**		1	1 unit	41K
High-grade steel rollers	10	➔ 5	**3SE5000-0AD04**		1	1 unit	41K


3SE5000-0AB01


3SE5000-0AD03

➔ Positively driven actuator, necessary in safety circuits.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Enclosure width 31 mm acc. to EN 50047

	Version	Diameter	SD	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm	d					
Operating mechanisms								
 3SE5000-0AD10	**Roller plungers with central fixing**							
	Plastic rollers	10	➔ 2	**3SE5000-0AD10**		1	1 unit	41K
	High-grade steel rollers	10	➔ 5	**3SE5000-0AD11**		1	1 unit	41K
 3SE5000-0AE10	**Roller levers, type E, acc. to EN 50047**							
	Metal lever, plastic roller	13	➔ 2	**3SE5000-0AE10**		1	1 unit	41K
	Metal lever, high-grade steel roller	13	➔ 5	**3SE5000-0AE11**		1	1 unit	41K
	High-grade steel lever, plastic roller	13	➔ 5	**3SE5000-0AE12**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	13	➔ 5	**3SE5000-0AE13**		1	1 unit	41K
 3SE5000-0AF10	**Angular roller levers**							
	Metal lever, plastic roller	13	➔ 2	**3SE5000-0AF10**		1	1 unit	41K
	Metal lever, high-grade steel roller	13	➔ 5	**3SE5000-0AF11**		1	1 unit	41K
	High-grade steel lever, plastic roller	13	➔ 2	**3SE5000-0AF12**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	13	➔ 5	**3SE5000-0AF13**		1	1 unit	41K
 3SE5000-0AR01	**Spring rods** (for switches with snap-action contacts only)							
	Plunger made of plastic, spring of high-grade steel:	7						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR01**		1	1 unit	41K
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	**3SE5000-0AR03**		1	1 unit	41K
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	**3SE5000-0AR04**		1	1 unit	41K
	Plunger and spring made of high-grade steel:	7						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR02**		1	1 unit	41K
Twist actuators								
 3SE5000-0AK00	**Twist actuators**, for 31/50 mm, EN 50047							
	Switching right and/or left, adjustable		➔ 2	**3SE5000-0AK00**		1	1 unit	41K
	Levers							
	Twist levers, straight, type A, acc. to EN 50047							
 3SE5000-0AA01	Metal lever 21 mm, plastic roller	19	➔ 2	**3SE5000-0AA21**		1	1 unit	41K
	Metal lever 21 mm, high-grade steel roller	19	➔ 5	**3SE5000-0AA22**		1	1 unit	41K
	Metal lever 21 mm, high-grade steel roller with ball bearing	19	➔ 5	**3SE5000-0AA23**		1	1 unit	41K
	Metal lever 21 mm, plastic roller	30	➔ 5	**3SE5000-0AA25**		1	1 unit	41K
	High-grade steel lever 21 mm, plastic roller	19	➔ 5	**3SE5000-0AA31**		1	1 unit	41K
	High-grade steel lever 21 mm, high-grade steel roller	19	➔ 5	**3SE5000-0AA32**		1	1 unit	41K
	Twist levers 30 mm, straight							
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA24**		1	1 unit	41K
	Metal lever, plastic roller	30	➔ 5	**3SE5000-0AA26**		1	1 unit	41K
 3SE5000-0AA60 3SE5000-0AA50	**Twist levers, adjustable length, with grid hole**							
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA60**		1	1 unit	41K
	Metal lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA61**		1	1 unit	41K
	Metal lever, plastic roller	50	➔ 5	**3SE5000-0AA67**		1	1 unit	41K
	Metal lever, rubber roller	50	➔ 5	**3SE5000-0AA68**		1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA62**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA63**		1	1 unit	41K
	Twist levers, adjustable length							
	Metal lever, plastic roller	19	2	**3SE5000-0AA50**		1	1 unit	41K
	Metal lever, high-grade steel roller	19	5	**3SE5000-0AA51**		1	1 unit	41K
	Metal lever, plastic roller	30	5	**3SE5000-0AA55**		1	1 unit	41K
	Metal lever, plastic roller	50	5	**3SE5000-0AA57**		1	1 unit	41K
	Metal lever, rubber roller	50	5	**3SE5000-0AA58**		1	1 unit	41K
	High-grade steel lever, plastic roller	19	5	**3SE5000-0AA52**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	5	**3SE5000-0AA53**		1	1 unit	41K
 3SE5000-0AA80	**Rod actuators, type D, acc. to EN 50041**							
	Aluminum rod, length 200 mm	6	5	**3SE5000-0AA80**		1	1 unit	41K
	Spring rod, length 200 mm	6	5	**3SE5000-0AA81**		1	1 unit	41K
	Plastic rod, length 200 mm	6	5	**3SE5000-0AA82**		1	1 unit	41K
	Plastic rod, length 330 mm	6	5	**3SE5000-0AA83**		1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Enclosure width 40 mm acc. to EN 50041

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

	Version		Contacts		LEDs	SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
						d					
Complete units[1] • Enclosure width 40 mm											
 3SE5112-0BB01	***Plain plungers***										
	With high-grade steel plunger										
	Slow-action contacts		1 NO + 1 NC	--		⊖ 2	**3SE5112-0BB01**		1	1 unit	41K
	Snap-action contacts		1 NO + 1 NC	--		⊖ 2	**3SE5112-0CB01**		1	1 unit	41K
	Slow-action contacts		1 NO + 2 NC	--		⊖ 5	**3SE5112-0KB01**		1	1 unit	41K
	Snap-action contacts		1 NO + 2 NC	--		⊖ 5	**3SE5112-0LB01**		1	1 unit	41K
 3SE5112-0BC02	***Rounded plungers, type B, acc. to EN 50041***										
	With high-grade steel plungers, with 3 mm overtravel										
	Slow-action contacts		1 NO + 1 NC	--		⊖ 5	**3SE5112-0BC02**		1	1 unit	41K
	Snap-action contacts		1 NO + 1 NC	--		⊖ ▶	**3SE5112-0CC02**		1	1 unit	41K
	Snap-action contacts[2]	NEW	1 NO + 1 NC	--		⊖ 5	**3SE5112-0CC02-1AA7**		1	1 unit	41K
	Slow-action contacts		1 NO + 2 NC	--		⊖ 5	**3SE5112-0KC02**		1	1 unit	41K
	Snap-action contacts		1 NO + 2 NC	--		⊖ 5	**3SE5112-0LC02**		1	1 unit	41K
	Snap-action contacts With M12 connector socket, 4-pole		1 NO + 1 NC	--		⊖ 5	**3SE5114-0CC02-1AC4**		1	1 unit	41K
 3SE5112-0BD02	***Roller plungers, type C, acc. to EN 50041***										
	With high-grade steel roller 13 mm, with 3 mm overtravel										
	Slow-action contacts		1 NO + 1 NC	--		⊖ 5	**3SE5112-0BD02**		1	1 unit	41K
	Snap-action contacts		1 NO + 1 NC	--		⊖ ▶	**3SE5112-0CD02**		1	1 unit	41K
	Snap-action contacts[2]	NEW	1 NO + 1 NC	--		⊖ 5	**3SE5112-0CD02-1AA7**		1	1 unit	41K
	Slow-action contacts		1 NO + 2 NC	--		⊖ 5	**3SE5112-0KD02**		1	1 unit	41K
	Snap-action contacts		1 NO + 2 NC	--		⊖ 5	**3SE5112-0LD02**		1	1 unit	41K
	Snap-action contacts[2]	NEW	1 NO + 2 NC	--		⊖ 5	**3SE5112-0LD02-1AA7**		1	1 unit	41K
	Slow-action contacts[2]	NEW	2 NO + 1 NC	--		⊖ 5	**3SE5112-0PD02-1AA7**		1	1 unit	41K
	With M12 connector socket, 5-pole (125 V, 4 A)										
	Snap-action contacts with 2 LEDs		1 NO + 1 NC	24 V DC		⊖ 5	**3SE5114-1CD02-1AF3**		1	1 unit	41K
	Snap-action contacts without LED	NEW	1 NO + 1 NC	24 V DC		⊖ 5	**3SE5114-0CD02-1AC5**		1	1 unit	41K
	Snap-action contacts without LED[2]	NEW	1 NO + 1 NC	24 V DC		⊖ 5	**3SE5114-0CD02-1AL0**		1	1 unit	41K
 3SE5112-0BE01	***Roller levers***										
	With metal lever and plastic roller 22 mm										
	Slow-action contacts		1 NO + 1 NC	--		⊖ 5	**3SE5112-0BE01**		1	1 unit	41K
	Snap-action contacts		1 NO + 1 NC	--		⊖ ▶	**3SE5112-0CE01**		1	1 unit	41K
	Slow-action contacts		1 NO + 2 NC	--		⊖ 5	**3SE5112-0KE01**		1	1 unit	41K
	Snap-action contacts		1 NO + 2 NC	--		⊖ 5	**3SE5112-0LE01**		1	1 unit	41K
 3SE5112-0BF01	***Angular roller lever***										
	With metal lever and plastic roller 22 mm										
	Slow-action contacts		1 NO + 1 NC	--		⊖ 5	**3SE5112-0BF01**		1	1 unit	41K
	Snap-action contacts		1 NO + 1 NC	--		⊖ 2	**3SE5112-0CF01**		1	1 unit	41K
	Snap-action contacts		1 NO + 2 NC	--		⊖ 5	**3SE5112-0LF01**		1	1 unit	41K
 3SE5112-0CR01	***Spring rod***										
	Length 142.5 mm, with plastic plunger 50 mm										
	Snap-action contacts		1 NO + 1 NC	--		⊖ ▶	**3SE5112-0CR01**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Popular versions.

[2] Increased operation or restoring force 30 N; only available as complete unit, no modular design.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Complete units[1] • Enclosure width 40 mm								
Twist levers, type A, acc. to EN 50041								
With metal lever 27 mm and plastic roller 19 mm								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5112-0BH01**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ ►	**3SE5112-0CH01**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5112-0KH01**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5112-0LH01**		1	1 unit	41K
With M12 connector socket, 5-pole (125 V, 4 A)								
Snap-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5114-0CH01-1AC5**		1	1 unit	41K
With M12 connector socket, 5-pole (125 V, 4 A); LEDs								
Snap-action contacts	1 NO + 1 NC	24 V DC	⊖ 5	**3SE5114-1CH01-1AF3**		1	1 unit	41K
With metal lever 27 mm and high-grade steel roller 19 mm								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5112-0BH02**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5112-0CH02**		1	1 unit	41K
With M12 connector socket, 5-pole (125 V, 4 A); 2 LEDs								
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5114-1CH02-1AF3**		1	1 unit	41K
With metal lever 30 mm and plastic roller 19 mm								
Snap-action contacts	1 NO + 1 NC	--	⊖ ►	**3SE5112-0CH24**		1	1 unit	41K
Twist levers, adjustable length								
Metal lever, grid hole and plastic roller 19 mm								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5112-0BH60**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ ►	**3SE5112-0CH60**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5112-0LH60**		1	1 unit	41K
With M12 connector socket, 5-pole (125 V, 4 A)								
Snap-action contacts	1 NO + 2 NC	-- NEW	5	**3SE5114-0CH60-1AC5**		1	1 unit	41K
With metal lever and plastic roller 19 mm								
Slow-action contacts	1 NO + 1 NC	--	5	**3SE5112-0BH50**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	►	**3SE5112-0CH50**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	5	**3SE5112-0LH50**		1	1 unit	41K
With M12 connector socket, 5-pole (125 V, 4 A); 2 LEDs								
Snap-action contacts	1 NO + 1 NC	24 V DC NEW	5	**3SE5114-1CH60-1AF3**		1	1 unit	41K
With M12 connector socket, 8-pole (30 V, 2 A); 2 LEDs								
Snap-action contacts	1 NO + 2 NC	24 V DC	5	**3SE5114-1LH50-1AD4**		1	1 unit	41K
With metal lever and high-grade steel roller 19 mm								
Snap-action contacts	1 NO + 1 NC	--	5	**3SE5112-0CH51**		1	1 unit	41K
Fork levers, latching								
With metal lever and 2 plastic rollers 19 mm								
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5112-0CT11**		1	1 unit	41K
Rod actuators, type D, acc. to EN 50041								
With aluminum rod, length 200 mm								
Snap-action contacts	1 NO + 1 NC	--	►	**3SE5112-0CH80**		1	1 unit	41K
With plastic rod, length 200 mm								
Snap-action contacts	1 NO + 1 NC	--	5	**3SE5112-0CH82**		1	1 unit	41K


3SE5112-0BH01


3SE5112-0BH60


3SE5112-0BH50


3SE5112-0CT11


3SE5112-0CH80

⊖ Positive opening according to IEC 60947-5-1, Appendix K.
[1] Popular versions.

Note:

If the device you require is not available as a complete unit, see Modular System, page 12/36.

Enclosure width 40 mm acc. to EN 50041

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD d	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches • Enclosure width 40 mm								
Connecting thread M20 × 1.5								
Slow-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5112-0BA00**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	➔ 2	**3SE5112-0CA00**		1	1 unit	41K
• Gold-plated contacts			➔ 5	**3SE5112-0CA00-1AC1**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	➔ 2	**3SE5112-0KA00**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 2	**3SE5112-0LA00**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	➔ 2	**3SE5112-0MA00**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	➔ 2	**3SE5112-0PA00**		1	1 unit	41K
Increased corrosion protection[1]								
Slow-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5112-0BA00-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5112-0CA00-1CA0**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5112-0KA00-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5112-0LA00-1CA0**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	➔ 5	**3SE5112-0MA00-1CA0**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	➔ 5	**3SE5112-0PA00-1CA0**		1	1 unit	41K
M12 connector socket, 5-pole (125 V, 4 A)								
Slow-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5114-0BA00-1AC5**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5114-0CA00-1AC5**		1	1 unit	41K
Slow-action contacts	2 NC	--	➔ 5	**3SE5114-0KA00-1AE1**		1	1 unit	41K
Snap-action contacts	2 NC	--	➔ 5	**3SE5114-0LA00-1AE1**		1	1 unit	41K
Connector socket, 6-pole + PE (250 V, 10 A)								
Slow-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5115-0KA00-1AD1**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5115-0LA00-1AD1**		1	1 unit	41K
Connector socket, 6-pole + PE (250 V, 10 A), **and quick-release device**								
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5115-0CA00-1AD0**		1	1 unit	41K
2 LEDs, yellow/green								
Slow-action contacts	1 NO + 2 NC	24 V DC	➔ 5	**3SE5112-1KA00**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	24 V DC	➔ 5	**3SE5112-1LA00**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	230 V AC	➔ 5	**3SE5112-3KA00**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	230 V AC	➔ 5	**3SE5112-3LA00**		1	1 unit	41K
M12 connector socket, 5-pole (125 V, 4 A), **and 2 LEDs**								
Slow-action contacts	1 NO + 1 NC	24 V DC	➔ 5	**3SE5114-1BA00-1AF3**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	24 V DC	➔ 5	**3SE5114-1CA00-1AF3**		1	1 unit	41K
M12 connector socket, 8-pole (30 V, 2 A), **and 2 LEDs**								
Snap-action contacts	1 NO + 2 NC	24 V DC	➔ 5	**3SE5114-1LA00-1AD4**		1	1 unit	41K
Connector socket, 6-pole + PE (10 A), **and 2 LEDs**								
Slow-action contacts	1 NO + 1 NC	24 V DC	➔ 5	**3SE5115-1BA00-1AF2**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	24 V DC	➔ 5	**3SE5115-1CA00-1AF2**		1	1 unit	41K
Snap-action contacts	2 NC	24 V DC	➔ 5	**3SE5115-1LA00-1AD2**		1	1 unit	41K


3SE5112-0BA00


3SE5112-0BA00-1CA0


3SE5114-0BA00-1AC5


3SE5115-0KA00-1AD1


3SE5112-1KA00


3SE5114-1BA00-1AF3


3SE5115-1BA00-1AF2

➔ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) Use corresponding high-grade steel lever.

Note:

For the selection aid, see page 12/15.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	Diameter mm	SD d	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms								
 3SE5000-0AC02 3SE5000-0AD02	**Plain plungers**							
	High-grade steel plunger	10	➔ 2	**3SE5000-0AB01**		1	1 unit	41K
	Rounded plungers, type B, acc. to EN 50041							
	High-grade steel plungers, with 3 mm overtravel	10	➔ 5	**3SE5000-0AC02**		1	1 unit	41K
	Roller plungers, type C, acc. to EN 50041							
	High-grade steel roller, with 3 mm overtravel	13	➔ 5	**3SE5000-0AD02**		1	1 unit	41K
 3SE5000-0AE01	**Roller levers**							
	Metal lever, plastic roller	22	➔ 2	**3SE5000-0AE01**		1	1 unit	41K
	Metal lever, high-grade steel roller	22	➔ 5	**3SE5000-0AE02**		1	1 unit	41K
	High-grade steel lever, plastic roller	22	➔ 5	**3SE5000-0AE03**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	22	➔ 5	**3SE5000-0AE04**		1	1 unit	41K
 3SE5000-0AF01	**Angular roller levers**							
	Metal lever, plastic roller	22	➔ 2	**3SE5000-0AF01**		1	1 unit	41K
	Metal lever, high-grade steel roller	22	➔ 5	**3SE5000-0AF02**		1	1 unit	41K
	High-grade steel lever, plastic roller	22	➔ 5	**3SE5000-0AF03**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	22	➔ 5	**3SE5000-0AF04**		1	1 unit	41K
 3SE5000-0AR01	**Spring rods** (for switches with snap-action contacts only)							
	Plunger made of plastic, spring of high-grade steel:	7						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR01**		1	1 unit	41K
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	**3SE5000-0AR03**		1	1 unit	41K
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	**3SE5000-0AR04**		1	1 unit	41K
	Plunger and spring made of high-grade steel:	7						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR02**		1	1 unit	41K
Twist actuators								
 3SE5000-0AH00	**Twist actuators**, for 40/56/56 XL mm EN 50041							
	• for twist levers and rod levers, Switching right and/or left, adjustable		➔ 2	**3SE5000-0AH00**		1	1 unit	41K
	• For fork levers, latching		➔ 5	**3SE5000-0AT10**		1	1 unit	41K
	Levers							
	Twist levers, offset, type A, acc. to EN 50041							
 3SE5000-0AA01	Metal lever 27 mm, plastic roller	19	➔ 2	**3SE5000-0AA01**		1	1 unit	41K
	Metal lever 27 mm, high-grade steel roller	19	➔ 2	**3SE5000-0AA02**		1	1 unit	41K
	Metal lever 27 mm, high-grade steel roller with ball bearing	19	➔ 5	**3SE5000-0AA03**		1	1 unit	41K
	Metal lever 27 mm, 2 plastic rollers	19	➔ 5	**3SE5000-0AA04**		1	1 unit	41K
	Metal lever 27 mm, plastic roller	30	➔ 5	**3SE5000-0AA05**		1	1 unit	41K
	Metal lever 27 mm, rubber roller	50	➔ 5	**3SE5000-0AA08**		1	1 unit	41K
 3SE5000-0AA60 3SE5000-0AA50	High-grade steel lever 27 mm, plastic roller	19	➔ 5	**3SE5000-0AA11**		1	1 unit	41K
	High-grade steel lever 27 mm, high-grade steel roller	19	➔ 5	**3SE5000-0AA12**		1	1 unit	41K
	Metal lever 35 mm, plastic roller	19	➔ 5	**3SE5000-0AA15**		1	1 unit	41K
	High-grade steel lever 35 mm, plastic roller	19	➔ 5	**3SE5000-0AA16**		1	1 unit	41K
	Twist levers 30 mm, straight							
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA24**		1	1 unit	41K
	Metal lever, plastic roller	30	➔ 5	**3SE5000-0AA26**		1	1 unit	41K
	Twist levers, adjustable length, with grid hole							
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA60**		1	1 unit	41K
	Metal lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA61**		1	1 unit	41K
	Metal lever, rubber roller	50	➔ 5	**3SE5000-0AA68**		1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA62**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA63**		1	1 unit	41K
 3SE5000-0AT01	**Twist levers, adjustable length**							
	Metal lever, plastic roller	19	2	**3SE5000-0AA50**		1	1 unit	41K
	Metal lever, high-grade steel roller	19	5	**3SE5000-0AA51**		1	1 unit	41K
	Metal lever, plastic roller	30	5	**3SE5000-0AA55**		1	1 unit	41K
	Metal lever, rubber roller	50	5	**3SE5000-0AA58**		1	1 unit	41K
	High-grade steel lever, plastic roller	19	5	**3SE5000-0AA52**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	5	**3SE5000-0AA53**		1	1 unit	41K
	Fork levers (for switches with snap-action contacts only)							
	2 metal levers, 2 plastic rollers	19	➔ 5	**3SE5000-0AT01**		1	1 unit	41K
	2 metal levers, 2 high-grade steel rollers	19	➔ 5	**3SE5000-0AT02**		1	1 unit	41K
	2 high-grade steel levers, 2 plastic rollers	19	➔ 5	**3SE5000-0AT03**		1	1 unit	41K
 3SE5000-0AA80	**Rod actuators, type D, acc. to EN 50041**							
	Aluminum rod, length 200 mm	6	5	**3SE5000-0AA80**		1	1 unit	41K
	Spring rod, length 200 mm	6	5	**3SE5000-0AA81**		1	1 unit	41K
	Plastic rod, length 200 mm	6	5	**3SE5000-0AA82**		1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Enclosure width 56 mm

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	LEDs		SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Complete units[1] • Enclosure width 56 mm									
Plain plungers									
With high-grade steel plunger									
Slow-action contacts	1 NO + 1 NC	--		⊖ 5	**3SE5122-0BB01**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--		⊖ 5	**3SE5122-0CB01**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--		⊖ 5	**3SE5122-0KB01**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--		⊖ 5	**3SE5122-0LB01**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--		⊖ 5	**3SE5122-0PB01**		1	1 unit	41K
Rounded plungers									
With high-grade steel plungers, with 3 mm overtravel									
Slow-action contacts	1 NO + 1 NC	--		⊖ 5	**3SE5122-0BC02**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--		⊖ ▶	**3SE5122-0CC02**		1	1 unit	41K
Snap-action contacts[2]	1 NO + 1 NC	--	NEW	⊖ 5	**3SE5122-0CC02-1AA7**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--		⊖ 5	**3SE5122-0KC02**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--		⊖ 5	**3SE5122-0LC02**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--		⊖ 5	**3SE5122-0PC02**		1	1 unit	41K
Roller plunger									
With high-grade steel roller 13 mm, with 3 mm overtravel									
Slow-action contacts	1 NO + 1 NC	--		⊖ 5	**3SE5122-0BD02**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--		⊖ 2	**3SE5122-0CD02**		1	1 unit	41K
Snap-action contacts[2]	1 NO + 1 NC	--	NEW	⊖ 5	**3SE5122-0CD02-1AA7**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--		⊖ 5	**3SE5122-0KD02**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--		⊖ 5	**3SE5122-0LD02**		1	1 unit	41K
Roller levers									
With metal lever and plastic roller 22 mm									
Slow-action contacts	1 NO + 1 NC	--		⊖ 5	**3SE5122-0BE01**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--		⊖ 2	**3SE5122-0CE01**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--		⊖ 5	**3SE5122-0KE01**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--		⊖ 5	**3SE5122-0LE01**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--		⊖ 5	**3SE5122-0PE01**		1	1 unit	41K
With metal lever and high-grade steel roller 22 mm									
Snap-action contacts	1 NO + 1 NC	--		⊖ 5	**3SE5122-0CE02**		1	1 unit	41K
Angular roller lever									
With metal lever and plastic roller 22 mm									
Slow-action contacts	1 NO + 1 NC	--		⊖ 5	**3SE5122-0BF01**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--		⊖ 5	**3SE5122-0CF01**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--		⊖ 5	**3SE5122-0PF01**		1	1 unit	41K


3SE5122-0BB01


3SE5122-0BC02


3SE5122-0BD02


3SE5122-0BE01


3SE5122-0BF01

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.

2) Increased operation or restoring force 30 N; only available as complete unit, no modular design.

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	LEDs	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] • Enclosure width 56 mm								
Spring rod								
Length 142.5 mm, with plastic plunger 50 mm								
Snap-action contacts	1 NO + 1 NC	--	5	**3SE5122-0CR01**		1	1 unit	41K
Twist levers								
With metal lever 27 mm and plastic roller 19 mm								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5122-0BH01**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5122-0CH01**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5122-0KH01**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5122-0LH01**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖ 5	**3SE5122-0PH01**		1	1 unit	41K
With metal lever 27 mm and high-grade steel roller 19 mm								
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5122-0CH02**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5122-0LH02**		1	1 unit	41K
Twist levers, adjustable length								
With metal lever with grid hole and plastic roller 19mm								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5122-0BH60**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5122-0CH60**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5122-0LH60**		1	1 unit	41K
With metal lever and plastic roller 19 mm								
Slow-action contacts	1 NO + 1 NC	--	5	**3SE5122-0BH50**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	2	**3SE5122-0CH50**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	5	**3SE5122-0LH50**		1	1 unit	41K
Fork levers, latching								
With metal lever and 2 plastic rollers 19 mm								
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5122-0CT11**		1	1 unit	41K
Rod actuator								
With aluminum rod, length 200 mm								
Snap-action contacts	1 NO + 1 NC	--	5	**3SE5122-0CH80**		1	1 unit	41K
With plastic rod, length 200 mm								
Snap-action contacts	1 NO + 1 NC	--	5	**3SE5122-0CH82**		1	1 unit	41K


3SE5122-0CR01


3SE5122-0BH01


3SE5122-0BH60


3SE5122-0CT11


3SE5122-0CH80

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.

Note:

If the device you require is not available as a complete unit, see Modular System, page 12/40.

Enclosure width 56 mm

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

Basic switches • Enclosure width 56 mm

Version	Contacts	LEDs	SD d	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
With 3 × connection thread M20 × 1.5								
Slow-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5122-0BA00**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5122-0CA00**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5122-0KA00**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 2	**3SE5122-0LA00**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖ 2	**3SE5122-0MA00**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖ 2	**3SE5122-0PA00**		1	1 unit	41K
With increased corrosion protection[1]								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5122-0BA00-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5122-0CA00-1CA0**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5122-0KA00-1CA0**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5122-0LA00-1CA0**		1	1 unit	41K
Slow-action contacts with make-before-break	1 NO + 2 NC	--	⊖ 5	**3SE5122-0MA00-1CA0**		1	1 unit	41K
Slow-action contacts	2 NO + 1 NC	--	⊖ 5	**3SE5122-0PA00-1CA0**		1	1 unit	41K
With 2 LEDs, yellow/green								
Slow-action contacts	1 NO + 2 NC	24 V DC	⊖ 5	**3SE5122-1KA00**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	24 V DC	⊖ 5	**3SE5122-1LA00**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	230 V AC	⊖ 5	**3SE5122-3KA00**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	230 V AC	⊖ 5	**3SE5122-3LA00**		1	1 unit	41K


3SE5122-0BA00


3SE5122-0BA00-1CA0


3SE5122-1KA00

⊖ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) Use corresponding high-grade steel lever.

Note:

For the selection aid, see page 12/15.

Operating mechanisms

Version	Diameter mm	SD d	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Plain plungers							
High-grade steel plungers	10	⊖ 2	**3SE5000-0AB01**		1	1 unit	41K
Rounded plungers, type B, acc. to EN 50041							
High-grade steel plungers, with 3 mm overtravel	10	⊖ 5	**3SE5000-0AC02**		1	1 unit	41K
Roller plungers, type C, acc. to EN 50041							
High-grade steel roller, with 3 mm overtravel	13	⊖ 5	**3SE5000-0AD02**		1	1 unit	41K
Roller levers							
Metal lever, plastic roller	22	⊖ 2	**3SE5000-0AE01**		1	1 unit	41K
Metal lever, high-grade steel roller	22	⊖ 5	**3SE5000-0AE02**		1	1 unit	41K
High-grade steel lever, plastic roller	22	⊖ 5	**3SE5000-0AE03**		1	1 unit	41K
High-grade steel lever, high-grade steel roller	22	⊖ 5	**3SE5000-0AE04**		1	1 unit	41K
Angular roller levers							
Metal lever, plastic roller	22	⊖ 2	**3SE5000-0AF01**		1	1 unit	41K
Metal lever, high-grade steel roller	22	⊖ 5	**3SE5000-0AF02**		1	1 unit	41K
High-grade steel lever, plastic roller	22	⊖ 5	**3SE5000-0AF03**		1	1 unit	41K
High-grade steel lever, high-grade steel roller	22	⊖ 5	**3SE5000-0AF04**		1	1 unit	41K
Spring rods (for switches with snap-action contacts only)							
Plunger made of plastic, spring of high-grade steel:	7						
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR01**		1	1 unit	41K
• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	**3SE5000-0AR03**		1	1 unit	41K
• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	**3SE5000-0AR04**		1	1 unit	41K
Plunger and spring made of high-grade steel:	7						
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR02**		1	1 unit	41K


3SE5000-0AC02
3SE5000-0AD02


3SE5000-0AE01


3SE5000-0AF01


3SE5000-0AR01

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No. Price per PU			
Twist actuators						
Twist actuators, for 40/56/56 XL mm EN 50041						
• For twist levers and rod levers, Switching right and/or left, adjustable		⊖ 2	**3SE5000-0AH00**	1	1 unit	41K
• For fork levers, latching		⊖ 5	**3SE5000-0AT10**	1	1 unit	41K
Levers						
Twist levers 27 mm, offset, type A, acc. to EN 50041						
Metal lever, plastic roller	19	⊖ 2	**3SE5000-0AA01**	1	1 unit	41K
Metal lever, high-grade steel roller	19	⊖ 2	**3SE5000-0AA02**	1	1 unit	41K
Metal lever, high-grade steel roller with ball bearing	19	⊖ 5	**3SE5000-0AA03**	1	1 unit	41K
Metal lever, 2 plastic rollers	19	⊖ 5	**3SE5000-0AA04**	1	1 unit	41K
Metal lever, plastic roller	30	⊖ 5	**3SE5000-0AA05**	1	1 unit	41K
Metal lever, plastic roller	50	⊖ 5	**3SE5000-0AA07**	1	1 unit	41K
Metal lever, rubber roller	50	⊖ 5	**3SE5000-0AA08**	1	1 unit	41K
High-grade steel lever, plastic roller	19	⊖ 5	**3SE5000-0AA11**	1	1 unit	41K
High-grade steel lever, high-grade steel roller	19	⊖ 5	**3SE5000-0AA12**	1	1 unit	41K
Twist levers 35 mm, offset						
Metal lever, plastic roller	19	⊖ 5	**3SE5000-0AA15**	1	1 unit	41K
High-grade steel lever, plastic roller	19	⊖ 5	**3SE5000-0AA16**	1	1 unit	41K
Twist levers 30 mm, straight (can be mounted rotated by 180°)						
Metal lever, plastic roller	19	⊖ 5	**3SE5000-0AA24**	1	1 unit	41K
Metal lever, plastic roller	30	⊖ 5	**3SE5000-0AA26**	1	1 unit	41K
Twist levers, adjustable length, with grid hole						
Metal lever, plastic roller	19	⊖ 5	**3SE5000-0AA60**	1	1 unit	41K
Metal lever, high-grade steel roller	19	⊖ 5	**3SE5000-0AA61**	1	1 unit	41K
Metal lever, plastic roller	50	⊖ 5	**3SE5000-0AA67**	1	1 unit	41K
Metal lever, rubber roller	50	⊖ 5	**3SE5000-0AA68**	1	1 unit	41K
High-grade steel lever, plastic roller	19	⊖ 5	**3SE5000-0AA62**	1	1 unit	41K
High-grade steel lever, high-grade steel roller	19	⊖ 5	**3SE5000-0AA63**	1	1 unit	41K
Twist levers, adjustable length						
Metal lever, plastic roller	19	2	**3SE5000-0AA50**	1	1 unit	41K
Metal lever, high-grade steel roller	19	5	**3SE5000-0AA51**	1	1 unit	41K
Metal lever, plastic roller	30	5	**3SE5000-0AA55**	1	1 unit	41K
Metal lever, plastic roller	50	5	**3SE5000-0AA57**	1	1 unit	41K
Metal lever, rubber roller	50	5	**3SE5000-0AA58**	1	1 unit	41K
High-grade steel lever, plastic roller	19	5	**3SE5000-0AA52**	1	1 unit	41K
High-grade steel lever, high-grade steel roller	19	5	**3SE5000-0AA53**	1	1 unit	41K
Fork levers (for switches with snap-action contacts only)						
2 metal levers, 2 plastic rollers	19	⊖ 5	**3SE5000-0AT01**	1	1 unit	41K
2 metal levers, 2 high-grade steel rollers	19	⊖ 5	**3SE5000-0AT02**	1	1 unit	41K
2 high-grade steel levers, 2 plastic rollers	19	⊖ 5	**3SE5000-0AT03**	1	1 unit	41K
2 high-grade steel levers, 2 high-grade steel rollers	19	⊖ 5	**3SE5000-0AT04**	1	1 unit	41K
Rod actuators, type D, acc. to EN 50041						
Aluminum rod, length 200 mm	6	5	**3SE5000-0AA80**	1	1 unit	41K
Spring rod, length 200 mm	6	5	**3SE5000-0AA81**	1	1 unit	41K
Plastic rod, length 200 mm	6	5	**3SE5000-0AA82**	1	1 unit	41K


3SE5000-0AH00


3SE5000-0AA01
1


3SE5000-0AA60
3SE5000-0AA50


3SE5000-0AT0


3SE5000-0AA80

⊖ Positively driven actuator, necessary in safety circuits.

Enclosure width 56 mm, XL

Selection and ordering data

Complete units

4 or 5 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

	Version	Contacts	LEDs	SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Complete units[1] • Enclosure width 56 mm, XL									
 3SE5162-0CB01	***Plain plungers***								
	With high-grade steel plunger								
	Snap-action contacts	2 × (1 NO + 1 NC)	--	➔ 5	**3SE5162-0CB01**		1	1 unit	41K
 3SE5162-0EC02	***Rounded plungers***								
	With high-grade steel plungers, with 3 mm overtravel								
	Slow-action contacts Slow-action contacts with make-before-break 2 mm travel difference	1 NO + 1 NC and 1 NO + 2 NC	--	➔ 5	**3SE5162-0EC02**		1	1 unit	41K
 3SE5162-0BD02	***Roller plunger***								
	With high-grade steel roller 13 mm, with 3 mm overtravel								
	Slow-action contacts	2 × (1 NO + 1 NC)	--	➔ 5	**3SE5162-0BD02**		1	1 unit	41K
	Snap-action contacts	2 × (1 NO + 1 NC)	--	➔ 2	**3SE5162-0CD02**		1	1 unit	41K
 3SE5162-0BE01	***Roller levers***								
	With metal lever and plastic roller 22 mm								
	Slow-action contacts	2 × (1 NO + 1 NC)	--	➔ 5	**3SE5162-0BE01**		1	1 unit	41K
	Snap-action contacts	2 × (1 NO + 1 NC)	--	➔ 2	**3SE5162-0CE01**		1	1 unit	41K
	With metal lever and high-grade steel roller 22 mm								
	Snap-action contacts	2 × (1 NO + 1 NC)	--	➔ 5	**3SE5162-0CE02**		1	1 unit	41K
 3SE5162-0CF01	***Angular roller lever***								
	With metal lever and plastic roller 22 mm								
	Snap-action contacts	2 × (1 NO + 1 NC)	--	➔ 5	**3SE5162-0CF01**		1	1 unit	41K
 3SE5162-0CH01	***Twist levers***								
	With metal lever 27 mm and plastic roller 19 mm								
	Snap-action contacts	2 × (1 NO + 1 NC)	--	➔ 2	**3SE5162-0CH01**		1	1 unit	41K
	With high-grade steel lever 27 mm and high-grade steel roller 19 mm Increased corrosion protection								
	Snap-action contacts (gold contacts)	2 × (1 NO + 1 NC)	-- NEW	➔ 5	**3SE5162-0CH12-1CC1**		1	1 unit	41K
	Twist levers, adjustable length								
	With high-grade steel lever with grid hole and high-grade steel roller 19 mm Increased corrosion protection Adapter 3SX5100-3B enclosed								
	Snap-action contacts (gold contacts)	2 × (1 NO + 1 NC)	-- NEW	➔ 5	**3SE5162-0CH63-1AN4**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Appendix K.
1) Popular versions.

Note:
If the device you require is not available as a complete unit, see Modular System, page 12/43.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Modular system

4 or 6 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	LEDs	SD d	Modular system Article No.	PU (UNIT, SET, M)	PS*	PG
Basic switches • Enclosure width 56 mm, XL							
 3SE5162-0BA00							
With 3 × connection thread M20 × 1.5							
Slow-action contacts	2 × (1 NO + 1 NC)	--	➔ 2	**3SE5162-0BA00**	1	1 unit	41K
Snap-action contacts	2 × (1 NO + 1 NC)	--	➔ 2	**3SE5162-0CA00**	1	1 unit	41K
Slow-action contacts with make-before-break	2 × (1 NO + 2 NC)	--	➔ 5	**3SE5162-0DA00**	1	1 unit	41K
With increased corrosion protection[1]							
Slow-action contacts	2 × (1 NO + 1 NC)	--	➔ 5	**3SE5162-0BA00-1CA0**	1	1 unit	41K
Snap-action contacts	2 × (1 NO + 1 NC)	--	➔ 5	**3SE5162-0CA00-1CA0**	1	1 unit	41K
Slow-action contacts with make-before-break	2 × (1 NO + 2 NC)	--	➔ 5	**3SE5162-0DA00-1CA0**	1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) Use corresponding high-grade steel lever.

Note:

For the selection aid, see page 12/15.

Version	Diameter mm	SD d	Modular system Article No.	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms						
 3SE5000-0AB01						
Plain plungers						
High-grade steel plunger	10	➔ 2	**3SE5000-0AB01**	1	1 unit	41K
 3SE5000-0AC02						
Rounded plungers, type B, acc. to EN 50041						
High-grade steel plungers, with 3 mm overtravel	10	➔ 5	**3SE5000-0AC02**	1	1 unit	41K
 3SE5000-0AD02						
Roller plungers, type C, acc. to EN 50041						
High-grade steel roller, with 3 mm overtravel	13	➔ 5	**3SE5000-0AD02**	1	1 unit	41K
 3SE5000-0AE01						
Roller levers						
Metal lever, plastic roller	22	➔ 2	**3SE5000-0AE01**	1	1 unit	41K
Metal lever, high-grade steel roller	22	➔ 5	**3SE5000-0AE02**	1	1 unit	41K
High-grade steel lever, plastic roller	22	➔ 5	**3SE5000-0AE03**	1	1 unit	41K
High-grade steel lever, high-grade steel roller	22	➔ 5	**3SE5000-0AE04**	1	1 unit	41K
 3SE5000-0AF01						
Angular roller levers						
Metal lever, plastic roller	22	➔ 2	**3SE5000-0AF01**	1	1 unit	41K
Metal lever, high-grade steel roller	22	➔ 5	**3SE5000-0AF02**	1	1 unit	41K
High-grade steel lever, plastic roller	22	➔ 5	**3SE5000-0AF03**	1	1 unit	41K
High-grade steel lever, high-grade steel roller	22	➔ 5	**3SE5000-0AF04**	1	1 unit	41K
 3SE5000-0AR01						
Spring rods (for switches with snap-action contacts only)						
Plunger made of plastic, spring of high-grade steel:	7					
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR01**	1	1 unit	41K
• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	**3SE5000-0AR03**	1	1 unit	41K
• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	**3SE5000-0AR04**	1	1 unit	41K
Plunger and spring made of high-grade steel:	7					
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	**3SE5000-0AR02**	1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

Enclosure width 56 mm, XL

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No. / Price per PU			
Twist actuators						
Twist actuators, for 40/56/56 XL mm EN 50041						
• for twist levers and rod levers, Switching right and/or left, adjustable		➔ 2	**3SE5000-0AH00**	1	1 unit	41K
• For fork levers, latching		➔ 5	**3SE5000-0AT10**	1	1 unit	41K
Levers						
Twist levers 27 mm, offset, type A, acc. to EN 50041						
Metal lever, plastic roller	19	➔ 2	**3SE5000-0AA01**	1	1 unit	41K
Metal lever, high-grade steel roller	19	➔ 2	**3SE5000-0AA02**	1	1 unit	41K
Metal lever, high-grade steel roller with ball bearing	19	➔ 5	**3SE5000-0AA03**	1	1 unit	41K
Metal lever, 2 plastic rollers	19	➔ 5	**3SE5000-0AA04**	1	1 unit	41K
Metal lever, plastic roller	30	➔ 5	**3SE5000-0AA05**	1	1 unit	41K
Metal lever, plastic roller	50	➔ 5	**3SE5000-0AA07**	1	1 unit	41K
Metal lever, rubber roller	50	➔ 5	**3SE5000-0AA08**	1	1 unit	41K
High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA11**	1	1 unit	41K
High-grade steel lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA12**	1	1 unit	41K
Twist levers 35 mm, offset						
Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA15**	1	1 unit	41K
High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA16**	1	1 unit	41K
Twist levers 30 mm, straight						
Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA24**	1	1 unit	41K
Metal lever, plastic roller	30	➔ 5	**3SE5000-0AA26**	1	1 unit	41K
Twist levers, adjustable length, with grid hole						
Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA60**	1	1 unit	41K
Metal lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA61**	1	1 unit	41K
Metal lever, plastic roller	50	➔ 5	**3SE5000-0AA67**	1	1 unit	41K
Metal lever, rubber roller	50	➔ 5	**3SE5000-0AA68**	1	1 unit	41K
High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA62**	1	1 unit	41K
High-grade steel lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA63**	1	1 unit	41K
Twist levers, adjustable length						
Metal lever, plastic roller	19	2	**3SE5000-0AA50**	1	1 unit	41K
Metal lever, high-grade steel roller	19	5	**3SE5000-0AA51**	1	1 unit	41K
Metal lever, plastic roller	30	5	**3SE5000-0AA55**	1	1 unit	41K
Metal lever, plastic roller	50	5	**3SE5000-0AA57**	1	1 unit	41K
Metal lever, rubber roller	50	5	**3SE5000-0AA58**	1	1 unit	41K
High-grade steel lever, plastic roller	19	5	**3SE5000-0AA52**	1	1 unit	41K
High-grade steel lever, high-grade steel roller	19	5	**3SE5000-0AA53**	1	1 unit	41K
Fork levers (for switches with snap-action contacts only)						
2 metal levers, 2 plastic rollers	19	➔ 5	**3SE5000-0AT01**	1	1 unit	41K
2 metal levers, 2 high-grade steel rollers	19	➔ 5	**3SE5000-0AT02**	1	1 unit	41K
2 high-grade steel levers, 2 plastic rollers	19	➔ 5	**3SE5000-0AT03**	1	1 unit	41K
2 high-grade steel levers, 2 high-grade steel rollers	19	➔ 5	**3SE5000-0AT04**	1	1 unit	41K
Rod actuators, type D, acc. to EN 50041						
Aluminum rod, length 200 mm	6	5	**3SE5000-0AA80**	1	1 unit	41K
Spring rod, length 200 mm	6	5	**3SE5000-0AA81**	1	1 unit	41K
Plastic rod, length 200 mm	6	5	**3SE5000-0AA82**	1	1 unit	41K
Plastic rod, length 330 mm	6	5	**3SE5000-0AA83**	1	1 unit	41K


3SE5000-0AH00


3SE5000-0AA01


3SE5000-0AA60
3SE5000-0AA50


3SE5000-0AT01


3SE5000-0AA80

➔ Positively driven actuator, necessary in safety circuits.

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Compact design in width 30 mm

Particularly in harsh environments or on equipment with limited space, the small 3SE5 4 position switches in compact design with a depth of 16 mm and a weight of only 80 g (without cable) are ideal. Above all the versions with molded cable can be mounted in the most confined spaces.

3SE54 compact position switches are available in two different widths as complete units:

- The 3SE5413 series complies with the EU standard and features a 30 mm wide enclosure with drilled holes at a distance of 20 mm.
- The 3SE5423 series meets the requirements of the US market and features a 40-mm-wide enclosure with drilled holes at a spacing of 25 mm.

Both the enclosure and the actuator head are made of metal and comply with the high IP67 degree of protection. The following actuators are available:

- Rounded plungers
- Rounded plungers with central fixing
- Rounded plungers with external seal
- Roller plungers
- Roller plungers with central fixing
- Twist levers

The contact block is designed with snap-action contacts 1 NO + 1 NC. The NC contact complies with the requirements for positive opening acc. to IEC 60947-5-1.

Use in safety circuits up to category 4 according to EN ISO 13849-1.

Connection:
- With molded cable, 2 m or 5 m long
- With M12 connector socket

Benefits

- Very compact yet with the same rating as the 3SE51 standard switches, for notable space savings in confined installation conditions
- Various actuator versions available
- Roller plungers can be rotated through 90°
- Twist levers, can be rotated through 180°; twist lever can be adjusted in 15° increments
- Time is saved when mounting the fully assembled unit
- With metal enclosure of degree of protection IP67, ideal for use in rough industrial environments
- Insensitive to electromagnetic interference

Selection and ordering data

2 snap-action contacts 1 NO + 1 NC · Degree of protection IP67 · With connecting cable or M12 connector socket

	Operating mechanism	Enclosure width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm	d					
Complete units • Enclosure width 30 or 40 mm								
	Rounded plungers							
	• Standard mounting							
	- With 2 m cable 5 x 0.75 mm²	30	⊖ 2	**3SE5413-0CC20-1EA2**		1	1 unit	41K
		40	⊖ 2	**3SE5423-0CC20-1EA2**		1	1 unit	41K
	- With 5 m cable 5 x 0.75 mm²	30	⊖ 5	**3SE5413-0CC20-1EA5**		1	1 unit	41K
	- With M12 connector socket, 5-pole	30	⊖ 2	**3SE5413-0CC20-1EB1**		1	1 unit	41K
		40	⊖ 2	**3SE5423-0CC20-1EB1**		1	1 unit	41K
 3SE5413-0CC20-1EA2	• With central fixing M12 x 1							
	- With 2 m cable 5 x 0.75 mm²	30	⊖ 2	**3SE5413-0CC21-1EA2**		1	1 unit	41K
		40	⊖ 2	**3SE5423-0CC21-1EA2**		1	1 unit	41K
 3SE5413-0CC21-1EA2								
	• With external seal							
	- With 2 m cable 5 x 0.75 mm²	30	⊖ 2	**3SE5413-0CC22-1EA2**		1	1 unit	41K
		40	⊖ 2	**3SE5423-0CC22-1EA2**		1	1 unit	41K
 3SE5413-0CC22-1EA2								
	Roller plunger							
	• Standard mounting							
	- With 2 m cable 5 x 0.75 mm²	30	⊖ 2	**3SE5413-0CD20-1EA2**		1	1 unit	41K
		40	⊖ 2	**3SE5423-0CD20-1EA2**		1	1 unit	41K
	- With 5 m cable 5 x 0.75 mm²	30	⊖ 5	**3SE5413-0CD20-1EA5**		1	1 unit	41K
	- With M12 connector socket, 5-pole	30	⊖ 2	**3SE5413-0CD20-1EB1**		1	1 unit	41K
 3SE5413-0CD20-1EA2		40	⊖ 2	**3SE5423-0CD20-1EB1**		1	1 unit	41K
	• With central fixing M12 x 1							
	- With 2 m cable 5 x 0.75 mm²	30	⊖ 2	**3SE5413-0CD21-1EA2**		1	1 unit	41K
		40	⊖ 2	**3SE5423-0CD21-1EA2**		1	1 unit	41K
 3SE5413-0CD23-1EA2	• Actuator head rotated 90°							
	- With 2 m cable 5 x 0.75 mm²	30	⊖ 2	**3SE5413-0CD23-1EA2**		1	1 unit	41K
	Twist levers							
	• Standard mounting							
	- With 2 m cable 5 x 0.75 mm²	30	⊖ 2	**3SE5413-0CN20-1EA2**		1	1 unit	41K
		40	⊖ 2	**3SE5423-0CN20-1EA2**		1	1 unit	41K
	- With 5 m cable 5 x 0.75 mm²	30	⊖ 2	**3SE5413-0CN20-1EA5**		1	1 unit	41K
	- With M12 connector socket, 5-pole	30	⊖ 2	**3SE5413-0CN20-1EB1**		1	1 unit	41K
		40	⊖ 2	**3SE5423-0CN20-1EB1**		1	1 unit	41K
 3SE5413-0CN20-1EA2	• Twist levers with a smaller mounting depth and lower height							
	- With 2 m cable 5 x 0.75 mm²	30	⊖ 2	**3SE5413-0CP20-1EA2**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

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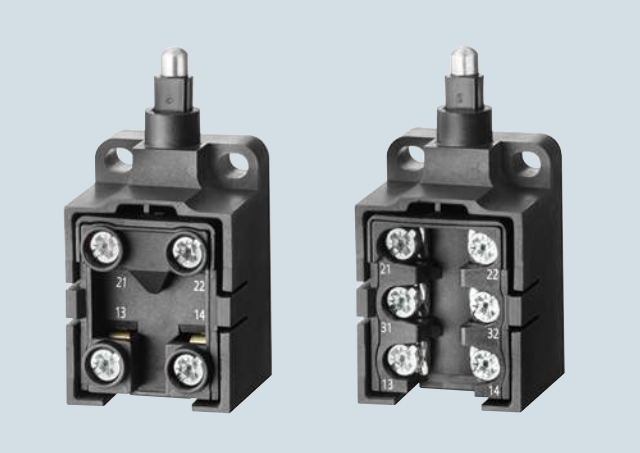
* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview



Open-Type

Their compact design makes these switches particularly suitable for use in confined conditions. The fixing dimensions and operating points are according to EN 50047.

The switches are equipped with two or three contacts in snap-action, slow-action or slow-action with make-before-break versions. The stroke is 6 mm.

The empty enclosure can be equipped with all contact block versions (see page 12/49).

Improved version

NEW: The switches now have a robust metal plunger with increased abrasion resistance (instead of the teflon plunger). This enables the switch to be approached from a 30° angle.

Selection and ordering data

2 or 3 contacts · Degree of protection IP20 (2 contacts), IP10 (3 contacts)

	Version	Contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Plastic enclosures • Enclosure width 30 mm								
	With metal plunger							
 3SE5250-0BC05	Slow-action contacts	1 NO + 1 NC	⊖ 2	**3SE5250-0BC05**		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	⊖ ►	**3SE5250-0CC05**		1	1 unit	41K
 3SE5250-0KC05	Slow-action contacts	1 NO + 2 NC	⊖ 5	**3SE5250-0KC05**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	⊖ ►	**3SE5250-0LC05**		1	1 unit	41K
	Slow-action contacts with make-before-break	1 NO + 2 NC	⊖ 2	**3SE5250-0MC05**		1	1 unit	41K
	Slow-action contacts	2 NO + 1 NC	⊖ 2	**3SE5250-0PC05**		1	1 unit	41K
 3SE5250-0AC05	Empty enclosure without contact block	--	⊖ 5	**3SE5250-0AC05**		1	1 unit	41K
 3SE5050-0BA00	**Contact blocks with 2 contacts** for open-type[1]							
	• Slow-action contacts	1 NO + 1 NC	⊖ 5	**3SE5050-0BA00**		1	1 unit	41K
	• Snap-action contacts	1 NO + 1 NC						
	- Standard		⊖ 5	**3SE5050-0CA00**		1	1 unit	41K
	- 2 × 2 mm switching interval		⊖ 5	**3SE5050-0GA00**		1	1 unit	41K
	- Short stroke		⊖ 5	**3SE5050-0NA00**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Contact blocks with 3 contacts, see page 12/49.

Selection and ordering data

The quick-release devices and plug-in connections are used for fast installation and replacement of position switches.

Quick-release devices for enclosure width 40 mm


3SY3110


3SY3027

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Adapter plates with screws	5	**3SY3110**		1	1 unit	41K
Base plate with locking lever	5	**3SY3027**		1	1 unit	41K

Plug-in connections for M20 × 1.5 connecting threads


3SY3131


3SY3136


3SY3127


3SY3134


3RK1902-4CA00-4AA0

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Connector sockets (6-pole + PE), for M20 × 1.5 For up to 250 V, 10 A With connecting cable 0.75 mm^2, plastic, degree of protection IP65, ambient temperature –40 to +90 °C	5	**3SY3131**		1	1 unit	41K
Cable box (6-pole + PE)[1)] With terminal compartment, can be pre-assembled, plastic, degree of protection IP65,	2	**3SY3136**		1	1 unit	41K
Connector sockets (4-pole), M12, for M20 × 1.5, fixed For max. 250 V, 4 A, U_{imp} = 2500 V With 4 connecting cables 0.25 mm^2, plastic, degree of protection IP67, ambient temperature –40 to +85 °C	5	**3SY3127**		1	1 unit	41K
Connector sockets (5-pole), M12, for M20 × 1.5, fixed For max. 125 V, 4 A, U_{imp} = 1500 V With 5 connecting cables 0.25 mm^2, plastic, degree of protection IP67, ambient temperature –40 to +85 °C	5	**3SY3128**		1	1 unit	41K
Connector sockets (8-pole), M12, for M20 × 1.5, fixed, metal version For max. 30 V, 2 A, U_{imp} = 800 V With 8 connecting cables 0.25 mm^2, metal, degree of protection IP67, ambient temperature –25 to +85 °C	5	**3SY3134**		1	1 unit	41K
M12 cable box, angled, 4-pole, For AS-Interface, max 4 A With cabling box, max. 0.75 mm^2	10	**3RK1902-4CA00-4AA0**		1	1 unit	42D

Adapters and cable glands for M20 × 1.5 connecting threads


3SX9917


3SX9918


3SX9926

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Adapters acc. to CSA, UL and UR, For cable entry from M20 × 1.5 to NPT 1/2						
• Metal	5	**3SX9917**		1	1 unit	41K
• Plastic	30	**3SX9918**		1	1 unit	41K
Cable glands M20 × 1.5 Plastic IP67	2	**3SX9926**		1	1 unit	41K
high degree of protection IP69, IEC 60529	2	**3SX5601-1A**		1	1 unit	41K

1) For wiring, a crimping tool is necessary, conductor cross-section max. 1 mm^2.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	Color/ Contacts	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories for 3SE51, 3SE52								
 3SE5000-0AC30	**Protective caps, rubber** For rounded plunger acc. to EN 50047, 3SE5...-..C05	Black	2	**3SE5000-0AC30**		1	1 unit	41K
 3SX5100-3B	**Adapters** with screw[1] For an increase in the mounting depth on the 3SE5 000-0AH00 twist actuator, in combination with twist lever with adjustable length or rod actuator		5	**3SX5100-3B**		1	1 unit	41K
 3SX5100-1A	**Mounting plate** Suitable for 3SE523. and 3SE521. position switches with a width of 31 mm (especially for control cabinet types)		5	**3SX5100-1A**		1	1 unit	41K
Spare parts for 3SE51, 3SE52								
 3SE5232-0AC05	**Empty enclosures, plastic**	Turquoise						
	Enclosure width 31 mm		5	**3SE5232-0AC05**		1	1 unit	41K
	• With increased corrosion protection		5	**3SE5232-0AC05-1CA0**		1	1 unit	41K
	Enclosure width 40 mm		5	**3SE5132-0AA00**		1	1 unit	41K
	Enclosure width 50 mm		5	**3SE5242-0AC05**		1	1 unit	41K
	• With increased corrosion protection		5	**3SE5242-0AC05-1CA0**		1	1 unit	41K
 3SE5212-0AC05	**Empty enclosures, metal**	Turquoise						
	Enclosure width 31 mm		5	**3SE5212-0AC05**		1	1 unit	41K
	• With increased corrosion protection		5	**3SE5212-0AC05-1CA0**		1	1 unit	41K
	Enclosure width 40 mm		5	**3SE5112-0AA00**		1	1 unit	41K
	• With increased corrosion protection		5	**3SE5112-0AA00-1CA0**		1	1 unit	41K
	Enclosure width 56 mm		5	**3SE5122-0AA00**		1	1 unit	41K
	• With increased corrosion protection		5	**3SE5122-0AA00-1CA0**		1	1 unit	41K
	Enclosure width 56 mm, XL[2]		5	**3SE5162-0AA00**		1	1 unit	41K
 3SE5000-0BA00	**Contact blocks with 2 contacts**[3]							
	• Slow-action contacts	1 NO + 1 NC	⊖ 5	**3SE5000-0BA00**		1	1 unit	41K
	• Snap-action contacts	1 NO + 1 NC						
	- Standard		⊖ 5	**3SE5000-0CA00**		1	1 unit	41K
	- Gold-plated contacts		⊖ 5	**3SE5000-0CA00-1AC1**		1	1 unit	41K
	- 2 × 2 mm switching interval		⊖ 5	**3SE5000-0GA00**		1	1 unit	41K
	- Short stroke		⊖ 5	**3SE5000-0NA00**		1	1 unit	41K
 3SE5000-0KA00	**Contact blocks with 3 contacts**							
	• Slow-action contacts	1 NO + 2 NC	⊖ 5	**3SE5000-0KA00**		1	1 unit	41K
	• Snap-action contacts	1 NO + 2 NC	⊖ 5	**3SE5000-0LA00**		1	1 unit	41K
	• Slow-action contacts with make-before-break	1 NO + 2 NC	⊖ 2	**3SE5000-0MA00**		1	1 unit	41K
	• Slow-action contacts	2 NO + 1 NC	⊖ 2	**3SE5000-0PA00**		1	1 unit	41K
 3SE5060-0BA00	**Contact blocks for XL enclosure**[2]							
	• Slow-action contacts	1 NO + 1 NC	⊖ 5	**3SE5060-0BA00**		1	1 unit	41K
	• Snap-action contacts	1 NO + 1 NC	⊖ 5	**3SE5060-0CA00**		1	1 unit	41K
	• Slow-action contacts with make-before-break	1 NO + 2 NC	⊖ 5	**3SE5060-0MA00**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Possibly required for the conversion from 3SE21 to 3SE51.

2) Equip XL enclosures only with contact combinations according to pages 12/14, 12/42 and 12/43.

3) Unsuitable for open-type position switches; see page 12/47.

Accessories and spare parts

	Version	Rated voltage LEDs	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V	d					
Spare parts for 3SE51, 3SE52								
 3SE5230-1AA00	**Covers for plastic enclosures, width 31 mm**							
	• Turquoise with LED	24 DC	5	**3SE5230-1AA00**		1	1 unit	41K
		230 AC	5	**3SE5230-3AA00**		1	1 unit	41K
	• Yellow	--	5	**3SE5230-0AA00-1AG0**		1	1 unit	41K
	• Yellow with LED	24 DC	5	**3SE5230-1AA00-1AG0**		1	1 unit	41K
		230 AC	5	**3SE5230-3AA00-1AG0**		1	1 unit	41K
 3SE5130-1AA00-1AG0	**Covers for plastic enclosures, width 40 mm**							
	• Turquoise with LED	24 DC	5	**3SE5130-1AA00**		1	1 unit	41K
		230 AC	5	**3SE5130-3AA00**		1	1 unit	41K
	• Yellow	--	5	**3SE5130-0AA00-1AG0**		1	1 unit	41K
	• Yellow with LED	24 DC	5	**3SE5130-1AA00-1AG0**		1	1 unit	41K
		230 AC	5	**3SE5130-3AA00-1AG0**		1	1 unit	41K
 3SE5240-1AA00	**Covers for plastic enclosures, width 50 mm**							
	• Turquoise with LED	24 DC	5	**3SE5240-1AA00**		1	1 unit	41K
		230 AC	5	**3SE5240-3AA00**		1	1 unit	41K
	• Yellow	--	5	**3SE5240-0AA00-1AG0**		1	1 unit	41K
	• Yellow with LED	24 DC	5	**3SE5240-1AA00-1AG0**		1	1 unit	41K
		230 AC	5	**3SE5240-3AA00-1AG0**		1	1 unit	41K
 3SE5210-1AA00	**Covers for metal enclosures, width 31 mm**							
	• Turquoise with LED	24 DC	5	**3SE5210-1AA00**		1	1 unit	41K
		230 AC	5	**3SE5210-3AA00**		1	1 unit	41K
	• Yellow	--	5	**3SE5210-0AA00-1AG0**		1	1 unit	41K
	• Yellow with LED	24 DC	5	**3SE5210-1AA00-1AG0**		1	1 unit	41K
		230 AC	5	**3SE5210-3AA00-1AG0**		1	1 unit	41K
 3SE5110-1AA00	**Covers for metal enclosures, width 40 mm**							
	• Turquoise with LED	24 DC	5	**3SE5110-1AA00**		1	1 unit	41K
		230 AC	5	**3SE5110-3AA00**		1	1 unit	41K
	• Yellow	--	5	**3SE5110-0AA00-1AG0**		1	1 unit	41K
	• Yellow with LED	24 DC	5	**3SE5110-1AA00-1AG0**		1	1 unit	41K
		230 AC	5	**3SE5110-3AA00-1AG0**		1	1 unit	41K
 3SE5120-0AA00-1AG0	**Covers for metal enclosures, width 56 mm**							
	• Turquoise with LED	24 DC	5	**3SE5120-1AA00**		1	1 unit	41K
		230 AC	5	**3SE5120-3AA00**		1	1 unit	41K
	• Yellow	--	5	**3SE5120-0AA00-1AG0**		1	1 unit	41K
	• Yellow with LED	24 DC	5	**3SE5120-1AA00-1AG0**		1	1 unit	41K
		230 AC	5	**3SE5120-3AA00-1AG0**		1	1 unit	41K
	Covers for XL metal enclosures, width 56 mm							
	• Yellow	--	5	**3SE5160-0AA00-1AG0**		1	1 unit	41K

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Safety switches with separate actuator are used where the position of doors, covers or protective grilles must be monitored for safety reasons.

3SE5 safety switches with separate actuator have the same enclosures as the 3SE5 position switches (modular system).

3SE5 safety switches with head for separate actuator

Design

Enclosure sizes

The 3SE5 safety switches are available in four different enclosure sizes:

- Plastic enclosures according to EN 50047, 31 mm wide, IP65, 1 cable entry
- Metal enclosure according to EN 50047, 31 mm wide, IP66/IP67, 1 cable entry
- Plastic and metal enclosures according to EN 50041, 40 mm wide, IP66/IP67, 1 cable entry
- Plastic enclosure, 50 mm wide, IP66/IP67, 2 cable entries
- Metal enclosure, 56 mm wide, IP66/IP67, 3 cable entries

Also available are safety switches in the 3SE2 series which have been developed in this form according to general market requirements:

- Molded-plastic enclosures outside of the standards, enclosure width 52 mm, IP67

Enclosure versions

Various basic versions can be selected for the enclosures of the 3SE5 series:

- Available with two or three-pole contact blocks designed as slow-action contacts
- Optional LED status display
- With mounted four or five-pole M12 connector socket (available for the wide enclosures as an accessory for self-assembly)
- With 6-pole connector socket + PE on the metal enclosures
- Similarly with a combination of connector socket and LED indicators
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs (see page 12/99)

For a description of the basic switches, see page 12/5

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through 4 × 90°. The switches can also be approached from above.

The actuator heads of the 3SE2243 and 3SE2257 switches with special enclosures cannot be changed. The switches can be approached from the two broad sides and from above.

The actuator is not included in the scope of supply of the safety switches and must be ordered separately from a choice of different versions to suit the application (see page 12/61).

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

Radius actuators

The safety switches with radius actuators are particularly suitable for rotary protective devices. The movable actuation key allows even small radii to be approached. Damage to the switch and the actuator due to inaccurate approach is prevented.

Locking devices

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more security (see page 12/61).

Blocking inserts with padlock

Dust protection

For use in dusty environments, a rubber cap is offered that protects the actuator entries of the actuator head from dirt (see page 12/61).

Contact reliability

The contact blocks ensure an extremely high contact stability. This applies even when the devices are switching low voltages and currents, e. g. 1 mA at 5 V DC.

Positive opening

The NC contacts of the switch are forced open mechanically, positively-driven and reliably by the plunger. This is referred to as "positive opening".

General data

Benefits

The 3SE5 safety switches with separate actuator differ from the previous series through the following new characteristics:

- All enclosure sizes with increased corrosion protection.
- All enclosure sizes are optionally available with an LED signaling indicator.
- The three-pole contact block 1 NO + 2 NC is available for all enclosure sizes.
- The plastic enclosure has simple and fast wiring equipment which makes it possible to save approx. 20 to 25 % of the time when connecting.
- The ASIsafe electronic component is integrated in the enclosure for the versions with AS-Interface connection (see page 12/99); an additional adapter is not required.

Application

Safety switches with separate actuator are used where the position of doors, covers or protective grilles must be monitored for safety reasons.

The safety switch can only be operated with the matching coded actuator. Simple overruling by hand or auxiliary devices is impossible.

Devices are available with enclosure versions to suit the particular ambient conditions. The high-grade steel actuator IP69(K) with optimized geometry is suitable for extreme environmental conditions as low as minus 40 degrees. Different control tasks can be performed with the best contact blocks suited for the particular purpose. Dimensions, fixing points of the enclosure are in accordance with EN 50041 or EN 50047 standards. The devices are suitable for use in any climate.

Standards

IEC 60947-5-1 or EN 60947-5-1.

The protective measure of "total insulation" by the molded-plastic enclosure is guaranteed by the use of molded-plastic screw glands.

Safety position switches

For controls according to IEC 60204-1 or EN 60204-1 the devices can be used as a safety position switch. They comply with the standard EN ISO 14119. A TÜV certificate is available. To secure position switches against changes in their position, keyed techniques must be employed on installation.

Safety circuits

Standards IEC 60947-5-1 and EN 60947-5-1 require positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked in accordance with the standard IEC 60947-5-1 with the symbol ⊖.

Category 3 according to EN ISO 13849-1 can be attained with a safety switch with separate actuator if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK, 3TK28 safety relays or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

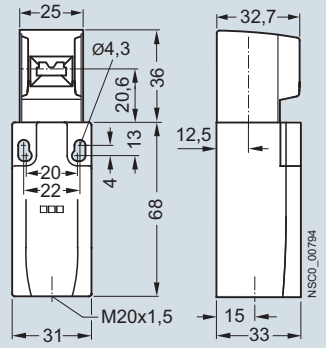
Category 4 can be achieved when using an additional 3SE5 safety switch.

Technical specifications

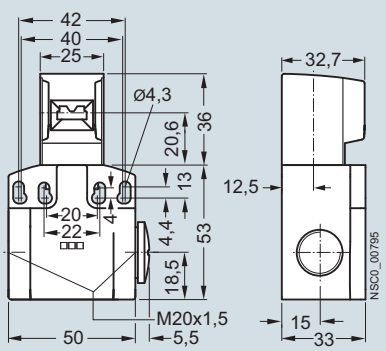
Type		3SE51..-..V.., 3SE52..-..V..		3SE2257-.XX..		3SE2243-.XX..	
General data							
Standards		IEC 60947-5-1, DIN EN 60947-5-1, DIN EN ISO 14119					
Rated insulation voltage U_i	V	400		500			
Degree of pollution according to IEC 60664-1		Class 3		Class 3			
Rated impulse withstand voltage U_{imp}	kV	6					
Rated operational voltage U_e	V	400 AC; over 300 V AC Same potential only		500 AC; over 380 V AC Same potential only			
Conventional thermal current I_{th}	A	6		10			
Rated operational current I_e		2-pole	3-pole	1-pole		3-pole	
• With alternating current 50/60 Hz		I_e / AC-15	I_e / AC-15	I_e / AC-12	I_e / AC-15	I_e / AC-12	I_e / AC-15
- At 24 V	A	6	6	10	10	10	10
- At 125 V	A	6	6	10	10	10	10
- At 230 V	A	3	1.5	10	6	10	4
- At 400 V	A	--	--	10	4	10	4
- At 500 V	A	--	--	10	3	10	3
• For direct current		I_e / DC-13	I_e / DC-13	I_e / DC-12	I_e / DC-13	I_e / DC-12	I_e / DC-13
- At 24 V	A	3	3	10	10	10	10
- At 125 V	A	0.55	0.55	--	--	--	--
- At 230 V	A	0.27	0.27	--	--	--	--
- At 110 V	A	--	--	4	1	4	1
- At 220 V	A	--	--	1	0.4	1	0.4
- At 440 V	A	--	--	0.5	0.2	0.5	0.2
Short-circuit protection							
• With DIAZED fuse links, operational class gG	A	6		6			
• With fuse links, quick	A	--		10			
• With miniature circuit breaker, Char. C ($I_{K< 400A}$)	A	1		--			
Mechanical endurance		1×10^6 operating cycles					
Electrical endurance							
• With 3RH.1, 3RT contactors in size S00, S0		1×10^6 operating cycles		$> 1 \times 10^6$ operating cycles			
• For utilization category AC-15 when switching off I_e / AC-15 at 240 V		100 000 operating cycles		500 000 operating cycles			
Switching frequency With 3RH.1, 3RT contactors in size S00, S0		6 000 operating cycles/h					
Minimum pull-out force for positive opening	N	20		10		30	

3SE51, 3SE52 configuration

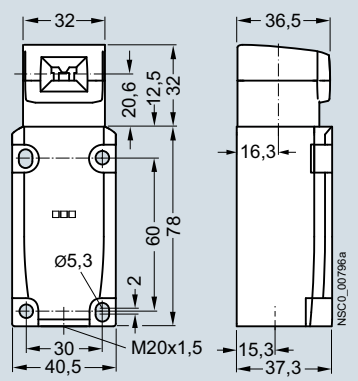
Enclosure width 31 mm
3SE523.-.QV40, 3SE523.-.RV40



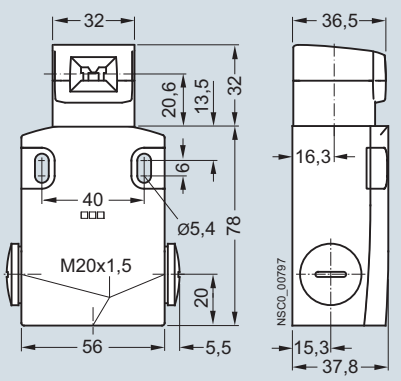
Enclosure width 50 mm
3SE524.-.QV40, 3SE524.-.RV40



Enclosure width 40 mm
3SE511.--.QV10, 3SE511.-.RV10

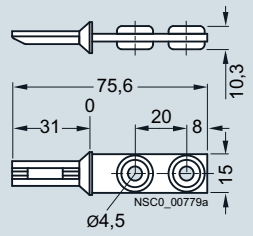


Enclosure width 56 mm
3SE512.-.QV10, 3SE512.-.RV10

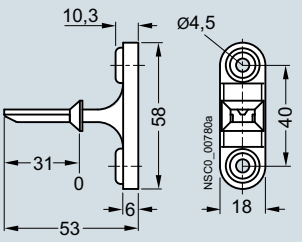


Actuators

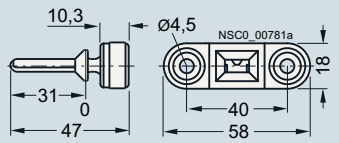
Standard actuator
3SE5000-0AV01



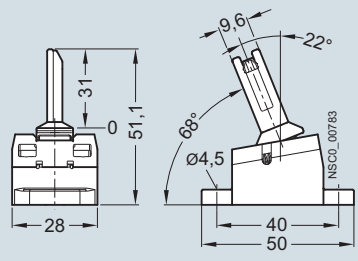
Actuator with vertical fixing
3SE5000-0AV02



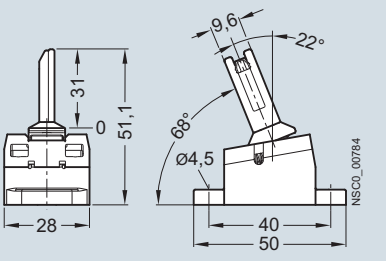
Actuator with horizontal fixing
3SE5000-0AV03



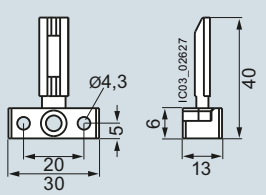
Radius actuator, approach from left
3SE5000-0AV04



Radius actuator, approach from right
3SE5000-0AV06



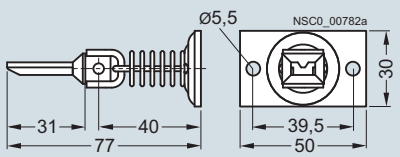
Actuator with horizontal fixing
3SE5000-0AW11



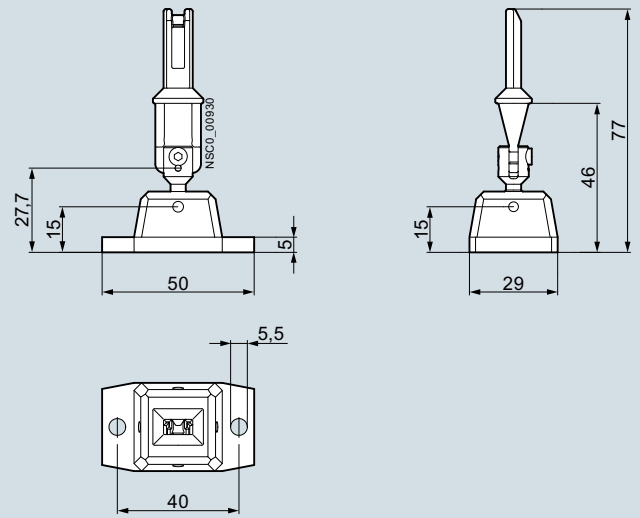
12

General data

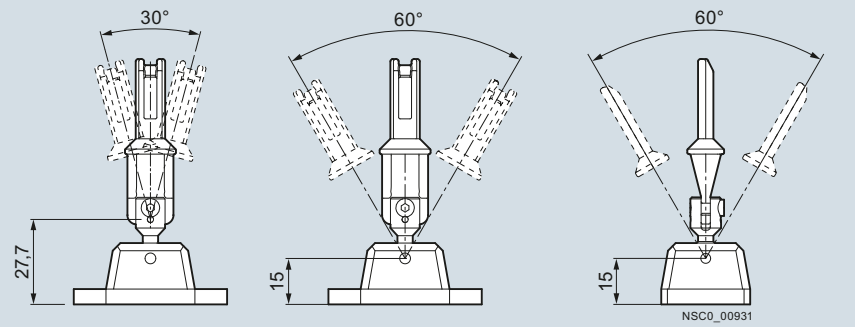
Universal radius actuator
3SE5000-0AV05



Universal radius actuator, heavy duty
3SE5000-0AV07



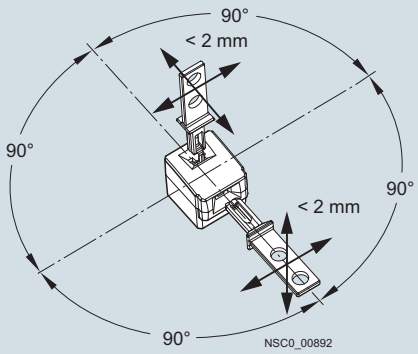
Flexible lateral and vertical approach



Actuation and travel

Standard actuator

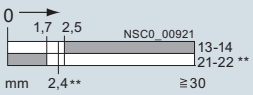
Axial and lateral actuation (4 × 90°)



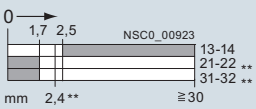
Lateral actuation (4 × 90°)

Slow-action contacts

1 NO + 1 NC, Ident. No. **11**



1 NO + 2 NC, Ident. No. **12**



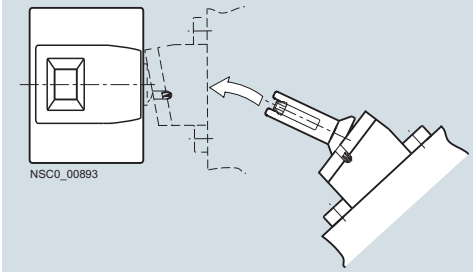
Contact closed
Contact open

Actuator in actuator head:
NC is closed

** Positive opening point

Radius actuators (all directions of approach)

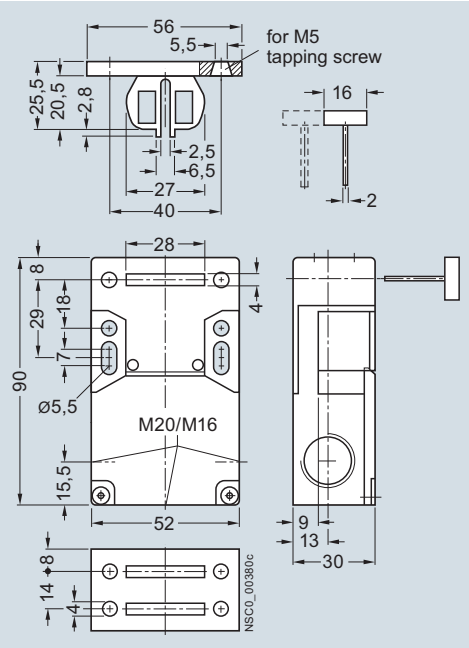
Example: Direction of approach from the left



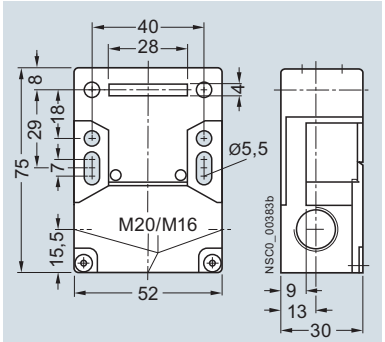
Circuit diagrams and connector assignment, see page 12/14.

3SE2243, 3SE2257 configuration

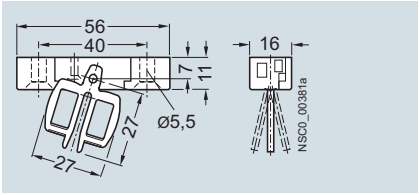
3SE2243, lateral and front-end actuation, with 3SX3218 standard actuator



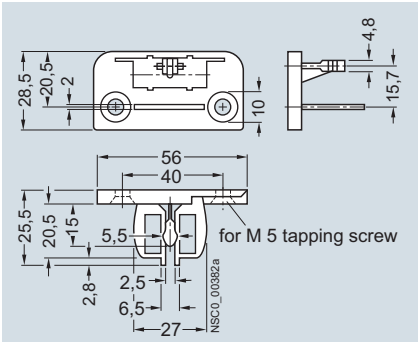
3SE2257, lateral and front-end actuation



Universal radius actuator 3SX3228



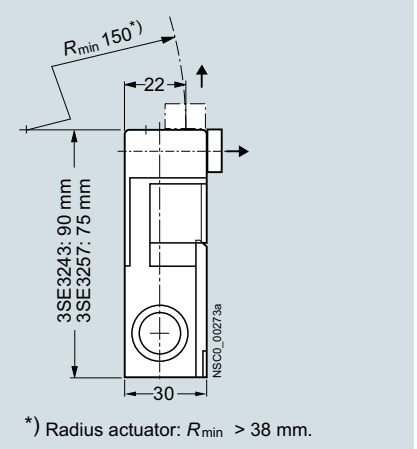
Actuator with ball locating 3SX3217



Actuation and travel

Standard and radius actuators

Axial and lateral actuation

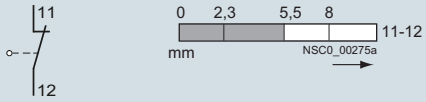


*) Radius actuator: R_{min} > 38 mm.

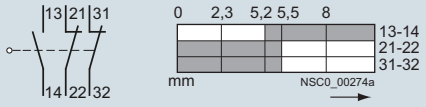
Lateral actuation

Slow-action contacts

1 NC, Ident. No. **01**



1 NO + 2 NC, Ident. No. **12**



Contact closed
Contact open

Actuator in actuator head:
NC is closed

Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP65 · Cable entry M20 × 1.5

Version[1]	Contacts	LEDs	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure width 31 mm acc. to EN 50047								
 3SE5232-0RV40								
5 directions of approach								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5232-0RV40**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ ▶	**3SE5232-0QV40**		1	1 unit	41K
With increased minimum pull-out force 30 N								
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0QV40-1AA1**		1	1 unit	41K
 3SE5234-0RV40-1AC4								
With M12 connector socket, 4-pole (250 V, 4 A)								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5234-0RV40-1AC4**		1	1 unit	41K
Slow-action contacts	2 NC	--	⊖ 5	**3SE5234-0QV40-1AE0**		1	1 unit	41K
 3SE5232-1RV40								
With 2 LEDs, yellow/green								
Slow-action contacts	1 NO + 1 NC	24 V DC	⊖ 5	**3SE5232-1RV40**		1	1 unit	41K
Slow-action contacts	1 NO + 1 NC	230 V AC	⊖ 5	**3SE5232-3RV40**		1	1 unit	41K
With M12 connector socket, 5-pole (125 V, 4 A), **and 2 LEDs**								
Slow-action contacts	1 NO + 1 NC	24 V DC	⊖ 5	**3SE5234-1RV40-1AF3**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Supplied without actuator. Please order separately (see page 12/61).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version[1]	Contacts	LEDs	SD	Complete units		PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU			
			d					
Enclosure width 40 mm acc. to EN 50041								
 3SE5132-0QV20								
5 directions of approach								
Slow-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5132-0QV20**		1	1 unit	41K
 3SE5132-1QV20								
With 2 LEDs, yellow/green								
Slow-action contacts	1 NO + 2 NC	24 V DC	➔ 5	**3SE5132-1QV20**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	230 V AC	➔ 5	**3SE5132-3QV20**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Appendix K.

1) Supplied without actuator. Please order separately (see page 12/61).

Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version[1]	Contacts	LEDs	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure width 50 mm								
 3SE5242-0QV40								
5 directions of approach								
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5242-0QV40**		1	1 unit	41K
With increased minimum pull-out force 30 N								
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5242-0RV40-1AA1**		1	1 unit	41K
 3SE5242-1QV40								
With 2 LEDs, yellow/green								
Slow-action contacts	1 NO + 2 NC	24 V DC	⊖ 5	**3SE5242-1QV40**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	230 V AC	⊖ 5	**3SE5242-3QV40**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Supplied without actuator. Please order separately (see page 12/61).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version[1]	Contacts	LEDs	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure width 31 mm acc. to EN 50047								
 3SE5212-0RV40								
5 directions of approach								
Slow-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5212-0RV40**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0QV40**		1	1 unit	41K
 3SE5212-1RV40								
With 2 LEDs, yellow/green								
Slow-action contacts	1 NO + 1 NC	24 V DC	⊖ 5	**3SE5212-1RV40**		1	1 unit	41K
Slow-action contacts	1 NO + 1 NC	230 V AC	⊖ 5	**3SE5212-3RV40**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Supplied without actuator. Please order separately (see page 12/61).

3SE5, metal enclosures, enclosure width 40 mm according to EN 50041 / 56 mm

Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

	Version[1]	Contacts	LEDs		SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					d					
Enclosure width 40 mm acc. to EN 50041										
 3SE5112-0QV10	**5 directions of approach**									
	Slow-action contacts	1 NO + 2 NC	--	⊖	▶	**3SE5112-0QV10**		1	1 unit	41K
	With increased minimum pull-out force 30 N									
	Slow-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5112-0QV10-1AA7**		1	1 unit	41K
 3SE5114-0RV10-1AC5	**With M12 connector socket, 5-pole** (125 V, 4 A)									
	Slow-action contacts	1 NO + 1 NC	--	⊖	5	**3SE5114-0RV10-1AC5**		1	1 unit	41K
	Slow-action contacts	2 NC	--	⊖	5	**3SE5114-0QV10-1AE1**		1	1 unit	41K
	With connector socket, 6-pole + PE (250 V, 10 A)									
	Slow-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5115-0QV10-1AD1**		1	1 unit	41K
 3SE5112-1QV10	**With 2 LEDs, yellow/green**									
	Slow-action contacts	1 NO + 2 NC	24 V DC	⊖	5	**3SE5112-1QV10**		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	230 V AC	⊖	5	**3SE5112-3QV10**		1	1 unit	41K
	With M12 connector socket, 5-pole (125 V, 4 A), **and 2 LEDs**									
	Slow-action contacts	1 NO + 1 NC	24 V DC	⊖	5	**3SE5114-1RV10-1AF3**		1	1 unit	41K
	With connector socket, 6-pole + PE (250 V, 10 A), **and 2 LEDs**									
	Slow-action contacts	1 NO + 1 NC	24 V DC	⊖	5	**3SE5115-1RV10-1AF2**		1	1 unit	41K
Enclosure width 56 mm										
 3SE5122-0QV10	**5 directions of approach**									
	Slow-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5122-0QV10**		1	1 unit	41K
	With increased minimum pull-out force 30 N									
	Slow-action contacts	1 NO + 2 NC	--	⊖	5	**3SE5122-0QV10-1AA7**		1	1 unit	41K
 3SE5122-1QV10	**With 2 LEDs, yellow/green**									
	Slow-action contacts	1 NO + 2 NC	24 V DC	⊖	5	**3SE5122-1QV10**		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	230 V AC	⊖	5	**3SE5122-3QV10**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Supplied without actuator. Please order separately (see page 12/61).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
IP66/IP67							
	Standard actuator						
 3SE5000-0AV01	• Length 75.6 mm	►	**3SE5000-0AV01**		1	1 unit	41K
 3SE5000-0AV02	• With vertical fixing, length 53 mm	5	**3SE5000-0AV02**		1	1 unit	41K
 3SE5000-0AV03	• With transverse fixing, length 47 mm	5	**3SE5000-0AV03**		1	1 unit	41K
 3SE5000-0AW11	• With transverse fixing, plastic[1], length 40 mm	5	**3SE5000-0AW11**		1	1 unit	41K
	High-grade steel actuator, IP69 (K)[2]						
 3SE5000-0AW51	• Length 75.6 mm	NEW 5	**3SE5000-0AW51**		1	1 unit	41K
	Radius actuators, length 51 mm						
 3SE5000-0AV06	• Direction of approach from the left	2	**3SE5000-0AV04**		1	1 unit	41K
	• Direction of approach from the right	►	**3SE5000-0AV06**		1	1 unit	41K
	Universal radius actuator						
 3SE5000-0AV05-1AA6	• Length 77 mm	5	**3SE5000-0AV05**		1	1 unit	41K
	• Length 77 mm, tab rotated 90°	5	**3SE5000-0AV05-1AA6**		1	1 unit	41K
	Universal radius actuator, heavy duty						
 3SE5000-0AV07	• Length 67 mm	2	**3SE5000-0AV07-1AK2**		1	1 unit	41K
	• Length 77 mm	5	**3SE5000-0AV07**		1	1 unit	41K
Optional accessories for 3SE5							
 3SE5000-0AV08-1AA2	**Protective caps**, black rubber for the actuator head, to protect the actuator openings from contamination (Only for enclosure width 40 or 56 mm)	5	**3SE5000-0AV08-1AA2**		1	1 unit	41K
 3SE5000-0AV08-1AA3	**Blocking inserts**, high-grade steel, for actuator head, for up to eight padlocks	5	**3SE5000-0AV08-1AA3**		1	1 unit	41K
Connections for 3SE5, 3SE2							
 3SY3127	**Connector sockets (4-pole), M12, fixed for M20 × 1.5** for max. 250 V, 4 A With connecting cable 0.25 mm², plastic, degree of protection IP67, Ambient temperature –40 to +85 °C	5	**3SY3127**		1	1 unit	41K
 3SX9926	**Connector sockets (5-pole), M12, fixed for M20 × 1.5** for max. 125 V, 4 A With connecting cable 0.25 mm², Plastic, degree of protection IP67, Ambient temperature –40 to +85 °C	5	**3SY3128**		1	1 unit	41K
	Cable glands M20 × 1.5 Plastic	2	**3SX9926**		1	1 unit	41K

[1] Not suitable for safety switches with tumbler.

[2] With optimized geometry and suitable for extreme environmental conditions such as -40 °C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

1 or 3 contacts · 3 directions of approach · Degree of protection IP67

	Version	Operation		SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Molded-plastic enclosures in special width of 52 mm									
 3SE2243	**Lateral and front-end actuation**[1]	6 mm stroke							
	• With connecting thread M20 × 1.5								
	- Slow-action contacts 1 NO + 2 NC	Holding force 5 N	⊖	▶	**3SE2243-0XX40**		1	1 unit	41K
		Holding force 30 N	⊖	▶	**3SE2243-0XX**		1	1 unit	41K
		With automatic ejection	⊖	▶	**3SE2243-0XX30**		1	1 unit	41K
	- Slow-action contacts 1 NC	Holding force 5 N	⊖	▶	**3SE2257-6XX40**		1	1 unit	41K
		Holding force 30 N	⊖	▶	**3SE2257-6XX**		1	1 unit	41K
		With automatic ejection	⊖	5	**3SE2257-6XX30**		1	1 unit	41K
	• With connecting thread M16 × 1.5								
	- Slow-action contacts 1 NO + 2 NC	Holding force 30 N	⊖	2	**3SE2243-0XX18**		1	1 unit	41K
Accessories									
	Actuators								
 3SX3218	• Standard actuators (r_{min} = 150 mm), Length 28 mm			2	**3SX3218**		1	1 unit	41K
 3SX3228	• Universal radius actuator (r_{min} = 45 mm), length 34 mm			2	**3SX3228**		1	1 unit	41K
 3SX3256	• Radius actuators, Radius adjustable, length 34 mm			30	**3SX3256**		1	1 unit	41K
 3SX3217	• Ball locating, force adjustable up to max. 100 N by 2 adjustable screws, length 28 mm			2	**3SX3217**		1	1 unit	41K
 3SX3234	• Actuators, length 34 mm with dust protection and slit cover			30	**3SX3234**		1	1 unit	41K
	Accessories								
	• Slit cover (1 set = 3 units)			30	**3SX3233**		1	3 units	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Supplied without actuator.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

The safety switches with tumbler are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grilles or other covers as long as a dangerous situation is present (i.e. follow-on motion of the switched-off machine).

3SE5 safety switch with tumbler

The safety switches with solenoid interlocking are comprised of a switch part with electromechanical interlock and a mechanical actuator which has to be ordered separately.

They are rugged protective devices that enable the greatest possible safety for man and machine.

The safety switches with tumbler are offered in plastic or metal enclosures.

Dimensions (W × H × D): 54 mm × 185 mm × 43.5 mm

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through 4 × 90°. The switches can also be approached from above.

The actuator is not included in the scope of supply of the safety switches and must be ordered separately from a choice of different versions to suit the application (see page 12/70).

Actuation data:

- Maximum actuating speed v_{max} = 1.5 m/s
- Minimum actuating speed v_{min} = 0.4 mm/s
- Minimum force in the direction of actuation F_{min} = 30 N

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

Radius actuators

The safety switches with radius actuators are particularly suitable for rotary protective devices. The movable actuation key allows even small radii to be approached. Damage to the switch and the actuator due to inaccurate approach is prevented.

Locking devices

A high-grade steel locking device for attaching up to eight padlocks is available for even more security (see page 12/70).

Dust protection

A rubber cap to protect the actuator entry of the actuator head from contamination is available for operation in dusty environments (see page 12/70).

Tumbler

There are two versions for interlocking the actuator:

- Spring-actuated lock (closed-circuit principle) with various release mechanisms
- Solenoid-locked (open-circuit principle)

The spring-actuated lock switch is equipped with an auxiliary release for emergency situations or setup mode. Available as options:

- Escape release or
- Emergency release

Contact blocks

The safety switches with tumbler have one switching block each for:

- Monitoring the actuator or the position of the protective door
- Monitoring the position of the solenoid

The mechanical design of the switches corresponds to the requirements of the fail-safe principle according to EN ISO 14119.

Optical signaling equipment

The safety switches with tumbler are available with an optional optical signaling device.

The signaling device indicates the switch position of the interlock and the protective device optically by means of 2 LEDs on the front.

Protective device	Tumbler	Display	Meaning
Closed	Released		Actuators able to be pulled
Closed	Locked		Actuators locked
Open	Released		Actuators pulled

Internal wiring:

- The yellow LED is pre-wired to the magnetic monitoring NO contact.
- The green LED is pre-wired to the actuator monitoring NC contact.
- LED ground is pre-wired to the ground of the solenoid.

Note:

- The operational voltage must be connected to the corresponding contacts by the customer.
- This voltage for the LEDs must match the operational voltage of the solenoid (same potential).

Benefits

The new generation of 3SE53 safety switches offers:

- More safety through higher locking forces:
  - 1300 N with plastic enclosure
  - 2600 N with metal enclosure
- Various release mechanisms: Lock release, escape release and emergency release
- Two contact blocks each with three contacts as standard equipment, hence fewer versions needed
- Same dimensions for all enclosure versions: Plastic, metal or with integrated ASIsafe
- An extensive range of actuators
- An optional LED status display 24 V DC, 115 V AC or 230 V AC for all switch versions
- Devices with ASIsafe electronics integrated in the enclosure (see page 12/103)
- 3SE5322-1S.21-1AG4 series with high degree of protection IP69, IP69K in accordance with IEC 60529, cover with foamed seal

Application

The safety switches with tumbler are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grilles or other covers as long as a dangerous situation is present (i.e. follow-on motion of the switched-off machine).

The safety position switches with tumbler have the following functions:

- Enabling the machine or process with closed and locked protective device
- Locking the machine or process with opened protective device
- Position monitoring of the protective device and tumbler

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Devices).

The mechanical design of the switch corresponds to the requirements of the fail-safe principle according to EN ISO 14119.

Approvals

The switches are approved for use with locking devices according to EN ISO 14119 and EN 292, Parts 1 and 2.

Category 3 according to EN ISO 13849-1 can be attained with a safety switch with tumbler if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK or 3TK28 safety relays or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

Category 4 can be achieved when using an additional 3SE5 safety switch.

These switches are approved according to UL 508, UL 50 and UL 746-C.

Tumbler

The separate actuator operates in a similar way to the coding of a key and protects against manipulation. It transmits the locking force to the protective device and helps to monitor its position.

There are two versions of locking:

Spring-actuated lock (closed-circuit principle)

- In the standard version, the safety switch locks by means of spring force and releases by means of electromagnetic force. In the case of voltage failure, it reliably prevents the protective device from opening when machine parts are still moving.
- The switch is equipped with an auxiliary release for emergency situations or setup mode.
- An auxiliary release which can be secured with a lock to prevent misuse is available as a version.

Auxiliary release

Auxiliary release with lock

The 3SE5 3 safety switches are also available with an escape release or emergency release.

- Personnel working inside the hazard zone can use the escape release feature to manually release the tumbler without tools from the escape side (hazardous area side) so that they can exit the hazard area. An intentional act (in this case pulling the gray actuator) is required to release the locking mechanism and restore the normal operating state.
- The emergency release enables someone in an emergency situation to manually release the tumbler without tools from the access side (outside the hazardous area). Releasing the lock and restoring the normal operating state must require effort which is comparable to repair activity: in this case disassembly of the red actuator and resetting of the mechanical lock.

Escape release from the front

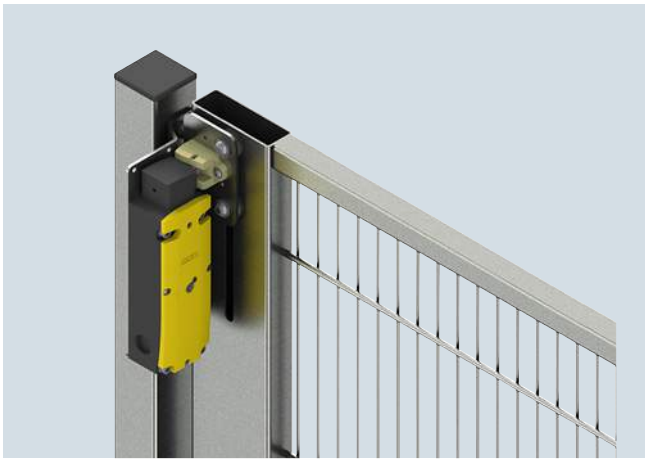
Emergency release from the back

Solenoid-locked (open-circuit principle)

- The second version offers locking by means of electromagnetic force and release by means of spring force. This version has an advantage when it is necessary to quickly access the machine after a power failure occurs, or in the case of very short coasting times.

Examples of door interlocking

X-Lock door interlocking from Axelent



Door interlocking from Brühl

For the addresses of the door interlock manufacturers, see page 16/20.

Technical specifications

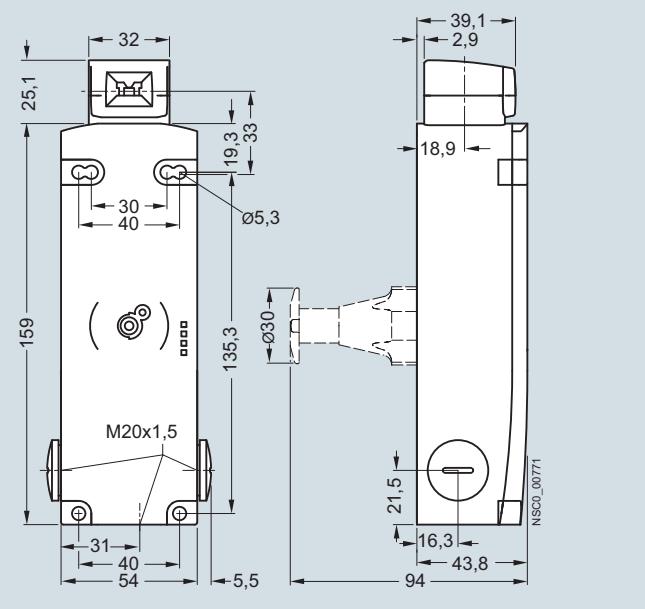
Type		3SE5322	3SE5312
General data			
Standards		IEC 60947-5-1, EN 60947-5-1, DIN EN ISO 14119	
Rated insulation voltage U_i	V	250	
Degree of pollution according to IEC 60664-1		Class 3	
Rated impulse withstand voltage U_{imp}	kV	4	
Rated operational voltage U_e			
• DC	V	24	
• 50/60 Hz AC	V	230	
Conventional thermal current I_{th}	A	6	
Rated operational current I_e			
• With alternating current 50/60 Hz		I_e / AC-15 or B300	
- At 24 V	A	6	
- At 120 V	A	3	
- At 230 V	A	1.5	
• For direct current		I_e / DC-13 or Q300	
- At 24 V	A	3	
- At 125 V	A	0.55	
- At 250 V	A	0.27	
Solenoid			
• Locking force, max.	N	1 300	2 600
• Locking force according to EN ISO 14119	N	1 000	2 000
• Power consumption at U_c	W	3.5	
Short-circuit protection[1]			
• With DIAZED fuse links, Operational class gG	A	6	
• With miniature circuit breaker, Char. C	A	0.5	
Mechanical endurance		1×10^6 operating cycles	
Electrical endurance			
• With 3RH.1, 3RT contactors in size S00, S0		1×10^6 operating cycles	
• For utilization category AC-15 when switching off I_e / AC-15 at 230 V		100 000 operating cycles	
• With utilization category DC-12/DC-13		For direct current depending on the loading of the switch	
Switching frequency With 3RH.1, 3RT contactors in size S00, S0	Operating cycles	6 000 operating cycles/h	
Shock resistance acc. to IEC 60068-2-27	g / ms	30 / 11	

[1] Without any welds according to IEC 60947-5-1.

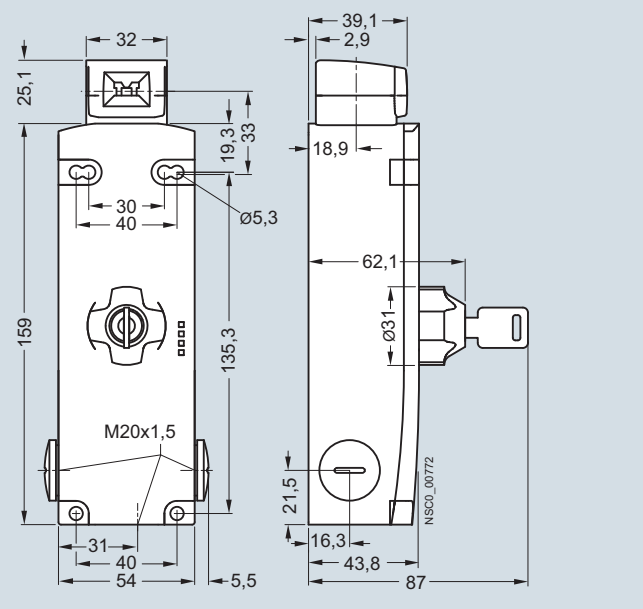
General data

3SE53 configuration

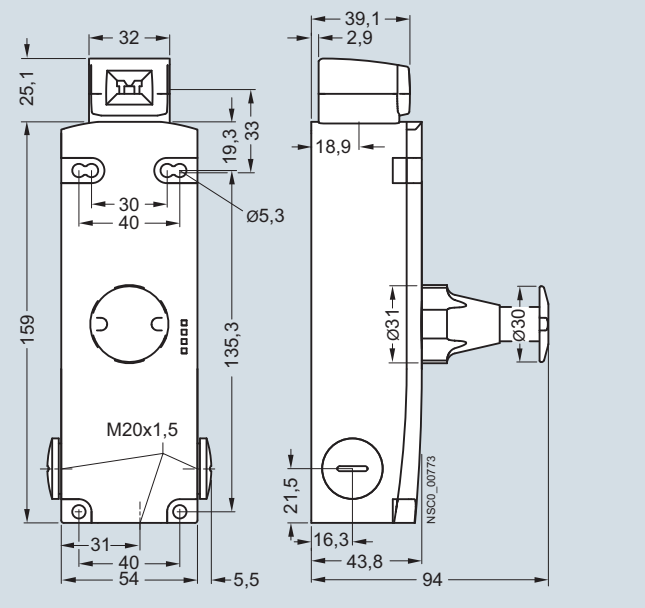
Spring-actuated lock, with auxiliary release
3SE5322-.SD2., 3SE5322-.SG2., 3SE5322-.SJ2.,
3SE5312-.SD1., 3SE5312-.SG1., 3SE5312-.SJ1.,



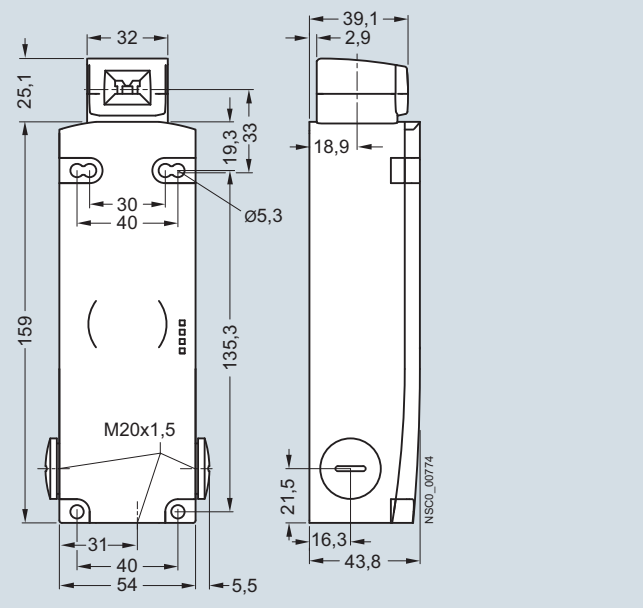
Spring-actuated lock, with auxiliary release with lock
3SE5322-.SE2.,
3SE5312-.SE1.



Spring-actuated lock, with escape release
3SE5322-.SF2.,
3SE5312-.SF1.



Solenoid-locked
3SE5322-.SB2.,
3SE5312-.SB1.



Note:

The plastic enclosures have knock-out openings behind the connecting thread; and are supplied without protective caps because of this.

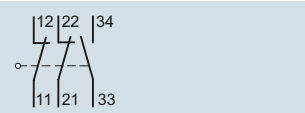
Actuators, see pages 12/53 and 12/54.

Operation, see page 12/54.

Circuit diagrams

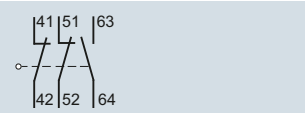
Monitoring the actuator

Slow-action contacts 1 NO + 2 NC



Monitoring the solenoid

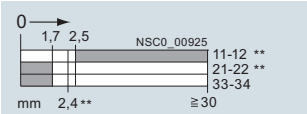
Slow-action contacts 1 NO + 2 NC



Operating travel

Monitoring the actuator

Slow-action contacts 1 NO + 2 NC



Selection and ordering data

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 × M20 × 1.5 · Locking force 1 300 N

	Tumbler[1]	LEDs	Solenoid, rated operational voltage	SD	Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC — Article No.	PU (UNIT, SET, M)	PS*	PG
			V	d				
1 300 N locking force · Enclosure width 54 mm								
 3SE5322-0SD21	**Spring-actuated lock**							
	• With auxiliary release	--	24 DC	⊖ ▶	**3SE5322-0SD21**	1	1 unit	41K
		--	115 AC	⊖ 5	**3SE5322-0SD22**	1	1 unit	41K
		--	230 AC	⊖ 5	**3SE5322-0SD23**	1	1 unit	41K
		Yellow/Green	24 DC	⊖ 2	**3SE5322-1SD21**	1	1 unit	41K
		Yellow/Green	115 AC	⊖ 5	**3SE5322-2SD22**	1	1 unit	41K
		Yellow/Green	230 AC	⊖ 5	**3SE5322-3SD23**	1	1 unit	41K
 3SE5322-0SE21	• With auxiliary release With lock	--	24 DC	⊖ 5	**3SE5322-0SE21**	1	1 unit	41K
		--	115 AC	⊖ 5	**3SE5322-0SE22**	1	1 unit	41K
		--	230 AC	⊖ 5	**3SE5322-0SE23**	1	1 unit	41K
		Yellow/Green	24 DC	⊖ 5	**3SE5322-1SE21**	1	1 unit	41K
		Yellow/Green	115 AC	⊖ 5	**3SE5322-2SE22**	1	1 unit	41K
		Yellow/Green	230 AC	⊖ 5	**3SE5322-3SE23**	1	1 unit	41K
 3SE5322-0SF21	• With escape release from the front	--	24 DC	⊖ 5	**3SE5322-0SF21**	1	1 unit	41K
		--	115 AC	⊖ 5	**3SE5322-0SF22**	1	1 unit	41K
		--	230 AC	⊖ 5	**3SE5322-0SF23**	1	1 unit	41K
		Yellow/Green	24 DC	⊖ 5	**3SE5322-1SF21**	1	1 unit	41K
		Yellow/Green	115 AC	⊖ 5	**3SE5322-2SF22**	1	1 unit	41K
		Yellow/Green	230 AC	⊖ 5	**3SE5322-3SF23**	1	1 unit	41K
	• With escape release from the front and emergency release from the back	--	24 DC	⊖ 5	**3SE5322-0SL21**	1	1 unit	41K
 3SE5322-0SG21	• With escape release from the back and front auxiliary release	--	24 DC	⊖ 5	**3SE5322-0SG21**	1	1 unit	41K
		--	115 AC	⊖ 5	**3SE5322-0SG22**	1	1 unit	41K
		--	230 AC	⊖ 5	**3SE5322-0SG23**	1	1 unit	41K
		Yellow/Green	24 DC	⊖ 5	**3SE5322-1SG21**	1	1 unit	41K
		Yellow/Green	115 AC	⊖ 5	**3SE5322-2SG22**	1	1 unit	41K
		Yellow/Green	230 AC	⊖ 5	**3SE5322-3SG23**	1	1 unit	41K
	• With escape release from the back and auxiliary release with lock from the front	--	24 DC	⊖ 5	**3SE5322-0SH21**	1	1 unit	41K
 3SE5322-0SJ21	• With emergency release from the back and front auxiliary release	--	24 DC	⊖ 5	**3SE5322-0SJ21**	1	1 unit	41K
		--	115 AC	⊖ 5	**3SE5322-0SJ22**	1	1 unit	41K
		--	230 AC	⊖ 5	**3SE5322-0SJ23**	1	1 unit	41K
		Yellow/Green	24 DC	⊖ 5	**3SE5322-1SJ21**	1	1 unit	41K
		Yellow/Green	115 AC	⊖ 5	**3SE5322-2SJ22**	1	1 unit	41K
		Yellow/Green	230 AC	⊖ 5	**3SE5322-3SJ23**	1	1 unit	41K
 3SE5322-1SB21	**Solenoid-locked**	--	24 DC	⊖ ▶	**3SE5322-0SB21**	1	1 unit	41K
		--	115 AC	⊖ 5	**3SE5322-0SB22**	1	1 unit	41K
		--	230 AC	⊖ 5	**3SE5322-0SB23**	1	1 unit	41K
		Yellow/Green	24 DC	⊖ 2	**3SE5322-1SB21**	1	1 unit	41K
		Yellow/Green	115 AC	⊖ 5	**3SE5322-2SB22**	1	1 unit	41K
		Yellow/Green	230 AC	⊖ 5	**3SE5322-3SB23**	1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Supplied without actuator. Please order separately (see page 12/70).

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches
With Tumbler

3SE5, plastic enclosures with locking force greater than 1 200 N

6 slow-action contacts · 5 directions of approach · **Degree of protection IP69K** · Cable entry 3 × M20 × 1.5 · Locking force 1 300 N

- With foamed seal and special cover

	Tumbler[1]	LEDs	Solenoid, rated operational voltage	SD	Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC		PU (UNIT, SET, M)	PS*	PG
			V	d	Article No.	Price per PU			
1 300 N locking force · Enclosure width 54 mm · Degree of protection IP69K									
 3SE5322-1SD21-1AG4	**Spring-actuated locks** • With auxiliary release	Yellow/ Green	24 DC	⊖ 5	**3SE5322-1SD21-1AG4**		1	1 unit	41K
 3SE5322-1SE21-1AG4	• With auxiliary release With lock	Yellow/ Green	24 DC	⊖ 5	**3SE5322-1SE21-1AG4**		1	1 unit	41K
 3SE5322-1SF21-1AG4	• With escape release from the front	Yellow/ Green	24 DC	⊖ 5	**3SE5322-1SF21-1AG4**		1	1 unit	41K
 3SE5322-1SG21-1AG4	• With escape release from the back and front auxiliary release	Yellow/ Green	24 DC	⊖ 5	**3SE5322-1SG21-1AG4**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Supplied without actuator. Please order separately (see page 12/70).

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Accessories							
	**Cable glands M20 × 1.5** Plastic high degree of protection IP69, IEC 60529	2	**3SX5601-1A**		1	1 unit	41K

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 × M20 × 1.5 · Locking force 2 600 N

	Tumbler[1]	LEDs	Solenoid, rated operational voltage	SD	Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC		PU (UNIT, SET, M)	PS*	PG
			V	d	Article No.	Price per PU			
2 600 N locking force · Enclosure width 54 mm									
 3SE5312-0SD11	**Spring-actuated locks**								
	• With auxiliary release	--	24 DC	⇒ ▶	**3SE5312-0SD11**		1	1 unit	41K
		--	115 AC	⇒ 5	**3SE5312-0SD12**		1	1 unit	41K
		--	230 AC	⇒ 5	**3SE5312-0SD13**		1	1 unit	41K
		Yellow/Green	24 DC	⇒ 5	**3SE5312-1SD11**		1	1 unit	41K
		Yellow/Green	115 AC	⇒ 5	**3SE5312-2SD12**		1	1 unit	41K
		Yellow/Green	230 AC	⇒ 5	**3SE5312-3SD13**		1	1 unit	41K
 3SE5312-0SE11	• With auxiliary release With lock	--	24 DC	⇒ 5	**3SE5312-0SE11**		1	1 unit	41K
		--	115 AC	⇒ 5	**3SE5312-0SE12**		1	1 unit	41K
		--	230 AC	⇒ 5	**3SE5312-0SE13**		1	1 unit	41K
		Yellow/Green	24 DC	⇒ 5	**3SE5312-1SE11**		1	1 unit	41K
		Yellow/Green	115 AC	⇒ 5	**3SE5312-2SE12**		1	1 unit	41K
		Yellow/Green	230 AC	⇒ 5	**3SE5312-3SE13**		1	1 unit	41K
 3SE5312-0SF11	• With escape release from the front	--	24 DC	⇒ 5	**3SE5312-0SF11**		1	1 unit	41K
		--	115 AC	⇒ 5	**3SE5312-0SF12**		1	1 unit	41K
		--	230 AC	⇒ 5	**3SE5312-0SF13**		1	1 unit	41K
		Yellow/Green	24 DC	⇒ 5	**3SE5312-1SF11**		1	1 unit	41K
		Yellow/Green	115 AC	⇒ 5	**3SE5312-2SF12**		1	1 unit	41K
		Yellow/Green	230 AC	⇒ 5	**3SE5312-3SF13**		1	1 unit	41K
 3SE5312-0SG11	• With escape release from the back and auxiliary release from the front	--	24 DC	⇒ 5	**3SE5312-0SG11**		1	1 unit	41K
		--	115 AC	⇒ 5	**3SE5312-0SG12**		1	1 unit	41K
		--	230 AC	⇒ 5	**3SE5312-0SG13**		1	1 unit	41K
		Yellow/Green	24 DC	⇒ 5	**3SE5312-1SG11**		1	1 unit	41K
		Yellow/Green	115 AC	⇒ 5	**3SE5312-2SG12**		1	1 unit	41K
		Yellow/Green	230 AC	⇒ 5	**3SE5312-3SG13**		1	1 unit	41K
	• With escape release from the back and auxiliary release with lock from the front	--	24 DC	⇒ 5	**3SE5312-0SH11**		1	1 unit	41K
 3SE5312-0SJ11	• With emergency release from the back and front auxiliary release	--	24 DC	⇒ 5	**3SE5312-0SJ11**		1	1 unit	41K
		--	115 AC	⇒ 5	**3SE5312-0SJ12**		1	1 unit	41K
		--	230 AC	⇒ 5	**3SE5312-0SJ13**		1	1 unit	41K
		Yellow/Green	24 DC	⇒ 5	**3SE5312-1SJ11**		1	1 unit	41K
		Yellow/Green	115 AC	⇒ 5	**3SE5312-2SJ12**		1	1 unit	41K
		Yellow/Green	230 AC	⇒ 5	**3SE5312-3SJ13**		1	1 unit	41K
 3SE5312-0SB11	**Solenoid-locked**	--	24 DC	⇒ ▶	**3SE5312-0SB11**		1	1 unit	41K
		--	115 AC	⇒ 5	**3SE5312-0SB12**		1	1 unit	41K
		--	230 AC	⇒ 5	**3SE5312-0SB13**		1	1 unit	41K
		Yellow/Green	24 DC	⇒ 5	**3SE5312-1SB11**		1	1 unit	41K
		Yellow/Green	115 AC	⇒ 5	**3SE5312-2SB12**		1	1 unit	41K
		Yellow/Green	230 AC	⇒ 5	**3SE5312-3SB13**		1	1 unit	41K

⇒ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Supplied without actuator. Please order separately (see page 12/70).

Accessories

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
IP66/IP67							
 3SE5000-0AV01	**Standard actuator** • Length 75.6 mm	▶	**3SE5000-0AV01**		1	1 unit	41K
 3SE5000-0AV02	• With vertical fixing, length 53 mm	5	**3SE5000-0AV02**		1	1 unit	41K
 3SE5000-0AV03	• With transverse fixing, length 47 mm	5	**3SE5000-0AV03**		1	1 unit	41K
 3SE5000-0AW51	**High-grade steel actuator, IP69 (K)**[1] • Length 75.6 mm	NEW 5	**3SE5000-0AW51**		1	1 unit	41K
 3SE5000-0AV06	**Radius actuators**, length 51 mm						
	• Direction of approach from the left	2	**3SE5000-0AV04**		1	1 unit	41K
	• Direction of approach from the right	▶	**3SE5000-0AV06**		1	1 unit	41K
 3SE5000-0AV05-1AA6	**Universal radius actuator**						
	• Length 77 mm	5	**3SE5000-0AV05**		1	1 unit	41K
	• Length 77 mm, tab rotated 90°	5	**3SE5000-0AV05-1AA6**		1	1 unit	41K
 3SE5000-0AV07	**Universal radius actuator, heavy duty**						
	• Length 67 mm	2	**3SE5000-0AV07-1AK2**		1	1 unit	41K
	• Length 77 mm	5	**3SE5000-0AV07**		1	1 unit	41K
Optional accessories for 3SE5							
 3SE5000-0AV08-1AA2	**Protective caps** made of black rubber for the actuator head, to protect the actuator openings from contamination	5	**3SE5000-0AV08-1AA2**		1	1 unit	41K
 3SE5000-0AV08-1AA3	**Blocking inserts**, high-grade steel, for actuator head, for up to eight padlocks	5	**3SE5000-0AV08-1AA3**		1	1 unit	41K
Spare parts for 3SE53							
	Spare keys	5	**3SX5100-1F**		1	1 unit	41K
Connection for 3SE5							
 3SY3127	**Connector sockets (4-pole), M12, fixed for M20 × 1.5** for max. 250 V, 4 A With connecting cable 0.25 mm², Plastic, degree of protection IP67, Ambient temperature –40 to +85 °C	5	**3SY3127**		1	1 unit	41K
	Connector sockets (5-pole), M12, fixed for M20 × 1.5 for max. 125 V, 4 A With connecting cable 0.25 mm², Plastic, degree of protection IP67, Ambient temperature –40 to +85 °C	5	**3SY3128**		1	1 unit	41K
 3SX9926	**Cable glands M20 × 1.5** • Plastic	2	**3SX9926**		1	1 unit	41K
	• high degree of protection IP69, IEC 60529	2	**3SX5601-1A**		1	1 unit	41K

For further connector versions see page 12/48

[1] With optimized geometry and suitable for extreme environmental conditions -40 °C.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

3SE5 hinge switches have the same enclosures as the 3SE5 position switches (modular system).

Hinge switches

Design

Enclosure sizes

The 3SE5 switches are available as complete units in two enclosure sizes:

- Plastic enclosures according to EN 50047, 31 mm wide, IP65, 1 cable entry
- Metal enclosure according to EN 50047, 31 mm wide, IP66/IP67, 1 cable entry
- Plastic and metal enclosures according to EN 50041, 40 mm wide, IP66/IP67, 1 cable entry

Enclosure versions

Various basic versions can be selected for the enclosures:

- With two or three-pole switching elements designed as snap-action contacts
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs (see page 12/106)

For a description of the basic switches, see page 12/5.

Operating mechanism

The hinge switches are provided for mounting on hinges. The actuator head is included in the scope of supply. There are two versions:

- Operating mechanism with hollow shaft, inner diameter 8 mm, outer diameter 12 mm
- Operating mechanism with solid shaft, diameter 10 mm

3SE2283 hinge switches

The 3SE2283 hinge switches with integrated hinge are available in a special design. They are particularly suitable for use in machine doors and flaps.

Benefits

The 3SE5 hinge switches differ from the previous series through the following new characteristics:

- All actuators can be turned around the axis in increments of 22.5° (see picture, page 12/6).
- The new three-pole contact block 1 NO + 2 NC is available for all enclosure sizes (see picture, page 12/6).
- The plastic enclosure with a width of 31 mm has simple and fast wiring equipment which makes it possible to save approx. 20 to 25 % of the time when connecting (see picture, page 12/6).
- The ASIsafe electronic component is integrated in the enclosure for the versions with AS-Interface connection (see page 12/91); an additional adapter is not required.

Application

The hinge switches are used in those areas where the position of swiveling protective devices such as doors or flaps must be monitored. With these switches, the position of the doors and flaps is converted into electric signals. The switches allow shutdown and signaling without delay in the event of a small opening angle through the snap-action contacts with an operating angle of 10°.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the contact blocks best suited for the particular purpose. Dimensions and fixing points of the enclosures are in accordance with EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

IEC 60947-5-1 or EN 60947-5-1.

The protective measure of "total insulation" by the molded-plastic enclosure is ensured by the use of molded-plastic screw glands.

Safety position switches

For controls according to IEC 60204-1 or EN 60204-1 the devices can be used as a safety position switch. To secure position switches against changes in their position, keyed techniques must be employed on installation.

Safety circuits

Standards IEC 60947-5-1 and EN 60947-5-1 require positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked in accordance with IEC 60947-5-1 with the symbol ⊖.

Category 4 according to EN ISO 13849-1 can be attained with the 3SE5 hinge switches with ⊖ if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK or 3TK28 safety relays or matching devices from the ASIsafe, SIMATIC or SINUMERIK product ranges.

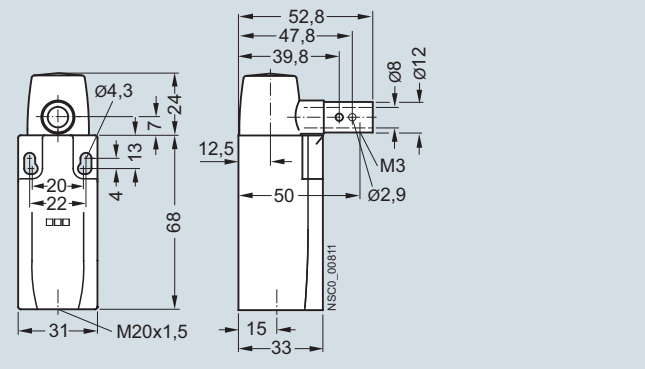
Technical specifications

The technical specifications are the same as for the standard switches (see page 12/9).

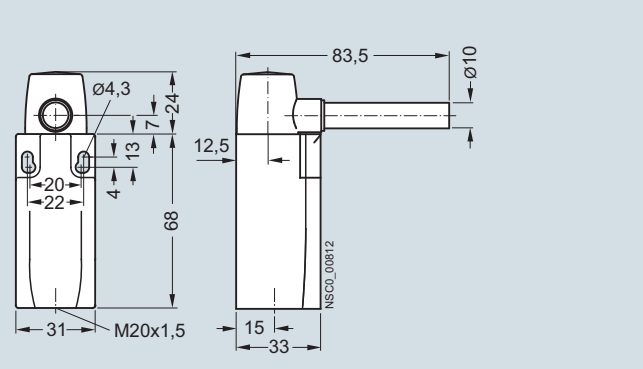
Configuration

Enclosure width 31 mm

With hollow shaft
3SE5212-0.U21, 3SE5232-0.U21

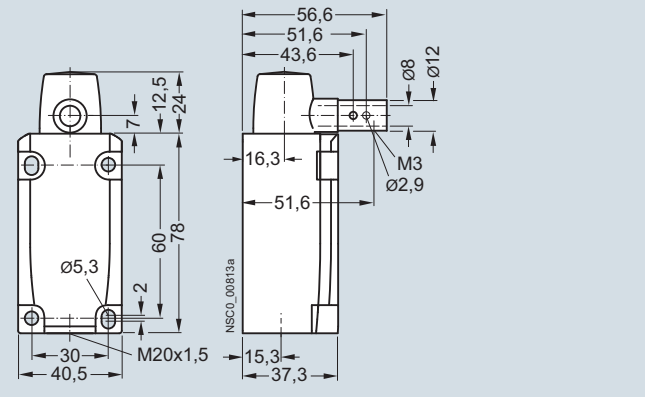


With solid shaft
3SE5212-0.U22, 3SE5232-0.U22

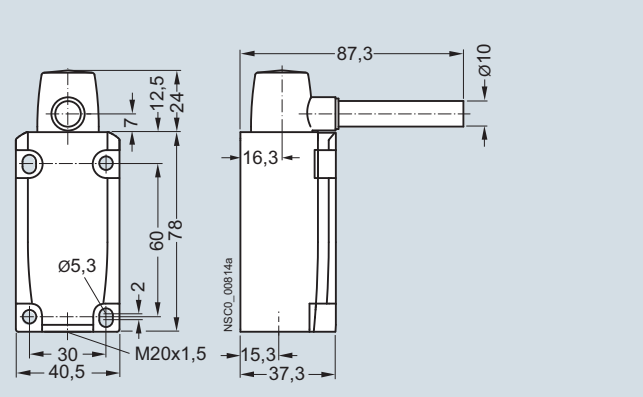


Enclosure width 40 mm

With hollow shaft
3SE5112-0.U21, 3SE5132-0.U21



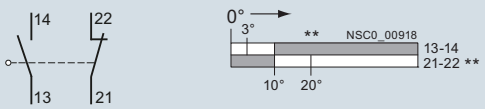
With solid shaft
3SE5112-0.U22, 3SE5132-0.U22



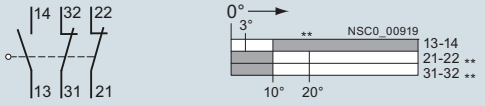
Operating travel of the shaft

Snap-action contacts

1 NO + 1 NC, Ident. No. **11**



1 NO + 2 NC, Ident. No. **12**



Contact closed
Contact open
** Positive opening point

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP65 (31 mm) or IP67/IP68 (40 mm) · Cable entry M20 × 1.5

	Version	Snap-action contacts	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Plastic enclosures · Enclosure width 31 mm acc. to EN 50047								
 3SE5232-0HU21	**With hollow shaft**							
	Operating angle 10°	1 NO + 1 NC[1]	⊕ 5	**3SE5232-0HU21**		1	1 unit	41K
	Operating angle 10°	1 NO + 2 NC	⊕ 5	**3SE5232-0LU21**		1	1 unit	41K
 3SE5232-0HU22	**With solid shaft**							
	Operating angle 10°	1 NO + 1 NC[1]	⊕ 5	**3SE5232-0HU22**		1	1 unit	41K
	Operating angle 10°	1 NO + 2 NC	⊕ 5	**3SE5232-0LU22**		1	1 unit	41K
Plastic enclosures · Enclosure width 40 mm acc. to EN 50041								
 3SE5132-0LU21	**With hollow shaft**							
	Operating angle 10°	1 NO + 2 NC	⊕ 5	**3SE5132-0LU21**		1	1 unit	41K
 3SE5132-0LU22	**With solid shaft**							
	Operating angle 10°	1 NO + 2 NC	⊕ 5	**3SE5132-0LU22**		1	1 unit	41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) Contact blocks permanently integrated, replacement not available.

Spare parts

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Actuator heads							
 3SE5000-0AU21	**With hollow shaft**						
	Operating angle 10°	5	**3SE5000-0AU21**		1	1 unit	41K
 3SE5000-0AU22	**With solid shaft**						
	Operating angle 10°	5	**3SE5000-0AU22**		1	1 unit	41K

Note:
The respective actuators are included in the scope of supply for the complete units.

Enclosure widths 31 mm / 40 mm

Selection and ordering data

Complete units

3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

	Version	Snap-action contacts	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Metal enclosures · Enclosure width 31 mm according to EN 50047								
 3SE5212-0LU21	**With hollow shaft** Operating angle 10°	1 NO + 2 NC	➔ 5	**3SE5212-0LU21**		1	1 unit	41K
 3SE5212-0LU22	**With solid shaft** Operating angle 10°	1 NO + 2 NC	➔ 5	**3SE5212-0LU22**		1	1 unit	41K
Metal enclosures · Enclosure width 40 mm according to EN 50041								
 3SE5112-0LU21	**With hollow shaft** Operating angle 10°	1 NO + 2 NC	➔ 5	**3SE5112-0LU21**		1	1 unit	41K
 3SE5112-0LU22	**With solid shaft** Operating angle 10°	1 NO + 2 NC	➔ 5	**3SE5112-0LU22**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Appendix K.

Spare parts

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Actuator heads							
 3SE5000-0AU21	**With hollow shaft** Operating angle 10°	5	**3SE5000-0AU21**		1	1 unit	41K
 3SE5000-0AU22	**With solid shaft** Operating angle 10°	5	**3SE5000-0AU22**		1	1 unit	41K

Note:
The respective actuators are included in the scope of supply for the complete units.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

The 3SE2283 hinge switches with built-in hinge are particularly suitable for use in doors and flaps of machines that must be closed to ensure the safety of operating personnel. Their thin profile and the compact design allow them to be directly mounted on a hinged protective cover and the stable frame.

Benefits

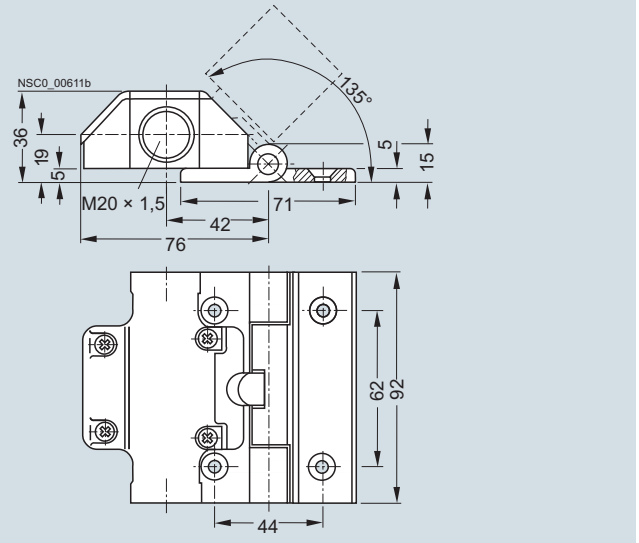
- Easy mounting through use of versions with integrated hinge
- Versions with small operating angle of 4° or 8°
- Protection against personal injury provided by positively driven NC contacts according to IEC 60947-5-1
- Simultaneous shutdown and signaling by 1 NO + 2 NC contacts

Technical specifications

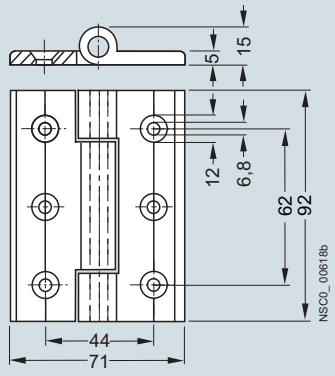
Type		3SE2283
Rated insulation voltage U_i	V	250
Conventional thermal current I_{th}	A	2.5
Rated operational current I_e		
• At AC-15, 120 V	A	4.2
• At AC-15, 250 V	A	2
• At DC-13, 24 V	A	1
Min. make-break capacity		> 5 V/1 mA
Short-circuit protection		
• Operational class gG	A	2
Mechanical endurance		> 1 × 10^6 operating cycles
Switching frequency		1 200 operating cycles/h
Positive opening		2 mm after opening point
Enclosure material		Plastic
Degree of protection		IP65
Ambient temperature	°C	–25 ... +65
Shock resistance		30 *g* /18 ms
Resistance to vibrations		20 *g* /10 ... 200 Hz
Cable entry		2 × (M20 × 1.5)
Screw terminals		0.5 ... 1.5 mm^2 / AWG 15

Configuration

3SE2283-.GA.3 hinge switch with hinge

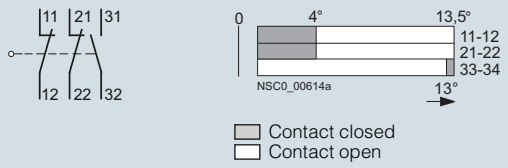


3SX3225 additional hinge

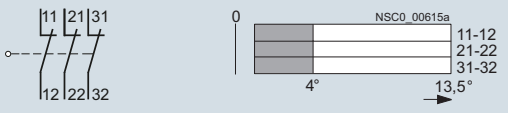


Operating travel of the hinge

Slow-action contacts
1 NO + 2 NC, Ident. No. **12**



Slow-action contacts
3 NC, Ident. No. **03**



12

With integrated hinge

Selection and ordering data

3 contacts · Degree of protection IP65 · Cable entry 2 × (M20 × 1.5)

Version	Slow-action contacts	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Plastic enclosures with integrated hinge							
 3SE2283							
With integrated hinge (Scope of supply includes additional hinge and fixing accessories)							
• Aluminum hinge							
- 4 ° actuating angle	1 NO + 2 NC	➔ 2	**3SE2283-0GA43**		1	1 unit	41K
- 4 ° actuating angle	3 NC	➔ 5	**3SE2283-6GA43**		1	1 unit	41K
- 8 ° actuating angle	1 NO + 2 NC	➔ 10	**3SE2283-0GA53**		1	1 unit	41K
- 8 ° actuating angle	3 NC	➔ 10	**3SE2283-6GA53**		1	1 unit	41K
• High-grade steel hinge							
- 4 ° actuating angle	1 NO + 2 NC	➔ 5	**3SE2283-0GA44**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Appendix K.

Accessories/spare parts

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories						
 3SX3225						
Additional hinge (Scope of supply includes fixing accessories)						
• Made of aluminum	➔ 30	**3SX3225**		1	1 unit	41K

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP65 or IP66/IP67 · Cable entry M20 × 1.5, with enhanced corrosion protection

	Version	Contacts	LEDs	SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Complete units[1] • Enclosure width 31 mm									
 SE5232-0LK21-1AY0	***Twist levers, 21 mm long, according to EN 50047*** **With plastic roller 19 mm, with M20 connector socket** Snap-action contacts	1 NO + 2 NC	--	5	**3SE5232-0LK21-1AY0**		1	1 unit	41K
 3SE5232-0LE10-1AY0	***Roller levers, according to EN 50047*** **With plastic roller 13 mm, with M20 connector socket** Snap-action contacts	1 NO + 2 NC	--	5	**3SE5232-0LE10-1AY0**		1	1 unit	41K
 3SE5232-0HK82-1AY0	***Rod actuators, according to EN 50047*** **Plastic rod, length 200 mm with M20 connector socket** Snap-action contacts	1 NO + 1 NC	--	5	**3SE5232-0HK82-1AY0**		1	1 unit	41K
 3SE5232-0HR01-1AY0	***Spring rod, according to EN 50047*** **with M20 connector socket** Snap-action contacts	1 NO + 1 NC	--	5	**3SE5232-0HR01-1AY0**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

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Selection and ordering data

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 × M20 × 1.5 · Locking force 1 300 N

	Tumbler[1]	LEDs	Solenoid, rated operational voltage	SD	**Complete units** Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC ☐ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			V	d					
1 300 N locking force · Enclosure width 54 mm									
 3SE5322-0SD21-1AY0	**Spring-actuated locks**								
	• with front auxiliary release		24 DC	⊖ 5	**3SE5322-0SD21-1AY0**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Supplied without actuator. Please order separately.

Accessories/spare parts

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Accessories							
 3SE5000-0AV01	**Standard actuator**	►	**3SE5000-0AV01**		1	1 unit	41K
	• Length 75.6 mm						
	High-grade steel actuator[1]						
 3SE5000-0AW51	• Length 75.6 mm	NEW 5	**3SE5000-0AW51**		1	1 unit	41K

1) With optimized geometry and suitable for extreme environmental conditions -40 °C

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

With enhanced corrosion protection

Version	Contacts	LEDs	SD	Complete units		PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU			
			d					
Complete units[1] • Enclosure width 31 mm								
Hinge switches, according to EN 50047								
With hollow shaft D = 8 mm, operating angle 10 degrees, with M20 connector socket								
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5232-0HU21-1AY0**		1	1 unit	41K

3SE5232-0HU21-1AY0

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

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Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP65 or IP66/IP67 · Cable entry M20 × 1.5, with enhanced corrosion protection

	Version	Contacts	LEDs	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] • Enclosure width 31 mm									
 3SE5234-0CD03-1AJ1	***Roller plungers, type C, acc. to EN 50047*** **With plastic roller 10 mm,** **With M12 connector socket, 4-pole** (250 V, 4 A)								
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5234-0CD03-1AJ1**		1	1 unit	41K
 3SE5232-0CD10-1AJ0	***Roller plungers with central fixing***								
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5232-0CD10-1AJ0**		1	1 unit	41K
 3SE5232-0CK31-1AJ0	***Twist levers, type A, acc. to EN 50047*** **With high-grade steel lever 21 mm and plastic roller 19 mm**								
	Snap-action contacts	1 NO + 1 NC	--	⊖ 2	**3SE5232-0CK31-1AJ0**		1	1 unit	41K
 3SE5232-0CK62-1AJ0	***Twist levers, adjustable length*** **With high-grade steel lever with grid hole and plastic roller 19mm**								
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5232-0CK62-1AJ0**		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0LK62-1AJ0**		1	1 unit	41K
Complete units[1] • Enclosure width 50 mm									
 3SE5242-0HK21-1AJ0	***Twist levers*** **With metal lever 21 mm and plastic roller 19 mm**								
	Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖ 5	**3SE5242-0HK21-1AJ0**		1	1 unit	41K
	Twist levers, adjustable length **With high-grade steel lever with grid hole and plastic roller 19mm**								
	Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖ 5	**3SE5242-0HK62-1AJ0**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) Subsequent replacement of contact blocks is not possible.

Note:

If the device you require is not available as a complete unit, see Modular System, page 12/81.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Modular system

2 or 3 contacts · Degree of protection IP65 or IP66/IP67 · Cable entry M20 × 1.5, with enhanced corrosion protection

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No. / Price per PU			
Basic switches • Enclosure width 31 mm (with rounded plunger[1])							
With teflon plunger							
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5232-0CC05-1AJ0**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0KC05-1AJ0**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5232-0LC05-1AJ0**	1	1 unit	41K

3SE5232-0CC05-1AJ0

Basic switches • Enclosure width 50 mm (with rounded plunger[1])							
With teflon plunger							
Slow-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5242-0BC05-1AJ0**	1	1 unit	41K
Snap-action contacts, integrated[2]	1 NO + 1 NC	--	⊖ 5	**3SE5242-0HC05-1AJ0**	1	1 unit	41K

3SE5242-0BC05-1AJ0

⊖ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) For enclosures with widths of 31 and 50 mm, the basic switch is a complete unit with rounded plungers.

2) Subsequent replacement of contact blocks is not possible.

Note:

For the selection aid, see page 12/15.

3SE5, plastic enclosures

	Version	Diameter mm	SD d	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms								
 3SE5000-0AD03	**Roller plungers, type C, acc. to EN 50047**							
	Plastic roller	10	➔ 5	**3SE5000-0AD03-1AJ0**		1	1 unit	41K
	Roller levers, type E, acc. to EN 50047							
	Metal lever, plastic roller	13	➔ 5	**3SE5000-0AE10-1AJ0**		1	1 unit	41K
	High-grade steel lever, plastic roller	13	➔ 5	**3SE5000-0AE12-1AJ0**		1	1 unit	41K
 3SE5000-0AF10-1AJ0	**Angular roller levers**							
	Metal lever, plastic roller	13	➔ 5	**3SE5000-0AF10-1AJ0**		1	1 unit	41K
	High-grade steel lever, plastic roller	13	➔ 5	**3SE5000-0AF12-1AJ0**		1	1 unit	41K
Twist actuators								
 3SE5000-0AK00-1AJ0	**Twist actuators**, for 31/50 mm, EN 50047							
	Switching right and/or left, adjustable		➔ 5	**3SE5000-0AK00-1AJ0**		1	1 unit	41K
 3SE5000-0AA21-1AJ0	***Levers***							
	Twist levers straight, 21 mm, type A acc. to EN 50047							
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA21-1AJ0**		1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA31-1AJ0**		1	1 unit	41K
 3SE5000-0AA60-1AJ0	**Twist levers, adjustable length, with grid hole**							
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA60-1AJ0**		1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA62-1AJ0**		1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5, with enhanced corrosion protection

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No. / Price per PU			
Basic switches • Enclosure width 40 mm							
 3SE5132-0CA00-1AJ0							
With connecting thread M20 × 1.5							
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5132-0CA00-1AJ0**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5132-0KA00-1AJ0**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5132-0LA00-1AJ0**	1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

Note:
For the selection aid, see page 12/15.

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No. / Price per PU			
Operating mechanisms						
 3SE5000-0AC03-1AJ0						
Rounded plungers, type B, acc. to EN 50041						
Plastic plungers	10	➔ 5	**3SE5000-0AC03-1AJ0**	1	1 unit	41K
 3SE5000-0AD05-1AJ0						
Roller plungers, type C, acc. to EN 50041						
Plastic plunger, plastic roller	13	➔ 5	**3SE5000-0AD05-1AJ0**	1	1 unit	41K
 3SE5000-0AE05-1AJ0						
Roller levers						
Metal lever with plastic roller, plastic base	22	➔ 5	**3SE5000-0AE05-1AJ0**	1	1 unit	41K
Twist actuators						
 3SE5000-0AJ00-1AJ0						
Twist actuators, for 31/50 mm, EN 50047 • for twist levers and rod levers, Switching right and/or left, adjustable		➔ 5	**3SE5000-0AJ00-1AJ0**	1	1 unit	41K
 3SE5000-0AA01-1AJ0						
Levers						
Twist levers, type A, acc. to EN 50041						
Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA01-1AJ0**	1	1 unit	41K
High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA11-1AJ0**	1	1 unit	41K
 3SE5000-0AA60-1AJ0						
Twist levers, adjustable length, with grid hole						
Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA60-1AJ0**	1	1 unit	41K
High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA62-1AJ0**	1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5, with enhanced corrosion protection

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No. / Price per PU			
Complete units • Enclosure width 31 mm							
Rounded plungers, type B, acc. to EN 50047							
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5212-0CC05-1AJ0**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5212-0KC05-1AJ0**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5212-0LC05-1AJ0**	1	1 unit	41K
Twist levers, type A, acc. to EN 50047							
With metal lever 21 mm and high-grade steel roller 19 mm, twist actuator in metal version							
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5212-0CH22-1AJ0**	1	1 unit	41K


3SE5212-0CC05-1AJ0


3SE5212-0CH22-1AJ0

➔ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

Note:

If the device you require is not available as a complete unit, see "Modular system" on page 12/83.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5, with enhanced corrosion protection

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No. / Price per PU			
Basic switches • Enclosure width 31 mm (with rounded plunger[1])							
With plunger							
Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5212-0CC05-1AJ0**	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0KC05-1AJ0**	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5212-0LC05-1AJ0**	1	1 unit	41K


3SE5212-0CC05-1AJ0

⊖ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

Note:
For the selection aid, see page 12/15.

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No. / Price per PU			
Operating mechanisms						
Roller plungers, type C, acc. to EN 50047						
Plastic roller	10	⊖ 5	**3SE5000-0AD03-1AJ0**	1	1 unit	41K


3SE5000-0AD03-1AJ0

Roller levers, type E, acc. to EN 50047						
Metal lever, plastic roller	13	⊖ 5	**3SE5000-0AE10-1AJ0**	1	1 unit	41K
High-grade steel lever, plastic roller	13	⊖ 5	**3SE5000-0AE12-1AJ0**	1	1 unit	41K


3SE5000-0AE10-1AJ0

Angular roller levers						
Metal lever, plastic roller	13	⊖ 5	**3SE5000-0AF10-1AJ0**	1	1 unit	41K
High-grade steel lever, plastic roller	13	⊖ 5	**3SE5000-0AF12-1AJ0**	1	1 unit	41K


3SE5000-0AF10-1AJ0

Twist actuators						
Twist actuators, for 31/50 mm, EN 50047						
Switching right and/or left, adjustable		⊖ 5	**3SE5000-0AK00-1AJ0**	1	1 unit	41K


3SE5000-0AK00-1AJ0

Levers						
Twist levers straight, 21 mm, type A acc. to EN 50047						
Metal lever, plastic roller	19	⊖ 5	**3SE5000-0AA21-1AJ0**	1	1 unit	41K
High-grade steel lever, plastic roller	19	⊖ 5	**3SE5000-0AA31-1AJ0**	1	1 unit	41K


3SE5000-0AA21-1AJ0

Twist levers, adjustable length, with grid hole						
Metal lever, plastic roller	19	⊖ 5	**3SE5000-0AA60-1AJ0**	1	1 unit	41K
High-grade steel lever, plastic roller	19	⊖ 5	**3SE5000-0AA62-1AJ0**	1	1 unit	41K


3SE5000-0AA60-1AJ0

⊖ Positively driven actuator, necessary in safety circuits.

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3SE5, metal enclosures

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5, with enhanced corrosion protection

	Version	Contacts	LEDs	SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Complete units • Enclosure width 40 mm									
 3SE5112-0CC02-1AJ0	***Rounded plungers, type B, acc. to EN 50041*** **With high-grade steel plungers, with 3 mm overtravel**								
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5112-0CC02-1AJ0**		1	1 unit	41K
 3SE5112-0LH11-1AJ0	***Twist levers, type A, acc. to EN 50041*** **With high-grade steel lever 27 mm and plastic roller 19 mm**								
	Snap-action contacts	1 NO + 2 NC	--	⊖ 5	**3SE5112-0LH11-1AJ0**		1	1 unit	41K
 3SE5112-0CH62-1AJ0	***Twist levers, adjustable length*** **With high-grade steel lever with grid hole and plastic roller 19 mm**								
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5112-0CH62-1AJ0**		1	1 unit	41K
Complete units • Enclosure width 56 mm, XL									
 3SE5162-0CH60-1AJ0	***Twist levers, adjustable length*** **With metal lever with grid hole and plastic roller 19 mm**								
	Snap-action contacts	1 NO + 1 NC	--	⊖ 5	**3SE5162-0CH60-1AJ0**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K or positively driven actuator, necessary in safety circuits.

Note:

If the device you require is not available as a complete unit, see "Modular system" on page 12/87.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Modular system

2, 3 or 4 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5, with enhanced corrosion protection

Version	Contacts	LEDs	SD	Modular system ◇ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Basic switches • Enclosure width 40 mm								
With connecting thread M20 × 1.5								
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5112-0CA00-1AJ0**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5112-0KA00-1AJ0**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5112-0LA00-1AJ0**		1	1 unit	41K

3SE5112-0CA00-1AJ0

Basic switches • Enclosure width 56 mm								
With 3 x connecting thread M20 × 1.5								
Snap-action contacts	1 NO + 1 NC	--	➔ 5	**3SE5122-0CA00-1AJ0**		1	1 unit	41K
Slow-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5122-0KA00-1AJ0**		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC	--	➔ 5	**3SE5122-0LA00-1AJ0**		1	1 unit	41K

3SE5122-0CA00-1AJ0

Basic switches • Enclosure width 56 mm, XL								
With 3 × connection thread M20 × 1.5								
Slow-action contacts	2 × (1 NO + 1 NC)	--	➔ 5	**3SE5162-0BA00-1AJ0**		1	1 unit	41K
Snap-action contacts	2 × (1 NO + 1 NC)	--	➔ 5	**3SE5162-0CA00-1AJ0**		1	1 unit	41K

3SE5162-0BA00-1AJ0

➔ Positive opening according to IEC 60947-5-1, Appendix K or positively driven actuator, necessary in safety circuits.

Note:

For the selection aid, see page 12/15.

3SE5, metal enclosures

	Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
		mm	d	Article No. Price per PU			
Operating mechanisms							
 3SE5000-0AC02-1AJ0	**Rounded plungers, type B, acc. to EN 50041**						
	High-grade steel plunger, with 3 mm overtravel	10	➔ 5	**3SE5000-0AC02-1AJ0**	1	1 unit	41K
 3SE5000-0AD02-1AJ0	**Roller plungers, type C, acc. to EN 50041**						
	High-grade steel roller, with 3 mm overtravel	10	➔ 5	**3SE5000-0AD02-1AJ0**	1	1 unit	41K
 3SE5000-0AE01-1AJ0	**Roller levers**						
	Metal lever, plastic roller	13	➔ 5	**3SE5000-0AE01-1AJ0**	1	1 unit	41K
	High-grade steel lever, plastic roller	13	➔ 5	**3SE5000-0AE03-1AJ0**	1	1 unit	41K
 3SE5000-0AF01-1AJ0	**Angular roller levers**						
	Metal lever, plastic roller	13	➔ 5	**3SE5000-0AF01-1AJ0**	1	1 unit	41K
	High-grade steel lever, plastic roller	13	➔ 5	**3SE5000-0AF03-1AJ0**	1	1 unit	41K
Twist actuators							
 3SE5000-0AH00-1AJ0	**Twist actuators**, for 40/56/56 XL mm EN 50041						
	Switching right and/or left, adjustable		➔ 5	**3SE5000-0AH00-1AJ0**	1	1 unit	41K
	Levers						
 3SE5000-0AA01-1AJ0	**Twist levers, type A, acc. to EN 50041**						
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA01-1AJ0**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA11-1AJ0**	1	1 unit	41K
 3SE5000-0AA60-1AJ0	**Twist levers, adjustable length, with grid hole**						
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA60-1AJ0**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA62-1AJ0**	1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Complete units

2 or 3 contacts · 5 directions of approach · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · Cable entry M20 × 1.5

Version	Contacts	LEDs		SD	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Enclosure width 31 mm acc. to EN 50047									
 3SE5232-0RV40-1AJ0									
Ambient temperature down to -40° C **With increased corrosion protection**									
Slow-action contacts	1 NO + 1 NC	--	⊕	5	**3SE5232-0RV40-1AJ0**		1	1 unit	41K

Accessories/spare parts

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Accessories						
Standard actuator						
 3SE5000-0AW11						
• With transverse fixing, plastic Length 40 mm	5	**3SE5000-0AW11**		1	1 unit	41K
High-grade steel actuator[1]						
 3SE5000-0AW51						
• Length 75.6 mm	NEW 5	**3SE5000-0AW51**		1	1 unit	41K

[1] With optimized geometry and suitable for extreme environmental conditions -40 °C.

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Selection and ordering data

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 × M20 × 1.5 · Locking force 1 300 N

Tumbler[1]	Solenoid, rated operational voltage	SD	**Complete units** Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC ☐	PU (UNIT, SET, M)	PS*	PG
	V	d	Article No. Price per PU			
1 300 N locking force • Enclosure width 54 mm						
 3SE5322-0SL21-1AJ0						
Spring-actuated locks						
• With escape release from the front and emergency release from the back	24 DC	⊖ 5	**3SE5322-0SL21-1AJ0**	1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

1) Supplied without actuator. Please order separately.

Accessories/spare parts

Version	SD	Article No. Price per PU	PU (UNIT, SET, M)	PS*	PG
	d				
Accessories					
 3SE5000-0AV01					
Standard actuator	►	**3SE5000-0AV01**	1	1 unit	41K
• Length 75.6 mm					
High-grade steel actuator[1]					
 3SE5000-0AW51					
• Length 75.6 mm	NEW 5	**3SE5000-0AW51**	1	1 unit	41K

1) With optimized geometry and suitable for extreme environmental conditions such as minus 40 °C

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

The 3SF1 position switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 position switches the ASIsafe electronics component is integrated in the switch enclosure.

Examples of selection options in the modular system

Modular system

The position switches of the 3SF11.4 and 3SF12.4 series are designed as a modular system comprising different versions of the basic switch and an actuator which must be ordered separately. Thanks to the modular design of the switch the end users can select the right solution for their application from numerous versions and install it themselves in a very short time.

Design

The 3SF1 switches are available in four different enclosure sizes:

- Plastic and metal enclosures according to EN 50047, 31 mm wide, with M12 plug
- Metal enclosures according to EN 50041, 40 mm wide, with M12 plug
- Plastic enclosures, 50 mm wide, with M12 plug and M12 socket
- Metal enclosures, 56 mm wide, with M12 plug and M12 socket

Display

The switches have a status display with three LEDs:

- LED 1 (yellow): F-IN1
- LED 2 (yellow): F-IN2
- LED 3 (green/red): AS-i/FAULT

Connection

Connection to the AS-Interface is by means of a 4-pole M12 connector socket (plastic version) connected to the yellow AS-Interface bus cable.

The wide enclosures (50 or 56 mm) also have an M12 socket for connecting a second position switch. Category 4 according to EN ISO 13849-1 is thus achieved.

Benefits

The new generation of 3SF1 position switches offers:

- ASIsafe electronics integrated in the enclosure with low power requirements < 60 mA
- An extensive range of actuators
- Status display with three LEDs

Application

With the standard position switches, mechanical positions of moving machine parts are converted into electrical signals. Through their modular and uniform design and large number of variants, the devices can comply with practically all requirements in industry.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the best contact blocks suited for the particular purpose. And many different actuator variants are available to match the mechanical configuration of the moving machined parts. Dimensions, fixing points and characteristics are largely in accordance with the EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Devices).

The mechanical design of the switch corresponds to the requirements of the fail-safe principle according to EN ISO 14119.

Approvals

AS-Interface according to EN 50295 and IEC 62026-2.

With a 3SF1 position switch it is possible to achieve Category 2 according to EN ISO 13849-1 or SIL 1 according to IEC 61508.

Categories 3 or 4 according to EN ISO 13849-1 or SIL 2 or 3 according to IEC 61508 can be achieved by using a second 3SE5 position switch.

The 3SF1 position switches are approved according to UL 508, UL 50 and UL 746-C.

General data

Technical specifications

Type		3SF11.., 3SF12..
General data		
Standards		IEC 60947-5-1, EN 60947-5-1, EN ISO 14119
According to AS-Interface specification		
• I/O configuration / ID configuration		0 / B
• ID1 code / ID2 code (Hex)		F / F
• Power consumption, overall	mA	≤ 60
Inputs		
• Low signal range		Contact open
• High signal range		Contact closed, I_{in} dynamic (I_{peak} ≥ 5 mA)
Status display		Green/red dual LED
Rated impulse withstand voltage U_{imp}	kV	0.6
EMC strength		
• IEC 61000-1-2	kV	4
• IEC 61000-4-3	V/m	10
• IEC 61000-4-4 (A / B)	kV	1 / 2
Mechanical endurance		
• Basic switch		15×10^6 operating cycles
• With separate actuator, 3SF1...-..V..		1×10^6 operating cycles
PFH value		
Probability of failure upon request of the safety function, with 1 actuation per hour and B10 = 5×10^6		
• Basic switch	1/h	4×10^{-9}
• With separate actuator, 3SF1...-..V..	1/h	2×10^{-9}
• Hinge switches, 3SF1...-..U..	1/h	2×10^{-9}
Shock resistance acc. to IEC 60068-2-27		30 g / 11 ms

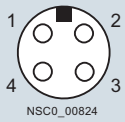
Type		3SF1234	3SF1134	3SF1244	3SF1214	3SF1114	3SF1124
Enclosure							
Enclosure							
• Material		Ultramid A3X2G7			Zinc diecasting GD Zn Al4 Cu1		
• Width	mm	31	40	50	31	40	56
• Dimensions according to EN		EN 50047	EN 50041	--	EN 50047	EN 50041	--
Degree of protection acc. to IEC 60529		IP65	IP66/IP67				
Ambient temperature							
• During operation	°C	–25 ... +60					
• Storage, transport	°C	–40 ... +80					
Mounting position		Any					

Connector assignment

M12 connector socket, 4-pole

1 ASi +
2 Not assigned
3 ASi –
4 Not assigned

M12 socket, 4-pole



1 Channel 2
2 Channel 2
3 Not assigned
4 Not assigned

LEDs:

Status display (operating state)

LEDs	No voltage at the AS-Interface chip	Communication OK	Communication failed	Slave has address "0"
ASi/Fault (GN/RD)	●	☀	☀	☀

Safe inputs

LED	Not actuated	Actuated
F-IN1 (YE)	●	☀
F-IN2 (YE)	●	☀

Selection and ordering data

Modular system

For the ASIsafe version of the position switch, the basic switch and actuator must be ordered separately.

1 or 2 contacts · 3 LEDs · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · M12 connector socket

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No. / Price per PU			
Basic switches (with rounded plunger[1]) Enclosure width 31 mm acc. to EN 50047							
 3SF1234-1KC05-1BA1							
With teflon plunger							
With M12 connector socket, 4-pole channel 1 on NC contact channel 2 on NC contact							
Slow-action contacts	2 NC	24 V DC	➔ 5	**3SF1234-1KC05-1BA1**	1	1 unit	42A
Snap-action contacts	2 NC	24 V DC	➔ 5	**3SF1234-1LC05-1BA1**	1	1 unit	42A
Basic switches (with rounded plunger[1]) Enclosure width 50 mm							
 3SF1244-1KC05-1BA2							
With teflon plunger							
With M12 connector socket, 4-pole channel 1 on NC contact channel 2 on M12 socket, right							
Slow-action contacts	1 NC	24 V DC	➔ 5	**3SF1244-1KC05-1BA2**	1	1 unit	42A
Snap-action contacts	1 NC	24 V DC	➔ 5	**3SF1244-1LC05-1BA2**	1	1 unit	42A

➔ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, for use in safety circuits.

1) For enclosures with widths of 31 mm and 50 mm, the basic switch is a complete unit with rounded plungers.

Note:

For the selection aid, see page 12/15.

3SF1, plastic enclosures, enclosure width 31 mm according to EN 50047 / 50 mm

	Version	Diameter Roller	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
		mm	d	Article No. Price per PU			
Operating mechanisms							
 3SE5000-0AD03	**Roller plungers, type C, acc. to EN 50047**						
	Plastic roller	10	➔ 2	**3SE5000-0AD03**	1	1 unit	41K
	High-grade steel roller	10	➔ 5	**3SE5000-0AD04**	1	1 unit	41K
 3SE5000-0AD10	**Roller plungers with central fixing**						
	Plastic roller	10	➔ 2	**3SE5000-0AD10**	1	1 unit	41K
	High-grade steel roller	10	➔ 5	**3SE5000-0AD11**	1	1 unit	41K
 3SE5000-0AE10	**Roller levers, type E, acc. to EN 50047**						
	Metal lever, plastic roller	13	➔ 2	**3SE5000-0AE10**	1	1 unit	41K
	Metal lever, high-grade steel roller	13	➔ 5	**3SE5000-0AE11**	1	1 unit	41K
	High-grade steel lever, plastic roller	13	➔ 5	**3SE5000-0AE12**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	13	➔ 5	**3SE5000-0AE13**	1	1 unit	41K
 3SE5000-0AF10	**Angular roller levers**						
	Metal lever, plastic roller	13	➔ 2	**3SE5000-0AF10**	1	1 unit	41K
	Metal lever, high-grade steel roller	13	➔ 5	**3SE5000-0AF11**	1	1 unit	41K
	High-grade steel lever, plastic roller	13	➔ 2	**3SE5000-0AF12**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	13	➔ 5	**3SE5000-0AF13**	1	1 unit	41K
Twist actuators with lever							
 3SE5000-0AK00	**Twist actuators**, for 31/50 mm, EN 50047						
	Switching right or left, adjustable		➔ 2	**3SE5000-0AK00**	1	1 unit	41K
 3SE5000-0AA21	***Levers***						
	Twist levers, type A, acc. to EN 50047						
	Metal lever, plastic roller	19	➔ 2	**3SE5000-0AA21**	1	1 unit	41K
	Metal lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA22**	1	1 unit	41K
	Metal lever, high-grade steel roller with ball bearing	19	➔ 5	**3SE5000-0AA23**	1	1 unit	41K
	Metal lever, plastic roller	30	➔ 5	**3SE5000-0AA25**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA31**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA32**	1	1 unit	41K
	Twist levers 30 mm, straight[1]						
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA24**	1	1 unit	41K
	Metal lever, plastic roller	30	➔ 5	**3SE5000-0AA26**	1	1 unit	41K
 3SE5000-0AA60-	**Twist levers, adjustable length, with grid hole**						
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA60**	1	1 unit	41K
	Metal lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA61**	1	1 unit	41K
	Metal lever, plastic roller	50	➔ 5	**3SE5000-0AA67**	1	1 unit	41K
	Metal lever, rubber roller	50	➔ 5	**3SE5000-0AA68**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA62**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA63**	1	1 unit	41K

➔ Positively driven actuator, for use in safety circuits.

1) Can be clinch mounted (turned through 180°, rear of lever).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Modular system

For the ASIsafe version of the position switch, the basic switch and actuator must be ordered separately.

2 contacts · 3 LEDs · Degree of protection IP66/IP67 · M12 connector socket

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No. / Price per PU			
Basic switches (with rounded plunger[1]) Enclosure width 31 mm acc. to EN 50047							
With plunger							
With M12 connector socket, 4-pole channel 1 on NC contact. channel 2 on NC contact							
Slow-action contacts	2 NC	24 V DC	➔ 5	**3SF1214-1KC05-1BA1**	1	1 unit	42A
Snap-action contacts	2 NC	24 V DC	➔ 5	**3SF1214-1LC05-1BA1**	1	1 unit	42A

3SF1214-1KC05-1BA1

➔ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, for use in safety circuits.

1) For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

Note:

For the selection aid, see page 12/15.

3SF1, metal enclosures, enclosure width 31 mm according to EN 50047

	Version	Roller diameter	SD	Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm	d					
Operating mechanisms								
 3SE5000-0AB01	**Plain plungers**							
	High-grade steel plunger	10	⇒ 2	**3SE5000-0AB01**		1	1 unit	41K
 3SE5000-0AD03	**Roller plungers, type C, acc. to EN 50047**							
	Plastic roller	10	⇒ 2	**3SE5000-0AD03**		1	1 unit	41K
	High-grade steel roller	10	⇒ 5	**3SE5000-0AD04**		1	1 unit	41K
 3SE5000-0AD10	**Roller plungers with central fixing**							
	Plastic roller	10	⇒ 2	**3SE5000-0AD10**		1	1 unit	41K
	High-grade steel roller	10	⇒ 5	**3SE5000-0AD11**		1	1 unit	41K
 3SE5000-0AE10	**Roller levers, type E, acc. to EN 50047**							
	Metal lever, plastic roller	13	⇒ 2	**3SE5000-0AE10**		1	1 unit	41K
	Metal lever, high-grade steel roller	13	⇒ 5	**3SE5000-0AE11**		1	1 unit	41K
	High-grade steel lever, plastic roller	13	⇒ 5	**3SE5000-0AE12**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	13	⇒ 5	**3SE5000-0AE13**		1	1 unit	41K
 3SE5000-0AF10	**Angular roller levers**							
	Metal lever, plastic roller	13	⇒ 2	**3SE5000-0AF10**		1	1 unit	41K
	Metal lever, high-grade steel roller	13	⇒ 5	**3SE5000-0AF11**		1	1 unit	41K
	High-grade steel lever, plastic roller	13	⇒ 2	**3SE5000-0AF12**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	13	⇒ 5	**3SE5000-0AF13**		1	1 unit	41K
Twist actuators with lever								
 3SE5000-0AK00	**Twist actuators**, for 31/50 mm, EN 50047							
	Switching right or left, adjustable		⇒ 2	**3SE5000-0AK00**		1	1 unit	41K
	Levers							
 3SE5000-0AA21	**Twist levers, type A, acc. to EN 50047**							
	Metal lever, plastic roller	19	⇒ 2	**3SE5000-0AA21**		1	1 unit	41K
	Metal lever, high-grade steel roller	19	⇒ 5	**3SE5000-0AA22**		1	1 unit	41K
	Metal lever, high-grade steel roller with ball bearing	19	⇒ 5	**3SE5000-0AA23**		1	1 unit	41K
	Metal lever, plastic roller	30	⇒ 5	**3SE5000-0AA25**		1	1 unit	41K
	High-grade steel lever, plastic roller	19	⇒ 5	**3SE5000-0AA31**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	⇒ 5	**3SE5000-0AA32**		1	1 unit	41K
	Twist levers 30 mm, straight[1)]							
	Metal lever, plastic roller	19	⇒ 5	**3SE5000-0AA24**		1	1 unit	41K
	Metal lever, plastic roller	30	⇒ 5	**3SE5000-0AA26**		1	1 unit	41K
 3SE5000-0AA60	**Twist levers, adjustable length, with grid hole**							
	Metal lever, plastic roller	19	⇒ 5	**3SE5000-0AA60**		1	1 unit	41K
	Metal lever, high-grade steel roller	19	⇒ 5	**3SE5000-0AA61**		1	1 unit	41K
	Metal lever, plastic roller	50	⇒ 5	**3SE5000-0AA67**		1	1 unit	41K
	Metal lever, rubber roller	50	⇒ 5	**3SE5000-0AA68**		1	1 unit	41K
	High-grade steel lever, plastic roller	19	⇒ 5	**3SE5000-0AA62**		1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	⇒ 5	**3SE5000-0AA63**		1	1 unit	41K

⇒ Positively driven actuator, for use in safety circuits.

1) Can be clinch mounted (turned through 180°, rear of lever).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Modular system

For the ASIsafe version of the position switch, the basic switch and actuator must be ordered separately.

1 or 2 contacts · 3 LEDs · Degree of protection IP66/IP67 · M12 connector socket

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No. / Price per PU			
Basic switches · Enclosure width 40 mm acc. to EN 50041							
 3SF1114-1KA00-1BA1							
With M12 connector socket, 4-pole channel 1 on NC contact, channel 2 on NC contact							
Slow-action contacts	2 NC	24 V DC	➔ 5	**3SF1114-1KA00-1BA1**	1	1 unit	42A
Snap-action contacts	2 NC	24 V DC	➔ 5	**3SF1114-1LA00-1BA1**	1	1 unit	42A
Basic switches · Enclosure width 56 mm							
 3SF1124-1KA00-1BA2							
With M12 connector socket, 4-pole channel 1 on NC contact, channel 2 on M12 socket, right							
Slow-action contacts	1 NC	24 V DC	➔ 5	**3SF1124-1KA00-1BA2**	1	1 unit	42A
Snap-action contacts	1 NC	24 V DC	➔ 5	**3SF1124-1LA00-1BA2**	1	1 unit	42A

➔ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, for use in safety circuits.

Note:

For the selection aid, see page 12/15.

Version	Roller diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No. / Price per PU			
Operating mechanisms						
 3SE5000-0AB01						
Plain plungers						
High-grade steel plunger	10	➔ 2	**3SE5000-0AB01**	1	1 unit	41K
 3SE5000-0AC02						
Rounded plungers, type B, acc. to EN 50041						
High-grade steel plunger, with 3 mm overtravel	10	➔ 5	**3SE5000-0AC02**	1	1 unit	41K
 3SE5000-0AD02						
Roller plungers, type C, acc. to EN 50041						
High-grade steel roller, with 3 mm overtravel	13	➔ 5	**3SE5000-0AD02**	1	1 unit	41K

➔ Positively driven actuator, for use in safety circuits.

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3SF1, metal enclosures, enclosure width 40 mm according to EN 50041 / 56 mm

	Version	Roller diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
		mm	d	Article No. Price per PU			
Operating mechanisms							
 3SE5000-0AE01	**Roller levers**						
	Metal lever, plastic roller	22	➔ 2	**3SE5000-0AE01**	1	1 unit	41K
	Metal lever, high-grade steel roller	22	➔ 5	**3SE5000-0AE02**	1	1 unit	41K
	High-grade steel lever, plastic roller	22	➔ 5	**3SE5000-0AE03**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	22	➔ 5	**3SE5000-0AE04**	1	1 unit	41K
 3SE5000-0AF01	**Angular roller levers**						
	Metal lever, plastic roller	22	➔ 2	**3SE5000-0AF01**	1	1 unit	41K
	Metal lever, high-grade steel roller	22	➔ 5	**3SE5000-0AF02**	1	1 unit	41K
	High-grade steel lever, plastic roller	22	➔ 5	**3SE5000-0AF03**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	22	➔ 5	**3SE5000-0AF04**	1	1 unit	41K
Twist actuators with lever							
 3SE5000-0AH00	**Twist actuators**, for 40/56/56 XL mm EN 50041						
	• For twist levers, switching right or left, adjustable						
	- For enclosure width 40 and 56 mm		➔ 2	**3SE5000-0AH00**	1	1 unit	41K
	• For fork levers, latching		➔ 5	**3SE5000-0AT10**	1	1 unit	41K
 3SE5000-0AA01	***Levers***						
	Twist levers 27 mm, offset, type A, acc. to EN 50041						
	Metal lever, plastic roller	19	➔ 2	**3SE5000-0AA01**	1	1 unit	41K
	Metal lever, high-grade steel roller	19	➔ 2	**3SE5000-0AA02**	1	1 unit	41K
	Metal lever, high-grade steel roller with ball bearing	19	➔ 5	**3SE5000-0AA03**	1	1 unit	41K
	Metal lever, 2 plastic rollers	19	➔ 5	**3SE5000-0AA04**	1	1 unit	41K
	Metal lever, plastic roller	30	➔ 5	**3SE5000-0AA05**	1	1 unit	41K
	Metal lever, plastic roller	50	➔ 5	**3SE5000-0AA07**	1	1 unit	41K
	Metal lever, rubber roller	50	➔ 5	**3SE5000-0AA08**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA11**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA12**	1	1 unit	41K
	Twist levers 35 mm, offset						
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA15**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA16**	1	1 unit	41K
	Twist levers 30 mm, straight[1]						
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA24**	1	1 unit	41K
	Metal lever, plastic roller	30	➔ 5	**3SE5000-0AA26**	1	1 unit	41K
 3SE5000-0AA60	**Twist levers, adjustable length, with grid hole**						
	Metal lever, plastic roller	19	➔ 5	**3SE5000-0AA60**	1	1 unit	41K
	Metal lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA61**	1	1 unit	41K
	Metal lever, plastic roller	50	➔ 5	**3SE5000-0AA67**	1	1 unit	41K
	Metal lever, rubber roller	50	➔ 5	**3SE5000-0AA68**	1	1 unit	41K
	High-grade steel lever, plastic roller	19	➔ 5	**3SE5000-0AA62**	1	1 unit	41K
	High-grade steel lever, high-grade steel roller	19	➔ 5	**3SE5000-0AA63**	1	1 unit	41K
 3SE5000-0AT01	**Fork levers** (for switches with snap-action contacts only)						
	Metal lever, 2 plastic rollers	19	➔ 5	**3SE5000-0AT01**	1	1 unit	41K
	Metal lever, 2 high-grade steel rollers	19	➔ 5	**3SE5000-0AT02**	1	1 unit	41K
	High-grade steel lever, 2 plastic rollers	19	➔ 5	**3SE5000-0AT03**	1	1 unit	41K
	High-grade steel lever, 2 high-grade steel rollers	19	➔ 5	**3SE5000-0AT04**	1	1 unit	41K

➔ Positively driven actuator, for use in safety circuits.

1) Can be clinch mounted (turned through 180°, rear of lever).

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

The 3SF1 safety switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 safety switches the ASIsafe electronics component is integrated in the switch enclosure.

3SF1 safety switches with head for separate actuator and with integrated ASIsafe electronics

3SF1 safety switches with separate actuator have the same enclosures as the 3SF1 position switches.

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through 4 × 90°. The switches can also be approached from above.

The actuators are not included in the scope of supply of the safety switch and must be ordered separately from a choice of different versions to suit the application (see page 12/102).

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more safety.

A rubber cap to protect the actuator head from contamination is available for operation in dusty environments.

Display

The switches have a status display with three LEDs:

- LED 1 (yellow): F-IN1
- LED 2 (yellow): F-IN2
- LED 3 (green/red): AS-i/FAULT

Connection

Connection to the AS-Interface is by means of a 4-pole M12 connector socket (plastic version) connected to the yellow AS-Interface bus cable.

The wide enclosures (50 or 56 mm) also have an M12 socket for connecting a second safety switch. Category 4 according to EN ISO 13849-1 is thus achieved.

Benefits

The new generation of 3SF1 safety switches with separate actuator offers

- ASIsafe electronics integrated in the enclosure with low power requirements < 60 mA
- An extensive range of actuators
- Status display with three LEDs

Application

Safety switches with separate actuator are used where the position of doors, covers or protective grilles must be monitored for safety reasons.

The safety switch can only be operated with the matching coded actuator. Simple overruling by hand or auxiliary devices is impossible.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the best contact blocks suited for the particular purpose. Dimensions, fixing points of the enclosure are in accordance with EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Devices).

The mechanical design of the switch corresponds to the requirements of the fail-safe principle according to EN ISO 14119.

Approvals

AS-Interface according to EN 50295 and IEC 62026-2.

With a 3SF1 safety switch it is possible to achieve Category 3 according to EN ISO 13849-1 or SIL 2 according to IEC 61508.

Category 4 according to EN ISO 13849-1 or SIL 3 according to IEC 61508 can be achieved by using an additional 3SE5 safety switch.

The 3SF1 safety switches are approved according to UL 508, UL 50 and UL 746-C.

Overview

- Contacts: 1 or 2 slow-action contacts
- Status display with 3 LEDs 24 V DC;
  1: F–IN1, 2: F–IN2, 3: AS-i/FAULT
- Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm)

Selection and ordering data

	Version[1]	Contacts	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No. / Price per PU			
Enclosure width 31 mm acc. to EN 50047							
 3SF1234-1QV40-1BA1	**5 directions of approach** With M12 connector socket, 4-pole, channel 1 on NC contact, channel 2 on NC contact Slow-action contacts	2 NC	➔ 5	**3SF1234-1QV40-1BA1**	1	1 unit	42A
Enclosure width 50 mm							
 3SF1244-1QV40-1BA2	**5 directions of approach** With M12 connector socket, 4-pole, channel 1 on NC contact, channel 2 on M12 socket, right Slow-action contacts	1 NC	➔ 5	**3SF1244-1QV40-1BA2**	1	1 unit	42A

➔ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Supplied without actuator. Please order separately (see page 12/102).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

- Contacts: 1 or 2 slow-action contacts
- Status display with 3 LEDs 24 V DC;
  1: F–IN1, 2: F–IN2, 3: AS-i/FAULT
- Degree of protection IP66/IP67

Selection and ordering data

	Version[1]	Contacts	SD	Complete units		PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU			
Enclosure width 31 mm acc. to EN 50047								
 3SF1214-1QV40-1BA1	**5 directions of approach** With M12 connector socket, 4-pole, channel 1 on NC contact, channel 2 on NC contact Slow-action contacts	2 NC	➔ 5	**3SF1214-1QV40-1BA1**		1	1 unit	42A
Enclosure width 40 mm acc. to EN 50041								
 3SF1114-1QV10-1BA1	**5 directions of approach** With M12 connector socket, 4-pole, channel 1 on NC contact, channel 2 on NC contact Slow-action contacts	2 NC	➔ 5	**3SF1114-1QV10-1BA1**		1	1 unit	42A
Enclosure width 56 mm								
 3SF1124-1QV10-1BA2	**5 directions of approach** With M12 connector socket, 4-pole, channel 1 on NC contact, channel 2 on M12 socket, right Slow-action contacts	1 NC	➔ 5	**3SF1124-1QV10-1BA2**		1	1 unit	42A

➔ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Supplied without actuator. Please order separately (see page 12/102).

Selection and ordering data

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Actuators							
	Standard actuator						
 3SE5000-0AV01	• Length 75.6 mm	►	**3SE5000-0AV01**		1	1 unit	41K
 3SE5000-0AV02	• With vertical fixing, length 53 mm	5	**3SE5000-0AV02**		1	1 unit	41K
 3SE5000-0AV03	• With transverse fixing, length 47 mm	5	**3SE5000-0AV03**		1	1 unit	41K
 3SE5000-0AW11	• With transverse fixing, plastic[1], length 40 mm	5	**3SE5000-0AW11**		1	1 unit	41K
	Radius actuators						
 3SE5000-0AV04	• Length 51 mm, direction of approach from the left	2	**3SE5000-0AV04**		1	1 unit	41K
 3SE5000-0AV06	• Length 51 mm, direction of approach from the right	►	**3SE5000-0AV06**		1	1 unit	41K
	Universal radius actuator						
 3SE5000-0AV05-1AA6	- Length 77 mm	5	**3SE5000-0AV05**		1	1 unit	41K
	- Length 77 mm, tab rotated 90°	5	**3SE5000-0AV05-1AA6**		1	1 unit	41K
	Universal radius actuator, heavy duty						
 3SE5000-0AV07	- Length 67 mm	2	**3SE5000-0AV07-1AK2**		1	1 unit	41K
	- Length 77 mm	5	**3SE5000-0AV07**		1	1 unit	41K
Optional accessories							
 3SE5000-0AV08-1AA2	**Protective caps** made of black rubber for the actuator head, to protect the actuator openings from contamination (Only for enclosure width 40 or 56 mm)	5	**3SE5000-0AV08-1AA2**		1	1 unit	41K
 3SE5000-0AV08-1AA3	**Blocking inserts**, high-grade steel, for actuator head, for up to eight padlocks	5	**3SE5000-0AV08-1AA3**		1	1 unit	41K

[1] Not suitable for safety switches with tumbler.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

The 3SF1 safety switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 safety switches the ASIsafe electronics component is integrated in the switch enclosure.

3SF1 safety switch with tumbler and with integrated ASIsafe electronics

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through 4 × 90°. The switches can also be approached from above.

The actuators are not included in the scope of supply of the safety switch and must be ordered separately from a choice of different versions to suit the application (see page 12/102).

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more safety.

A rubber cap to protect the actuator entry of the actuator head from contamination is available for operation of the enclosures in dusty environments.

Tumbler

There are two versions for interlocking the actuator:

- Spring-actuated lock (closed-circuit principle) with various release mechanisms
- Solenoid-locked (open-circuit principle)

For more explanations, see page 12/64.

Display

The switches have a status display with four LEDs:

- LED 1 (green): AS-i
- LED 2 (red): FAULT
- LED 3 (yellow): F-IN1
- LED 4 (yellow): F-IN2

Connection

Connection to the AS-Interface is by means of a 4-pole M12 connector socket (plastic version) connected to the yellow AS-Interface bus cable (no additional supply of auxiliary power is required thanks to the low current consumption of the solenoid of max. 170 mA).

Benefits

The new generation of 3SF13 safety switches with tumbler offers:

- More safety through higher locking forces:
  - 1 300 N for the plastic version
  - 2 600 N for the metal version
- Various release mechanisms: Lock release, escape release and emergency release
- ASIsafe electronics integrated in the enclosure; connected through 4-pole M12 connector socket
- Current consumption of the solenoid no more than 170 mA
- Two contact blocks as standard equipment, hence fewer versions needed
- Same dimensions for all enclosure versions: Plastic, metal
- An extensive range of actuators
- Status display with four LEDs
- 3SF1324-1S.21-1BK4 series with high degree of protection IP69K, IP69 in accordance with IEC 60529, cover with foamed seal

Application

The safety switches with tumbler are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grilles or other covers as long as a dangerous situation is present (i.e. follow-on motion of the switched-off machine).

The safety switches with tumbler have the following functions:

- Enabling the machine or process with closed and locked protective device
- Locking the machine or process with opened protective device
- Position monitoring of the protective device and tumbler

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Devices).

The mechanical design of the switch corresponds to the requirements of the fail-safe principle according to EN ISO 14119.

Approvals

AS-Interface according to EN 50295 and IEC 62026-2

The switches are approved for use with locking devices according to EN ISO 14119 and EN 292, Parts 1 and 2.

3SF13 safety switches with tumbler have a VDE test mark.

With a 3SF13 safety switch with tumbler it is possible to achieve Category 3 according to EN ISO 13849-1 or SIL 2 according to IEC 61508.

Category 4 according to EN ISO 13849-1 or SIL 3 according to IEC 61508 can be achieved by using an additional 3SE5 safety switch.

The 3SF1 safety switches are approved according to UL 508, UL 50 and UL 746-C.

Overview

Versions

- 1BA1: ASIsafe channel 1 on 1 NC contact from the actuator, and channel 2 on 1 NC contact from the solenoid
- 1BA3: ASIsafe channel 1 on the first NC contact from the actuator and channel 2 on the second NC contact from the actuator
- 1BA4: ASIsafe channel 1 on 2 NC contacts (two-channel) from the actuator, and channel 2 on 1 NC contact from the solenoid. The position switch transfers the information of actuators to a transfer channel because the discrepancy of the two actuator contacts is already evaluated in the switch.

The 3SF1324-1S.21-1BA4 safety switches are also recommended where there are several protective door tumblers and reliable diagnostics and quick restart capability of equipment is required.

- A response is received from the solenoid
- No opening of the doors required after the solenoid is unlocked

In connection with an ASIsafe MSS modular safety system or an ET 200SP F-CM AS-i Safety ST module, it is possible to achieve SIL 2 according to IEC 61508 or PL d according to ISO 13849-1. They comply with the standard EN ISO 14119. A TÜV certificate is available.

Features:

- Slow-action contacts
- 5 directions of approach
- Solenoid: Rated operational voltage 24 V DC
- 1 300 N locking force
- Degree of protection IP66/IP67 (IP69K)
- Status display with 4 LEDs 24 V DC; 1: AS-i, 2: FAULT, 3: F–IN1, 4: F–IN2

Comparison of versions

Safety switches Type	Contacts Actuator / solenoid	Achievable safety level	Diagnostics Feedback from the solenoid	Reclosing condition after unlocking the solenoid (depending on the type of evaluation)
3SF1324-1S.21-1BA1	1 NC / 1 NC	SIL 1 / PL c	✓	Door does not have to be opened
	1 NC / 1 NC	SIL 2 / PL d	✓	Door must be opened
3SF1324-1S.21-1BA3	2 NC / --	SIL 2 / PL d	--	Door does not have to be opened
3SF1324-1S.21-1BA4	2 NC / 1 NC	SIL 2 / PL d	✓	Door does not have to be opened
3SF1324-1S.21-1BK4 (IP69K)	2 NC / 1 NC	SIL 2 / PL d	✓	Door does not have to be opened

✓ Available -- Not available

Selection and ordering data

Tumbler[1]	Contacts Actuator / solenoid	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
1 300 N locking force · Enclosure width 54 mm							
Spring-actuated locks							
• With auxiliary release	1 NC / 1 NC	⊖ 5	**3SF1324-1SD21-1BA1**		1	1 unit	42A
	2 NC / --	⊖ 5	**3SF1324-1SD21-1BA3**		1	1 unit	42A
	2 NC / 1 NC	⊖ 5	**3SF1324-1SD21-1BA4**		1	1 unit	42A
- Degree of protection IP69 acc. to IEC 60529; IP69K acc. to DIN 40050	2 NC / 1 NC	⊖ 5	**3SF1324-1SD21-1BK4**		1	1 unit	42A
• With auxiliary release with lock	1 NC / 1 NC	⊖ 5	**3SF1324-1SE21-1BA1**		1	1 unit	42A
• With escape release from the front	1 NC / 1 NC	⊖ 5	**3SF1324-1SF21-1BA1**		1	1 unit	42A
	2 NC / 1 NC	⊖ 5	**3SF1324-1SF21-1BA4**		1	1 unit	42A
- Degree of protection IP69 acc. to IEC 60529; IP69K acc. to DIN 40050	2 NC / 1 NC	⊖ 5	**3SF1324-1SF21-1BK4**		1	1 unit	42A
• With escape release from the back and front auxiliary release	1 NC / 1 NC	⊖ 5	**3SF1324-1SG21-1BA1**		1	1 unit	42A
	2 NC / 1 NC	⊖ 5	**3SF1324-1SG21-1BA4**		1	1 unit	42A
- Degree of protection IP69 acc. to IEC 60529; IP69K acc. to DIN 40050	2 NC / 1 NC	⊖ 5	**3SF1324-1SG21-1BK4**		1	1 unit	42A
• With emergency release from the back and front auxiliary release	1 NC / 1 NC	⊖ 5	**3SF1324-1SJ21-1BA1**		1	1 unit	42A
Solenoid-locked	1 NC / 1 NC	⊖ 5	**3SF1324-1SB21-1BA1**		1	1 unit	42A
	2 NC / --	⊖ 5	**3SF1324-1SB21-1BA3**		1	1 unit	42A


3SF1324-1SD21-1BA1


3SF1324-1SF21-1BA1


3SF1324-1SB21-1BA1

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Supplied without actuator. Please order separately.
For actuators and optional accessories, see page 12/102.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

Version

- 1BA1: ASIsafe channel 1 on 1 NC contact from the actuator, and channel 2 on 1 NC contact from the solenoid

Features

- Slow-action contacts
- Solenoid: Rated operational voltage 24 V DC
- 2 600 N locking force
- Degree of protection IP66/IP67
- Status display with 4 LEDs 24 V DC; 1: AS-i, 2: FAULT, 3: F–IN1, 4: F–IN2

Comparison of versions

Safety switches Type	Contacts Actuator / solenoid	Achievable safety level	Diagnostics Feedback from the solenoid	Reclosing condition after unlocking the solenoid (depending on the type of evaluation)
3SF1314-1S.11-1BA1	1 NC / 1 NC	SIL 1 / PL c	✓	Door does not have to be opened

✓ Available -- Not available

Selection and ordering data

Tumbler[1]	Contacts Actuator / solenoid	SD d	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
2600 N locking force · Enclosure width 54 mm							
Spring-actuated locks							
• With auxiliary release	1 NC / 1 NC	⊖ 5	**3SF1314-1SD11-1BA1**		1	1 unit	42A
• With auxiliary release with lock	1 NC / 1 NC	⊖ 5	**3SF1314-1SE11-1BA1**		1	1 unit	42A
• With escape release from the front	1 NC / 1 NC	⊖ 5	**3SF1314-1SF11-1BA1**		1	1 unit	42A
• With escape release from the back and front auxiliary release	1 NC / 1 NC	⊖ 5	**3SF1314-1SG11-1BA1**		1	1 unit	42A
• With escape release from the back and auxiliary release with lock from the front	1 NC / 1 NC	⊖ 5	**3SF1314-1SH11-1BA1**		1	1 unit	42A
• With emergency release from the back and front auxiliary release	1 NC / 1 NC	⊖ 5	**3SF1314-1SJ11-1BA1**		1	1 unit	42A
Solenoid-locked	1 NC / 1 NC	⊖ 5	**3SF1314-1SB11-1BA1**		1	1 unit	42A


3SF1314-1SD11-1BA1


3SF1314-1SF11-1BA1


3SF1314-1SB11-1BA1

⊖ Positive opening according to IEC 60947-5-1, Appendix K.

[1] Supplied without actuator. Please order separately.

For actuators and optional accessories, see page 12/102.

3SF1, plastic enclosures, enclosure widths 31 mm / 50 mm

Overview

The 3SF1 safety hinge switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 hinge switches the ASIsafe electronics component is integrated in the switch enclosure.

The hinge switches are provided for mounting on hinges. There are two actuator variants here:
- Hollow shaft, inner diameter 8 mm, outer 12 mm
- Solid shaft, diameter 10 mm

For the ASIsafe version of the hinge switch, the basic switch and actuator head must be ordered separately. The basic switches correspond to the 3SF1 position switches (use only versions with snap-action contacts).

The provisions and approvals are the same as for the 3SF1 standard switches (see page 12/91).

Selection and ordering data

Modular system

1 or 2 contacts · 3 LEDs · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · M12 connector socket

	Version	Contacts	LEDs		SD	Modular system	PU (UNIT, SET, M)	PS*	PG
					d	Article No. / Price per PU			
Basic switches · Enclosure width 31 mm acc. to EN 50047									
 3SF1234-1LC05-1BA1	**With teflon plunger, With M12 connector socket**, 4-pole Channel 1 on NC contact, channel 2 on NC contact								
	Snap-action contacts	2 NC	24 V DC	⊕	5	**3SF1234-1LC05-1BA1**	1	1 unit	42A
Basic switches · Enclosure width 50 mm									
 3SF1244-1LC05-1BA2	**With teflon plunger, With M12 connector socket**, 4-pole Channel 1 on NC contact, channel 2 on M12 socket, right								
	Snap-action contacts	1 NC	24 V DC	⊕	5	**3SF1244-1LC05-1BA2**	1	1 unit	42A
Actuator heads									
 3SE5000-0AU21	**With hollow shaft** Operating angle 10°				5	**3SE5000-0AU21**	1	1 unit	41K
 3SE5000-0AU22	**With solid shaft** Operating angle 10°				5	**3SE5000-0AU22**	1	1 unit	41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

The 3SF1 safety hinge switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 hinge switches the ASIsafe electronics component is integrated in the switch enclosure.

The hinge switches are provided for mounting on hinges. There are two actuator variants here:
- Hollow shaft, inner diameter 8 mm, outer 12 mm
- Solid shaft, diameter 10 mm

For the ASIsafe version of the hinge switch, the basic switch and actuator head must be ordered separately. The basic switches correspond to the 3SF1 position switches (use only versions with snap-action contacts).

The provisions and approvals are the same as for the 3SF1 standard switches (see page 12/91).

Selection and ordering data

Modular system

1 or 2 contacts · 3 LEDs · Degree of protection IP66/IP67 · M12 connector socket

	Version	Contacts	LEDs		SD	Modular system	PU (UNIT, SET, M)	PS*	PG
						Article No. Price per PU			
					d				
Basic switches · Enclosure width 31 mm acc. to EN 50047									
 3SF1214-1LC05-1BA1	**With plunger** With M12 connector socket, 4-pole Channel 1 on NC contact, channel 2 on NC contact								
	Snap-action contacts	2 NC	24 V DC	➔	5	**3SF1214-1LC05-1BA1**	1	1 unit	42A
Basic switches · Enclosure width 40 mm acc. to EN 50041									
 3SF1114-1LA00-1BA1	**With M12 connector socket**, 4-pole Channel 1 on NC contact, channel 2 on NC contact								
	Snap-action contacts	2 NC	24 V DC	➔	5	**3SF1114-1LA00-1BA1**	1	1 unit	42A
Basic switches · Enclosure width 56 mm									
 3SF1124-1LA00-1BA2	**With M12 connector socket**, 4-pole Channel 1 on NC contact, channel 2 on M12 socket, right								
	Snap-action contacts	1 NC	24 V DC	➔	5	**3SF1124-1LA00-1BA2**	1	1 unit	42A
Actuator heads									
 3SE5000-0AU21	**Hollow shaft** Operating angle 10°				5	**3SE5000-0AU21**	1	1 unit	41K
 3SE5000-0AU22	**Solid shaft** Operating angle 10°				5	**3SE5000-0AU22**	1	1 unit	41K

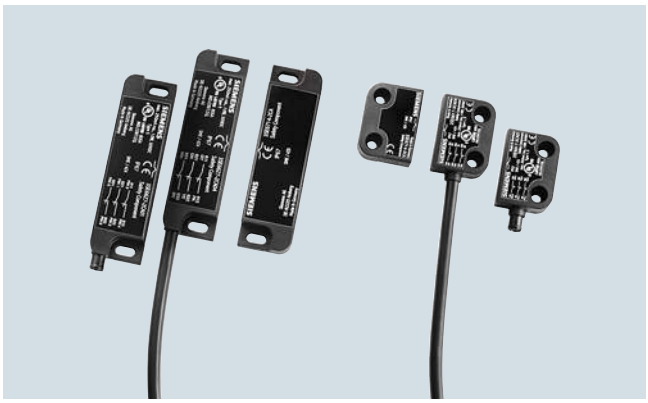
➔ Positive opening according to IEC 60947-5-1, Appendix K.

3SE66, 3SE67 magnetically operated switches

Overview

3SE66 contact blocks and 3SE67 switching magnets

A magnetically operated switch comprises a coded switching magnet and a contact block (sensor unit). The switch must be connected to a safety relay, e.g. SIRIUS 3SK1, or a bus system, e.g. SIMATIC ET 200SP, for evaluation. The switches use reed contacts as mechanical contacts. The status of the contacts is monitored using an evaluation unit.



3SE66 contact blocks and 3SE67 switching magnets, supplementary range in new design

Safety relays

3SK safety relays can be used worldwide since they possess all the required certification. Since they satisfy the most exacting safety requirements, they are suitable for all kinds of safety applications.

The following can be selected:

- 3SK1 Standard basic units:
  simple and compact to satisfy all the essential requirements of safety sensor monitoring systems
- 3SK1 Advanced basic units:
  multifunctional series with relay enabling circuits, semiconductor outputs or time-delay outputs
- 3SK2 basic units:
  multifunctional series whose functionality is parameterized using software. The basic units have solid-state outputs. Relay outputs from the 3SK1 portfolio can also be connected via device connectors.
- Expansion units for inputs and outputs

The 3SE6806 safety relay is also available with two floating enabling circuits (safe circuits) as NO contact circuits and one floating signaling circuit as an NC contact circuit.

Benefits

Standard range

- Non-contact round, rectangular, small (25 mm x 33 mm) and larger (25 mm x 88 mm) versions
- Small, compact, safe
- Simple mounting with alignment of sensor and actuator, and concealed installation also easy
- Suitable for restricted spaces

Supplementary range

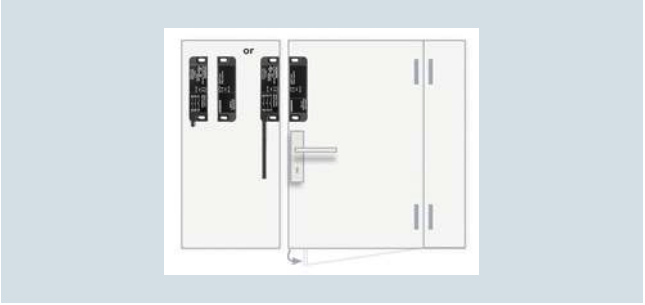
- New design for rectangular shape
- More functionality
- Greater switching intervals and a larger horizontal or vertical displacement
- Various mounting positions possible (e.g. at 90° offset)
- SIL 3 and PL e diagnostics possible because there are two safety contacts and one signaling contact
- LED variant
- Fast connection possible using plug-in variants

Application

SIRIUS 3SE6 magnetically operated switches are designed for mounting on movable protective guards (hoods, hinged covers, doors, etc.). Evaluation can be performed by means of a safety relay or through connection to a bus system.

The 3SE66 non-contact, magnetically operated safety switches stand out due to their enclosed design with degree of protection IP67. Since they are coded, they do not have to be concealed when installed They are particularly suitable therefore for areas exposed to contamination, cleaning or disinfecting.

A magnetic monitoring system comprises one or more magnetically operated switches and an evaluation unit, e. g. a safety relay. When contact blocks 1 NO + 1 NC (+ 1 NC signaling contact) or 2 NC (+ 1 NC signaling contact) are used, the 3SK safety relay, for example, provides a high degree of protection against manipulation and can be installed in safety circuits up to SIL 3 according to IEC 62061 and PL e according to EN ISO 13849-1.



Non-contact safety magnetically operated switches (with plug or cable) door hinge right

Non-contact safety magnetically operated switches (with plug or cable) for left-hinged door

3SE66, 3SE67 magnetically operated switches

Combination of monitoring units and magnetically operated switches

Monitoring units		Magnetically operated switches (contact block + switching magnet)			Achievable SIL (IEC 61508, IEC 62061) **Performance level** (EN ISO 13849-1)
		1 NO + 1 NC 3SE6605-.BA..  3SE6704-.BA	**2 NC** 3SE6604-2BA.. **1 NO + 2 NC** 3SE6606-2BA04  3SE6704-2BA	--	
		1 NO + 1 NC (+ 1 NC signaling contact) 3SE6616-3CA01 3SE6626-3CA01  3SE6714-3CA 3SE6724-3CA	**2 NC; 2 NC (+ 1 NC signaling contact)** 3SE6614-4CA01 3SE6624-4CA01 3SE6617-2CA01 3SE6627-2CA01 3SE6617-2CA04 3SE6627-2CA04  3SE6714-2CA 3SE6724-2CA	**2 NC (+ 1 NC signaling contact)** 3SE6617-3CA01 3SE6627-3CA01 3SE6617-3CA04 3SE6627-3CA04  3SE6714-3CA 3SE6724-3CA	
Relay output					
SIRIUS safety relays	3SK1111 	--	✓	✓	SIL 3/PL e
	3SK1121, 3TK2826 	✓	✓	✓	SIL 3/PL e
Solid-state outputs					
SIRIUS safety relays	3SK1112, 3SK1122 	✓	✓	✓	SIL 3/PL e
	3SK2112, 3SK2122 	✓	✓	✓	SIL 3/PL e
	3TK2845 	--	✓	✓	SIL 3/PL e
Safe compact modules ASIsafe	3RK1205, 3RK1405 	--	✓	✓	SIL 3/PL e
Modular safety system (MSS)	3RK3 	✓	✓	✓	SIL 3/PL e
SIMATIC S7-1200F	F-DI 16 x 24 V DC	✓	✓	✓	SIL 3/PL e
SIMATIC ET 200SP PROFIsafe	4/8 F-DI, 24 V DC	✓	✓	✓	SIL 3/PL e
SIMATIC ET 200eco	4/8 F-DI, 24 V DC	✓	✓	✓	SIL 3/PL e
SIMATIC ET 200pro	8/16 F DI, 24 V DC, 4/8 F-DI / 4 F-DO 2 A, 24 V DC, F-Switch	✓	✓	✓	SIL 3/PL e
SIMATIC ET200SP	8F-DI, 24 V DC F-PM-E 24 V DC	✓	✓	✓	SIL 3/PL e
SIMATIC ET200MP	16 F-DI, 24 V DC	✓	✓	✓	SIL 3/PL e

✓ Suitable magnetically operated switch -- Not available

Selection and ordering data

	Version	Size	Contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm		d					
Standard range – Round sensor units									
 3SE6704-1BA	**Switching magnet (coded)**	M30	--	2	**3SE6704-1BA**		1	1 unit	41K
	Contact blocks								
 3SE6505-1BA	• With cable 3 m	M30	1 NO + 1 NC	2	**3SE6605-1BA**		1	1 unit	41K
	• With M12 plug, 4-pole	M30	1 NO + 1 NC	2	**3SE6605-1BA02**		1	1 unit	41K
Standard range – Rectangular sensor units									
 3SE6704-2BA	**Switching magnet (coded)**	25 × 88	--	2	**3SE6704-2BA**		1	1 unit	41K
	Contact blocks								
 3SE660.-2BA	• With cable 3 m	25 × 88	1 NO + 1 NC	2	**3SE6605-2BA**		1	1 unit	41K
			2 NC	2	**3SE6604-2BA**		1	1 unit	41K
			1 NO + 2 NC	10	**3SE6606-2BA04**		1	1 unit	41K
	• With cable, 10 m	25 × 88	1 NO + 1 NC	2	**3SE6605-2BA10**		1	1 unit	41K
			2 NC	2	**3SE6604-2BA10**		1	1 unit	41K
	• With M8 plug, 4-pole	25 × 88	1 NO + 1 NC	2	**3SE6605-2BA01**		1	1 unit	41K
			2 NC	2	**3SE6604-2BA01**		1	1 unit	41K
 3SE660.-3BA	**Switching magnet (coded)**	25 × 33	--	2	**3SE6704-3BA**		1	1 unit	41K
	Contact blocks								
	• With cable 3 m	25 × 33	1 NO + 1 NC	2	**3SE6605-3BA**		1	1 unit	41K
	• With cable 5 m			2	**3SE6605-3BA05**		1	1 unit	41K
	• With cable, 10 m			2	**3SE6605-3BA10**		1	1 unit	41K
Supplementary range in new design - Rectangular sensor units for left-hinged door									
 3SE6714-2CA	**Switching magnets (coded)**								
	• Same level	25 x 88	--	5	**3SE6714-2CA**		1	1 unit	41K
	• 90° offset			5	**3SE6724-2CA**		1	1 unit	41K
	Contact blocks								
 3SE6614-4CA01	• With M8 plug, 4-pole, with LED	25 × 88	2 NC	5	**3SE6614-4CA01**		1	1 unit	41K
	• 8 mm ∅, latching connection, plug, 6-pole		2 NC + 1 NC[1)]	5	**3SE6617-2CA01**		1	1 unit	41K
	• With cable 3 m		2 NC + 1 NC[1)]	5	**3SE6617-2CA04**		1	1 unit	41K
	Switching magnets (coded)								
 3SE6714-3CA	• Same level	26 x 36	--	5	**3SE6714-3CA**		1	1 unit	41K
	• 90° offset			5	**3SE6724-3CA**		1	1 unit	41K
	Contact blocks								
 3SE6616-3CA01	• 8 mm ∅, latching connection, plug, 6-pole	26 × 36	1 NO + 1 NC + 1 NC[1)]	5	**3SE6616-3CA01**		1	1 unit	41K
			2 NC + 1 NC[1)]	5	**3SE6617-3CA01**		1	1 unit	41K
	• With cable 3 m		2 NC + 1 NC[1)]	5	**3SE6617-3CA04**		1	1 unit	41K

[1)] The second NC is a signaling contact, not a safety contact.

3SE66, 3SE67 magnetically operated switches

	Version	Size	Contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm		d					
Supplementary range in new design - rectangular sensor units for right-hinged door									
 3SE6714-2CA	**Switching magnets (coded)**								
	• Same level	25 x 88	--	5	**3SE6714-2CA**		1	1 unit	41K
	• 90° offset			5	**3SE6724-2CA**		1	1 unit	41K
 3SE6624-4CA01	**Contact blocks**								
	• With M8 plug, 4-pole, with LED	25 × 88	2 NC	5	**3SE6624-4CA01**		1	1 unit	41K
	• 8 mm ∅, latching connection, plug, 6-pole		2 NC + 1 NC[1)]	5	**3SE6627-2CA01**		1	1 unit	41K
	• With cable 3 m		2 NC + 1 NC[1)]	5	**3SE6627-2CA04**		1	1 unit	41K
 3SE6714-3CA	**Switching magnets (coded)**								
	• Same level	26 x 36	--	5	**3SE6714-3CA**		1	1 unit	41K
	• 90° offset			5	**3SE6724-3CA**		1	1 unit	41K
 3SE6626-3CA01	**Contact blocks**								
	• 8 mm ∅, latching connection, plug, 6-pole	26 × 36	1 NO + 1 NC + 1 NC[1)]	5	**3SE6626-3CA01**		1	1 unit	41K
			2 NC + 1 NC[1)]	5	**3SE6627-3CA01**		1	1 unit	41K
	• With cable 3 m		2 NC + 1 NC[1)]	5	**3SE6627-3CA04**		1	1 unit	41K
Accessories for standard range									
 3SX3260	**Spacer**	25 × 88	--	2	**3SX3260**		1	1 unit	41K
 3SX3261		25 × 33	--	2	**3SX3261**		1	1 unit	41K
	Coupling With connecting cable, 5 m								
	• With M8 socket, 4-pole		--	5	**3SX5601-3GA05**		1	1 unit	41K
Accessories for supplementary range in new design									
 3SX5600-2GA01	**Spacer**	25 × 88	--	2	**3SX5600-2GA01**		1	1 unit	41K
 3SX5600-2GA02		26 × 36	--	2	**3SX5600-2GA02**		1	1 unit	41K
	Coupling With connecting cable, 5 m								
	• With M8 socket, 4-pole		--	5	**3SX5601-3GA05**		1	1 unit	41K
	• With 8 mm socket ∅, 8 mm, latching connection, 6-pole		--	5	**3SX5601-4GA05**		1	1 unit	41K

[1)] The second NC is a signaling contact, not a safety contact.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Version	Rated control voltage	Number of sensors	Enabling/ signaling circuits	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Monitoring units									
3SK1 safety relays									
Standard or Advanced basic units									
With relay output	24 V DC	1	3 NO/1 NC	▶	**3SK1111-1AB30**		1	1 unit	41L
		6[1]	3 NO/1 NC	▶	**3SK1121-1AB40**		1	1 unit	41L
With semiconductor output	24 V DC	1	2 x F-DQ/1 QM	2	**3SK1112-1BB40**		1	1 unit	41L
3SK2 safety relays									
Basic units									
With semiconductor output	24 V DC	5	2 x F-DQ/1 QM	2	**3SK2112-1AA10**		1	1 unit	41L
		10	4 x F-DQ/2 QM	2	**3SK2122-1AA10**		1	1 unit	41L
3SE68 safety relay									
With relay output, 6-fold	24 V DC	6	2 S /1 NC	5	**3SE6806-2CD00**		1	1 unit	41K


3SK1111-1AB30


3SK2112-1AA10


3SE6806-2CD00

[1] Only when up to 5 3SK1220 expansion units are used
see page 11/21.

For more monitoring units, see pages 2/1, 8/1, 9/1 and 11/1, and Catalog IK PI.

Overview

non-contact RFID safety switch with maximum tamper protection

RFID 3SE63 non-contact safety switches comply with the highest safety requirements, SIL 3 or Cat. 4, for monitoring the positions of movable protective devices.

An RFID safety switch consists of a coded RFID switch with an 8-pole M12 connector plug and an identical RFID actuator.

The switch is available in several versions:

- Family coded with M12 plug or with additional 18 N magnetic catch as an option
- Individually coded, programmable once, with M12 plug or with additional 18 N magnetic catch as an option
- Individually coded, programmable more than once (an unlimited number of times), with M12 plug or variant with additional 18 N magnetic catch

The actuator is therefore available in two versions:

- Standard
- With 18 N magnetic catch

The magnetic catch keeps doors and hinge switches closed with permanent magnets.

Mounting and maintenance

Various options for mounting save on enclosure variants:

- Mounting of the switch on the right or left side
- The actuator can be mounted on all sides

Quick and easy mounting thanks to universal mounting holes:

- Standard gauge/holes for 3SE6 magnetically operated switches
- Fine adjustment thanks to slotted holes

Little adjustment or maintenance required:

- Threshold indication by LED display on the switch for quick and easy adjustment during mounting and maintenance
- Molded switch allows it to be used as an end stop for small and medium-sized doors

Note:

- Keep metal parts and cuttings away from the vicinity of the switch
- Minimum distance between two switches 100 mm

Optional accessories (mounting)

- Covers for sealing mounting holes, also suitable for tamper-proofing screw fixings
- Spacers (approx. 3 mm high) to facilitate cleaning under the installation surface when using high-pressure cleaners, for example

Coding

Family coded

These safety switches are delivered ready to use, i. e. no programming is necessary.

Individually coded, programmable once

The assignment of safety switch and actuator thus created is irreversible.

The actuator is programmed simply by routine during startup, thus permanently preventing any form of tampering by means of a replacement actuator.

Individually coded, programmable several times

The procedure for programming a new actuator can be repeated an unlimited number of times. When a new actuator is programmed the previous code becomes invalid. A protected coding process allows new actuators to be programmed for service purposes.

After this, a ten-minute lockout provides enhanced tamper protection. The green LED flashes until the lockout time has ended and the new actuator has been detected. If the operational voltage is interrupted during this time, the ten-minute guard time is restarted.

Programming procedure for individual coding

1. Apply operational voltage to safety sensor

2. Move actuator into detection range:
red LED lights up, yellow LED flashes (1 Hz)

3. After 10 s it changes to a shorter flashing frequency (3 Hz).
In this state switch off operational voltage.

4. After the next time the operational voltage is switched on, the actuator is detected again to activate the programmed actuator code. The activated code is thus stored permanently.

Diagnostics

The RFID safety switch indicates its operating state including faults by means of the LED indicator in the switch and the short-circuit proof diagnostics output. The signals can then be used for central displays or non-safety-related control tasks.

There are two diagnostics functions:

- Crossover monitoring
- Open-circuit monitoring
- External voltage monitoring
- Ambient temperature too high
- Wrong or defective actuator
- Switching interval threshold identification with LED display

The signal combination "diagnostics output switched off" and "safety outputs still switched on" can be used to move the machine into a controlled stop position.

Any crossover or a fault that is not currently compromising the safe function of a safety switch results in the disconnection of the safety channels after a 30-minute delay. However, the diagnostics output switches off instantaneously.

Mode of operation of the diagnostics LEDs

The safety switch indicates not only its operating state, but also faults by means of LEDs in three colors at the ends of the RFID switch.

- The green LED indicates readiness for operation when the control supply voltage is connected.
- The yellow LED indicates that there is an actuator in detection range. If the actuator is in the switching interval threshold, this is indicated by flashing. This flashing can be used to identify a change in the distance between sensor and actuator at an early stage (e. g. as a result of the sagging of a protective door). The installation should be tested before the distance increases further, the safety outputs switch off and the machine stops.
- The red LED indicates the individual causes of the fault by means of defined flashing frequencies.

Benefits

- Maximum tamper resistance by means of individual coding of switches and actuators at the highest safety level
- Plastic enclosure with integrated connector
- Two solid-state short-circuit proof safety outputs, each 250 mA
- Integrated crossover, open circuit and external voltage monitoring, with series circuit as far as the control cabinet
- Safety and diagnostics signals can be connected in series
- Series connection of safety circuits in Cat. 4 / PL e / SIL 3
- LED status indication including switching interval threshold indication for quick and easy adjustment during installation and maintenance
- Short-circuit proof conventional diagnostics output
- Optional version with magnetic catch for interlocking hinge switches or small doors even when de-energized
- Highly rugged thanks to the use of tested enclosure materials, resistant to aggressive cleaning products, with a degree of protection of up to IP69(K)
  IP69 does not automatically mean that it can be used outdoors. The devices must be installed with corresponding protection for this purpose. UV radiation additionally affects the enclosure
- Fine adjustment thanks to slotted holes
- Little adjustment or maintenance required
- Molded switch allows it to be used as an end stop for small and medium-sized doors

Application

RFID non-contact safety switches are designed for use in safety circuits, and are used to monitor the positions of movable protective devices. They monitor the positions of rotating, laterally sliding or removable protective devices using the coded electronic actuator.

Their high degree of protection (IP69K) and the use of cleaning-product-resistant materials means that these switches are optimized for use under extreme environmental conditions.

Their electronic operating principle makes these switches ideal for metalworking machinery.

The switches have a larger switching interval and switching displacement than mechanical switches, improve the mounting tolerance of the protective door, and offer a wide range of diagnostics options.

The RFID switches can be connected to all standard evaluation units suitable for solid-state inputs and in which the built-in crossover monitoring function can be deactivated, e.g.:

Monitoring units	
Relay output	
SIRIUS safety relays	3SK1111-.AB30, 3SK1121
SIRIUS safety relays	3TK2826-.BB4.
Solid-state outputs	
SIRIUS safety relays	3SK1112, 3SK1122, 3SK2112, 3SK2122
SIRIUS safety relays	3TK2841, 3TK2842, 3TK2845 3TK2853-.BB40
Modular Safety System (MSS)	3RK3 (safe inputs)
SIMATIC ET 200S	6ES7138-4FA0.-0AB0 6ES7138-4FC0.-0AB0
SIMATIC ET 200M	6ES7326-1BK0.-0AB0
SIMATIC ET 200eco	6ES7148-3FA00-0XB0
SIMATIC ET 200pro	6ES7148-4F.00-0AB0
SIMATIC ET 200SP	6ES7136-6BA00-0CA0 6ES7136-6PA00-0BC0
SIMATIC ET 200MP	6ES7526-3BH00-0AB0
SIMATIC S7-1200F	6ES7226-6BA32-0XB0

These safety categories can be achieved in safety circuits:

- Category 4 according to EN ISO 13849-1
- PL e according to EN ISO 13849-1
- SIL 3 according to IEC 61508

Technical specifications

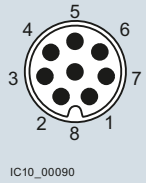
Type		3SE63
General data		
Standards		IEC 60947-5-3, IEC 61508, EN ISO 13849-1, EN ISO 14119
Enclosure material		Glass-fiber reinforced thermoplast, self-extinguishing
Degree of protection		IP69K
Ambient temperature		
• During operation	°C	-25 ... +70
• During storage, transport	°C	-25 ... +85
Shock resistance		30 *g* / 11 ms
Vibration resistance		10 ... 55 Hz / Amplitude 1 mm

Type		3SE63
Electrical specifications		
Rated insulation voltage U_i	V	32
Degree of pollution according to IEC 60664-1		3
Rated impulse withstand voltage U_{imp}	V	800
Rated conditional short-circuit current	A	100
Rated operational voltage U_e (PELV according to EN 60204-1)	V DC	24 –15/+10 %
Protection class		II
Overvoltage category		III
Rated operational current I_e	A	0.6
Lowest operating current I_m	mA	0.5
No-load current I_0	mA	35

3SE63 RFID safety switches

Type		3SE63
Inputs/outputs		
Safety inputs X1/X2		
• Input voltage	V DC	24 –15/+10 %
• Power consumption per input	mA	5
Safety outputs OSSD1/OSSD2		p operation
• Max. rated operating current $I_{e\ max}$	A	0.25
• Rated operational current I_e/DC-12/DC-13 at U_e	A	0.25
• Voltage drop U_e	V	< 1
• Switching frequency	Hz	1
• Response time, max.	ms	100
• Risk time, max.	ms	200
• Recovery, max.	s	5
Diagnostics output		p operation
• Max. rated operating current $I_{e2\ max}$	A	0.05
• Rated operational current I_e/DC-12/DC-13 at U_e	A	0.05
• Voltage drop U_e	V	< 2
• Operational current	mA	150
• Conductor capacity, max.	nF	50

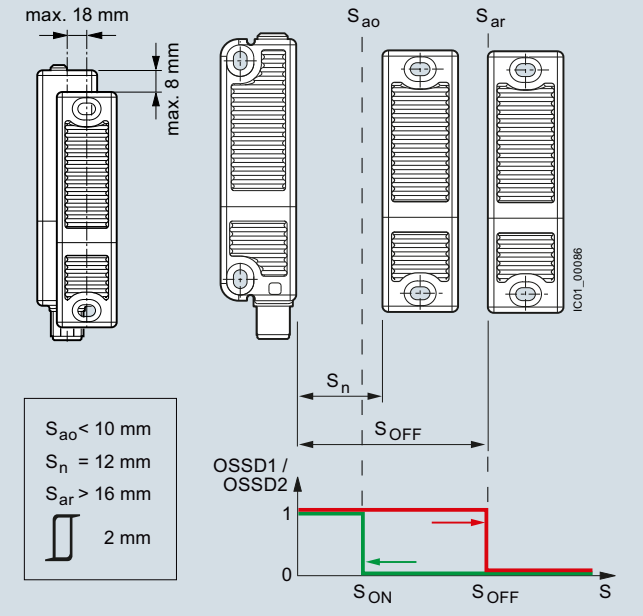
Connector assignment



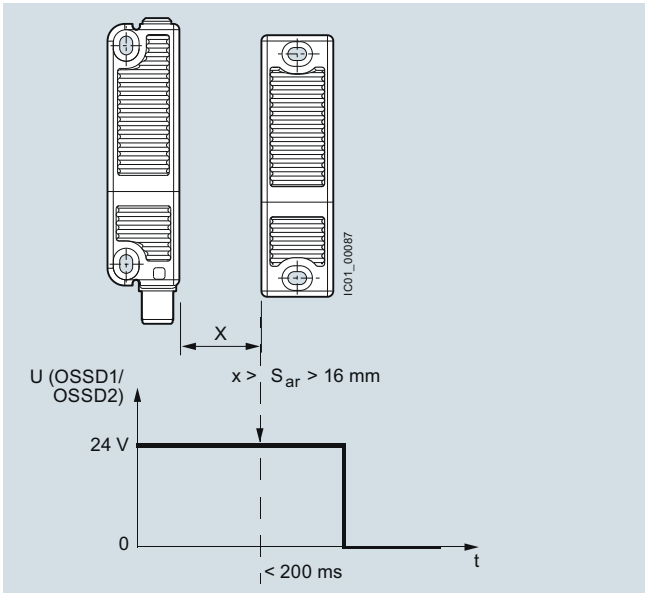
Pin 1: A1 rated operational voltage 24 V DC
Pin 2: X1 safety input 24 V DC
Pin 3: A2 grounding
Pin 4: OSSD1 safety output
Pin 5: OUT conventional diagnostics output
Pin 6: X2 safety input 24 V DC
Pin 7: OSSD2 safety output
Pin 8: Not used

Directions of approach and switching interval

The side area permits a maximum height offset of the switch and actuator of ±8 mm (e.g. mounting tolerance or due to sagging of the protective door). The transverse offset also equals max. ±8 mm.



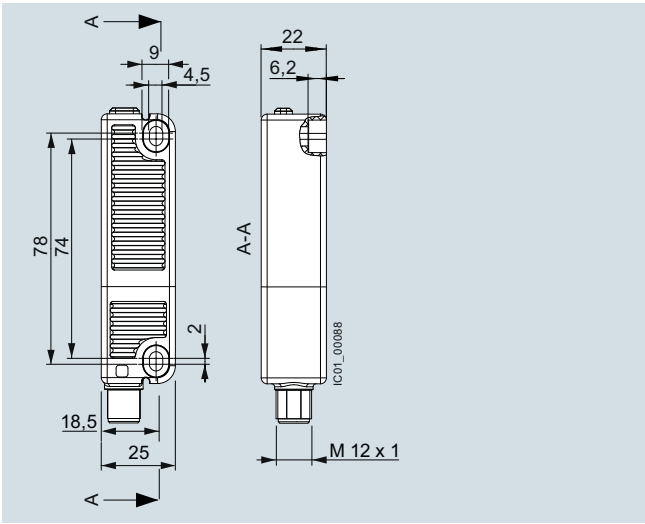
Switching interval: Output signal with hysteresis



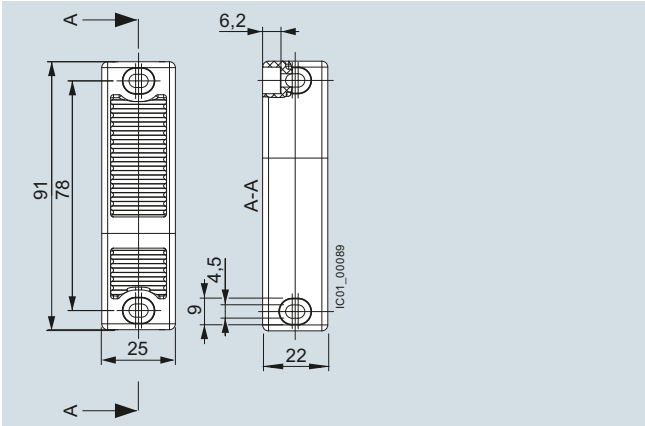
Switching interval: Output signal with OFF delay

Dimension drawings

RFID switch
3SE6315

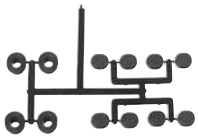


RFID actuator
3SE6310



Selection and ordering data

With M12 connector, 8-pole

	Version/coding	Latching/length	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rectangular safety switches 91 mm x 25 mm[1]								
 3SE6315	**RFID safety switch**							
	• Family coded	None	2	**3SE6315-0BB01**		1	1 unit	41K
		With 18 N magnetic catch	2	**3SE6315-1BB01**		1	1 unit	41K
	• Individually coded, multiple teach-in capability	None	2	**3SE6315-0BB02**		1	1 unit	41K
		With 18 N magnetic catch	2	**3SE6315-1BB02**		1	1 unit	41K
	• Individually coded, programmable once	None	2	**3SE6315-0BB03**		1	1 unit	41K
		With 18 N magnetic catch	2	**3SE6315-1BB03**		1	1 unit	41K
 3SE6310	**RFID actuator**							
	• Standard	None	2	**3SE6310-0BC01**		1	1 unit	41K
		With 18 N magnetic catch	2	**3SE6310-1BC01**		1	1 unit	41K
Optional accessories								
 3SX5600-1G	**Covers and spacers** One pack (1 unit) contains 8 covers and 4 spacers		2	**3SX5600-1G**		1	1 unit	41K
 3SX5601-2GA03	**Connecting cable, 8-pole**, with 1 straight M12 socket Rated control voltage 30 V Rated current 2 A	Length 3 m	2	**3SX5601-2GA03**		1	1 unit	41K
		Length 5 m	2	**3SX5601-2GA05**		1	1 unit	41K
		Length 10 m	2	**3SX5601-2GA10**		1	1 unit	41K

[1] Not connectable via ASi modules

For monitoring units, see chapter 8/1, 9/1, 11/1

Notes

Note:
For the conversion tool e.g. from 3SB3 to 3SU1, see www.siemens.com/sirius/conversion-tool

Overview

	3SU1.0			3SU1.3		
Pushbuttons and indicator lights						
Designs						
Nominal diameter	22 mm			22 mm		
Version	Plastic			Plastic with metal front ring, matte		
Actuators	Complete units	Compact units	Actuating / signaling elements	Complete units	Compact units	Actuating / signaling elements
Pushbuttons	✓ see p. 13/18	--	✓ see p. 13/27	✓ see p. 13/39	--	✓ see p. 13/47
Illuminated pushbuttons	✓ see p. 13/18	--	✓ see p. 13/28	✓ see p. 13/39	--	✓ see p. 13/48
Mushroom pushbuttons	✓ see p. 13/20	--	✓ see p. 13/30	✓ see p. 13/41	--	✓ see p. 13/50
EMERGENCY STOP mushroom pushbuttons	✓ see p. 13/20	--	✓ see p. 13/31	✓ see p. 13/41	--	✓ see p. 13/51
Selector switches	✓ see p. 13/21	--	✓ see p. 13/33	✓ see p. 13/42	--	✓ see p. 13/53
Key-operated switches	✓ see p. 13/22	--	✓ see p. 13/35	✓ see p. 13/43	--	✓ see p. 13/55
Twin pushbuttons	--	--	✓ see p. 13/29	--	--	✓ see p. 13/49
Toggle switches	--	--	✓ see p. 13/32	--	--	✓ see p. 13/52
Coordinate switches	✓ see p. 13/23		✓see p. 13/38	✓see p. 13/43		✓ see p. 13/58
Sensor switches	--	✓ see p. 13/25	--	--	✓ see p. 13/45	--
ID key-operated switches	--	--	✓ see p. 13/37	--	--	✓ see p. 13/57
Pushbuttons with extended stroke	--	✓ see p. 13/26	--	--	✓ see p. 13/46	--
Potentiometers	--	✓ see p. 13/25	--	--	✓ see p. 13/45	--
Indicators						
Indicator lights	✓ see p. 13/38	--	✓ see p. 13/38	✓ see p. 13/44	--	✓ see p. 13/58
Contact modules						
Single-pole	✓ see p. 13/85					
LED modules						
Module with integrated LED	✓ see p. 13/87, 13/88, 13/100, 13/101					
Connections						
Screw terminals	✓	✓	✓	✓	✓	✓
Spring-type terminals	✓	--	✓	✓	--	✓
Solder pins	--	--	✓	--	--	✓
AS-Interface	✓	--	✓	✓	--	✓
IO-Link	--	--	✓	--	--	✓

✓ Available

-- Not available

	3SU1.5			3SU1.6			3SB2
Pushbuttons and indicator lights							
Designs							
Nominal diameter	22 mm			30 mm			16 mm
Version	Metal, shiny			Metal, matte, flat			Plastic, round
	Complete units	Compact units	Actuating / signaling elements	Complete units	Compact units	Actuating / signaling elements	
Actuators							
Pushbuttons	✓ see p. 13/151	--	✓ see p. 13/67	--	--	✓ see p. 13/78	✓ see p. 13/131
Illuminated pushbuttons	✓ see p. 13/59	--	✓ see p. 13/68	--	--	✓ see p. 13/78	✓ see p. 13/136
Mushroom pushbuttons	✓ see p. 13/61	--	✓ see p. 13/70	--	--	--	--
EMERGENCY STOP mushroom pushbuttons	✓ see p. 13/61	--	✓ see p. 13/71	--	--	--	✓ see p. 13/136
Selector switches	✓ see p. 13/62	--	✓ see p. 13/73	--	--	✓ see p. 13/79	✓ see p. 13/136
Key-operated switches	✓ see p. 13/62	--	✓ see p. 13/75	--	--	✓ see p. 13/80	✓ see p. 13/137
Twin pushbuttons	--	--	✓ see p. 13/69	--	--	--	--
Toggle switches	--	--	✓ see p. 13/73	--	--	--	--
Coordinate switches	✓ see p. 13/63		✓ see p. 13/77	✓ see p. 13/43		--	--
Pushbuttons with extended stroke	--	✓ see p. 13/66	--	--	--	--	--
Potentiometers	--	✓ see p. 13/63	--	--	--	--	
indicators							
Indicator lights	✓ see p. 13/64	--	✓ see p. 13/77	--	--	✓ see p. 13/80	✓ see p. 13/137
Contact modules							
Single-pole	✓ see p. 13/85, 13/99						--
LED modules							
Wedge bases	--	--	--	--	--	--	✓ see p. 13/139
Module with integrated LED	✓ see p. 13/87, 13/88, 13/100, 13/101						
Connections							
--							
Plug-in connection	--	--	--	--	--	--	✓
Screw terminals	✓	✓	✓	✓	✓	✓	--
Spring-type terminals	✓	✓	✓	✓	✓	✓	--
Solder pins	✓	✓	✓	✓	✓	✓	✓
AS-Interface	✓	✓	✓	✓	✓	✓	✓
IO-Link	✓	✓	✓	✓	✓	✓	✓

✓ Available

-- Not available

Note:

Safety characteristics, see page 16/10.

AS-Interface solutions

Pushbuttons and indicator lights of the SIRIUS ACT series can be connected to the AS-Interface communication system quickly and easily with the help of various solutions.

For AS-Interface solutions, see Catalog IK PI "Industrial Communication SIMATIC NET".

AS-Interface EMERGENCY STOP according to ISO 13850

Using special modules, EMERGENCY STOP devices according to ISO 13850 can be directly connected through the standard AS-Interface with safety-related communication (see page 13/89).

AS-Interface enclosures

Enclosures with standard fittings are listed in this catalog. For customized enclosures, use the SIRIUS ACT Configurator to select the elements for equipping (see page 13/91).

PROFINET solutions

SIRIUS ACT devices will be equipped in future with a direct communication interface to PROFINET and PROFIsafe.

RFID authentication solutions

Groups of employees or individuals can be authenticated by means of the ID key-operated switch. Color-coded keys for easy distinction between users and flexible in application thanks to four function stages.

Introduction




	3SU18	3SU18	3SE7, 3SF2	3SE29, 3SB39
	Enclosures	Two-hand operation consoles	Cable-operated switches	Foot switches
Enclosures				
Plastic	✓	✓	--	✓
Metal	✓	✓	✓	✓
Actuators				
Pushbuttons	✓	--	✓	✓
Illuminated pushbuttons		--	--	--
Mushroom pushbuttons	✓	✓	--	--
EMERGENCY STOP mushroom pushbuttons	✓	✓	✓	--
Selector switches	✓	--	--	--
Key-operated switches	✓	--	--	--
Bowden wires	--	--	✓	--
indicators				
Indicator lights	✓	--	✓	--
Acoustic signaling devices	✓	--	--	
Contact modules				
Single-pole	✓	✓	--	--
Two-pole	--	✓	✓	✓
Three-pole	--	--	✓	✓
Four-pole	--	--	✓	✓
Connections				
Screw terminals	✓	✓	✓	✓
Pages	see p. 13/92	see p. 13/103	see p. 13/147	see p. 13/151

✓ Available -- Not available


	8WD42, 8WD44	8WD53
	Signaling columns	Integrated signal lamps
Enclosures		
Plastic	✓	✓
Illumination		
Incandescent lamps	✓	✓
LEDs	✓	✓
Flashlights	✓	✓
Connections		
Screw terminals	✓	✓
Spring-type terminals	✓	--
AS-Interface	✓	--
Pages	see p. 13/153	see p. 13/162

✓ Available -- Not available

Overview

SIRIUS ACT pushbuttons and indicator lights

SIRIUS ACT – commanding and signaling

SIRIUS ACT is a modular system of pushbuttons and indicator lights for front plate mounting and rear-mounted electrical modules.

Extensive portfolio

- Customized variants, e.g. special tumbler arrangements, labeling, equipped enclosures
- Communication-enabled thanks to direct interfacing to AS-Interface, IO-Link or PROFINET

Diverse possible applications

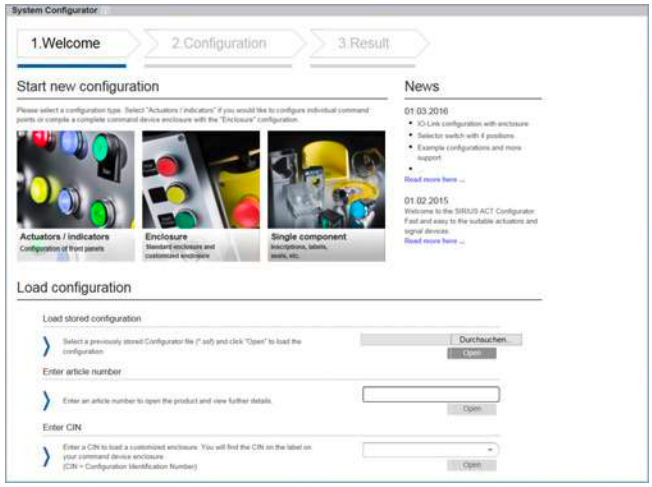
- National and international approvals
- Many trade approvals
- Short delivery times thanks to global availability

Standards

- IEC 60947-1, EN 60947-1
- IEC 60947-5-1, EN 60947-5-1
- IEC 60947-5-5, EN 60947-5-5 for EMERGENCY STOP devices

More information
Home page, see www.siemens.com/sirius-act
Industry Mall, see www.siemens.com/product?3SU1
Configurator, see www.siemens.com/sirius-act/configurator
Conversion tool, see www.siemens.com/sirius/conversion-tool
Manual, see https://support.industry.siemens.com/cs/ww/en/view/107542462

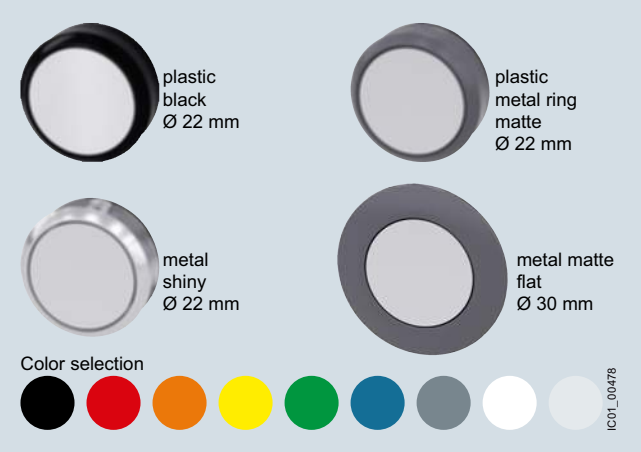
Configurator



- Fast, simple selection by intuitive navigation through clearly-organized menus using drag & drop
- Image preview of selected components
- Inscription of pushbuttons and labeling plates using the interactive inscription tool
- Once created, a configuration can be ordered as often as required using the customer-specific article number and the CIN (Configuration Identification Number)
- Everything at a glance: Product data sheets, certificates, dimensional drawings, list prices, inscription tool

Benefits

Design



SIRIUS ACT is available in four design lines.

Communication

- Direct connection of the enclosure to AS-Interface or IO-Link
- Direct connection in the control cabinet to PROFINET, IO-Link or AS-Interface
- Can be integrated easily via the TIA Portal

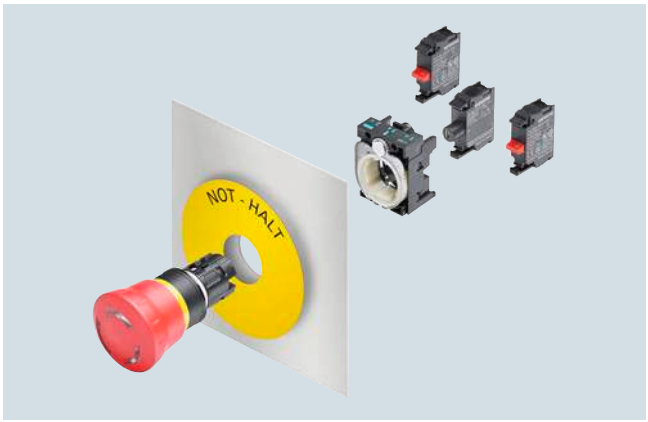
Ruggedness

- Degree of protection IP66, IP67, IP69 (IP69K)

IP66	
6 = Protection against the ingress of dust	6 = Protection against powerful splashwater
IP67	
6 = Protection against the ingress of dust	7 = Protection against temporary immersion
IP69 (IP69K)	
6 = Protection against the ingress of dust	9/9K = Protection against water in high-pressure cleaning (approx. 80 bar) and high water jet temperatures (approx. 80°C)

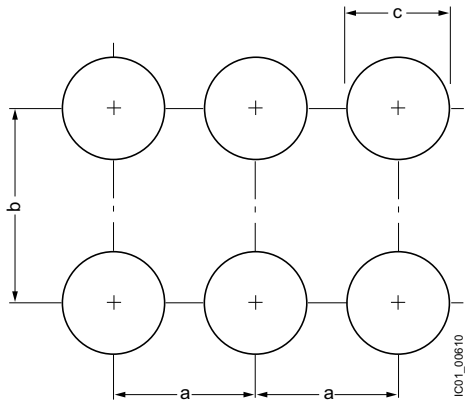
- Service life of 100 000 hours thanks to use of LEDs
- Media resistance (chemicals) thanks to solid stainless steel and high-grade plastics
- Mechanical endurance of 10 x 10^6 switching cycles
- Suitable for use in extreme environments
- Reliable, friction-locked fixing with just one screw
- Design stability according to use
- Simple geometry for mounting holes

Easy handling



- Self-holding function of the actuator when mounting
- Twist prevention integrated into patented holder design
- Stackable contact modules
- Self-explanatory and fast installation using one hand
- Components can be mounted with holder removed
- No special tools required,
  simple size 2 screwdriver (cross-tip DIN ISO 87641PZD1, flat-head DIN ISO 2380-1 A/B 1x4.5) is sufficient

Mounting dimensions



	Minimum clearance		
	a	b	c
	mm	mm	mm
22 mm plastic, plastic with metal front ring, metal for front plate thickness 1 ... 6 mm			
3-slot holder	30	40	$22.3^{+0.4}$
4-slot holder	40	40	$22.3^{+0.4}$
30 mm, metal, matte for front plate thickness 1 ... 4 mm			
3-slot holder	40	45	$30.5^{+0.5}$

Versions

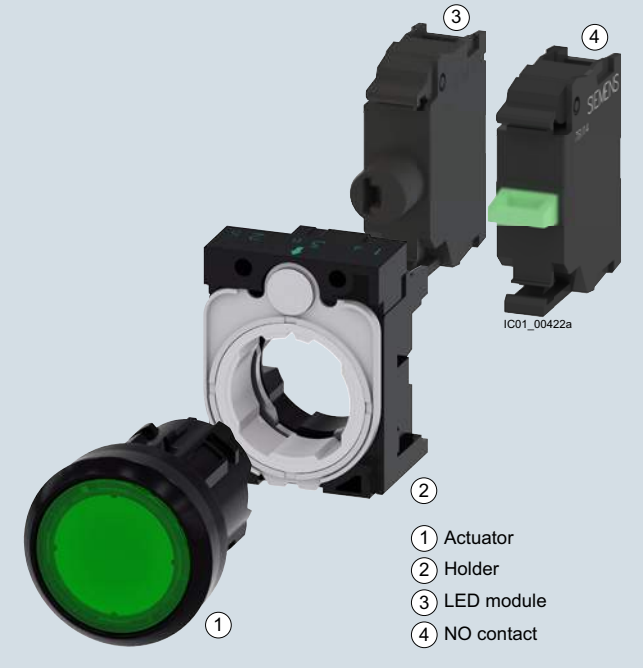
SIRIUS ACT is a modular system of pushbuttons and indicator lights with which customized variants can be configured flexibly.

One command point comprises:

- An actuating or signaling element in front of the control panel
- A holder for securing behind the control panel
- Up to six contact modules and/or one LED module (mounted onto the holder), single-pole contacts can be stacked
- A comprehensive range of accessories for inscription/marking

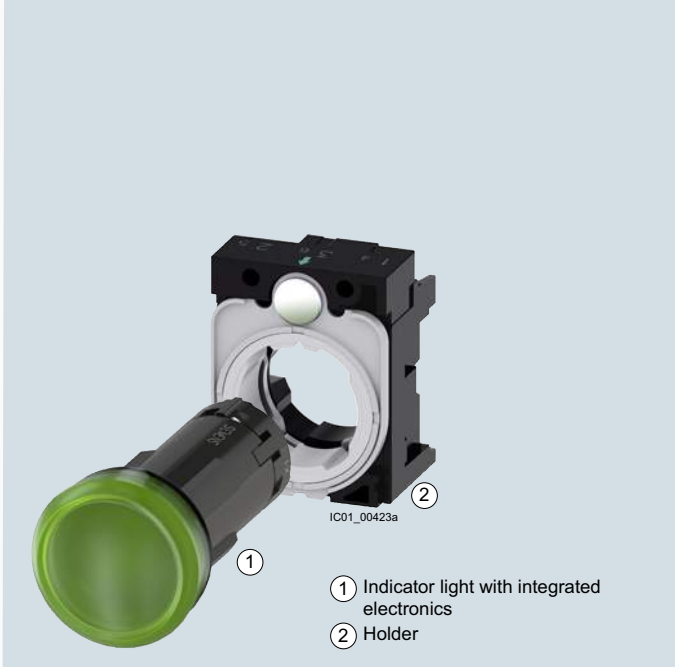
Complete units

Complete units made up of an actuating or signaling element, holder and contact modules and/or LED modules are offered for the most frequent application cases. The electrical parts are integrated and only have to be wired.



Compact units

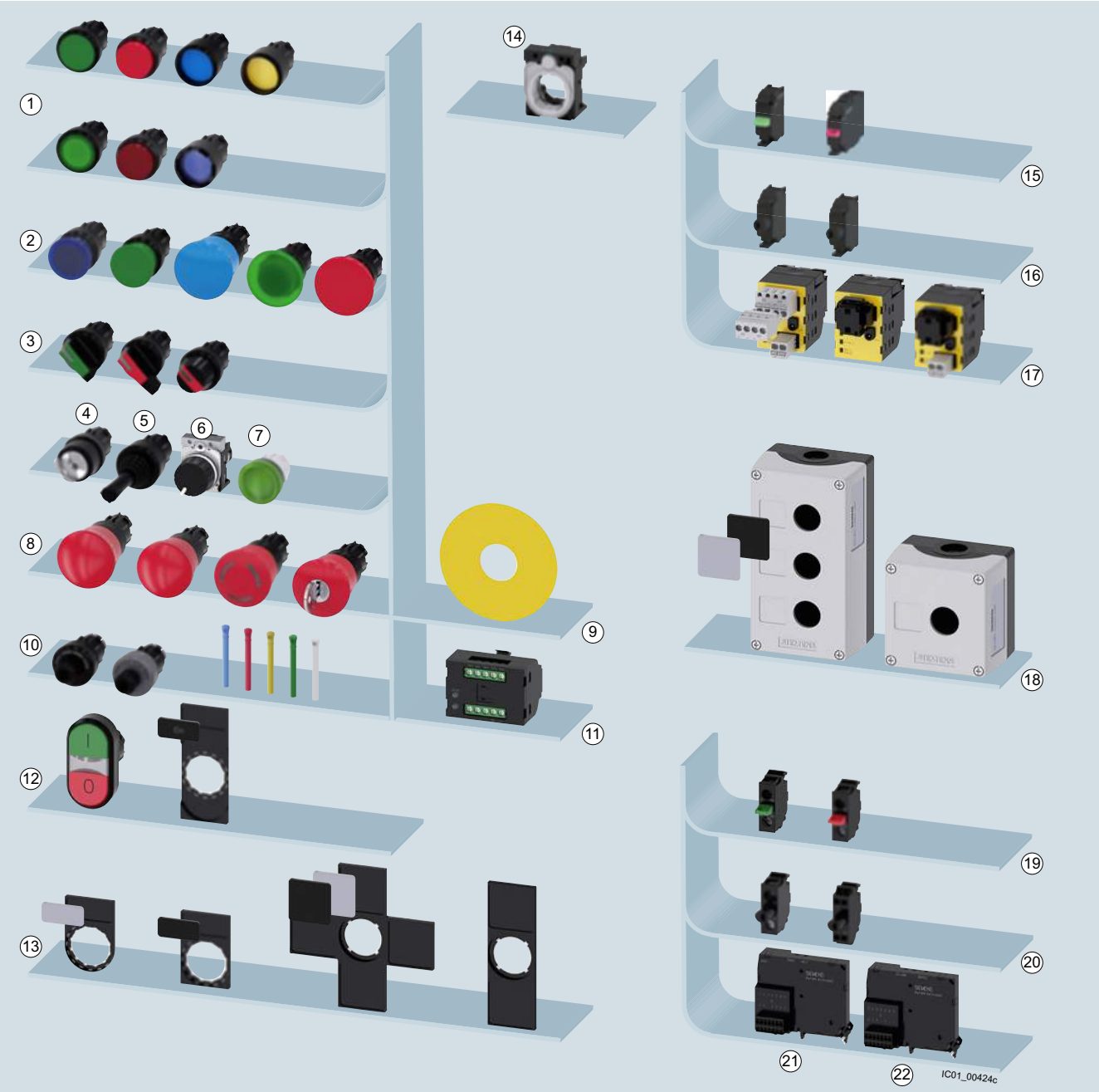
Signaling devices, sensor switches, pushbuttons with extended stroke and potentiometers are available as compact units. The electronic circuitry is already integrated in these devices, i.e. it is not necessary to snap on a contact or LED module.



Complete units	Pages	Compact units	Pages
Plastic, black	13/18	Plastic, black	13/25
Plastic with metal front ring, matte	13/39	Plastic with metal front ring, matte	13/46
Metal, shiny	13/59	Metal, shiny	13/64

General data

Actuating and signaling elements



Actuating and signaling elements		Pages
①	Pushbuttons, illuminated pushbuttons	13/18
②	Mushroom pushbuttons	13/20
③	Selector switches	13/42
④⑤⑥⑦	Key-operated switches, coordinate switches, potentiometers, indicator lights	13/43
⑧⑨	EMERGENCY STOP mushroom pushbuttons, backing plates	13/20
⑩⑪	ID key-operated switches with ID key, electronic modules	13/37
⑫	Twin pushbuttons, label holders, labeling plates	13/29
Holders and labels		**Pages**
⑬	Label holders, labeling plates	13/104
⑭	Holder	13/104

Modules for front plate mounting		Pages
⑮	Contact modules	13/85
⑯	LED modules	13/87
⑰	AS-Interface modules	13/89
Enclosures		**Pages**
⑱	Enclosures	13/91
Modules for base mounting		**Pages**
⑲	Contact modules	13/99
⑳	LED modules	13/99
㉑	IO-Link modules	13/102
㉒	AS-Interface modules	13/102

System overview of SIRIUS ACT pushbuttons and indicator lights from the plastic design line.
Pushbuttons and indicator lights available in 4 design lines.

ID key-operated switches

The ID key-operated switch is electronic and has 4 switch positions that are selected by keys with different codes.
Using the 4 ID keys with different codes, it is possible to select 1 to 4 positions.
The ID keys are color-coded (yellow, blue, red, green, white) so that they can be clearly differentiated at a glance.

Different versions of ID key-operated switches are available depending on the following features:

- Front ring material
- Conventional variant: 1 + 4 non-isolated outputs
- Variant with IO-Link: Option of individual coding

Operation:
Insert ID key, turn key to select the position. Standard keys can also be used in conjunction with the electronic module for ID key-operated switches with IO-Link function. The white ID key is supplied without coding.

		
	3SU1000-4WS10-0AA0 **Plastic, black**	**3SU1030-4WS10-0AA0** **Plastic with metal front ring, matte**
ID key-operated switches		
Number of switching positions	4	4
Operating angle	45°	45°
Operating principle	Latching	Latching
Switch position for key removal	Key removal possible in all 4 positions	Key removal possible in all 4 positions
Color	Black	Black
Pages	13/37	13/57

		
	3SU1400-1GC10-1AA0	**3SU1400-1GD10-1AA0**
Electronic modules for ID key-operated switches		
Type of power supply	--	via IO-Link master
Protocol is supported IO-Link protocol	--	IO-Link protocol
Number of NO contacts	5	5
IO-Link transfer rate	--	COM2 (38.4 Kbaud)
Pages	13/90	13/90

		
	3SU1900-0FU60-0AA0 **ID keys ID group individual**	**3SU1900-0FV40-0AA0** **3SU1900-0FW30-0AA0** **3SU1900-0FX20-0AA0** **3SU1900-0FY50-0AA0** **ID keys**
ID keys		
Material	Plastic	Plastic
Version of RFID coding	Individually coded, programmable several times	ID group 1 ID group 2 ID group 3 ID group 4
Color	White	Green Yellow Red Blue
Pages	13/127	13/127

General data

Article No. scheme

Device types







3SU10	3SU11	3SU12	3SU14	3SU15	3SU18	3SU19
Device types						
Actuating and signaling elements	**Complete units**	**Compact units**	**Modules for actuators and indicators**	**Holders with module**	**Enclosures**	**Accessories**

Actuating and signaling elements

Product versions		**Article number**														
SIRIUS ACT pushbuttons and indicator lights		**3SU1**	☐	☐	☐	–	☐	☐	☐	☐	☐	–	☐	☐	☐	☐
Device type	Actuating and signaling elements		**0**													
Material (front ring)	Plastic, black Metal, matte (front ring)/ plastic, black (rosette) Metal, shiny Metal, matte			**0** **3** **5** **6**												
Illumination	Non-illuminated Illuminated/transparent Illuminated/non illuminated				**0** **1** **2**											
Type of actuator/indicator	Pushbutton Mushroom pushbutton/EMERGENCY STOP mushroom pushbutton/ sensor switch Selector switch Twin pushbutton, toggle switch Key-operated switch Indicator light/acoustic signaling device Coordinate switch						**0** **1** **2** **3** **4/5** **6** **7**									
Design of the actuator/acoustic signaling device	e.g. A = Flat							☐								
Function	e.g. B = Momentary contact								☐							
Color/key removal position	e. g. 10 = Black, 20 = Red									☐	☐					
Connection type	None												**0**			
Module/holder equipment	e. g. A = Without module, without holder Y = Without module, with holder													☐		
Marking	e.g. A = None, C = "I", D = "O", R = "R"														☐	
Ambient condition	Standard, ATEX															**0** **1**
Example		**3SU1**	**0**	**0**	**0**	**–**	**0**	**A**	**B**	**1**	**0**	**–**	**0**	**A**	**A**	**0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Complete units

Product versions		Article number														
SIRIUS ACT pushbuttons and indicator lights		**3SU1**	□	□	□	–	□	□	□	□	□	–	□	□	□	□
Device type	Complete units		**1**													
Material (front ring)	Plastic, black			**0**												
	Metal, matte (front ring)/ plastic, black (rosette)			**3**												
	Metal, shiny			**5**												
	Metal, matte			**6**												
Illumination	Non-illuminated				**0**											
	Illuminated (with/without LED, various voltages)				**1...8**											
Type of actuator/indicator	Pushbutton						**0**									
	Mushroom pushbutton/EMERGENCY STOP mushroom pushbutton/ sensor switch						**1**									
	Selector switch						**2**									
	Twin pushbutton, toggle switch						**3**									
	Key-operated switch						**4/5**									
	Indicator light/acoustic signaling device						**6**									
	Coordinate switch						**7**									
Design of the actuator/acoustic signaling device	e.g. A = Flat							□								
Function	e.g. B = Momentary contact								□							
Color/key removal position	e. g. 10 = Black, 20 = Red									□	□					
Connection type	Screw terminals												**1**			
	Spring-type terminals												**3**			
Module/holder equipment incl. contact material	e. g. A = Without module, with holder B = 1 NO contact with holder C = 1 NC contact with holder													□		
Marking	e.g. A = None, C = "I", D = "O", R = "R"														□	
Ambient condition	Standard															**0**
	ATEX															**1**
Example		**3SU1**	**1**	**0**	**0**	**–**	**0**	**A**	**A**	**1**	**0**	**–**	**1**	**B**	**A**	**0**

Compact units

Product versions		Article number														
SIRIUS ACT pushbuttons and indicator lights		**3SU1**	□	□	□	–	□	□	□	□	□	–	□	□	□	□
Device type	Compact units		**2**													
Material (front ring)	Plastic, black			**0**												
	Metal, matte (front ring)/ plastic, black (rosette)			**3**												
	Metal, shiny			**5**												
	Metal, matte			**6**												
Illumination	Non-illuminated				**0**											
	Illuminated/non illuminated				**1**											
Type of actuator/indicator	Pushbutton						**0**									
	Sensor switch						**1**									
	Potentiometer						**2**									
	Indicator light/acoustic signaling device						**6**									
Design of the actuator/acoustic signaling device	e.g. A = Flat							□								
Function (voltage/resistance)	e.g. B = 24 V AC/DC								□							
Color	e. g. 10 = Black, 20 = Red									□	□					
Connection type	None												**0**			
	Screw terminals												**1**			
	M12 connection, 4-pole												**2**			
	Spring-type terminals												**3**			
Module/holder equipment incl. contact material	e. g. A = Without module, without holder B = 1 NO contact with holder C = 1 NC contact with holder													□		
Marking	e.g. A = none														□	
Ambient condition	Standard															**0**
	ATEX															**1**
Example		**3SU1**	**2**	**0**	**1**	**–**	**6**	**A**	**B**	**1**	**0**	**–**	**1**	**A**	**A**	**0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

General data

Modules for actuators and indicators

Product versions		Article number														
SIRIUS ACT pushbuttons and indicator lights		**3SU1**	□	□	□	–	□	□	□	□	□	–	□	□	□	□
Device type	Modules for actuators and indicators		**4**													
Material (front ring)	Plastic, black			**0**												
Illumination	Non-illuminated Illuminated				**0** **1**											
Fastening method	Front plate mounting Base mounting Printed circuit board						**1** **2** **3**									
Module type	Contact module LED module LED test module Support terminal AS-Interface module Electronic module for ID key-operated switches							**A** **B** **C** **D** **E** **G**								
Function/voltage	e.g. B = 24 V AC/DC								□							
Color	e. g. 10 = Black, 20 = Red									□	□					
Connection type	Screw terminals Screw terminals + insulation piercing method Spring-type terminals Spring-type terminals + insulation piercing method Socket terminals												**1** **2** **3** **4** **5**			
Module equipment incl. contact material	e. g. A = None B = 1 NO contact, silver C = 1 NC contact, silver													□		
Marking	None														**A**	
Ambient condition	Standard ATEX															**0** **1**
Example		**3SU1**	**4**	**0**	**0**	**–**	**1**	**A**	**A**	**1**	**0**	**–**	**1**	**B**	**A**	**0**

Holders

Product versions		Article number														
SIRIUS ACT pushbuttons and indicator lights		**3SU1**	□	□	□	–	□	□	□	□	□	–	□	□	□	□
Device type	Holder		**5**													
Material (front ring)	Plastic, black Metal, shiny			**0** **5**												
Illumination	Non-illuminated Illuminated				**0** **1**											
Fastening method	None Front plate mounting						**0** **1**									
Holder type	3x A 4x B							**A** **B**								
Function/voltage	None 6 ... 24 V AC/DC								**A** **G**							
Color	e.g. 10 = Black, 20 = Red									□	□					
Connection type	None Screw terminals												**0** **1**			
Module equipment incl. contact material and slot	e. g. A = None B = 1 NO contact, silver C = 1 NC contact, silver													□		
Marking	None														**A**	
Ambient condition	Standard ATEX															**0** **1**
Example		**3SU1**	**5**	**0**	**0**	**–**	**0**	**A**	**A**	**1**	**0**	**–**	**0**	**A**	**A**	**0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Enclosures

Product versions		Article number														
SIRIUS ACT pushbuttons and indicator lights		**3SU1**	☐	☐	☐	–	☐	☐	☐	☐	☐	–	☐	☐	☐	☐
Device type	Enclosures		**8**													
Material (enclosure/front ring)	Plastic, black plastic Metal, shiny metal			**0** **5**												
Number of command points	Command point ... Command points				**1** **...** **6**											
Type of enclosure	Configuration 4-position selector switch and coordinate switch Palm pushbutton Two-hand operation console						**0** **1** **2** **3**									
Command point	e.g. command point, inscription, module							☐	☐							
Communication capability	None AS-i									**0** **1**						
Ambient condition	Standard ATEX										**0** **1**					
Mounting/connection of modules	None Front plate mounting, screw terminals Base mounting, screw terminals Base mounting, spring-type terminals												**0** **1** **2** **3**			
Cable exit from enclosure	None Direct entry of AS-i flat cable at top/on right AS-i insulation piercing method at top/on right													**A** **G** **H**		
Design of enclosure top	Center command point With recess for labeling plate With protective collar 4 additional holes (two-hand operation console) 8 additional premachined breaking points (two-hand operation console)														**A** **B** **C** **D** **E**	
Color of enclosure top	Gray Yellow															**1** **2**
Example		**3SU1**	**8**	**0**	**1**	**–**	**0**	**A**	**A**	**0**	**0**	**–**	**0**	**A**	**A**	**2**

Accessories

Product versions		Article number														
SIRIUS ACT Pushbuttons and Indicator Lights		**3SU1**	☐	☐	☐	–	☐	☐	☐	☐	☐	–	☐	☐	☐	☐
Device type	Accessories		**9**													
Material	Plastic, black Metal/plastic Metal, shiny Metal, matte			**0** **3** **5** **6**												
Illumination	Non-illuminated Illuminated				**0** **1**											
Type of accessory (labels, protection, actuator, enclosure)	e. g. 0AB = Insert label						☐	☐	☐							
Color	e. g. 10 = Black, 20 = Red									☐	☐					
Marking	e. g. 0AA = None 0AB = ON 0AT = EMERGENCY STOP												☐	☐	☐	
Ambient condition	Standard ATEX															**0** **1**
Example		**3SU1**	**9**	**0**	**0**	**–**	**0**	**A**	**B**	**2**	**0**	**–**	**0**	**A**	**B**	**0**

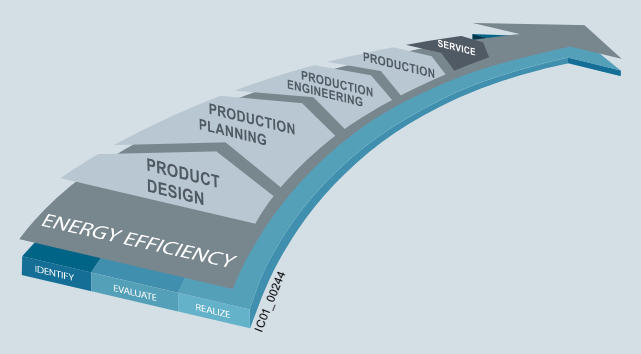
Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

Advantages through energy efficiency



Energy management in industry

Overview of the energy management process

We offer you a unique portfolio for industrial energy management in the industry – a process that is used to optimize the energy requirements. We divide operational energy management into the three phases: identification, evaluation and implementation, and support you with suitable hardware and software solutions in each phase of the process.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see www.siemens.com/sirius/energysaving).

SIRIUS ACT pushbuttons and indicator lights contribute to energy efficiency throughout the plant as follows:

- Lower power consumption by means of LED technology
- Long service life

Application

Environmental conditions

The pushbuttons and indicator lights are climate-proof (KTW 24) and suitable for standard industrial applications and operation in marine applications.

Safety EMERGENCY STOP pushbuttons according to ISO 13850

For controls according to IEC 60204-1 or EN 60204-1, the SIRIUS ACT mushroom pushbuttons are suitable for use as safety EMERGENCY STOP pushbuttons.

Safety circuits

IEC 60947-5-1 and EN 60947-5-1 require positive opening. This means that for the purpose of personal safety, the reliable opening of NC contacts in all safety circuits is expressly prescribed for the electrical equipment of machines and is designated according to IEC 60947-5-1 with the symbol (⊖).

Category 4 according to EN ISO 13849-1 can be attained with the EMERGENCY STOP mushroom pushbuttons if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK11 safety relays or the 3RK3 Modular Safety System (see page 11/1 onwards) or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

The SIRIUS ACT pushbuttons and indicator lights can be connected to the AS-Interface communication system quickly and safely.

The following solutions are available:

- AS-Interface modules
- AS-Interface module in safety-related version for EMERGENCY STOP mushroom pushbutton
- Ready-fitted AS-Interface enclosures with 1 to 6 command points

IO-Link

The SIRIUS ACT pushbuttons and indicator lights can be connected to IO-Link quickly and safely. The connection is made via a special IO-Link-module.

Technical specifications

More information	
Industry Mall, see www.siemens.com/product?3SU1	Configurator, see www.siemens.com/sirius-act/configurator Conversion tool, see www.siemens.com/sirius/conversion-tool Manual, see https://support.industry.siemens.com/cs/ww/en/view/107542462

Type		**3SU1..0-.AA 3SU1..0-.JA**	**3SU1..1-.AA 3SU1..1-.JA**	**3SU1..0-.AB 3SU1..0-.BB 3SU1..0-.CB 3SU1..0-.DB 3SU1..0-.JB**	**3SU1..1-.AB 3SU1..1-.BB 3SU1..1-.JB**
Product version		**Pushbuttons**			
Operating principle of the actuating element		Latching		Momentary contact	
Optional expansion of product by light source		No	Yes	No	Yes
Mechanical endurance (operating cycles) typical		500 000		10 000 000	3 000 000
Switching frequency maximum	1/h	1 800		3 600	
Shock resistance acc. to IEC 60068-2-27		Half-sine wave 50 *g* / 11 ms			
Vibration resistance acc. to IEC 60068-2-6		10 ... 500 Hz: 5 *g*			
IP degree of protection		IP66, IP67, IP69 (IP69K)			
Environmental category during operation according to IEC 60721		3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95 %)			
Ambient temperature					
• During operation	°C	-25 … +70			
• During storage	°C	-40 … +80			

Type		**3SU1.00-.AA 3SU1.00-.BA 3SU1.00-.CA 3SU1.30-.AA 3SU1.30-.BA 3SU1.50-.AA 3SU1.50-.BA 3SU1.50-.CA**	**3SU1.50-.EA**	**3SU1.01-.AA 3SU1.01-.BA 3SU1.51-.AA 3SU1.51-.BA 3SU1.51-.CA**	**3SU1.00-.AD 3SU1.00-.BD 3SU1.00-.CD 3SU1.30-.AD 3SU1.30-.BD 3SU1.50-.AD 3SU1.50-.BD 3SU1.50-.CD**	**3SU1.50-.ED**	**3SU1.01-.AD 3SU1.01-.BD 3SU1.31-.AD 3SU1.31-.BD**
Product version		**Mushroom pushbuttons**					
Operating principle of the actuating element		Latching			Momentary contact		
Optional expansion of product by light source		No		Yes	No		Yes
Mechanical endurance (operating cycles) typical		500 000	300 000	500 000	10 000 000	300 000	3 000 000
Switching frequency maximum	1/h	1 800			3 600	1 800	3 600
Shock resistance acc. to IEC 60068-2-27		Half-sine wave 50 *g* / 11 ms					
Vibration resistance acc. to IEC 60068-2-6		10 ... 500 Hz: 5 *g*					
IP degree of protection		IP66, IP67, IP69 (IP69K)	IP65, IP67, IP69 (IP69K)	IP66, IP67, IP69 (IP69K)		IP65, IP67, IP69 (IP69K)	IP66, IP67, IP69 (IP69K)
Environmental category during operation according to IEC 60721		3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95 %)					
Ambient temperature							
• During operation	°C	-25 … +70					
• During storage	°C	-40 … +80					

Type		**3SU1...-.J 3SU1...-.H 3SU1...-.G**
Product version		**EMERGENCY STOP mushroom pushbuttons**
Mechanical endurance (operating cycles)		300 000
Switching frequency maximum	1/h	600
Shock resistance acc. to IEC 60068-2-27		Half-sine wave 50 *g* / 11 ms
Vibration resistance acc. to IEC 60068-2-6		10 ... 500 Hz: 5 *g*
IP degree of protection		IP66, IP67, IP69 (IP69K)
Environmental category during operation according to EN 60721		3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95 %)
Ambient temperature		
• During operation	°C	-25 ... +70
• During storage	°C	-40 ... +80

General data

Type		3SU1.5.-2A 3SU1.5.-2B 3SU1.5.-2C 3SU1.5.-2D 3SU1.5.-2E	3SU1.0.-2A 3SU1.0.-2B 3SU1.0.-2C 3SU1.3.-2A 3SU1.3.-2B 3SU1.3.-2C	3SU1.0.-3E 3SU1.3.-3E 3SU1.5.-3E	3SU1.0.-4B 3SU1.0.-4C 3SU1.0.-4D 3SU1.0.-4F 3SU1.0.-4G 3SU1.0.-4H 3SU1.0.-4J 3SU1.0.-4L 3SU1.0.-5B 3SU1.0.-5H 3SU1.0.-5P 3SU1.0.-5Q 3SU1.0.-5R 3SU1.0.-5S 3SU1.0.-5T 3SU1.0.-5X	3SU1...-4B 3SU1...-4C 3SU1...-4D 3SU1...-4F 3SU1...-4G 3SU1...-4H 3SU1...-4J 3SU1...-4L 3SU1...-5B 3SU1...-5H 3SU1...-5K 3SU1...-5L 3SU1...-5P 3SU1...-5Q 3SU1...-5R 3SU1...-5S 3SU1...-5T 3SU1...-5X	3SU1.0.-7A 3SU1.0.-7B 3SU1.3.-7A 3SU1.3.-7B 3SU1.5.-7A 3SU1.5.-7B
Product version		**Selector switches**		**Toggle switches**	**Key-operated switches**		**Coordinate switches**
Mechanical endurance (operating cycles)		300 000	1 000 000			300 000	250 000
Switching frequency maximum	1/h	1 800					3 600
Shock resistance acc. to IEC 60068-2-27		Half-sine wave 50 *g* / 11 ms					
Vibration resistance acc. to IEC 60068-2-6		10 ... 500 Hz: 5 *g*					
IP degree of protection		IP66, IP67, IP69 (IP69K)		IP66, IP67, IP69K	IP66, IP67, IP69 (IP69K)		IP65, IP67
Ambient temperature							
• During operation	°C	-25 … +70					
• During storage	°C	-40 … +80					

Type		3SU1400- .AA10-1A.0	3SU1400- 1AA10-1GA0, 3SU1400- 1AA10-1RA0	3SU1400- 1AA10-1HA0	3SU1400- .AA10-3A.0	3SU1400- 1AA10-3HA0	3SU1400- 3AA10-5A.0
Product version		**Contact modules**					
Rated insulation voltage	V	500					
Pollution degree		3					
Impulse withstand voltage Rated value	kV	6					
Operational voltage type		AC/DC					
Operational voltage, rated value							
• At AC at 50 Hz	V	5 … 500					
• At DC	V	5 … 500					
Thermal current	A	10					
Operational current, rated value							
• At AC-12							
- At 24 V	A	10					
- At 230 V	A	8					
• At AC-15							
- At 24 V	A	6					
- At 230 V	A	6	4		6		
- At 400 V	A	3					
- At 500 V	A	1.4					
• At DC-12							
- At 24 V	A	10					
- At 48 V	A	5					
- At 110 V	A	2.5					
- At 230 V	A	1		0.3	1	0.3	1
- At 400 V	A	0.3					
- At 500 V	A	0.3		0.2	0.3		
• At DC-13							
- At 24 V	A	3					
- At 48 V	A	1.5					
- At 110 V	A	0.7		0.6	0.7	0.6	0.7
- At 230 V	A	0.3					
- At 400 V	A	0.1					
- At 500 V	A	0.1					
Contact reliability		One contact failure per 100 million switching operations (17 V, 5 mA), one contact failure per 10 million switching operations (5 V, 1 mA)					
Mechanical endurance (operating cycles) typical		10 000 000					
Switching frequency maximum	1/s	3600					
Fuse link version required for short-circuit protection of the auxiliary switch with type of coordination 1		gG / Dz 10 A, quick-response / Dz 10 A					

Type		3SU1400-.AA10-1A.0	3SU1400-1AA10-1GA0, 3SU1400-1AA10-1RA0	3SU1400-1AA10-1HA0	3SU1400-.AA10-3A.0	3SU1400-1AA10-3HA0	3SU1400-3AA10-5A.0
Product version		**Contact modules**					
Continuous current of miniature circuit breaker C characteristic	A	10					
Vibration resistance acc. to IEC 60068-2-6		10 ... 500 Hz: 5 *g*					
Shock resistance acc. to IEC 60068-2-27		Half-sine wave 50 *g* / 11 ms					
Climate class during operation acc. to EN 60721		3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95 %, no condensation permitted in operation)					
Ambient temperature							
• During operation	°C	-25 … +70					
• During storage	°C	-40 … +80					
IP degree of protection							
• of enclosure		IP40					
• of the terminal		IP20					
Type of electrical connection		**Screw terminals**			**Spring-type terminals**		**Socket terminals (THT)**
Type of connectable conductor cross-sections							
• Solid with end sleeve		2 x (0.5 ... 0.75 mm²)			--		
• Solid without end sleeve		2 x (1.0 ... 1.5 mm²)			2 x (0.25 ... 1.5 mm²)		--
• Finely stranded with end sleeve		2 x (0.5 ... 1.5 mm²)			2 x (0.25 ... 0.75 mm²)		--
• Finely stranded without end sleeve		2 x (1.0 ... 1.5 mm²)			2 x (0.25 ... 1.5 mm²)		--
• For AWG cables		2 x (18 ... 14)			2 x (24 ... 16)		--
Tightening torque for screw terminals	Nm	0.8 ... 0.9			--		

Type		3SU1401-.....-1	3SU1401-.....-3	3SU1401-.....-5
Product version		**LED module**		
Light source integrated in product		Yes		
Type of light source		LED		
Rated insulation voltage	V	320		
Pollution degree		3		
Impulse withstand voltage rated value	kV	4		
Relative positive tolerance of the operational voltage	%	20		
Relative negative tolerance of the operational voltage	%	20		
Operating time typical	h	100 000		
Vibration resistance acc. to IEC 60068-2-6		10 ... 500 Hz: 5 *g*		
Shock resistance acc. to IEC 60068-2-27		Half-sine wave 50 *g* / 11 ms		
Environmental category during operation according to IEC 60721		3M6, 3S2, 3B2, 3K6 (with a relative air humidity of 10 ... 95 %, no condensation permitted in operation)		
Ambient temperature				
• During operation	°C	-25 … +70		
• During storage	°C	-40 … +80		
IP degree of protection of the terminal		IP20		
Type of electrical connection		**Screw terminals**	**Spring-type terminals**	**Socket terminals (THT)**

Selection and ordering data

Supply voltage for light source at AC V	Supply voltage for light source at DC V	Color	Number of Contact modules	Number of NO contacts	Number of NC contacts	SD d	Screw terminals Article No.	Screw terminals Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons											
Pushbuttons with flat button, momentary contact											
--	--	Black	1	1	0	▶	**3SU1100-0AB10-1BA0**		1	1 unit	41J
				0	1	▶	**3SU1100-0AB10-1CA0**		1	1 unit	41J
		Red	1	1	0	▶	**3SU1100-0AB20-1BA0**		1	1 unit	41J
				0	1	▶	**3SU1100-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	3	**3SU1100-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	▶	**3SU1100-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	▶	**3SU1100-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	▶	**3SU1100-0AB60-1BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1100-0AB70-1BA0**		1	1 unit	41J


3SU1100-0AB40-1BA0

Pushbuttons with raised button, momentary contact

--	--	Black	1	0	1	5	**3SU1100-0BB10-1CA0**		1	1 unit	41J
		Red	1	0	1	5	**3SU1100-0BB20-1CA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1100-0BB50-1BA0**		1	1 unit	41J


3SU1100-0BB20-1CA0

Illuminated pushbuttons with flat button, momentary contact with integrated LED

24	24	Red	1	1	0	5	**3SU1102-0AB20-1BA0**		1	1 unit	41J
				0	1	▶	**3SU1102-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	▶	**3SU1102-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	▶	**3SU1102-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	▶	**3SU1102-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	▶	**3SU1102-0AB60-1BA0**		1	1 unit	41J
		Clear	1	1	0	▶	**3SU1102-0AB70-1BA0**		1	1 unit	41J


3SU1102-0AB40-1BA0

110	--	Red	1	0	1	5	**3SU1103-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1103-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	3	**3SU1103-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1103-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1103-0AB60-1BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1103-0AB70-1BA0**		1	1 unit	41J


3SU1103-0AB20-1CA0

230	--	Red	1	0	1	5	**3SU1106-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1106-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	3	**3SU1106-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1106-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1106-0AB60-1BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1106-0AB70-1BA0**		1	1 unit	41J


3SU1106-0AB40-1BA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Supply voltage for light source		Color	Number of			SD	Spring-type terminals		PU (UNIT, SET, M)	PS*	PG
At AC	At DC		Contact modules	NO contacts	NC contacts		Article No.	Price per PU			
V	V					d					
Pushbuttons											
Pushbuttons with flat button, momentary contact											
--	--	Black	1	1	0	3	**3SU1100-0AB10-3BA0**		1	1 unit	41J
			1	0	1	5	**3SU1100-0AB10-3CA0**		1	1 unit	41J
		Red	1	0	1	5	**3SU1100-0AB20-3CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1100-0AB30-3BA0**		1	1 unit	41J
		Green	1	1	0	5	**3SU1100-0AB40-3BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1100-0AB50-3BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1100-0AB60-3BA0**		1	1 unit	41J

3SU1100-0AB30-3BA0

Illuminated pushbuttons with flat button, momentary contact with integrated LED											
24	24	Red	1	0	1	5	**3SU1102-0AB20-3CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1102-0AB30-3BA0**		1	1 unit	41J
		Green	1	1	0	3	**3SU1102-0AB40-3BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1102-0AB50-3BA0**		1	1 unit	41J
		White	1	1	0	3	**3SU1102-0AB60-3BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1102-0AB70-3BA0**		1	1 unit	41J
110	--	Red	1	0	1	5	**3SU1103-0AB20-3CA0**		1	1 unit	41J
		Green	1	1	0	5	**3SU1103-0AB40-3BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1103-0AB60-3BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1103-0AB70-3BA0**		1	1 unit	41J
230	--	Red	1	0	1	5	**3SU1106-0AB20-3CA0**		1	1 unit	41J
		Green	1	1	0	5	**3SU1106-0AB40-3BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1106-0AB60-3BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1106-0AB70-3BA0**		1	1 unit	41J

3SU1102-0AB20-3BA0

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Selection and ordering data

Unlatching method	Number of Contact modules	NO contacts	NC contacts	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Mushroom pushbuttons									
With red mushroom, diameter 40 mm, latching									
Pull to unlatch	1	0	1	3	**3SU1100-1BA20-1CA0**		1	1 unit	41J
					Spring-type terminals				
Pull to unlatch	1	0	1	5	**3SU1100-1BA20-3CA0**		1	1 unit	41J

3SU1100-1BA20-3CA0

Selection and ordering data

Unlatching method	Number of Contact modules	NO contacts	NC contacts	Marking	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					d					
EMERGENCY STOP mushroom pushbuttons, tamper-proof, in accordance with ISO 13850 and IEC 60947-5-5										
With red mushroom, diameter 40 mm, with positive latching										
Pull to unlatch	1	0	1	NOT-HALT	⊖ 5	**3SU1100-1HA20-1CH0**		1	1 unit	41J
Rotate to unlatch	1	0	1	None	⊖ 5	**3SU1100-1HB20-1CF0**		1	1 unit	41J
		0	1	EMERGENCY STOP	⊖ 5	**3SU1100-1HB20-1CG0**		1	1 unit	41J
		0	1	NOT-HALT	⊖ ▶	**3SU1100-1HB20-1CH0**		1	1 unit	41J
	NEW	0	2	EMERGENCY STOP	⊖ X	**3SU1100-1HB20-1PG0**		1	1 unit	41J
		0	1	ARRET D'URGENCE	⊖ 5	**3SU1100-1HB20-1CJ0**		1	1 unit	41J
	NEW	1	1	EMERGENCY STOP	⊖ 5	**3SU1100-1HB20-1FG0**		1	1 unit	41J
	NEW	1	1	NOT-HALT	⊖ ▶	**3SU1100-1HB20-1FH0**		1	1 unit	41J
	NEW	1	1	ARRET D'URGENCE	⊖ 5	**3SU1100-1HB20-1FJ0**		1	1 unit	41J
						Spring-type terminals				
Rotate to unlatch	1	0	1	NOT-HALT	⊖ 5	**3SU1100-1HB20-3CH0**		1	1 unit	41J
	NEW	1	1	NOT-HALT	⊖ 5	**3SU1100-1HB20-3FH0**		1	1 unit	41J

3SU1100-1HA20-1CH0

3SU1100-1HB20-1CH0

3SU1100-1HB20-3CH0

⊖ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System;
see page 11/1 onwards.
Certificate:

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Operating principle	Color	Number of: Contact modules	NO contacts	NC contacts	SD	Screw terminals: Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Supply voltage for light source				d					
Selector switches										
Short black actuator, 2 switch positions, can be illuminated										
 3SU1100-2BF60-1BA0										
Latching, 90° 	White	1	1	0	▶	**3SU1100-2BF60-1BA0**		1	1 unit	41J
		2	1	1	▶	**3SU1100-2BF60-1MA0**		1	1 unit	41J
	White 110 V	1	1	0	5	**3SU1103-2BF60-1BA0**		1	1 unit	41J
Short black actuator, 3 switch positions, can be illuminated										
Momentary contact, 2x45°, reset from right + left 	White	2	2	0	▶	**3SU1100-2BM60-1NA0**		1	1 unit	41J
Latching, 2x45° 	White	2	2	0	▶	**3SU1100-2BL60-1NA0**		1	1 unit	41J
Short black actuator, 2 switch positions, can be illuminated						**Spring-type terminals**				
 3SU1100-2BL60-1NA0										
Latching, 90° 	White	1	1	0	5	**3SU1100-2BF60-3BA0**		1	1 unit	41J
		2	1	1	5	**3SU1100-2BF60-3MA0**		1	1 unit	41J
Short black actuator, 3 switch positions, can be illuminated										
Momentary contact, 2x45°, reset from right + left 	White	2	2	0	5	**3SU1100-2BM60-3NA0**		1	1 unit	41J
Latching, 2x45° 	White	2	2	0	5	**3SU1100-2BL60-3NA0**		1	1 unit	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Key-operated switches

Selection and ordering data

	Operating principle	Switch position for key removal	Number of Contact modules	NO contacts	NC contacts	Number of keys	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches												
	With RONIS lock, SB30, 2 switch positions											
 3SU1100-4BF11-1BA0	Latching, 90° (10:30/1:30 o'clock) 	O+I	1	1	0	2	►	**3SU1100-4BF11-1BA0**		1	1 unit	41J
	With RONIS lock, SB30, 3 switch positions											
	Latching, 2x45° (10:30/1:30 o'clock) 	I+O+II	2	2	0	2	5	**3SU1100-4BL11-1NA0**		1	1 unit	41J
	With RONIS lock, SB30, 2 switch positions							**Spring-type terminals**				
 3SU1100-4BL11-1NA0	Latching, 90° (10:30/1:30 o'clock) 	O+I	1	1	0	2	5	**3SU1100-4BF11-3BA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

	Number of NO contacts (1 per direction)	Operating principle	Direction of actuation	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
				d	Article No.	Price per PU			
Coordinate switches NEW									
	Without mechanical interlock, 2 switch positions								
 3SU1100-7AC10-1NA0	2	Momentary contact	Horizontal	5	**3SU1100-7AC10-1NA0**		1	1 unit	41J
			Vertical	5	**3SU1100-7AD10-1NA0**		1	1 unit	41J
	Without mechanical interlock, 4 switch positions								
 3SU1100-7AF10-1QA0	4	Momentary contact	Horizontal / Vertical	3	**3SU1100-7AF10-1QA0**		1	1 unit	41J
	With mechanical interlock, 2 switch positions								
 3SU1100-7BC10-1NA0	2	Momentary contact	Horizontal	5	**3SU1100-7BC10-1NA0**		1	1 unit	41J
			Vertical	5	**3SU1100-7BD10-1NA0**		1	1 unit	41J
	With mechanical interlock, 4 switch positions								
 3SU1100-7BF10-1QA0	4	Momentary contact	Horizontal / Vertical	5	**3SU1100-7BF10-1QA0**		1	1 unit	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Indicator lights

Selection and ordering data

Operational voltage		Color		SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
At AC, rated value	At DC, rated value	of actuating element	of light source		Article No.	Price per PU			
V	V			d					
Indicator lights									
With smooth lens and integrated LED									
24	24	Red	Red	▶	**3SU1102-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	▶	**3SU1102-6AA30-1AA0**		1	1 unit	41J
		Green	Green	▶	**3SU1102-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	▶	**3SU1102-6AA50-1AA0**		1	1 unit	41J
		White	White	▶	**3SU1102-6AA60-1AA0**		1	1 unit	41J
		Clear	White	▶	**3SU1102-6AA70-1AA0**		1	1 unit	41J
110	--	Amber	Amber	5	**3SU1103-6AA00-1AA0**		1	1 unit	41J
		Red	Red	▶	**3SU1103-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	▶	**3SU1103-6AA30-1AA0**		1	1 unit	41J
		Green	Green	▶	**3SU1103-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	3	**3SU1103-6AA50-1AA0**		1	1 unit	41J
		White	White	▶	**3SU1103-6AA60-1AA0**		1	1 unit	41J
		Clear	White	3	**3SU1103-6AA70-1AA0**		1	1 unit	41J
230	--	Amber	Amber	5	**3SU1106-6AA00-1AA0**		1	1 unit	41J
		Red	Red	▶	**3SU1106-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	▶	**3SU1106-6AA30-1AA0**		1	1 unit	41J
		Green	Green	▶	**3SU1106-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	3	**3SU1106-6AA50-1AA0**		1	1 unit	41J
		White	White	▶	**3SU1106-6AA60-1AA0**		1	1 unit	41J
		Clear	White	3	**3SU1106-6AA70-1AA0**		1	1 unit	41J
					Spring-type terminals				
24	24	Red	Red	3	**3SU1102-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	5	**3SU1102-6AA30-3AA0**		1	1 unit	41J
		Green	Green	3	**3SU1102-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	5	**3SU1102-6AA50-3AA0**		1	1 unit	41J
		White	White	3	**3SU1102-6AA60-3AA0**		1	1 unit	41J
		Clear	White	5	**3SU1102-6AA70-3AA0**		1	1 unit	41J
110	--	Red	Red	5	**3SU1103-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	5	**3SU1103-6AA30-3AA0**		1	1 unit	41J
		Green	Green	5	**3SU1103-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	5	**3SU1103-6AA50-3AA0**		1	1 unit	41J
		White	White	5	**3SU1103-6AA60-3AA0**		1	1 unit	41J
		Clear	White	5	**3SU1103-6AA70-3AA0**		1	1 unit	41J
230	--	Red	Red	5	**3SU1106-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	5	**3SU1106-6AA30-3AA0**		1	1 unit	41J
		Green	Green	5	**3SU1106-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	5	**3SU1106-6AA50-3AA0**		1	1 unit	41J
		White	White	5	**3SU1106-6AA60-3AA0**		1	1 unit	41J
		Clear	White	5	**3SU1106-6AA70-3AA0**		1	1 unit	41J


3SU1102-6AA30-1AA0


3SU1103-6AA00-1AA0


3SU1106-6AA50-1AA0


3SU1102-6AA20-3AA0


3SU1102-6AA40-3AA0


3SU1106-6AA60-3AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Operating principle	Number of NO contacts	Number of NC contacts	Color	SD	**M12 connector, 4-pole** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Sensor switches									
 3SU1200-1SK10-2SA0									
Whether integrated in the two-hand operation console or installed as a door opening contact, the capacitive sensor switch is suitable for many different applications in industrial environments. The switch is actuated by simple contact with the hand or other part of the body (i.e. without the application of pressure). As a result, these switches are rugged, extremely durable and have the highest possible degree of protection IP66, IP67, IP69 (IP69K).									
Without pressure	1	0	Black	►	**3SU1200-1SK10-2SA0**		1	1 unit	41J

Optional accessories see
"Protection for sensor switches" on page 13/124
"Connectors for sensor switches, angled socket with screw terminal connection" on page 13/130.

Selection and ordering data

Version of actuating element	Operating principle	Adjustable resistance	SD	**Screw terminals** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		kΩ	d					
Potentiometers *NEW*								
 3SU1200-2PQ10-1AA0								
Rotary knob	Stepless	1	3	**3SU1200-2PQ10-1AA0**		1	1 unit	41J
		2.2	X	**3SU1200-2PW10-1AA0**		1	1 unit	41J
		4.7	3	**3SU1200-2PR10-1AA0**		1	1 unit	41J
		10	3	**3SU1200-2PS10-1AA0**		1	1 unit	41J
		47	3	**3SU1200-2PT10-1AA0**		1	1 unit	41J
		100	3	**3SU1200-2PU10-1AA0**		1	1 unit	41J
		470	3	**3SU1200-2PV10-1AA0**		1	1 unit	41J

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Pushbuttons with extended stroke

Selection and ordering data

	Version	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons with extended stroke								
	For actuating relays, can only be combined with extension plunger, no contact module or LED module required							
 3SU1200-0EB20-0AA0	**Pushbuttons with flat button**	Red	5	**3SU1200-0EB20-0AA0**		1	1 unit	41J
		Green	5	**3SU1200-0EB40-0AA0**		1	1 unit	41J
 3SU1200-0FB10-0AA0	**Pushbuttons with raised button**	Black	►	**3SU1200-0FB10-0AA0**		1	1 unit	41J
		Red	X	**3SU1200-0FB20-0AA0**		1	1 unit	41J
 3SU1201-0EB70-0AA0	**Pushbuttons with flat transparent button for insertion of insert labels**	Red	►	**3SU1201-0EB20-0AA0**		1	1 unit	41J
		Clear	►	**3SU1201-0EB70-0AA0**		1	1 unit	41J

	Version	Material	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories									
 3SU1900-0KG10-0AA0	**Extension plungers** For compensation of the distance between the pushbutton and the unlatching button of an overload relay	Plastic	Gray	►	**3SU1900-0KG10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

	Version of actuating element Front ring version	Operating principle Unlatching method	Color, marking	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons									
 3SU1000-0AB20-0AD0	**Pushbuttons with flat button** Standard	Momentary contact	Black ▶		**3SU1000-0AB10-0AA0**		1	1 unit	41J
			Black, "O" ▶		**3SU1000-0AB10-0AD0**		1	1 unit	41J
			Red ▶		**3SU1000-0AB20-0AA0**		1	1 unit	41J
			Red, "O" ▶		**3SU1000-0AB20-0AD0**		1	1 unit	41J
			Yellow ▶		**3SU1000-0AB30-0AA0**		1	1 unit	41J
			Green ▶		**3SU1000-0AB40-0AA0**		1	1 unit	41J
			Green, "I" ▶		**3SU1000-0AB40-0AC0**		1	1 unit	41J
			Blue ▶		**3SU1000-0AB50-0AA0**		1	1 unit	41J
			Blue, "R"	5	**3SU1000-0AB50-0AR0**		1	1 unit	41J
			White ▶		**3SU1000-0AB60-0AA0**		1	1 unit	41J
			White, "I" ▶		**3SU1000-0AB60-0AC0**		1	1 unit	41J
			Clear ▶		**3SU1000-0AB70-0AA0**		1	1 unit	41J
			Gray ▶		**3SU1000-0AB80-0AA0**		1	1 unit	41J
 3SU1000-0AA30-0AA0		Latching Push to unlatch	Black ▶		**3SU1000-0AA10-0AA0**		1	1 unit	41J
			Red ▶		**3SU1000-0AA20-0AA0**		1	1 unit	41J
			Yellow	3	**3SU1000-0AA30-0AA0**		1	1 unit	41J
			Green ▶		**3SU1000-0AA40-0AA0**		1	1 unit	41J
			Blue ▶		**3SU1000-0AA50-0AA0**		1	1 unit	41J
			White ▶		**3SU1000-0AA60-0AA0**		1	1 unit	41J
 3SU1000-0BB30-0AA0	**Pushbuttons with raised button** Standard	Momentary contact	Black ▶		**3SU1000-0BB10-0AA0**		1	1 unit	41J
			Red ▶		**3SU1000-0BB20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1000-0BB30-0AA0**		1	1 unit	41J
			Green ▶		**3SU1000-0BB40-0AA0**		1	1 unit	41J
			Blue ▶		**3SU1000-0BB50-0AA0**		1	1 unit	41J
			White ▶		**3SU1000-0BB60-0AA0**		1	1 unit	41J
 3SU1000-0CB40-0AA0	**Pushbuttons with flat button** Raised	Momentary contact	Black	3	**3SU1000-0CB10-0AA0**		1	1 unit	41J
			Red	5	**3SU1000-0CB20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1000-0CB30-0AA0**		1	1 unit	41J
			Green	5	**3SU1000-0CB40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1000-0CB50-0AA0**		1	1 unit	41J
			White	5	**3SU1000-0CB60-0AA0**		1	1 unit	41J
 3SU1000-0DB50-0AA0	**Pushbuttons with flat button** Raised, castellated	Momentary contact	Black	3	**3SU1000-0DB10-0AA0**		1	1 unit	41J
			Red	5	**3SU1000-0DB20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1000-0DB30-0AA0**		1	1 unit	41J
			Green	5	**3SU1000-0DB40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1000-0DB50-0AA0**		1	1 unit	41J
			White	5	**3SU1000-0DB60-0AA0**		1	1 unit	41J

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Pushbuttons

	Version of actuating element Front ring version	Operating principle Unlatching method	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons									
 3SU1001-0AB40-0AA0	**Illuminated pushbuttons with flat button** Standard	Momentary contact	Amber	5	**3SU1001-0AB00-0AA0**		1	1 unit	41J
			Red	▶	**3SU1001-0AB20-0AA0**		1	1 unit	41J
			Yellow	▶	**3SU1001-0AB30-0AA0**		1	1 unit	41J
			Green	▶	**3SU1001-0AB40-0AA0**		1	1 unit	41J
			Blue	▶	**3SU1001-0AB50-0AA0**		1	1 unit	41J
			White	▶	**3SU1001-0AB60-0AA0**		1	1 unit	41J
			Clear	▶	**3SU1001-0AB70-0AA0**		1	1 unit	41J
 3SU1001-0AA20-0AA0		Latching Push to unlatch	Red	▶	**3SU1001-0AA20-0AA0**		1	1 unit	41J
			Yellow	▶	**3SU1001-0AA30-0AA0**		1	1 unit	41J
			Green	▶	**3SU1001-0AA40-0AA0**		1	1 unit	41J
			Blue	▶	**3SU1001-0AA50-0AA0**		1	1 unit	41J
			White	▶	**3SU1001-0AA60-0AA0**		1	1 unit	41J
			Clear	▶	**3SU1001-0AA70-0AA0**		1	1 unit	41J
 3SU1001-0BB70-0AA0	**Illuminated pushbuttons with raised button** Standard	Momentary contact	Red	▶	**3SU1001-0BB20-0AA0**		1	1 unit	41J
			Yellow	▶	**3SU1001-0BB30-0AA0**		1	1 unit	41J
			Green	▶	**3SU1001-0BB40-0AA0**		1	1 unit	41J
			Blue	▶	**3SU1001-0BB50-0AA0**		1	1 unit	41J
			Clear	3	**3SU1001-0BB70-0AA0**		1	1 unit	41J
 3SU1001-0DB50-0AA0	**Illuminated pushbuttons with flat button** Raised, castellated	Momentary contact	Blue	5	**3SU1001-0DB50-0AA0**		1	1 unit	41J
 3SU1000-0HC10-0AA0	**Stop pushbuttons** NEW Standard	Momentary contact, latching by pressing in and turning to the right, Rotate-to-unlatch to the left	Black	3	**3SU1000-0HC10-0AA0**		1	1 unit	41J
			Red	3	**3SU1000-0HC20-0AA0**		1	1 unit	41J

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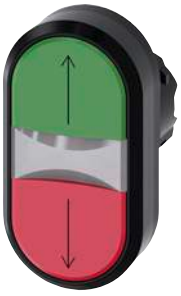
* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Version of actuating element	Operating principle	Color	Marking / Symbol No.	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Twin pushbuttons									
 3SU1000-3AB66-0AL0									
Twin pushbuttons flat, flat	Momentary contact	Green / Red	--	3	**3SU1000-3AB42-0AA0**		1	1 unit	41J
			"I" / "O" ▶		**3SU1000-3AB42-0AK0**		1	1 unit	41J
		White / Black	--	3	**3SU1000-3AB61-0AA0**		1	1 unit	41J
			"I" / "O" ▶		**3SU1000-3AB61-0AK0**		1	1 unit	41J
		White / White	--	3	**3SU1000-3AB66-0AA0**		1	1 unit	41J
			"–" / "+"	5	**3SU1000-3AB66-0AL0**		1	1 unit	41J
			Arrows, hor.	5	**3SU1000-3AB66-0AM0**		1	1 unit	41J
			Arrows, vert.	5	**3SU1000-3AB66-0AN0**		1	1 unit	41J
		Black / Black	--	3	**3SU1000-3AB11-0AA0**		1	1 unit	41J
			○ ○ 5264 / 5265 (IEC 60417)	3	**3SU1000-3AB11-0AQ0**		1	1 unit	41J
 3SU1000-3BB42-0AK0									
Twin pushbuttons flat, raised	Momentary contact	Green / Red	--	3	**3SU1000-3BB42-0AA0**		1	1 unit	41J
			"I" / "O" ▶		**3SU1000-3BB42-0AK0**		1	1 unit	41J
		White / Black	--	3	**3SU1000-3BB61-0AA0**		1	1 unit	41J
			"I" / "O"	5	**3SU1000-3BB61-0AK0**		1	1 unit	41J
 3SU1001-3AB42-0AN0									
Twin pushbuttons flat, flat, illuminated	Momentary contact	Green / Red	--	3	**3SU1001-3AB42-0AA0**		1	1 unit	41J
			"I" / "O" ▶		**3SU1001-3AB42-0AK0**		1	1 unit	41J
			Arrows, vert.	3	**3SU1001-3AB42-0AN0**		1	1 unit	41J
		White / Black	--	3	**3SU1001-3AB61-0AA0**		1	1 unit	41J
			"I" / "O" ▶		**3SU1001-3AB61-0AK0**		1	1 unit	41J
		White / White	--	3	**3SU1001-3AB66-0AA0**		1	1 unit	41J
			"–" / "+"	5	**3SU1001-3AB66-0AL0**		1	1 unit	41J
			Arrows, vert.	5	**3SU1001-3AB66-0AN0**		1	1 unit	41J
			Symbols "Circular saw blade" / "Tilt tipper"	5	**3SU1001-3AB66-0AP0**		1	1 unit	41J
 3SU1001-3BB61-0AK0									
Twin pushbuttons flat, raised, illuminated	Momentary contact	Green / Red	--	3	**3SU1001-3BB42-0AA0**		1	1 unit	41J
			"I" / "O" ▶		**3SU1001-3BB42-0AK0**		1	1 unit	41J
		White / Black	--	3	**3SU1001-3BB61-0AA0**		1	1 unit	41J
			"I" / "O"	3	**3SU1001-3BB61-0AK0**		1	1 unit	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Mushroom pushbuttons

Selection and ordering data

	Version of actuating element	Operating principle Unlatching method	Color, marking	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons									
 3SU1000-1AD20-0AA0	**Mushroom pushbuttons** 30 mm diameter, 2 positions	Momentary contact	Black ▶		**3SU1000-1AD10-0AA0**		1	1 unit	41J
			Red ▶		**3SU1000-1AD20-0AA0**		1	1 unit	41J
			Yellow ▶		**3SU1000-1AD30-0AA0**		1	1 unit	41J
			Green ▶		**3SU1000-1AD40-0AA0**		1	1 unit	41J
		Latching Pull to unlatch	Black ▶		**3SU1000-1AA10-0AA0**		1	1 unit	41J
			Red ▶		**3SU1000-1AA20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1000-1AA30-0AA0**		1	1 unit	41J
 3SU1000-1BD40-0AA0	**Mushroom pushbuttons** 40 mm diameter, 2 positions	Momentary contact	Black ▶		**3SU1000-1BD10-0AA0**		1	1 unit	41J
			Red ▶		**3SU1000-1BD20-0AA0**		1	1 unit	41J
			Yellow	3	**3SU1000-1BD30-0AA0**		1	1 unit	41J
			Green ▶		**3SU1000-1BD40-0AA0**		1	1 unit	41J
		Latching Pull to unlatch	Black ▶		**3SU1000-1BA10-0AA0**		1	1 unit	41J
			Red ▶		**3SU1000-1BA20-0AA0**		1	1 unit	41J
			Red "O" ▶		**3SU1000-1BA20-0AD0**		1	1 unit	41J
			Yellow	3	**3SU1000-1BA30-0AA0**		1	1 unit	41J
			Green	5	**3SU1000-1BA40-0AA0**		1	1 unit	41J
 3SU1000-1CD10-0AA0	**Mushroom pushbuttons** 60 mm diameter, 2 positions	Momentary contact	Black	3	**3SU1000-1CD10-0AA0**		1	1 unit	41J
			Red	5	**3SU1000-1CD20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1000-1CD30-0AA0**		1	1 unit	41J
			Green	3	**3SU1000-1CD40-0AA0**		1	1 unit	41J
		Latching Pull to unlatch	Black	5	**3SU1000-1CA10-0AA0**		1	1 unit	41J
			Red	5	**3SU1000-1CA20-0AA0**		1	1 unit	41J
 3SU1001-1AD30-0AA0	**Mushroom pushbuttons** 30 mm diameter, 2 positions, illuminated	Momentary contact	Red	5	**3SU1001-1AD20-0AA0**		1	1 unit	41J
			Yellow	3	**3SU1001-1AD30-0AA0**		1	1 unit	41J
			Green	3	**3SU1001-1AD40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1001-1AD50-0AA0**		1	1 unit	41J
			White	3	**3SU1001-1AD60-0AA0**		1	1 unit	41J
			Clear	5	**3SU1001-1AD70-0AA0**		1	1 unit	41J
		Latching Pull to unlatch	Red ▶		**3SU1001-1AA20-0AA0**		1	1 unit	41J
			Yellow	3	**3SU1001-1AA30-0AA0**		1	1 unit	41J
			Green	5	**3SU1001-1AA40-0AA0**		1	1 unit	41J
			Blue	3	**3SU1001-1AA50-0AA0**		1	1 unit	41J
			Clear	5	**3SU1001-1AA70-0AA0**		1	1 unit	41J
 3SU1001-1BA50-0AA0	**Mushroom pushbuttons** 40 mm diameter, 2 positions, illuminated	Momentary contact	Yellow	3	**3SU1001-1BD30-0AA0**		1	1 unit	41J
			Green	3	**3SU1001-1BD40-0AA0**		1	1 unit	41J
			White	3	**3SU1001-1BD60-0AA0**		1	1 unit	41J
			Clear	3	**3SU1001-1BD70-0AA0**		1	1 unit	41J
		Latching Pull to unlatch	Red ▶		**3SU1001-1BA20-0AA0**		1	1 unit	41J
			Yellow	3	**3SU1001-1BA30-0AA0**		1	1 unit	41J
			Green	5	**3SU1001-1BA40-0AA0**		1	1 unit	41J
			Blue	3	**3SU1001-1BA50-0AA0**		1	1 unit	41J
			Clear	5	**3SU1001-1BA70-0AA0**		1	1 unit	41J
 3SU1000-1HB10-0AA0	**Mushroom pushbuttons** 40 mm diameter, 2 positions	With positive latching, tamper-proof Rotate to unlatch	Black ▶		**3SU1000-1HB10-0AA0**		1	1 unit	41J
			Blue	3	**3SU1000-1HB50-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Version of actuating element	Outer diameter of mushroom	Make of lock	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm			d					
EMERGENCY STOP mushroom pushbuttons, in accordance with ISO 13850 and IEC 60947-5-5									
With pull-to-unlatch mechanism									
Tamper-proof, 2 positions	40	--	Red	▶	**3SU1000-1HA20-0AA0**		1	1 unit	41J
With rotate-to-unlatch mechanism									
Tamper-proof, 2 positions	33.8	--	Red	▶	**3SU1000-1GB20-0AA0**		1	1 unit	41J
	40	--	Red	▶	**3SU1000-1HB20-0AA0**		1	1 unit	41J
	60	--	Red	▶	**3SU1000-1JB20-0AA0**		1	1 unit	41J
With rotate-to-unlatch mechanism, can be illuminated									
Tamper-proof, 2 positions	33.8	--	Red	X	**3SU1001-1GB20-0AA0**		1	1 unit	41J
	40	--	Red	▶	**3SU1001-1HB20-0AA0**		1	1 unit	41J
	60	--	Red	3	**3SU1001-1JB20-0AA0**		1	1 unit	41J


3SU1000-1HA20-0AA0


3SU1000-1GB20-0AA0


3SU1000-1HB20-0AA0


3SU1000-1JB20-0AA0


3SU1001-1HB20-0AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

EMERGENCY STOP mushroom pushbuttons / Toggle switches

Version of actuating element	Outer diameter of mushroom	Make of lock	Color	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm				d					
EMERGENCY STOP mushroom pushbuttons, in accordance with ISO 13850 and IEC 60947-5-5										
With key-operated release										
Tamper-proof, 2 positions	40	RONIS SB30	Red	2	▶	**3SU1000-1HF20-0AA0**		1	1 unit	41J
		RONIS 455	Red	2	3	**3SU1000-1HG20-0AA0**		1	1 unit	41J
		BKS S1	Red	2	▶	**3SU1000-1HK20-0AA0**		1	1 unit	41J
		BKS E7	Red	0	3	**3SU1000-1HM20-0AA0**		1	1 unit	41J
		BKS E9	Red	0	3	**3SU1000-1HN20-0AA0**		1	1 unit	41J
		O.M.R. 73037	Red	2	▶	**3SU1000-1HQ20-0AA0**		1	1 unit	41J
		CES SSG10	Red	2	▶	**3SU1000-1HR20-0AA0**		1	1 unit	41J
		CES SSP9	Red	2	▶	**3SU1000-1HS20-0AA0**		1	1 unit	41J
		CES SMS1	Red	2	3	**3SU1000-1HT20-0AA0**		1	1 unit	41J


3SU1000-1HF20-0AA0


3SU1000-1HK20-0AA0


3SU1000-1HQ20-0AA0


3SU1000-1HR20-0AA0

Selection and ordering data

Number of switching positions	Number of command points	Color of actuating element	Operating principle of the actuating element	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Toggle switches NEW									
2	1	Black	Latching	3	**3SU1000-3EA10-0AA0**		1	1 unit	41J
			Momentary contact Reset from above	3	**3SU1000-3EC10-0AA0**		1	1 unit	41J


3SU1000-3EA10-0AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Version of actuator	Operating principle	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Selector switches								
2 switch positions, can be illuminated								
Selector, short black actuator	Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	Black ▶		**3SU1002-2BC10-0AA0**		1	1 unit	41J
		Red ▶		**3SU1002-2BC20-0AA0**		1	1 unit	41J
		Yellow ▶		**3SU1002-2BC30-0AA0**		1	1 unit	41J
		Green ▶		**3SU1002-2BC40-0AA0**		1	1 unit	41J
		Blue ▶		**3SU1002-2BC50-0AA0**		1	1 unit	41J
		White ▶		**3SU1002-2BC60-0AA0**		1	1 unit	41J
	Latching, 90° (10:30/1:30 o'clock) 	Black ▶		**3SU1002-2BF10-0AA0**		1	1 unit	41J
		Red ▶		**3SU1002-2BF20-0AA0**		1	1 unit	41J
		Yellow ▶		**3SU1002-2BF30-0AA0**		1	1 unit	41J
		Green ▶		**3SU1002-2BF40-0AA0**		1	1 unit	41J
		Blue ▶		**3SU1002-2BF50-0AA0**		1	1 unit	41J
		White ▶		**3SU1002-2BF60-0AA0**		1	1 unit	41J
Selector, long black actuator	Latching, 90° (10:30/1:30 o'clock) 	Black	3	**3SU1002-2CF10-0AA0**		1	1 unit	41J
		Red	3	**3SU1002-2CF20-0AA0**		1	1 unit	41J
		White	3	**3SU1002-2CF60-0AA0**		1	1 unit	41J
Rotary knob	Latching, 90° (10:30/1:30 o'clock) 	Red	3	**3SU1002-2AF20-0AA0**		1	1 unit	41J
		White ▶		**3SU1002-2AF60-0AA0**		1	1 unit	41J


3SU1002-2BC40-0AA0


3SU1002-2BF30-0AA0


3SU1002-2CF20-0AA0


3SU1002-2AF20-0AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selector switches

Version of actuator	Operating principle	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches								
3 switch positions, can be illuminated								
Selector, short black actuator	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right + left 	Black		**3SU1002-2BM10-0AA0**		1	1 unit	41J
		Red		**3SU1002-2BM20-0AA0**		1	1 unit	41J
		Yellow		**3SU1002-2BM30-0AA0**		1	1 unit	41J
		Green		**3SU1002-2BM40-0AA0**		1	1 unit	41J
		Blue		**3SU1002-2BM50-0AA0**		1	1 unit	41J
		White		**3SU1002-2BM60-0AA0**		1	1 unit	41J
 3SU1002-2BM20-0AA0								
	Latching, 2x45° (10:30/12/1:30 o'clock) 	Black		**3SU1002-2BL10-0AA0**		1	1 unit	41J
		Red		**3SU1002-2BL20-0AA0**		1	1 unit	41J
		Yellow		**3SU1002-2BL30-0AA0**		1	1 unit	41J
		Green		**3SU1002-2BL40-0AA0**		1	1 unit	41J
		Blue		**3SU1002-2BL50-0AA0**		1	1 unit	41J
		White		**3SU1002-2BL60-0AA0**		1	1 unit	41J
 3SU1002-2BL60-0AA0								
	Momentary contact/ latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to right 	Black		**3SU1002-2BP10-0AA0**		1	1 unit	41J
		Red	5	**3SU1002-2BP20-0AA0**		1	1 unit	41J
		Yellow		**3SU1002-2BP30-0AA0**		1	1 unit	41J
		Green		**3SU1002-2BP40-0AA0**		1	1 unit	41J
		Blue		**3SU1002-2BP50-0AA0**		1	1 unit	41J
		White		**3SU1002-2BP60-0AA0**		1	1 unit	41J
 3SU1002-2BP50-0AA0								
	Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to left 	Black		**3SU1002-2BN10-0AA0**		1	1 unit	41J
		Red		**3SU1002-2BN20-0AA0**		1	1 unit	41J
		Yellow		**3SU1002-2BN30-0AA0**		1	1 unit	41J
		Green		**3SU1002-2BN40-0AA0**		1	1 unit	41J
		Blue		**3SU1002-2BN50-0AA0**		1	1 unit	41J
		White		**3SU1002-2BN60-0AA0**		1	1 unit	41J
 3SU1002-2BN30-0AA0								
4 switch positions NEW								
Rotary knob	Latching, 4x90° (0-position: 3/6/9/12 o'clock) 	White		**3SU1000-2AS60-0AA0**		1	1 unit	41J
 3SU1000-2AS60-0AA0								

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Key-operated switches									
2 switch positions									
Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	RONIS, SB30	O	2	▶	**3SU1000-4BC01-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	5	**3SU1000-4CC01-0AA0**		1	1 unit	41J
	O.M.R. 73037, red	O	2	3	**3SU1000-4FC01-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	3	**3SU1000-4GC01-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	3	**3SU1000-4HC01-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	O	2	3	**3SU1000-4JC01-0AA0**		1	1 unit	41J
	CES, SSG10	O	2	▶	**3SU1000-5BC01-0AA0**		1	1 unit	41J
	CES, LSG1		2	3	**3SU1000-5HC01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	▶	**3SU1000-5PC01-0AA0**		1	1 unit	41J
	IKON, 360012K1	O	2	▶	**3SU1000-5XC01-0AA0**		1	1 unit	41J
 3SU1000-4JC01-0AA0									
Latching, 90° (10:30/1:30 o'clock) 	RONIS, SB30	O	2	▶	**3SU1000-4BF01-0AA0**		1	1 unit	41J
		O+I	2	▶	**3SU1000-4BF11-0AA0**		1	1 unit	41J
		I	2	▶	**3SU1000-4BF21-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	3	**3SU1000-4CF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1000-4CF11-0AA0**		1	1 unit	41J
	RONIS, 421	O+I	2	5	**3SU1000-4DF11-0AA0**		1	1 unit	41J
 3SU1000-4BF11-0AA0									
	O.M.R. 73037, red	O	2	3	**3SU1000-4FF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1000-4FF11-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	▶	**3SU1000-4GF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1000-4GF11-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	3	**3SU1000-4HF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1000-4HF11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1000-4HF21-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	O	2	3	**3SU1000-4JF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1000-4JF11-0AA0**		1	1 unit	41J
 3SU1000-4GF11-0AA0									
	CES, SSG10	O	2	▶	**3SU1000-5BF01-0AA0**		1	1 unit	41J
		O+I	2	▶	**3SU1000-5BF11-0AA0**		1	1 unit	41J
		I	2	▶	**3SU1000-5BF21-0AA0**		1	1 unit	41J
	CES, LSG1	O	2	▶	**3SU1000-5HF01-0AA0**		1	1 unit	41J
		O+I	2	▶	**3SU1000-5HF11-0AA0**		1	1 unit	41J
 3SU1000-5BF11-0AA0									
	BKS, S1	O	2	▶	**3SU1000-5PF01-0AA0**		1	1 unit	41J
		O+I	2	▶	**3SU1000-5PF11-0AA0**		1	1 unit	41J
		I	2	3	**3SU1000-5PF21-0AA0**		1	1 unit	41J
	BKS, E1	O	0	3	**3SU1000-5QF01-0AA0**		1	1 unit	41J
		O+I	0	3	**3SU1000-5QF11-0AA0**		1	1 unit	41J
	BKS, E2	O	0	▶	**3SU1000-5RF01-0AA0**		1	1 unit	41J
		O+I	0	3	**3SU1000-5RF11-0AA0**		1	1 unit	41J
	BKS, E7	O	0	▶	**3SU1000-5SF01-0AA0**		1	1 unit	41J
		O+I	0	▶	**3SU1000-5SF11-0AA0**		1	1 unit	41J
	BKS, E9	O	0	▶	**3SU1000-5TF01-0AA0**		1	1 unit	41J
		O+I	0	3	**3SU1000-5TF11-0AA0**		1	1 unit	41J
 3SU1000-5PF11-0AA0									
	IKON, 360012K1	O	2	▶	**3SU1000-5XF01-0AA0**		1	1 unit	41J
		O+I	2	▶	**3SU1000-5XF11-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Key-operated switches

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches									
3 switch positions									
Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right 	RONIS, SB30	O	2	▶	**3SU1000-4BM01-0AA0**		1	1 unit	41J
	O.M.R. 73037, Red	O	2	5	**3SU1000-4FM01-0AA0**		1	1 unit	41J
	O.M.R. 73034, Black	O	2	5	**3SU1000-4HM01-0AA0**		1	1 unit	41J
	CES, SSG10	O	2	▶	**3SU1000-5BM01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	3	**3SU1000-5PM01-0AA0**		1	1 unit	41J
	IKON, 360012K1	O	2	3	**3SU1000-5XM01-0AA0**		1	1 unit	41J
Latching, 2x45° (10:30/12/1:30 o'clock) 	RONIS, SB30	O	2	3	**3SU1000-4BL01-0AA0**		1	1 unit	41J
		I+O+II	2	▶	**3SU1000-4BL11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1000-4BL21-0AA0**		1	1 unit	41J
		II	2	3	**3SU1000-4BL31-0AA0**		1	1 unit	41J
		I+II	2	3	**3SU1000-4BL41-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1000-4BL51-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	5	**3SU1000-4CL01-0AA0**		1	1 unit	41J
		I+O+II	2	3	**3SU1000-4CL11-0AA0**		1	1 unit	41J
	O.M.R. 73037, Red	O	2	5	**3SU1000-4FL01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1000-4FL51-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	3	**3SU1000-4GL01-0AA0**		1	1 unit	41J
		I+O+II	2	3	**3SU1000-4GL11-0AA0**		1	1 unit	41J
	O.M.R. 73034, Black	O	2	5	**3SU1000-4HL01-0AA0**		1	1 unit	41J
		I+O+II	2	3	**3SU1000-4HL11-0AA0**		1	1 unit	41J
	O.M.R. 73033, Yellow	I+O+II	2	5	**3SU1000-4JL11-0AA0**		1	1 unit	41J
	CES, SSG10	O		▶	**3SU1000-5BL01-0AA0**		1	1 unit	41J
		I+O+II	2	▶	**3SU1000-5BL11-0AA0**		1	1 unit	41J
		I	2	3	**3SU1000-5BL21-0AA0**		1	1 unit	41J
		II	2	▶	**3SU1000-5BL31-0AA0**		1	1 unit	41J
		I+II	2	3	**3SU1000-5BL41-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1000-5BL51-0AA0**		1	1 unit	41J
	BKS, S1	O	2	3	**3SU1000-5PL01-0AA0**		1	1 unit	41J
		I+O+II	2	3	**3SU1000-5PL11-0AA0**		1	1 unit	41J
		I	2	3	**3SU1000-5PL21-0AA0**		1	1 unit	41J
		II	2	3	**3SU1000-5PL31-0AA0**		1	1 unit	41J
		I+II	2	3	**3SU1000-5PL41-0AA0**		1	1 unit	41J
	BKS, E2	I+O+II	0	5	**3SU1000-5RL11-0AA0**		1	1 unit	41J
	BKS, E9	I+O+II	0	3	**3SU1000-5TL11-0AA0**		1	1 unit	41J
	IKON, 360012K1	O	2	3	**3SU1000-5XL01-0AA0**		1	1 unit	41J
		I+O+II	2	3	**3SU1000-5XL11-0AA0**		1	1 unit	41J


3SU1000-4BM01-0AA0


3SU1000-4FL01-0AA0


3SU1000-5BL01-0AA0


3SU1000-5PL01-0AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Operating principle	Make of lock	Switch position for key removal	Number of keys	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches										
	3 switch positions									
 3SU1000-4BP01-0AA0	Momentary contact/ latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to the right 	RONIS, SB30	O	2	3	**3SU1000-4BP01-0AA0**		1	1 unit	41J
			II	2	X	**3SU1000-4BP31-0AA0**		1	1 unit	41J
			O+II	2	X	**3SU1000-4BP61-0AA0**		1	1 unit	41J
 3SU1000-5BP01-0AA0		CES, SSG10	O	2	3	**3SU1000-5BP01-0AA0**		1	1 unit	41J
			II	2	5	**3SU1000-5BP31-0AA0**		1	1 unit	41J
			O+II	2	3	**3SU1000-5BP61-0AA0**		1	1 unit	41J
		BKS, S1	O	2	3	**3SU1000-5PP01-0AA0**		1	1 unit	41J
 3SU1000-4GN01-0AA0	Latching/ momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left 	RONIS, SB30	O	2	3	**3SU1000-4BN01-0AA0**		1	1 unit	41J
			I	2	X	**3SU1000-4BN21-0AA0**		1	1 unit	41J
			O+I	2	X	**3SU1000-4BN51-0AA0**		1	1 unit	41J
		O.M.R. 73038, light blue	O	2	5	**3SU1000-4GN01-0AA0**		1	1 unit	41J
		O.M.R. 73034, Black	I	2	5	**3SU1000-4HN21-0AA0**		1	1 unit	41J
		CES, SSG10	O	2	3	**3SU1000-5BN01-0AA0**		1	1 unit	41J
			I	2	3	**3SU1000-5BN21-0AA0**		1	1 unit	41J
			O+I	2	3	**3SU1000-5BN51-0AA0**		1	1 unit	41J
		BKS, S1	I	2	5	**3SU1000-5PN21-0AA0**		1	1 unit	41J
			O+I	2	3	**3SU1000-5PN51-0AA0**		1	1 unit	41J
		IKON, 360012K1	O+I	2	5	**3SU1000-5XN51-0AA0**		1	1 unit	41J

Selection and ordering data

	Operating angle	Operating principle	Switch position for key removal	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
ID key-operated switches										
	4 switch positions									
 3SU1000-4WS10-0AA0	45°	Latching	Key removal possible in all 4 positions	Black	▶	**3SU1000-4WS10-0AA0**		1	1 unit	41J

For ID keys, see page 13/127.

For electronic modules for ID key-operated switches, see page 13/90.

Coordinate switches / indicator lights

Selection and ordering data

Product function Locking in zero position	Number of switching positions	Operating principle	Direction of actuation	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coordinate switches NEW									
No	2	Momentary contact	Horizontal	3	**3SU1000-7AC10-0AA0**		1	1 unit	41J
			Vertical	3	**3SU1000-7AD10-0AA0**		1	1 unit	41J
	4	Momentary contact	Horizontal / Vertical	►	**3SU1000-7AF10-0AA0**		1	1 unit	41J
Yes	2	Momentary contact	Horizontal	3	**3SU1000-7BC10-0AA0**		1	1 unit	41J
			Vertical	3	**3SU1000-7BD10-0AA0**		1	1 unit	41J
	4	Momentary contact	Horizontal / Vertical	3	**3SU1000-7BF10-0AA0**		1	1 unit	41J


3SU1000-7AC10-0AA0


3SU1000-7BD10-0AA0

Selection and ordering data

Version of product	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Indicator lights							
With smooth lens	Amber	3	**3SU1001-6AA00-0AA0**		1	1 unit	41J
	Red	►	**3SU1001-6AA20-0AA0**		1	1 unit	41J
	Yellow	►	**3SU1001-6AA30-0AA0**		1	1 unit	41J
	Green	►	**3SU1001-6AA40-0AA0**		1	1 unit	41J
	Blue	►	**3SU1001-6AA50-0AA0**		1	1 unit	41J
	White	►	**3SU1001-6AA60-0AA0**		1	1 unit	41J
	Clear	►	**3SU1001-6AA70-0AA0**		1	1 unit	41J


3SU1001-6AA40-0AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Supply voltage for light source		Color	Number of			SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
At AC	At DC		Contact modules	NO contacts	NC contacts						
V	V					d	Article No.	Price per PU			
Pushbuttons											
Pushbuttons with flat button, momentary contact											
--	--	Black	1	1	0	▶	**3SU1130-0AB10-1BA0**		1	1 unit	41J
				0	1	3	**3SU1130-0AB10-1CA0**		1	1 unit	41J
		Red	1	1	0	5	**3SU1130-0AB20-1BA0**		1	1 unit	41J
				0	1	▶	**3SU1130-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1130-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	▶	**3SU1130-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	3	**3SU1130-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	3	**3SU1130-0AB60-1BA0**		1	1 unit	41J


3SU1130-0AB10-1BA0

Pushbuttons with raised button, momentary contact											
--	--	Red	1	0	1	5	**3SU1130-0BB20-1CA0**		1	1 unit	41J


3SU1130-0BB20-1CA0

Illuminated pushbuttons with flat button, momentary contact with integrated LED											
24	24	Red	1	1	0	5	**3SU1132-0AB20-1BA0**		1	1 unit	41J
				0	1	3	**3SU1132-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	3	**3SU1132-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	▶	**3SU1132-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	3	**3SU1132-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	▶	**3SU1132-0AB60-1BA0**		1	1 unit	41J
		Clear	1	1	0	3	**3SU1132-0AB70-1BA0**		1	1 unit	41J


3SU1132-0AB40-1BA0

110	--	Red	1	0	1	5	**3SU1133-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1133-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	5	**3SU1133-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1133-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1133-0AB60-1BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1133-0AB70-1BA0**		1	1 unit	41J

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Pushbuttons

Pushbuttons

Supply voltage for light source		Color	Number of			SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
At AC	At DC		Contact modules	NO contacts	NC contacts		Article No.	Price per PU			
V	V					d					
Illuminated pushbuttons with flat button, momentary contact with integrated LED											
230	--	Red	1	0	1	5	**3SU1136-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1136-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	5	**3SU1136-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1136-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1136-0AB60-1BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1136-0AB70-1BA0**		1	1 unit	41J


3SU1136-0AB40-1BA0

							Spring-type terminals				
Pushbuttons with flat button, momentary contact											
--	--	Black	1	1	0	5	**3SU1130-0AB10-3BA0**		1	1 unit	41J
		Red	1	0	1	5	**3SU1130-0AB20-3CA0**		1	1 unit	41J
		Green	1	1	0	5	**3SU1130-0AB40-3BA0**		1	1 unit	41J


3SU1130-0AB10-3BA0

Illuminated pushbuttons with flat button, momentary contact											
24	24	Red	1	0	1	5	**3SU1132-0AB20-3CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1132-0AB30-3BA0**		1	1 unit	41J
		Green	1	1	0	5	**3SU1132-0AB40-3BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1132-0AB50-3BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1132-0AB60-3BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1132-0AB70-3BA0**		1	1 unit	41J


3SU1132-0AB30-3BA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Unlatching method	Number of Contact modules	NO contacts	NC contacts	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons									
With red mushroom, diameter 40 mm, latching									
Pull to unlatch	1	0	1	5	**3SU1130-1BA20-1CA0**		1	1 unit	41J

3SU1130-1BA20-1CA0

Selection and ordering data

Unlatching method	Number of Contact modules	NO contacts	NC contacts	Marking	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, tamper-proof, in accordance with ISO 13850 and IEC 60947-5-5										
With red mushroom, diameter 40 mm, with positive latching										
Pull to unlatch	1	0	1	NOT-HALT	⊖ 5	**3SU1100-1HA20-1CH0**		1	1 unit	41J
Rotate to unlatch	1	0	1	None	⊖ 5	**3SU1100-1HB20-1CF0**		1	1 unit	41J
		0	1	EMERGENCY STOP	⊖ 5	**3SU1100-1HB20-1CG0**		1	1 unit	41J
		0	1	NOT-HALT	⊖ ▶	**3SU1100-1HB20-1CH0**		1	1 unit	41J
	NEW	0	2	EMERGENCY STOP	⊖ X	**3SU1100-1HB20-1PG0**		1	1 unit	41J
		0	1	ARRET D'URGENCE	⊖ 5	**3SU1100-1HB20-1CJ0**		1	1 unit	41J
	NEW	1	1	EMERGENCY STOP	⊖ 5	**3SU1100-1HB20-1FG0**		1	1 unit	41J
	NEW	1	1	NOT-HALT	⊖ ▶	**3SU1100-1HB20-1FH0**		1	1 unit	41J
	NEW	1	1	ARRET D'URGENCE	⊖ 5	**3SU1100-1HB20-1FJ0**		1	1 unit	41J
						Spring-type terminals				
Rotate to unlatch	1	0	1	NOT-HALT	⊖ 5	**3SU1100-1HB20-3CH0**		1	1 unit	41J
	NEW	1	1	NOT-HALT	⊖ 5	**3SU1100-1HB20-3FH0**		1	1 unit	41J

3SU1100-1HA20-1CH0

3SU1100-1HB20-1CH0

3SU1100-1HB20-3CH0

⊖ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System;
see page 11/1 onwards.

Certificate:

Selection and ordering data

Operating principle	Color	Number of Contact modules	NO contacts	NC contacts	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches										
Short black actuator, 2 switch positions, can be illuminated										
 3SU1130-2BF60-1BA0										
Latching, 90° 	White	1	1	0	▶	**3SU1130-2BF60-1BA0**		1	1 unit	41J
		2	1	1	▶	**3SU1130-2BF60-1MA0**		1	1 unit	41J
Short black actuator, 3 switch positions, can be illuminated										
Momentary contact, 2x45° 	White	2	2	0	3	**3SU1130-2BM60-1NA0**		1	1 unit	41J
Latching, 2x45° 	White	2	2	0	▶	**3SU1130-2BL60-1NA0**		1	1 unit	41J
Short black actuator, 2 switch positions, can be illuminated						**Spring-type terminals**				
 3SU1130-2BL60-1NA0										
Latching, 90° 	White	1	1	0	5	**3SU1130-2BF60-3BA0**		1	1 unit	41J
		2	1	1	5	**3SU1130-2BF60-3MA0**		1	1 unit	41J
Short black actuator, 3 switch positions, can be illuminated										
Momentary contact, 2x45° 	White	2	2	0	5	**3SU1130-2BM60-3NA0**		1	1 unit	41J
Latching, 2x45° 	White	2	2	0	5	**3SU1130-2BL60-3NA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Operating principle	Switch position for key removal	Number of Contact modules	Number of NO contacts	Number of NC contacts	Number of keys	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches											
With RONIS lock, SB30, 2 switch positions											
Latching, 90° (10:30/1:30 o'clock) 	O+I	1	1	0	2	3	**3SU1130-4BF11-1BA0**		1	1 unit	41J
With RONIS lock, SB30, 3 switch positions											
Latching, 2x45° (10:30/12/1:30 o'clock) 	I+O+II	2	2	0	2	5	**3SU1130-4BL11-1NA0**		1	1 unit	41J
With RONIS lock, SB30, 2 switch positions							**Spring-type terminals**				
Latching, 90° (10:30/1:30 o'clock) 	O+I	1	1	0	2	5	**3SU1130-4BF11-3BA0**		1	1 unit	41J


3SU1130-4BF11-1BA0


3SU1130-4BL11-1NA0

Selection and ordering data

Number of NO contacts (1 per direction)	Operating principle	Direction of actuation	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coordinate switches NEW								
Without mechanical interlock, 2 switch positions								
2	Momentary contact	Horizontal	5	**3SU1130-7AC10-1NA0**		1	1 unit	41J
		Vertical	5	**3SU1130-7AD10-1NA0**		1	1 unit	41J
Without mechanical interlock, 4 switch positions								
4	Momentary contact	Horizontal / Vertical	5	**3SU1130-7AF10-1QA0**		1	1 unit	41J
With mechanical interlock, 2 switch positions								
2	Momentary contact	Horizontal	5	**3SU1130-7BC10-1NA0**		1	1 unit	41J
		Vertical	5	**3SU1130-7BD10-1NA0**		1	1 unit	41J
With mechanical interlock, 4 switch positions								
4	Momentary contact	Horizontal / Vertical	5	**3SU1130-7BF10-1QA0**		1	1 unit	41J


3SU1130-7AF10-1QA0


3SU1130-7BC10-1QA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Operational voltage		Color		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
At AC, rated value	At DC, rated value	of actuating element	of light source		Article No. / Price per PU			
V	V			d				
Indicator lights								
With smooth lens and integrated LED								
24	24	Red	Red	►	**3SU1102-6AA20-1AA0**	1	1 unit	41J
		Yellow	Yellow	►	**3SU1102-6AA30-1AA0**	1	1 unit	41J
		Green	Green	►	**3SU1102-6AA40-1AA0**	1	1 unit	41J
		Blue	Blue	►	**3SU1102-6AA50-1AA0**	1	1 unit	41J
		White	White	►	**3SU1102-6AA60-1AA0**	1	1 unit	41J
		Clear	White	►	**3SU1102-6AA70-1AA0**	1	1 unit	41J
110	--	Amber	Amber	5	**3SU1103-6AA00-1AA0**	1	1 unit	41J
		Red	Red	►	**3SU1103-6AA20-1AA0**	1	1 unit	41J
		Yellow	Yellow	►	**3SU1103-6AA30-1AA0**	1	1 unit	41J
		Green	Green	►	**3SU1103-6AA40-1AA0**	1	1 unit	41J
		Blue	Blue	3	**3SU1103-6AA50-1AA0**	1	1 unit	41J
		White	White	►	**3SU1103-6AA60-1AA0**	1	1 unit	41J
		Clear	White	3	**3SU1103-6AA70-1AA0**	1	1 unit	41J
230	--	Amber	Amber	5	**3SU1106-6AA00-1AA0**	1	1 unit	41J
		Red	Red	►	**3SU1106-6AA20-1AA0**	1	1 unit	41J
		Yellow	Yellow	►	**3SU1106-6AA30-1AA0**	1	1 unit	41J
		Green	Green	►	**3SU1106-6AA40-1AA0**	1	1 unit	41J
		Blue	Blue	3	**3SU1106-6AA50-1AA0**	1	1 unit	41J
		White	White	►	**3SU1106-6AA60-1AA0**	1	1 unit	41J
		Clear	White	3	**3SU1106-6AA70-1AA0**	1	1 unit	41J
					Spring-type terminals			
24	24	Red	Red	3	**3SU1102-6AA20-3AA0**	1	1 unit	41J
		Yellow	Yellow	5	**3SU1102-6AA30-3AA0**	1	1 unit	41J
		Green	Green	3	**3SU1102-6AA40-3AA0**	1	1 unit	41J
		Blue	Blue	5	**3SU1102-6AA50-3AA0**	1	1 unit	41J
		White	White	3	**3SU1102-6AA60-3AA0**	1	1 unit	41J
		Clear	White	5	**3SU1102-6AA70-3AA0**	1	1 unit	41J
110	--	Red	Red	5	**3SU1103-6AA20-3AA0**	1	1 unit	41J
		Yellow	Yellow	5	**3SU1103-6AA30-3AA0**	1	1 unit	41J
		Green	Green	5	**3SU1103-6AA40-3AA0**	1	1 unit	41J
		Blue	Blue	5	**3SU1103-6AA50-3AA0**	1	1 unit	41J
		White	White	5	**3SU1103-6AA60-3AA0**	1	1 unit	41J
		Clear	White	5	**3SU1103-6AA70-3AA0**	1	1 unit	41J
230	--	Red	Red	5	**3SU1106-6AA20-3AA0**	1	1 unit	41J
		Yellow	Yellow	5	**3SU1106-6AA30-3AA0**	1	1 unit	41J
		Green	Green	5	**3SU1106-6AA40-3AA0**	1	1 unit	41J
		Blue	Blue	5	**3SU1106-6AA50-3AA0**	1	1 unit	41J
		White	White	5	**3SU1106-6AA60-3AA0**	1	1 unit	41J
		Clear	White	5	**3SU1106-6AA70-3AA0**	1	1 unit	41J


3SU1102-6AA30-1AA0


3SU1103-6AA00-1AA0


3SU1106-6AA50-1AA0


3SU1102-6AA20-3AA0


3SU1102-6AA40-3AA0


3SU1106-6AA60-3AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Operating principle	Number of NO contacts	Number of NC contacts	Color	SD	M12 connector, 4-pole		PU (UNIT, SET, M)	PS*	PG
				d	Article No.	Price per PU			
Sensor switches									
 3SU1200-1SK10-2SA0									
Whether integrated in the two-hand operation console or installed as a door opening contact, the capacitive sensor switch is suitable for many different applications in industrial environments. The switch is actuated by simple contact with the hand or other part of the body (i.e. without the application of pressure). As a result, these switches are rugged, extremely durable and have the highest degree of protection IP66, IP67, IP69(IP69K).									
Without pressure	1	0	Black	►	**3SU1200-1SK10-2SA0**		1	1 unit	41J

Optional accessories, see
- "Protection for sensor switches" on page 13/124.
- "Connectors for sensor switches, angled socket with screw terminal connection" on page 13/130.

Selection and ordering data

Version of actuating element	Operating principle	Adjustable resistance	SD	Screw terminals ⊕		PU (UNIT, SET, M)	PS*	PG
		kΩ	d	Article No.	Price per PU			
Potentiometers *NEW*								
 3SU1200-2PQ10-1AA0								
Rotary knob	Stepless	1	3	**3SU1200-2PQ10-1AA0**		1	1 unit	41J
		4.7	3	**3SU1200-2PR10-1AA0**		1	1 unit	41J
		10	3	**3SU1200-2PS10-1AA0**		1	1 unit	41J
		47	3	**3SU1200-2PT10-1AA0**		1	1 unit	41J
		100	3	**3SU1200-2PU10-1AA0**		1	1 unit	41J
		470	3	**3SU1200-2PV10-1AA0**		1	1 unit	41J

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Pushbuttons with extended stroke

Selection and ordering data

Version	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons with extended stroke							
For actuating relays, can only be combined with extension plunger, no contact module or LED module required							
 3SU1230-0EB40-0AA0 **Pushbuttons with flat button**	Red	5	**3SU1230-0EB20-0AA0**		1	1 unit	41J
	Green	5	**3SU1230-0EB40-0AA0**		1	1 unit	41J
 3SU1230-0FB10-0AA0 **Pushbuttons with raised button**	Black	3	**3SU1230-0FB10-0AA0**		1	1 unit	41J
 3SU1231-0EB20-0AA0 **Pushbuttons with flat transparent button for insertion of insert labels**	Red	3	**3SU1231-0EB20-0AA0**		1	1 unit	41J
	Clear	3	**3SU1231-0EB70-0AA0**		1	1 unit	41J

Version	Material	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories								
 3SU1900-0KG10-0AA0 **Extension plungers** For compensation of the distance between the pushbutton and the unlatching button of an overload relay	Plastic	Gray	►	**3SU1900-0KG10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Version of actuating element Front ring version	Operating principle Unlatching method	Color, marking	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons								
 3SU1030-0AB50-0AR0 **Pushbuttons with flat button** Standard	Momentary contact	Black ▶		**3SU1030-0AB10-0AA0**		1	1 unit	41J
		Black, "O" ▶		**3SU1030-0AB10-0AD0**		1	1 unit	41J
		Red ▶		**3SU1030-0AB20-0AA0**		1	1 unit	41J
		Red, "O" ▶		**3SU1030-0AB20-0AD0**		1	1 unit	41J
		Red, "AUTO"	5	**3SU1030-0AB20-0AQ0**		1	1 unit	41J
		Yellow ▶		**3SU1030-0AB30-0AA0**		1	1 unit	41J
		Green ▶		**3SU1030-0AB40-0AA0**		1	1 unit	41J
		Green, "I" ▶		**3SU1030-0AB40-0AC0**		1	1 unit	41J
		Blue ▶		**3SU1030-0AB50-0AA0**		1	1 unit	41J
		Blue, "R"	5	**3SU1030-0AB50-0AR0**		1	1 unit	41J
		White ▶		**3SU1030-0AB60-0AA0**		1	1 unit	41J
		White, "I" ▶		**3SU1030-0AB60-0AC0**		1	1 unit	41J
		Clear ▶		**3SU1030-0AB70-0AA0**		1	1 unit	41J
		Gray ▶		**3SU1030-0AB80-0AA0**		1	1 unit	41J
 3SU1030-0AA40-0AA0	Latching Push to unlatch	Black ▶		**3SU1030-0AA10-0AA0**		1	1 unit	41J
		Red ▶		**3SU1030-0AA20-0AA0**		1	1 unit	41J
		Yellow ▶		**3SU1030-0AA30-0AA0**		1	1 unit	41J
		Green ▶		**3SU1030-0AA40-0AA0**		1	1 unit	41J
		Blue ▶		**3SU1030-0AA50-0AA0**		1	1 unit	41J
		White ▶		**3SU1030-0AA60-0AA0**		1	1 unit	41J
 3SU1030-0BB20-0AA0 **Pushbuttons with raised button** Standard	Momentary contact	Black ▶		**3SU1030-0BB10-0AA0**		1	1 unit	41J
		Red ▶		**3SU1030-0BB20-0AA0**		1	1 unit	41J
		Yellow ▶		**3SU1030-0BB30-0AA0**		1	1 unit	41J
		Green ▶		**3SU1030-0BB40-0AA0**		1	1 unit	41J
		Blue ▶		**3SU1030-0BB50-0AA0**		1	1 unit	41J
		White ▶		**3SU1030-0BB60-0AA0**		1	1 unit	41J
 3SU1030-0CB30-0AA0 **Pushbuttons with flat button** Raised	Momentary contact	Black	5	**3SU1030-0CB10-0AA0**		1	1 unit	41J
		Red	5	**3SU1030-0CB20-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1030-0CB30-0AA0**		1	1 unit	41J
		Green	5	**3SU1030-0CB40-0AA0**		1	1 unit	41J
		Blue	5	**3SU1030-0CB50-0AA0**		1	1 unit	41J
		White	5	**3SU1030-0CB60-0AA0**		1	1 unit	41J

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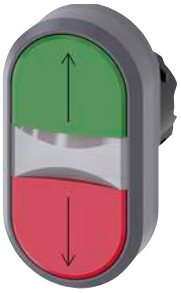
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Pushbuttons

	Version of actuating element Front ring version	Operating principle Unlatching method	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons									
 3SU1031-0AB20-0AA0	**Illuminated pushbuttons with flat button** Standard	Momentary contact	Amber	5	**3SU1031-0AB00-0AA0**		1	1 unit	41J
			Red ►		**3SU1031-0AB20-0AA0**		1	1 unit	41J
			Yellow ►		**3SU1031-0AB30-0AA0**		1	1 unit	41J
			Green ►		**3SU1031-0AB40-0AA0**		1	1 unit	41J
			Blue ►		**3SU1031-0AB50-0AA0**		1	1 unit	41J
			White ►		**3SU1031-0AB60-0AA0**		1	1 unit	41J
			Clear ►		**3SU1031-0AB70-0AA0**		1	1 unit	41J
 3SU1031-0AA50-0AA0		Latching Push to unlatch	Red ►		**3SU1031-0AA20-0AA0**		1	1 unit	41J
			Yellow ►		**3SU1031-0AA30-0AA0**		1	1 unit	41J
			Green ►		**3SU1031-0AA40-0AA0**		1	1 unit	41J
			Blue ►		**3SU1031-0AA50-0AA0**		1	1 unit	41J
			White ►		**3SU1031-0AA60-0AA0**		1	1 unit	41J
			Clear ►		**3SU1031-0AA70-0AA0**		1	1 unit	41J
 3SU1031-0BB40-0AA0	**Illuminated pushbuttons with raised button** Standard	Momentary contact	Red ►		**3SU1031-0BB20-0AA0**		1	1 unit	41J
			Yellow ►		**3SU1031-0BB30-0AA0**		1	1 unit	41J
			Green ►		**3SU1031-0BB40-0AA0**		1	1 unit	41J
			Blue ►		**3SU1031-0BB50-0AA0**		1	1 unit	41J
			Clear	3	**3SU1031-0BB70-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

	Version of actuating element	Operating principle	Color	Marking Symbol No.	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Twin pushbuttons										
 3SU1030-3AB66-0AN0	**Twin pushbuttons** flat, flat	Momentary contact	Green / Red	--	3	**3SU1030-3AB42-0AA0**		1	1 unit	41J
				"I" / "O" ▶		**3SU1030-3AB42-0AK0**		1	1 unit	41J
			White / Black	--	3	**3SU1030-3AB61-0AA0**		1	1 unit	41J
				"I" / "O"	3	**3SU1030-3AB61-0AK0**		1	1 unit	41J
			White / White	--	3	**3SU1030-3AB66-0AA0**		1	1 unit	41J
				Arrows, vert.	5	**3SU1030-3AB66-0AN0**		1	1 unit	41J
			Black / Black	--	3	**3SU1030-3AB11-0AA0**		1	1 unit	41J
				⊙ ○ 5264 / 5265 (IEC 60417)	5	**3SU1030-3AB11-0AQ0**		1	1 unit	41J
 3SU1030-3BB42-0AK0	**Twin pushbuttons** flat, raised	Momentary contact	Green / Red	--	3	**3SU1030-3BB42-0AA0**		1	1 unit	41J
				"I" / "O"	3	**3SU1030-3BB42-0AK0**		1	1 unit	41J
 3SU1031-3AB42-0AN0	**Twin pushbuttons** flat, flat, illuminated	Momentary contact	Green / Red	--	3	**3SU1031-3AB42-0AA0**		1	1 unit	41J
				"I" / "O" ▶		**3SU1031-3AB42-0AK0**		1	1 unit	41J
				Arrows, vert.	5	**3SU1031-3AB42-0AN0**		1	1 unit	41J
			White / Black	--	3	**3SU1031-3AB61-0AA0**		1	1 unit	41J
				"I" / "O"	3	**3SU1031-3AB61-0AK0**		1	1 unit	41J
			White / White	--	3	**3SU1031-3AB66-0AA0**		1	1 unit	41J
				Arrows, vert.	5	**3SU1031-3AB66-0AN0**		1	1 unit	41J
 3SU1031-3BB61-0AA0	**Twin pushbuttons** flat, raised, illuminated	Momentary contact	Green / Red	--	3	**3SU1031-3BB42-0AA0**		1	1 unit	41J
				"I" / "O"	3	**3SU1031-3BB42-0AK0**		1	1 unit	41J
			White / Black	--	3	**3SU1031-3BB61-0AA0**		1	1 unit	41J
				"I" / "O"	3	**3SU1031-3BB61-0AK0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Mushroom pushbuttons

Selection and ordering data

	Version of actuating element	Operating principle Unlatching method	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons									
 3SU1030-1AD20-0AA0	**Mushroom pushbuttons** 30 mm diameter, 2 positions	Momentary contact	Black ▶ Red ▶ Yellow ▶ Green ▶		**3SU1030-1AD10-0AA0** **3SU1030-1AD20-0AA0** **3SU1030-1AD30-0AA0** **3SU1030-1AD40-0AA0**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
		Latching Pull to unlatch	Black ▶ Red ▶		**3SU1030-1AA10-0AA0** **3SU1030-1AA20-0AA0**		1 1	1 unit 1 unit	41J 41J
 3SU1030-1BD40-0AA0	**Mushroom pushbuttons** 40 mm diameter, 2 positions	Momentary contact	Black 3 Red 3 Yellow 3 Green 3		**3SU1030-1BD10-0AA0** **3SU1030-1BD20-0AA0** **3SU1030-1BD30-0AA0** **3SU1030-1BD40-0AA0**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
		Latching Pull to unlatch	Black ▶ Red ▶ Red, "O" 5		**3SU1030-1BA10-0AA0** **3SU1030-1BA20-0AA0** **3SU1030-1BA20-0AD0**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
 3SU1031-1AD30-0AA0	**Mushroom pushbuttons** 30 mm diameter, 2 positions, illuminated	Momentary contact	Yellow 5 Green 3 White 3 Clear 5		**3SU1031-1AD30-0AA0** **3SU1031-1AD40-0AA0** **3SU1031-1AD60-0AA0** **3SU1031-1AD70-0AA0**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
		Latching Pull to unlatch	Red 3 Yellow 5		**3SU1031-1AA20-0AA0** **3SU1031-1AA30-0AA0**		1 1	1 unit 1 unit	41J 41J
 3SU1031-1BD60-0AA0	**Mushroom pushbuttons** 40 mm diameter, 2 positions, illuminated	Momentary contact	Yellow 5 Green 5 White 3 Clear 5		**3SU1031-1BD30-0AA0** **3SU1031-1BD40-0AA0** **3SU1031-1BD60-0AA0** **3SU1031-1BD70-0AA0**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
		Latching Pull to unlatch	Red 3 Yellow 3		**3SU1031-1BA20-0AA0** **3SU1031-1BA30-0AA0**		1 1	1 unit 1 unit	41J 41J
 3SU1000-1HB50-0AA0	**Mushroom pushbuttons** 40 mm diameter, 2 positions	With positive latching, tamper-proof Rotate to unlatch	Black ▶ Blue 3		**3SU1000-1HB10-0AA0** **3SU1000-1HB50-0AA0**		1 1	1 unit 1 unit	41J 41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

	Version of actuating element	Outer diameter of mushroom	Make of lock	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm			d					
EMERGENCY STOP mushroom pushbuttons										
	With pull-to-unlatch mechanism									
 3SU1000-1HA20-0AA0	Tamper-proof, 2 positions	40	--	Red	►	**3SU1000-1HA20-0AA0**		1	1 unit	41J
	With rotate-to-unlatch mechanism									
 3SU1000-1GB20-0AA0	Tamper-proof, 2 positions	33.8	--	Red	►	**3SU1000-1GB20-0AA0**		1	1 unit	41J
 3SU1000-1HB20-0AA0		40	--	Red	►	**3SU1000-1HB20-0AA0**		1	1 unit	41J
 3SU1000-1JB20-0AA0		60	--	Red	►	**3SU1000-1JB20-0AA0**		1	1 unit	41J
	With rotate-to-unlatch mechanism, can be illuminated									
 3SU1001-1HB20-0AA0	Tamper-proof, 2 positions	33.8	--	Red	X	**3SU1001-1GB20-0AA0**		1	1 unit	41J
		40	--	Red	►	**3SU1001-1HB20-0AA0**		1	1 unit	41J
		60	--	Red	3	**3SU1001-1JB20-0AA0**		1	1 unit	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

EMERGENCY STOP mushroom pushbuttons / Toggle switches

	Version of actuating element	Outer diameter of mushroom	Make of lock	Color	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm				d					
EMERGENCY STOP mushroom pushbuttons											
	With key-operated release										
 3SU1000-1HF20-0AA0	Tamper-proof, 2 positions	40	RONIS SB30	Red	2	▶	**3SU1000-1HF20-0AA0**		1	1 unit	41J
			RONIS 455	Red	2	3	**3SU1000-1HG20-0AA0**		1	1 unit	41J
 3SU1000-1HK20-0AA0			BKS S1	Red	2	▶	**3SU1000-1HK20-0AA0**		1	1 unit	41J
			BKS E7	Red	0	3	**3SU1000-1HM20-0AA0**		1	1 unit	41J
			BKS E9	Red	0	3	**3SU1000-1HN20-0AA0**		1	1 unit	41J
 3SU1000-1HQ20-0AA0			O.M.R. 73037	Red	2	▶	**3SU1000-1HQ20-0AA0**		1	1 unit	41J
 3SU1000-1HR20-0AA0			CES SSG10	Red	2	▶	**3SU1000-1HR20-0AA0**		1	1 unit	41J
			CES SSP9	Red	2	▶	**3SU1000-1HS20-0AA0**		1	1 unit	41J
			CES SMS1	Red	2	3	**3SU1000-1HT20-0AA0**		1	1 unit	41J

Selection and ordering data

	Number of switching positions	Number of command points	Color of actuating element	Operating principle of the actuating element	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					d					
Toggle switches NEW										
 3SU1030-3EA10-0AA0	2	1	Black	Latching	3	**3SU1030-3EA10-0AA0**		1	1 unit	41J
				Momentary contact Reset from above	5	**3SU1030-3EC10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Version of actuator	Operating principle	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches								
2 switch positions, can be illuminated								
Selector, short black actuator	Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	Black	3	**3SU1032-2BC10-0AA0**		1	1 unit	41J
		Red ►		**3SU1032-2BC20-0AA0**		1	1 unit	41J
		Yellow ►		**3SU1032-2BC30-0AA0**		1	1 unit	41J
		Green ►		**3SU1032-2BC40-0AA0**		1	1 unit	41J
		Blue ►		**3SU1032-2BC50-0AA0**		1	1 unit	41J
		White ►		**3SU1032-2BC60-0AA0**		1	1 unit	41J
	Latching, 90° (10:30/1:30 o'clock) 	Black	X	**3SU1032-2BF10-0AA0**		1	1 unit	41J
		Red ►		**3SU1032-2BF20-0AA0**		1	1 unit	41J
		Yellow ►		**3SU1032-2BF30-0AA0**		1	1 unit	41J
		Green ►		**3SU1032-2BF40-0AA0**		1	1 unit	41J
		Blue ►		**3SU1032-2BF50-0AA0**		1	1 unit	41J
		White ►		**3SU1032-2BF60-0AA0**		1	1 unit	41J
Selector, long black actuator	Latching, 90° (10:30/1:30 o'clock) 	Black	3	**3SU1032-2CF10-0AA0**		1	1 unit	41J
		Red	3	**3SU1032-2CF20-0AA0**		1	1 unit	41J
		White	3	**3SU1032-2CF60-0AA0**		1	1 unit	41J
Rotary knob	Latching, 90° (10:30/1:30 o'clock) 	Red	3	**3SU1032-2AF20-0AA0**		1	1 unit	41J
		White ►		**3SU1032-2AF60-0AA0**		1	1 unit	41J


3SU1032--2BC40-0AA0


3SU1032-2BF30-0AA0


3SU1032-2CF60-0AA0


3SU1032-2AF20-0AA0

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selector switches

	Version of actuator	Operating principle	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Selector switches									
	3 switch positions, can be illuminated								
 3SU1032-2BM60-0AA0	Selector, short black actuator	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right + left 	Black	►	**3SU1032-2BM10-0AA0**		1	1 unit	41J
			Red	►	**3SU1032-2BM20-0AA0**		1	1 unit	41J
			Yellow	►	**3SU1032-2BM30-0AA0**		1	1 unit	41J
			Green	►	**3SU1032-2BM40-0AA0**		1	1 unit	41J
			Blue	►	**3SU1032-2BM50-0AA0**		1	1 unit	41J
			White	►	**3SU1032-2BM60-0AA0**		1	1 unit	41J
 3SU1032-2BL20-0AA0		Latching, 2x45° (10:30/12/1:30 o'clock) 	Black	X	**3SU1032-2BL10-0AA0**		1	1 unit	41J
			Red	►	**3SU1032-2BL20-0AA0**		1	1 unit	41J
			Yellow	►	**3SU1032-2BL30-0AA0**		1	1 unit	41J
			Green	►	**3SU1032-2BL40-0AA0**		1	1 unit	41J
			Blue	►	**3SU1032-2BL50-0AA0**		1	1 unit	41J
			White	►	**3SU1032-2BL60-0AA0**		1	1 unit	41J
 3SU1032-2BP40-0AA0		Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to right 	Black	►	**3SU1032-2BP10-0AA0**		1	1 unit	41J
			Red	5	**3SU1032-2BP20-0AA0**		1	1 unit	41J
			Yellow	►	**3SU1032-2BP30-0AA0**		1	1 unit	41J
			Green	►	**3SU1032-2BP40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1032-2BP50-0AA0**		1	1 unit	41J
			White	►	**3SU1032-2BP60-0AA0**		1	1 unit	41J
 3SU1032-2BN30-0AA0		Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to left 	Black	3	**3SU1032-2BN10-0AA0**		1	1 unit	41J
			Red	►	**3SU1032-2BN20-0AA0**		1	1 unit	41J
			Yellow	►	**3SU1032-2BN30-0AA0**		1	1 unit	41J
			Green	►	**3SU1032-2BN40-0AA0**		1	1 unit	41J
			Blue	►	**3SU1032-2BN50-0AA0**		1	1 unit	41J
			White	►	**3SU1032-2BN60-0AA0**		1	1 unit	41J
	4 switch positions NEW								
 3SU1030-2AS60-0AA0	Rotary knob	Latching, 4x90° (0-position: 3/6/9/12 o'clock) 	White	3	**3SU1030-2AS60-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Key-operated switches									
2 switch positions									
 3SU1030-4BC01-0AA0									
Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	RONIS, SB30	O	2	▶	**3SU1030-4BC01-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	5	**3SU1030-4CC01-0AA0**		1	1 unit	41J
	O.M.R. 73037, Red	O	2	3	**3SU1030-4FC01-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	5	**3SU1030-4GC01-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	5	**3SU1030-4HC01-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	O	2	3	**3SU1030-4JC01-0AA0**		1	1 unit	41J
	CES, SSG10	O	2	▶	**3SU1030-5BC01-0AA0**		1	1 unit	41J
	CES, LSG1	O	2	3	**3SU1030-5HC01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	▶	**3SU1030-5PC01-0AA0**		1	1 unit	41J
	IKON, 360012K1	O	2	3	**3SU1030-5XC01-0AA0**		1	1 unit	41J
 3SU1030-4BF01-0AA0									
Latching, 90° (10:30/1:30 o'clock) 	RONIS, SB30	O	2	▶	**3SU1030-4BF01-0AA0**		1	1 unit	41J
		O+I	2	▶	**3SU1030-4BF11-0AA0**		1	1 unit	41J
		I	2	3	**3SU1030-4BF21-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	3	**3SU1030-4CF01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1030-4CF11-0AA0**		1	1 unit	41J
 3SU1030-4FF01-0AA0									
	O.M.R. 73037, Red	O	2	3	**3SU1030-4FF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1030-4FF11-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	3	**3SU1030-4GF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1030-4GF11-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	3	**3SU1030-4HF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1030-4HF11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1030-4HF21-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	O	2	3	**3SU1030-4JF01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1030-4JF11-0AA0**		1	1 unit	41J
 3SU1030-5BF01-0AA0									
	CES, SSG10	O	2	▶	**3SU1030-5BF01-0AA0**		1	1 unit	41J
		O+I	2	▶	**3SU1030-5BF11-0AA0**		1	1 unit	41J
		I	2	3	**3SU1030-5BF21-0AA0**		1	1 unit	41J
	CES, LSG1	O	2	3	**3SU1030-5HF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1030-5HF11-0AA0**		1	1 unit	41J
 3SU1030-5PF01-0AA0									
	BKS, S1	O	2	3	**3SU1030-5PF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1030-5PF11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1030-5PF21-0AA0**		1	1 unit	41J
	BKS, E1	O	0	3	**3SU1030-5QF01-0AA0**		1	1 unit	41J
		O+I	0	5	**3SU1030-5QF11-0AA0**		1	1 unit	41J
	BKS, E2	O	0	▶	**3SU1030-5RF01-0AA0**		1	1 unit	41J
		O+I	0	3	**3SU1030-5RF11-0AA0**		1	1 unit	41J
	BKS, E7	O	0	▶	**3SU1030-5SF01-0AA0**		1	1 unit	41J
		O+I	0	▶	**3SU1030-5SF11-0AA0**		1	1 unit	41J
	BKS, E9	O	0	3	**3SU1030-5TF01-0AA0**		1	1 unit	41J
		O+I	0	3	**3SU1030-5TF11-0AA0**		1	1 unit	41J
	IKON, 360012K1	O	2	▶	**3SU1030-5XF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1030-5XF11-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Key-operated switches

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches									
3 switch positions									
Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right 	RONIS, SB30	O	2	3	**3SU1030-4BM01-0AA0**		1	1 unit	41J
	O.M.R. 73037, Red	O	2	5	**3SU1030-4FM01-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	5	**3SU1030-4HM01-0AA0**		1	1 unit	41J
	CES, SSG10	O	2	▶	**3SU1030-5BM01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	3	**3SU1030-5PM01-0AA0**		1	1 unit	41J
	IKON, 360012K1	O	2	5	**3SU1030-5XM01-0AA0**		1	1 unit	41J
Latching, 2x45° (10:30/12/1:30 o'clock) 	RONIS, SB30	O	2	3	**3SU1030-4BL01-0AA0**		1	1 unit	41J
		I+O+II	2	▶	**3SU1030-4BL11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1030-4BL21-0AA0**		1	1 unit	41J
		II	2	3	**3SU1030-4BL31-0AA0**		1	1 unit	41J
		I+II	2	5	**3SU1030-4BL41-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1030-4BL51-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	5	**3SU1030-4CL01-0AA0**		1	1 unit	41J
		I+O+II	2	5	**3SU1030-4CL11-0AA0**		1	1 unit	41J
	O.M.R. 73037, Red	O	2	5	**3SU1030-4FL01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1030-4FL51-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	5	**3SU1030-4GL01-0AA0**		1	1 unit	41J
		I+O+II	2	3	**3SU1030-4GL11-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	5	**3SU1030-4HL01-0AA0**		1	1 unit	41J
		I+O+II	2	3	**3SU1030-4HL11-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	I+O+II	2	5	**3SU1030-4JL11-0AA0**		1	1 unit	41J
	CES, SSG10	O	2	3	**3SU1030-5BL01-0AA0**		1	1 unit	41J
		I+O+II	2	▶	**3SU1030-5BL11-0AA0**		1	1 unit	41J
		I	2	3	**3SU1030-5BL21-0AA0**		1	1 unit	41J
		II	2	3	**3SU1030-5BL31-0AA0**		1	1 unit	41J
		I+II	2	3	**3SU1030-5BL41-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1030-5BL51-0AA0**		1	1 unit	41J
	BKS, S1	O	2	5	**3SU1030-5PL01-0AA0**		1	1 unit	41J
		I+O+II	2	3	**3SU1030-5PL11-0AA0**		1	1 unit	41J
		I	2	3	**3SU1030-5PL21-0AA0**		1	1 unit	41J
		II	2	5	**3SU1030-5PL31-0AA0**		1	1 unit	41J
		I+II	2	5	**3SU1030-5PL41-0AA0**		1	1 unit	41J
	BKS, E2	I+O+II	0	5	**3SU1030-5RL11-0AA0**		1	1 unit	41J
	BKS, E9	I+O+II	0	5	**3SU1030-5TL11-0AA0**		1	1 unit	41J
	IKON, 360012K1	O	2	5	**3SU1030-5XL01-0AA0**		1	1 unit	41J
		I+O+II	2	5	**3SU1030-5XL11-0AA0**		1	1 unit	41J


3SU1030-4BM01-0AA0


3SU1030-4JL11-0AA0


3SU1030-5BL41-0AA0


3SU1030-5PL01-0AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches									
3 switch positions									
 3SU1030-4BP01-0AA0 Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to the right 	RONIS, SB30	O	2	5	**3SU1030-4BP01-0AA0**		1	1 unit	41J
		II	2	X	**3SU1030-4BP31-0AA0**		1	1 unit	41J
		O+II	2	X	**3SU1030-4BP61-0AA0**		1	1 unit	41J
	CES, SSG10	O	2	3	**3SU1030-5BP01-0AA0**		1	1 unit	41J
		II	2	5	**3SU1030-5BP31-0AA0**		1	1 unit	41J
		O+II	2	3	**3SU1030-5BP61-0AA0**		1	1 unit	41J
	BKS, S1	O	2	3	**3SU1030-5PP01-0AA0**		1	1 unit	41J
Latching/ momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left 	RONIS, SB30	O	2	5	**3SU1030-4BN01-0AA0**		1	1 unit	41J
		I	2	X	**3SU1030-4BN21-0AA0**		1	1 unit	41J
		O+I	2	X	**3SU1030-4BN51-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	5	**3SU1030-4GN01-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	I	2	5	**3SU1030-4HN21-0AA0**		1	1 unit	41J
 3SU1030-5BN01-0AA0	CES, SSG10	O	2	3	**3SU1030-5BN01-0AA0**		1	1 unit	41J
		I	2	3	**3SU1030-5BN21-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1030-5BN51-0AA0**		1	1 unit	41J
	BKS, S1	I	2	5	**3SU1030-5PN21-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1030-5PN51-0AA0**		1	1 unit	41J
	IKON, 360012K1	O+I	2	5	**3SU1030-5XN51-0AA0**		1	1 unit	41J

Selection and ordering data

Operating angle	Operating principle	Switch position for key removal	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
ID key-operated switches									
4 switch positions									
 3SU1030-4WS10-0AA0 45°	Latching	Key removal possible in all 4 positions	Black	10	**3SU1030-4WS10-0AA0**		1	1 unit	41J

For ID keys, see page 13/127.

For electronic modules for ID key-operated switches, see page 13/90.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Selection and ordering data

Product function Locking in zero position	Number of switching positions	Operating principle	Direction of actuation	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coordinate switches NEW									
No	2	Momentary contact	Horizontal	3	**3SU1030-7AC10-0AA0**		1	1 unit	41J
			Vertical	3	**3SU1030-7AD10-0AA0**		1	1 unit	41J
	4	Momentary contact	Horizontal / Vertical	3	**3SU1030-7AF10-0AA0**		1	1 unit	41J
Yes	2	Momentary contact	Horizontal	3	**3SU1030-7BC10-0AA0**		1	1 unit	41J
			Vertical	3	**3SU1030-7BD10-0AA0**		1	1 unit	41J
	4	Momentary contact	Horizontal / Vertical	3	**3SU1030-7BF10-0AA0**		1	1 unit	41J


3SU1030-7AC10-0AA0


3SU1030-7BD10-0AA0

Selection and ordering data

Version of product	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Indicator lights							
With smooth lens	Amber	3	**3SU1001-6AA00-0AA0**		1	1 unit	41J
	Red	►	**3SU1001-6AA20-0AA0**		1	1 unit	41J
	Yellow	►	**3SU1001-6AA30-0AA0**		1	1 unit	41J
	Green	►	**3SU1001-6AA40-0AA0**		1	1 unit	41J
	Blue	►	**3SU1001-6AA50-0AA0**		1	1 unit	41J
	White	►	**3SU1001-6AA60-0AA0**		1	1 unit	41J
	Clear	►	**3SU1001-6AA70-0AA0**		1	1 unit	41J


3SU1001-6AA20-0AA0

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Selection and ordering data

Supply voltage for light source		Color	Number of			SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
At AC	At DC		Contact modules	NO contacts	NC contacts		Article No.	Price per PU			
V	V					d					
Pushbuttons											
Pushbuttons with flat button, momentary contact											
--	--	Black	1	1	0	▶	**3SU1150-0AB10-1BA0**		1	1 unit	41J
				0	1	3	**3SU1150-0AB10-1CA0**		1	1 unit	41J
		Red	1	1	0	5	**3SU1150-0AB20-1BA0**		1	1 unit	41J
				0	1	▶	**3SU1150-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	3	**3SU1150-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	▶	**3SU1150-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	3	**3SU1150-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	3	**3SU1150-0AB60-1BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1150-0AB70-1BA0**		1	1 unit	41J
Pushbuttons with raised button, momentary contact											
--	--	Black	1	1	0	5	**3SU1150-0BB10-1BA0**		1	1 unit	41J
				0	1	5	**3SU1150-0BB10-1CA0**		1	1 unit	41J
		Red	1	0	1	3	**3SU1150-0BB20-1CA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1150-0BB50-1BA0**		1	1 unit	41J
Illuminated pushbuttons with flat button, momentary contact, with integrated LED											
24	24	Amber	1	1	0	5	**3SU1152-0AB00-1BA0**		1	1 unit	41J
		Red	1	0	1	▶	**3SU1152-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	▶	**3SU1152-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	▶	**3SU1152-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	▶	**3SU1152-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	▶	**3SU1152-0AB60-1BA0**		1	1 unit	41J
		Clear	1	1	0	▶	**3SU1152-0AB70-1BA0**		1	1 unit	41J
110	--	Amber	1	1	0	5	**3SU1153-0AB00-1BA0**		1	1 unit	41J
		Red	1	0	1	5	**3SU1153-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1153-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	3	**3SU1153-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1153-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1153-0AB60-1BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1153-0AB70-1BA0**		1	1 unit	41J
230	--	Amber	1	1	0	5	**3SU1156-0AB00-1BA0**		1	1 unit	41J
		Red	1	0	1	5	**3SU1156-0AB20-1CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1156-0AB30-1BA0**		1	1 unit	41J
		Green	1	1	0	3	**3SU1156-0AB40-1BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1156-0AB50-1BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1156-0AB60-1BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1156-0AB70-1BA0**		1	1 unit	41J


3SU1150-0AB30-1BA0


3SU1150-0BB20-3CA0


3SU1152-0AB20-1CA0


3SU1153-0AB20-1CA0

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Pushbuttons

Supply voltage for light source		Color	Number of			SD	Spring-type terminals		PU (UNIT, SET, M)	PS*	PG
At AC	At DC		Contact modules	NO contacts	NC contacts		Article No.	Price per PU			
V	V					d					
Pushbuttons											
Pushbuttons with flat button, momentary contact											
--	--	Black	1	1	0	▶	**3SU1150-0AB10-3BA0**		1	1 unit	41J
				0	1	5	**3SU1150-0AB10-3CA0**		1	1 unit	41J
		Red	1	1	0	5	**3SU1150-0AB20-3CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1150-0AB30-3BA0**		1	1 unit	41J
		Green	1	1	0	5	**3SU1150-0AB40-3BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1150-0AB50-3BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1150-0AB60-3BA0**		1	1 unit	41J
Pushbuttons with raised button, momentary contact											
--	--	Red	1	0	1	5	**3SU1150-0BB20-3CA0**		1	1 unit	41J
Illuminated pushbuttons with flat button, momentary contact, with integrated LED											
24	24	Red	1	0	1	5	**3SU1152-0AB20-3CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1152-0AB30-3BA0**		1	1 unit	41J
		Green	1	1	0	5	**3SU1152-0AB40-3BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1152-0AB50-3BA0**		1	1 unit	41J
		White	1	1	0	3	**3SU1152-0AB60-3BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1152-0AB70-3BA0**		1	1 unit	41J
110	--	Red	1	0	1	5	**3SU1153-0AB20-3CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1153-0AB30-3BA0**		1	1 unit	41J
		Green	1	1	0	5	**3SU1153-0AB40-3BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1153-0AB50-3BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1153-0AB60-3BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1153-0AB70-3BA0**		1	1 unit	41J
230	--	Red	1	0	1	5	**3SU1156-0AB20-3CA0**		1	1 unit	41J
		Yellow	1	1	0	5	**3SU1156-0AB30-3BA0**		1	1 unit	41J
		Green	1	1	0	5	**3SU1156-0AB40-3BA0**		1	1 unit	41J
		Blue	1	1	0	5	**3SU1156-0AB50-3BA0**		1	1 unit	41J
		White	1	1	0	5	**3SU1156-0AB60-3BA0**		1	1 unit	41J
		Clear	1	1	0	5	**3SU1156-0AB70-3BA0**		1	1 unit	41J


3SU1150-0AB40-3BA0


3SU1150-0BB20-1CA0


3SU1152-0AB50-3BA0

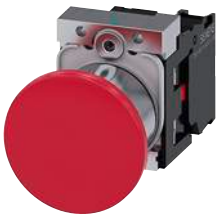

3SU1153-0AB60-3BA0


3SU1156-0AB30-3BA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Unlatching method	Number of Contact modules	NO contacts	NC contacts	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons									
With red mushroom, diameter 40 mm, latching									
Pull to unlatch	1	0	1	▶	**3SU1150-1BA20-1CA0**		1	1 unit	41J
					Spring-type terminals				
Pull to unlatch	1	0	1	5	**3SU1150-1BA20-3CA0**		1	1 unit	41J



3SU1150-1BA20-1CA0

Selection and ordering data

Unlatching method	Number of Contact modules	NO contacts	NC contacts	Marking	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, tamper-proof, in accordance with ISO 13850 and IEC 60947-5-5										
With red mushroom, diameter 40 mm, with positive latching										
Pull to unlatch	1	0	1	EMERGENCY STOP ⊖	5	**3SU1150-1HA20-1CG0**		1	1 unit	41J
	1	0	1	NOT-HALT ⊖	5	**3SU1150-1HA20-1CH0**		1	1 unit	41J
Rotate to unlatch	1	0	1	EMERGENCY STOP ⊖	3	**3SU1150-1HB20-1CG0**		1	1 unit	41J
	1	0	1	NOT-HALT ⊖	▶	**3SU1150-1HB20-1CH0**		1	1 unit	41J
	1	0	1	ARRET D'URGENCE ⊖	5	**3SU1150-1HB20-1CJ0**		1	1 unit	41J
						Spring-type terminals				
Pull to unlatch	1	0	1	NOT-HALT ⊖	5	**3SU1150-1HA20-3CH0**		1	1 unit	41J
	2	0	2	NOT-HALT ⊖	5	**3SU1150-1HA20-3PH0**		1	1 unit	41J
Rotate to unlatch	1	0	1	NOT-HALT ⊖	5	**3SU1150-1HB20-3CH0**		1	1 unit	41J
	2	0	2	NOT-HALT ⊖	5	**3SU1150-1HB20-3PH0**		1	1 unit	41J

3SU1150-1HB20-1CH0

3SU1150-1HA20-3CH0

⊖ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System;
see page 11/1 onwards.
Certificate:

Selection and ordering data

Operating principle	Color	Number of Contact modules	NO contacts	NC contacts	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches										
Short black actuator, 2 switch positions										
Latching, 90° 	White	1	1	0	▶	**3SU1150-2BF60-1BA0**		1	1 unit	41J
		2	1	1	▶	**3SU1150-2BF60-1MA0**		1	1 unit	41J
Short black actuator, 3 switch positions (I - O - II)										
Momentary contact, 2x45° Reset from right + left 	White	2	2	0	▶	**3SU1150-2BM60-1NA0**		1	1 unit	41J
Latching, 2x45° 	White	2	2	0	▶	**3SU1150-2BL60-1NA0**		1	1 unit	41J
						Spring-type terminals				
Short black actuator, 2 switch positions										
Latching, 90° 	White	1	1	0	5	**3SU1150-2BF60-3BA0**		1	1 unit	41J
		2	1	1	5	**3SU1150-2BF60-3MA0**		1	1 unit	41J
Short black actuator, 3 switch positions										
Momentary contact, 2x45° Reset from right + left 	White	2	2	0	5	**3SU1150-2BM60-3NA0**		1	1 unit	41J
Latching, 2x45° 	White	2	2	0	5	**3SU1150-2BL60-3NA0**		1	1 unit	41J


3SU1150-2BF60-1BA0


3SU1150-2BL60-3NA0

Selection and ordering data

Operating principle	Switch position for key removal	Number of Contact modules	NO contacts	NC contacts	Number of keys	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches											
With RONIS lock, SB30, 2 switch positions											
Latching, 90° (10:30/1:30 o'clock) 	0+I	1	1	0	2	3	**3SU1150-4BF11-1BA0**		1	1 unit	41J
							Spring-type terminals				
	0+I	1	1	0	2	5	**3SU1150-4BF11-3BA0**		1	1 unit	41J
	O	2	0	2	2	5	**3SU1150-4BF01-3PA0**		1	1 unit	41J


3SU1150-4BF11-1BA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Number of NO contacts (1 per direction)	Operating principle	Direction of actuation	SD	Screw terminals ⊕ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Coordinate switches NEW								
Without mechanical interlock, 2 switch positions								
2	Momentary contact	Horizontal	5	**3SU1150-7AC88-1NA0**		1	1 unit	41J
		Vertical	5	**3SU1150-7AD88-1NA0**		1	1 unit	41J
Without mechanical interlock, 4 switch positions								
4	Momentary contact	Horizontal / Vertical	3	**3SU1150-7AF88-1QA0**		1	1 unit	41J
With mechanical interlock, 2 switch positions								
2	Momentary contact	Horizontal	5	**3SU1150-7BC88-1NA0**		1	1 unit	41J
		Vertical	5	**3SU1150-7BD88-1NA0**		1	1 unit	41J
With mechanical interlock, 4 switch positions								
4	Momentary contact	Horizontal / Vertical	5	**3SU1150-7BF88-1QA0**		1	1 unit	41J

3SU1150-7AF88-1QA0

3SU1150-7BF88-1QA0

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Selection and ordering data

Operational voltage		Color		SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
At AC, rated value	At DC, rated value	of actuating element	of light source		Article No.	Price per PU			
V	V			d					
Indicator lights									
With smooth lens and integrated LED									
24	24	Amber	Amber	5	**3SU1152-6AA00-1AA0**		1	1 unit	41J
		Red	Red	▶	**3SU1152-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	▶	**3SU1152-6AA30-1AA0**		1	1 unit	41J
		Green	Green	▶	**3SU1152-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	3	**3SU1152-6AA50-1AA0**		1	1 unit	41J
		White	White	▶	**3SU1152-6AA60-1AA0**		1	1 unit	41J
		Clear	White	3	**3SU1152-6AA70-1AA0**		1	1 unit	41J
110	--	Amber	Amber	5	**3SU1153-6AA00-1AA0**		1	1 unit	41J
		Red	Red	▶	**3SU1153-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	3	**3SU1153-6AA30-1AA0**		1	1 unit	41J
		Green	Green	▶	**3SU1153-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	5	**3SU1153-6AA50-1AA0**		1	1 unit	41J
		White	White	3	**3SU1153-6AA60-1AA0**		1	1 unit	41J
		Clear	White	5	**3SU1153-6AA70-1AA0**		1	1 unit	41J
230	--	Red	Red	▶	**3SU1156-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	3	**3SU1156-6AA30-1AA0**		1	1 unit	41J
		Green	Green	▶	**3SU1156-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	5	**3SU1156-6AA50-1AA0**		1	1 unit	41J
		White	White	3	**3SU1156-6AA60-1AA0**		1	1 unit	41J
		Clear	White	5	**3SU1156-6AA70-1AA0**		1	1 unit	41J
					Spring-type terminals				
24	24	Red	Red	3	**3SU1152-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	5	**3SU1152-6AA30-3AA0**		1	1 unit	41J
		Green	Green	3	**3SU1152-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	3	**3SU1152-6AA50-3AA0**		1	1 unit	41J
		White	White	5	**3SU1152-6AA60-3AA0**		1	1 unit	41J
		Clear	White	5	**3SU1152-6AA70-3AA0**		1	1 unit	41J
110	--	Red	Red	5	**3SU1153-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	5	**3SU1153-6AA30-3AA0**		1	1 unit	41J
		Green	Green	5	**3SU1153-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	5	**3SU1153-6AA50-3AA0**		1	1 unit	41J
		White	White	5	**3SU1153-6AA60-3AA0**		1	1 unit	41J
		Clear	White	5	**3SU1153-6AA70-3AA0**		1	1 unit	41J
230	--	Red	Red	5	**3SU1156-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	5	**3SU1156-6AA30-3AA0**		1	1 unit	41J
		Green	Green	5	**3SU1156-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	5	**3SU1156-6AA50-3AA0**		1	1 unit	41J
		White	White	5	**3SU1156-6AA60-3AA0**		1	1 unit	41J
		Clear	White	5	**3SU1156-6AA70-3AA0**		1	1 unit	41J


3SU1152-6AA50-1AA0


3SU1153-6AA00-1AA0


3SU1156-6AA60-1AA0


3SU1152-6AA40-3AA0


3SU1153-6AA30-3AA0


3SU1156-6AA20-3AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Version of actuating element	Operating principle	Adjustable resistance	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU			
		kΩ	d					
Potentiometers *NEW*								
Rotary knob	Stepless	1	5	**3SU1250-2PQ10-1AA0**		1	1 unit	41J
		4.7	5	**3SU1250-2PR10-1AA0**		1	1 unit	41J
		10	5	**3SU1250-2PS10-1AA0**		1	1 unit	41J
		47	5	**3SU1250-2PT10-1AA0**		1	1 unit	41J
		100	5	**3SU1250-2PU10-1AA0**		1	1 unit	41J
		470	5	**3SU1250-2PV10-1AA0**		1	1 unit	41J

3SU1250-2PQ10-1AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Pushbuttons with extended stroke

Selection and ordering data

Version	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons with extended stroke							
For actuating relays, can only be combined with extension plunger, no contact module or LED module required							
 3SU1250-0EB40-0AA0 **Pushbuttons with flat button**	Red	5	**3SU1250-0EB20-0AA0**		1	1 unit	41J
	Green	5	**3SU1250-0EB40-0AA0**		1	1 unit	41J
	Blue	7	**3SU1250-0EB50-0AA0**		1	1 unit	41J
 3SU1250-0FB10-0AA0 **Pushbuttons with raised button**	Black	►	**3SU1250-0FB10-0AA0**		1	1 unit	41J
 3SU1251-0EB20-0AA0 **Pushbuttons with flat transparent button for insertion of insert labels**	Red	3	**3SU1251-0EB20-0AA0**		1	1 unit	41J
	Clear	3	**3SU1251-0EB70-0AA0**		1	1 unit	41J

Version	Material	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories								
 3SU1900-0KG10-0AA0 **Extension plungers** For compensation of the distance between the pushbutton and the unlatching button of an overload relay	Plastic	Gray	►	**3SU1900-0KG10-0AA0**		1	1 unit	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

	Version of actuating element Front ring version	Operating principle Unlatching method	Color, marking	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons									
 3SU1050-0AB40-0AC0	**Pushbuttons with flat button** Standard	Momentary contact	Black	▶	**3SU1050-0AB10-0AA0**		1	1 unit	41J
			Black, "O"	3	**3SU1050-0AB10-0AD0**		1	1 unit	41J
			Red	▶	**3SU1050-0AB20-0AA0**		1	1 unit	41J
			Red, "O"	3	**3SU1050-0AB20-0AD0**		1	1 unit	41J
			Yellow	3	**3SU1050-0AB30-0AA0**		1	1 unit	41J
			Green	▶	**3SU1050-0AB40-0AA0**		1	1 unit	41J
			Green, "I"	5	**3SU1050-0AB40-0AC0**		1	1 unit	41J
			Blue	3	**3SU1050-0AB50-0AA0**		1	1 unit	41J
			Blue, "R"	5	**3SU1050-0AB50-0AR0**		1	1 unit	41J
			White	3	**3SU1050-0AB60-0AA0**		1	1 unit	41J
			White, "⏚"	5	**3SU1050-0AB60-0AB0**		1	1 unit	41J
			White, "I"	3	**3SU1050-0AB60-0AC0**		1	1 unit	41J
			Clear	3	**3SU1050-0AB70-0AA0**		1	1 unit	41J
			Gray	5	**3SU1050-0AB80-0AA0**		1	1 unit	41J
 3SU1050-0AA30-0AA0		Latching Push to unlatch	Black	5	**3SU1050-0AA10-0AA0**		1	1 unit	41J
			Red	5	**3SU1050-0AA20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1050-0AA30-0AA0**		1	1 unit	41J
			Green	5	**3SU1050-0AA40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1050-0AA50-0AA0**		1	1 unit	41J
			White	5	**3SU1050-0AA60-0AA0**		1	1 unit	41J
 3SU1050-0BB20-0AA0	**Pushbuttons with raised button** Standard	Momentary contact	Black	3	**3SU1050-0BB10-0AA0**		1	1 unit	41J
			Red	3	**3SU1050-0BB20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1050-0BB30-0AA0**		1	1 unit	41J
			Green	5	**3SU1050-0BB40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1050-0BB50-0AA0**		1	1 unit	41J
			White	5	**3SU1050-0BB60-0AA0**		1	1 unit	41J
		Latching Push to unlatch	Red	5	**3SU1050-0BA20-0AA0**		1	1 unit	41J
 3SU1050-0CB50-0AA0	**Pushbuttons with flat button** Raised	Momentary contact	Black	5	**3SU1050-0CB10-0AA0**		1	1 unit	41J
			Red	5	**3SU1050-0CB20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1050-0CB30-0AA0**		1	1 unit	41J
			Green	5	**3SU1050-0CB40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1050-0CB50-0AA0**		1	1 unit	41J
			White	5	**3SU1050-0CB60-0AA0**		1	1 unit	41J

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Pushbuttons

	Version of actuating element Front ring version	Operating principle Unlatching method	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons									
 3SU1051-0AB30-0AA0	**Illuminated pushbuttons with flat button** Standard	Momentary contact	Amber	5	**3SU1051-0AB00-0AA0**		1	1 unit	41J
			Red ▶		**3SU1051-0AB20-0AA0**		1	1 unit	41J
			Yellow	3	**3SU1051-0AB30-0AA0**		1	1 unit	41J
			Green ▶		**3SU1051-0AB40-0AA0**		1	1 unit	41J
			Blue	3	**3SU1051-0AB50-0AA0**		1	1 unit	41J
			White ▶		**3SU1051-0AB60-0AA0**		1	1 unit	41J
			Clear ▶		**3SU1051-0AB70-0AA0**		1	1 unit	41J
 3SU1051-0AA20-0AA0		Latching Push to unlatch	Red	5	**3SU1051-0AA20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1051-0AA30-0AA0**		1	1 unit	41J
			Green	5	**3SU1051-0AA40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1051-0AA50-0AA0**		1	1 unit	41J
			White	5	**3SU1051-0AA60-0AA0**		1	1 unit	41J
			Clear	5	**3SU1051-0AA70-0AA0**		1	1 unit	41J
 3SU1051-0BB20-0AA0	**Illuminated pushbuttons with raised button** Standard	Momentary contact	Amber	5	**3SU1051-0BB00-0AA0**		1	1 unit	41J
			Red	3	**3SU1051-0BB20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1051-0BB30-0AA0**		1	1 unit	41J
			Green	3	**3SU1051-0BB40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1051-0BB50-0AA0**		1	1 unit	41J
			White	5	**3SU1051-0BB60-0AA0**		1	1 unit	41J
			Clear	3	**3SU1051-0BB70-0AA0**		1	1 unit	41J

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Illustrations are approximate

Selection and ordering data

Version of actuating element	Operating principle	Color	Marking / Symbol No.	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Twin pushbuttons									
Twin pushbuttons flat, flat	Momentary contact	Green / Red	--	3	**3SU1050-3AB42-0AA0**		1	1 unit	41J
			"I" / "O"	3	**3SU1050-3AB42-0AK0**		1	1 unit	41J
		White / Black	--	3	**3SU1050-3AB61-0AA0**		1	1 unit	41J
			"I" / "O"	3	**3SU1050-3AB61-0AK0**		1	1 unit	41J
		White / White	--	3	**3SU1050-3AB66-0AA0**		1	1 unit	41J
			"–" / "+"	5	**3SU1050-3AB66-0AL0**		1	1 unit	41J
			Arrows, hor.	5	**3SU1050-3AB66-0AM0**		1	1 unit	41J
		Black / Black	--	3	**3SU1050-3AB11-0AA0**		1	1 unit	41J
			○ ○ 5264 / 5265 (IEC 60417)	5	**3SU1050-3AB11-0AQ0**		1	1 unit	41J
Twin pushbuttons flat, raised	Momentary contact	Green / Red	--	3	**3SU1050-3BB42-0AA0**		1	1 unit	41J
			"I" / "O"	3	**3SU1050-3BB42-0AK0**		1	1 unit	41J
		White / Black	--	3	**3SU1050-3BB61-0AA0**		1	1 unit	41J
			"I" / "O"	5	**3SU1050-3BB61-0AK0**		1	1 unit	41J
Twin pushbuttons flat, flat, illuminated	Momentary contact	Green / Red	--	3	**3SU1051-3AB42-0AA0**		1	1 unit	41J
			"I" / "O"	3 ▶	**3SU1051-3AB42-0AK0**		1	1 unit	41J
			Arrows, vert.	5	**3SU1051-3AB42-0AN0**		1	1 unit	41J
		White / Black	--	3	**3SU1051-3AB61-0AA0**		1	1 unit	41J
			"I" / "O"	3	**3SU1051-3AB61-0AK0**		1	1 unit	41J
Twin pushbuttons flat, raised, illuminated	Momentary contact	Green / Red	--	3	**3SU1051-3BB42-0AA0**		1	1 unit	41J
			"I" / "O"	3	**3SU1051-3BB42-0AK0**		1	1 unit	41J
		White / Black	--	3	**3SU1051-3BB61-0AA0**		1	1 unit	41J
			"I" / "O"	5	**3SU1051-3BB61-0AK0**		1	1 unit	41J

3SU1050-3AB66-0AL0

3SU1050-3BB42-0AK0


3SU1051-3AB42-0AN0


3SU1051-3BB61-0AA0

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Illustrations are approximate

Selection and ordering data

Version of actuating element	Operating principle / Unlatching method	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons								
2 switch positions								
 3SU1050-1AD20-0AA0								
Mushroom pushbuttons 30 mm diameter, 2 positions	Momentary contact	Black	3	**3SU1050-1AD10-0AA0**		1	1 unit	41J
		Red	5	**3SU1050-1AD20-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1050-1AD30-0AA0**		1	1 unit	41J
		Green	5	**3SU1050-1AD40-0AA0**		1	1 unit	41J
	Latching / Pull to unlatch	Black	5	**3SU1050-1AA10-0AA0**		1	1 unit	41J
		Red	3	**3SU1050-1AA20-0AA0**		1	1 unit	41J
 3SU1050-1BD30-0AA0								
Mushroom pushbuttons 40 mm diameter, 2 positions	Momentary contact	Black	3	**3SU1050-1BD10-0AA0**		1	1 unit	41J
		Red	5	**3SU1050-1BD20-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1050-1BD30-0AA0**		1	1 unit	41J
		Green	5	**3SU1050-1BD40-0AA0**		1	1 unit	41J
	Latching / Pull to unlatch	Black	3	**3SU1050-1BA10-0AA0**		1	1 unit	41J
		Red	3	**3SU1050-1BA20-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1050-1BA30-0AA0**		1	1 unit	41J
 3SU1050-1CD40-0AA0								
Mushroom pushbuttons 60 mm diameter, 2 positions	Momentary contact	Black	5	**3SU1050-1CD10-0AA0**		1	1 unit	41J
		Red	5	**3SU1050-1CD20-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1050-1CD30-0AA0**		1	1 unit	41J
		Green	5	**3SU1050-1CD40-0AA0**		1	1 unit	41J
	Latching / Pull to unlatch	Black	5	**3SU1050-1CA10-0AA0**		1	1 unit	41J
		Red	5	**3SU1050-1CA20-0AA0**		1	1 unit	41J
 3SU1051-1AD60-0AA0								
Mushroom pushbuttons 30 mm diameter, 2 positions, illuminated	Momentary contact	Yellow	5	**3SU1051-1AD30-0AA0**		1	1 unit	41J
		Green	5	**3SU1051-1AD40-0AA0**		1	1 unit	41J
		White	5	**3SU1051-1AD60-0AA0**		1	1 unit	41J
	Latching / Pull to unlatch	Amber	5	**3SU1051-1AA00-0AA0**		1	1 unit	41J
		Red	5	**3SU1051-1AA20-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1051-1AA30-0AA0**		1	1 unit	41J
		Green	5	**3SU1051-1AA40-0AA0**		1	1 unit	41J
		Blue	5	**3SU1051-1AA50-0AA0**		1	1 unit	41J
		Clear	5	**3SU1051-1AA70-0AA0**		1	1 unit	41J
 3SU1051-1BD40-0AA0								
Mushroom pushbuttons 40 mm diameter, 2 positions, illuminated	Momentary contact	Amber	5	**3SU1051-1BD00-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1051-1BD30-0AA0**		1	1 unit	41J
		Green	5	**3SU1051-1BD40-0AA0**		1	1 unit	41J
		White	5	**3SU1051-1BD60-0AA0**		1	1 unit	41J
	Latching / Pull to unlatch	Amber	5	**3SU1051-1BA00-0AA0**		1	1 unit	41J
		Red	3	**3SU1051-1BA20-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1051-1BA30-0AA0**		1	1 unit	41J
		Green	5	**3SU1051-1BA40-0AA0**		1	1 unit	41J
		Blue	5	**3SU1051-1BA50-0AA0**		1	1 unit	41J
		Clear	5	**3SU1051-1BA70-0AA0**		1	1 unit	41J
 3SU1051-1CA50-0AA0								
Mushroom pushbuttons 60 mm diameter, 2 positions, illuminated	Momentary contact / None	Amber	5	**3SU1051-1CD00-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1051-1CD30-0AA0**		1	1 unit	41J
		Green	5	**3SU1051-1CD40-0AA0**		1	1 unit	41J
		White	5	**3SU1051-1CD60-0AA0**		1	1 unit	41J
	Latching / Pull to unlatch	Red	5	**3SU1051-1CA20-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1051-1CA30-0AA0**		1	1 unit	41J
		Green	5	**3SU1051-1CA40-0AA0**		1	1 unit	41J
		Blue	5	**3SU1051-1CA50-0AA0**		1	1 unit	41J
		Clear	5	**3SU1051-1CA70-0AA0**		1	1 unit	41J

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	Version of actuating element	Operating principle Unlatching method	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons									
	2 switch positions								
 3SU1050-1HB10-0AA0	**Mushroom pushbuttons** With raised mushroom, Tamper-proof, 40 mm diameter, 2 positions	Latching Rotate to unlatch	Black	5	**3SU1050-1HB10-0AA0**		1	1 unit	41J
	3 switch positions								
 3SU1050-1EA20-0AA0	**Mushroom pushbuttons** 40 mm diameter, 3 positions	Momentary contact	Black Red	5 5	**3SU1050-1ED10-0AA0** **3SU1050-1ED20-0AA0**		1 1	1 unit 1 unit	41J 41J
		Latching Pull to unlatch	Black Red	5 5	**3SU1050-1EA10-0AA0** **3SU1050-1EA20-0AA0**		1 1	1 unit 1 unit	41J 41J
 3SU1051-1EA40-0AA0	**Mushroom pushbuttons** 40 mm diameter, 3 positions, illuminated	Momentary contact	Red White	5 5	**3SU1051-1ED20-0AA0** **3SU1051-1ED60-0AA0**		1 1	1 unit 1 unit	41J 41J
		Latching Pull to unlatch	Red Green	5 5	**3SU1051-1EA20-0AA0** **3SU1051-1EA40-0AA0**		1 1	1 unit 1 unit	41J 41J

Selection and ordering data

	Version of actuating element	Outer diameter of mushroom	Make of lock	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, in accordance with ISO 13850 and IEC 60947-5-5										
	With pull-to-unlatch mechanism									
 3SU1050-1HA20-0AA0	Tamper-proof, 2 positions	40	--	Red	3	**3SU1050-1HA20-0AA0**		1	1 unit	41J
	With rotate-to-unlatch mechanism									
 3SU1050-1GB20-0AA0	Tamper-proof, 2 positions	33.8	--	Red	3	**3SU1050-1GB20-0AA0**		1	1 unit	41J

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Illustrations are approximate

EMERGENCY STOP mushroom pushbuttons

Version of actuating element	Outer diameter of mushroom	Make of lock	Color	Number of keys	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, in accordance with ISO 13850 and IEC 60947-5-5										
With rotate-to-unlatch mechanism										
Tamper-proof, 2 positions	40	--	Red		▶	**3SU1050-1HB20-0AA0**		1	1 unit	41J
	60	--	Red		5	**3SU1050-1JB20-0AA0**		1	1 unit	41J
With rotate-to-unlatch mechanism, can be illuminated										
Tamper-proof, 2 positions	33.8	--	Red		X	**3SU1051-1GB20-0AA0**		1	1 unit	41J
	40				3	**3SU1051-1HB20-0AA0**		1	1 unit	41J
	60				5	**3SU1051-1JB20-0AA0**		1	1 unit	41J
With key-operated release										
Tamper-proof, 2 positions	40	RONIS SB30	Red	2	3	**3SU1050-1HF20-0AA0**		1	1 unit	41J
		RONIS 455		2	5	**3SU1050-1HG20-0AA0**		1	1 unit	41J
		RONIS 421		2	5	**3SU1050-1HH20-0AA0**		1	1 unit	41J
		BKS S1	Red	2	5	**3SU1050-1HK20-0AA0**		1	1 unit	41J
		BKS E7		0	5	**3SU1050-1HM20-0AA0**		1	1 unit	41J
		BKS E9		0	5	**3SU1050-1HN20-0AA0**		1	1 unit	41J
		O.M.R. 73037		2	5	**3SU1050-1HQ20-0AA0**		1	1 unit	41J
		CES SSG10	Red	2	3	**3SU1050-1HR20-0AA0**		1	1 unit	41J
		CES SSP9		2	5	**3SU1050-1HS20-0AA0**		1	1 unit	41J
		CES VL5	Black	2	5	**3SU1050-1HU10-0AA0**		1	1 unit	41J
			Red	2	5	**3SU1050-1HU20-0AA0**		1	1 unit	41J
		CES VL1		2	5	**3SU1050-1HV20-0AA0**		1	1 unit	41J
		IKON 360012K1		2	5	**3SU1050-1HX20-0AA0**		1	1 unit	41J


3SU1050-1HB20-0AA0


3SU1050-1JB20-0AA0


3SU1051-1HB20-0AA0


3SU1050-1HF20-0AA0


3SU1050-1HQ20-0AA0


3SU1050-1HR20-0AA0

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Illustrations are approximate

Selection and ordering data

	Number of switching positions	Number of command points	Color of actuating element	Operating principle of the actuating element	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Toggle switches NEW										
 3SU1050-3EA10-0AA0	2	1	Black	Latching	5	**3SU1050-3EA10-0AA0**		1	1 unit	41J
				Momentary contact Reset from above	5	**3SU1050-3EC10-0AA0**		1	1 unit	41J

Selection and ordering data

	Version of actuator	Operating principle	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches									
	2 switch positions, can be illuminated								
 3SU1052-2BC20-0AA0	Selector, short black actuator	Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	Black	3	**3SU1052-2BC10-0AA0**		1	1 unit	41J
			Red	5	**3SU1052-2BC20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1052-2BC30-0AA0**		1	1 unit	41J
			Green	5	**3SU1052-2BC40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1052-2BC50-0AA0**		1	1 unit	41J
			White	3	**3SU1052-2BC60-0AA0**		1	1 unit	41J
 3SU1052-2BF40-0AA0		Latching, 90° (10:30/1:30 o'clock) 	Amber	5	**3SU1052-2BF00-0AA0**		1	1 unit	41J
			Black	▶	**3SU1052-2BF10-0AA0**		1	1 unit	41J
			Red	3	**3SU1052-2BF20-0AA0**		1	1 unit	41J
			Green	3	**3SU1052-2BF40-0AA0**		1	1 unit	41J
			White	▶	**3SU1052-2BF60-0AA0**		1	1 unit	41J
 3SU1052-2CF60-0AA0	Selector, long black actuator	Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	Black	5	**3SU1052-2CC10-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1052-2CC30-0AA0**		1	1 unit	41J
			Green	5	**3SU1052-2CC40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1052-2CC50-0AA0**		1	1 unit	41J
			White	5	**3SU1052-2CC60-0AA0**		1	1 unit	41J
		Latching, 90° (10:30/1:30 o'clock)	Black	5	**3SU1052-2CF10-0AA0**		1	1 unit	41J
			Red	5	**3SU1052-2CF20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1052-2CF30-0AA0**		1	1 unit	41J
			Green	5	**3SU1052-2CF40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1052-2CF50-0AA0**		1	1 unit	41J
			White	5	**3SU1052-2CF60-0AA0**		1	1 unit	41J

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Illustrations are approximate

Selector switches

Version of actuator	Operating principle	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches								
3 switch positions, can be illuminated								
Selector, short black actuator	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right + left 	Amber	5	**3SU1052-2BM00-0AA0**		1	1 unit	41J
		Black ▶		**3SU1052-2BM10-0AA0**		1	1 unit	41J
		Red	5	**3SU1052-2BM20-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1052-2BM30-0AA0**		1	1 unit	41J
		Green	3	**3SU1052-2BM40-0AA0**		1	1 unit	41J
		Blue	5	**3SU1052-2BM50-0AA0**		1	1 unit	41J
		White ▶		**3SU1052-2BM60-0AA0**		1	1 unit	41J
	Latching, 2x45° (10:30/12/1:30 o'clock) 	Black ▶		**3SU1052-2BL10-0AA0**		1	1 unit	41J
		Red	5	**3SU1052-2BL20-0AA0**		1	1 unit	41J
		Yellow	5	**3SU1052-2BL30-0AA0**		1	1 unit	41J
		Green	3	**3SU1052-2BL40-0AA0**		1	1 unit	41J
		White ▶		**3SU1052-2BL60-0AA0**		1	1 unit	41J
Selector, short black actuator	Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to right 	Black	5	**3SU1052-2BP10-0AA0**		1	1 unit	41J
		White	5	**3SU1052-2BP60-0AA0**		1	1 unit	41J
	Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to left 	Black	3	**3SU1052-2BN10-0AA0**		1	1 unit	41J
		Red	5	**3SU1052-2BN20-0AA0**		1	1 unit	41J
		Green	5	**3SU1052-2BN40-0AA0**		1	1 unit	41J
		White	3	**3SU1052-2BN60-0AA0**		1	1 unit	41J
Selector, long black actuator	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right + left 	Black	3	**3SU1052-2CM10-0AA0**		1	1 unit	41J
		Red	5	**3SU1052-2CM20-0AA0**		1	1 unit	41J
		Green	5	**3SU1052-2CM40-0AA0**		1	1 unit	41J
		White	3	**3SU1052-2CM60-0AA0**		1	1 unit	41J
	Latching, 2x45° (10:30/12/1:30 o'clock) 	Black	5	**3SU1052-2CL10-0AA0**		1	1 unit	41J
		Red	5	**3SU1052-2CL20-0AA0**		1	1 unit	41J
		Green	5	**3SU1052-2CL40-0AA0**		1	1 unit	41J
		White	5	**3SU1052-2CL60-0AA0**		1	1 unit	41J
	Momentary contact/ latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to right 	Black	5	**3SU1052-2CP10-0AA0**		1	1 unit	41J
		Red	5	**3SU1052-2CP20-0AA0**		1	1 unit	41J
		White	5	**3SU1052-2CP60-0AA0**		1	1 unit	41J
	Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to left 	Black	5	**3SU1052-2CN10-0AA0**		1	1 unit	41J
		Red	5	**3SU1052-2CN20-0AA0**		1	1 unit	41J
		White	5	**3SU1052-2CN60-0AA0**		1	1 unit	41J
4 switch positions NEW								
Rotary knob	Latching, 4x90° (0-position: 3/6/9/12 o'clock) 	White	3	**3SU1050-2AS60-0AA0**		1	1 unit	41J


3SU1052-2BM50-0AA0


3SU1052-2BL30-0AA0


3SU1052-2BN20-0AA0


3SU1052-2CL40-0AA0


3SU1050-2AS60-0AA0

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Illustrations are approximate

Selection and ordering data

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches									
2 switch positions									
 3SU1050-4BC01-0AA0 Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	RONIS, SB30	O	2	3	**3SU1050-4BC01-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	5	**3SU1050-4CC01-0AA0**		1	1 unit	41J
	O.M.R. 73037, red	O	2	5	**3SU1050-4FC01-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	5	**3SU1050-4GC01-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	5	**3SU1050-4HC01-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	O	2	5	**3SU1050-4JC01-0AA0**		1	1 unit	41J
	CES, SSG10	O	2	3	**3SU1050-5BC01-0AA0**		1	1 unit	41J
	CES, LSG1	O	2	5	**3SU1050-5HC01-0AA0**		1	1 unit	41J
	CES, VL5	O	2	5	**3SU1050-5KC01-0AA0**		1	1 unit	41J
	CES, STGH10	O	2	5	**3SU1050-5LC01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	5	**3SU1050-5PC01-0AA0**		1	1 unit	41J
	IKON, 360012K1	O	2	5	**3SU1050-5XC01-0AA0**		1	1 unit	41J
 3SU1050-4BF01-0AA0 Latching, 90° (10:30/1:30 o'clock) 	RONIS, SB30	O	2	3	**3SU1050-4BF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1050-4BF11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-4BF21-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	5	**3SU1050-4CF01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1050-4CF11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-4CF21-0AA0**		1	1 unit	41J
	RONIS, 421	O+I	2	5	**3SU1050-4DF11-0AA0**		1	1 unit	41J
 3SU1050-4GF11-0AA0	O.M.R. 73037, red	O	2	5	**3SU1050-4FF01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1050-4FF11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-4FF21-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	5	**3SU1050-4GF01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1050-4GF11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-4GF21-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	5	**3SU1050-4HF01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1050-4HF11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-4HF21-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	O	2	5	**3SU1050-4JF01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1050-4JF11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-4JF21-0AA0**		1	1 unit	41J
 3SU1050-5BF01-0AA0	CES, SSG10	O	2	3	**3SU1050-5BF01-0AA0**		1	1 unit	41J
		O+I	2	3	**3SU1050-5BF11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-5BF21-0AA0**		1	1 unit	41J
	CES, LSG1	O	2	5	**3SU1050-5HF01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1050-5HF11-0AA0**		1	1 unit	41J
	CES, VL5	O	2	5	**3SU1050-5KF01-0AA0**		1	1 unit	41J
	CES, STGH10	O+I	2	5	**3SU1050-5LF11-0AA0**		1	1 unit	41J
 3SU1050-5PF01-0AA0	BKS, S1	O	2	5	**3SU1050-5PF01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1050-5PF11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-5PF21-0AA0**		1	1 unit	41J
	BKS, E1	O	0	5	**3SU1050-5QF01-0AA0**		1	1 unit	41J
		O+I	0	5	**3SU1050-5QF11-0AA0**		1	1 unit	41J
	BKS, E2	O	0	3	**3SU1050-5RF01-0AA0**		1	1 unit	41J
		O+I	0	5	**3SU1050-5RF11-0AA0**		1	1 unit	41J
	BKS, E7	O	0	5	**3SU1050-5SF01-0AA0**		1	1 unit	41J
		O+I	0	5	**3SU1050-5SF11-0AA0**		1	1 unit	41J
	BKS, E9	O	0	5	**3SU1050-5TF01-0AA0**		1	1 unit	41J
		O+I	0	5	**3SU1050-5TF11-0AA0**		1	1 unit	41J
	IKON, 360012K1	O	2	5	**3SU1050-5XF01-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1050-5XF11-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Key-operated switches

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Key-operated switches									
3 switch positions									
 3SU1050-4BM01-0AA0									
Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right 	RONIS, SB30	O	2	5	**3SU1050-4BM01-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	5	**3SU1050-4CM01-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	5	**3SU1050-4HM01-0AA0**		1	1 unit	41J
	CES, SSG10	O	2	5	**3SU1050-5BM01-0AA0**		1	1 unit	41J
	CES, STGH10	O	2	5	**3SU1050-5LM01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	5	**3SU1050-5PM01-0AA0**		1	1 unit	41J
	IKON, 360012K1	O	2	5	**3SU1050-5XM01-0AA0**		1	1 unit	41J
Latching, 2x45° (10:30/12/1:30 o'clock) 	RONIS, SB30	O	2	5	**3SU1050-4BL01-0AA0**		1	1 unit	41J
		I+O+II	2	3	**3SU1050-4BL11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-4BL21-0AA0**		1	1 unit	41J
		II	2	5	**3SU1050-4BL31-0AA0**		1	1 unit	41J
		I+II	2	5	**3SU1050-4BL41-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1050-4BL51-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	5	**3SU1050-4CL01-0AA0**		1	1 unit	41J
		I+O+II	2	5	**3SU1050-4CL11-0AA0**		1	1 unit	41J
	RONIS, 421		2	5	**3SU1050-4DL11-0AA0**		1	1 unit	41J
 3SU1050-4FL11-0AA0	O.M.R. 73037, red	I+O+II	2	5	**3SU1050-4FL11-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	5	**3SU1050-4GL01-0AA0**		1	1 unit	41J
		I+O+III	2	5	**3SU1050-4GL11-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	5	**3SU1050-4HL01-0AA0**		1	1 unit	41J
		I+O+II	2	5	**3SU1050-4HL11-0AA0**		1	1 unit	41J
 3SU1050-5BL01-0AA0	CES, SSG10	O	2	5	**3SU1050-5BL01-0AA0**		1	1 unit	41J
		I+O+II	2	3	**3SU1050-5BL11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-5BL21-0AA0**		1	1 unit	41J
		II	2	5	**3SU1050-5BL31-0AA0**		1	1 unit	41J
		I+II	2	5	**3SU1050-5BL41-0AA0**		1	1 unit	41J
	BKS, S1	O	2	5	**3SU1050-5PL01-0AA0**		1	1 unit	41J
		I+O+II	2	5	**3SU1050-5PL11-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-5PL21-0AA0**		1	1 unit	41J
		I+II	2	5	**3SU1050-5PL41-0AA0**		1	1 unit	41J
	IKON, 360012K1	O	2	5	**3SU1050-5XL01-0AA0**		1	1 unit	41J
		I+O+II	2	5	**3SU1050-5XL11-0AA0**		1	1 unit	41J
 3SU1050-4BP01-0AA0									
Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to the right 	RONIS, SB30	O	2	5	**3SU1050-4BP01-0AA0**		1	1 unit	41J
		O+II	2	X	**3SU1050-4BP61-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	II	2	5	**3SU1050-4HP31-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	II	2	5	**3SU1050-4JP31-0AA0**		1	1 unit	41J
	CES, SSG10	O	2	5	**3SU1050-5BP01-0AA0**		1	1 unit	41J
		II	2	5	**3SU1050-5BP31-0AA0**		1	1 unit	41J
		O+II	2	5	**3SU1050-5BP61-0AA0**		1	1 unit	41J
	BKS, S1	O	2	5	**3SU1050-5PP01-0AA0**		1	1 unit	41J
Latching/ momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left 	RONIS, SB30	O	2	5	**3SU1050-4BN01-0AA0**		1	1 unit	41J
		I	2	X	**3SU1050-4BN21-0AA0**		1	1 unit	41J
		O+IO+I	2	X	**3SU1050-4BN51-0AA0**		1	1 unit	41J
	CES, SSG10	O	2	5	**3SU1050-5BN01-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-5BN21-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1050-5BN51-0AA0**		1	1 unit	41J
	CES, STGH10	O+I	2	5	**3SU1050-5LN51-0AA0**		1	1 unit	41J
	BKS, S1	O	2	5	**3SU1050-5PN01-0AA0**		1	1 unit	41J
		I	2	5	**3SU1050-5PN21-0AA0**		1	1 unit	41J
		O+I	2	5	**3SU1050-5PN51-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Number of NO contacts (1 per direction)	Operating principle	Direction of actuation	SD	Screw terminals ⊕ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Coordinate switches NEW								
Without mechanical interlock, 2 switch positions								
2	Momentary contact	Horizontal	1	**3SU1050-7AC88-0AA0**		1	1 unit	41J
		Vertical	1	**3SU1050-7AD88-0AA0**		1	1 unit	41J
Without mechanical interlock, 4 switch positions								
4	Momentary contact	Horizontal / Vertical	1	**3SU1050-7AF88-0AA0**		1	1 unit	41J
With mechanical interlock, 2 switch positions								
2	Momentary contact	Horizontal	1	**3SU1050-7BC88-0AA0**		1	1 unit	41J
		Vertical	1	**3SU1050-7BD88-0AA0**		1	1 unit	41J
With mechanical interlock, 4 switch positions								
4	Momentary contact	Horizontal / Vertical	1	**3SU1050-7BF88-0AA0**		1	1 unit	41J

3SU1050-7AC88-1NA0

3SU1050-7BC88-1QA0

Selection and ordering data

Version of product	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Indicator lights							
With smooth lens	Amber	3	**3SU1051-6AA00-0AA0**		1	1 unit	41J
	Red	▶	**3SU1051-6AA20-0AA0**		1	1 unit	41J
	Yellow	▶	**3SU1051-6AA30-0AA0**		1	1 unit	41J
	Green	▶	**3SU1051-6AA40-0AA0**		1	1 unit	41J
	Blue	3	**3SU1051-6AA50-0AA0**		1	1 unit	41J
	White	▶	**3SU1051-6AA60-0AA0**		1	1 unit	41J
	Clear	3	**3SU1051-6AA70-0AA0**		1	1 unit	41J

3SU1051-6AA40-0AA0

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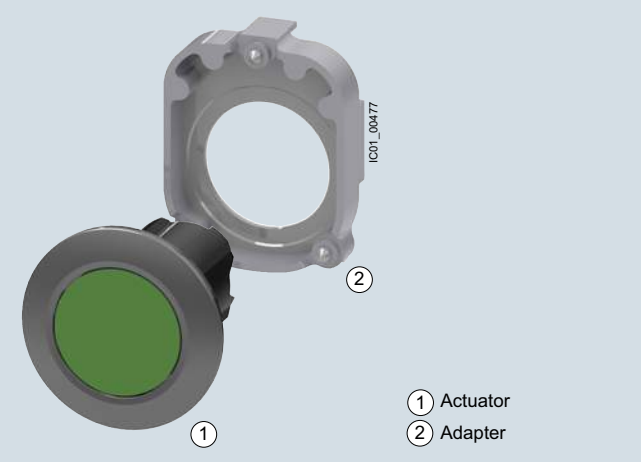
* You can order this quantity or a multiple thereof.
Illustrations are approximate

Pushbuttons

Overview



Actuators and indicators, flat, 30 mm, metal, matte, including adapter (adapter included in the scope of supply)

Selection and ordering data

Version	Operating principle	Unlatching method	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Pushbuttons									
 3SU1060-0JB50-0AA0									
Pushbuttons With flat button	Momentary contact	--	Black	3	**3SU1060-0JB10-0AA0**		1	1 unit	41J
			Red	3	**3SU1060-0JB20-0AA0**		1	1 unit	41J
			Yellow	3	**3SU1060-0JB30-0AA0**		1	1 unit	41J
			Green	3	**3SU1060-0JB40-0AA0**		1	1 unit	41J
			Blue	3	**3SU1060-0JB50-0AA0**		1	1 unit	41J
			White	3	**3SU1060-0JB60-0AA0**		1	1 unit	41J
 3SU1060-0JA20-0AA0									
	Latching	Push to unlatch	Black	5	**3SU1060-0JA10-0AA0**		1	1 unit	41J
			Red	5	**3SU1060-0JA20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1060-0JA30-0AA0**		1	1 unit	41J
			Green	5	**3SU1060-0JA40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1060-0JA50-0AA0**		1	1 unit	41J
			White	5	**3SU1060-0JA60-0AA0**		1	1 unit	41J
 3SU1061-0JB40-0AA0									
Illuminated pushbuttons With flat button	Momentary contact	--	Red	3	**3SU1061-0JB20-0AA0**		1	1 unit	41J
			Yellow	3	**3SU1061-0JB30-0AA0**		1	1 unit	41J
			Green	3	**3SU1061-0JB40-0AA0**		1	1 unit	41J
			Blue	3	**3SU1061-0JB50-0AA0**		1	1 unit	41J
			Clear	3	**3SU1061-0JB70-0AA0**		1	1 unit	41J
 3SU1061-0JA30-0AA0									
	Latching	Push to unlatch	Red	5	**3SU1061-0JA20-0AA0**		1	1 unit	41J
			Yellow	5	**3SU1061-0JA30-0AA0**		1	1 unit	41J
			Green	5	**3SU1061-0JA40-0AA0**		1	1 unit	41J
			Blue	5	**3SU1061-0JA50-0AA0**		1	1 unit	41J
			Clear	5	**3SU1061-0JA70-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Version	Operating principle	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches								
2 switch positions, can be illuminated								
Selector, short black actuator and front ring for flat mounting	Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	Black	5	**3SU1062-2DC10-0AA0**		1	1 unit	41J
		Red	5	**3SU1062-2DC20-0AA0**		1	1 unit	41J
		Green	5	**3SU1062-2DC40-0AA0**		1	1 unit	41J
		White	5	**3SU1062-2DC60-0AA0**		1	1 unit	41J
	Latching, 90° (10:30/1:30 o'clock) 	Black	3	**3SU1062-2DF10-0AA0**		1	1 unit	41J
		Red	5	**3SU1062-2DF20-0AA0**		1	1 unit	41J
		Green	5	**3SU1062-2DF40-0AA0**		1	1 unit	41J
		Blue	X	**3SU1062-2DF50-0AA0**		1	1 unit	41J
		White	3	**3SU1062-2DF60-0AA0**		1	1 unit	41J
Selector, long black actuator and front ring for flat mounting	Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	Black	5	**3SU1062-2EC10-0AA0**		1	1 unit	41J
		Red	5	**3SU1062-2EC20-0AA0**		1	1 unit	41J
		Green	5	**3SU1062-2EC40-0AA0**		1	1 unit	41J
		White	5	**3SU1062-2EC60-0AA0**		1	1 unit	41J
	Latching, 90° (10:30/1:30 o'clock) 	Black	3	**3SU1062-2EF10-0AA0**		1	1 unit	41J
		Red	5	**3SU1062-2EF20-0AA0**		1	1 unit	41J
		Green	5	**3SU1062-2EF40-0AA0**		1	1 unit	41J
		White	3	**3SU1062-2EF60-0AA0**		1	1 unit	41J
3 switch positions (I+O+II), can be illuminated								
Selector, short black actuator and front ring for flat mounting	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right + left 	Black	3	**3SU1062-2DM10-0AA0**		1	1 unit	41J
		Red	5	**3SU1062-2DM20-0AA0**		1	1 unit	41J
		Green	5	**3SU1062-2DM40-0AA0**		1	1 unit	41J
		White	3	**3SU1062-2DM60-0AA0**		1	1 unit	41J
	Latching, 2x45° (10:30/12/1:30 o'clock) 	Black	3	**3SU1062-2DL10-0AA0**		1	1 unit	41J
		Red	5	**3SU1062-2DL20-0AA0**		1	1 unit	41J
		Yellow	X	**3SU1062-2DL30-0AA0**		1	1 unit	41J
		Green	5	**3SU1062-2DL40-0AA0**		1	1 unit	41J
		White	3	**3SU1062-2DL60-0AA0**		1	1 unit	41J
Selector, long black actuator and front ring for flat mounting	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right + left 	Black	3	**3SU1062-2EM10-0AA0**		1	1 unit	41J
		Red	5	**3SU1062-2EM20-0AA0**		1	1 unit	41J
		Green	5	**3SU1062-2EM40-0AA0**		1	1 unit	41J
		White	3	**3SU1062-2EM60-0AA0**		1	1 unit	41J
	Latching, 2x45° (10:30/12/1:30 o'clock) 	Black	3	**3SU1062-2EL10-0AA0**		1	1 unit	41J
		Red	5	**3SU1062-2EL20-0AA0**		1	1 unit	41J
		Green	5	**3SU1062-2EL40-0AA0**		1	1 unit	41J
		White	3	**3SU1062-2EL60-0AA0**		1	1 unit	41J


3SU1062-2DC40-0AA0


3SU1062-2EC20-0AA0


3SU1062-2DL60-0AA0


3SU1062-2EL20-0AA0

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Selection and ordering data

Make of lock	Operating principle	Switch position for key removal	Number of keys	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches									
2 switch positions									
RONIS, SB30 and front ring for flat mounting	Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	O	2	5	**3SU1060-4LC01-0AA0**		1	1 unit	41J
 3SU1060-4LF11-0AA0	Latching, 90° (10:30/1:30 o'clock) 	O+I I	2 2	3 3	**3SU1060-4LF11-0AA0** **3SU1060-4LF21-0AA0**		1 1	1 unit 1 unit	41J 41J
3 switch positions									
RONIS, SB30 and front ring for flat mounting	Latching, 2x45° (10:30/12/1:30 o'clock) 	I+O+II	2	5	**3SU1060-4LL11-0AA0**		1	1 unit	41J
 3SU1060-4LL11-0AA0									

Selection and ordering data

Version	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Indicator lights							
 3SU1061-0JD40-0AA0	**With flat lens**						
	Red	3	**3SU1061-0JD20-0AA0**		1	1 unit	41J
	Yellow	3	**3SU1061-0JD30-0AA0**		1	1 unit	41J
	Green	3	**3SU1061-0JD40-0AA0**		1	1 unit	41J
	Blue	3	**3SU1061-0JD50-0AA0**		1	1 unit	41J
	Clear	3	**3SU1061-0JD70-0AA0**		1	1 unit	41J

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Illustrations are approximate

Options

Special locks for key-operated switches

The plastic and metal key-operated switches of type RONIS, BKS, CES and IKON can be optionally ordered with additional locks.

In this case **"–Z"**, the order code **"Y01"** and the required lock number must be added to the Article No. of the relevant key-operated switch for standard locking.

Order code	Y01
Standard delivery time	25 working days
Additional price per unit	On request
Ordering example	3SU1000–5BF01–0AA0-Z Y01 Z = SSG18

Ordering notes

- For all special locks, an additional price applies.
- The order code **"Y01"** must be quoted in accordance with the above table. Automated processing of the order with a defined delivery time can be guaranteed only for correctly submitted orders.
- For applications in which access security is important and several lock numbers are used, we recommend the use of BKS or CES key-operated switches.
- Special locks for VW (E1, E2, ...) will be delivered without keys, all others with 2 keys.
- With RONIS, the special locks SB31, 421 and 455 are possible.

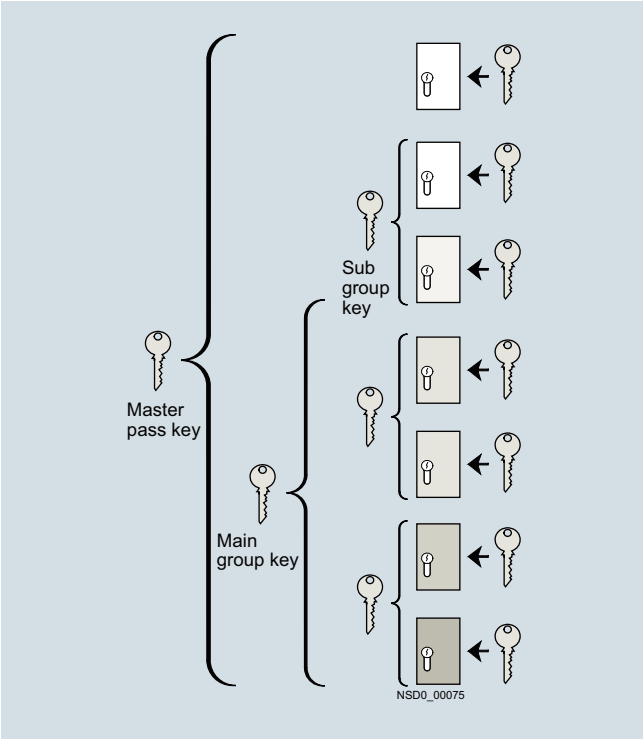
Master and master-pass key systems

The following key systems can be supplied with BKS, CES or IKON key-operated switches:

- Central lock systems
- Master key systems
- Central master key systems
- Master-pass key systems

When placing an order you must supplement the Article No. of the matching key-operated switches with **"-Z"** and quote the order code **"Y03"**.

Price and delivery time on request.



Example of master-pass key system

Options

Inscription of actuating and signaling elements

Actuating and signaling elements of plastic as well as metal can be optionally inscribed with a laser.

Example of laser inscription

The actuators of the pushbuttons, illuminated pushbuttons, twin pushbuttons, mushroom pushbuttons, illuminated mushroom pushbuttons, EMERGENCY STOP mushroom pushbuttons (without lock), the lenses of the indicator lights, and the acoustic signaling devices can all be inscribed.

Version

Text inscriptions have centered alignment and a font height of 4 mm as standard.

The typeface used is Arial. Other letter heights and typefaces are possible, but must be specified when ordering.

The maximum possible number of characters per line is:

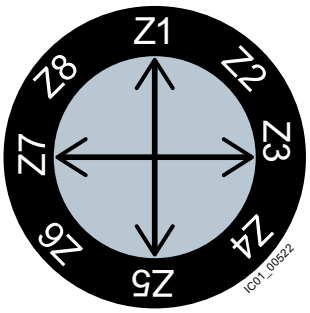
- 10 characters for one line of text
- 8 characters for 2 lines of text
- 6 characters for 3 lines of text, but 10 characters in the middle line.

Note:

Selected pushbuttons and twin pushbuttons can be supplied as standard with inscribed letters or symbols.

Selector switches, key-operated switches and toggle switches can be inscribed on the front ring only if they are made of plastic (only one text line and the supplement Y19).

Assignment of the positions on the actuator



Ordering notes

To order, the inscribed actuating and signaling elements can be selected via the SIRIUS ACT Configurator. An electronic order form is then generated.

For configurator, see
- www.siemens.com/sirius-act/configurator
- Electronic Catalog CA 01 on DVD or
- Industry Mall: www.siemens.com/industrymall

When ordering, add **–Z** and an order code to the Article No. of the actuator or the indicator light:

- **Y10:** Text line in upper/lower case, always upper case at beginning of line (e.g. Lift / Off)
- **Y11:** Text in upper case (e.g. LIFT)
- **Y12:** Text in lower case (e.g. lift / off / lower):
- **Y15:** Text in upper/lower case, all words begin with upper case letters (e.g. On / Off)
- **Y13:** Symbol with number according to ISO 7000 or IEC 60417
- **Y19:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT Configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription in plain text without spaces, in addition to the Article No. and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language. In the case of symbols with number, quote the corresponding standard (see ordering example 1).

In the case of multi-line inscriptions, the text must be assigned to the respective line, e.g. Z1=Lift, Z2=Lower. For long words you can also specify the end-of-line division.

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering examples 2 and 3).

The SIRIUS ACT Configurator must be used to select special inscriptions and symbols (order code Y19). In this case a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly using the CIN and the SIRIUS ACT Configurator (Mall shopping cart) or via the standard ordering channels.

Ordering example 1

A round pushbutton with the inscription Reset is required:

3SU1030–0AB20–0AA0-Z
Y10
Z1=Reset (English)

Ordering example 2

A square pushbutton inscribed with
symbol No. 5389 according to IEC 60417 is required:

3SU1030–0AB20–0AA0-Z
Y13
Z=5389 IEC

Ordering example 3

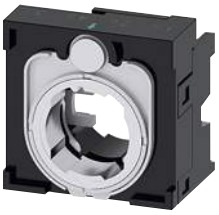
A selector switch with 2 switch positions and multi-line inscription on the front ring is required:

3SU1002-2BF10-0AA0-Z
Z8=0
Z2=I

Overview

Holders made of plastic can only be attached to actuators and indicators made of plastic (3SU100) or plastic with metal front ring (3SU103).
Metal holders can be attached to all versions of actuators and indicators. Metal holders are automatically grounded by their fastening screw, but a grounding stud can also be fitted.

Selection and ordering data

	Version	Holder material	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Holders without module								
 3SU1500-0AA10-0AA0	**3x without module**	Plastic	►	**3SU1500-0AA10-0AA0**		1	1 unit	41J
 3SU1500-0BA10-0AA0	**4x without module** For selector switch with 4 switch positions and for coordinate switches	Plastic	►	**3SU1500-0BA10-0AA0**		1	1 unit	41J

	Version	Holder material	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Holders without module								
 3SU1550-0AA10-0AA0	**3x without module**	Metal	►	**3SU1550-0AA10-0AA0**		1	1 unit	41J
 3SU1550-0BA10-0AA0	**4x without module** For selector switch with 4 switch positions and for coordinate switches	Metal	►	**3SU1550-0BA10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Holders with module

Selection and ordering data

Number of Contact modules	LED modules	NO contacts	NC contacts	Color of light source	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Holders with module										
3x with module, plastic										
1	0	1	0	--	3	**3SU1500-1AA10-1BA0**		1	1 unit	41J
		0	1	⊖	3	**3SU1500-1AA10-1CA0**		1	1 unit	41J
2	0	2	0	--	3	**3SU1500-1AA10-1NA0**		1	1 unit	41J
2	0	0	2	⊖	X	**3SU1500-1AA10-1PA0**		1	1 unit	41J


3SU1500-1AA10-1BA0

3x with contact and LED module[1] (6 ... 24 V AC/DC)										
1	1	1	0	Amber	3	**3SU1501-1AG00-1BA0**		1	1 unit	41J
				Red	3	**3SU1501-1AG20-1BA0**		1	1 unit	41J
				Yellow	3	**3SU1501-1AG30-1BA0**		1	1 unit	41J
				Green	3	**3SU1501-1AG40-1BA0**		1	1 unit	41J
				Blue	3	**3SU1501-1AG50-1BA0**		1	1 unit	41J
				White	3	**3SU1501-1AG60-1BA0**		1	1 unit	41J
		0	1	Amber ⊖	3	**3SU1501-1AG00-1CA0**		1	1 unit	41J
				Red ⊖	3	**3SU1501-1AG20-1CA0**		1	1 unit	41J
				Yellow ⊖	3	**3SU1501-1AG30-1CA0**		1	1 unit	41J
				Green ⊖	3	**3SU1501-1AG40-1CA0**		1	1 unit	41J
				Blue ⊖	3	**3SU1501-1AG50-1CA0**		1	1 unit	41J
				White ⊖	3	**3SU1501-1AG60-1CA0**		1	1 unit	41J
2	1	2	0	Amber ⊖	3	**3SU1501-1AG00-1NA0**		1	1 unit	41J
				Red ⊖	3	**3SU1501-1AG20-1NA0**		1	1 unit	41J
				Yellow ⊖	3	**3SU1501-1AG30-1NA0**		1	1 unit	41J
				Green ⊖	3	**3SU1501-1AG40-1NA0**		1	1 unit	41J
				Blue ⊖	3	**3SU1501-1AG50-1NA0**		1	1 unit	41J
				White ⊖	3	**3SU1501-1AG60-1NA0**		1	1 unit	41J


3SU1501-1AG20-1CA0

3SU1501-1AG20-1LA0

[1] Only for use with SIRIUS commanding and signaling devices.

Number of Contact modules	NO contacts	NC contacts	SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Holders with module								
3x with module, metal								
1	1	0	3	**3SU1550-1AA10-1BA0**		1	1 unit	41J
	0	1	⊖ 3	**3SU1550-1AA10-1CA0**		1	1 unit	41J
2	2	0	3	**3SU1550-1AA10-1NA0**		1	1 unit	41J
	0	2	⊖ X	**3SU1550-1AA10-1PA0**		1	1 unit	41J


3SU1550-1AA10-1BA0

⊖ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System;
see page 11/1 onwards.
Certificate:

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Contact modules and LED modules

The contact modules are fitted with slow-action contacts (NO contacts or NC contacts). These ensure a high switching reliability even with small voltages and currents, such as 5 V/1 mA. They are suitable for use in electronic systems as well as conventional controls. The contact pieces of the NC contacts are positively driven.

Only LED modules with permanently integrated LEDs are available for illumination.

Contact modules and LED modules bear terminal designations acc. to EN 50013

Mounting the modules

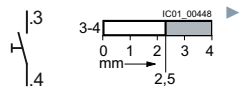
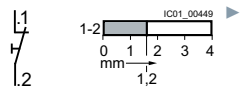
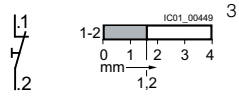
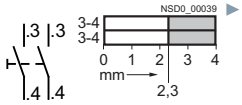
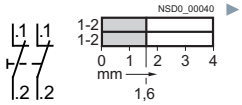
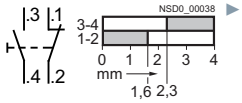
With SIRIUS ACT, the modules are mounted on the holder without any further accessories. Holders in plastic or metal versions are available for mounting three modules.

Connection methods

The modules are available with:

- Screw terminals
- Spring-type terminals or
- Solder pin connection (0.8 mm × 0.8 mm solder pins) for assembly on printed circuit boards

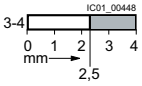
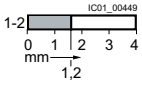
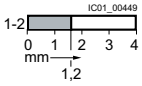
Selection and ordering data

Contact version	Number of NO contacts	Number of NC contacts			SD d	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact modules for front plate mounting										
Silver alloy	1	0				**3SU1400-1AA10-1BA0**		1	1 unit	41J
 3SU1400-1AA10-1BA0	0	1	⊖			**3SU1400-1AA10-1CA0**		1	1 unit	41J
	0	1 with installation monitoring[1]	⊖		3	**3SU1400-1AA10-1HA0**		1	1 unit	41J
 3SU1400-1AA10-1HA0	2	0	NEW			**3SU1400-1AA10-1DA0**		1	1 unit	41J
	0	2	NEW ⊖			**3SU1400-1AA10-1EA0**		1	1 unit	41J
	1	1	NEW ⊖			**3SU1400-1AA10-1FA0**		1	1 unit	41J
 3SU1400-1AA10-1FA0										

[1] The contact module has 1 NO internal contact + 1 NC internal contact. The NO contact is connected in series with the NC contact and brought out at terminal 1-2. When the module is snapped onto the holder, the NO contact closes. It opens when the module is detached from the holder again (the NC contact remains closed). The NC contact opens when the EMERGENCY STOP device is actuated (the NO contact remains closed). The contact is closed only when both the NC and NO contacts are closed. Unsuitable for mounting in 3SU18 enclosure.

⊖ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System; see page 11/1 onwards.
Certificate:

Contact modules

	Contact version	Number of NO contacts	Number of NC contacts			SD d	Spring-type terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact modules for front plate mounting											
	Silver alloy	1	0		 	▶	**3SU1400-1AA10-3BA0**		1	1 unit	41J
		0	1	⊖	 	▶	**3SU1400-1AA10-3CA0**		1	1 unit	41J
3SU1400-1AA10-3BA0											
		0	1 with installation monitoring[1]	⊖	 	5	**3SU1400-1AA10-3HA0**		1	1 unit	41J
3SU1400-1AA10-3HA0											

[1] The contact module has 1 NO internal contact + 1 NC internal contact. The NO contact is connected in series with the NC contact and brought out at terminal 1-2. When the module is snapped onto the holder, the NO contact closes. It opens when the module is detached from the holder again (the NC contact remains closed). The NC contact opens when the EMERGENCY STOP device is actuated (the NO contact remains closed). The contact is closed only when both the NC and NO contacts are closed. Unsuitable for mounting in 3SU18 enclosure.

⊖ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System; see page 11/1 onwards.
Certificate:

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

Operational voltage at AC	Operational voltage at DC	Color	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
V	V		d	Article No.			
LED modules[1] for front plate mounting							
24	24	Amber	▶	**3SU1401-1BB00-1AA0**	1	1 unit	41J
		Red	▶	**3SU1401-1BB20-1AA0**	1	1 unit	41J
		Yellow	▶	**3SU1401-1BB30-1AA0**	1	1 unit	41J
		Green	▶	**3SU1401-1BB40-1AA0**	1	1 unit	41J
		Blue	3	**3SU1401-1BB50-1AA0**	1	1 unit	41J
		White	▶	**3SU1401-1BB60-1AA0**	1	1 unit	41J
110	--	Amber	5	**3SU1401-1BC00-1AA0**	1	1 unit	41J
		Red	▶	**3SU1401-1BC20-1AA0**	1	1 unit	41J
		Yellow	3	**3SU1401-1BC30-1AA0**	1	1 unit	41J
		Green	▶	**3SU1401-1BC40-1AA0**	1	1 unit	41J
		Blue	3	**3SU1401-1BC50-1AA0**	1	1 unit	41J
		White	▶	**3SU1401-1BC60-1AA0**	1	1 unit	41J
230	--	Amber	5	**3SU1401-1BF00-1AA0**	1	1 unit	41J
		Red	▶	**3SU1401-1BF20-1AA0**	1	1 unit	41J
		Yellow	3	**3SU1401-1BF30-1AA0**	1	1 unit	41J
		Green	▶	**3SU1401-1BF40-1AA0**	1	1 unit	41J
		Blue	3	**3SU1401-1BF50-1AA0**	1	1 unit	41J
		White	▶	**3SU1401-1BF60-1AA0**	1	1 unit	41J
				Spring-type terminals			
24	24	Amber	3	**3SU1401-1BB00-3AA0**	1	1 unit	41J
		Red	3	**3SU1401-1BB20-3AA0**	1	1 unit	41J
		Yellow	3	**3SU1401-1BB30-3AA0**	1	1 unit	41J
		Green	3	**3SU1401-1BB40-3AA0**	1	1 unit	41J
		Blue	3	**3SU1401-1BB50-3AA0**	1	1 unit	41J
		White	3	**3SU1401-1BB60-3AA0**	1	1 unit	41J
110	--	Amber	5	**3SU1401-1BC00-3AA0**	1	1 unit	41J
		Red	5	**3SU1401-1BC20-3AA0**	1	1 unit	41J
		Yellow	5	**3SU1401-1BC30-3AA0**	1	1 unit	41J
		Green	5	**3SU1401-1BC40-3AA0**	1	1 unit	41J
		Blue	5	**3SU1401-1BC50-3AA0**	1	1 unit	41J
		White	5	**3SU1401-1BC60-3AA0**	1	1 unit	41J
230	--	Amber	5	**3SU1401-1BF00-3AA0**	1	1 unit	41J
		Red	5	**3SU1401-1BF20-3AA0**	1	1 unit	41J
		Yellow	5	**3SU1401-1BF30-3AA0**	1	1 unit	41J
		Green	5	**3SU1401-1BF40-3AA0**	1	1 unit	41J
		Blue	5	**3SU1401-1BF50-3AA0**	1	1 unit	41J
		White	5	**3SU1401-1BF60-3AA0**	1	1 unit	41J

3SU1401-1BB30-1AA0

3SU1401-1BB30-3AA0

[1] Only for use with SIRIUS commanding and signaling devices.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

LED modules

Operational voltage at AC	Operational voltage at DC	Color	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
V	V		d	Article No. / Price per PU			
LED modules[1] for front plate mounting							
6 … 24	6 … 24	Amber	▶	**3SU1401-1BG00-1AA0**	1	1 unit	41J
		Red	3	**3SU1401-1BG20-1AA0**	1	1 unit	41J
		Yellow	5	**3SU1401-1BG30-1AA0**	1	1 unit	41J
		Green	3	**3SU1401-1BG40-1AA0**	1	1 unit	41J
		Blue	5	**3SU1401-1BG50-1AA0**	1	1 unit	41J
		White	3	**3SU1401-1BG60-1AA0**	1	1 unit	41J
24 … 240	24 … 240	Amber	5	**3SU1401-1BH00-1AA0**	1	1 unit	41J
		Red	3	**3SU1401-1BH20-1AA0**	1	1 unit	41J
		Yellow	3	**3SU1401-1BH30-1AA0**	1	1 unit	41J
		Green	3	**3SU1401-1BH40-1AA0**	1	1 unit	41J
		Blue	5	**3SU1401-1BH50-1AA0**	1	1 unit	41J
		White	3	**3SU1401-1BH60-1AA0**	1	1 unit	41J
				Spring-type terminals			
6 … 24	6 … 24	Amber	3	**3SU1401-1BG00-3AA0**	1	1 unit	41J
		Red	5	**3SU1401-1BG20-3AA0**	1	1 unit	41J
		Yellow	5	**3SU1401-1BG30-3AA0**	1	1 unit	41J
		Green	5	**3SU1401-1BG40-3AA0**	1	1 unit	41J
		Blue	5	**3SU1401-1BG50-3AA0**	1	1 unit	41J
		White	5	**3SU1401-1BG60-3AA0**	1	1 unit	41J
24 … 240	24 … 240	Amber	5	**3SU1401-1BH00-3AA0**	1	1 unit	41J
		Red	5	**3SU1401-1BH20-3AA0**	1	1 unit	41J
		Yellow	5	**3SU1401-1BH30-3AA0**	1	1 unit	41J
		Green	5	**3SU1401-1BH40-3AA0**	1	1 unit	41J
		Blue	5	**3SU1401-1BH50-3AA0**	1	1 unit	41J
		White	5	**3SU1401-1BH60-3AA0**	1	1 unit	41J

3SU1401-1BG30-1AA0

3SU1401-1BG30-3AA0

[1] Only for use with SIRIUS commanding and signaling devices.

Operational voltage at AC	Operational voltage at DC	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
V	V	d	Article No. / Price per PU			
LED test modules[1] for front plate mounting NEW						
12 … 240	12 … 240	3	**3SU1400-1CK10-1AA0**	1	1 unit	41J


3SU1401-1CK10-1AA0

[1] Only for use with SIRIUS commanding and signaling devices.

Operational voltage at AC	Operational voltage at DC	Color	SD	Socket terminals (THT)	PU (UNIT, SET, M)	PS*	PG
V	V		d	Article No. / Price per PU			
LED modules[1] for mounting on printed-circuit boards							
--	5	Amber	5	**3SU1401-3BA00-5AA0**	1	1 unit	41J
		Red	5	**3SU1401-3BA20-5AA0**	1	1 unit	41J
		Yellow	5	**3SU1401-3BA30-5AA0**	1	1 unit	41J
		Green	3	**3SU1401-3BA40-5AA0**	1	1 unit	41J
		Blue	5	**3SU1401-3BA50-5AA0**	1	1 unit	41J
		White	3	**3SU1401-3BA60-5AA0**	1	1 unit	41J


3SU1401-3BA20-5AA0

[1] Only for use with SIRIUS commanding and signaling devices.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

	Operational voltage	Slave type	Number of digital inputs: Standard	Number of digital inputs: Safety-related	Number of digital outputs	SD	Screw terminals + Spring-type terminals: Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
						d					
AS-Interface modules for front plate mounting											
 3SU1400-1EA10-2AA0	30 V	2 F-DI	--	2	--	5	**3SU1400-1EA10-2AA0**		1	1 unit	41J
		2 F-DI + 1 LED	--	2	1	5	**3SU1401-1EE20-2AA0**		1	1 unit	41J
 3SU1400-1EC10-2AA0		2 F-DI + 1 DQ	--	2	1	5	**3SU1400-1EC10-2AA0**		1	1 unit	41J
							Insulation piercing method				
 3SU1400-1EA10-4AA0		2 F-DI	--	2	--	5	**3SU1400-1EA10-4AA0**		1	1 unit	41J
		2 F-DI + 1 LED	--	2	1	5	**3SU1401-1EE20-4AA0**		1	1 unit	41J
							Spring-type terminals + Insulation piercing method				
 3SU1400-1EC10-4AA0		2 F-DI + 1 DQ	--	2	1	5	**3SU1400-1EC10-4AA0**		1	1 unit	41J
							Spring-type terminals				
Electronic modules for IO-Link, front panel mounting *NEW*											
 3SU1400-1HL10-6AA0	24 V	Freely programmable (default 6DI/2DQ)	0-8	--	0-8	5	**3SU1400-1HL10-6AA0**		1	1 unit	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Electronic modules for ID key-operated switches

Technical specifications

Type		3SU1400-1GC10-1AA0	3SU1400-1GD10-1AA0
Communication/protocol			
Protocol is supported by IO-Link protocol		No	Yes
Product function		Group ID 24 V DC	IO-Link 24 V DC
IO-Link transfer rate		--	COM2 (38.4 kBaud)
Point-to-point cycle time between the master and the IO-Link device, minimum	ms	--	10
Type of power supply via IO-Link master		--	Yes
Data volume			
• of the address area of the inputs with cyclic transfer total	bytes	--	2
• of the address area of the outputs with cyclic transfer total	bytes	--	0
Number of NO contacts		5	
General data			
Impulse withstand voltage rated value	kV	0.8	
Rated insulation voltage	V	30	
Pollution degree		3	
Type of voltage			
• of operational voltage		DC	
• of input voltage		DC	
Operational voltage			
• at DC, rated value	V	24	
• Rated value	V	18 … 30	
Current consumed, maximum	mA	49	
Ambient temperature			
• During operation	°C	-25 … +70	
• During storage	°C	-40 … +80	
IP degree of protection		IP20	
Touch protection against electric shock		Finger-safe	
Connections			
Type of electrical connection		**Screw terminals**	
Connectable conductor cross-section for auxiliary contacts			
• Solid			
- With end sleeves	mm^2	1 x (0.2 ... 2.5), 2 x (0.2 ... 0.75)	
- Without end sleeves	mm^2	1 x (0.2 ... 2.5), 2 x (0.2 ... 0.75)	
• Finely stranded			
- With end sleeves	mm^2	1 x (0.2 ... 2.5), 2 x (0.25 .. 0.75)	
- Without end sleeves	mm^2	1 x (0.2 ... 2.5), 2 x (0.2 ... 0.75)	
AWG number as coded connectable conductor cross-section		26 … 14	
Tightening torque for screw terminals	Nm	0.35 .. 0.4	

Selection and ordering data

	Type of power supply via IO-Link master	Protocol is supported IO-Link protocol	Number of NO contacts	IO-Link transfer rate	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
					d	Article No. / Price per PU			
Electronic modules for ID key-operated switches									
 3SU1400-1GC10-1AA0	--	No	5	--	5	**3SU1400-1GC10-1AA0**	1	1 unit	41J
 3SU1400-1GD10-1AA0	Yes	Yes	5	COM2 (38.4 Kbaud)	5	**3SU1400-1GD10-1AA0**	1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Design

Enclosures with standard fittings

Enclosed SIRIUS ACT pushbuttons and indicator lights are used as hand-operated control devices for separately allocated control units and cabinets. The devices are suitable for use in any climate and all have IP66, IP67, IP69 (IP69K) degree of protection, including those with cable glands.

Standards

IEC 60947-5-1 or EN 60947-5-1

Versions

The enclosed pushbuttons and indicator lights are available with conventional controls as well as for connection to AS-Interface. The following versions are available:

- Empty enclosures with 1 to 6 command points (the installed components must be ordered separately; modules for floor mounting or 1-pole contact and LED modules can be used)
- Enclosures with standard fittings with 1 to 3 command points, e.g. EMERGENCY STOP enclosure with EMERGENCY STOP mushroom pushbutton
- Enclosures with customized fittings with 1 to 6 command points
- Enclosure for 4-position selector switches, coordinate switches, ID key-operated switches and sensor switches

Color of the enclosures

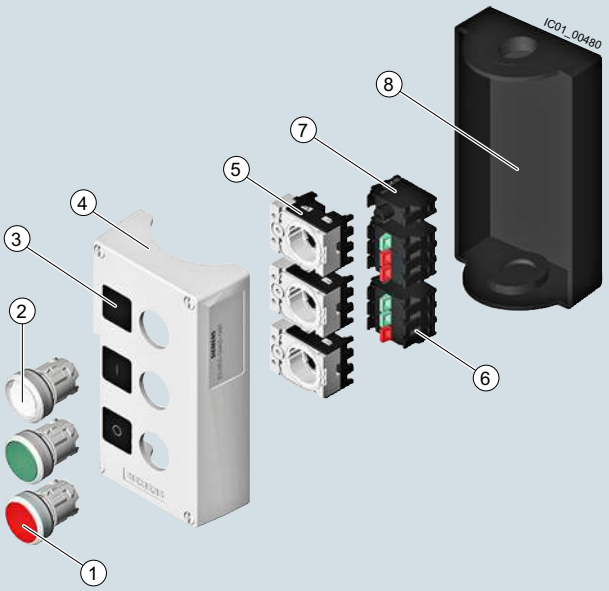
Top:

- Gray, RAL 7035
- Yellow, RAL 1004 for EMERGENCY-STOP

Base:

- Black, RAL 9005

Enclosures with standard fittings



Pushbuttons and indicator lights in the enclosure

Customized enclosures

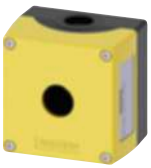
The fittings and labeling of the command point can be chosen using the Configurator on the Internet. The prices depend on the equipment selected;
see www.siemens.com/sirius-act/configurator.

Application

The enclosures are climate-proof (KTW 24) according to EN ISO 6270-2 and suitable for stationary use, and for use in marine applications.

Empty enclosures

Selection and ordering data

	Color of enclosure top	Number of command points	Version of enclosure	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Enclosures for surface mounting									
	Plastic								
 3SU1801-0AA00-0AA2	Yellow	1	Center command point	►	**3SU1801-0AA00-0AA2**		1	1 unit	41J
			With protective collar	►	**3SU1801-0AA00-0AC2**		1	1 unit	41J
			With recess for labelling plate	►	**3SU1801-0AA00-0AB2**		1	1 unit	41J
		2	With recess for labelling plate	►	**3SU1802-0AA00-0AB2**		1	1 unit	41J
 3SU1802-0AA00-0AB1	Gray	1	With recess for labelling plate	►	**3SU1801-0AA00-0AB1**		1	1 unit	41J
		2	With recess for labelling plate	►	**3SU1802-0AA00-0AB1**		1	1 unit	41J
		3	With recess for labelling plate	►	**3SU1803-0AA00-0AB1**		1	1 unit	41J
		4	With recess for labelling plate	►	**3SU1804-0AA00-0AB1**		1	1 unit	41J
		6	With recess for labelling plate	►	**3SU1806-0AA00-0AB1**		1	1 unit	41J
	Metal								
 3SU1851-0AA00-0AC2	Yellow	1	Center command point	►	**3SU1851-0AA00-0AA2**		1	1 unit	41J
			With protective collar	3	**3SU1851-0AA00-0AC2**		1	1 unit	41J
			With recess for labelling plate	►	**3SU1851-0AA00-0AB2**		1	1 unit	41J
 3SU1853-0AA00-0AB1	Gray	1	With recess for labelling plate	►	**3SU1851-0AA00-0AB1**		1	1 unit	41J
			With protective collar	5	**3SU1851-0AA00-0AC1**		1	1 unit	41J
		2	With recess for labelling plate	►	**3SU1852-0AA00-0AB1**		1	1 unit	41J
		3	With recess for labelling plate	►	**3SU1853-0AA00-0AB1**		1	1 unit	41J
 3SU1854-0AA00-0AB1		4	With recess for labelling plate	►	**3SU1854-0AA00-0AB1**		1	1 unit	41J
		6	With recess for labelling plate	►	**3SU1856-0AA00-0AB1**		1	1 unit	41J
Enclosure for 4-position selector switches, coordinate switches, ID key-operated switches and sensor switches									
	Plastic, front plate mounting								
 3SU1801-1AA00-1AA1	Gray	1	Center command point	3	**3SU1801-1AA00-1AA1**		1	1 unit	41J
	Metal, front plate mounting								
	Gray	1	Center command point	5	**3SU1851-1AA00-1AA1**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Pushbuttons and indicator lights in the enclosure (standard fittings) are available with:

- 1 to 3 command points
- Operational voltage up to 400 V
- Vertical mounting type
- Plastic enclosures are equipped with plastic actuators and indicators, metal enclosures are equipped with metal actuators and indicators
- Contact modules and LED modules for base mounting (are snapped into the enclosure base); screw terminals as standard; some versions also with spring-type terminals

Palm pushbuttons

Palm pushbuttons have a particularly large button surface. As a result, the button can be actuated quickly and easily with either the hand, arm or foot.

Selection and ordering data

Color of enclosure top	Number of command points	Enclosure version Command point indicator light fittings	Color of actuating element Marking	Number of NC contacts	Number of NO contacts	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosures with standard fittings											
Plastic											
Yellow	1	Center command point A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching function according to ISO 13850, rotate to unlatch	Red	1	0	►	**3SU1801-0NA00-2AA2**		1	1 unit	41J
		With protective collar									
		A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching function according to ISO 13850, rotate to unlatch	Red A = I	1	0	►	**3SU1801-0NA00-2AC2**		1	1 unit	41J
				2	0	►	**3SU1801-0NB00-2AC2**		1	1 unit	41J
	2	With recess for labeling plate A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching function according to ISO 13850 and rotate-to-unlatch mechanism B = Indicator light 24 V AC/DC	A = Red B = Red A = "Without inscription" B = "Blank"	2	1	3	**3SU1802-0NB00-2AB2**		1	1 unit	41J
	1	Center command point A= Palm pushbutton with positive latching according to ISO 13850, pull to unlatch	Red	1	1	3 NEW	**3SU1801-2NG00-2AA2**		1	1 unit	41J


3SU1801-0NA00-2AA2


3SU1801-0NA00-2AC2


3SU1801-2NG00-2AA2

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Pushbuttons and indicator lights in the enclosure

Color of enclosure top	Number of command points	Enclosure version Pushbutton and indicator light fittings	Color of actuating element Marking	Number of NC contacts	Number of NO contacts	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosures with standard fittings											
Plastic											
Gray	1	With recess for labeling plate A = Pushbutton	Green A = I	0	1	3	**3SU1801-0AB00-2AB1**		1	1 unit	41J
			Red A = O	1	0	5	**3SU1801-0AC00-2AB1**		1	1 unit	41J
			White A = I	0	1	5	**3SU1801-0AD00-2AB1**		1	1 unit	41J
			Black A = O	1	0	5	**3SU1801-0AE00-2AB1**		1	1 unit	41J
	2	With recess for labeling plate A = Pushbutton / B = Pushbutton	A = Red / B = Green A = O / B = I	1	1	3	**3SU1802-0AB00-2AB1**		1	1 unit	41J
			A = Black / B = Black A = O / B = I	1	1	5	**3SU1802-0AC00-2AB1**		1	1 unit	41J
	3	With recess for labeling plate A = Pushbutton / B = Pushbutton / C = Indicator light	A = Red / B = Green / C = Clear A = O / B = I / C = "Without inscription"	1	1	5	**3SU1803-0AB00-2AB1**		1	1 unit	41J
			A = Black / B = White / C = Clear A = O / B = I / C = "Without inscription"	1	1	5	**3SU1803-0AC00-2AB1**		1	1 unit	41J
		With recess for labeling plate A = Pushbutton / B = Pushbutton / C = Pushbutton	A = Red / B = Black / C = Black A = O / B = I / C = II	1	2	5	**3SU1803-0AD00-2AB1**		1	1 unit	41J
	1	Center command point A = Palm pushbutton, momentary-contact type	Black	0	1	3 NEW	**3SU1801-2GA00-2AA1**		1	1 unit	41J


3SU1801-0AB00-2AB1


3SU1802-0AB00-2AB1


3SU1803-0AB00-2AB1


3SU1801-2GA00-2AA1

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Color of enclosure top	Number of command points	Enclosure version Command point indicator light fittings	Color of actuating element Marking	Number of NC contacts	Number of NO contacts	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosures with standard fittings												
	Metal											
 3SU1851-0NA00-2AA2	Yellow	1	Center command point A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching function according to ISO 13850, rotate to unlatch	Red	1 2	0 0	3 5	**3SU1851-0NA00-2AA2** **3SU1851-0NB00-2AA2**		1 1	1 unit 1 unit	41J 41J
 3SU1851-0NA00-2AC2			With protective collar A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching function according to ISO 13850, rotate to unlatch	Red	1 2 2	0 0 1	▶ 3 5 NEW	**3SU1851-0NA00-2AC2** **3SU1851-0NB00-2AC2** **3SU1851-0ND00-2AC2**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
 3SU1801-2NG00-2AA2		1	Center command point A = Palm pushbutton with positive latching according to ISO 13850 Pull to unlatch	Red	1	1	3	**3SU18512NG002AA2**		1	1 unit	41J
 3SU1851-0AC00-2AB1	Gray	1	With recess for labeling plate A = Pushbutton	Green A = I Red A = O White A = I Black A = O	0 1 0 1	1 0 1 0	5 5 5 5	**3SU1851-0AB00-2AB1** **3SU1851-0AC00-2AB1** **3SU1851-0AD00-2AB1** **3SU1851-0AE00-2AB1**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
 3SU1852-0AB00-2AB1		2	With recess for labeling plate A = Pushbutton / B = Pushbutton	A = Red / B = Green A = O / B = I	1	1	5	**3SU1852-0AB00-2AB1**		1	1 unit	41J
				A = Black / B = White A = O / B = I	1	1	5	**3SU1852-0AC00-2AB1**		1	1 unit	41J
 3SU1853-0AB00-2AB1		3	With recess for labeling plate A = Pushbutton / B = Pushbutton / C = Indicator light	A = Red / B = Green / C = Clear A = O / B = I / C = "Without inscription"	1	1	5	**3SU1853-0AB00-2AB1**		1	1 unit	41J
			With recess for labeling plate A = Pushbutton / B = Pushbutton / C = Pushbutton	A = Red / B = Black / C = Black A = O / B = I / C = II	1	2	5	**3SU1853-0AD00-2AB1**		1	1 unit	41J
 3SU1801-2GA00-2AA1		1	Center command point A = Palm pushbutton, momentary-contact type	Black	0	1	3 NEW	**3SU1851-2GA00-2AA1**		1	1 unit	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Pushbuttons and indicator lights in the enclosure

Number of command points	Product function / EMERGENCY STOP function	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Customized enclosures[1]							
	Plastic						
1	No	10	**3SU1801-0AZ00 K0Y**		1	1 unit	41J
	Yes	10	**3SU1801-0NZ00 K0Y**		1	1 unit	41J
2	No	10	**3SU1802-0AZ00 K0Y**		1	1 unit	41J
	Yes	10	**3SU1802-0NZ00 K0Y**		1	1 unit	41J
3	No	10	**3SU1803-0AZ00 K0Y**		1	1 unit	41J
	Yes	10	**3SU1803-0NZ00 K0Y**		1	1 unit	41J
4	No	10	**3SU1804-0AZ00 K0Y**		1	1 unit	41J
	Yes	10	**3SU1804-0NZ00 K0Y**		1	1 unit	41J
6	No	10	**3SU1806-0AZ00 K0Y**		1	1 unit	41J
	Yes	10	**3SU1806-0NZ00 K0Y**		1	1 unit	41J
	Metal						
1	No	10	**3SU1851-0AZ00 K0Y**		1	1 unit	41J
	Yes	10	**3SU1851-0NZ00 K0Y**		1	1 unit	41J
2	No	10	**3SU1852-0AZ00 K0Y**		1	1 unit	41J
	Yes	10	**3SU1852-0NZ00 K0Y**		1	1 unit	41J
3	No	10	**3SU1853-0AZ00 K0Y**		1	1 unit	41J
	Yes	10	**3SU1853-0NZ00 K0Y**		1	1 unit	41J
4	No	10	**3SU1854-0AZ00 K0Y**		1	1 unit	41J
	Yes	10	**3SU1854-0NZ00 K0Y**		1	1 unit	41J
6	No	10	**3SU1856-0AZ00 K0Y**		1	1 unit	41J
	Yes	10	**3SU1856-0NZ00 K0Y**		1	1 unit	41J


3SU1801-0AZ00 K0Y


3SU1851-0AZ00 K0Y

[1] The fittings and labeling of the command points can be chosen using the Configurator on the Internet. The prices depend on the equipment selected; see www.siemens.com/sirius-act/configurator.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

With AS-Interface enclosures, distributed SIRIUS ACT pushbuttons and indicator lights can be quickly connected to the AS-Interface communication system. Using suitable components you can make your own enclosures with integrated AS-Interface or flexibly modify existing enclosures.

Enclosures for AS-Interface

Enclosures

Color of enclosure top:

- Gray, RAL 7035
- Yellow, RAL 1004 for EMERGENCY-STOP

Color of enclosure base:

- Black, RAL 9005

Equipping with AS-Interface slaves

The following slaves are available for connecting the command points:

- Slave in A/B technology with 4 digital inputs and 3 digital outputs (4 DI/3 DQ)
- Slave with 4 digital inputs and 4 digital outputs (4 DI/4 DQ)
- F slave with 2 safe inputs for EMERGENCY STOP mushroom pushbutton (2 F-DI), also with integrated red LED for the illuminated EMERGENCY STOP mushroom pushbutton.

The following table shows the maximum number of slaves possible:

Number of command points	Number of slaves for enclosures without EMERGENCY STOP	Number of slaves for enclosures with EMERGENCY STOP
1	--	1 x F slave 2 F-DI
2	1 x slave 4 DI/4 DQ or 4 DI/3 DQ	--
3	1 x slave 4 DI/4 DQ or 4 DI/3 DQ	1 x slave 4 DI/4 DQ or 4 DI/3 DQ + 1 x F slave
4	2 x slave 4 DI/4 DQ or 4 DI/3 DQ	2 x slave 4 DI/4 DQ or 4 DI/3 DQ + 1 x F slave
6	2 x slave 4 DI/4 DQ or 4 DI/3 DQ	2 x slave 4 DI/4 DQ or 4 DI/3 DQ + 1 x F slave

Connection

One set of links is required in each case to connect a slave to contact modules, LED modules, and the connection element.

The connection elements are mounted in the front-end cable glands and are used to connect the AS-Interface or bring unused inputs or outputs out of the enclosure.

For connection to AS-Interface, the following options are available:

- Terminal for shaped AS-Interface cable. The cable is contacted by the insulation piercing method and routed past the enclosure on the outside (possible only with plastic enclosure).
- Cable gland for the shaped AS-Interface cable or round cable. The cable is routed into the enclosure (preferable for metal enclosure).
- Connection using M12 plug.

If less than all inputs/outputs of the installed slaves in an enclosure are used for connecting the command devices, free inputs and outputs can be routed on request to the outside through an M12 socket on the top or bottom side of the enclosure.

To supply inputs with power, the S+ connection of the slave must be assigned to the socket, for outputs the OUT– connection must be assigned. Addressing is performed using the AS-Interface connections or the integrated addressing socket. An external power supply is not required.

Enclosures with standard fittings

Enclosures with standard fittings are available with:

- 1 to 3 command points
- Operational voltage through AS-Interface (approx. 30 V)
- Vertical mounting type
- Plastic enclosure with plastic actuators and indicators, metal enclosure with metal actuators and indicators

The enclosures without EMERGENCY STOP each have one module with 4I/3O; the enclosures with EMERGENCY STOP mushroom pushbuttons have a safe AS-Interface slave integrated in the enclosure. Enclosures with EMERGENCY STOP mushroom pushbuttons are fitted with two NC contact modules, which are wired to the safe F slave.

The contact modules and LED modules (with spring-type terminals) of the command devices and the AS-Interface slaves are mounted in the base of the enclosure and connected using cables. The plastic enclosures are designed with a connection for the AS-Interface flat cable (the cable is run along the outside of the enclosure). With metal enclosures, the AS-Interface cable is run inside the enclosure.

The enclosures with EMERGENCY STOP mushroom pushbuttons are also available with an M12 connector.

Customized enclosures (selection by configurator)

To order customized 3SU18 AS-Interface enclosures with pushbuttons and indicator lights, the configurator must be used to select the fittings. An electronic order form will be generated for the options.

For the configurator, see www.siemens.com/sirius-act/configurator.

Pushbuttons and indicator lights in the enclosure for AS-Interface

Selection and ordering data

Color of enclosure top	Number of command points	Enclosure version Command point fittings	Color, marking	SD d	Insulation piercing method Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosures with standard fittings									
Plastic									
Yellow	1	With recess for labeling plate A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching function according to ISO 13850, rotate to unlatch	Red	5	**3SU1801-0NB10-4HB2**		1	1 unit	41J
Gray	2	With recess for labeling plate A = Pushbutton / B = Pushbutton	A = Red / B = Green A = O / B = I	5	**3SU1802-0AB10-4HB1**		1	1 unit	41J
			A = Black / B = White A = O / B = I	5	**3SU1802-0AC10-4HB1**		1	1 unit	41J
	3	With recess for labeling plate A = Pushbutton / B = Pushbutton / C = Indicator light	A = Red / B = Green / C = Clear A = O / B = I / C = "Without inscription"		**3SU1803-0AB10-4HB1**		1	1 unit	41J


3SU1801-0NB10-4HB2


3SU1802-0AB10-4HB1


3SU1803-0AB10-4HB1

Number of command points	Product function / EMERGENCY STOP function	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Customized enclosures for AS-Interface[1)]							
Plastic							
1	No	10	**3SU1801-0NZ10 K0Y**		1	1 unit	41J
2	No	10	**3SU1802-0AZ10 K0Y**		1	1 unit	41J
	Yes	10	**3SU1802-0NZ10 K0Y**		1	1 unit	41J
3	No	10	**3SU1803-0AZ10 K0Y**		1	1 unit	41J
	Yes	10	**3SU1803-0NZ10 K0Y**		1	1 unit	41J
4	No	10	**3SU1804-0AZ10 K0Y**		1	1 unit	41J
	Yes	10	**3SU1804-0NZ10 K0Y**		1	1 unit	41J
6	No	10	**3SU1806-0AZ10 K0Y**		1	1 unit	41J
	Yes	10	**3SU1806-0NZ10 K0Y**		1	1 unit	41J
Metal							
1	No	10	**3SU1851-0NZ10 K0Y**		1	1 unit	41J
2	No	10	**3SU1852-0AZ10 K0Y**		1	1 unit	41J
	Yes	10	**3SU1852-0NZ10 K0Y**		1	1 unit	41J
3	No	10	**3SU1853-0AZ10K0Y**		1	1 unit	41J
	Yes	10	**3SU1853-0NZ10 K0Y**		1	1 unit	41J
4	No	10	**3SU1854-0AZ10 K0Y**		1	1 unit	41J
	Yes	10	**3SU1854-0NZ10 K0Y**		1	1 unit	41J
6	No	10	**3SU1856-0AZ10 K0Y**		1	1 unit	41J
	Yes	10	**3SU1856-0NZ10 K0Y**		1	1 unit	41J

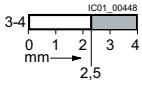
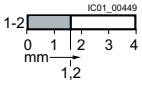
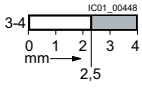
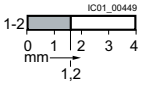

3SU1801-0NZ10 K0Y


3SU1851-0NZ10 K0Y

[1)] The fittings and labeling of the command points can be chosen using the Configurator on the Internet. The prices depend on the equipment selected; see www.siemens.com/sirius-act/configurator.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Selection and ordering data

	Contact version	Number of NO contacts	Number of NC contacts		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
					d	Article No. / Price per PU			
Contact modules for base mounting									
 3SU1400-2AA10-1BA0	Silver alloy	1	0	 		▶ **3SU1400-2AA10-1BA0**	1	1 unit	41J
		0	1	⊖  		▶ **3SU1400-2AA10-1CA0**	1	1 unit	41J
						Spring-type terminals			
 3SU1400-2AA10-3BA0	Silver alloy	1	0	 	3	**3SU1400-2AA10-3BA0**	1	1 unit	41J
		0	1	⊖  	3	**3SU1400-2AA10-3CA0**	1	1 unit	41J

⊖ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System;
see page 11/1 onwards.
Certificate:

Modules for enclosures

Operational voltage at AC	Operational voltage at DC	Color	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
V	V		d	Article No. / Price per PU			
LED modules[1] for base mounting							
24	24	Amber	3	**3SU1401-2BB00-1AA0**	1	1 unit	41J
		Red	3	**3SU1401-2BB20-1AA0**	1	1 unit	41J
		Yellow	3	**3SU1401-2BB30-1AA0**	1	1 unit	41J
		Green	3	**3SU1401-2BB40-1AA0**	1	1 unit	41J
		Blue	3	**3SU1401-2BB50-1AA0**	1	1 unit	41J
		White	3	**3SU1401-2BB60-1AA0**	1	1 unit	41J
110	--	Amber	5	**3SU1401-2BC00-1AA0**	1	1 unit	41J
		Red	5	**3SU1401-2BC20-1AA0**	1	1 unit	41J
		Yellow	5	**3SU1401-2BC30-1AA0**	1	1 unit	41J
		Green	5	**3SU1401-2BC40-1AA0**	1	1 unit	41J
		Blue	5	**3SU1401-2BC50-1AA0**	1	1 unit	41J
		White	5	**3SU1401-2BC60-1AA0**	1	1 unit	41J
230	--	Amber	5	**3SU1401-2BF00-1AA0**	1	1 unit	41J
		Red	5	**3SU1401-2BF20-1AA0**	1	1 unit	41J
		Yellow	5	**3SU1401-2BF30-1AA0**	1	1 unit	41J
		Green	5	**3SU1401-2BF40-1AA0**	1	1 unit	41J
		Blue	5	**3SU1401-2BF50-1AA0**	1	1 unit	41J
		White	5	**3SU1401-2BF60-1AA0**	1	1 unit	41J

3SU1401-2BB60-1AA0

[1] Only for use with SIRIUS commanding and signaling devices.

Operational voltage at AC	Operational voltage at DC	Color	SD	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
V	V		d	Article No. / Price per PU			
LED modules[1] for base mounting							
24	24	Amber	5	**3SU1401-2BB00-3AA0**	1	1 unit	41J
		Red	5	**3SU1401-2BB20-3AA0**	1	1 unit	41J
		Yellow	5	**3SU1401-2BB30-3AA0**	1	1 unit	41J
		Green	5	**3SU1401-2BB40-3AA0**	1	1 unit	41J
		Blue	5	**3SU1401-2BB50-3AA0**	1	1 unit	41J
		White	3	**3SU1401-2BB60-3AA0**	1	1 unit	41J
110	--	Amber	5	**3SU1401-2BC00-3AA0**	1	1 unit	41J
		Red	5	**3SU1401-2BC20-3AA0**	1	1 unit	41J
		Yellow	5	**3SU1401-2BC30-3AA0**	1	1 unit	41J
		Green	5	**3SU1401-2BC40-3AA0**	1	1 unit	41J
		Blue	5	**3SU1401-2BC50-3AA0**	1	1 unit	41J
		White	5	**3SU1401-2BC60-3AA0**	1	1 unit	41J
230	--	Amber	5	**3SU1401-2BF00-3AA0**	1	1 unit	41J
		Red	5	**3SU1401-2BF20-3AA0**	1	1 unit	41J
		Yellow	5	**3SU1401-2BF30-3AA0**	1	1 unit	41J
		Green	5	**3SU1401-2BF40-3AA0**	1	1 unit	41J
		Blue	5	**3SU1401-2BF50-3AA0**	1	1 unit	41J
		White	5	**3SU1401-2BF60-3AA0**	1	1 unit	41J

3SU1401-2BB20-3AA0

[1] Only for use with SIRIUS commanding and signaling devices.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Operational voltage at AC	Operational voltage at DC	Color	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	V	V		d	Article No. / Price per PU			
LED modules[1] for base mounting wide voltage range								
 3SU1401-2BG60-1AA0	6 … 24	6 … 24	Amber	3	**3SU1401-2BG00-1AA0**	1	1 unit	41J
			Red	5	**3SU1401-2BG20-1AA0**	1	1 unit	41J
			Yellow	5	**3SU1401-2BG30-1AA0**	1	1 unit	41J
			Green	5	**3SU1401-2BG40-1AA0**	1	1 unit	41J
			Blue	5	**3SU1401-2BG50-1AA0**	1	1 unit	41J
			White	5	**3SU1401-2BG60-1AA0**	1	1 unit	41J
	24 … 240	24 … 240	Amber	5	**3SU1401-2BH00-1AA0**	1	1 unit	41J
			Red	5	**3SU1401-2BH20-1AA0**	1	1 unit	41J
			Yellow	5	**3SU1401-2BH30-1AA0**	1	1 unit	41J
			Green	5	**3SU1401-2BH40-1AA0**	1	1 unit	41J
			Blue	5	**3SU1401-2BH50-1AA0**	1	1 unit	41J
			White	5	**3SU1401-2BH60-1AA0**	1	1 unit	41J
					Spring-type terminals			
 3SU1401-2BG20-3AA0	6 … 24	6 … 24	Amber	5	**3SU1401-2BG00-3AA0**	1	1 unit	41J
			Red	5	**3SU1401-2BG20-3AA0**	1	1 unit	41J
			Yellow	5	**3SU1401-2BG30-3AA0**	1	1 unit	41J
			Green	5	**3SU1401-2BG40-3AA0**	1	1 unit	41J
			Blue	5	**3SU1401-2BG50-3AA0**	1	1 unit	41J
			White	5	**3SU1401-2BG60-3AA0**	1	1 unit	41J
	24 … 240	24 … 240	Amber	5	**3SU1401-2BH00-3AA0**	1	1 unit	41J
			Red	5	**3SU1401-2BH20-3AA0**	1	1 unit	41J
			Yellow	5	**3SU1401-2BH30-3AA0**	1	1 unit	41J
			Green	5	**3SU1401-2BH40-3AA0**	1	1 unit	41J
			Blue	5	**3SU1401-2BH50-3AA0**	1	1 unit	41J
			White	5	**3SU1401-2BH60-3AA0**	1	1 unit	41J

[1] Only for use with SIRIUS commanding and signaling devices.

	Operational voltage at AC	Operational voltage at DC	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	V	V	d	Article No. / Price per PU			
LED test modules[1] for base mounting NEW							
 3SU1401-1CK10-1AA0	12 … 240	12 … 240	3	**3SU1400-2CK10-1AA0**	1	1 unit	41J

[1] Only for use with SIRIUS commanding and signaling devices.

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Modules for enclosures

	Operational voltage	Slave type	Number of digital inputs: Standard	Number of digital inputs: Safety-related	Number of digital outputs	SD	Spring-type terminals (push-in)	PU (UNIT, SET, M)	PS*	PG
						d	Article No. / Price per PU			
AS-Interface modules, base mounting										
 3SU1400-2EJ10-6AA0	30 V	4 DI/3 DQ AB	4	0	3	5	**3SU1400-2EJ10-6AA0**	1	1 unit	41J
		4 DI/4DQ	4	0	4	5	**3SU1400-2EK10-6AA0**	1	1 unit	41J
		2 F-DI	0	2	0	5	**3SU1400-2EA10-6AA0**	1	1 unit	41J
		2 F-DI + 1LED	0	2	1 for LED control	5	**3SU1401-2EE20-6AA0**	1	1 unit	41J
Electronic modules for IO-Link, base mounting										
 3SU1400-2HL10-6AA0	24 V	Freely programmable (default 6DI/2DQ)	0-8	0	0-8	5	**3SU1400-2HL10-6AA0**	1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Equipment

The two-hand operation consoles are pre-equipped with command devices. In the case of plastic enclosures the command points are equipped as standard with actuators and indicators made of plastic and in the case of metal enclosures they are equipped with actuators and indicators made of metal.

The standard equipment comprises:

- 2 black mushroom pushbuttons, diameter 40 mm, 1 NO + 1 NC
- 1 red EMERGENCY STOP mushroom pushbutton according to ISO 13850, diameter 40 mm, with positive latching, 2 NC

The plastic version can be retrofitted with up to 8 customized command points. The surface of the console has premachined breaking points for this purpose.

Application

The two-hand operation consoles are required for use with machines and systems that have hazardous areas, in order to direct both hands of the operator to one position.

The operation consoles are primarily used on presses, stamping machines, printing presses and paper converting machines, in the chemical industry and in the rubber and plastics industries.

The control command is given by pressing the two mushroom pushbuttons on the sides simultaneously (within 0.5 s of each other) and must be maintained for as long as a hazard exists.

For the further processing of control commands, evaluation units are used, e.g. 3SK11 safety relays or the 3RK3, 3SK2 Modular Safety System.

Standards

The two-hand operation consoles comply with the requirements of EN 574.

Selection and ordering data

Version of actuating element/ unlatching method/ operating principle	Color of actuating element	Number of NO contacts	Number of NC contacts	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosures · Two-hand operation consoles									
Plastic									
None	--	0	0	5	**3SU1803-3AA00-0AA1**		1	1 unit	41J
A = Mushroom pushbutton/ momentary contact B = EMERGENCY STOP mushroom pushbutton/ Rotate to unlatch C = Mushroom pushbutton/ momentary contact	A = Black / B = Red / C = Black	2	4	5	**3SU1803-3NB00-1AE1**		1	1 unit	41J
Metal									
None	--	0	0	5	**3SU1853-3AA00-0AA1**		1	1 unit	41J
A = Mushroom pushbutton/ momentary contact B = EMERGENCY STOP mushroom pushbutton/ Rotate to unlatch C = Mushroom pushbutton/ momentary contact	A = Black / B = Red / C = Black	2	4	5	**3SU1853-3NB00-1AA1**		1	1 unit	41J
		2	4	5	**3SU1853-3NB00-1AD1**		1	1 unit	41J

3SU1803-3NB00-1AE1

3SU1853-3AA00-0AA1

3SU1853-3NB00-1AA1

3SU1853-3NB00-1AD1

Version	Material	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories								
Stand for two-hand operation console	Metal	Black	5	**3SU1950-0HN10-0AA0**		1	1 unit	41J

3SU1950-0HN10-0AA0

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Insert labels

Overview

Labels can be inserted for identification purposes in pushbuttons (clear) and in illuminated pushbuttons with a flat button. These insert labels are made of transparent plastic with black inscription; they can be fitted in any 90° angle.

Inscription

The inscription is in upper/lower case, all words begin with upper case letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

The insert labels without inscription are suitable for user marking with permanent pen.

For customized inscriptions see "Options", page 13/106.

Selection and ordering data

3SU1900-0AB71-0AA0

3SU1900-0AB71-0AB0

3SU1900-0AB71-0DN0

Color	Marking	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Insert labels							
For self-inscription							
Milky white/black (label/lettering)	None	3	**3SU1900-0AB71-0AA0**		100	10 units	41J
With customized inscription							
Inscription or symbol, see "Options", page 13/106.		10	**3SU1900-0AB71-0AZ0**		1	1 unit	41J
Inscription in German							
Milky white/black (label/lettering)	Ein	5	**3SU1900-0AB71-0AB0**		100	10 units	41J
	Aus	5	**3SU1900-0AB71-0AC0**		100	10 units	41J
	Auf	5	**3SU1900-0AB71-0AD0**		100	10 units	41J
	Ab	5	**3SU1900-0AB71-0AE0**		100	10 units	41J
	Vor	5	**3SU1900-0AB71-0AF0**		100	10 units	41J
	Zurück	5	**3SU1900-0AB71-0AG0**		100	10 units	41J
	Rechts	5	**3SU1900-0AB71-0AH0**		100	10 units	41J
	Links	5	**3SU1900-0AB71-0AJ0**		100	10 units	41J
	Halt	5	**3SU1900-0AB71-0AK0**		100	10 units	41J
	Zu	5	**3SU1900-0AB71-0AL0**		100	10 units	41J
	Schnell	5	**3SU1900-0AB71-0AM0**		100	10 units	41J
	Langsam	5	**3SU1900-0AB71-0AN0**		100	10 units	41J
	Betrieb	5	**3SU1900-0AB71-0AP0**		100	10 units	41J
	Störung	5	**3SU1900-0AB71-0AQ0**		100	10 units	41J
	Einrichten	5	**3SU1900-0AB71-0AR0**		100	10 units	41J
Inscription in English							
Milky white/black (label/lettering)	On	5	**3SU1900-0AB71-0DJ0**		100	10 units	41J
	Off	5	**3SU1900-0AB71-0DK0**		100	10 units	41J
	Up	5	**3SU1900-0AB71-0DL0**		100	10 units	41J
	Down	5	**3SU1900-0AB71-0DM0**		100	10 units	41J
	Forward	5	**3SU1900-0AB71-0DN0**		100	10 units	41J
	Right	5	**3SU1900-0AB71-0DQ0**		100	10 units	41J
	Left	5	**3SU1900-0AB71-0DR0**		100	10 units	41J
	Stop	5	**3SU1900-0AB71-0DS0**		100	10 units	41J
	Start	5	**3SU1900-0AB71-0DT0**		100	10 units	41J
	Reset	5	**3SU1900-0AB71-0DU0**		100	10 units	41J
	Test	5	**3SU1900-0AB71-0DV0**		100	10 units	41J
	Open	5	**3SU1900-0AB71-0DW0**		100	10 units	41J
	Close	5	**3SU1900-0AB71-0DX0**		100	10 units	41J
	Running	5	**3SU1900-0AB71-0EB0**		100	10 units	41J
	Fast	5	**3SU1900-0AB71-0EE0**		100	10 units	41J
	Slow	5	**3SU1900-0AB71-0EF0**		100	10 units	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Insert labels


3SU1900-0AB71-0QC0


3SU1900-0AB71-0QT0


3SU1900-0AB71-0RB0


3SU1900-0AB71-0RN0

Color	Marking	Symbol No.	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
With symbol (ON/OFF)								
Milky white/black (label/lettering)	O	5008 IEC	►	**3SU1900-0AB71-0QA0**		100	10 units	41J
	I	5007 IEC	►	**3SU1900-0AB71-0QB0**		100	10 units	41J
	II	--	5	**3SU1900-0AB71-0QC0**		100	10 units	41J
	III	--	5	**3SU1900-0AB71-0QD0**		100	10 units	41J
With symbol (graphic)								
Milky white/black (label/lettering)	ARROW DIRECTION TO RIGHT	5022 IEC	►	**3SU1900-0AB71-0QR0**		100	10 units	41J
	ARROW DIRECTION UP AND TO LEFT	--	5	**3SU1900-0AB71-0QS0**		100	10 units	41J
	CLOCKWISE ROTATION	0004 ISO	5	**3SU1900-0AB71-0QT0**		100	10 units	41J
	COUNTERCLOCK-WISE ROTATION	--	5	**3SU1900-0AB71-0QU0**		100	10 units	41J
	RAPID TRAVERSE	0266 ISO	5	**3SU1900-0AB71-0QV0**		100	10 units	41J
	FEED	0259 ISO	5	**3SU1900-0AB71-0QW0**		100	10 units	41J
	INCREASE, PLUS	5005 IEC	5	**3SU1900-0AB71-0QX0**		100	10 units	41J
	DECREASE, MINUS	5006 IEC	5	**3SU1900-0AB71-0QY0**		100	10 units	41J
	ELECTRIC MOTOR	0011 ISO	5	**3SU1900-0AB71-0RA0**		100	10 units	41J
	HORN	5014 IEC	5	**3SU1900-0AB71-0RB0**		100	10 units	41J
	WATER INLET	--	5	**3SU1900-0AB71-0RC0**		100	10 units	41J
	PUMP	0134 ISO	5	**3SU1900-0AB71-0RD0**		100	10 units	41J
	COOLANT PUMP	0355 ISO	5	**3SU1900-0AB71-0RE0**		100	10 units	41J
	LOCK, TIGHTEN	5653 IEC	5	**3SU1900-0AB71-0RF0**		100	10 units	41J
	UNLOCK, UNCLAMP	5652 IEC	5	**3SU1900-0AB71-0RG0**		100	10 units	41J
	BRAKE	--	5	**3SU1900-0AB71-0RH0**		100	10 units	41J
	RELEASE BRAKE	0021 ISO	5	**3SU1900-0AB71-0RJ0**		100	10 units	41J
	INTERLOCK	0022 ISO	5	**3SU1900-0AB71-0RK0**		100	10 units	41J
	UNLOCK	0023 ISO	5	**3SU1900-0AB71-0RL0**		100	10 units	41J
	SET UP	0910 ISO	5	**3SU1900-0AB71-0RM0**		100	10 units	41J
	ON/OFF, MOMENTARY CONTACT TYPE	5011 IEC	5	**3SU1900-0AB71-0RN0**		100	10 units	41J
	MANUAL OPERATION	0096 ISO	5	**3SU1900-0AB71-0RP0**		100	10 units	41J
	AUTOMATIC CYCLE	0017 ISO	5	**3SU1900-0AB71-0RQ0**		100	10 units	41J
	SUCTION	--	5	**3SU1900-0AB71-0RR0**		100	10 units	41J
	BLOWING	--	5	**3SU1900-0AB71-0RS0**		100	10 units	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data.

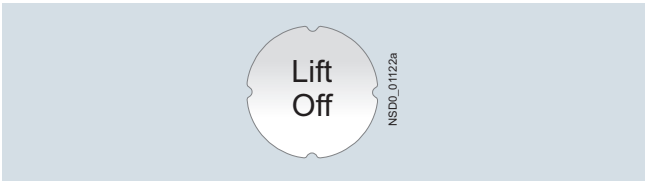
Text inscriptions have centered alignment and a font height of 4 mm as standard (for a single line of text) or 3 mm (for two or three lines of text).

The typeface used is Arial. Other letter heights and typefaces are possible, but must be specified when ordering.

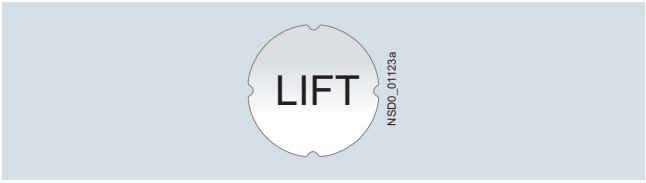
For round insert labels, the maximum possible number of characters per line is:

- 10 characters for one line of text
- 8 characters for two lines of text
- 6 characters for three lines of text, but 10 characters in the middle line.

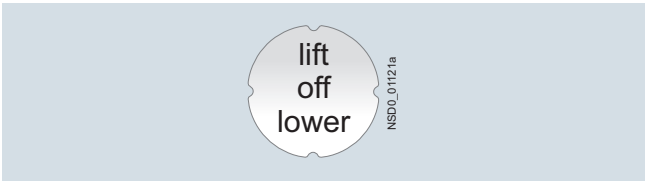
Examples for customized inscription



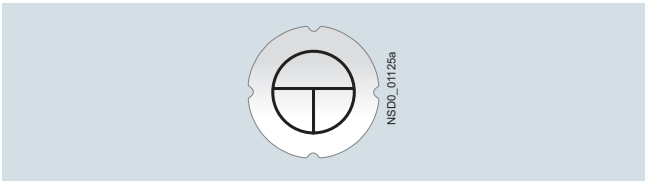
Two-line inscription in upper/lower case lettering (Q0Y)



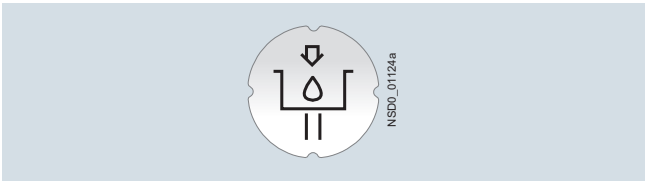
Single-line inscription in upper case lettering (Q1Y)



Three-line inscription in lower case letters (Q2Y)



Symbol number 5011 according to IEC 60417 (Q3Y)



Any symbol according to order form supplement (Q9Y)

Ordering notes

Append the following order codes to the Article No.:

- **Q0Y:** Text line(s) in upper/lower case, all lines begin with upper case (e.g. Lift / Off)
- **Q1Y:** Text line(s) in upper case (e.g. LIFT)
- **Q2Y:** Text line(s) in lower case (e.g. lift / off / lower)
- **Q5Y:** Text line(s) in upper/lower case, all words begin with upper case letters (e.g. On Off)
- **Q3Y:** Symbol with number according to ISO 7000 or IEC 60417
- **Q9Y:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT Configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription in plain text without spaces, in addition to the Article No. and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language. For long words you can also specify the end-of-line division. In the case of multi-line inscriptions, the text must be assigned to the respective line, e.g. Z1=Lift, Z2=Lower.
see ordering example 1.

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417; (see ordering examples 2 and 3).

The SIRIUS ACT Configurator must be used to select special inscriptions and symbols (order code Q9Y). In this case a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly using the CIN and the SIRIUS ACT Configurator (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:
- Configurator: www.siemens.com/sirius-act/configurator
- Electronic Catalog CA 01 on DVD
- Industry Mall: www.siemens.com/industrymall

Ordering example 1

A label with 2 lines of text is required:

3SU1900-0AB71-0AZ0
Q1Y
Z1=LIFT
Z2=LOWER

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

3SU1900-0AB71-0AZ0
Q3Y
Z=5011 IEC

Ordering example 3

A label inscribed with symbol No. 1118 according to ISO 7000 is required:

3SU1900-0AB71-0AZ0
Q3Y
Z=1118 ISO

Selection and ordering data

	Label holder shape	Color holder shape	Label fastening method	Labeling plate size Height	Labeling plate size Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				mm	mm	d					
Label holders for labeling plates											
 3SU1900-0AG10-0AA0	With rounded bottom	Black	Self-adhesive	12.5	27	▶	**3SU1900-0AG10-0AA0**		100	10 units	41J
				17.5	27	▶	**3SU1900-0AH10-0AA0**		100	10 units	41J
				27	27	▶	**3SU1900-0AJ10-0AA0**		100	10 units	41J
			Snap-on	12.5	27	▶	**3SU1900-0AR10-0AA0**		100	10 units	41J
				17.5	27	▶	**3SU1900-0AS10-0AA0**		100	10 units	41J
				27	27	▶	**3SU1900-0AT10-0AA0**		100	10 units	41J
 3SU1900-0AN10-0AA0	With square bottom	Black	Self-adhesive	12.5	27	3	**3SU1900-0AN10-0AA0**		100	10 units	41J
				17.5	27	5	**3SU1900-0AP10-0AA0**		100	10 units	41J
				27	27	5	**3SU1900-0AQ10-0AA0**		100	10 units	41J
Label holders for labeling plates, coordinate switches											
 3SU1900-0AL10-0AA0	With square bottom	Black	Self-adhesive	27	27	▶	**3SU1900-0AL10-0AA0**		1	1 unit	41J
 3SU1900-0AM10-0AA0	Cross	Black	Self-adhesive	27	27	5	**3SU1900-0AM10-0AA0**		1	1 unit	41J
Label holders for labeling plates, twin pushbuttons											
 3SU1900-0AK10-0AA0	Rectangular	Black	Self-adhesive	12.5	27	▶	**3SU1900-0AK10-0AA0**		100	10 units	41J
Single frames											
 3SU1900-0AX10-0AA0	Square	--	--	29.8	29.8	▶	**3SU1900-0AX10-0AA0**		1	10 units	41J

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Labeling plates

Overview

Label holders of black plastic, and labeling plates (black with white print or silver-colored with black print) for sticking or snapping in place, are available for labeling. They are not suitable for EMERGENCY STOP buttons. Note mounting dimensions!
The label holders cannot be used in conjunction with protective caps, protective collars and locking devices.

Inscription

The inscription is in upper/lower case, all words begin with upper case letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

For customized inscriptions, see "Options", page 13/114.

Labeling plates for sticking/snapping in place

The labels are available in three sizes:

- 12.5 mm × 27 mm
- 17.5 mm × 27 mm
- 27 mm × 27 mm

For mounting the labeling plates, you can choose between label holders for stick-on or snap-on mounting.

Selection and ordering data

Color	Marking	Symbol No.	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 12.5 mm x 27 mm								
For self-inscription								
Black/White (label/lettering)	None	--	▶	**3SU1900-0AC16-0AA0**		100	10 units	41J
With customized inscription								
For inscriptions or symbols, see "Options", page 13/114.			10	**3SU1900-0AC16-0AZ0**		1	1 unit	41J
Inscription in German								
Black/White (label/lettering)	Ein	--	5	**3SU1900-0AC16-0AB0**		100	10 units	41J
	Aus	--	5	**3SU1900-0AC16-0AC0**		100	10 units	41J
	Auf	--	5	**3SU1900-0AC16-0AD0**		100	10 units	41J
	Ab	--	5	**3SU1900-0AC16-0AE0**		100	10 units	41J
	Vor	--	5	**3SU1900-0AC16-0AF0**		100	10 units	41J
	Zurück	--	5	**3SU1900-0AC16-0AG0**		100	10 units	41J
	Rechts	--	5	**3SU1900-0AC16-0AH0**		100	10 units	41J
	Links	--	5	**3SU1900-0AC16-0AJ0**		100	10 units	41J
	Halt	--	5	**3SU1900-0AC16-0AK0**		100	10 units	41J
	Zu	--	5	**3SU1900-0AC16-0AL0**		100	10 units	41J
	Betrieb	--	5	**3SU1900-0AC16-0AP0**		100	10 units	41J
	Störung	--	5	**3SU1900-0AC16-0AQ0**		100	10 units	41J
	Hand Auto	--	5	**3SU1900-0AC16-0DB0**		100	10 units	41J
	Hand O Auto	--	5	**3SU1900-0AC16-0DD0**		100	10 units	41J
Inscription in English								
Black/White (label/lettering)	On	--	5	**3SU1900-0AC16-0DJ0**		100	10 units	41J
	Off	--	5	**3SU1900-0AC16-0DK0**		100	10 units	41J
	Up	--	5	**3SU1900-0AC16-0DL0**		100	10 units	41J
	Down	--	5	**3SU1900-0AC16-0DM0**		100	10 units	41J
	Forward	--	5	**3SU1900-0AC16-0DN0**		100	10 units	41J
	Reverse	--	5	**3SU1900-0AC16-0DP0**		100	10 units	41J
	Right	--	5	**3SU1900-0AC16-0DQ0**		100	10 units	41J
	Left	--	5	**3SU1900-0AC16-0DR0**		100	10 units	41J
	Stop	--	5	**3SU1900-0AC16-0DS0**		100	10 units	41J
	Start	--	5	**3SU1900-0AC16-0DT0**		100	10 units	41J
	Reset	--	5	**3SU1900-0AC16-0DU0**		100	10 units	41J
	Test	--	5	**3SU1900-0AC16-0DV0**		100	10 units	41J
	Open	--	5	**3SU1900-0AC16-0DW0**		100	10 units	41J
	Close	--	5	**3SU1900-0AC16-0DX0**		100	10 units	41J
	Jog	--	5	**3SU1900-0AC16-0DE0**		100	10 units	41J
	Running	--	5	**3SU1900-0EB0**		100	10 units	41J
	Fault	--	5	**3SU1900-0AC16-0EC0**		100	10 units	41J
	Run	--	5	**3SU1900-0AC16-0ED0**		100	10 units	41J
	Stop Start	--	5	**3SU1900-0AC16-0DC0**		100	10 units	41J
	Off On	--	3	**3SU1900-0AC16-0DH0**		100	10 units	41J
	Power off	--	5	**3SU1900-0AC16-0DF0**		100	10 units	41J
	Power on	--	5	**3SU1900-0AC16-0DG0**		100	10 units	41J
	Man O Auto	--	5	**3SU1900-0AC16-0DY0**		100	10 units	41J
	Man Auto	--	5	**3SU1900-0AC16-0EA0**		100	10 units	41J


3SU1900-0AC16-0AA0

3SU1900-0AC16-0AG0

3SU1900-0AC16-0DN0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Labeling plates

3SU1900-0AC16-0GA0


3SU1900-0AC16-0QG0

Color	Marking	Symbol No.	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 12.5 mm x 27 mm								
Inscription in French								
Black/White (label/lettering)	Marche	--	5	**3SU1900-0AC16-0GA0**		100	10 units	41J
	Arrêt	--	5	**3SU1900-0AC16-0GB0**		100	10 units	41J
	Montée	--	5	**3SU1900-0AC16-0GC0**		100	10 units	41J
	Descente	--	5	**3SU1900-0AC16-0GD0**		100	10 units	41J
	Avant	--	5	**3SU1900-0AC16-0GE0**		100	10 units	41J
	Retour	--	5	**3SU1900-0AC16-0GF0**		100	10 units	41J
	Droite	--	5	**3SU1900-0AC16-0GG0**		100	10 units	41J
	Gauche	--	5	**3SU1900-0AC16-0GH0**		100	10 units	41J
	Ouvert	--	5	**3SU1900-0AC16-0GJ0**		100	10 units	41J
	Fermé	--	5	**3SU1900-0AC16-0GK0**		100	10 units	41J
	Rapide	--	5	**3SU1900-0AC16-0GL0**		100	10 units	41J
	En Service	--	5	**3SU1900-0AC16-0GM0**		100	10 units	41J
	Defaut	--	5	**3SU1900-0AC16-0GN0**		100	10 units	41J
	Reglage	--	5	**3SU1900-0AC16-0GP0**		100	10 units	41J
	Arrêt d'urgence	--	5	**3SU1900-0AC16-0GQ0**		100	10 units	41J
	Hors Service	--	5	**3SU1900-0AC16-0GR0**		100	10 units	41J
	Sous tension	--	5	**3SU1900-0AC16-0GS0**		100	10 units	41J
	Manu Auto	--	5	**3SU1900-0AC16-0GT0**		100	10 units	41J
	Marche Arrêt	--	5	**3SU1900-0AC16-0GU0**		100	10 units	41J
	Rearmement	--	5	**3SU1900-0AC16-0GV0**		100	10 units	41J
With symbol								
Black/White (label/lettering)	O	--	5	**3SU1900-0AC16-0QA0**		100	10 units	41J
	I	--	5	**3SU1900-0AC16-0QB0**		100	10 units	41J
	O I	--	3	**3SU1900-0AC16-0QG0**		100	10 units	41J
	1 2	--	5	**3SU1900-0AC16-0QJ0**		100	10 units	41J
	↑ ARROW DIRECTION UP	--	5	**3SU1900-0AC16-0QS0**		100	10 units	41J

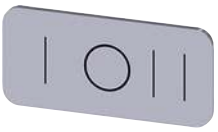
Labeling plates

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Labeling plates 12.5 mm x 27 mm								
For self-inscription								
Silver/Black (label/lettering)	None			▶ **3SU1900-0AC81-0AA0**		100	10 units	41J
With customized inscription								
For inscriptions or symbols, see "Options", page 13/114.			10	**3SU1900-0AC81-0AZ0**		1	1 unit	41J
Inscription in German								
Silver/Black (label/lettering)	Ein	--	5	**3SU1900-0AC81-0AB0**		100	10 units	41J
	Aus	--	5	**3SU1900-0AC81-0AC0**		100	10 units	41J
	Auf	--	5	**3SU1900-0AC81-0AD0**		100	10 units	41J
	Ab	--	5	**3SU1900-0AC81-0AE0**		100	10 units	41J
	Vor	--	5	**3SU1900-0AC81-0AF0**		100	10 units	41J
	Zurück	--	5	**3SU1900-0AC81-0AG0**		100	10 units	41J
	Rechts	--	5	**3SU1900-0AC81-0AH0**		100	10 units	41J
	Links	--	5	**3SU1900-0AC81-0AJ0**		100	10 units	41J
	Halt	--	5	**3SU1900-0AC81-0AK0**		100	10 units	41J
	Zu	--	5	**3SU1900-0AC81-0AL0**		100	10 units	41J
	Schnell	--	5	**3SU1900-0AC81-0AM0**		100	10 units	41J
	Langsam	--	5	**3SU1900-0AC81-0AN0**		100	10 units	41J
	Betrieb	--	5	**3SU1900-0AC81-0AP0**		100	10 units	41J
	Störung	--	5	**3SU1900-0AC81-0AQ0**		100	10 units	41J
	Einrichten	--	5	**3SU1900-0AC81-0AR0**		100	10 units	41J
	Hand Auto	--	5	**3SU1900-0AC81-0DB0**		100	10 units	41J
	Stop Start	--	5	**3SU1900-0AC81-0DC0**		100	10 units	41J
	Hand O Auto	--	5	**3SU1900-0AC81-0DD0**		100	10 units	41J
Inscription in English								
Silver/Black (label/lettering)	On	--	5	**3SU1900-0AC81-0DJ0**		100	10 units	41J
	Off	--	5	**3SU1900-0AC81-0DK0**		100	10 units	41J
	Up	--	5	**3SU1900-0AC81-0DL0**		100	10 units	41J
	Down	--	5	**3SU1900-0AC81-0DM0**		100	10 units	41J
	Stop	--	3	**3SU1900-0AC81-0DS0**		100	10 units	41J
	Start	--	5	**3SU1900-0AC81-0DT0**		100	10 units	41J
	Reset	--	5	**3SU1900-0AC81-0DU0**		100	10 units	41J
	Test	--	5	**3SU1900-0AC81-0DV0**		100	10 units	41J
	Open	--	5	**3SU1900-0AC81-0DW0**		100	10 units	41J
	Close	--	5	**3SU1900-0AC81-0DX0**		100	10 units	41J
	Man O Auto	--	5	**3SU1900-0AC81-0DY0**		100	10 units	41J
	Man Auto	--	5	**3SU1900-0AC81-0EA0**		100	10 units	41J
	Running	--	5	**3SU1900-0AC81-0EB0**		100	10 units	41J
	Fault	--	5	**3SU1900-0AC81-0EC0**		100	10 units	41J
	Fast	--	5	**3SU1900-0AC81-0EE0**		100	10 units	41J
	Slow	--	5	**3SU1900-0AC81-0EF0**		100	10 units	41J
With symbol								
Silver/Black (label/lettering)	O	5008 IEC	5	**3SU1900-0AC81-0QA0**		100	10 units	41J
	I	5007 IEC	5	**3SU1900-0AC81-0QB0**		100	10 units	41J
	II	--	5	**3SU1900-0AC81-0QC0**		100	10 units	41J
	III	--	5	**3SU1900-0AC81-0QD0**		100	10 units	41J
	O I	--	5	**3SU1900-0AC81-0QG0**		100	10 units	41J
	I O II	--	5	**3SU1900-0AC81-0QK0**		100	10 units	41J
	1 O 2	--	5	**3SU1900-0AC81-0QL0**		100	10 units	41J
	→ ARROW DIRECTION TO RIGHT	5022 IEC	5	**3SU1900-0AC81-0QR0**		100	10 units	41J
	↑ ARROW DIRECTION UP	--	5	**3SU1900-0AC81-0QS0**		100	10 units	41J


3SU1900-0AC81-0AA0

3SU1900-0AC81-0AB0

3SU1900-0AC81-0DK0



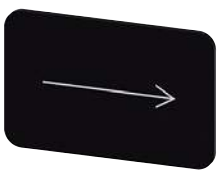
3SU1900-0AC81-0QK0

* You can order this quantity or a multiple thereof.
Illustrations are approximate


3SU1900-0AD16-0AA0

3SU1900-0AD16-0AC0

3SU1900-0AD16-0DK0


3SU1900-0AD16-0QR0

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Labeling plates 17.5 mm x 27 mm								
For self-inscription								
Black/White (label/lettering)	None	--	►	**3SU1900-0AD16-0AA0**		100	10 units	41J
With customized inscription								
For inscriptions or symbols, see "Options", page 13/114.			5	**3SU1900-0AD16-0AZ0**		1	1 unit	41J
Inscription in German								
Black/White (label/lettering)	Ein	--	5	**3SU1900-0AD16-0AB0**		100	10 units	41J
	Aus	--	5	**3SU1900-0AD16-0AC0**		100	10 units	41J
	Auf	--	5	**3SU1900-0AD16-0AD0**		100	10 units	41J
	Ab	--	5	**3SU1900-0AD16-0AE0**		100	10 units	41J
	Vor	--	5	**3SU1900-0AD16-0AF0**		100	10 units	41J
	Zurück	--	5	**3SU1900-0AD16-0AG0**		100	10 units	41J
	Halt	--	5	**3SU1900-0AD16-0AK0**		100	10 units	41J
	Zu	--	5	**3SU1900-0AD16-0AL0**		100	10 units	41J
	Betrieb	--	5	**3SU1900-0AD16-0AP0**		100	10 units	41J
	Störung	--	5	**3SU1900-0AD16-0AQ0**		100	10 units	41J
	Hand Auto	--	5	**3SU1900-0AD16-0DB0**		100	10 units	41J
Inscription in English								
Black/White (label/lettering)	Stop Start	--	5	**3SU1900-0AD16-0DC0**		100	10 units	41J
	On	--	5	**3SU1900-0AD16-0DJ0**		100	10 units	41J
	Off	--	5	**3SU1900-0AD16-0DK0**		100	10 units	41J
	Up	--	5	**3SU1900-0AD16-0DL0**		100	10 units	41J
	Down	--	5	**3SU1900-0AD16-0DM0**		100	10 units	41J
	Forward	--	5	**3SU1900-0AD16-0DN0**		100	10 units	41J
	Reverse	--	5	**3SU1900-0AD16-0DP0**		100	10 units	41J
	Right	--	5	**3SU1900-0AD16-0DQ0**		100	10 units	41J
	Stop	--	5	**3SU1900-0AD16-0DS0**		100	10 units	41J
	Start	--	5	**3SU1900-0AD16-0DT0**		100	10 units	41J
	Open	--	5	**3SU1900-0AD16-0DW0**		100	10 units	41J
	Close	--	5	**3SU1900-0AD16-0DX0**		100	10 units	41J
	Man Auto	--	5	**3SU1900-0AD16-0EA0**		100	10 units	41J
	Running	--	5	**3SU1900-0AD16-0EB0**		100	10 units	41J
	Fault	--	5	**3SU1900-0AD16-0EC0**		100	10 units	41J
Inscription in French								
Black/White (label/lettering)	Marche	--	5	**3SU1900-0AD16-0GA0**		100	10 units	41J
	Arrêt	--	5	**3SU1900-0AD16-0GB0**		100	10 units	41J
	Droite	--	5	**3SU1900-0AD16-0GG0**		100	10 units	41J
	Gauche	--	5	**3SU1900-0AD16-0GH0**		100	10 units	41J
	En Service	--	5	**3SU1900-0AD16-0GM0**		100	10 units	41J
	Defaut	--	5	**3SU1900-0AD16-0GN0**		100	10 units	41J
	Sous tension	--	5	**3SU1900-0AD16-0GS0**		100	10 units	41J
	Manu Auto	--	5	**3SU1900-0AD16-0GT0**		100	10 units	41J
	Marche Arrêt	--	5	**3SU1900-0AD16-0GU0**		100	10 units	41J
	Rearmement	--	5	**3SU1900-0AD16-0GV0**		100	10 units	41J
With symbol								
Black/White (label/lettering)	O	5008 IEC	5	**3SU1900-0AD16-0QA0**		100	10 units	41J
	I	5007 IEC	5	**3SU1900-0AD16-0QB0**		100	10 units	41J
	O I	--	5	**3SU1900-0AD16-0QG0**		100	10 units	41J
	→ ARROW DIRECTION TO RIGHT	5022 IEC	5	**3SU1900-0AD16-0QR0**		100	10 units	41J
	↑ ARROW DIRECTION UP	--	5	**3SU1900-0AD16-0QS0**		100	10 units	41J

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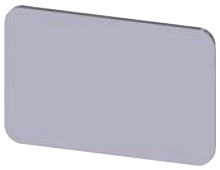
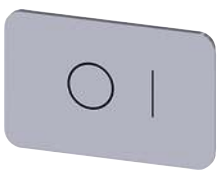
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Labeling plates


3SU1900-0AD81-0AA0

3SU1900-0AD81-0AP0

3SU1900-0AD81-0EC0



3SU1900-0AD81-0QG0

Labeling plates 17.5 mm x 27 mm

Color	Marking	Symbol No.	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
For self-inscription								
Silver/Black (label/lettering)	None	--	▶	**3SU1900-0AD81-0AA0**		100	10 units	41J
Inscription in German								
Silver/Black (label/lettering)	Ein	--	5	**3SU1900-0AD81-0AB0**		100	10 units	41J
	Aus	--	5	**3SU1900-0AD81-0AC0**		100	10 units	41J
	Auf	--	5	**3SU1900-0AD81-0AD0**		100	10 units	41J
	Ab	--	5	**3SU1900-0AD81-0AE0**		100	10 units	41J
	Vor	--	5	**3SU1900-0AD81-0AF0**		100	10 units	41J
	Zurück	--	5	**3SU1900-0AD81-0AG0**		100	10 units	41J
	Rechts	--	5	**3SU1900-0AD81-0AH0**		100	10 units	41J
	Halt	--	5	**3SU1900-0AD81-0AK0**		100	10 units	41J
	Zu	--	5	**3SU1900-0AD81-0AL0**		100	10 units	41J
	Betrieb	--	5	**3SU1900-0AD81-0AP0**		100	10 units	41J
	Störung	--	5	**3SU1900-0AD81-0AQ0**		100	10 units	41J
	Hand Auto	--	5	**3SU1900-0AD81-0DB0**		100	10 units	41J
	Hand O Auto	--	5	**3SU1900-0AD81-0DD0**		100	10 units	41J
Inscription in English								
Silver/Black (label/lettering)	On	--	5	**3SU1900-0AD81-0DJ0**		100	10 units	41J
	Off	--	5	**3SU1900-0AD81-0DK0**		100	10 units	41J
	Stop	--	5	**3SU1900-0AD81-0DS0**		100	10 units	41J
	Start	--	5	**3SU1900-0AD81-0DT0**		100	10 units	41J
	Reset	--	5	**3SU1900-0AD81-0DU0**		100	10 units	41J
	Hand O Auto	--	5	**3SU1900-0AD81-0DY0**		100	10 units	41J
	Fault	--	5	**3SU1900-0AD81-0EC0**		100	10 units	41J
With symbol								
Silver/Black (label/lettering)	O	5008 IEC	5	**3SU1900-0AD81-0QA0**		100	10 units	41J
	I	5007 IEC	5	**3SU1900-0AD81-0QB0**		100	10 units	41J
	O I	--	5	**3SU1900-0AD81-0QG0**		100	10 units	41J
	I O II	--	5	**3SU1900-0AD81-0QK0**		100	10 units	41J
	1 O 2	--	5	**3SU1900-0AD81-0QL0**		100	10 units	41J
	→ ARROW DIRECTION TO RIGHT	5022 IEC	5	**3SU1900-0AD81-0QR0**		100	10 units	41J
	↑ ARROW DIRECTION UP	--	5	**3SU1900-0AD81-0QS0**		100	10 units	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Color	Marking	Symbol No.	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 27 mm x 27 mm								
For self-inscription								
Black/White (label/lettering)	None	--		**3SU1900-0AE16-0AA0**		100	10 units	41J
Silver/Black (label/lettering)		--		**3SU1900-0AE81-0AA0**		100	10 units	41J
With customized inscription								
For inscriptions or symbols, see "Options", page 13/114.								
Black/White (label/lettering)			10	**3SU1900-0AE16-0AZ0**		1	1 unit	41J
Silver/Black (label/lettering)			10	**3SU1900-0AE81-0AZ0**		1	1 unit	41J
Inscription in German								
Black/White (label/lettering)	Ein	--	5	**3SU1900-0AE16-0AB0**		100	10 units	41J
	Aus	--	5	**3SU1900-0AE16-0AC0**		100	10 units	41J
	Auf	--	5	**3SU1900-0AE16-0AD0**		100	10 units	41J
	Ab	--	5	**3SU1900-0AE16-0AE0**		100	10 units	41J
	Vor	--	5	**3SU1900-0AE16-0AF0**		100	10 units	41J
	Zurück	--	5	**3SU1900-0AE16-0AG0**		100	10 units	41J
	Rechts	--	5	**3SU1900-0AE16-0AH0**		100	10 units	41J
	Links	--	5	**3SU1900-0AE16-0AJ0**		100	10 units	41J
	Halt	--	5	**3SU1900-0AE16-0AK0**		100	10 units	41J
	Zu	--	5	**3SU1900-0AE16-0AL0**		100	10 units	41J
	Betrieb	--	5	**3SU1900-0AE16-0AP0**		100	10 units	41J
	Störung	--	5	**3SU1900-0AE16-0AQ0**		100	10 units	41J
	Hand Auto	--	5	**3SU1900-0AE16-0DB0**		100	10 units	41J
Inscription in English								
Black/White (label/lettering)	On	--	5	**3SU1900-0AE16-0DJ0**		100	10 units	41J
	Off	--	5	**3SU1900-0AE16-0DK0**		100	10 units	41J
	Up	--	5	**3SU1900-0AE16-0DL0**		100	10 units	41J
	Down	--	5	**3SU1900-0AE16-0DM0**		100	10 units	41J
	Forward	--	5	**3SU1900-0AE16-0DN0**		100	10 units	41J
	Reverse	--	5	**3SU1900-0AE16-0DP0**		100	10 units	41J
	Stop	--	5	**3SU1900-0AE16-0DS0**		100	10 units	41J
	Start	--	5	**3SU1900-0AE16-0DT0**		100	10 units	41J
	EMERGENCY STOP	--	5	**3SU1900-0AE16-0DA0**		100	10 units	41J
	Stop Start	--	5	**3SU1900-0AE16-0DC0**		100	10 units	41J
Inscription in French								
Black/White (label/lettering)	Marche	--	5	**3SU1900-0AE16-0GA0**		100	10 units	41J
	Arrêt	--	5	**3SU1900-0AE16-0GB0**		100	10 units	41J
	Montée	--	5	**3SU1900-0AE16-0GC0**		100	10 units	41J
	Descente	--	5	**3SU1900-0AE16-0GD0**		100	10 units	41J
	En Service	--	5	**3SU1900-0AE16-0GM0**		100	10 units	41J
	Defaut	--	5	**3SU1900-0AE16-0GN0**		100	10 units	41J
	Sous tension	--	5	**3SU1900-0AE16-0GS0**		100	10 units	41J
	Manu Auto	--	5	**3SU1900-0AE16-0GT0**		100	10 units	41J
	Marche Arrêt		5	**3SU1900-0AE16-0GU0**		100	10 units	41J
With symbol								
Black/White (label/lettering)	O I	--	5	**3SU1900-0AE16-0QG0**		100	10 units	41J
	→ ARROW DIRECTION TO RIGHT	5022 IEC	5	**3SU1900-0AE16-0QR0**		100	10 units	41J


3SU1900-0AE16-0AA0


3SU1900-0AE81-0AA0

3SU1900-0AE16-0AD0

3SU1900-0AE16-0DK0

3SU1900-0AE16-0GB0

3SU1900-0AE16-0QG0

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data.

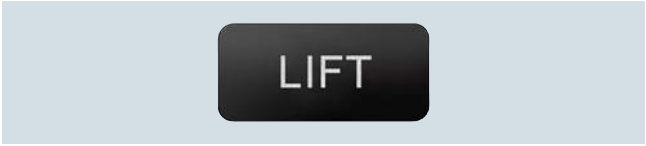
Text inscriptions have centered alignment and the font heights specified below as standard:

- Label size 12.5 mm × 27 mm, max. 3 lines:
  Font height 4 mm (1-line), 3.5 mm (2-line) or
  2.5 mm (3-line)
- Label size 17.5 mm × 27 mm, max. 3 lines:
  Font height 4 mm (1- to 2-line) or 3 mm (3-line)
- Label size 27 mm × 27 mm, max. 5 lines:
  Font height 4 mm (1- to 5-line)

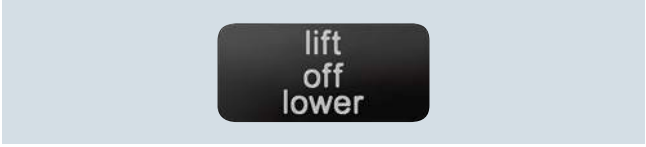
Up to 11 characters per line are possible. The typeface used is Arial. Other letter heights and typefaces are possible, but must be specified when ordering.

Examples for customized inscription

Two-line inscription in upper/lower case lettering (Q0Y)

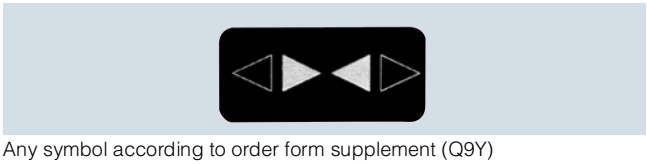


Single-line inscription in upper case lettering (Q1Y)



Three-line inscription in lower case letters (Q2Y)

Symbol number 5011 according to IEC 60417 (Q3Y)



Any symbol according to order form supplement (Q9Y)

Ordering notes

Append the following order codes to the Article No.:

- **Q0Y:** Text line(s) in upper/lower case, all lines begin with upper case (e.g. Lift / Off)
- **Q1Y:** Text line(s) in upper case (e.g. LIFT)
- **Q2Y:** Text line(s) in lower case (e.g. lift / off / lower)
- **Q5Y:** Text line(s) in upper/lower case, all words begin with upper case letters (e.g. On Off)
- **Q3Y:** Symbol with number according to ISO 7000 or IEC 60417
- **Q9Y:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT Configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription in plain text without spaces, in addition to the Article No. and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language. For long words you can also specify the end-of-line division. In the case of multi-line inscriptions, the text must be assigned to the respective line, e.g. Z1=Lift, Z2=Lower.
see ordering example 1.

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417; (see ordering examples 2 and 3).

The SIRIUS ACT Configurator must be used to select special inscriptions and symbols (order code Q9Y). In this case a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly using the CIN and the SIRIUS ACT Configurator (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:
- Configurator: www.siemens.com/sirius-act/configurator
- Electronic Catalog CA 01 on DVD
- Industry Mall: www.siemens.com/industrymall

Ordering example 1

A label with 2 lines of text is required:

3SU1900–0AC16-0AZ0
Q1Y
Z1=LIFT
Z2=LOWER

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

3SU1900–0AC16-0AZ0
Q3Y
Z=5011 IEC

Ordering example 3

A label inscribed with symbol No. 1118 according to ISO 7000 is required:

3SU1900–0AC16-0AZ0
Q3Y
Z=1118 ISO

Overview

The labeling plates in size 22 mm x 22 mm can be attached to enclosures with cutouts for labels. There are versions in black with white print or silver-colored with black print.

Inscription

The inscription is in upper/lower case, all words begin with upper case letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

For customized inscriptions, see "Options", page 13/118.

Selection and ordering data

3SU1900-0AF16-0AA0

3SU1900-0AF16-0AB0

3SU1900-0AF16-0AP0

3SU1900-0AF16-0DM0

3SU1900-0AF16-0EC0

Color	Marking	Symbol No.	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 22 mm x 22 mm								
For self-inscription								
Black/White (label/lettering)	None	--	►	**3SU1900-0AF16-0AA0**		100	10 units	41J
With customized inscription								
For inscriptions or symbols, see "Options", page 13/118.			10	**3SU1900-0AF16-0AZ0**		1	1 unit	41J
Inscription in German								
Black/White (label/lettering)	Ein	--	5	**3SU1900-0AF16-0AB0**		1	10 units	41J
	Aus	--	5	**3SU1900-0AF16-0AC0**		1	10 units	41J
	Auf	--	5	**3SU1900-0AF16-0AD0**		1	10 units	41J
	Ab	--	5	**3SU1900-0AF16-0AE0**		1	10 units	41J
	Vor	--	5	**3SU1900-0AF16-0AF0**		1	10 units	41J
	Zurück	--	5	**3SU1900-0AF16-0AG0**		1	10 units	41J
	Rechts	--	5	**3SU1900-0AF16-0AH0**		1	10 units	41J
	Links	--	5	**3SU1900-0AF16-0AJ0**		1	10 units	41J
	Halt	--	5	**3SU1900-0AF16-0AK0**		1	10 units	41J
	Zu	--	5	**3SU1900-0AF16-0AL0**		1	10 units	41J
	Schnell	--	5	**3SU1900-0AF16-0AM0**		1	10 units	41J
	Langsam	--	5	**3SU1900-0AF16-0AN0**		1	10 units	41J
	Betrieb	--	5	**3SU1900-0AF16-0AP0**		1	10 units	41J
	Störung	--	5	**3SU1900-0AF16-0AQ0**		1	10 units	41J
	Einrichten	--	5	**3SU1900-0AF16-0AR0**		1	10 units	41J
	NOT AUS	--	5	**3SU1900-0AF16-0AS0**		1	10 units	41J
Inscription in English								
Black/White (label/lettering)	On	--	5	**3SU1900-0AF16-0DJ0**		1	10 units	41J
	Off	--	5	**3SU1900-0AF16-0DK0**		1	10 units	41J
	Up	--	5	**3SU1900-0AF16-0DL0**		1	10 units	41J
	Down	--	5	**3SU1900-0AF16-0DM0**		1	10 units	41J
	Forward	--	5	**3SU1900-0AF16-0DN0**		1	10 units	41J
	Right	--	5	**3SU1900-0AF16-0DQ0**		1	10 units	41J
	Left	--	5	**3SU1900-0AF16-0DR0**		1	10 units	41J
	Stop	--	5	**3SU1900-0AF16-0DS0**		1	10 units	41J
	Start	--	5	**3SU1900-0AF16-0DT0**		1	10 units	41J
	Reset	--	5	**3SU1900-0AF16-0DU0**		1	10 units	41J
	Test	--	5	**3SU1900-0AF16-0DV0**		1	10 units	41J
	Open	--	5	**3SU1900-0AF16-0DW0**		1	10 units	41J
	Close	--	5	**3SU1900-0AF16-0DX0**		1	10 units	41J
	Running	--	5	**3SU1900-0AF16-0EB0**		1	10 units	41J
	Fault	--	5	**3SU1900-0AF16-0EC0**		1	10 units	41J
	Fast	--	5	**3SU1900-0AF16-0EE0**		1	10 units	41J
	Slow	--	5	**3SU1900-0AF16-0EF0**		1	10 units	41J
	EMERGENCY STOP	--	5	**3SU1900-0AF16-0DA0**		1	10 units	41J

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Inscription labels for enclosures

Color	Marking	Symbol No.	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 22 mm x 22 mm								
Inscription in French								
Black/White (label/lettering)	Marche	--	5	**3SU1900-0AF16-0GA0**		1	10 units	41J
	Arrêt	--	5	**3SU1900-0AF16-0GB0**		1	10 units	41J
	Montée	--	5	**3SU1900-0AF16-0GC0**		1	10 units	41J
	Descente	--	5	**3SU1900-0AF16-0GD0**		1	10 units	41J
	Retour	--	5	**3SU1900-0AF16-0GF0**		1	10 units	41J
	Droite	--	5	**3SU1900-0AF16-0GG0**		1	10 units	41J
	Gauche	--	5	**3SU1900-0AF16-0GH0**		1	10 units	41J
	Ouvert	--	5	**3SU1900-0AF16-0GJ0**		1	10 units	41J
	Fermé	--	5	**3SU1900-0AF16-0GK0**		1	10 units	41J
	Rapide	--	5	**3SU1900-0AF16-0GL0**		1	10 units	41J
	En Service	--	5	**3SU1900-0AF16-0GM0**		1	10 units	41J
	Defaut	--	5	**3SU1900-0AF16-0GN0**		1	10 units	41J
	Sous tension	--	5	**3SU1900-0AF16-0GS0**		1	10 units	41J
	Manu Auto	--	5	**3SU1900-0AF16-0GT0**		1	10 units	41J
	Marche Arrêt	--	5	**3SU1900-0AF16-0GU0**		1	10 units	41J
	Rearmement	--	5	**3SU1900-0AF16-0GV0**		1	10 units	41J
	Lent	--	5	**3SU1900-0AF16-0GW0**		1	10 units	41J
	Arrêt d'urgence	--	5	**3SU1900-0AF16-0GQ0**		1	10 units	41J
With symbol (ON/OFF)								
Black/White (label/lettering)	O	5008 IEC	5	**3SU1900-0AF16-0QA0**		1	10 units	41J
	I	5007 IEC	5	**3SU1900-0AF16-0QB0**		1	10 units	41J
	II	--	5	**3SU1900-0AF16-0QC0**		1	10 units	41J
	III	--	5	**3SU1900-0AF16-0QD0**		1	10 units	41J
	O I	--	5	**3SU1900-0AF16-0QG0**		1	10 units	41J
	I O II	--	5	**3SU1900-0AF16-0QK0**		1	10 units	41J
	I O (arranged vertically)	--	5	**3SU1900-0AF16-0QP0**		1	10 units	41J
	II O I (arranged vertically)	--	5	**3SU1900-0AF16-0QQ0**		1	10 units	41J
With symbol (graphic)								
Black/White (label/lettering)	→ ARROW DIRECTION TO RIGHT	5022 IEC	5	**3SU1900-0AF16-0QR0**		1	10 units	41J
	PUMP	0134 ISO	5	**3SU1900-0AF16-0RD0**		1	10 units	41J
	FAN	--	5	**3SU1900-0AF16-0RV0**		1	10 units	41J
	COOLING	--	5	**3SU1900-0AF16-0RW0**		1	10 units	41J
	ILLUMINATION	--	5	**3SU1900-0AF16-0RX0**		1	10 units	41J
	MOTOR	--	5	**3SU1900-0AF16-0RY0**		1	10 units	41J

3SU1900-0AF16-0GA0

3SU1900-0AF16-0GB0


3SU1900-0AF16-0QQ0


3SU1900-0AF16-0RW0

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Illustrations are approximate

Inscription labels for enclosures

Color	Marking	Symbol No.	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 22 mm x 22 mm								
For self-inscription								
Silver/Black (label/lettering)	None	--	10	**3SU1900-0AF81-0AA0**		100	10 units	41J
With customized inscription								
For inscriptions or symbols, see "Options", page 13/118.			10	**3SU1900-0AF81-0AZ0**		1	10 units	41J
Inscription in German								
Silver/Black (label/lettering)	Ein	--	5	**3SU1900-0AF81-0AB0**		1	10 units	41J
	Aus	--	5	**3SU1900-0AF81-0AC0**		1	10 units	41J
	Auf	--	5	**3SU1900-0AF81-0AD0**		1	10 units	41J
	Ab	--	5	**3SU1900-0AF81-0AE0**		1	10 units	41J
	Vor	--	5	**3SU1900-0AF81-0AF0**		1	10 units	41J
	Zurück	--	5	**3SU1900-0AF81-0AG0**		1	10 units	41J
	Rechts	--	5	**3SU1900-0AF81-0AH0**		1	10 units	41J
	Links	--	5	**3SU1900-0AF81-0AJ0**		1	10 units	41J
	Halt	--	5	**3SU1900-0AF81-0AK0**		1	10 units	41J
	Zu	--	5	**3SU1900-0AF81-0AL0**		1	10 units	41J
	Schnell	--	5	**3SU1900-0AF81-0AM0**		1	10 units	41J
	Langsam	--	5	**3SU1900-0AF81-0AN0**		1	10 units	41J
	Betrieb	--	5	**3SU1900-0AF81-0AP0**		1	10 units	41J
	Störung	--	5	**3SU1900-0AF81-0AQ0**		1	10 units	41J
	Einrichten	--	5	**3SU1900-0AF81-0AR0**		1	10 units	41J
	NOT AUS	--	5	**3SU1900-0AF81-0AS0**		1	10 units	41J
	NOT-HALT	--	5	**3SU1900-0AF81-0AT0**		1	10 units	41J
	Hand O Auto	--	5	**3SU1900-0AF81-0DD0**		1	10 units	41J
Inscription in English								
Silver/Black (label/lettering)	Stop	--	5	**3SU1900-0AF81-0DS0**		1	10 units	41J
	Start	--	5	**3SU1900-0AF81-0DT0**		1	10 units	41J
	Reset	--	5	**3SU1900-0AF81-0DU0**		1	10 units	41J
	Test	--	5	**3SU1900-0AF81-0DV0**		1	10 units	41J
	Open	--	5	**3SU1900-0AF81-0DW0**		1	10 units	41J
With symbol (ON/OFF)								
Silver/Black (label/lettering)	O	5008 IEC	5	**3SU1900-0AF81-0QA0**		1	10 units	41J
	I	5007 IEC	5	**3SU1900-0AF81-0QB0**		1	10 units	41J
	II	--	5	**3SU1900-0AF81-0QC0**		1	10 units	41J
	III	--	5	**3SU1900-0AF81-0QD0**		1	10 units	41J
	O I	--	5	**3SU1900-0AF81-0QG0**		1	10 units	41J
	I O II	--	5	**3SU1900-0AF81-0QK0**		1	10 units	41J
	I O (arranged vertically)	--	5	**3SU1900-0AF81-0QP0**		1	10 units	41J
	II O I (arranged vertically)	--	5	**3SU1900-0AF81-0QQ0**		1	10 units	41J
With symbol (graphic)								
Silver/Black (label/lettering)	→ ARROW DIRECTION TO RIGHT	5022 IEC	5	**3SU1900-0AF81-0QR0**		1	10 units	41J

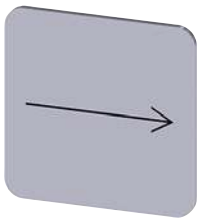

3SU1900-0AF81-0AA0

3SU1900-0AF81-0AB0

3SU1900-0AF81-0DD0

3SU1900-0AF81-0DU0

3SU1900-0AF81-QK0


3SU1900-0AF81-0QR0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Inscription labels for enclosures

Options

Customized inscriptions

The labels can be inscribed with texts and symbols not listed in the ordering data.

Text inscriptions have centered alignment and font height 4 mm (1 to 3 lines):

Up to 11 characters per line are possible. The typeface used is Arial. Other letter heights and typefaces are possible, but must be specified when ordering.

Examples for customized inscription

Two-line inscription in upper/lower case lettering (Q0Y)

Single-line inscription in upper case lettering (Q1Y)

3SB39 backing plate for enclosures, customized inscription (Q2Y)

Symbol number 5011 according to IEC 60417 (Q3Y)

Any symbol according to order form supplement (Q9Y)

Ordering notes

Append the following order codes to the Article No.:

- **Q0Y:** Text line(s) in upper/lower case, all lines begin with upper case (e.g. Lift / Off)
- **Q1Y:** Text line(s) in upper case (e.g. LIFT)
- **Q2Y:** Text line(s) in lower case (e.g. lift / off / lower)
- **Q5Y:** Text line(s) in upper/lower case, all words begin with upper case letters (e.g. "On Off")
- **Q3Y:** Symbol with number according to ISO 7000 or IEC 60417
- **Q9Y:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT Configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription in plain text without spaces, in addition to the Article No. and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

For long words you can also specify the end-of-line division. In the case of multi-line inscriptions, the text must be assigned to the respective line, e.g. Z1=Lift, Z2=Lower
(see ordering example 1).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering examples 2 and 3).

The SIRIUS ACT Configurator must be used to select special inscriptions and symbols (order code Q9Y). In this case a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly using the CIN and the SIRIUS ACT Configurator (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:
- Configurator: www.siemens.com/sirius-act/configurator
- Electronic Catalog CA 01 on DVD
- Industry Mall: www.siemens.com/industrymall

Ordering example 1

A label with 2 lines of text is required:

3SU1900–0AF16-0AZ0
Q1Y
Z1=LIFT
Z2=LOWER

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

3SU1900–0AF16–0AZ0
Q3Y
Z=5011 IEC

Ordering example 3

A label inscribed with symbol No. 1118 according to ISO 7000 is required:

3SU1900–0AF16–0AZ0
Q3Y
Z=1118 ISO

Overview

Label inscriptions

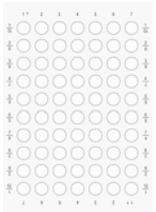
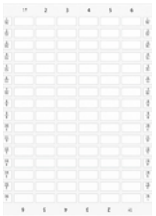
Using the *Label Designer* software, which can be downloaded from the Internet, and the labeling plates for laser inscription you can create your own customized labels with a standard laser printer. The self-adhesive or snap-on labels can be stuck or snapped onto the corresponding label holders. Round labels are provided for inserting in illuminated pushbuttons and switches.

The labels are suitable for inscription with one to three lines of text or symbols.

For applications with more exacting requirements we recommend factory-printed labeling plates and insert labels (laser-printed or engraved depending on the type).

For *Label Designer* software, see www.siemens.com/sirius-label-designer.

Selection and ordering data

	Type of mounting	Height	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm	mm	d					
Labels for printing - insert labels									
 3SU1900-0BH60-0AA0	Insert	--	--	3	**3SU1900-0BH60-0AA0**		100	490 units	41J
Labels for printing - labeling plates									
 3SU1900-0BJ61-0AA0	Self-adhesive	12.5	27.5	►	**3SU1900-0BJ61-0AA0**		100	480 units	41J
		17.5	27	►	**3SU1900-0BK61-0AA0**		100	720 units	41J
		27	27	►	**3SU1900-0BL61-0AA0**		100	480 units	41J
		22	22	►	**3SU1900-0BM61-0AA0**		100	700 units	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Other labels

Selection and ordering data

Color	Fastening method	Outer diameter mm	Marking	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP backing plates									
 3SU1900-0BB31-0AT0									
Yellow/Black (label/ lettering)	None	45	None	▶	**3SU1900-0BA31-0AA0**		1	10 units	41J
		60	NOT-HALT, EMERGENCY STOP, Arrêt d'urgence, parada de emergencia (de, en, fr, it)	X	**3SU1900-0BN31-0NC0**		1	10 units	41J
		75	None	▶	**3SU1900-0BB31-0AA0**		1	10 units	41J
			NOT-AUS	10	**3SU1900-0BB31-0AS0**		1	10 units	41J
			NOT-HALT	1	**3SU1900-0BB31-0AT0**		1	10 units	41J
With customized inscription									
For inscriptions or symbols, see "Options" on page 13/121									
		45		10	**3SU1900-0BA31-0AZ0**		1	1 unit	41J
		75		10	**3SU1900-0BB31-0AZ0**		1	1 unit	41J
EMERGENCY STOP backing plates									
 3SU1900-0BC31-0AT0									
Yellow/Black (label/ lettering)	Self-adhesive	75	None	▶	**3SU1900-0BC31-0AA0**		1	10 units	41J
			NOT-AUS	3	**3SU1900-0BC31-0AS0**		1	10 units	41J
			NOT-HALT	▶	**3SU1900-0BC31-0AT0**		1	10 units	41J
			EMERGENCY STOP	▶	**3SU1900-0BC31-0DA0**		1	10 units	41J
			Arrêt d'urgence	3	**3SU1900-0BC31-0GQ0**		1	10 units	41J
			EMERGENZA	3	**3SU1900-0BC31-0JA0**		1	10 units	41J
			NODSTOP	5	**3SU1900-0BC31-0LA0**		1	10 units	41J
			EMERGENCY STOP in Chinese	5	**3SU1900-0BC31-0MA0**		1	10 units	41J
			NOT-HALT, EMERGENCY STOP, EMERGENZA, EMERGENCIA (de, en, it, sp)	▶	**3SU1900-0BC31-0NB0**		1	10 units	41J
 3SU1900-0BC31-0NB0									
With customized inscription									
For inscriptions or symbols, see "Options" on page 13/121									
		75		10	**3SU1900-0BC31-0AZ0**		1	1 unit	41J
Labeling plates for potentiometers									
 3SU1900-0BG16-0RU0									
Black/White (label/ lettering)	None	40	--	▶	**3SU1900-0BG16-0AA0**		1	10 units	41J
			SYMBOL: 0 ...9	3	**3SU1900-0BG16-0RT0**		1	10 units	41J
			SYMBOL: 0 ... 10 NEW	3	**3SU1900-0BG16-0SA0**		1	10 units	41J
			SYMBOL: Power up	3	**3SU1900-0BG16-0RU0**		1	10 units	41J

Color	Label fastening method	Height mm	Width mm	Marking	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates for enclosures with EMERGENCY STOP										
 3SU1900-0BE31-0AS0										
Yellow/Black (label/lettering)	Self-adhesive	38	150	None	▶	**3SU1900-0BE31-0AA0**		1	10 units	41J
				NOT-AUS	3	**3SU1900-0BE31-0AS0**		1	10 units	41J
Labeling plates for enclosures with EMERGENCY STOP with recess										
 3SU1900-0BF31-0AA0										
Yellow/Black (label/lettering)	Self-adhesive	38	150	None	3	**3SU1900-0BF31-0AA0**		1	10 units	41J
Unit labeling plates										
3SU1900-0BY61-0AA0										
White/Black (label/lettering)	Insert	9.5	10.5	None	5	**3SU1900-0AY61-0AA0**		100	10 units	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data.

The EMERGENCY STOP backing plates can be divided into as many as 4 radial segments. Each segment can be custom-labeled.

Example: 4 radial segments for customized inscription

Ordering notes

Append the following order codes to the Article No.:

- **Q0Y:** Text line(s) in upper/lower case, always upper case at beginning of line (e.g. Text)
- **Q1Y:** Text line(s) in upper case (e.g. TEXT)
- **Q2Y:** Text line(s) in lower case (e.g. text)
- **Q5Y:** Text line(s) in upper/lower case, all words begin with upper case letters (e.g. Text / Text)
- **Q9Y:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT Configurator can be ordered with a Configuration Identification Number (CIN)

When ordering, specify the required inscription in plain text without spaces, in addition to the Article No. and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

In the case of customer-specific labeling with as many as 4 radial segments, the text must be assigned to the respective radial segment (Z1-Z4),
e.g. Z1=Text 1, Z2=Text 2. For long words you can also specify the end-of-line division.
(see ordering examples 1 and 2)

The SIRIUS ACT Configurator must be used to select special inscriptions and symbols (order code Q9Y). In this case a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly using the CIN and the SIRIUS ACT Configurator (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:
- Configurator: www.siemens.com/sirius-act/configurator
- Electronic Catalog CA 01 on DVD
- Industry Mall: www.siemens.com/industrymall

Ordering example 1

A label with two radial segments is required:

3SU1900-0BB31-0AZ0
Q1Y
Z1=Text 1
Z2=Text 2

Ordering example 2

A label with four radial segments is required:

3SU1900-0BB31-0AZ0
Q1Y
Z1=Text 1
Z2=Text 2
Z3=Text 3
Z4=Text 4

Protection/access protection

Overview

- Protection and access protection are for actuators and indicators with diameter 22 mm.
- The protective collars cannot be used in conjunction with label holders or single frames.

Selection and ordering data

	Product version	Material	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Protective caps									
 3SU1900-0DA10-0AA0	**Sealable caps for pushbuttons, flat and raised**	Plastic	Black Clear	3 3	**3SU1900-0DA10-0AA0** **3SU1900-0DA70-0AA0**		1 1	1 unit 1 unit	41J 41J
 3SU1900-0EL70-0AA0	**Sealable caps for:** • Pushbuttons, raised • Pushbuttons with front ring, raised • Pushbuttons with front ring, raised, castellated	Plastic	Black Clear	3 3	**3SU1900-0EL10-0AA0** **3SU1900-0EL70-0AA0**		1 1	1 unit 1 unit	41J 41J
 3SU1900-0DB70-0AA0	**Silicone protective caps for pushbuttons, flat**	Plastic	Clear	►	**3SU1900-0DB70-0AA0**		1	1 unit	41J
	Silicone-free protective caps for pushbuttons, flat	Plastic	Clear	►	**3SU1900-0ED70-0AA0**		1	1 unit	41J
 3SU1900-0DC70-0AA0	**Silicone protective caps for pushbuttons, raised**	Plastic	Clear	►	**3SU1900-0DC70-0AA0**		1	1 unit	41J
	Silicone-free protective caps for pushbuttons, raised	Plastic	Clear	►	**3SU1900-0EE70-0AA0**		1	1 unit	41J
 3SU1900-0DD70-0AA0	**Silicone protective caps for selectors, short**	Plastic	Clear	3	**3SU1900-0DD70-0AA0**		1	1 unit	41J
 3SU1900-0DE70-0AA0	**Silicone protective caps for mushroom pushbuttons 40 mm**	Plastic	Clear	5	**3SU1900-0DE70-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Product version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Protective caps									
 3SU1900-0DF70-0AA0	**Silicone protective caps for EMERGENCY STOP**	Plastic	Clear	5	**3SU1900-0DF70-0AA0**		1	1 unit	41J
 3SU1900-0DG70-0AA0	**Silicone protective caps for twin pushbuttons, flat**	Plastic	Clear	▶	**3SU1900-0DG70-0AA0**		1	1 unit	41J
	Silicone protective caps for twin pushbuttons, raised	Plastic	Clear	5	**3SU1900-0DH70-0AA0**		1	1 unit	41J
 3SU1900-0EB10-0AA0	**Dust caps for key-operated switches**	Plastic	Black	5	**3SU1900-0EB10-0AA0**		1	1 unit	41J
Protective collars									
 3SU1900-0DJ10-0AA0	**Sun collars**	Plastic	Black	5	**3SU1900-0DJ10-0AA0**		1	1 unit	41J
 3SU1900-0DW10-0AA0	**360° protective collars for pushbuttons and selectors, short**	Plastic	Black	3	**3SU1900-0DW10-0AA0**		1	1 unit	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Protection/access protection

	Product version	Material	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Protective collars									
 3SU1950-0DK80-0AA0	**360° protective collars for pushbuttons,** visibility from the side	Metal	Silver	5	**3SU1950-0DK80-0AA0**		1	1 unit	41J
 3SU1950-0DL80-0AA0	**360° protective collars for mushroom pushbuttons, 40 mm** visibility from the side	Metal	Silver	5	**3SU1950-0DL80-0AA0**		1	1 unit	41J
 3SU1900-0DY30-0AA0	**Protective collars for EMERGENCY STOP mushroom pushbuttons without lock or with RONIS lock**	Plastic	Yellow Silver	▶ 5	**3SU1900-0DY30-0AA0** **3SU1900-0DY80-0AA0**		1 1	1 unit 1 unit	41J 41J
 3SU1950-0DX30-0AA0	**Protective collars for EMERGENCY STOP mushroom pushbuttons 40 mm** **For 5 padlocks**	Metal	Yellow Silver	3 5	**3SU1950-0DX30-0AA0** **3SU1950-0DX80-0AA0**		1 1	1 unit 1 unit	41J 41J
	**360° protective collar**	Plastic	Yellow	5	**3SU1900-0EA30-0AA0**		1	1 unit	41J
 3SU1900-0EC10-0AA0	**Protection for sensor switches**	Plastic	Black	5	**3SU1900-0EC10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Product version	Material	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Locking devices									
 3SU1950-0DM80-0AA0	**Locking devices for pushbuttons** flat, for front ring, raised and front ring raised, castellated	Metal	Silver	5	**3SU1950-0DM80-0AA0**		1	1 unit	41J
	Locking devices for pushbuttons, raised	Metal	Silver	5	**3SU1950-0DN80-0AA0**		1	1 unit	41J
	Locking devices for mushroom pushbuttons D30, D40	Metal	Silver	5	**3SU1950-0DP80-0AA0**		1	1 unit	41J
 3SU1950-0DQ80-0AA0	**Locking devices for selectors** short/long actuator, in the left position	Metal	Silver	5	**3SU1950-0DQ80-0AA0**		1	1 unit	41J
 3SU1950-0DR80-0AA0	**Locking devices for selectors** short/long actuator, in the center position	Metal	Silver	5	**3SU1950-0DR80-0AA0**		1	1 unit	41J
 3SU1950-0DS80-0AA0	**Locking devices for selectors** short/long actuator, in the right position	Metal	Silver	5	**3SU1950-0DS80-0AA0**		1	1 unit	41J
 3SU1950-0DT80-0AA0	**Locking devices for selectors** short/long actuator, window from center to right, blocked on left	Metal	Silver	5	**3SU1950-0DT80-0AA0**		1	1 unit	41J
 3SU1950-0DU80-0AA0	**Locking devices for selectors** short/long actuator, window from center to left, blocked on right	Metal	Silver	5	**3SU1950-0DU80-0AA0**		1	1 unit	41J
 3SU1950-0DV80-0AA0	**Covers for locking devices**	Metal	Silver	5	**3SU1950-0DV80-0AA0**		1	1 unit	41J

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Actuators

Selection and ordering data

	Material	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Sealing plugs[1], mounting diameter 22 mm								
 3SU1900-0FA10-0AA0	Plastic	Black	▶	**3SU1900-0FA10-0AA0**		1	1 unit	41J
 3SU1950-0FA80-0AA0	Metal, matte	Sand gray	▶	**3SU1930-0FA80-0AA0**		1	1 unit	41J
	Metal, shiny	Silver	▶	**3SU1950-0FA80-0AA0**		1	1 unit	41J

[1] The sealing plug is mounted with a holder.
Modules might already be mounted on the holder.

	Material	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Buttons, flat								
	For pushbuttons							
 3SU1900-0FT20-0AA0	Plastic	Black	5	**3SU1900-0FT10-0AA0**		100	10 units	41J
		Red	3	**3SU1900-0FT20-0AA0**		100	10 units	41J
		Yellow	3	**3SU1900-0FT30-0AA0**		100	10 units	41J
		Green	▶	**3SU1900-0FT40-0AA0**		100	10 units	41J
		Blue	3	**3SU1900-0FT50-0AA0**		100	10 units	41J
		White	5	**3SU1900-0FT60-0AA0**		100	10 units	41J
	For illuminated pushbuttons							
 3SU1901-0FT30-0AA0	Plastic	Amber	5	**3SU1901-0FT00-0AA0**		100	10 units	41J
		Red	5	**3SU1901-0FT20-0AA0**		100	10 units	41J
		Yellow	3	**3SU1901-0FT30-0AA0**		100	10 units	41J
		Green	3	**3SU1901-0FT40-0AA0**		100	10 units	41J
		Blue	5	**3SU1901-0FT50-0AA0**		100	10 units	41J
		White	▶	**3SU1901-0FT60-0AA0**		100	10 units	41J
		Clear	▶	**3SU1901-0FT70-0AA0**		100	10 units	41J
Buttons, raised								
	For pushbuttons							
 3SU1900-0FS30-0AA0	Plastic	Black	5	**3SU1900-0FS10-0AA0**		1	10 units	41J
		Red	5	**3SU1900-0FS20-0AA0**		1	10 units	41J
		Yellow	5	**3SU1900-0FS30-0AA0**		1	10 units	41J
		Green	5	**3SU1900-0FS40-0AA0**		1	10 units	41J
	For illuminated pushbuttons							
 3SU1901-0FS40-0AA0	Plastic	Red	5	**3SU1901-0FS20-0AA0**		1	10 units	41J
		Yellow	5	**3SU1901-0FS30-0AA0**		1	10 units	41J
		Green	5	**3SU1901-0FS40-0AA0**		1	10 units	41J
		Blue	5	**3SU1901-0FS50-0AA0**		1	10 units	41J
		Clear	5	**3SU1901-0FS70-0AA0**		1	10 units	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Material	Key number	Version of RFID coding	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
RONIS keys										
 3SU1950-0FB80-0AA0	Metal	SB30[1)] 455	--	Silver	► 5	**3SU1950-0FB80-0AA0** **3SU1950-0FC80-0AA0**		1 1	1 unit 1 unit	41J 41J
BKS keys										
 3SU1950-0FD80-0AA0	Metal	S1[1)]	--	Silver	5	**3SU1950-0FD80-0AA0**		1	1 unit	41J
O.M.R. keys										
 3SU1950-0FJ50-0AA0	Metal	73038 73037 73034 73033	--	Blue Red Black Yellow	3 5 5 5	**3SU1950-0FJ50-0AA0** **3SU1950-0FK20-0AA0** **3SU1950-0FL10-0AA0** **3SU1950-0FM30-0AA0**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
CES keys										
 3SU1950-0FP80-0AA0	Metal	LSG1 SSG10[1)] VL5	--	Silver	5 ► 5	**3SU1950-0FN80-0AA0** **3SU1950-0FP80-0AA0** **3SU1950-0FQ80-0AA0**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
IKON keys										
 3SU1950-0FR80-0AA0	Metal	360012K1[1)]	--	Silver	5	**3SU1950-0FR80-0AA0**		1	1 unit	41J
ID keys ID group individual										
 3SU1900-0FU60-0AA0	Plastic	--	Individually coded, programmable several times	White	►	**3SU1900-0FU60-0AA0**		1	1 unit	41J
ID keys										
 3SU1900-0FV40-0AA0	Plastic	--	ID group 1 ID group 2 ID group 3 ID group 4	Green Yellow Red Blue	5 5 5 5	**3SU1900-0FV40-0AA0** **3SU1900-0FW30-0AA0** **3SU1900-0FX20-0AA0** **3SU1900-0FY50-0AA0**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J

[1)] Also available with special lock. Supplement the Article No. with **"-Z"** and the order code **"Y04"** and specify the required lock in plain text. Additional price.

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Enclosures

Selection and ordering data

	Product version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Cable glands									
 3SU1900-0HG10-0AA0	**Metric M20 cable glands** for enclosures	Plastic	Black	►	**3SU1900-0HG10-0AA0**		1	1 unit	41J
	Metric M25 cable glands for enclosures			5	**3SU1900-0HH10-0AA0**		1	1 unit	41J
Cable glands for AS-i									
 3SU1900-0HG10-0AA0	**Metric M20 cable glands** for enclosures	Plastic	Black	3	**3SU1900-0JA10-0AA0**		1	1 unit	41J
	Metric M25 cable glands for enclosures			3	**3SU1900-0JB10-0AA0**		1	1 unit	41J
Connection pieces									
	For plastic enclosures								
 3SU1900-0HJ10-0AA0	**M20/M20 connection pieces** for connecting 2 enclosures	Plastic	Black	5	**3SU1900-0HJ10-0AA0**		1	1 unit	41J
	M20/M25 connection pieces for connecting 2 enclosures			5	**3SU1900-0HK10-0AA0**		1	1 unit	41J
	M25/M25 connection pieces for connecting 2 enclosures			5	**3SU1900-0HL10-0AA0**		1	1 unit	41J
	For metal enclosures								
 3SU1950-0HJ10-0AA0	**M20/M20 connection pieces** for connecting 2 enclosures	Metal	Silver	5	**3SU1950-0HJ10-0AA0**		1	1 unit	41J
	M20/M25 connection pieces for connecting 2 enclosures			5	**3SU1950-0HK10-0AA0**		1	1 unit	41J
	M25/M25 connection pieces for connecting 2 enclosures			5	**3SU1950-0HL10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Product version	Material	Color	SD	Insulation piercing method	PU (UNIT, SET, M)	PS*	PG
				d	Article No. / Price per PU			
Adapters for AS-i shaped cable								
 3SU1900-0HX10-0AA0	Insulation piercing method							
	M20	Plastic	Black	3	**3SU1900-0HX10-0AA0**	1	1 unit	41J
	M25			3	**3SU1900-0HY10-0AA0**	1	1 unit	41J
Adapters for tab connection								
	For plastic enclosures							
 3SU1930-0HS10-0AA0	Adapter, M12 socket, 4-pole	Plastic	Black			1	1 unit	41J
	M20 cable entry			5	**3SU1930-0HA10-0AA0**			
	M25 cable entry			5	**3SU1930-0HB10-0AA0**	1	1 unit	41J
	Adapter, M12 connector, 4-pole	Plastic	Black			1	1 unit	41J
	M20 cable entry			5	**3SU1930-0HC10-0AA0**			
	M25 cable entry			5	**3SU1930-0HD10-0AA0**	1	1 unit	41J
	Adapter, M12 socket, 5-pole	Plastic	Black			1	1 unit	41J
	M20 cable entry			5	**3SU1930-0HP10-0AA0**			
	M25 cable entry			5	**3SU1930-0HQ10-0AA0**	1	1 unit	41J
	Adapter, M12 connector, 5-pole	Plastic	Black			1	1 unit	41J
	M20 cable entry			5	**3SU1930-0HR10-0AA0**			
	M25 cable entry			5	**3SU1930-0HS10-0AA0**	1	1 unit	41J
	Adapter, M12 socket, 8-pole	Plastic	Black			1	1 unit	41J
	M20 cable entry			5	**3SU1930-0HT10-0AA0**			
	M25 cable entry			5	**3SU1930-0HU10-0AA0**	1	1 unit	41J
	Adapter, M12 connector, 8-pole	Plastic	Black			1	1 unit	41J
	M20 cable entry			5	**3SU1930-0HV10-0AA0**			
	M25 cable entry			5	**3SU1930-0HW10-0AA0**	1	1 unit	41J
	For metal enclosures							
 3SU1950-0HA10-0AA0	Adapter, M12 socket, 4-pole	Plastic	Black	5		1	1 unit	41J
	M20 cable entry				**3SU1950-0HA10-0AA0**			
	M25 cable entry			5	**3SU1950-0HB10-0AA0**	1	1 unit	41J
	Adapter, M12 connector, 4-pole	Plastic	Black			1	1 unit	41J
	M20 cable entry			5	**3SU1950-0HC10-0AA0**			
	M25 cable entry			5	**3SU1950-0HD10-0AA0**	1	1 unit	41J
	Adapter, M12 socket, 5-pole	Plastic	Black	5		1		41J
	M20 cable entry				**3SU1950-0HP10-0AA0**		1 unit	
	M25 cable entry			5	**3SU1950-0HQ10-0AA0**	1	1 unit	41J
	Adapter, M12 connector, 5-pole	Plastic	Black	5		1	1 unit	41J
	M20 cable entry				**3SU1950-0HR10-0AA0**			
	M25 cable entry			5	**3SU1950-0HS10-0AA0**	1	1 unit	41J
	Adapter, M12 socket, 8-pole	Plastic	Black	5		1	1 unit	41J
	M20 cable entry				**3SU1950-0HT10-0AA0**			
	M25 cable entry			5	**3SU1950-0HU10-0AA0**	1	1 unit	41J
	Adapter, M12 connector, 8-pole	Plastic	Black			1	1 unit	41J
	M20 cable entry			5	**3SU1950-0HV10-0AA0**			
	M25 cable entry			5	**3SU1950-0HW10-0AA0**	1	1 unit	41J
Enclosure cover monitoring								
 3SU1900-0HM10-0AA0	**Enclosure cover monitoring** (module with extension plunger)	Plastic	Black	3	**3SU1900-0HM10-0AA0**	1	1 unit	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Miscellaneous accessories

Selection and ordering data

	Product version	Material	Color	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories									
 3SU1900-0KA10-0AA0	**PCB carriers**	Plastic	Black	X	**3SU1900-0KA10-0AA0**		100	10 units	41J
 3SU1900-0CK10-0AA0	**Pressure plates for selectors and locks**	Plastic	White	▶	**3SU1900-0KC10-0AA0**		100	10 units	41J
 3SU1900-0KF10-0AA0	**Drilling template for grid** 30 x 40, horizontal	Plastic	Black	5	**3SU1900-0KF10-0AA0**		1	1 unit	41J
 3SU1900-0KG10-0AA0	**Extension plungers** For compensation of the distance between the pushbutton and the unlatching button of an overload relay	Plastic	Gray	▶	**3SU1900-0KG10-0AA0**		1	1 unit	41J
 3SU1900-0KH80-0AA0	**Adapters for standard rail mounting**	Plastic	Black NEW	▶	**3SU1900-0KH80-0AA0**		1	1 unit	41J
 3SU1950-0KJ80-0AA0	**Adapters for actuators and indicators** with front ring for flat mounting	Metal	Silver	▶	**3SU1950-0KJ80-0AA0**		1	1 unit	41J
	Adapters for 30.5 mm to 22.5 mm mounting hole	Metal	Silver	▶	**3SU1950-0KB10-0AA0**		1	1 unit	41J
 3SU1950-0KK80-0AA0	**Grounding studs**	Metal	Silver	5	**3SU1950-0KK80-0AA0**		100	50 units	41J
 3SU1900-0KL10-0AA0	**Connectors for sensor switches, angled socket with screw terminal connection**	Metal	Black	3	**3SU1900-0KL10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

More information

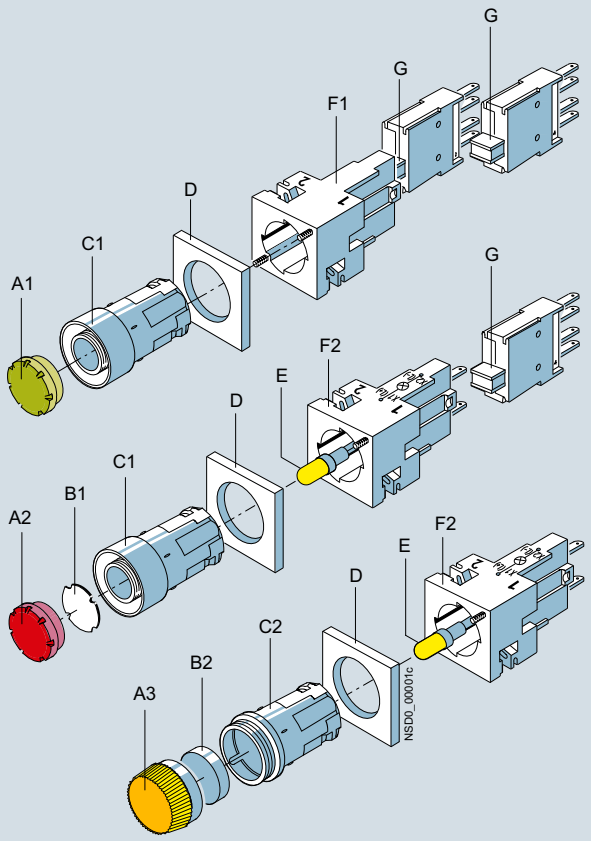
Home page, see www.siemens.com/sirius-commanding
Industry Mall, see www.siemens.com/product?3SB2
Manual, see https://support.industry.siemens.com/cs/ww/en/view/107194954

The 3SB2 pushbuttons and indicator lights are provided for front plate mounting and rear connection with flat connectors. For use on printed circuit boards, contact blocks and lampholders with solder pins are also available.

Standards

IEC 60947-1, EN 60947-1,
IEC 60947-5-1, EN 60947-5-1,
IEC 60947-5-5, EN 60947-5-5 for EMERGENCY STOP mushroom pushbuttons

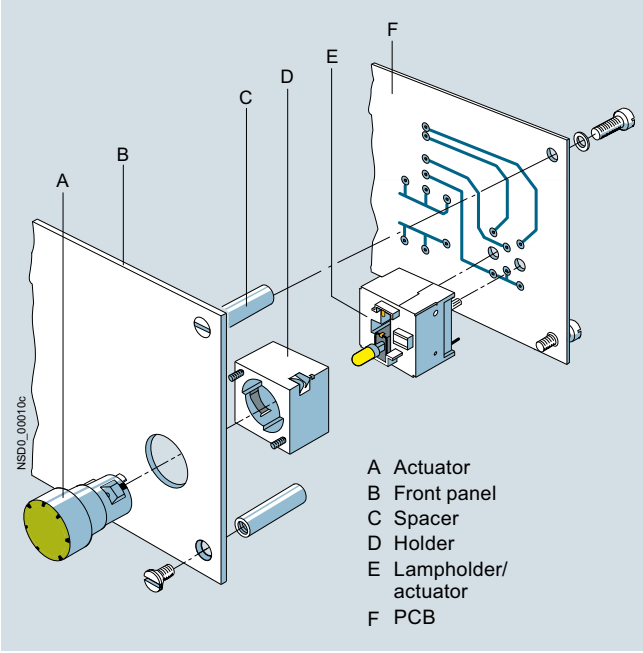
Version with flat connector



A1 Button, flat
A2 Illuminated button, flat
A3 Screw lens for indicator light
B1 Insert label, for labeling
B2 Insert cap, for labeling
C1 Collar with extruded front ring
C2 Collar for indicator light
D Frame for rectangular design
E Wedge base lamp, W2 x 4.6 d
F1 Holders
F2 Lampholder with holder
G Contact blocks (1 NO or 1 NC) for snapping onto the holder or onto the lampholder

PCB mounting

For use on printed circuit boards, special contact blocks and lampholders for soldering into the printed circuit board are available. For this purpose, the contact blocks and lampholders are fitted with 0.8 mm x 0.8 mm solder pins of length 3.5 mm.



Connection methods

Flat connectors

Solder pin connections

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Application

The devices are climate-proof and suitable for marine applications.

Safety EMERGENCY STOP pushbuttons according to ISO 13850

For controls according to IEC 60204-1 or EN 60204-1, the mushroom pushbuttons of the 3SB2 series are suitable for use as safety EMERGENCY STOP pushbuttons.

Safety circuits

IEC 60947-5-1 and EN 60947-5-1 require positive opening. This means that for the purpose of personal safety, the reliable opening of NC contacts in all safety circuits is expressly prescribed for the electrical equipment of machines and is designated according to IEC 60947-5-1 with the symbol ⊖.

Category 4 according to EN ISO 13849-1 can be attained with the EMERGENCY STOP mushroom pushbuttons if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK11 safety relays, the 3RK3 Modular Safety System (see "Safety Technology", page 11/1 onwards) or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

General data

Technical specifications

Type		3SB2
Contact blocks and lampholders		
Standards		IEC 60947-5-1, EN 60947-5-1 IEC 60947-5-5, EN 60947-5-5
Rated insulation voltage U_i	V	250
Conventional thermal current I_{th}	A	10
Rated operational currents I_e at rated operational voltage U_e		
• Alternating current AC-12		
- At U_e = 24 ... 230 V	A	10
• Alternating current AC-15		
- At U_e = 24 ... 230 V	A	4
• Direct current DC-12		
- At U_e = 24 V	A	6
- At U_e = 60 V	A	5
- At U_e = 110 V	A	2.5
- At U_e = 230 V	A	1
• Direct current DC-13		
- At U_e = 24 V	A	3
- At U_e = 60 V	A	1.5
- At U_e = 110 V	A	0.7
- At U_e = 230 V	A	0.3
Contact stability		
• Test voltage/test current		5 V/1 mA
Lamps		
• Bases		Wedge base W2 x 4.6 d
• Rated voltage	V	6, 12, 24, 30, 48, 60
• Rated power, max.	W	1
Short-circuit protection weld-free according to IEC 60947-5-1		
• DIAZED fuse links, utilization category gG		10 A TDz, 16 A Dz
• Miniature circuit breaker with C characteristic according to IEC 60898		10 A
Electrical endurance		
• For utilization category AC-15 with 3RT10 15 to 3RT10 26 contactors		10 x 10^6 operating cycles
Mechanical endurance		10 x 10^6 operating cycles
Degree of protection acc. to IEC 60529		
• Connection of contact blocks and lampholders behind the front plate		IP00
• Contact chambers of the contact blocks behind the front plate		IP40
Finger-safe according to IEC 60529 and Reg. 3		With voltages > 50 V AC or 120 V DC, insulating sleeves must be fitted to the unassigned tab connections.
Data according to UL and CSA		
Rated voltage		
• Contact blocks	V	250 AC
• Indicator lights (lamp with wedge base W2 × 4.6 d)	V	60; 1 W
Uninterrupted current	A	5
Switching capacity		B 300, R 300
Actuating and signaling elements		
Mechanical endurance		
• Pushbuttons		10 x 10^6 operating cycles
• Actuating elements, rotary or latching		3 x 10^5 operating cycles
• Illuminated pushbuttons		3 x 10^6 operating cycles
Climatic withstand capability		Climate-proof; suitable for marine applications
Ambient temperature		
• During operation, non-illuminated devices and complete with LED	°C	–25 ... +70
• During operation, devices with incandescent lamp	°C	–25 ... +60
• During storage, transport	°C	–40 ... +80
Degree of protection acc. to IEC 60529		
• Actuators and indicators		IP65
• Actuators and indicators with protective cap		IP67
Protective measures		
• For mounting in metal front plates and enclosures		The actuators and lens assemblies must not be included in the protective measures.
• For fitting into enclosures with total insulation		The protective measure "Total insulation" is retained.
Shock resistance acc. to IEC 60068-2-27		
• Shock amplitude		≤ 50 *g*
• Shock duration	ms	11
• Shock form		Half-sine

Configuration

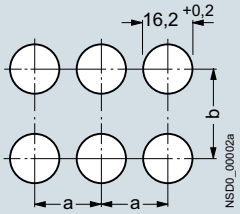
Design

Two design versions can be mounted:

- Round design: The 3SB2 pushbuttons and indicator lights are assembled with the modules – actuator, holder, contact block and lampholder. Depending on the specific application, various versions can be assembled. Complete units are offered for the most commonly used applications.
- Square design: With square, black frames the round units can be given a square look. The frames are inserted underneath the round actuators. Further mounting is the same as for the round version.

Mounting and fixing:

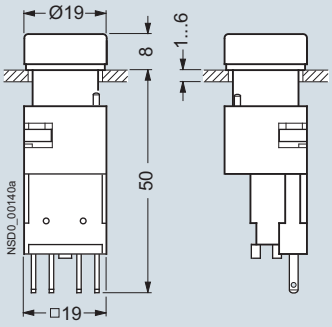
Mounting dimensions according to EN 50007
(does not apply to EMERGENCY STOP mushroom pushbuttons):



Minimum clearance	a	b
Round design	19	19
Square design without labeling plate	21	21
Round and square design with labeling plate	21	32
For 2 selector switches with 3 switch positions, latching, side by side	21	21

For mounting, the actuator or the lens assembly is inserted from the front into the hole in the front plate. Four small nubs ensure a secure fitting in the hole. The holder is plugged on from the back and snaps automatically into place. The module is fixed to the holder with two screws so that it is immune to vibrations.

One or two contact blocks can be mounted on the holder. They are inserted into the holder with slide slots and held down with two snap brackets.



Pushbutton (flat) with holder and contact block

If a command point is fitted with an indicator light or illuminated pushbutton, a lamp socket with lampholder must be used instead of a holder. It is suitable for incandescent lamps or LEDs with bases of type W2 x 4.6 d.

PCB mounting

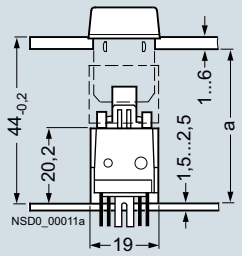
The command point comprises the actuator – e.g. 3SB2 pushbutton, illuminated pushbutton or indicator light –, which is mounted in the front plate, and a contact block and a lampholder which are soldered to the PCB. For this purpose, the contact blocks and lampholders are fitted with 0.8 mm x 0.8 mm solder pins of length 3.5 mm.

Mounting and fixing:

Mounting dimensions according to EN 50007

The actuators are mounted in the same way as 3SB2 front plate mounting devices.

The contact blocks and lampholders are plugged into the printed circuit board by means of their solder pins and can be flow-soldered. After soldering, the devices must be flush with the board and perpendicular to it. The printed circuit board must be supported on spacing bolts so that it cannot sag or bend more than 0.1 mm.



Length **a** of spacing bolts:
a = $44_{-0.2}$ minus front plate thickness.

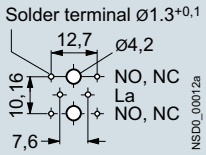
When using name plates, the length **a** is reduced by 0.8 mm.

Illuminated pushbutton with solder pin connection

To avoid bending the PCB when the control device is operated, sufficient spacing bolts must be provided as shown in the table below:

PCB thickness	Max. distance between spacing bolts
1.5 mm	80 mm
2.5 mm	150 mm
When using EMERGENCY STOP pushbuttons	Always 50 mm

These details are based on epoxy resin glass fiber mat.



Solder pin spacing

Selection and ordering data

Version	Contact blocks	Color of actuator	SD d	Flat connectors Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 Pushbutton with flat button								
Pushbuttons with flat button	1 NO	Black	▶	**3SB2202-0AB01**		1	1 unit	41J
	1 NC	Black	5	**3SB2203-0AB01**		1	1 unit	41J
	1 NC	Red	▶	**3SB2203-0AC01**		1	1 unit	41J
	1 NO	Yellow	5	**3SB2202-0AD01**		1	1 unit	41J
	1 NO	Green	▶	**3SB2202-0AE01**		1	1 unit	41J
	1 NO	Blue	5	**3SB2202-0AF01**		1	1 unit	41J
	1 NO	White	▶	**3SB2202-0AG01**		1	1 unit	41J
	1 NO	Clear[1]	5	**3SB2202-0AH01**		1	1 unit	41J
Illuminated pushbuttons with flat button Lampholder W2 x 4.6 d without lamp[2]	1 NC	Red	▶	**3SB2207-0AC01**		1	1 unit	41J
	1 NO	Yellow[1]	5	**3SB2206-0AD01**		1	1 unit	41J
	1 NO	Green	▶	**3SB2206-0AE01**		1	1 unit	41J
	1 NO	Blue	5	**3SB2206-0AF01**		1	1 unit	41J
	1 NO	Clear[1]	▶	**3SB2206-0AH01**		1	1 unit	41J
Illuminated pushbuttons with flat button Lampholder W2 x 4.6 d with 24 V incandescent lamp	1 NC	Red	▶	**3SB2227-0AC01**		1	1 unit	41J
	1 NO	Yellow[1]	5	**3SB2226-0AD01**		1	1 unit	41J
	1 NO	Green	▶	**3SB2226-0AE01**		1	1 unit	41J
	1 NO	Blue	5	**3SB2226-0AF01**		1	1 unit	41J
	1 NO	Clear[1]	▶	**3SB2226-0AH01**		1	1 unit	41J
 illuminated pushbutton with raised button								
Pushbuttons with raised button	1 NO	Black	5	**3SB2202-0LB01**		1	1 unit	41J
	1 NC	Red	5	**3SB2203-0LC01**		1	1 unit	41J
	1 NO	Yellow	5	**3SB2202-0LD01**		1	1 unit	41J
	1 NO	Blue	5	**3SB2202-0LF01**		1	1 unit	41J
	1 NO	Clear[1]	5	**3SB2202-0LH01**		1	1 unit	41J
Illuminated pushbuttons with raised button Lampholder W2 x 4.6 d without lamp[2]	1 NC	Red	5	**3SB2207-0LC01**		1	1 unit	41J
	1 NO	Yellow[1]	5	**3SB2206-0LD01**		1	1 unit	41J
	1 NO	Green	5	**3SB2206-0LE01**		1	1 unit	41J
	1 NO	Blue	5	**3SB2206-0LF01**		1	1 unit	41J
	1 NO	Clear[1]	5	**3SB2206-0LH01**		1	1 unit	41J
Illuminated pushbuttons with raised button Lampholder W2 x 4.6 d with 24 V incandescent lamp	1 NC	Red	5	**3SB2227-0LC01**		1	1 unit	41J
	1 NO	Yellow[1]	5	**3SB2226-0LD01**		1	1 unit	41J
	1 NO	Green	5	**3SB2226-0LE01**		1	1 unit	41J
	1 NO	Blue	5	**3SB2226-0LF01**		1	1 unit	41J
	1 NO	Clear[1]	5	**3SB2226-0LH01**		1	1 unit	41J
 EMERGENCY STOP mushroom pushbutton								
EMERGENCY STOP mushroom pushbuttons acc. to ISO 13850, latching[3] Latches automatically when pressed; Unlatches by turning the mushroom head counterclockwise, with yellow backing plate with inscription "NOT-HALT"	1 NC ⊖	Red	▶	**3SB2203-1AC01**		1	1 unit	41J

1) Inscription is possible by inserting a label.

2) Wedge base lamps, see "Accessories", page 13/145.

3) The mushroom pushbutton cannot be combined with 3SB2902-0AB backing plate or 3SB2902-0AA single frame.

⊖ Positive opening according to IEC 60947-5-1, Annex K. Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System; see page 11/1 onwards.
Certificate:

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selector switch

Version	Contact blocks	Color of actuator	SD d	Flat connectors Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches, 2 switch positions Switching sequence O-I, operating angle 62°, latching O I	1 NO	Black	▶ 5	**3SB2202-2AB01**		1	1 unit	41J
	1 NO	Red		**3SB2202-2AC01**		1	1 unit	41J
	1 NO	Green		**3SB2202-2AE01**		1	1 unit	41J
	1 NO	White		**3SB2202-2AG01**		1	1 unit	41J
Selector switches, 3 switch positions Switching sequence I-O-II, operating angle 2 × 62°, latching I O II	1 NO, 1 NO	Black	▶ 5	**3SB2210-2DB01**		1	1 unit	41J
	1 NO, 1 NO	Red		**3SB2210-2DC01**		1	1 unit	41J
	1 NO, 1 NO	Green		**3SB2210-2DE01**		1	1 unit	41J
	1 NO, 1 NO	White		**3SB2210-2DG01**		1	1 unit	41J
Selector switches, 3 switch positions Switching sequence I-O-II, operating angle 2 × 50°, momentary contact I O II	1 NO, 1 NO	Black	▶ 5	**3SB2210-2EB01**		1	1 unit	41J
	1 NO, 1 NO	Red		**3SB2210-2EC01**		1	1 unit	41J
	1 NO, 1 NO	Green		**3SB2210-2EE01**		1	1 unit	41J
	1 NO, 1 NO	White		**3SB2210-2EG01**		1	1 unit	41J

CES key-operated switch

Version	Contact blocks	Lock No.	Key removal position	SD d	Flat connectors Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
CES key-operated switches[1], 2 switch positions Switching sequence O-I, operating angle 62°, latching O I	1 NO	SB2	O	▶ 5	**3SB2202-4LA01**		1	1 unit	41J
	1 NO	SB2	O + I		**3SB2202-4LB01**		1	1 unit	41J
CES key-operated switches[1], 3 switch positions Switching sequence I-O-II, operating angle 2 × 62°, latching I O II	1 NO, 1 NO	SB2	O	5	**3SB2210-4PA01**		1	1 unit	41J
	1 NO, 1 NO	SB2	I + O + II	5	**3SB2210-4PB01**		1	1 unit	41J
CES key-operated switches[1], 3 switch positions Switching sequence I-O-II, operating angle 2 × 50°, momentary contact I O II	1 NO, 1 NO	SB2	O	5	**3SB2210-4QA01**		1	1 unit	41J

[1] Also available with additional locking systems. The Article No. must be supplemented with **"-Z"**, the order code "**Y01**" and the required lock number.

Indicator light

Version	Color screw lens	SD d	Flat connectors Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Indicator lights Lampholder W2 x 4.6 d without lamp[1]	Red	▶ 5	**3SB2204-6BC06**		1	1 unit	41J
	Yellow		**3SB2204-6BD06**		1	1 unit	41J
	Green	▶	**3SB2204-6BE06**		1	1 unit	41J
	White	▶	**3SB2204-6BG06**		1	1 unit	41J
	Clear	5	**3SB2204-6BH06**		1	1 unit	41J
Indicator lights Lampholder W2 x 4.6 d with 24 V incandescent lamp	Red	▶ 5	**3SB2224-6BC06**		1	1 unit	41J
	Yellow		**3SB2224-6BD06**		1	1 unit	41J
	Green	▶	**3SB2224-6BE06**		1	1 unit	41J
	White	▶	**3SB2224-6BG06**		1	1 unit	41J
	Clear	5	**3SB2224-6BH06**		1	1 unit	41J

[1] For wedge base lamps, see "Accessories", page 13/145.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Selection and ordering data

Pushbuttons

Pushbutton and illuminated pushbutton with flat button

Pushbutton and illuminated pushbutton with raised button

EMERGENCY STOP mushroom pushbuttons

Version	Color of actuator	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons with flat button	Black	▶	**3SB2000-0AB01**		1	1 unit	41J
	Red	▶	**3SB2000-0AC01**		1	1 unit	41J
	Yellow	5	**3SB2000-0AD01**		1	1 unit	41J
	Green	▶	**3SB2000-0AE01**		1	1 unit	41J
	Blue	▶	**3SB2000-0AF01**		1	1 unit	41J
	White	▶	**3SB2000-0AG01**		1	1 unit	41J
	Clear[1]	5	**3SB2000-0AH01**		1	1 unit	41J
Illuminated pushbuttons with flat button	Red	▶	**3SB2001-0AC01**		1	1 unit	41J
	Yellow[1]	5	**3SB2001-0AD01**		1	1 unit	41J
	Green	▶	**3SB2001-0AE01**		1	1 unit	41J
	Blue	5	**3SB2001-0AF01**		1	1 unit	41J
	White	▶	**3SB2000-0AG01**		1	1 unit	41J
	Clear[1]	5	**3SB2000-0AH01**		1	1 unit	41J
Pushbuttons with raised button	Black	5	**3SB2000-0LB01**		1	1 unit	41J
	Red	5	**3SB2000-0LC01**		1	1 unit	41J
	Yellow	5	**3SB2000-0LD01**		1	1 unit	41J
	Blue	5	**3SB2000-0LF01**		1	1 unit	41J
	White	5	**3SB2000-0LG01**		1	1 unit	41J
	Clear[1]	5	**3SB2000-0LH01**		1	1 unit	41J
Illuminated pushbuttons with raised button	Red	5	**3SB2001-0LC01**		1	1 unit	41J
	Yellow[1]	5	**3SB2001-0LD01**		1	1 unit	41J
	Green	▶	**3SB2001-0LE01**		1	1 unit	41J
	Blue	5	**3SB2001-0LF01**		1	1 unit	41J
	Clear[1]	5	**3SB2000-0LH01**		1	1 unit	41J
EMERGENCY STOP mushroom pushbuttons acc. to ISO 13850, latching[2] Latches automatically when pressed; unlatches by turning the mushroom head counterclockwise	Red	▶	**3SB2000-1AC01**		1	1 unit	41J

[1] Inscription is possible by inserting a label.

[2] The mushroom pushbutton cannot be combined with 3SB2902-0AB backing plate or 3SB2902-0AA single frame.

Selector switches

Selector switch

Version	Color of actuator	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches with 2 switch positions Switching sequence O-I, operating angle 62°, latching	Black	▶	**3SB2000-2AB01**		1	1 unit	41J
	Red	5	**3SB2000-2AC01**		1	1 unit	41J
	Green	5	**3SB2000-2AE01**		1	1 unit	41J
	White	5	**3SB2000-2AG01**		1	1 unit	41J
Selector switches with 2 switch positions Switching sequence O-I, operating angle 50°, momentary contact (reset from right)	Black	5	**3SB2000-2BB01**		1	1 unit	41J
	Red	5	**3SB2000-2BC01**		1	1 unit	41J
	Green	5	**3SB2000-2BE01**		1	1 unit	41J
Selector switches with 2 switch positions Switching sequence O-I, operating angle 90°, latching	Black	5	**3SB2000-2HB01**		1	1 unit	41J
	Red	5	**3SB2000-2HC01**		1	1 unit	41J
	Green	5	**3SB2000-2HE01**		1	1 unit	41J
	White	5	**3SB2000-2HG01**		1	1 unit	41J
Selector switches with 3 switch positions Switching sequence I-O-II, operating angle 2 x 62°, latching	Black	▶	**3SB2000-2DB01**		1	1 unit	41J
	Red	5	**3SB2000-2DC01**		1	1 unit	41J
	Green	5	**3SB2000-2DE01**		1	1 unit	41J
	White	5	**3SB2000-2DG01**		1	1 unit	41J
Selector switches with 3 switch positions Switching sequence I-O-II, operating angle 2 x 50°, momentary contact	Black	▶	**3SB2000-2EB01**		1	1 unit	41J
	Red	5	**3SB2000-2EC01**		1	1 unit	41J
	Green	5	**3SB2000-2EE01**		1	1 unit	41J
	White	5	**3SB2000-2EG01**		1	1 unit	41J
Selector switches with 3 switch positions Switching sequence I-O-II, operating angle 2 x 90°, latching	Black	5	**3SB2000-2JB01**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Key-operated switches


CES key-operated switch

Version		Lock No.	Key removal position	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
CES key-operated switches[1] with 2 keys, 2 switch positions Switching sequence O-I, operating angle 62°, latching		SB2	O+I	5	**3SB2000-4LB01**		1	1 unit	41J
			O	►	**3SB2000-4LA01**		1	1 unit	41J
CES key-operated switches[1] with 2 keys, 2 switch positions Switching sequence O-I, operating angle 50°, momentary contact		SB2	O	►	**3SB2000-4MA01**		1	1 unit	41J
CES key-operated switches[1] with 2 keys, 3 switch positions Switching sequence I-O-II, operating angle 2 x 62°, latching		SB2	I+O+II	5	**3SB2000-4PB01**		1	1 unit	41J
			O	5	**3SB2000-4PA01**		1	1 unit	41J
CES key-operated switches[1] with 2 keys, 3 switch positions Switching sequence I-O-II, operating angle 2 x 50°, momentary contact		SB2	O	5	**3SB2000-4QA01**		1	1 unit	41J

[1] Also available with additional locking systems. The Article No. must be supplemented with **"-Z"**, the order code "**Y01**" and the required lock number.

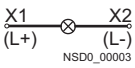
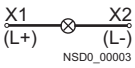
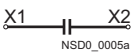
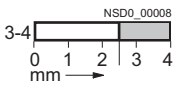
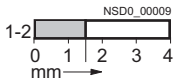
Indicator lights


Indicator light

Version	Color of screw lens	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Indicator lights with concentric rings (inscription with insert caps is not possible)	Red	►	**3SB2001-6BC06**		1	1 unit	41J
	Yellow	5	**3SB2001-6BD06**		1	1 unit	41J
	Green	►	**3SB2001-6BE06**		1	1 unit	41J
	Blue	5	**3SB2001-6BF06**		1	1 unit	41J
	White	►	**3SB2001-6BG06**		1	1 unit	41J
	Clear	5	**3SB2001-6BH06**		1	1 unit	41J
Indicator lights, smooth For inscription with insert caps[1]	Red	5	**3SB2001-6CC06**		1	1 unit	41J
	Yellow	5	**3SB2001-6CD06**		1	1 unit	41J
	Green	5	**3SB2001-6CE06**		1	1 unit	41J
	Blue	5	**3SB2001-6CF06**		1	1 unit	41J
	Clear	5	**3SB2001-6CH06**		1	1 unit	41J

[1] For insert caps, see "Accessories", page 13/142.

Selection and ordering data

Version	Graphic symbols	Operating travel Contact closed Contact open	SD d	Flat connectors Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact blocks and lampholders with flat connectors 2 × 2.8 – 0.8 mm according to IEC 60760								
Holders for fixing the actuator and the contact blocks								
 Holder Holders for 2 contact blocks Inscription with identification number 1-2				► **3SB2908-0AA**		1	5 units	41J
Lampholders with holder for fixing the actuator and the contact blocks								
 Lampholder **Lampholders** W2 x 4.6 d without lamp				► **3SB2304-2A**		1	1 unit	41J
Lampholders W2 x 4.6 d								
• with 6 V incandescent lamp			5	**3SB2304-2F**		1	1 unit	41J
• with 24 V incandescent lamp			5	**3SB2304-2H**		1	1 unit	41J
 Voltage reducer **Voltage reducers**[1] For connecting the 3SB2908-1AE lamp (48 V) to 230 V AC			5	**3SB2404-3D**		1	1 unit	41J
Contact blocks for fixing in the holder or lampholder								
 Contact block **Contact blocks with one contact**[2]								
1 NO				► **3SB2404-0B**		1	1 unit	41J
1 NC ⊖				► **3SB2404-0C**		1	1 unit	41J

[1] Use fixpoint terminals according to IEC 61439-2.

[2] For plug-in and insulating sleeves, see "Accessories", page 13/146.

⊖ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System;
see page 11/1 onwards.
Certificate:

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Version	Graphic symbols	Operating travel Contact closed Contact open	SD d	Solder pin connections Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact blocks and lampholders with solder pins								
 Holder **Holders for contact block with solder pins** For mounting the actuators in the front panel			5	**3SB2908-0AB**		1	5 units	41J
Lampholders Wedge base W2 x 4.6 d[1]	(L+) X1 (L-) X2		5	**3SB2455-2A**		1	1 unit	41J
Contact blocks								
 Contact block with solder pins 1 NO	3 4	NSD0_00015 3-4 0 1 2 3 4 mm 2,3	5	**3SB2455-0B**		1	1 unit	41J
1 NC ⊕	1 2	NSD0_00017 1-2 0 1 2 3 4 mm 1,6	5	**3SB2455-0C**		1	1 unit	41J
1 NO + 1 NC ⊕	13 21 14 22	NSD0_00019 21-22 0 1 2 3 4 mm 1,6	5	**3SB2455-0J**		1	1 unit	41J
1 NO + 1 NO	13 23 14 24	NSD0_00021 13-14 23-24 0 1 2 3 4 mm 2,3	5	**3SB2455-0E**		1	1 unit	41J
1 NC + 1 NC ⊕	11 21 12 22	NSD0_00023 21-22 11-12 0 1 2 3 4 mm 1,6	5	**3SB2455-0F**		1	1 unit	41J
Contact blocks and lampholders, wedge base W2 x 4.6 d[1]								
 Contact block and lampholder with solder pins 1 NO	13 X1 14 X2	NSD0_01082 13-14 0 1 2 3 4 mm 2,3	5	**3SB2455-1B**		1	1 unit	41J
1 NC ⊕	21 X1 22 X2	NSD0_01083 21-22 0 1 2 3 4 mm 1,6	5	**3SB2455-1C**		1	1 unit	41J
1 NO + 1 NC ⊕	13 21 X1 14 22 X2	NSD0_00019 21-22 0 1 2 3 4 mm 1,6	5	**3SB2455-1J**		1	1 unit	41J
1 NO + 1 NO	13 23 X1 14 24 X2	NSD0_00021 13-14 23-24 0 1 2 3 4 mm 2,3	5	**3SB2455-1E**		1	1 unit	41J
1 NC + 1 NC ⊕	11 21 X1 12 22 X2	NSD0_00023 21-22 11-12 0 1 2 3 4 mm 1,6	5	**3SB2455-1F**		1	1 unit	41J

[1] The lamp is not included in the scope of supply.

⊕ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System;
see page 11/1 onwards.
Certificate:

Insert labels and insert caps

Overview

Clear pushbuttons, illuminated pushbuttons and indicator lights can be fitted with insert labels and caps for identification purposes.

The insert labels and insert caps are made of a milky-transparent plastic with black lettering; they can be fitted in any 90° angle.

Inscription

The inscriptions have upper case initial letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

For customized inscriptions, see "Options", page 13/143.

Selection and ordering data

	Inscription/symbol	Symbol No.	SD	**Insert labels** For pushbuttons and illuminated pushbuttons, flat	PU (UNIT, SET, M)	PS*	PG
			d	Article No. / Price per PU			
For self-inscription							
	Blank	--	5	**3SB2901-4AA**	100	10 units	41J
With inscription							
	Ein	--	5	**3SB2901-4AB**	100	10 units	41J
	Aus	--	5	**3SB2901-4AC**	100	10 units	41J
	Auf	--	5	**3SB2901-4AD**	100	10 units	41J
	Ab	--	5	**3SB2901-4AE**	100	10 units	41J
	Vor	--	5	**3SB2901-4AF**	100	10 units	41J
	Zurück	--	5	**3SB2901-4AG**	100	10 units	41J
	Rechts	--	5	**3SB2901-4AH**	100	10 units	41J
	Links	--	5	**3SB2901-4AJ**	100	10 units	41J
	Halt	--	5	**3SB2901-4AK**	100	10 units	41J
	Zu	--	5	**3SB2901-4AL**	100	10 units	41J
	Langsam	--	5	**3SB2901-4AN**	100	10 units	41J
	Störung	--	5	**3SB2901-4AQ**	100	10 units	41J
	On	--	5	**3SB2901-4EB**	100	10 units	41J
	Start	--	5	**3SB2901-4EK**	100	10 units	41J
	Stop	--	5	**3SB2901-4EL**	100	10 units	41J
	Reset	--	5	**3SB2901-4EM**	100	10 units	41J
	Test	--	5	**3SB2901-4EN**	100	10 units	41J
	0	--	5	**3SB2901-4RA**	100	10 units	41J
	1	--	5	**3SB2901-4RB**	100	10 units	41J
	2	--	5	**3SB2901-4RC**	100	10 units	41J
	3	--	5	**3SB2901-4RD**	100	10 units	41J
	4	--	5	**3SB2901-4RE**	100	10 units	41J
	5	--	5	**3SB2901-4RF**	100	10 units	41J
	6	--	5	**3SB2901-4RG**	100	10 units	41J
	7	--	5	**3SB2901-4RH**	100	10 units	41J
	8	--	5	**3SB2901-4RJ**	100	10 units	41J
	9	--	5	**3SB2901-4RK**	100	10 units	41J
Graphic ON/OFF symbols							
	O (Off) 	5008 IEC	5	**3SB2901-4MB**	100	10 units	41J
	I (On)	5007 IEC	5	**3SB2901-4MC**	100	10 units	41J
	II (On) 	--	5	**3SB2901-4MD**	100	10 units	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Inscription/symbol		Symbol No.	SD	**Insert labels** For pushbuttons and illuminated pushbuttons, flat		PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU			
Graphic equipment symbols								
Electric motor		0011 ISO	5	**3SB2901-4PA**		100	10 units	41J
Horn		5014 IEC	5	**3SB2901-4PB**		100	10 units	41J
Pump		0134 ISO	5	**3SB2901-4PD**		100	10 units	41J
Coolant pump		0355 ISO	5	**3SB2901-4PE**		100	10 units	41J
Graphic motion symbols								
Motion in direction of arrow (straight)		5022 IEC	5	**3SB2901-4NA**		100	10 units	41J
Motion in direction of arrow (diagonal)		--	5	**3SB2901-4NB**		100	10 units	41J
Clockwise rotation		0004 ISO	5	**3SB2901-4NC**		100	10 units	41J
Counterclockwise rotation		--	5	**3SB2901-4ND**		100	10 units	41J
Fast motion		0266 ISO	5	**3SB2901-4NE**		100	10 units	41J
Increase (plus)		5005 IEC	5	**3SB2901-4NG**		100	10 units	41J
Decrease (minus)		5006 IEC	5	**3SB2901-4MC**		100	10 units	41J
Graphic control symbols								
Clamp		--	5	**3SB2901-4QB**		100	10 units	41J
Release		--	5	**3SB2901-4QC**		100	10 units	41J
Brake off		0021 ISO	5	**3SB2901-4QE**		100	10 units	41J
Lock		0022 ISO	5	**3SB2901-4QF**		100	10 units	41J
Unlock		0023 ISO	5	**3SB2901-4QG**		100	10 units	41J
On/Off, momentary contact type		5011 IEC	5	**3SB2901-4QJ**		100	10 units	41J
Manual operation		0096 ISO	5	**3SB2901-4QK**		100	10 units	41J
Automatic sequence		0017 ISO	5	**3SB2901-4QL**		100	10 units	41J
Customized inscriptions								
Any inscription				**3SB2901-4AZ**				
1 line of text with up to 6 characters with 3 mm font height. Please add the appropriate order code to the Article No. and specify the line of text required.			B	**K0Y**		1	1 unit	41J
			B	**K1Y** or **K2Y**		1	1 unit	41J
			B	**K5Y**		1	1 unit	41J
Other graphic symbols			B	**3SB2901-4AZ**		1	1 unit	41J
Please add the order code **"K3Y"** to the Article No. and specify the serial number and the applied standard (ISO 7000 or IEC 60417).				**K3Y**				
Any inscription or symbol			B	**3SB2901-4AZ**		1	1 unit	41J
Please add the order code **"K9Y"** to the Article No. and specify the inscription or the symbol required.				**K9Y**				

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Insert labels and insert caps

Inscription/symbol	Symbol No.	SD	**Insert caps** For pushbuttons and illuminated pushbuttons, raised		PU (UNIT, SET, M)	PS*	PG
		d	Article No.	Price per PU			
For self-inscription							
Blank	--	5	**3SB2901-5AA**		100	10 units	41J
With inscription							
On	--	5	**3SB2901-5EB**		100	10 units	41J
Aus	--	5	**3SB2901-5AC**		100	10 units	41J
Auf	--	5	**3SB2901-5AD**		100	10 units	41J
Zu	--	5	**3SB2901-5AL**		100	10 units	41J
0	--	5	**3SB2901-5RA**		100	10 units	41J
1	--	5	**3SB2901-5RB**		100	10 units	41J
2	--	5	**3SB2901-5RC**		100	10 units	41J
3	--	5	**3SB2901-5RD**		100	10 units	41J
4	--	5	**3SB2901-5RE**		100	10 units	41J
5	--	5	**3SB2901-5RF**		100	10 units	41J
6	--	5	**3SB2901-5RG**		100	10 units	41J
7	--	5	**3SB2901-5RH**		100	10 units	41J
8	--	5	**3SB2901-5RJ**		100	10 units	41J
9	--	5	**3SB2901-5RK**		100	10 units	41J
Graphic ON/OFF symbols							
O (Off)	5008 IEC	5	**3SB2901-5MB**		100	10 units	41J
I (On)	5007 IEC	5	**3SB2901-5MC**		100	10 units	41J
Graphic motion symbols							
Motion in direction of arrow	5022 IEC	5	**3SB2901-5NA**		100	10 units	41J
Motion in direction of arrow	--	5	**3SB2901-5NB**		100	10 units	41J
Increase (plus)	5005 IEC	5	**3SB2901-5NG**		100	10 units	41J
Decrease (minus)	5006 IEC	5	**3SB2901-5MC**		100	10 units	41J
Graphic control symbols							
Clamp	--	5	**3SB2901-5QB**		100	10 units	41J
Release	--	5	**3SB2901-5QC**		100	10 units	41J
Customized inscriptions							
Any inscription			**3SB2901-5AZ**				
1 line of text with up to 6 characters with 3 mm font height. Please add the appropriate order code to the Article No. and specify the line of text required.		B	**K0Y**		1	1 unit	41J
		B	**K1Y** or **K2Y**		1	1 unit	41J
		B	**K5Y**		1	1 unit	41J
Other graphic symbols		B	**3SB2901-5AZ**		1	1 unit	41J
Please add the order code **"K3Y"** to the Article No. and specify the serial number and the applied standard (ISO 7000 or IEC 60417).			**K3Y**				
Any inscription or symbol		B	**3SB2901-5AZ**		1	1 unit	41J
Please add the order code **"K9Y"** to the Article No. and specify the inscription or the symbol required.			**K9Y**				

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

	Inscription/symbol		Symbol No.	SD	**Insert caps** For indicator lights		PU (UNIT, SET, M)	PS*	PG
				d	Article No.	Price per PU			
For self-inscription									
	Blank		--	5	**3SB2901-7AA**		100	10 units	41J
With inscription									
	Betrieb		--	5	**3SB2901-7AP**		100	1 unit	41J
	Störung		--	5	**3SB2901-7AQ**		100	10 units	41J
Graphic symbols									
	Pump		0134 ISO	5	**3SB2901-7PD**		100	10 units	41J
	Manual operation		0096 ISO	5	**3SB2901-7QK**		100	10 units	41J
Customized inscriptions									
	**Any inscription**				**3SB2901-7AZ**				
	1 line of text with up to 6 characters with 3 mm font height. Please add the appropriate order code to the Article No. and specify the line of text required.			B	**K0Y**		1	1 unit	41J
				B	**K1Y** or **K2Y**		1	1 unit	41J
				B	**K5Y**		1	1 unit	41J
	Other graphic symbols			B	**3SB2901-7AZ**		1	1 unit	41J
	Please add the order code **"K3Y"** to the Article No. and specify the serial number and the applied standard (ISO 7000 or IEC 60417).				**K3Y**				
	Any inscription or symbol			B	**3SB2901-7AZ**		1	1 unit	41J
	Please add the order code **"K9Y"** to the Article No. and specify the inscription or the symbol required.				**K9Y**				

Options

Customized inscriptions

Labels and caps can be inscribed with text and symbols not listed in the ordering data. Append the following order codes to the Article No.:

- Text line in upper/lower case, always upper case for beginning of line (e.g. "Lift"): **K0Y**
- Text line in upper case (e.g. "LIFT"): **K1Y**
- Text line in lower case (e.g. "lift"): **K2Y**
- Text line in upper/lower case, all words begin with upper case letters (e.g. "Lift Out"): **K5Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbols according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the Article No. and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

One line with up to 6 characters with 3 mm font height is possible for the inscription (see ordering example 1).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering examples 2 and 3).

For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example 1

3SB2901–4AZ
K1Y
Z1=Pump

Ordering example 2

3SB2901–4AZ
K3Y
Z=5008 IEC

Ordering example 3

3SB2901–4AZ
K3Y
Z=1118 ISO

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Backing plates

Overview

The backing plates consist of a black plastic label holder and a labeling plate (silver with black print) for sticking in place.

Note mounting dimensions!

Inscription

The inscriptions (also special inscriptions) are lower case with upper case initial letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

Selection and ordering data

Inscription/symbol	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Labeling plates, self-adhesive, 9.5 mm × 18.5 mm							
Blank		►	**3SB2901-2AA**		100	10 units	41J
Ein		5	**3SB2901-2AB**		100	10 units	41J
Aus		5	**3SB2901-2AC**		100	10 units	41J
Auf		5	**3SB2901-2AD**		100	10 units	41J
Zu		5	**3SB2901-2AL**		100	10 units	41J
Vor		5	**3SB2901-2AF**		100	10 units	41J
Zurück		5	**3SB2901-2AG**		100	10 units	41J
Schnell		5	**3SB2901-2AM**		100	10 units	41J
Langsam		5	**3SB2901-2AN**		100	10 units	41J
Betrieb		5	**3SB2901-2AP**		100	10 units	41J
Störung		5	**3SB2901-2AQ**		100	10 units	41J
Einrichten		5	**3SB2901-2AR**		100	10 units	41J
On		5	**3SB2901-2EB**		100	10 units	41J
Off		5	**3SB2901-2EC**		100	10 units	41J
Start		5	**3SB2901-2EL**		100	10 units	41J
Reset		5	**3SB2901-2EM**		100	10 units	41J
Fault		5	**3SB2901-2EW**		100	10 units	41J
Hand Auto		5	**3SB2901-2BA**		100	10 units	41J
Manual 0 Auto		5	**3SB2901-2BE**		100	10 units	41J
Man 0 Auto		5	**3SB2901-2ET**		100	10 units	41J
Graphic symbols							
O (Off)	5008 IEC	5	**3SB2901-2MB**		100	10 units	41J
I (On)	5007 IEC	5	**3SB2901-2MC**		100	10 units	41J
O I (horizontal)	--	5	**3SB2901-2MF**		100	10 units	41J
Motion in direction of arrow	5002 IEC	5	**3SB2901-2NA**		100	10 units	41J
Customized inscriptions or symbols			**3SB2901-2XZ**				
(see Options)		B	**K0Y**		1	1 unit	41J
		B	**K1Y, K2Y** or **K3Y**		1	1 unit	41J
		B	**K5Y**		1	1 unit	41J
		B	**K9Y**		1	1 unit	41J
Label holders							
Label holders for labeling plates The label holders must not be used with the 3SB2...-1AC01 EMERGENCY STOP mushroom pushbutton.		5	**3SB2902-0AB**		100	10 units	41J

Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data. Append the following order codes to the Article No.:

- Text line(s) in upper/lower case, all lines begin with upper case (e.g. "Lift out"): **K0Y**
- Text line(s) in upper case (e.g. "LIFT OUT"): **K1Y**
- Text line(s) in lower case (e.g. "lift out"): **K2Y**
- Text line(s) in upper/lower case, all words begin with upper case letters (e.g. "Lift Out"): **K5Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbols according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the Article No. and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

Two lines of 11 characters per line are permitted with 4 mm font height (1 line) or 3 mm (2 lines).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering example).

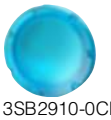
For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example

3SB2901–2XZ
K3Y
Z=1118 ISO

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

	Version	Lamp voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V		d					
Buttons and lenses[1]									
 3SB2910-0AF	**Buttons, flat** For pushbuttons		Black	5	**3SB2910-0AB**		100	10 units	41J
			Red	5	**3SB2910-0AC**		100	10 units	41J
			Yellow	5	**3SB2910-0AD**		100	10 units	41J
			Green	5	**3SB2910-0AE**		100	10 units	41J
			Blue	5	**3SB2910-0AF**		100	10 units	41J
			White	5	**3SB2910-0AG**		100	10 units	41J
			Clear	5	**3SB2910-0AH**		100	10 units	41J
 3SB2910-0CF	**Buttons, flat** For illuminated pushbuttons		Red	5	**3SB2910-0CC**		100	10 units	41J
			Yellow	5	**3SB2910-0CD**		100	10 units	41J
			Green	5	**3SB2910-0CE**		100	10 units	41J
			Blue	5	**3SB2910-0CF**		100	10 units	41J
			White	5	**3SB2910-0AG**		100	10 units	41J
			Clear	5	**3SB2910-0AH**		100	10 units	41J
 3SB2910-0BD	**Buttons, raised** For pushbuttons		Black	5	**3SB2910-0BB**		1	10 units	41J
			Red	5	**3SB2910-0BC**		1	10 units	41J
			Yellow	5	**3SB2910-0BD**		1	10 units	41J
			Clear	5	**3SB2910-0BH**		1	10 units	41J
 3SB2910-0DD	**Buttons, raised** For illuminated pushbuttons		Red	5	**3SB2910-0DC**		1	10 units	41J
			Yellow	5	**3SB2910-0DD**		1	10 units	41J
			Clear	5	**3SB2910-0BH**		1	10 units	41J
 3SB2910-1AD	**Screw lenses** With concentric rings		Red	5	**3SB2910-1AC**		100	10 units	41J
			Yellow	5	**3SB2910-1AD**		100	10 units	41J
			Green	5	**3SB2910-1AE**		100	10 units	41J
			Blue	5	**3SB2910-1AF**		100	10 units	41J
			White	5	**3SB2910-1AG**		100	10 units	41J
			Clear	5	**3SB2910-1AH**		100	10 units	41J
 3SB2910-1BE	**Screw lenses** Smooth, for inscription with insert cap		Red	5	**3SB2910-1BC**		100	10 units	41J
			Yellow	5	**3SB2910-1BD**		100	10 units	41J
			Green	5	**3SB2910-1BE**		100	10 units	41J
			Blue	5	**3SB2910-1BF**		100	10 units	41J
			Clear	5	**3SB2910-1BH**		100	10 units	41J
Keys for actuators									
 3SB2908-2AJ	**Keys** For CES key-operated switch, Lock No. SB2			5	**3SB2908-2AJ**		1	1 unit	41J
Lamps, wedge bases[2]									
 3SB2908-1AE	**Incandescent lamps** Wedge base W2 × 4.6 d, 1.0 W	AC/DC	Clear						
		6		15	**3SB2908-1AA**		100	10 units	41J
		12		5	**3SB2908-1AB**		100	10 units	41J
		24		5	**3SB2908-1AC**		100	10 units	41J
		30		2	**3SB2908-1AD**		100	10 units	41J
		48		5	**3SB2908-1AE**		1	10 units	41J
		60		5	**3SB2908-1AF**		1	10 units	41J
 3SB3901-1SB	**LED lamps, super-bright** Wedge base W2 × 4.6 d	24 AC/DC	Red	5	**3SB3901-1SB**		1	10 units	41J
			Yellow	5	**3SB3901-1RB**		1	10 units	41J
			Green	5	**3SB3901-1TB**		1	10 units	41J
			White	5	**3SB3901-1UB**		1	10 units	41J
			Blue	5	**3SB2908-1BD**		1	10 units	41J
 3SB2908-1BD		28 AC/DC	Red	5	**3SB3901-1SE**		1	10 units	41J
			Yellow	5	**3SB3901-1RE**		1	10 units	41J
			Green	5	**3SB3901-1TE**		1	10 units	41J
			White	5	**3SB3901-1UE**		1	10 units	41J
			Blue	15	**3SB3901-1VE**		1	10 units	41J
 3SB2908-2AB	**Lamp extractors** For lamps with bases W2 × 4.6 d			►	**3SB2908-2AB**		1	1 unit	41J

[1] Included in the scope of supply of actuators or indicator lights.

[2] Included in the scope of supply of some complete units.

13

Mounting parts and components

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for command points							
 3SB2902-0AA	**Single frames** for square design[1]	►	**3SB2902-0AA**		100	10 units	41J
 3SB2908-2AG	**Backing plates, yellow, diameter 50 mm,** As high-contrast background for EMERGENCY STOP, self-adhesive						
	• Blank	►	**3SB2908-2AF**		1	1 unit	41J
	• With German inscription "NOT-HALT"	►	**3SB2908-2AG**		1	1 unit	41J
	• With German inscription "NOT-AUS"	►	**3SB2908-2AK**		1	1 unit	41J
 3SB2908-3AA	**Blanking plugs** Plastic, black (degree of protection IP65)	5	**3SB2908-3AA**		1	1 unit	41J
 3SB2908-1	**Protective caps, clear** Silicone, for pushbuttons with flat and raised buttons	5	**3SB2908-3AB**		1	1 unit	41J
Flat connectors							
 3SB2908-8AA	**Plug-in sleeves** For flat connectors 2.8 × 0.8 mm, cross-section 0.5 ... 1.5 mm^2	2	**3SB2908-8AA**		100	250 units	41J
 3SB2908-8AB	**Insulating sleeves** For flat connectors, attachable from the front	10	**3SB2908-8AB**		100	250 units	41J
 3SB2908-8AD	**Complete connectors**[2] For connecting contact blocks and lampholders (up to 10 connections) Ensures finger-safety according to IEC 60529 and Reg. 3	5	**3SB2908-8AD**		1	1 unit	41J
 3SB2908-8AE	**Plug-in sleeves** For flat connectors 2.8 × 0.8 mm, with locating spring for latching in complete connector	5	**3SB2908-8AE**		100	10 units	41J
Tools							
 3SB2908-2AA	**Dismantling tools** For holders and lampholders with holder	►	**3SB2908-2AA**		1	1 unit	41J
 3SB2908-2AC	**Mounting tools** For buttons and screw lenses	►	**3SB2908-2AC**		1	1 unit	41J
 6179 0950	**Crimping tools for non-insulated connections, type KRBC 0560** For plug-in sleeves (both versions) Manufacturer: Lapp Kabel, Stuttgart, Germany E-mail: info@lappkabel.de Website: www.lappkabel.de		6179 0950				

[1] Not suitable for EMERGENCY STOP mushroom pushbuttons.

[2] Required 3SB2908-8AE plug-in sleeves for flat connectors 2.8 × 0.8 mm are not included in the scope of supply.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

3SE7 cable-operated switches

More information

Home page, see www.siemens.com/sirius-commanding
Industry Mall, see www.siemens.com/product?3SE7
Manual, see https://support.industry.siemens.com/cs/ww/en/view/107194954

The cable-operated switches are used for monitoring or as EMERGENCY-STOP devices on particularly endangered system components.

As the effective range of a cable-operated switch is only limited by the length of the trip-wire, large systems can also be protected. Cable-operated switches (requiring pulling at both ends) and conveyor belt unbalance trackers are used primarily for monitoring very long belt systems.

Contact blocks

The switches for wire lengths up to 50 m are supplied with 1 NO + 1 NC or 2 NC contacts and those up to 75 m with 1 NO + 3 NC contacts. The switches for wire lengths of 2 x 75 m and the conveyor belt unbalance tracker are supplied with 2 NO + 2 NC contacts.

The NC contacts of the cable-break or cable-pull signaling are positive opening. The NO contact can be used, for example, for signaling purposes.

Free position and display

Cable-operated switches with one-side operation are held in free position by the pre-tension on the turnbuckle.

On switches with interlocking, with a pre-tensioned cable, the locking must be deactivated beforehand in order to return the cable-operated switch to its original position.

The cable-operated switch and the conveyor belt unbalance tracker can be supplied optionally with a factory-fitted LED (red, 24 V DC). This light in innovative chip-on-board technology allows the operating state of the switch to be visible at a distance of at least 50 m.

Application

Standards

The switches are equipped with latching mechanism and positive NC contacts and are thus suitable for operation in EMERGENCY STOP devices according to EN ISO 13850.

Technical specifications

Type		3SE7120	3SE7150	3SE7140	3SE7141	3SE7160	3SE7310
General data							
Standards		IEC 60947-5-1, EN 60947-5-1; IEC 60204-1, EN 60204-1; EN ISO 13850					
Approvals		UL/CSA					
Electrical design		Contacts electrically isolated from each other					
Electrical load							
• 2-pole, at AC-15		400 V AC, 6 A		400 V AC, 6 A	250 V AC, 2 A	400 V AC, 6 A	--
• 3-pole, at AC-15		250 V AC, 2 A		--	--	--	--
• 4-pole, at AC-15		--		--	--	400 V AC, 6 A	400 V AC, 6 A
• Minimum		24 V AC/DC, 10 mA					
Short-circuit protection	A	6 (slow)					
Mechanical endurance		> 1 million operating cycles					
Contact material		Fine silver					
Operation		By pulling or breaking of wire					
Wire length, maximum	m	10	25	50	75	2 x 75	–
Distance between wire supports, max.	m	2.5	3	5			–
Enclosures							
Enclosure material		GD Al alloy, coated (color), dark black RAL 9005					
Cover		Shock-resistant thermoplast					
Degree of protection acc. to IEC 60529		IP65			IP67	IP65	
Ambient temperature	°C	–25 ... +70					
Mounting		Designed for M5					
Fixing spacing	mm	30 and 40					
Cable entry		2 x (M20 x 1.5)		1 x (M16 x 1.5)	3 x (M20 x 1.5)	2 x (M25 x 1.5)	
Connection type		Screw terminals M3.5, self-lifting clamp terminal					

3SE7 metal enclosures

Selection and ordering data

Version	Wire length	Contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	m		d					
Cable-operated switches								
 3SE7120-1BH00								
Metal enclosures, IP65 (cover made of molded plastic)	10							
• Without latching, only cable pull monitoring		1 NO + 1 NC	2	**3SE7120-2DD01**		1	1 unit	41K
• With latching and button reset		2 NC	2	**3SE7120-1BF00**		1	1 unit	41K
- With yellow lid		1 NO + 2 NC	2	**3SE7120-1BH00**		1	1 unit	41K
 3SE7150-1BD00								
Metal enclosures, IP65 (cover made of molded plastic), with alignment window	25							
• Without latching		1 NO + 1 NC	2	**3SE7150-2DD00**		1	1 unit	41K
• With latching and button reset		1 NO + 1 NC	2	**3SE7150-1BD00**		1	1 unit	41K
		2 NC	2	**3SE7150-1BF00**		1	1 unit	41K
- With yellow lid		1 NO + 2 NC	5	**3SE7150-1BH00**		1	1 unit	41K
• With latching and key unlatching		1 NO + 1 NC	5	**3SE7150-1CD00**		1	1 unit	41K
 3SE7150-1BD04 3SE7150-1BH04								
Metal enclosures, IP65 (cover made of molded plastic), with alignment window, with LED, red, 24 V DC	25							
• Without latching		1 NO + 1 NC	5	**3SE7150-2DD04**		1	1 unit	41K
• With latching and button reset		1 NO + 1 NC	5	**3SE7150-1BD04**		1	1 unit	41K
• With yellow cover NEW		1 NO + 2 NC		**3SE7150-1BH04**		1	1 unit	41K
 3SE7140-1B.00								
Metal enclosures, IP65 (cover made of molded plastic)	50							
• With latching and button reset		1 NO + 1 NC	2	**3SE7140-1BD00**		1	1 unit	41K
		2 NC	5	**3SE7140-1BF00**		1	1 unit	41K
• In addition with LED, red, 24 V DC		1 NO + 1 NC	5	**3SE7140-1BD04**		1	1 unit	41K
• With latching and key unlatching		1 NO + 1 NC	5	**3SE7140-1CD00**		1	1 unit	41K
 3SE7141-1EG10								
Metal enclosures, IP67 (cover made of molded plastic), with EMERGENCY STOP mushroom, with rotate-to-unlatch mechanism	75	1 NO + 3 NC	2	**3SE7141-1EG10**		1	1 unit	41K
 3SE7160-1AE00								
Metal enclosures, IP65 With actuation on both sides	2 x 75							
• With latching and button reset		2 NO + 2 NC	2	**3SE7160-1AE00**		1	1 unit	41K
		1 NO + 1 NC	5	**3SE7160-1BD00**		1	1 unit	41K
• In addition with LED, red, 24 V DC		2 NO + 2 NC	5	**3SE7160-1AE04**		1	1 unit	41K

Positive opening according to IEC 60947-5-1, Annex K.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Version	Contacts	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Conveyor belt unbalance trackers							
Metal enclosures, IP65							
• With latching and button reset	2 NO + 2 NC ➔	5	**3SE7310-1AE00**		1	1 unit	41K
• In addition with LED, red, 24 V DC	2 NO + 2 NC ➔	5	**3SE7310-1AE04**		1	1 unit	41K

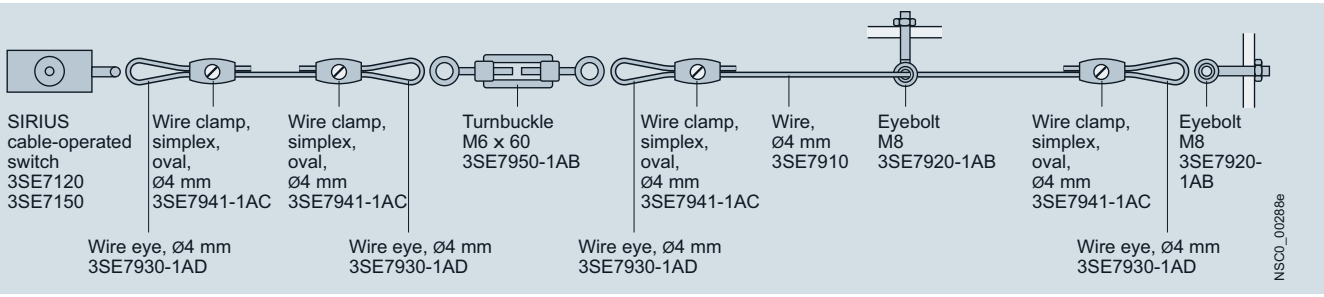
3SE7310-1AE00

➔ Positive opening according to IEC 60947-5-1, Annex K.

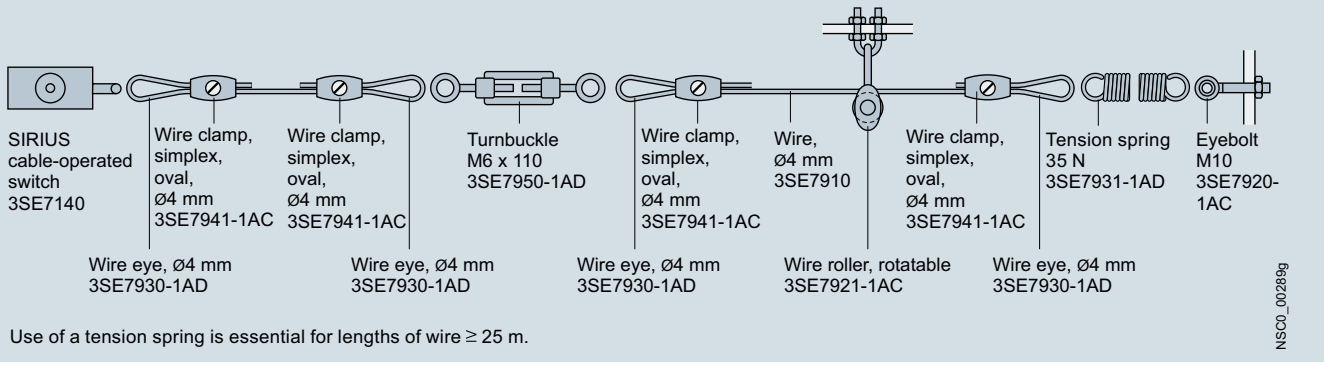
Accessories

Configuration of the cable-operated switches

Short lengths of wire up to 25 m

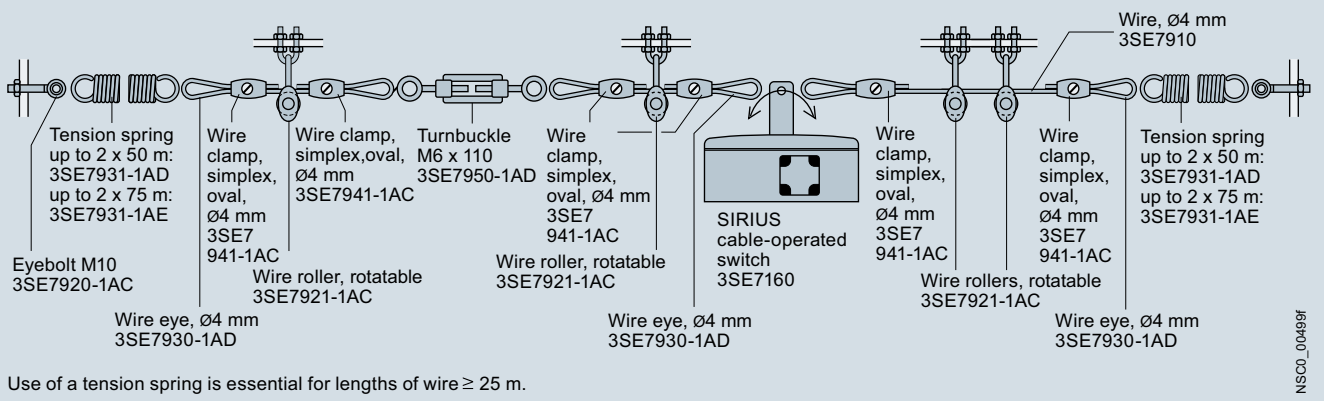


Long lengths of wire up to 50 m



Use of a tension spring is essential for lengths of wire ≥ 25 m.

Pulling from both sides up to 2 x 75 m



Use of a tension spring is essential for lengths of wire ≥ 25 m.

Note:

Large temperature fluctuations require corresponding compensation springs. For reliable connection the PVC sheath must be removed from the clamping area of the steel bowden wire.

Bowden wire supports must be used at the recommended intervals.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

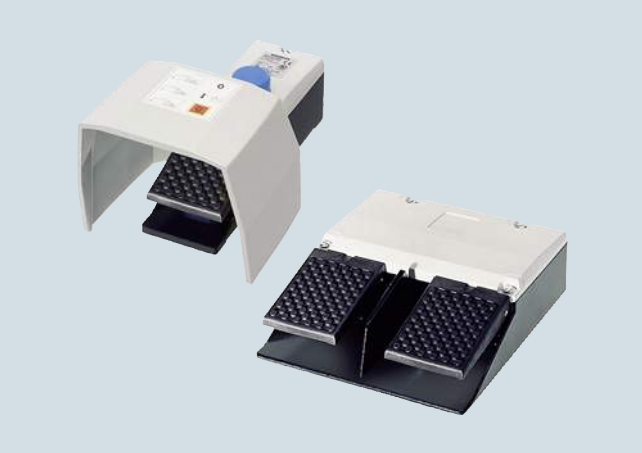
3SE7 metal enclosures

	Version	Length/ diameter	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Trip-wire with fixing								
	**Steel wires**, with red plastic sheath, diameter 4 mm[1]	10 m	2	**3SE7910-3AA**		1	1 unit	41K
		15 m	2	**3SE7910-3AB**		1	1 unit	41K
		20 m	2	**3SE7910-3AC**		1	1 unit	41K
		50 m	2	**3SE7910-3AH**		1	1 unit	41K
	**Wire clamps**, galvanized white							
	• Oval	2 x Ø 4 mm	2	**3SE7941-1AC**		1	1 unit	41K
	• Single (1 set = 4 units)	2 x Ø 4 mm	2	**3SE7942-1AA**		1	4 units	41K
	• Simplex (1 set = 4 units)	2 x Ø 4 mm	2	**3SE7943-1AC**		1	4 units	41K
	• Duplex (1 set = 4 units)	2 x Ø 4 mm	2	**3SE7944-1AC**		1	4 units	41K
	**Tension springs** (zinc-plated) To maintain the counter tension							
	• 13 N		2	**3SE7931-1AB**		1	1 unit	41K
	• 35 N, for cable-operated switches up to 50 m		2	**3SE7931-1AD**		1	1 unit	41K
	• > 35 N, for cable-operated switches up to 2 x 75 m		5	**3SE7931-1AE**		1	1 unit	41K
	**Wire rollers** for changing the direction of the wire, rotatable	Ø 4 mm	2	**3SE7921-1AC**		1	1 unit	41K
	**Fixtures for the wire rollers** (incl. fixing nuts)		2	**3SE7921-1AA**		1	1 unit	41K
	**Wire eyes** for changes in wire direction and improved power transmission at the fixing points (1 set = 4 units)	Ø 4 mm	2	**3SE7930-1AD**		1	4 units	41K
	**Eyebolts** for fixing the wire							
	• Including M8 nut		2	**3SE7920-1AB**		1	1 unit	41K
	• Including M10 nut		2	**3SE7920-1AC**		1	1 unit	41K
	**Turnbuckles** for precise adjustment of the pre-tension							
	• M6 x 60		2	**3SE7950-1AB**		1	1 unit	41K
	• M6 x 110		2	**3SE7950-1AD**		1	1 unit	41K
Spare parts								
	**LED lamps,** red 24 V DC Diameter 25 mm; for M20 x 1.5 connection		5	**3SX3235**		1	1 unit	41K

[1] Diameter including casing; the diameter of the steel wire is 3.2 mm.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview



3SE29 foot switch with metal enclosure

More information
Home page, see www.siemens.com/sirius-commanding
Industry Mall, see www.siemens.com/product?3SE2
Manual, see https://support.industry.siemens.com/cs/ww/en/view/107194954

Standard switches

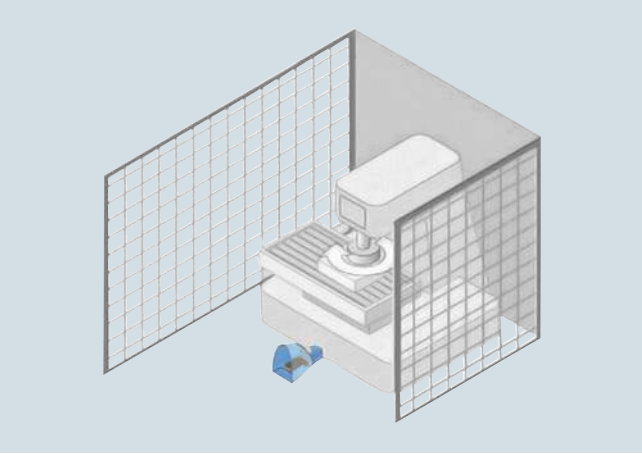
The 3SE29 and 3SE39 foot switch range encompasses versions in a metal enclosure for rugged applications as well as versions with plastic enclosure for less harsh environments. The devices can be supplied with or without a cover and have fixing holes for them to be screwed to the floor.

Depending on the particular application, the metal enclosures can be ordered with contact blocks in latching or momentary-contact versions. The momentary-contact pedal switch in the plastic enclosure has one microswitch (changeover contact) per actuating pedal.

Safety foot switches

The 3SE2924-3AA20 single-pedal safety foot switches are used on machines and plants as OK switches when operation by hand is not possible. The switches have an interlocking function.

The safety foot switches are protected by a guard hood against accidental operation.



Application example

The switches have two contact blocks, each with one NO contact and one NC contact. The NO contacts and NC contacts of the two contact blocks are connected for easy connection of a single-phase motor. The normal workflow is initiated by pressing down the pedal as far as the pressure point so that the two NO contacts close and the motor starts to run.

If in the event of danger the pedal is pressed beyond the resistance of the pressure point, the positively driven NC contacts will open and the motor is stopped. At the same time the independent latching takes effect and holds the NC contacts in open position. This prevents the machine parts from continuing to run out of control or from being restarted.

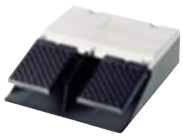
After the hazard is eliminated, the machine can only be restarted after manually releasing the switch using a pushbutton on the top of the enclosure. The contacts are then released again and return to their initial position (the NO contacts are open and the NC contacts are closed).

Technical specifications

Type		3SE29	3SE39
Metal and plastic enclosures			
Standards		IEC 60947-5-1	
Electrical load			
• At AC-15, 400 V			
- 1 NO + 1 NC	A	10	--
- 2 NO + 2 NC	A	6	--
- 3SE2924-3AA20 (2 NO + 2 NC)	A	10	
• At 250 V AC	A	–	5
Short-circuit protection			
- 1 NO + 1 NC	A	10 (slow)	--
- 2 NO + 2 NC	A	6 (slow)	--
- 3SE2924-3AA20 (2 NO + 2 NC)	A	10 (slow)	--
- 1 CO contact	A	--	5 (slow)
Mechanical endurance		> 10^6 operating cycles	
Material			
• Enclosures		Aluminum casting	Shock-resistant thermoplast, self-extinguishing according to UL 94 VO
• Covers		Thermoplast	–
• Guard hoods		Aluminum casting	Metal
Degree of protection		IP65	IP65
Ambient temperature	°C	-25 ... +80	-10 ... +75
Connection		Cable entry, metric	Cable AWG20, UL Style 2464, length 3 m

Plastic and metal enclosures

Selection and ordering data

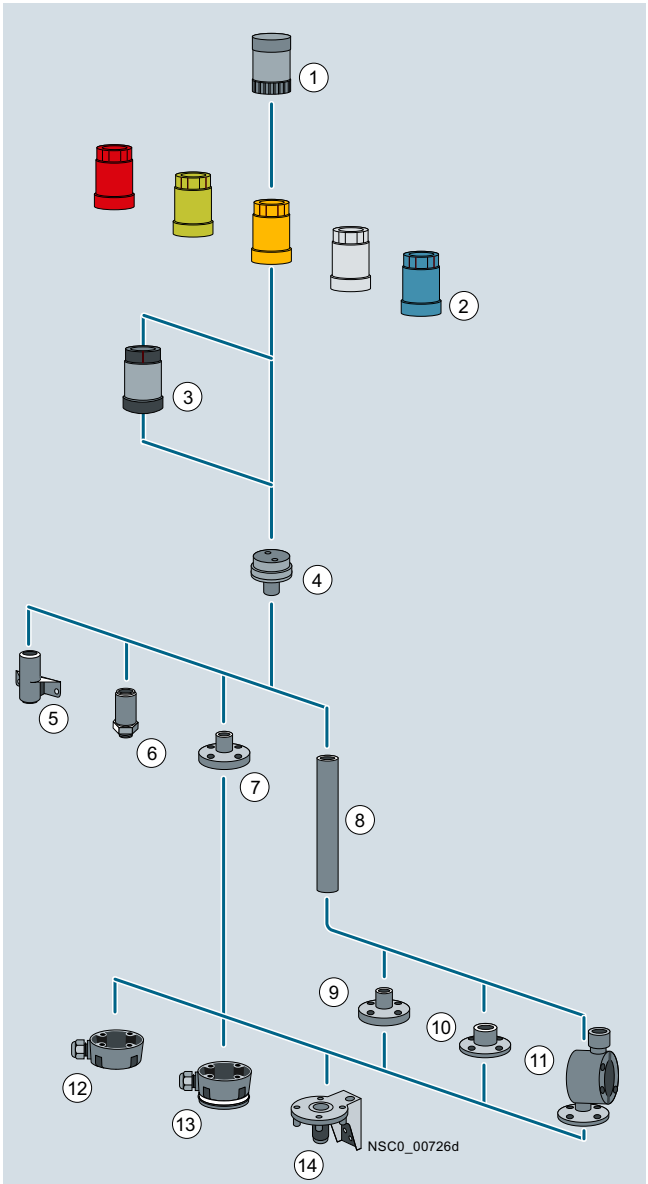
Version	Slow-action contacts for each pedal	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Metal enclosures, degree of protection IP65							
 3SE290.-.AA20 3SE291.-.AA20	**Momentary-contact foot switches, single pedal, non-latching** M20 x 1.5 cable entry						
• Without hood	1 NO + 1 NC ⊖	2	**3SE2902-0AB20**		1	1 unit	41K
	2 NO + 2 NC ⊖	2	**3SE2903-1AB20**		1	1 unit	41K
• With hood	1 NO + 1 NC ⊖	2	**3SE2902-0AA20**		1	1 unit	41K
	2 NO + 2 NC ⊖	2	**3SE2903-1AA20**		1	1 unit	41K
Foot switches, single pedal, latching M20 x 1.5 cable entry							
• Without hood	1 NO + 1 NC ⊖	15	**3SE2912-2AB20**		1	1 unit	41K
• With hood	1 NO + 1 NC ⊖	15	**3SE2912-2AA20**		1	1 unit	41K
 3SE2932-.AB20	**Momentary-contact foot switches, two-pedal, non-latching** M25 x 1.5 cable entry						
• Without hood	1 NO + 1 NC ⊖	5	**3SE2932-0AB20**		1	1 unit	41K
	2 NO + 2 NC ⊖	5	**3SE2932-1AB20**		1	1 unit	41K
 3SE2932-.AA20							
• With hood	1 NO + 1 NC ⊖	5	**3SE2932-0AA20**		1	1 unit	41K
	2 NO + 2 NC ⊖	5	**3SE2932-1AA20**		1	1 unit	41K
 3SE2924-3AA20	**Safety momentary-contact foot switches, non-latching, single pedal** with hood M20 x 1.5 cable entry with interlocking function NO closes as momentary contact type, NO opens with autonomous latching (safety function)	2 NO + 2 NC ⊖	15	**3SE2924-3AA20**		1	1 unit	41K
Plastic enclosures, degree of protection IP65							
 3SE3902-4CA20	**Momentary-contact pedal switches**, 3 m cable	Microswitch					
• Single pedal							
- Without hood	1 CO contact	5	**3SE3902-4CB20**		1	1 unit	41K
- With hood	1 CO contact	5	**3SE3902-4CA20**		1	1 unit	41K
 3SE3934-5CB20	• Two pedals, without hood	2 × 1 CO	5	**3SE3934-5CB20**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

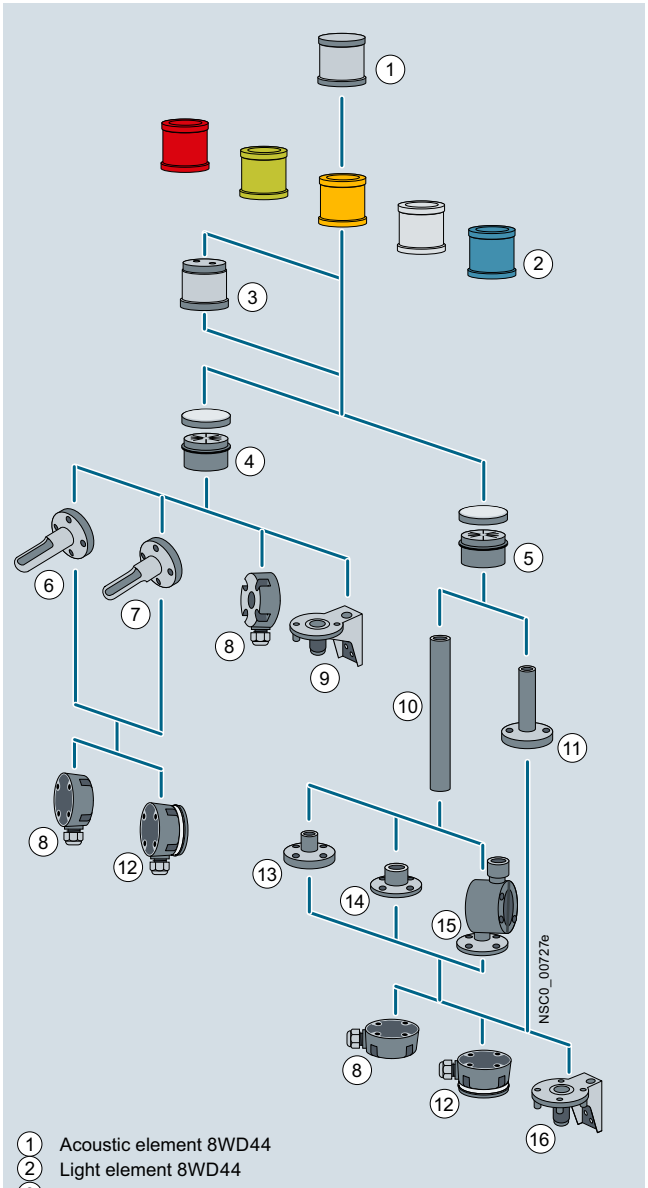
Overview

The 8WD4 signaling columns are flexible in design and versatile in use.



1 Acoustic element 8WD42.0-0FA
2 Light element 8WD42
3 AS-Interface adapter element 8WD4228-0BB
4 Connection element 8WD4208-0AA
5 Bracket for wall mounting 8WD4208-0CD
6 Adapter for single-hole mounting 8WD4208-0EH
7 Foot for mounting 8WD4208-0DE
8 Pipe 8WD4208-0EF/8WD4308-0E.
9 Foot for mounting with pipe 8WD4308-0DB
10 Foot for mounting with pipe (> 400 mm) 8WD4308-0DC
11 Adjustable-angle foot for mounting on pipes 8WD4408-0DF
12 Socket 8WD4308-0DD
13 Socket (magnetic fixing) 8WD4308-0DE
14 Bracket for mounting with foot 8WD4408-0CC

8WD42 signaling column (width 50 mm) with up to 4 elements



1 Acoustic element 8WD44
2 Light element 8WD44
3 AS-Interface adapter element 8WD4428-0BD/8WD4428-0BE
4 Connection element for mounting on bracket, base and floor 8WD4408-0AB/8WD4408-0AE
5 Connection element for mounting on pipe 8WD4408-0AA/8WD4408-0AD
6 Bracket for wall mounting 8WD4308-0CA
7 Bracket for wall mounting (two-sided) 8WD4308-0CB
8 Socket 8WD4308-0DD
9 Bracket for base mounting 8WD4408-0CD
10 Pipe 8WD4208-0EF/8WD4308-0E.
11 Foot with pipe 8WD4308-0DA
12 Socket (magnetic fixing) 8WD4308-0DE
13 Foot for mounting with pipe 8WD4308-0DB
14 Foot for mounting with pipe (> 400 mm) 8WD4308-0DC
15 Adjustable-angle foot for mounting on pipes 8WD4408-0DF
16 Bracket for mounting with foot 8WD4408-0CC

8WD44 signaling column (width 70 mm) with up to 5 elements

General data

More information

Home page, see www.siemens.com/sirius-commanding
Industry Mall, see www.siemens.com/product?8WD4
Manual, see https://support.industry.siemens.com/cs/ww/en/view/107194954

Two product series are available:

- 8WD42
  - Thermoplast enclosure, diameter 50 mm
  - Degree of protection IP54
  - up to 4 elements can be mounted between the connection element and the cover
- 8WD44
  - Thermoplast enclosure, diameter 70 mm
  - Advanced design and significantly improved illumination
  - Fast and flexible connection using spring-type terminals
  - Integrated degree of protection IP65
  - Up to 5 elements can be mounted between the connection element and the cover

Signaling columns, mounting examples

The illustrated examples are from the left:

- 8WD42: Cover (without No.), four light elements ②, connection element ④, pipe ⑧, foot ⑨
- 8WD44: Acoustic element with cover ①, two light elements ②, connection element ⑤, foot with pipe ⑪
- 8WD44: Cover (without No.), four light elements ②, AS-Interface adapter element ③, connection element ④, bracket for wall mounting ⑥
- 8WD44: Cover (without No.), three light elements ②, AS-Interface adapter element ③, connection element ⑤, foot with pipe ⑪

Note:

The cover is supplied with the connection element.

Benefits

- Choice of various light and acoustic elements with different functions:
  Continuous light, blinklight, flashlight and rotating light; buzzer and siren
- Light elements with particularly long-lasting LEDs
- Variety of colors: red, yellow, green, white or blue
- Optimized illumination through improved prism technology with the 8WD44
- Acoustic elements can be adjusted in tone and volume
- Extremely resistant to shock and vibrations
- Easy connection and quick lamp change with secure bayonet mechanism
- Communication capability through connection to AS-Interface

Application

8WD4 signaling columns are used in machines or in automatic processes for monitoring complex procedures or as visual or acoustic warning devices in emergency situations, e.g. for displaying individual assembly stages.

Communication capability

Connection to AS-Interface

The 8WD4 signaling columns can be directly connected to the AS-Interface bus system through an adapter element that can be integrated in the column. Wiring outlay is reduced as the result. The two-wire bus cable is fixed to the terminals in the connection element. Up to four signaling elements can be mounted on it using an adapter element.

A/B technology enables the connection of up to 62 slaves on one AS-Interface system.

Connection

The signaling elements are wired up using the screw terminals in the connection element, screw terminals on the 8WD42 and screw or spring-type terminals on the 8WD44.

Cable outlet

The connecting cables can be guided either downwards or sideways through the cable gland using an adapter that can be screwed under the foot. This makes wiring easier if there is no access from below.

Connection to AS-Interface

8WD42

The two-wire bus cable is fixed to the screw terminals in the connection element. The adapter element must be the first module to be mounted on the connection element. A maximum of four signaling elements can then be mounted on it.

The 8WD4228-0BB adapter element is a standard slave.

8WD44

The two-wire bus cable is fixed to the screw or spring-type terminals in the connection element. The adapter element must be the first module to be mounted on the connection element. The signaling elements can then be mounted on it.

The 8WD4428-0BE adapter element is a standard slave.
A maximum of four signaling elements can be mounted on it.

The 8WD4428-0BD adapter element with A/B technology enables the connection of up to 62 slaves on one AS-Interface system. The addressing socket provides user-friendly parameterization of the AS-Interface elements. A maximum of three signaling elements can be mounted on it.

Technical specifications

Type		8WD42	8WD44
General data			
Approvals		UL, CSA	UL, CSA
Light and acoustic elements			
Rated voltage, power consumption			
Light elements with incandescent lamp		(AC values for 50/60 Hz)	(AC values for 50/60 Hz)
• Continuous lights		12 V, 24 V, 115 V, 230 V AC/DC	12 V, 24 V, 115 V, 230 V AC/DC
• Blinklight		24 V AC/DC, 125 mA; 115 V AC, 20 mA; 230 V AC, 15 mA	24 V AC/DC, 125 mA; 115 V AC, 20 mA; 230 V AC, 15 mA
• Flashlights		--	24 V DC, 125 mA; 115 V AC, 20 mA; 230 V AC, 35 mA
• Max. inrush current, blinklight/flashlight		--	500 mA
Light elements with integrated LED			
• Continuous lights		24 V AC/DC, 60 mA	24 V AC/DC, 25 mA; 115 V AC, 25 mA; 230 V AC, 25 mA
• Blinklight		24 V AC/DC, 60 mA; 115 V AC, 60 mA; 230 V AC, 60 mA	24 V AC/DC, 40 mA
• Rotating light		--	24 V AC/DC/70 mA
Acoustic elements			
• Buzzer element (tone: pulsating or continuous tone)		80 dB: 24 V AC/DC, 25 mA; 115 V AC/DC, 25 mA; 230 V AC, 25 mA	85 dB: 24 V AC/DC, 25 mA; 115 V AC, 25 mA; 230 V AC, 25 mA
• Siren element (8 tones + amplification can be set, 100 dB)		--	24 V AC/DC, 80 mA; 115 V AC, 30 mA; 230 V AC, 16 mA
• Siren element (108 dB)		--	24 V DC/100 mA
Power consumption			
• Incandescent lamps, base BA 15d	W	max. 5	7
• Flashlight, flash energy	Ws	–	2
Service life			
• Flashlights		--	4×10^6 flashes
AS-Interface adapter elements			
IO code/ID code		8/F	8/E
Power supply		Through bus cable	Through bus cable
• Operational voltage	V	18.5 ... 31.6	18.5 ... 31.6
• Power consumption I_{max}	mA	50	100
Protective measures			
• Watchdog		✓	✓
• Short-circuit/overload protection		External back-up fuse M 1.6 A	✓
• Reverse polarity protection		✓	✓
• Induction protection		N/A	✓
Outputs		4 relay outputs	3 electronic outputs
• Load voltage	V V	External auxiliary voltage 0 … 30 DC 0 ... 230 AC	Through bus cable or external auxiliary voltage, switch-selectable
• Current carrying capacity $\sum I_{max}$			
- With external auxiliary voltage	A	1.5	0.3
- Without external auxiliary voltage	A	--	0.2
Operating temperature	°C	–20 ... +50	–20 ... +50
Enclosures			
Enclosure material		Thermoplast (polyamide), impact-resistant, black	Thermoplast (polyamide), impact-resistant, black
Light elements		Thermoplast (polycarbonate)	Thermoplast (polycarbonate)
Mounting			
• Horizontal (base mounting, foot with 25 mm diameter pipe)		✓	✓
• Horizontal (single-hole mounting)		✓	--
• Vertical with bracket		✓	✓
Degree of protection			
• Light elements		IP54	IP65 (seal premounted with every module)
• Acoustic elements, AS-i adapter elements		IP54	IP65
Operating temperature	°C	–20 ... +50	–20 ... +50
Connection		M3 screw terminal	Spring-type terminals/M3 screw terminals
• Conductor cross-sections	mm^2	Max. 2.5	Max. 2.5
• Tightening torque	Nm	Max. 0.5	– / max. 0.5

8WD42 signaling columns, 50 mm diameter

Overview

Features:
- Thermoplast enclosure, diameter 50 mm
- Degree of protection IP54
- Up to four elements can be mounted between the connection element and the cover

Selection and ordering data

	Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V		d					
Acoustic elements[1]									
	**Buzzer elements** 80 dB, pulsating or continuous tone, adjustable by means of a wire jumper	24 AC/DC	Black	2	**8WD4220-0FA**		1	1 unit	41J
		115 AC/DC	Black	2	**8WD4240-0FA**		1	1 unit	41J
		230 AC	Black	2	**8WD4250-0FA**		1	1 unit	41J
Light elements for incandescent lamps/LEDs, BA 15d bases[2]									
	**Continuous light elements**	24 ... 230 AC/DC	Red	2	**8WD4200-1AB**		1	1 unit	41J
			Green	2	**8WD4200-1AC**		1	1 unit	41J
			Yellow	2	**8WD4200-1AD**		1	1 unit	41J
			Clear	2	**8WD4200-1AE**		1	1 unit	41J
			Blue	2	**8WD4200-1AF**		1	1 unit	41J
Light elements with integrated LED									
	**Continuous light elements**	24 AC/DC	Red	2	**8WD4220-5AB**		1	1 unit	41J
			Green	2	**8WD4220-5AC**		1	1 unit	41J
			Yellow	2	**8WD4220-5AD**		1	1 unit	41J
			Clear	2	**8WD4220-5AE**		1	1 unit	41J
			Blue	2	**8WD4220-5AF**		1	1 unit	41J
		115 AC	Red	▶	**8WD4240-5AB**		1	1 unit	41J
			Green	▶	**8WD4240-5AC**		1	1 unit	41J
			Yellow	▶	**8WD4240-5AD**		1	1 unit	41J
			Clear	▶	**8WD4240-5AE**		1	1 unit	41J
			Blue	▶	**8WD4240-5AF**		1	1 unit	41J
		230 AC	Red	2	**8WD4250-5AB**		1	1 unit	41J
			Green	2	**8WD4250-5AC**		1	1 unit	41J
			Yellow	2	**8WD4250-5AD**		1	1 unit	41J
			Clear	2	**8WD4250-5AE**		1	1 unit	41J
			Blue	2	**8WD4250-5AF**		1	1 unit	41J
	**Blinklight elements**	24 AC/DC	Red	2	**8WD4220-5BB**		1	1 unit	41J
			Green	2	**8WD4220-5BC**		1	1 unit	41J
			Yellow	2	**8WD4220-5BD**		1	1 unit	41J
			Clear	2	**8WD4220-5BE**		1	1 unit	41J
			Blue	2	**8WD4220-5BF**		1	1 unit	41J
		115 AC	Red	2	**8WD4240-5BB**		1	1 unit	41J
			Green	2	**8WD4240-5BC**		1	1 unit	41J
			Yellow	2	**8WD4240-5BD**		1	1 unit	41J
			Clear	2	**8WD4240-5BE**		1	1 unit	41J
			Blue	2	**8WD4240-5BF**		1	1 unit	41J
		230 AC	Red	2	**8WD4250-5BB**		1	1 unit	41J
			Green	2	**8WD4250-5BC**		1	1 unit	41J
			Yellow	2	**8WD4250-5BD**		1	1 unit	41J
			Clear	2	**8WD4250-5BE**		1	1 unit	41J
			Blue	2	**8WD4250-5BF**		1	1 unit	41J
	Flashlight elements	24 AC/DC	Red	2	**8WD4220-0CB**		1	1 unit	41J
			Green	2	**8WD4220-0CC**		1	1 unit	41J
			Yellow	2	**8WD4220-0CD**		1	1 unit	41J
			Clear	2	**8WD4220-0CE**		1	1 unit	41J
			Blue	2	**8WD4220-0CF**		1	1 unit	41J
Adapter elements for AS-Interface									
	**AS-Interface adapter elements** With external auxiliary voltage	For 4 signaling elements 24 V DC	Black	2	**8WD4228-0BB**		1	1 unit	41J

1) One acoustic element can be mounted per signaling column. The cover is included in the scope of supply of the acoustic elements and fixed in place.

2) The lamp is not included in the scope of supply. Please order separately.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V		d					
Connection elements									
	**Connection elements with cover** For mounting on pipes, floors and angles Essential part for assembling the signaling columns		Black	2	**8WD4208-0AA**		1	1 unit	41J
Mounting									
	**Feet, single**	Plastic, for mounting on pipes		2	**8WD4308-0DB**		1	1 unit	41J
		Metal, for pipe lengths > 400 mm		2	**8WD4308-0DC**		1	1 unit	41J
		Plastic, for floor mounting (without pipe)		2	**8WD4208-0DE**		1	1 unit	41J
	**Adjustable-angle feet** For positioning in 7.5 increments [1]	Plastic, for mounting on pipes, incl. rubber seal		2	**8WD4408-0DF**		1	1 unit	41J
	**Pipes, single**	Length 100 mm		2	**8WD4208-0EF**		1	1 unit	41J
		Length 150 mm		2	**8WD4308-0EE**		1	1 unit	41J
		Length 250 mm		2	**8WD4308-0EA**		1	1 unit	41J
		Length 400 mm		2	**8WD4308-0EB**		1	1 unit	41J
		Length 1000 mm		2	**8WD4308-0ED**		1	1 unit	41J
	**Sockets for feet**	Side cable outlet		2	**8WD4308-0DD**		1	1 unit	41J
		Side cable outlet, with magnetic fixing [2]		2	**8WD4308-0DE**		1	1 unit	41J
	**Brackets for mounting with foot**			2	**8WD4408-0CC**		1	1 unit	41J
	**Brackets for wall mounting** (plastic)	Mounting without feet and pipe		2	**8WD4208-0CD**		1	1 unit	41J
	**Adapters for single-hole mounting**	Mounting without feet and pipe, with M18 thread and fixing nut		2	**8WD4208-0EH**		1	1 unit	41J
Lamps									
	**Incandescent lamps, 5 W**								
	Base BA 15d	24 AC/DC	Clear	2	**8WD4328-1XX**		1	10 units	41J
		115 AC	Clear	2	**8WD4348-1XX**		1	10 units	41J
		230 AC	Clear	2	**8WD4358-1XX**		1	10 units	41J
	**LEDs**								
	Base BA 15d	24 AC/DC	Red	2	**8WD4428-6XB**		1	1 unit	41J
			Green	2	**8WD4428-6XC**		1	1 unit	41J
			Yellow	2	**8WD4428-6XD**		1	1 unit	41J
			Clear	2	**8WD4428-6XE**		1	1 unit	41J
			Blue	2	**8WD4428-6XF**		1	1 unit	41J
		115 AC	Red	2	**8WD4448-6XB**		1	1 unit	41J
			Green	2	**8WD4448-6XC**		1	1 unit	41J
			Yellow	2	**8WD4448-6XD**		1	1 unit	41J
			Clear	2	**8WD4448-6XE**		1	1 unit	41J
			Blue	2	**8WD4448-6XF**		1	1 unit	41J
		230 AC	Red	2	**8WD4458-6XB**		1	1 unit	41J
			Green	2	**8WD4458-6XC**		1	1 unit	41J
			Yellow	2	**8WD4458-6XD**		1	1 unit	41J
			Clear	2	**8WD4458-6XE**		1	1 unit	41J
			Blue	2	**8WD4458-6XF**		1	1 unit	41J

For labeling panels, see 8WD44, page 13/161.

[1] Markings for 30°, 45°, 60° and 90°.

[2] For horizontal mounting, only 1 element is recommended.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

8WD44 signaling columns, 70 mm diameter

Overview

Features:

- Thermoplast enclosure, diameter 70 mm
- Advanced design and significantly improved illumination
- Fast and flexible connection using spring-type terminals
- Integrated degree of protection IP65
- Up to five elements can be mounted

Selection and ordering data

	Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V		d					
Acoustic elements[1]									
	**Buzzer elements** 85 dB, pulsating or continuous tone, adjustable by means of a wire jumper	24 AC/DC	Black	2	**8WD4420-0FA**		1	1 unit	41J
		115 AC	Black	2	**8WD4440-0FA**		1	1 unit	41J
		230 AC	Black	2	**8WD4450-0FA**		1	1 unit	41J
	Siren elements, multi-tone, 100 dB, 8 tones and volume are adjustable	24 AC/DC	Black	2	**8WD4420-0EA2**		1	1 unit	41J
		115 AC	Black	2	**8WD4440-0EA2**		1	1 unit	41J
		230 AC	Black	2	**8WD4450-0EA2**		1	1 unit	41J
	Siren elements 105 dB, IP40, alternating tone	24 DC	Black	2	**8WD4420-0EA**		1	1 unit	41J
Light elements for incandescent lamps/LEDs, BA 15d bases[2]									
	**Continuous light elements**	12 ... 230 AC/DC	Red	2	**8WD4400-1AB**		1	1 unit	41J
			Green	2	**8WD4400-1AC**		1	1 unit	41J
			Yellow	2	**8WD4400-1AD**		1	1 unit	41J
			Clear	2	**8WD4400-1AE**		1	1 unit	41J
			Blue	2	**8WD4400-1AF**		1	1 unit	41J
Light elements with integrated flash lamps[3]									
	**Flashlight elements** with integrated electronic flash	24 DC	Red	2	**8WD4420-0CB**		1	1 unit	41J
			Green	2	**8WD4420-0CC**		1	1 unit	41J
			Yellow	2	**8WD4420-0CD**		1	1 unit	41J
			Clear	2	**8WD4420-0CE**		1	1 unit	41J
			Blue	2	**8WD4420-0CF**		1	1 unit	41J
		115 AC	Red	2	**8WD4440-0CB**		1	1 unit	41J
			Green	20	**8WD4440-0CC**		1	1 unit	41J
			Yellow	2	**8WD4440-0CD**		1	1 unit	41J
			Clear	20	**8WD4440-0CE**		1	1 unit	41J
			Blue	20	**8WD4440-0CF**		1	1 unit	41J
		230 AC	Red	2	**8WD4450-0CB**		1	1 unit	41J
			Green	2	**8WD4450-0CC**		1	1 unit	41J
			Yellow	2	**8WD4450-0CD**		1	1 unit	41J
			Clear	2	**8WD4450-0CE**		1	1 unit	41J
			Blue	2	**8WD4450-0CF**		1	1 unit	41J

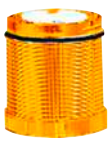
1) One acoustic element can be mounted per signaling column. The cover is included in the scope of supply of the acoustic elements and fixed in place.

2) The lamp is not included in the scope of supply. Please order separately.

3) The lamp is included in the scope of supply.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

8WD44 signaling columns, 70 mm diameter

	Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V		d					
Light elements with integrated LED									
	**Continuous light elements**	24 AC/DC	Red	2	**8WD4420-5AB**		1	1 unit	41J
			Green	2	**8WD4420-5AC**		1	1 unit	41J
			Yellow	2	**8WD4420-5AD**		1	1 unit	41J
			Clear	2	**8WD4420-5AE**		1	1 unit	41J
			Blue	2	**8WD4420-5AF**		1	1 unit	41J
		115 AC	Red	2	**8WD4440-5AB**		1	1 unit	41J
			Green	2	**8WD4440-5AC**		1	1 unit	41J
			Yellow	2	**8WD4440-5AD**		1	1 unit	41J
			Clear	2	**8WD4440-5AE**		1	1 unit	41J
			Blue	2	**8WD4440-5AF**		1	1 unit	41J
		230 AC	Red	2	**8WD4450-5AB**		1	1 unit	41J
			Green	2	**8WD4450-5AC**		1	1 unit	41J
			Yellow	2	**8WD4450-5AD**		1	1 unit	41J
			Clear	2	**8WD4450-5AE**		1	1 unit	41J
			Blue	2	**8WD4450-5AF**		1	1 unit	41J
	**Blinklight elements**	24 AC/DC	Red	2	**8WD4420-5BB**		1	1 unit	41J
			Green	2	**8WD4420-5BC**		1	1 unit	41J
			Yellow	2	**8WD4420-5BD**		1	1 unit	41J
			Clear	2	**8WD4420-5BE**		1	1 unit	41J
			Blue	2	**8WD4420-5BF**		1	1 unit	41J
		115 AC	Red	2	**8WD4440-5BB**		1	1 unit	41J
			Green	2	**8WD4440-5BC**		1	1 unit	41J
			Yellow	2	**8WD4440-5BD**		1	1 unit	41J
			Clear	2	**8WD4440-5BE**		1	1 unit	41J
			Blue	2	**8WD4440-5BF**		1	1 unit	41J
		230 AC	Red	2	**8WD4450-5BB**		1	1 unit	41J
			Green	2	**8WD4450-5BC**		1	1 unit	41J
			Yellow	2	**8WD4450-5BD**		1	1 unit	41J
			Clear	2	**8WD4450-5BE**		1	1 unit	41J
			Blue	2	**8WD4450-5BF**		1	1 unit	41J
	**Rotating light elements**	24 AC/DC	Red	2	**8WD4420-5DB**		1	1 unit	41J
			Green	2	**8WD4420-5DC**		1	1 unit	41J
			Yellow	2	**8WD4420-5DD**		1	1 unit	41J
			Clear	2	**8WD4420-5DE**		1	1 unit	41J
			Blue	2	**8WD4420-5DF**		1	1 unit	41J
Adapter elements for AS-Interface									
	**AS-Interface adapter elements**								
	With/without external auxiliary voltage, switchable								
	• A/B technology	For 3 signaling elements 24 V DC	Black	2	**8WD4428-0BD**		1	1 unit	41J
	• Standard AS-i	For 4 signaling elements 24 V DC	Black	2	**8WD4428-0BE**		1	1 unit	41J
Connection elements[1]									
	**Connection elements with cover**		Black						
	Screw terminals								
	• For mounting on pipes			2	**8WD4408-0AA**		1	1 unit	41J
	• For mounting on brackets and floors			2	**8WD4408-0AB**		1	1 unit	41J
	Spring-type terminals								
	• For mounting on pipes			2	**8WD4408-0AD**		1	1 unit	41J
	• For mounting on brackets and floors			2	**8WD4408-0AE**		1	1 unit	41J
	Cover (replacement)			2	**8WD4408-0XA**		1	1 unit	41J

[1] The connection element with cover is an essential part for assembling the signaling columns.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

8WD44 signaling columns, 70 mm diameter

	Version		SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mounting								
	**Feet with pipe**	Pipe length 100 mm	2	**8WD4308-0DA**		1	1 unit	41J
	**Feet, single**	Plastic, for mounting on pipes	2	**8WD4308-0DB**		1	1 unit	41J
		Metal, for pipe lengths > 400 mm	2	**8WD4308-0DC**		1	1 unit	41J
	**Adjustable-angle feet** For positioning in 7.5 increments [1]	Plastic, for mounting on pipes, incl. rubber seal	2	**8WD4408-0DF**		1	1 unit	41J
	**Pipes, single**	Length 100 mm	2	**8WD4208-0EF**		1	1 unit	41J
		Length 150 mm	2	**8WD4308-0EE**		1	1 unit	41J
		Length 250 mm	2	**8WD4308-0EA**		1	1 unit	41J
		Length 400 mm	2	**8WD4308-0EB**		1	1 unit	41J
		Length 1000 mm	2	**8WD4308-0ED**		1	1 unit	41J
	**Sockets for feet**	Side cable outlet (can also be used without feet)	2	**8WD4308-0DD**		1	1 unit	41J
		Side cable outlet, with magnetic fixing [2]	2	**8WD4308-0DE**		1	1 unit	41J
	**Brackets for wall mounting** (mounting without feet or pipe)	For single-sided mounting	2	**8WD4308-0CA**		1	1 unit	41J
		For double-sided mounting	2	**8WD4308-0CB**		1	1 unit	41J
	**Brackets for mounting with foot**		2	**8WD4408-0CC**		1	1 unit	41J
	**Brackets for base mounting**	Mounting without feet and pipe	2	**8WD4408-0CD**		1	1 unit	41J
	Adapter for mounting on pipes according to NPT	Mounting on pipes, ∅ 25 mm, with NPT 1/2" thread	2	**8WD4308-0DF**		1	1 unit	41J

[1] Markings for 30°, 45°, 60° and 90°.

[2] For horizontal mounting, only 1 element is recommended.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V		d					
Lamps									
	**Incandescent lamps, 5 W**								
	Base BA 15d	24 AC/DC	Clear	2	**8WD4328-1XX**		1	10 units	41J
		115 AC	Clear	2	**8WD4348-1XX**		1	10 units	41J
		230 AC	Clear	2	**8WD4358-1XX**		1	10 units	41J
	**LEDs**[1]								
	Base BA 15d	24 AC/DC	Red	2	**8WD4428-6XB**		1	1 unit	41J
			Green	2	**8WD4428-6XC**		1	1 unit	41J
			Yellow	2	**8WD4428-6XD**		1	1 unit	41J
			Clear	2	**8WD4428-6XE**		1	1 unit	41J
			Blue	2	**8WD4428-6XF**		1	1 unit	41J
		115 AC	Red	2	**8WD4448-6XB**		1	1 unit	41J
			Green	2	**8WD4448-6XC**		1	1 unit	41J
			Yellow	2	**8WD4448-6XD**		1	1 unit	41J
			Clear	2	**8WD4448-6XE**		1	1 unit	41J
			Blue	2	**8WD4448-6XF**		1	1 unit	41J
		230 AC	Red	2	**8WD4458-6XB**		1	1 unit	41J
			Green	2	**8WD4458-6XC**		1	1 unit	41J
			Yellow	2	**8WD4458-6XD**		1	1 unit	41J
			Clear	2	**8WD4458-6XE**		1	1 unit	41J
			Blue	2	**8WD4458-6XF**		1	1 unit	41J
Inscriptions									
	**Labeling panels** With fixing accessories for mounting on pipe ∅ 25 mm Inscription area / step 50 mm x 140 mm Suitable for standard labels, e.g. • Zweckform 3425 • Herma 4457			2	**8WD4408-0FA**		1	1 unit	41J

[1] Only for use with SIRIUS commanding and signaling devices.

8WD53 integrated signal lamps, 70 mm diameter

Overview

8WD53 integrated signal lamps

More information

Home page, see www.siemens.com/sirius-commanding
Industry Mall, see www.siemens.com/product?8WD5
Manual, see https://support.industry.siemens.com/cs/ww/en/view/107194954

Design

Features:

- Thermoplast enclosures, diameter 70 mm
- Degree of protection IP65
- Rated voltage 24 V, 115 V, 230 V AC/DC
- Ambient temperature -20 to +50 °C, incandescent lamp up to 60 °C

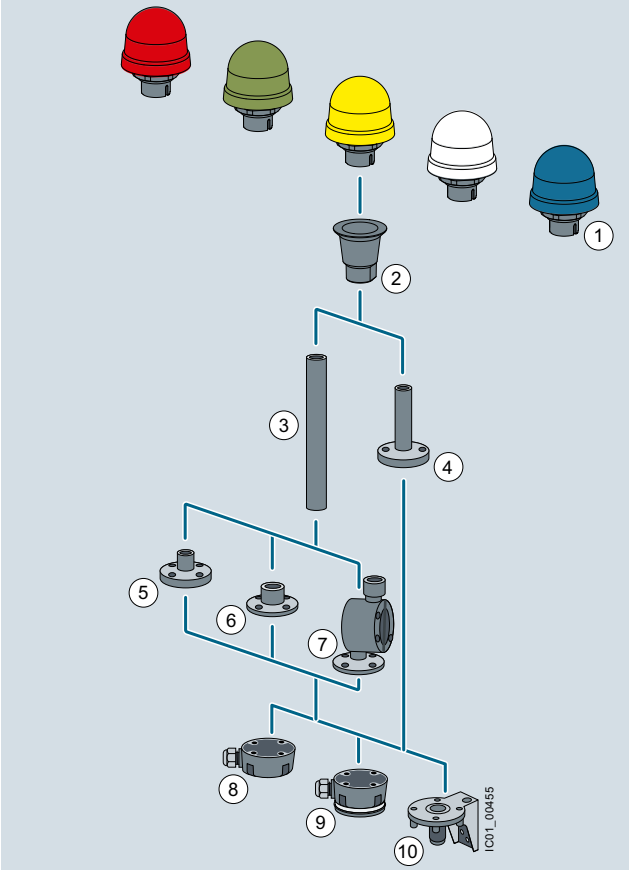
The special shape of the integrated signal lamps means that the light is emitted optimally in every direction (to the sides and upwards). Continuous lights (with incandescent lamp or LED) and single-flash lights are available in five colors. As well as the continuous-light version, a flashing-light or all-round light version is also available.

The LED versions of the integrated signal lamps offer a considerably longer endurance than the incandescent lamp versions.

They all have the high degree of protection IP65 and are made of a material highly resistant to impact.

Mounting

8WD53 integrated signal lamps can be mounted at any point of the machine for the purpose of giving visual signals. They are mounted by means of a Pg 29 screw base with nut.



1 Integrated signal lamp 8WD53
2 Pipe adapter 8WD5308-0EG
3 Pipe 8WD4208-0EF/8WD4308-0E.
4 Foot with pipe 8WD4308-0DA
5 Foot for mounting with pipe 8WD4308-0DB
6 Foot for mounting with pipe (> 400 mm) 8WD4308-0DC
7 Adjustable-angle foot for mounting on pipes 8WD4408-0DF
8 Socket 8WD4308-0DD
9 Socket (magnetic fixing) 8WD4308-0DE
10 Bracket for mounting with foot 8WD4408-0CC

Application

SIRIUS 8WD53 integrated signal lamps can be used as visual signaling devices in harsh ambient conditions and in outdoor installations.

Visual signaling devices for indicating operating conditions can be used for the following applications:

- Manufacturing plants
- Injection molding machines
- Conveyors
- Assembly systems for electronic components

Selection and ordering data

	Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V		d					
Luminaires for incandescent lamps/LED[1], BA 15d base									
	**Continuous lights**[2]	12 ... 230 AC/DC	Red	2	**8WD5300-1AB**		1	1 unit	41J
			Green	2	**8WD5300-1AC**		1	1 unit	41J
			Yellow	2	**8WD5300-1AD**		1	1 unit	41J
			Clear	2	**8WD5300-1AE**		1	1 unit	41J
			Blue	2	**8WD5300-1AF**		1	1 unit	41J
Luminaires with integrated flash lamp									
 	**Single-flash lights** with integrated electronic flash	24 AC/DC	Red	2	**8WD5320-0CB**		1	1 unit	41J
			Green	2	**8WD5320-0CC**		1	1 unit	41J
			Yellow	2	**8WD5320-0CD**		1	1 unit	41J
			Clear	2	**8WD5320-0CE**		1	1 unit	41J
			Blue	2	**8WD5320-0CF**		1	1 unit	41J
		115 AC	Red	2	**8WD5340-0CB**		1	1 unit	41J
			Green	2	**8WD5340-0CC**		1	1 unit	41J
			Yellow	2	**8WD5340-0CD**		1	1 unit	41J
			Clear	2	**8WD5340-0CE**		1	1 unit	41J
			Blue	20	**8WD5340-0CF**		1	1 unit	41J
		230 AC	Red	2	**8WD5350-0CB**		1	1 unit	41J
			Green	20	**8WD5350-0CC**		1	1 unit	41J
			Yellow	2	**8WD5350-0CD**		1	1 unit	41J
			Clear	2	**8WD5350-0CE**		1	1 unit	41J
			Blue	20	**8WD5350-0CF**		1	1 unit	41J
Luminaires with integrated LED[1]									
 	**Continuous lights**	24 AC/DC	Red	2	**8WD5320-5AB**		1	1 unit	41J
			Green	2	**8WD5320-5AC**		1	1 unit	41J
			Yellow	2	**8WD5320-5AD**		1	1 unit	41J
			Clear	2	**8WD5320-5AE**		1	1 unit	41J
			Blue	2	**8WD5320-5AF**		1	1 unit	41J
	Blinklight lamps	24 AC/DC	Red	2	**8WD5320-5BB**		1	1 unit	41J
			Green	2	**8WD5320-5BC**		1	1 unit	41J
			Yellow	2	**8WD5320-5BD**		1	1 unit	41J
			Clear	2	**8WD5320-5BE**		1	1 unit	41J
			Blue	2	**8WD5320-5BF**		1	1 unit	41J
	Rotating lights	24 AC/DC	Red	2	**8WD5320-5DB**		1	1 unit	41J
			Green	2	**8WD5320-5DC**		1	1 unit	41J
			Yellow	2	**8WD5320-5DD**		1	1 unit	41J
			Clear	2	**8WD5320-5DE**		1	1 unit	41J
			Blue	2	**8WD5320-5DF**		1	1 unit	41J
Accessories for mounting (optional)									
	**Pipe adapters** For mounting on pipes[3]			2	**8WD5308-0EG**		1	1 unit	41J

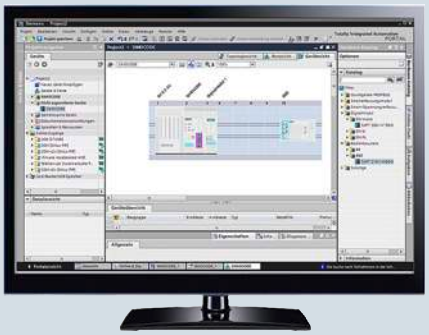
1) Only for use with SIRIUS commanding and signaling devices.

2) Lamp not included in scope of supply, see Signaling Columns, page 13/161.

3) For pipes and feet, see Signaling Columns, page 13/160.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Notes



Introduction

Overview

More information

Home page, see www.siemens.com/sirius
Industry Mall, see www.siemens.com/product?3ZS1

Engineering software

SIRIUS ES engineering software (E-SW)

Intuitive, efficient and future-oriented – the engineering programs in the SIRIUS ES software family

The programs of the SIRIUS ES software family enable:

- Intuitive engineering from the start
  The SIRIUS ES programs enable you to focus on your engineering task. Thanks to the intuitive layout and simple navigation, a clearly arranged configuring of device functions and their parameters is possible – online and offline. The task- and user-oriented portal views as well as the flexible screen layout, the uniform look and feel for all program editors and finally the graphic network and device configuration provide support.
- Efficient parameterization for fast success
  Faster startup is achieved by using local and global libraries. The joint hardware configuration for all components in the application also assists in the efficient parameterization and simple networking of system components. Not least, integrated system diagnostics offers fast troubleshooting and efficient fault analysis, thus making it possible to shorten startup times even further and to minimize production downtimes.
- Future-oriented basis for innovative results
  All future product developments are seamlessly integrated into the TIA Portal. Investments made up to now are still safe tomorrow. To harmonize engineering in all performance classes, the SIRIUS ES programs in TIA Portal are scalable and upwardly compatible. In the event of an upgrade, existing projects can easily be transferred and integrated into the next product level. Even existing SIRIUS ES projects in version 2007 can easily be migrated to the TIA Portal software version.

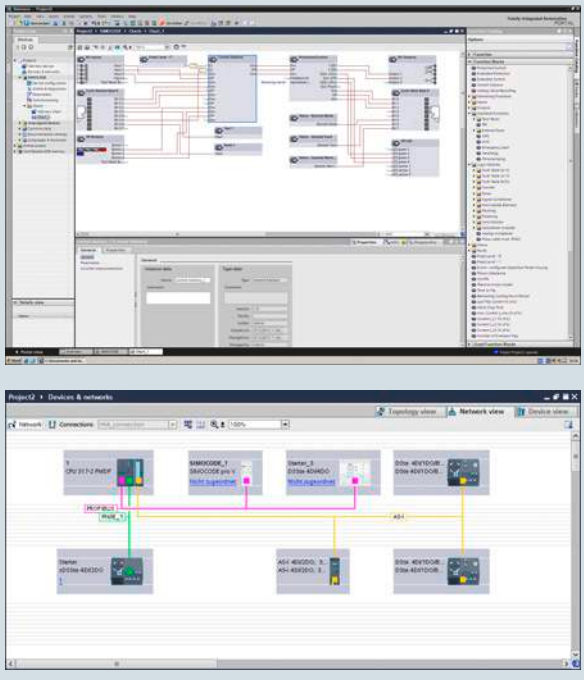
The next generation of SIRIUS ES programs, such as SIMOCODE ES V14 or SIRIUS Soft Starter ES V14, is based on the central engineering framework Totally Integrated Automation Portal (TIA Portal), which provides users with a consistent, efficient and intuitive solution for all automation tasks. Thus, the TIA Portal is also the integrated working environment for the programs in the SIRIUS software family. The same operator control concept, the elimination of interfaces and a high degree of user-friendliness make it possible to quickly integrate SIRIUS devices into an automation process and start them up with the TIA Portal.

The SIRIUS ES programs such as Motor Starter ES, Soft Starter ES, Safety ES and SIMOCODE ES are available in three versions, which differ in terms of user-friendliness, scope of functions and price:

- Basic
  The basic variant contains all basic functions that are needed to parameterize devices. These include both parameterization functions and also operator control, diagnostics and test functions.
- Standard
  The standard variant contains the basic functionality plus standard functions. The standard functions include parameterization with the aid of integrated graphic editors, creation of typicals, parameter export, analog value recording and parameter comparison.
- Premium
  The premium variants contain the complete functionality of the software packages. Besides the standard functionality, this includes communication functions such as access via PROFIBUS/PROFINET and S7 routing.

Note:

The scope of functions depends on the SIRIUS ES program, see the individual product description for details.



Efficient engineering and startup with graphic user interfaces and simple network and device configuration

Types of delivery and licenses

The programs of the SIRIUS ES software family are available in the following delivery types:

- Floating license – the license for any one user at any one time
  - Authorizes any one user
  - Independent of the number of installations (unlike the single license which is allowed to be installed once only)
  - Only the actual use of the program has to be licensed
- Combo license – license for parallel use
  - Licensed parallel use of the TIA Portal version and SIRIUS ES Version 2007
  - For all other properties such as floating license
- Trial License (free use of all program functions for 14/21 days for testing and evaluation purposes, included on every product CD/DVD, available in the download file of the SIRIUS ES program in the Service&Support portal).

Following delivery versions are available in addition for the programs of the SIRIUS ES software family:

- Upgrade
  Switching from an old to a new version with expanded functions, e.g. upgrade from Motor Starter ES 2006 to Motor Starter ES 2007
- Powerpack
  Special pack for switching within the same software version to a more powerful version with more functionality, e.g. Powerpack Soft Starter ES for switching from Standard to Premium
- Software Update Service
  To keep you up to date at all times we offer a special service that supplies you automatically with all service packs and upgrades within the SIRIUS ES 2007 or SIRIUS ES (TIA Portal) programs
- License/software download
  Simply download your new software and license key from the Internet via the Online Software Delivery (OSD) platform. After you have placed your order in our mall, you will receive your access data by email, which will allow you to immediately download the license or software you have ordered.
  For more information, see www.siemens.com/tia-online-software-delivery.

Article number scheme for the engineering software

Product versions		Article number
SIRIUS engineering software		**3ZS1** □□□ – □□□□□ – □□□□
Software type	e. g. 3 = parameterization software	□
Package designation 1	e. g. 1 = SIRIUS Engineering	□
Package designation 2	e. g. 3 = Soft Starter ES	□
Package designation 3	e. g. 4 = Basic	□
Hardware, operating system	e. g. C = Windows 32/64	□
Data carriers	e. g. C = CD-ROM	□
Serial number	e. g. 1	□
Function status	e. g. 0	□
Product category	e. g. 0 = normal product	□
Language	e.g. Y = multilingual	□
Delivery versions	e. g. A = basic product with program on data medium and license	□
License type	e. g. 5 = single license	□
Example		**3ZS1 3 1 3 – 4 C C 1 0 – 0 Y A 5**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

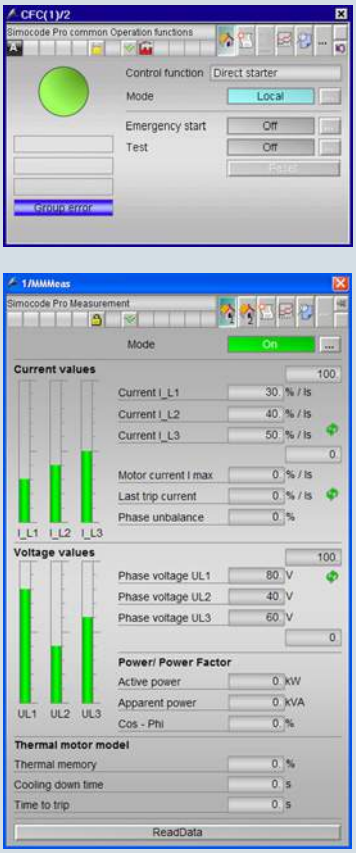
Safety note:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information on Industrial Security, see www.siemens.com/industrialsecurity.

Introduction

Block libraries for SIMATIC PCS 7



Advanced Process Library (APL) – faceplates and blocks for control and measured data of the SIMOCODE pro block library for PCS 7

The corresponding devices can be easily and conveniently installed into the SIMATIC PCS 7 process control system with the PCS 7 function block library for SIMOCODE, motor and soft starters, as well as the AS-Interface. PCS 7 block libraries contain the diagnostics and driver blocks corresponding with the diagnostics and driver concept of SIMATIC PCS 7 as well as the elements (symbols and faceplate) required for operator control and process monitoring.

Types of delivery and licenses

The PCS 7 Function Block Libraries supplied on CD-ROM allow users to run the required engineering software on the engineering station (single license) including the runtime software for executing the AS modules in an automation system (single license). If the AS modules are to be used in additional automation systems, the corresponding number of runtime licenses are required which are supplied without a data carrier.

Article number scheme of the function block libraries for SIMATIC PCS 7

Product versions		Article number
SIRIUS engineering software		**3ZS1** □ □ □ – □ **X X** □ □ – □ □ □ □
Type of software	e. g. 6 = standard FB (runtime)	□
Package designation 1	e. g. 3 = PCS 7	□
Package designation 2	e. g. 3 = soft starter	□
Type	e. g. 1 = for ES and AS	□
Serial number	e. g. 0	□
Function status	e. g. 2	□
Product category	e. g. 0 = normal product	□
Language	e.g. Y = multilingual	□
Delivery versions	e.g. A = basic product with program on data medium and license	□
License type	e. g. 0 = single license	□
Example		**3ZY1 6 3 3 – 1 X X 0 2 – 0 Y A 0**

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

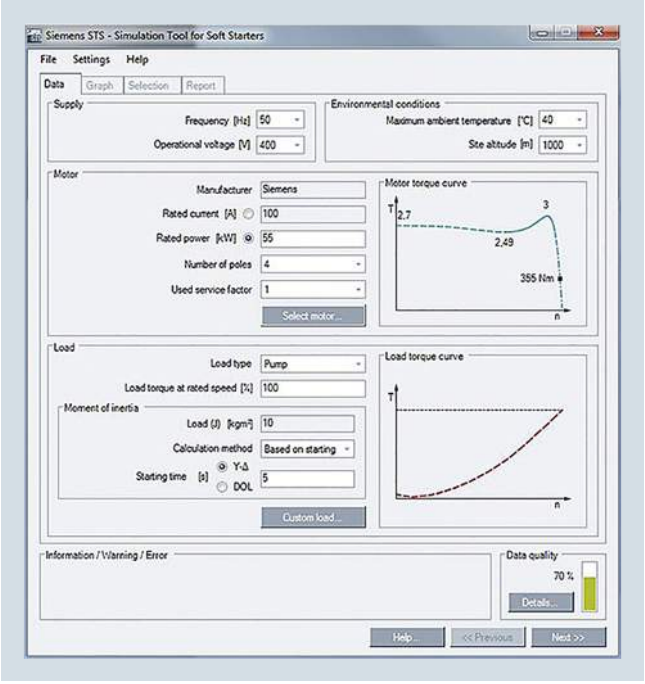
Safety note:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

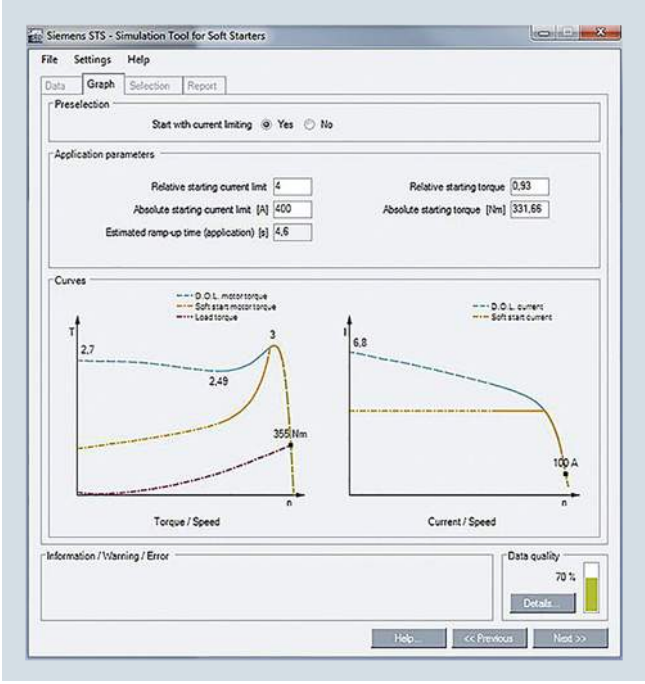
For more information on Industrial Security, see www.siemens.com/industrialsecurity.

NEW Simulation Tool for Soft Starters (STS)

Overview



Easy input of motor and load data



Graphic display of start operations

More information

Simulation Tool for Soft Starters (STS), see https://support.industry.siemens.com/cs/ww/en/ps/16221

The STS (Simulation Tool for Soft Starters) is a convenient way of designing soft starters using a simple, quick and easy-to-use interface. Entering the motor and load data will simulate the application and prompt suggestions for suitable soft starters.

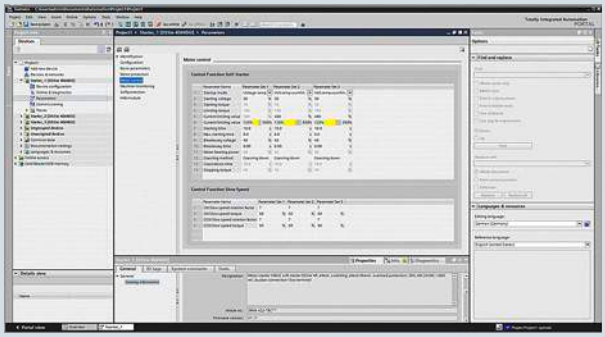
The Simulation Tool for Soft Starters (STS) is available free of charge as a download.

Benefits

- Simple, quick and user-friendly operator interface
- Detailed and up-to-date Siemens motor database, including IE3 motors. IE4 motor data will follow as soon as it is available.
- Simulation of heavy starting up to CLASS 30
- Update-capable (e.g. motors, load types, functions)
- Fast simulations with minimum input data
- Immediate, graphical curve charts of start operations with limit values
- View in table form of suitable soft starters for the application

SIRIUS Soft Starter ES (TIA Portal) NEW

Overview



Easy and clearly arranged parameter setting of the 3RW44 soft starter with SIRIUS Soft Starter ES (TIA Portal)

More information

Technical specifications and system requirements, see https://support.industry.siemens.com/cs/ww/en/ps/24230/td

The SIRIUS Soft Starter ES (TIA Portal) software permits quick and easy parameterization, monitoring and diagnostics of SIRIUS 3RW44 High Feature soft starters for service purposes. The device parameters can be configured directly on a PC and transferred to the soft starter through a serial cable or an optional PROFIBUS/PROFINET interface.

Version 14, which is based on the central engineering framework Totally Integrated Automation Portal (TIA Portal), is available in addition to Soft Starter ES Version 2007.

SIRIUS Soft Starter ES V14 is integrated seamlessly when further TIA Portal-based software such as STEP 7 or WinCC is available, thus enabling users to achieve a consistent, efficient and intuitive solution for all automation tasks.

However, use of SIRIUS Soft Starter ES V14 as stand-alone software also provides these advantages.

Efficient engineering with three program versions

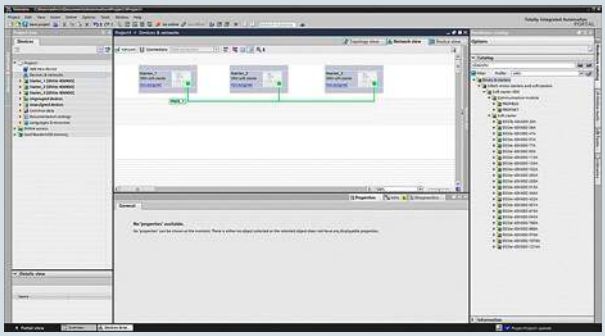
The SIRIUS Soft Starter ES (TIA Portal) software program is available in three versions, which differ in their user-friendliness, scope of functions and price.

SIRIUS Soft Starter ES V14	Basic	Standard	Premium
Access through the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	✓	✓	✓
Creating typicals	--	✓[1)]	✓
Exporting parameters	--	✓	✓
Comparison functions	--	✓	✓
Service data (slave pointer, statistics data)	--	✓	✓
Access via PROFIBUS/PROFINET	--	--	✓
Parameter comparison	--	--	✓
Teleservice through MPI	--	--	✓
Routing	--	--	✓

✓ Function available

-- Function not available

1) Typicals with Service Pack 1 and higher.



Graphic presentation of measured values with the trace function (oscilloscope function) of SIRIUS Soft Starter ES (TIA Portal) Standard and Premium

Additional functions

SIRIUS Soft Starter ES V14 offers numerous advantages of the TIA Portal that can be used in an integrated working environment.

Seamless integration

When using other TIA Portal-based software such as STEP 7 or WinCC, for example, the configuration for devices and networks for all components used is created in a standardized environment.

Working with libraries

Users can create copy templates for 3RW44 soft soft starter device configuration and can manage them in global or project libraries. This way, individual modules, diagrams and complete device configurations can be saved as reusable elements for frequently occurring tasks.

Teleservice through MPI

The SIRIUS Soft Starter ES (TIA Portal) Premium version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

Benefits

- Clearly arranged configuring of device functions and their parameters – online and offline
- Effective diagnostics functions on the soft starter and display of the most important measured values
- Trace function (oscilloscope function) for recording measured values and events (in the SIRIUS Soft Starter ES (TIA Portal) Standard and Premium versions).
- Complete transparency thanks to printout, logbook and event memory
- High degree of user-friendliness – convenient user interface, with English, German, French, Italian, Spanish and Chinese as possible operating languages
- Time savings through shorter startup times
- Fast, low-cost licensing using a simple licensing procedure (available online too)

Selection and ordering data

SIRIUS Soft Starter ES (TIA Portal) parameterization and service software for SIRIUS 3RW44 soft starters

- Delivered without PC cable

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
SIRIUS Soft Starter ES V14 Basic							
 3ZS1320-4CC10-0YA5	**Floating license for one user** Engineering software in limited-function version for diagnostics purposes, software and documentation on DVD, 6 languages (English/German/French/Italian/Spanish/Chinese) Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, communication via system interface						
	• License key on USB flash drive, Class A, including DVD	5	**3ZS1320-4CC10-0YA5**		1	1 unit	42H
	• License key download, Class A, without DVD	►	**3ZS1320-4CE10-0YB5**		1	1 unit	42H
SIRIUS Soft Starter ES V14 Standard							
 3ZS1320-5CC10-0YA5	**Floating license for one user** Engineering software, software and documentation on DVD, 6 languages (English/German/French/Italian/Spanish/Chinese) Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, communication via system interface						
	• License key on USB flash drive, Class A, including DVD	5	**3ZS1320-5CC10-0YA5**		1	1 unit	42H
	• License key download, Class A, without DVD	►	**3ZS1320-5CE10-0YB5**		1	1 unit	42H
	Powerpack for SIRIUS Soft Starter ES (TIA Portal) Basic Floating license for one user, engineering software, license key on USB flash drive, Class A 6 languages (English/German/French/Italian/Spanish/Chinese) communication via system interface	5	**3ZS1320-5CC10-0YD5**		1	1 unit	42H
	Upgrade for Soft Starter ES 2007 Floating license for one user, engineering software, software and documentation on DVD, license key on USB flash drive, Class A 6 languages (English/German/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, for all SIRIUS 3RW44 soft starters, online functions via system interface	5	**3ZS1320-5CC10-0YE5**		1	1 unit	42H
	Software Update Service for 1 year with automatic extension, requires the current software version, engineering software, software and documentation on DVD, 6 languages (English/German/French/Italian/Spanish/Chinese) Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, communication via system interface	►	**3ZS1320-5CC10-0YL5**		1	1 unit	42H

Note:

Please order PC cable separately; see page 14/8.

For a description of the software versions, see page 14/6.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS Soft Starter ES (TIA Portal) NEW

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
SIRIUS Soft Starter ES V14 Premium						
 3ZS1320-6CC10-0YA5	**Floating license for one user** Engineering software, software and documentation on DVD, 6 languages (English/German/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, Communication via system interface or PROFIBUS/PROFINET					
	• License key on USB flash drive, Class A, including DVD	5	**3ZS1320-6CC10-0YA5**	1	1 unit	42H
	• License key download, Class A, without DVD	►	**3ZS1320-6CE10-0YB5**	1	1 unit	42H
	Powerpack for SIRIUS Soft Starter ES (TIA Portal) Standard Floating license for one user, engineering software, license key on USB flash drive, Class A 6 languages (English/German/French/Italian/Spanish/Chinese), Communication via system interface or PROFIBUS/PROFINET	5	**3ZS1320-6CC10-0YD5**	1	1 unit	42H
	Upgrade for Soft Starter ES 2007 Floating license for one user, engineering software, software and documentation on DVD, license key on USB flash drive, Class A 6 languages (English/German/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, for all SIRIUS 3RW44 soft starters, Online functions via system interface or PROFIBUS/PROFINET	5	**3ZS1320-6CC10-0YE5**	1	1 unit	42H
	Software Update Service for 1 year with automatic extension, requires the current software version, engineering software, software and documentation on DVD, Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, Communication via system interface or PROFIBUS/PROFINET	►	**3ZS1320-6CC10-0YL5**	1	1 unit	42H

Note:

Please order PC cable separately; see Accessories.

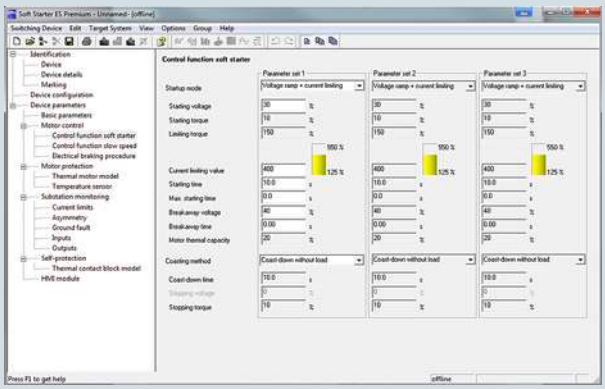
For a description of the software versions, see page 14/6.

Accessories

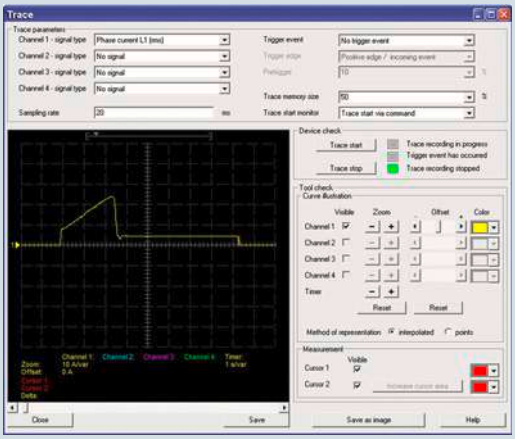
Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
 3UF7941-0AA00-0	**USB PC cables** For connecting to the USB interface of a PC/PG, for communication with Soft Starter ES through the system interface	►	**3UF7941-0AA00-0**	1	1 unit	42J
	Optional communication module for SIRIUS 3RW44					
	• PROFIBUS	►	**3RW4900-0KC00**	1	1 unit	42H
	• PROFINET	►	**3RW4900-0NC00**	1	1 unit	42H

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview



Easy and clearly arranged parameter setting of the 3RW44 soft starter with Soft Starter ES 2007



Graphic presentation of measured values with the trace function (oscilloscope function) of Soft Starter ES 2007 Standard and Premium

More information

Technical specifications and system requirements, see https://support.industry.siemens.com/cs/ww/en/ps/16709/td

The Soft Starter ES software permits the quick and easy parameterization, monitoring and diagnostics of SIRIUS 3RW44 High-Feature soft starters for service purposes. The device parameters can be configured directly on the PC and transferred to the soft starter through a serial cable or an optional PROFIBUS/PROFINET interface.

Efficient engineering with three program versions

The Soft Starter ES software program is available in three versions which differ in their user-friendliness, scope of functions and price.

Soft Starter ES	Basic	Standard	Premium
Access through the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	✓	✓	✓
Creation of typicals	--	✓[1)]	✓
Parameter export	--	✓	✓
Comparison functions	--	✓	✓
Standard-compliant printout according to EN ISO 7200	--	✓	✓
Service data (slave pointer, statistics data)	--	✓	✓
Access through PROFIBUS/PROFINET	--	--	✓
Group functions	--	--	✓
Teleservice through MPI	--	--	✓
Routing	--	--	✓
STEP7 Object Manager	--	--	✓

✓ Function available

-- Function not available

1) Typicals with Service Pack 1 and higher.

Additional functions

Standard-compliant printouts

The software tool greatly simplifies machine documentation. It enables parameterization printouts according to EN ISO 7200. The elements to be printed are easy to select and group as required.

Easy creation of typicals

Typicals can be created for devices and applications with only minimum differences in their parameters. These typicals contain all the parameters which are needed for the parameterization. In addition it is possible to specify which of these parameters are fixed and which can be adapted, e.g. by the startup engineer.

Group function

For the user-friendly parameterization of numerous devices or applications of the same type, the programs of the SIRIUS ES software family offer a group function that enables the parameterization of several devices to be read out or written through PROFIBUS/PROFINET. In conjunction with typicals it is even possible to selectively adapt the same parameters in any number of parameterizations.

Teleservice through MPI

The Soft Starter ES Premium version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

Benefits

- Transparent setting of the device functions and their parameters – online and offline
- Effective diagnostics functions on the soft starter and display of the most important measured values
- Trace function (oscilloscope function) for recording measured values and events (in the Soft Starter ES Standard and Premium versions)
- Complete transparency thanks to printout, logbook and event memory
- High degree of user-friendliness – convenient user interface, with German, English and French as possible operating languages
- Time savings through shorter startup times
- Fast, low-cost licensing using a simple licensing procedure (available online too)

Selection and ordering data

Soft Starter ES parameterization and service software for SIRIUS 3RW44 soft starters

- Delivered without PC cable

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Soft Starter ES 2007 Basic						
 3ZS1313-4CC10-0YA5						
Floating license for one user Engineering software in limited-function version for diagnostics purposes, Software and documentation on CD, 3 languages (English/German/French), communication via system interface						
• License key on USB stick, Class A, including CD	5	**3ZS1313-4CC10-0YA5**		1	1 unit	42H
• License key download, Class A, without CD	►	**3ZS1313-4CE10-0YB5**		1	1 unit	42H
Soft Starter ES 2007 Standard						
 3ZS1313-5CC10-0YA5						
Floating license for one user Engineering software, Software and documentation on CD, 3 languages (English/German/French), communication via system interface						
• License key on USB stick, Class A, including CD	5	**3ZS1313-5CC10-0YA5**		1	1 unit	42H
• License key download, Class A, without CD	►	**3ZS1313-5CE10-0YB5**		1	1 unit	42H
Powerpack for Soft Starter ES 2007 Basic Floating license for one user, engineering software, license key on USB flash drive, Class A 3 languages (English/German/French), communication via system interface	5	**3ZS1313-5CC10-0YD5**		1	1 unit	42H
Software Update Service for 1 year with automatic extension, requires the current software version, engineering software, Software and documentation on CD, communication via system interface	►	**3ZS1313-5CC10-0YL5**		1	1 unit	42H

Notes:

Please order PC cable separately; see page 14/11.

For a description of the software versions, see page 14/9.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Soft Starter ES 2007 Premium						
 3ZS1313-6CC10-0YA5						
Floating license for one user						
Engineering software, Software and documentation on CD, 3 languages (English/German/French), Communication via system interface or PROFIBUS/PROFINET, STEP7 Object Manager						
• License key on USB stick, Class A, including CD	5	**3ZS1313-6CC10-0YA5**		1	1 unit	42H
• License key download, Class A, without CD	►	**3ZS1313-6CE10-0YB5**		1	1 unit	42H
Powerpack for Soft Starter ES 2007 Standard	5	**3ZS1313-6CC10-0YD5**		1	1 unit	42H
Floating license for one user, engineering software, license key on USB flash drive, Class A 3 languages (English/German/French), Communication via system interface or PROFIBUS/PROFINET, STEP7 Object Manager						
Software Update Service	►	**3ZS1313-6CC10-0YL5**		1	1 unit	42H
for 1 year with automatic extension, requires the current software version, engineering software, Software and documentation on CD, Communication via system interface or PROFIBUS/PROFINET, STEP7 Object Manager						

Notes:

Please order PC cable separately; see Accessories.

For a description of the software versions, see page 14/9.

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
 3UF7941-0AA00-0						
USB PC cables	►	**3UF7941-0AA00-0**		1	1 unit	42J
For connecting to the USB interface of a PC/PG, for communication with Soft Starter ES through the system interface						
Optional communication module for SIRIUS 3RW44						
• PROFIBUS	►	**3RW4900-0KC00**		1	1 unit	42H
• PROFINET	►	**3RW4900-0NC00**		1	1 unit	42H

Overview

More information

Technical specifications, see
https://support.industry.siemens.com/cs/ww/en/ps/16710/td

Programming and Operating Manual for the "PCS 7 Soft Starter 3RW44 V6.2/V7.1" and "3RW44 Soft Starter PCS 7 Library V8 Migration V8.0 + SP2" block libraries, see
https://support.industry.siemens.com/cs/ww/en/view/41856585

Getting Started for the "PCS 7 Soft Starter 3RW44 V6.2/V7.1" and "3RW44 Soft Starter PCS 7 Library V8 Migration V8.0 + SP2" block libraries, see https://support.industry.siemens.com/cs/ww/en/view/41856498

The SIRIUS 3RW44 soft starter PCS 7 function block library can be used for simple and easy integration of SIRIUS 3RW44 soft starters into the SIMATIC PCS 7 process control system. The SIRIUS 3RW44 soft starter PCS 7 function block library contains the diagnostics and driver blocks corresponding with the SIMATIC PCS 7 diagnostics and driver concept as well as the elements (symbols and faceplates) required for operator control and process monitoring.

Integrated functionality for optimal process control for all process control systems

In addition to the general sensor technology, the motor feeder data is increasingly being integrated into the process control system. By integrating the SIRIUS 3RW44 soft starters into the process control system it becomes possible to prevent errors in the motor feeder simply and reliably, or to detect these errors quickly and rectify them. Downtimes are reduced to a minimum or can be prevented before they happen.

For example, the output and display of the key measured values calculated by the 3RW44 is also a good aid for being able to assess and monitor the current system status.

Easy integration with the PCS 7 Function Block Library

The PCS 7 function block library can be used for simple and easy integration of SIRIUS 3RW44 soft starters into the SIMATIC PCS 7 process control system. The focus here is simple configuration. Functioning of the blocks is based on the PCS 7 standard libraries and is optimally harmonized with the functions of the SIRIUS 3RW44.

Users who have previously integrated motor feeders into conventional technology via signal blocks and motor or valve blocks or, for example, already have experience with SIMOCODE modules, are easily able to switch to SIRIUS 3RW44.

All blocks required for the automation systems are provided by the PCS 7 function block library – as are the block symbols and faceplates for the operator station required for monitoring and control.

With the integration of the SIRIUS 3RW44 into SIMATIC PDM, the system-wide device parameterization and diagnostics of the SIRIUS 3RW44 soft starters are possible from a central point.

Motor block for direct control of the drive

The low-voltage motors started and protected by SIRIUS 3RW44 soft starters can be integrated into the process automation via the motor blocks. This means that they form the interface between the process control system and the motors controlled by the SIRIUS 3RW44.

To reduce the amount of configuring work required, functions for signal processing and technological functions are integrated into one motor block.

The important measured value – the current in the motor feeder – is recorded via the 3RW44 and monitored for motor protection. The motor current is accessible from the I&C system via the motor blocks.

The block symbols and faceplates for the motor blocks display the motor feeders on the operator station and provide all the required information for monitoring and control as well as detailed diagnostics.

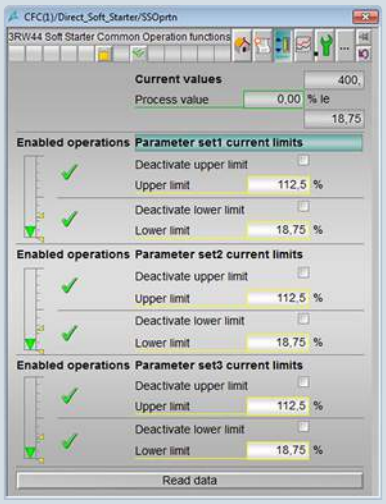
Faceplate of the motor block

Evaluation of additional motor feeder measurements

All measured values calculated by the soft starter, such as current, voltage and output of the feeder, are displayed and output via the measured value blocks. A key advantage here is that, where required, a wide range of information on important motor feeder measurements is available, e. g. for load monitoring.

The 3RW44 is not only able to detect measured values here, but also to react if these values are exceeded or undershot, for example, via custom settings – e. g. with a motor shut-down or with a warning.

The faceplate for the measured values is accessed from the motor block faceplate.



Faceplate for measured values

Evaluation of maintenance-related motor feeder data

The 3RW44 has powerful functions to detect and monitor maintenance-related motor feeder data. For example, the operating and downtimes of the motor, operating cycles and overload tripping events are detected and stored directly on the device. If required, the information already on the device is available via the statistics block in the I&C system. The display is provided on a separate faceplate for the statistics block on the operator station.

Benefits

- Uniform and continuous integration into SIMATIC PCS 7
- Standardized blocks for simple integration and optimal operation
- Including Advanced Process Library (APL) in Version V8
- Greater process transparency due to greater information density in the process control system
- System-wide device parameterization and diagnostics with SIMATIC PDM

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
SIRIUS 3RW44 Soft Starter block library for SIMATIC PCS 7 Version V8 with Advanced Process Library (APL)							
 3ZS1633-1XX02-0YA0	**Engineering software V8** For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German Scope of supply: AS modules and faceplates for integrating SIRIUS 3RW44 into the PCS 7 process control system with Advanced Process Library, for PCS 7 version V8.0/V8.1/V8.2 Type of delivery: Software and documentation on CD, One license for one engineering station One license for one automation station	►	**3ZS1633-1XX02-0YA0**		1	1 unit	42H
	Runtime license V8 For execution of the AS modules in an automation system (single license) Required for using the AS modules of the engineering software V8 on an additional automation system within a plant Type of delivery: one license for one automation station, without software and documentation	►	**3ZS1633-2XX02-0YB0**		1	1 unit	42H

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS 3RW44 Soft Starter block library for SIMATIC PCS 7

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
SIRIUS 3RW44 Soft Starter block library for SIMATIC PCS 7 Version V7 without Advanced Process Library (APL)							
 3ZS1633-1XX00-0YA0	**Engineering software V7** For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German Scope of supply: AS modules and faceplates for integrating SIRIUS 3RW44 into the PCS 7 process control system, for PCS 7 version V6.1/V7.0/V7.1[1)] Type of delivery: Software and documentation on CD, One license for one engineering station One license for one automation station	►	**3ZS1633-1XX00-0YA0**		1	1 unit	42H
	Runtime license V7 For execution of the AS modules in an automation system (single license) Required for using the AS modules of the engineering software V7 or the engineering software migration V7-V8 on an additional automation system within a plant Type of delivery: one license for one automation station, without software and documentation	►	**3ZS1633-2XX00-0YB0**		1	1 unit	42H
	Engineering software migration V7-V8 For upgrading (migrating) existing engineering software V6.1/V7.0/V7.1 of the SIRIUS 3RW44 soft starter block library for PCS 7 Conditions of use: Availability of the engineering software V7 (license) of the SIRIUS 3RW44 soft starter block library for PCS 7 for the PCS 7 version V6.1, V7.0 or V7.1 The V7-V8 engineering software migration can be installed directly onto a system with PCS 7 version V8; installation of the previous version is unnecessary. For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German Scope of supply: AS modules and faceplates for integrating SIRIUS 3RW44 soft starters into the PCS 7 process control system, for PCS 7 version V8.0 and higher Type of delivery: Software and documentation on CD, License for upgrading an existing license For one engineering station and the associated runtime licenses of a plant	►	**3ZS1633-1XX10-0YE0**		1	1 unit	42H

1) For earlier versions of the engineering software, SP1 can be downloaded from www.siemens.com/sirius-engineering.

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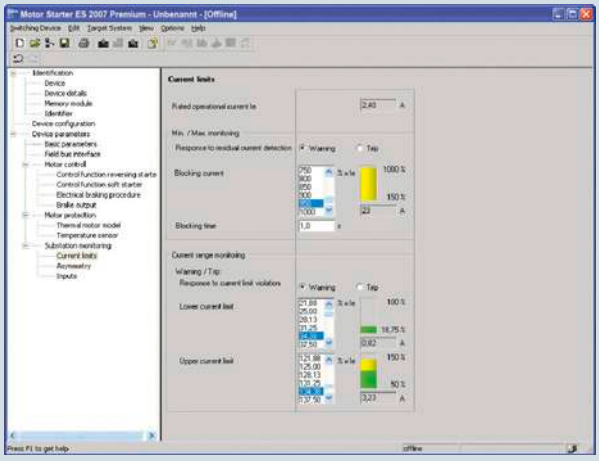
Overview



Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

More information

Technical specifications and system requirements, see https://support.industry.siemens.com/cs/ww/en/ps/16713/td

Motor Starter ES is used for the start up, parameterization, diagnostics, documentation and preventive maintenance of SIMATIC ET 200S, ET 200pro, ECOFAST and M200D motor starters.

Interfacing is performed

- Through the local interface on the device
- With PROFIBUS DP-V1-capable motor starters from any point in PROFIBUS or in PROFINET (applies to ET 200S DP V1/ET 200pro/ECOFAST/M200D)
- With PROFINET capable motor starters from any point in PROFINET or in PROFIBUS (applies to ET 200S DP V1/ ET 200pro/M200D)

Using Motor Starter ES, the communication-capable motor starters are easily parameterized during start up, monitored during normal operation and successfully diagnosed for service purposes. Preventative maintenance is supported by a function for reading out diverse statistical data (e.g.operating hours, operating cycles, cut-off currents, etc.). The user is supported during these procedures with comprehensive Help functions and plain text displays.

Motor Starter ES can either be used as a stand-alone program or it can be integrated into STEP 7 via an Object Manager.

Efficient engineering with three program versions

The Motor Starter ES software program is available in three versions which differ in their user-friendliness, scope of functions and price.

Motor Starter ES	Basic	Standard	Premium
ET 200S High Feature PROFIBUS IM	✓	✓	✓
ET 200S High Feature PROFINET IM	✓	✓	✓
ECOFAST AS-Interface High Feature	✓	✓	--
ECOFAST PROFIBUS	✓	✓	✓
ET 200pro PROFIBUS IM	✓	✓	✓
ET 200pro PROFINET IM	✓	✓	✓
M200D AS-Interface Standard	✓	✓	(✓)
M200D PROFIBUS	✓	✓	✓
M200D PROFINET	✓	✓	✓

✓ Function available, (✓) Available with restricted functionality

-- Function not available

Motor Starter ES	Basic	Standard	Premium
Access through the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	--	✓	✓
Creation of typicals	--	✓	✓
Comparison functions	--	✓	✓
Standard-compliant printout according to EN ISO 7200	--	✓	✓
Service data (maximum pointers, statistical data)	--	✓	✓
Access through PROFIBUS	--	--	✓
Access through PROFINET	--	--	✓
S7 routing	--	--	✓
Teleservice through MPI	--	--	✓
STEP 7 Object Manager	--	--	✓
Trace function	--	✓	✓

✓ Function available

-- Function not available

Additional functions

Standard-compliant printouts

The software tool greatly simplifies machine documentation. It enables parameterization printouts according to EN ISO 7200. The elements to be printed are easy to select and group as required.

Easy creation of typicals

Typicals can be created for devices and applications with only minimum differences in their parameters. These typicals contain all the parameters which are needed for the parameterization. In addition it is possible to specify which of these parameters are fixed and which can be adapted, e.g. by the startup engineer.

Teleservice through MPI

The Motor Starter ES Premium version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

Benefits

- Fast, error-free configuration and startup of motor starters even without extensive previous knowledge
- Transparent setting of the device functions and their parameters – online and offline
- Effective diagnostics functions on the soft starter and display of the most important measured values
- Trace function (oscilloscope function) for recording measured values and events (included in the Motor Starter ES Standard and Premium software version for M200D PROFIBUS and PROFINET).

Selection and ordering data

Parameterization, start-up and diagnostics software Motor Starter ES 2007

For ECOFAST Motor Starter, SIMATIC ET 200S High-Feature Starter, SIMATIC ET 200pro Starter and M200D (AS-I Standard, PROFIBUS, PROFINET)

- Delivered without PC cable

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Motor Starter ES 2007 Basic							
 3ZS1310-4CC10-0YA5	**Floating license for one user** Engineering software in limited-function version for diagnostics purposes Software and documentation on CD, 3 languages (English/German/French), communication via system interface						
	• License key on USB stick, Class A, including CD	5	**3ZS1310-4CC10-0YA5**		1	1 unit	42D
	• License key download, Class A, without CD	►	**3ZS1310-4CE10-0YB5**		1	1 unit	42D
Motor Starter ES 2007 Standard							
 3ZS1310-5CC10-0YA5	**Floating license for one user** Engineering software, Software and documentation on CD, 3 languages (English/German/French), communication via system interface						
	• License key on USB stick, Class A, including CD	5	**3ZS1310-5CC10-0YA5**		1	1 unit	42D
	• License key download, Class A, without CD	►	**3ZS1310-5CE10-0YB5**		1	1 unit	42D
	Powerpack for Motor Starter ES 2007 Basic Floating license for one user, engineering software, license key on USB flash drive, Class A 3 languages (English/German/French), communication via system interface	5	**3ZS1310-5CC10-0YD5**		1	1 unit	42D
	Software Update Service for 1 year with automatic extension, requires the current software version, engineering software, Software and documentation on CD, communication via system interface	3	**3ZS1310-5CC10-0YL5**		1	1 unit	42D

Notes:

Please order PC cable separately; see page 14/17.

For a description of the software versions, see page 14/15.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor Starter ES 2007 Premium						
 3ZS1310-6CC10-0YA5						
Floating license for one user Engineering software, Software and documentation on CD, 3 languages (English/German/French), Communication via system interface or PROFIBUS/PROFINET, STEP7 Object Manager						
• License key on USB stick, Class A, including CD	5	**3ZS1310-6CC10-0YA5**		1	1 unit	42D
• License key download, Class A, without CD	▶	**3ZS1310-6CE10-0YB5**		1	1 unit	42D
Powerpack for Motor Starter ES 2007 Standard Floating license for one user, engineering software, license key on USB flash drive, Class A 3 languages (English/German/French), Communication via system interface or PROFIBUS/PROFINET, STEP7 Object Manager	5	**3ZS1310-6CC10-0YD5**		1	1 unit	42D
Software Update Service for 1 year with automatic extension, requires the current software version, engineering software, Software and documentation on CD, Communication via system interface or PROFIBUS/PROFINET, STEP7 Object Manager	3	**3ZS1310-6CC10-0YL5**		1	1 unit	42D

Notes:

Please order PC cable separately; see Accessories.

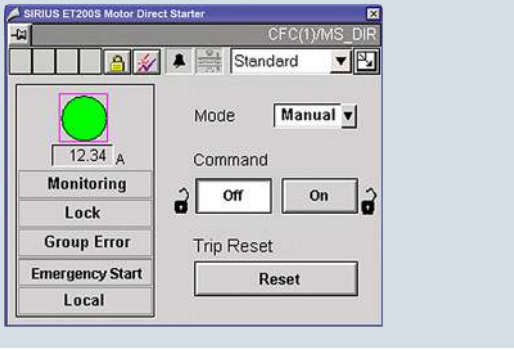
For a description of the software versions, see page 14/15.

Accessories

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories						
 3RK1903-0CH20						
2DI LC COM control modules For ET 200S High-Feature starter, Failsafe starter A	2	**3RK1903-0CH20**		1	1 unit	42D
LOGO! USB PC cables For ET 200S High-Feature starter	1	**6ED1057-1AA01-0BA0**		1	1 unit	2AP
RS 232 interface cable Serial data connection between ET 200pro MS/FC, M200D and laptop/PC/PG or MS	5	**3RK1922-2BP00**		1	1 unit	42D
USB interface cable Serial data connection between ET 200pro MS/FC, M200D and laptop/PC/PG or MS	3	**6SL3555-0PA00-2AA0**		1	1 unit	346
USB/serial adapter For connecting an RS 232 PC cable to the USB interface of a PC, recommended for use in conjunction with ET 200S/ECOFAST/ET 200pro motor starters	5	**3UF7946-0AA00-0**		1	1 unit	42J

SIRIUS Motor Starter Function Block Library for SIMATIC PCS 7

Overview



Faceplate of the motor block

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16714/td

Programming and Operating Manual for the "SIRIUS Motor Starter PCS 7 Library V7.1 + SP2" and "SIRIUS Motor Starter PCS 7 Library V8 Migration V8.0 + SP1" block libraries, see https://support.industry.siemens.com/cs/ww/en/view/41856573

Getting Started for the "SIRIUS Motor Starter PCS 7 Library V7.1 + SP2" and "SIRIUS Motor Starter PCS 7 Library V8 Migration V8.0 + SP1" block libraries, see https://support.industry.siemens.com/cs/ww/en/view/41856486

With the SIRIUS motor starter PCS 7 block library, SIRIUS ET 200S and ET 200pro motor starters can be easily and simply integrated into the SIMATIC PCS 7 process control system. The SIRIUS motor starter PCS 7 function block library contains the diagnostics and driver blocks corresponding to the SIMATIC PCS 7 diagnostics and driver concept as well as the elements (symbols and faceplates) required for operator control and process monitoring.

Easy integration with the PCS 7 Function Block Library

The PCS 7 block library can be used for simple and easy integration of SIRIUS ET 200S and ET 200pro motor starters into the SIMATIC PCS 7 process control system V7 and V8. The focus here is simple configuration. Functioning of the blocks is based on the PCS 7 standard libraries and is optimally harmonized with the functions of the SIRIUS motor starters.

Users who have previously integrated motor feeders into PCS 7 are easily able to switch to SIRIUS motor starters.

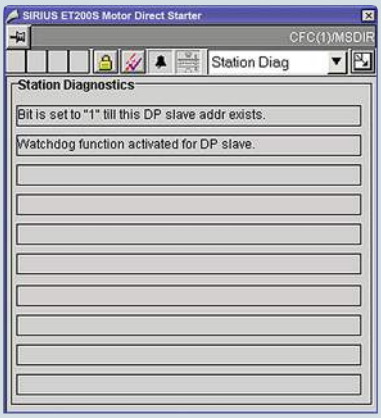
All blocks required for the automation systems are provided by the PCS 7 block library – as are the block symbols and faceplates for the operator station required for monitoring and control.

Regardless of whether, for example, the motor starter is controlled directly, or its current value is to be read out and status, warning and error signals are to be displayed, the right modules are always available.

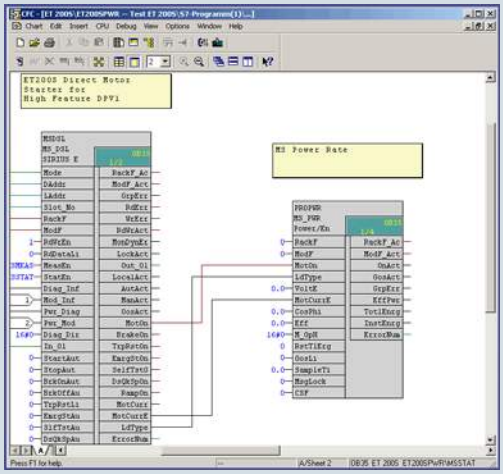
Connection to powerrate

The SIRIUS motor starters can be connected to powerrate. The block provides the possibility of integrating the motor starters into energy management.

The current values are supplied directly from the motor starter block, while the voltage and the power factor (p.f.) must be entered manually.



Faceplate for diagnostics



Faceplate for energy management with powerrate

Benefits

- Uniform and continuous integration into SIMATIC PCS 7
- Standardized blocks for simple integration and optimal operation
- Greater process transparency due to greater information density in the process control system

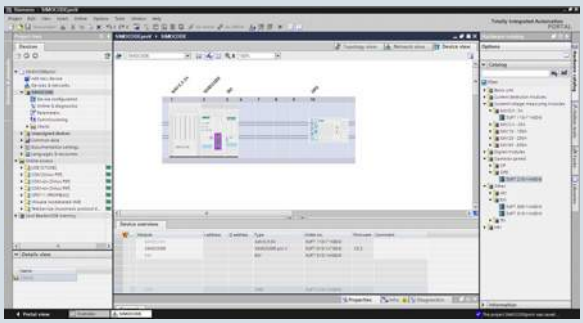
Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
SIRIUS motor starter block library for SIMATIC PCS 7						
 3ZS1630-1XX00-0YA0						
Engineering software V7 For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German Scope of supply: AS modules and faceplates for integrating SIRIUS motor starters into the PCS 7 process control system, for PCS 7 version V7.0 or V7.1 Type of delivery: Software and documentation on CD, One license for one engineering station One license for one automation station	►	**3ZS1630-1XX01-0YA0**		1	1 unit	42D
Runtime license V7 For execution of the AS modules in an automation system (single license) Required for using the AS modules of the engineering software V7 or the engineering software migration V7-V8 on an additional automation system within a plant Type of delivery: one license for one automation station, without software and documentation	►	**3ZS1630-2XX01-0YB0**		1	1 unit	42D
Upgrade for SIRIUS motor starter block library for SIMATIC PCS 7 V6.1/V7.0 on V7.0/V7.1 For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German Scope of supply: AS modules and faceplates for integrating SIRIUS motor starters into the PCS 7 process control system, for PCS 7 version V7.0 or V7.1 Type of delivery: Software and documentation on CD, One license for one engineering station One license for one automation station	►	**3ZS1630-1XX01-0YE0**		1	1 unit	42D
Engineering software migration V7-V8 For upgrading (migrating) existing V7 engineering software of the SIRIUS motor starter block library for PCS 7 Conditions of use: Availability of the V7 (license) engineering software of the SIRIUS motor starter block library for PCS 7 for PCS 7 version V7.0 or V7.1 The V7-V8 engineering software migration can be installed directly onto a system with PCS 7 version V8; installation of the previous version is unnecessary. For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German Scope of supply: AS blocks and faceplates for integrating SIRIUS motor starters into the PCS 7 process control system, for PCS 7 version V8.0 and higher Type of delivery: Software and documentation on CD, License for upgrading an existing license For one engineering station and the associated runtime licenses of a plant	►	**3ZS1630-1XX10-0YE0**		1	1 unit	42D

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIMOCODE ES (TIA Portal) NEW

Overview



Selection of SIMOCODE pro device configuration in SIMOCODE ES (TIA Portal)

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16716/td

SIMOCODE ES is the central software for configuration, startup, operation and diagnostics of SIMOCODE pro.

Version 14, which is based on the central engineering framework Totally Integrated Automation Portal (TIA Portal), is available in addition to SIMOCODE ES Version 2007.

SIMOCODE ES V14 is integrated seamlessly when further TIA Portal-based software such as STEP 7 or WinCC is available, thus enabling users to achieve a consistent, efficient and intuitive solution for all automation tasks.

However, use of SIMOCODE ES V14 as stand-alone software also provides these advantages.

Three program versions

The user can choose between three different versions of SIMOCODE ES: SIMOCODE ES Basic, SIMOCODE ES Standard and SIMOCODE ES Premium. While SIMOCODE ES Basic is a powerful tool for startup or maintenance personnel, SIMOCODE ES Standard and Premium are the perfect tools for engineers or configuration engineers on account of their larger scope of functions and integrated graphics editor. Unlike the Standard version, SIMOCODE ES Premium also permits parameterization and diagnostics through PROFIBUS/PROFINET. Indication of all operating, service and diagnostics data supplies important information about the current state of the motor and plant at all times – everywhere on PROFIBUS/PROFINET.

SIMOCODE ES V14	Basic	Standard	Premium
Access through the local interface on the device	✓	✓	✓
Parameter assignment in list form	✓	✓	✓
Parameter printing in list form	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	✓	✓	✓
Test	✓	✓	✓
Service data	✓	✓	✓
Analog value recording1)	✓	✓	✓
Trend display of measured values	--	✓	✓
Parameterizing with convenient graphical display	--	✓	✓
Parameterizing with the integrated graphics editor (CFC-based)	--	✓	✓
Printing of diagrams	--	✓	✓
Parameter comparison	--	✓	✓
Access through PROFIBUS/PROFINET	--	--	✓
Teleservice through MPI	--	--	✓
Routing2)	--	--	✓

✓ Function available

-- Function not available

1) For SIMOCODE pro V.

2) See http://support.automation.siemens.com/WW/view/en/109738745.

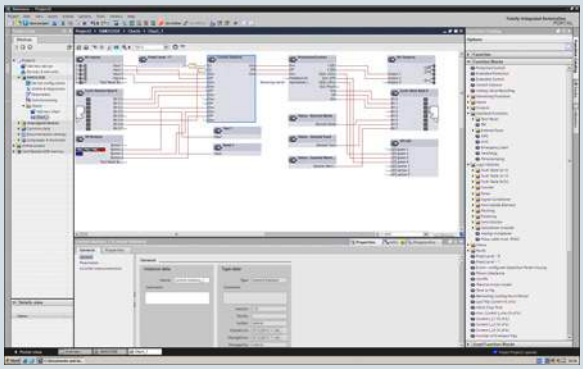
Working with libraries

Users can create copy templates for SIMOCODE pro device configuration and can manage them in global or project libraries.

This way, individual modules, diagrams and complete device configurations can be saved as reusable elements for frequently occurring tasks.

Integrated graphics editor

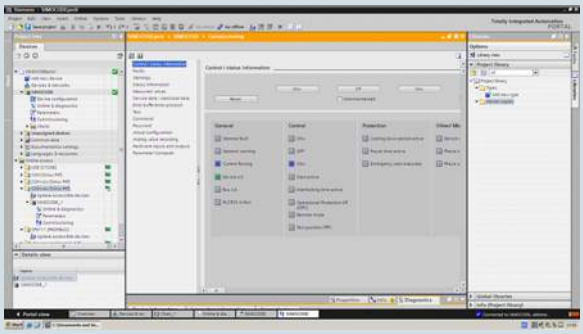
The graphics editor is a part of SIMOCODE ES Standard and SIMOCODE ES Premium. It is based on the Continuous Function Chart (CFC) and adds a powerful tool to the parameterizing interface that enables easy parameterization of devices by drag & drop. Extremely compact documentation of all configured parameters is possible, as is the graphic online presentation of the configured device functions including all signal states during operation.



Parameterize easily and ergonomically with the CFC-based graphics editor of SIMOCODE ES V14

Online functions for startup and diagnosis

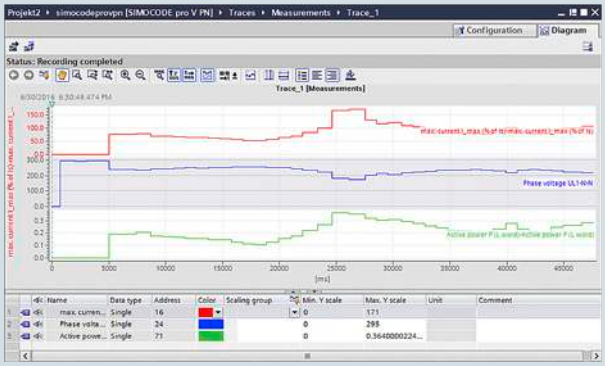
To this end, SIMOCODE ES provides powerful functions for startup and diagnosis of motor feeders. Besides a detailed display of status information and the causes of faults, all available measurement and statistics data can be retrieved online. Access to the fault and event memory and also to analog values recorded on the device, e.g. current or voltage, is also possible.



Commissioning functions of SIMOCODE ES V14

Trend display of measured values

With this online function, SIMOCODE ES Standard or Premium can present the trends of different measured values. It is thus possible for example to record and evaluate the start-up characteristic of a motor or its behavior under different load conditions.



Live trend display of SIMOCODE ES V14

Additional functions

SIMOCODE ES V14 offers numerous advantages of the TIA Portal that can be used in an integrated working environment.

Seamless integration

When using other TIA Portal-based software such as STEP 7 or WinCC, for example, the configuration for devices and networks for all components used is created in a standardized environment.

Benefits

- Easy parameterization with the graphics editor based on the Continuous Function Chart (CFC) reduces engineering work and shortens start up times
- Clear plant documentation by means of graphic presentation
- Detailed information, also when there are faults, is a help for maintenance personnel and shortens downtimes
- Universally applicable through stand-alone version or seamless integration into the central engineering framework when other TIA Portal-based software such as STEP 7 or WinCC are available
- Parameter changes are also possible during normal operation
- Users can create copy templates for device configurations and can manage them in global libraries

SIMOCODE ES (TIA Portal) NEW

Selection and ordering data

Parameterization and service software for SIMOCODE pro 3UF7

- Delivered without PC cable

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
SIMOCODE ES V14 Basic							
 3ZS1322-4CC12-0YA5	**Floating license for one user** Engineering software, software and documentation on DVD, 6 languages (English/German/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, for all SIMOCODE pro, online functions via system interface						
	• License key on USB flash drive, Class A	►	**3ZS1322-4CC12-0YA5**		1	1 unit	42J
	• License key download, Class A	►	**3ZS1322-4CE12-0YB5**		1	1 unit	42J
SIMOCODE ES V14 Standard							
 3ZS1322-5CC12-0YA5	**Floating license for one user** Engineering software, software and documentation on DVD, 6 languages (English/German/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, for all SIMOCODE pro, online functions via system interface, parameterizing with the integrated graphics editor (CFC-based)						
	• License key on USB flash drive, Class A	►	**3ZS1322-5CC12-0YA5**		1	1 unit	42J
	• License key download, Class A	►	**3ZS1322-5CE12-0YB5**		1	1 unit	42J
	Upgrade for SIMOCODE ES 2007 Floating license for one user, engineering software, software and documentation on DVD, license key on USB flash drive, Class A 6 languages (English/German/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, for all SIMOCODE pro, online functions via system interface, parameterizing with the integrated graphics editor (CFC-based)	2	**3ZS1322-5CC12-0YE5**		1	1 unit	42J
	Powerpack for SIMOCODE ES V14 Basic Floating license for one user, engineering software, license key on USB flash drive, Class A 6 languages (English/German/French/Italian/Spanish/Chinese), for all SIMOCODE pro, online functions via system interface, parameterizing with the integrated graphics editor (CFC-based)	2	**3ZS1322-5CC12-0YD5**		1	1 unit	42J
	Software Update Service for 1 year with automatic extension, requires software version of SIMOCODE ES (TIA Portal), engineering software, software and documentation on DVD, online functions via system interface, parameterizing with the integrated graphics editor (CFC-based)	►	**3ZS1322-5CC12-0YL5**		1	1 unit	42J

Notes:

SIMOCODE ES V13 licenses can also be used for SIMOCODE ES V14.

Please order PC cable separately; see page 14/23.

For a description of the software versions, see page 14/20.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

NEW SIMOCODE ES (TIA Portal)

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
SIMOCODE ES V14 Premium							
 3ZS1322-6CC12-0YA5	**Floating license for one user** Engineering software, software and documentation on DVD, 6 languages (English/German/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, for all SIMOCODE pro, online functions via system interface and PROFIBUS/PROFINET, parameterizing with the integrated graphics editor (CFC-based)						
	• License key on USB flash drive, Class A	►	**3ZS1322-6CC12-0YA5**		1	1 unit	42J
	• License key download, Class A	►	**3ZS1322-6CE12-0YB5**		1	1 unit	42J
	Upgrade for SIMOCODE ES 2007 Floating license for one user, engineering software, software and documentation on DVD, license key on USB flash drive, Class A 6 languages (English/German/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V14 of SIRIUS ES, for all SIMOCODE pro, online functions via system interface and PROFIBUS/PROFINET, parameterizing with the integrated graphics editor (CFC-based)	2	**3ZS1322-6CC12-0YE5**		1	1 unit	42J
	Powerpack for SIMOCODE ES V14 Standard Floating license for one user, engineering software, license key on USB flash drive, Class A 6 languages (English/German/French/Italian/Spanish/Chinese), for all SIMOCODE pro, online functions via system interface and PROFIBUS/PROFINET, parameterizing with the integrated graphics editor (CFC-based)	2	**3ZS1322-6CC12-0YD5**		1	1 unit	42J
	Software Update Service For 1 year with automatic extension, requires software version of SIMOCODE ES (TIA Portal), engineering software, software and documentation on DVD, online functions via system interface and PROFIBUS/PROFINET, parameterizing with the integrated graphics editor (CFC-based)	►	**3ZS1322-6CC12-0YL5**		1	1 unit	42J
SIMOCODE ES V14 software download							
	Trial license, Class A Engineering software, 6 languages (English/German/French/Italian/Spanish/Chinese), for all SIMOCODE pro, online functions via system interface and PROFIBUS/PROFINET, parameterizing with the integrated graphics editor (CFC-based)	►	**3ZS1322-6CE12-0YG8**		1	1 unit	42J

Notes:

Please order PC cable separately; see Accessories.

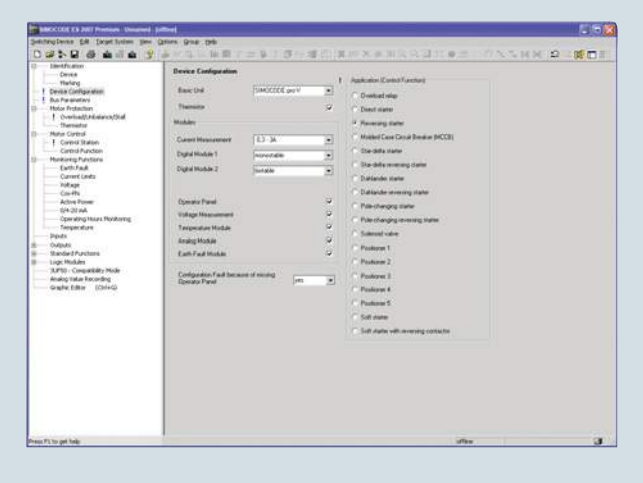
For a description of the software versions, see page 14/20.

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Optional accessories							
 3UF7941-0AA00-0	**USB PC cables** For connecting to the USB interface of a PC/PG, for communication with SIMOCODE ES through the system interface	►	**3UF7941-0AA00-0**		1	1 unit	42J
	USB/serial adapters For connecting an RS 232 PC cable to the USB interface of a PC, recommended for use in conjunction with SIMOCODE ES	5	**3UF7946-0AA00-0**		1	1 unit	42J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview



Selection of predefined control functions in SIMOCODE ES

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16717/td

In addition to SIMOCODE ES Version 14, which is based on the Totally Integrated Automation Portal (TIA Portal) central engineering framework, the 2007 version of the software continues to be available for commissioning, operation and diagnostics of SIMOCODE pro.

As a result, unnecessary plant downtimes can be consistently prevented, for example, by changing parameters online during operation. Control functions, protection functions and the wiring of the control circuit are implemented in SIMOCODE pro by predefined control functions and can be readily configured using SIMOCODE ES.

Three program versions

The user can choose between three different versions of SIMOCODE ES: SIMOCODE ES Basic, SIMOCODE ES Standard and SIMOCODE ES Premium. While SIMOCODE ES Basic is a powerful tool for startup or maintenance personnel, SIMOCODE ES Standard and Premium are the perfect tools for engineers or configuration engineers on account of their larger scope of functions and integrated graphics editor. Unlike the Standard version, SIMOCODE ES Premium also permits parameterization and diagnostics through PROFIBUS/PROFINET. Indication of all operating, service and diagnostics data supplies important information about the current state of the motor and plant at all times – everywhere on PROFIBUS/PROFINET.

SIMOCODE ES	Basic	Standard	Premium
Access through the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	✓	✓	✓
Test	✓	✓	✓
Service data	✓	✓	✓
Parameterizing with the integrated graphics editor	--	✓	✓
Creation of typicals	--	✓	✓
Parameter export	--	✓	✓
Comparison functions	--	✓	✓
Trend display of measured values	--	✓	✓
Parameter comparison	--	✓	✓
Analog value recording[1)]	--	✓	✓
Standard-compliant printout according to EN ISO 7200	--	✓	✓
Group functions	--	--	✓
Access through PROFIBUS/PROFINET	--	--	✓
Teleservice through MPI	--	--	✓
Routing[2)]	--	--	✓
STEP7 Object Manager	--	--	✓

✓ Function available

-- Function not available

[1)] For SIMOCODE pro V.

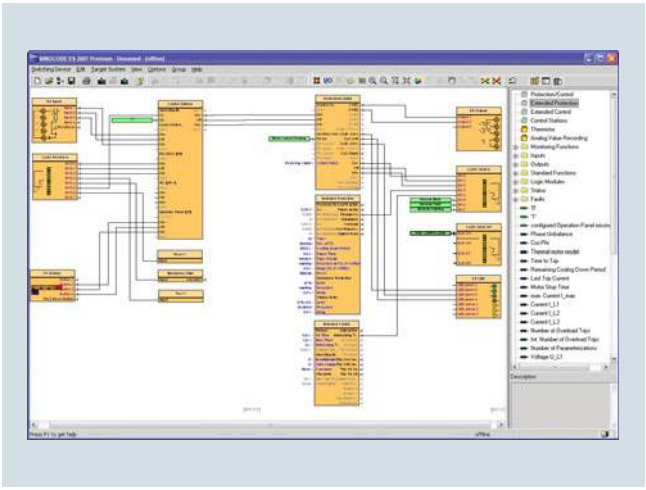
[2)] See http://support.automation.siemens.com/WW/view/en/109482642.

Object Manager for SIMATIC S7

The object manager is a component of SIMOCODE ES Premium. Thanks to this software tool, SIMOCODE ES is totally integrated in SIMATIC S7. If the two software packages are installed on the PG/PC with which the SIMATIC S7 hardware configuration is performed, then SIMOCODE ES can be called up directly from STEP 7.

Integrated graphics editor

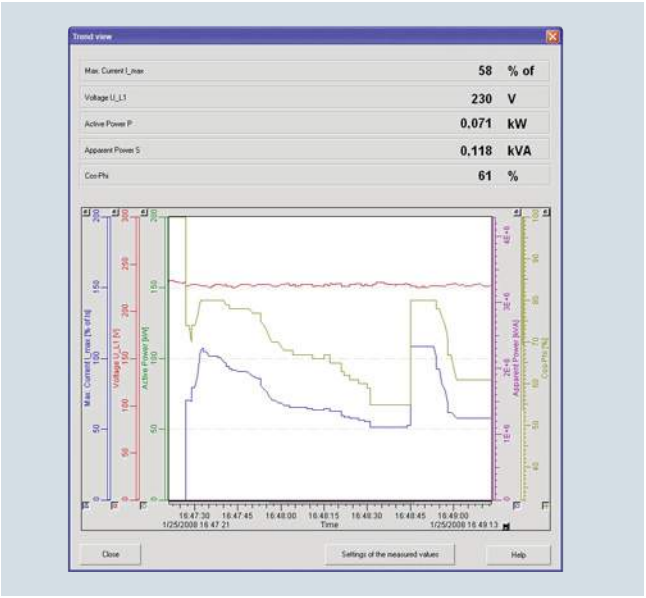
The graphics editor is a part of SIMOCODE ES Standard and SIMOCODE ES Premium. It adds a powerful tool to the parameterizing interface that enables the easy parameterization of devices by drag & drop. Extremely compact documentation of all configured parameters is possible, as is the graphic online presentation of the configured device functions including all signal states during operation.



Easy and ergonomic parameterizing with the graphics editor

Trend display of measured values

With this online function, SIMOCODE ES Standard or Premium can present the trend of up to five different measured values. It is thus possible for example to record and evaluate the start-up characteristic of a motor or its behavior under different load conditions.



Trend displays of measured values in SIMOCODE ES

Additional functions

In addition to device-specific parameterization, SIMOCODE ES 2007 also offers the following functionality in a uniform look and feel. These functions are available in many SIRIUS ES programs.

Standard-compliant printouts

The software tool greatly simplifies machine documentation. It enables parameterization printouts according to EN ISO 7200. The elements to be printed are easy to select and group as required.

Easy creation of typicals

Typicals can be created for devices and applications with only minimum differences in their parameters. These typicals contain all the parameters which are needed for the parameterization. In addition it is possible to specify which of these parameters are fixed and which can be adapted, e.g. by the startup engineer.

Group function

For user-friendly parameterization of numerous devices or applications of the same type, the programs of the SIRIUS ES software family offer a group function that enables the parameterization of several devices to be read out or written through PROFIBUS/PROFINET. In conjunction with typicals it is even possible to selectively adapt the same parameters in any number of parameterizations.

Teleservice through MPI

The SIMOCODE ES Premium version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

Benefits

- Easy parameterization reduces the amount of engineering work and shortens start up times
- Clear plant documentation by means of graphic presentation
- Detailed information, also when there are faults, is a help for maintenance personnel and shortens downtimes
- Stand-alone version and integration in SIMATIC STEP 7 enable universal use
- Parameter changes are also possible during normal operation
- Consistent data storage and easy configuration by means of integration in TIA (Totally Integrated Automation)

Selection and ordering data

Parameterization and service software for SIMOCODE pro 3UF7

- Delivered without PC cable

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
SIMOCODE ES 2007 Basic							
 3ZS1312-4CC10-0YA5	**Floating license for one user** Engineering software, Software and documentation on CD, 3 languages (English/German/French), communication via system interface						
	• License key on USB stick, Class A	►	**3ZS1312-4CC10-0YA5**		1	1 unit	42J
	• License key download, Class A	►	**3ZS1312-4CE10-0YB5**		1	1 unit	42J
SIMOCODE ES 2007 Standard							
 3ZS1312-5CC10-0YA5	**Floating license for one user** Engineering software, Software and documentation on CD, 3 languages (English/German/French), communication via system interface, Integrated graphics editor						
	• License key on USB stick, Class A	►	**3ZS1312-5CC10-0YA5**		1	1 unit	42J
	• License key download, Class A	►	**3ZS1312-5CE10-0YB5**		1	1 unit	42J
	Upgrade for SIMOCODE ES 2004 and higher Floating license for one user, engineering software, Software and documentation on CD, license key on USB flash drive, Class A 3 languages (English/German/French), communication via system interface, Integrated graphics editor	2	**3ZS1312-5CC10-0YE5**		1	1 unit	42J
	Powerpack for SIMOCODE ES 2007 Basic Floating license for one user, engineering software, license key on USB flash drive, Class A 3 languages (English/German/French), communication via system interface, Integrated graphics editor	2	**3ZS1312-5CC10-0YD5**		1	1 unit	42J
	Software Update Service[1)] for 1 year with automatic extension, requires the current software version, engineering software, Software and documentation on CD, communication via system interface, Integrated graphics editor	►	**3ZS1312-5CC10-0YL5**		1	1 unit	42J

1) The Software Update Service for the SIRIUS ES software family (e. g. SIMOCODE ES 2007) is not automatically transferred to the TIA Portal software family (e. g. SIMOCODE ES V14).

Notes:

Please order PC cable separately; see page 14/27.

For a description of the software versions, see page 14/24.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
SIMOCODE ES 2007 Premium						
 3ZS1312-6CC10-0YA5	**Floating license for one user** Engineering software, Software and documentation on CD, 3 languages (English/German/French), Communication through PROFIBUS/PROFINET or system interface, integrated graphics editor, STEP7 Object Manager					
	• License key on USB stick, Class A	►	**3ZS1312-6CC10-0YA5**	1	1 unit	42J
	• License key download, Class A	►	**3ZS1312-6CE10-0YB5**	1	1 unit	42J
	Upgrade for SIMOCODE ES 2004 and higher Floating license for one user, engineering software, Software and documentation on CD, license key on USB flash drive, Class A 3 languages (English/German/French), Communication through PROFIBUS/PROFINET or system interface, integrated graphics editor, STEP7 Object Manager	2	**3ZS1312-6CC10-0YE5**	1	1 unit	42J
	Powerpack for SIMOCODE ES 2007 Standard Floating license for one user, engineering software, license key on USB flash drive, Class A 3 languages (English/German/French), Communication through PROFIBUS/PROFINET or system interface, integrated graphics editor, STEP7 Object Manager	2	**3ZS1312-6CC10-0YD5**	1	1 unit	42J
	Software Update Service[1)] for 1 year with automatic extension, requires the current software version, engineering software, Software and documentation on CD, Communication through PROFIBUS/PROFINET or system interface, integrated graphics editor, STEP7 Object Manager	►	**3ZS1312-6CC10-0YL5**	1	1 unit	42J

[1)] The Software Update Service for the SIRIUS ES software family (e. g. SIMOCODE ES 2007) is not automatically transferred to the TIA Portal software family (e. g. SIMOCODE ES V14).

Notes:

Please order PC cable separately; see Accessories.

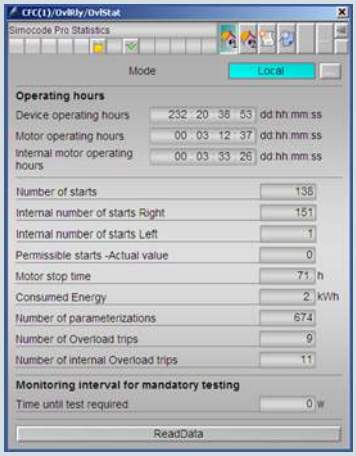
For a description of the software versions, see page 14/24.

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
 3UF7941-0AA00-0	**USB PC cables** For connecting to the USB interface of a PC/PG, for communication with SIMOCODE ES through the system interface	►	**3UF7941-0AA00-0**	1	1 unit	42J
	USB/serial adapters For connecting an RS 232 PC cable to the USB interface of a PC, recommended for use in conjunction with SIMOCODE ES	5	**3UF7946-0AA00-0**	1	1 unit	42J

SIMOCODE pro block library for SIMATIC PCS 7

Overview



Advanced Process Library (APL) - faceplates and blocks for statistical data of the SIMOCODE pro library for PCS 7

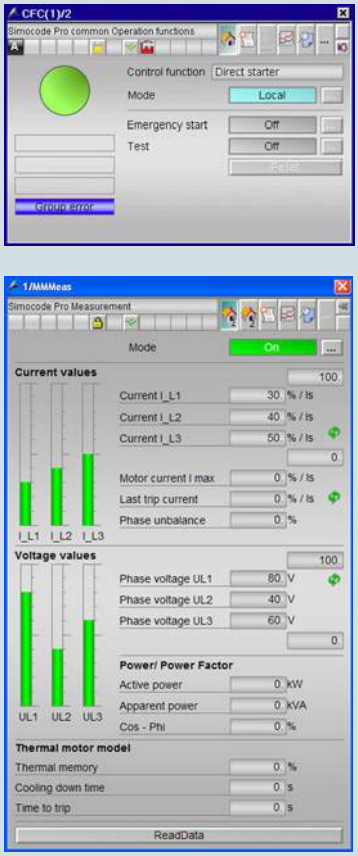
More information

Technical specifications, see
https://support.industry.siemens.com/cs/ww/en/ps/16718/td

Programming and Operating Manual for the "SIMOCODE pro PCS 7 Library":

- Version V8.2, see
  https://support.industry.siemens.com/cs/ww/en/view/103954289
- Version V8.0 + SP3, see
  https://support.industry.siemens.com/cs/ww/en/view/84626047

The PCS 7 block library can be used for simple and easy integration of SIMOCODE pro into the SIMATIC PCS 7 process control system. One focus here is on easy configuration, because the number of required configuration steps is reduced crucially. The configuration of the modules is based on the PCS 7 standard configuration processes and is optimally harmonized with the functions of SIMOCODE pro. Users who have previously integrated conventional motor feeders into PCS 7 will therefore find it easy to switch to SIMOCODE pro.



Advanced Process Library (APL) - faceplates and function blocks for control and measured data of the SIMOCODE pro library for PCS 7

Benefits

- Uniform and continuous integration into SIMATIC PCS 7
- Standardized blocks for simple integration and optimal operation
- Greater process transparency due to greater information density in the process control system

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
SIMOCODE pro function block library for SIMATIC PCS 7 Version V8 with Advanced Process Library (APL)						
 3ZS1632-1XX02-0YA0 **Engineering software V8** For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German Scope of supply: AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system with Advanced Process Library, for PCS 7 version V8.0, V8.1 and V8.2 Type of delivery: Software and documentation on CD, One license for one engineering station One license for one automation station	►	**3ZS1632-1XX02-0YA0**	1	1 unit	42J
Runtime license V8 For execution of the AS modules in an automation system (single license) Required for using the AS modules of the engineering software V8 within a plant Type of delivery: one license for one automation station, without software and documentation	►	**3ZS1632-2XX02-0YB0**	1	1 unit	42J

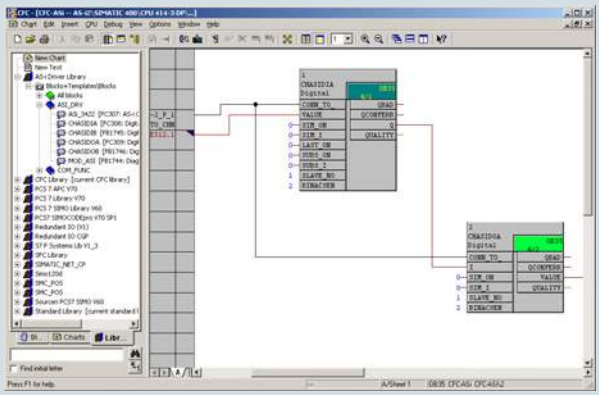
* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIMOCODE pro block library for SIMATIC PCS 7

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
SIMOCODE pro block library for SIMATIC PCS 7 Version 7 without Advanced Process Library (APL)						
 3UF7982-0AA10-0						
Engineering software V7 For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German/French Scope of supply: AS modules and faceplates for integrating SIMOCODE pro into the PCS 7 process control system, for PCS 7 version V7.0/V7.1 Type of delivery: Software and documentation on CD, One license for one engineering station One license for one automation station	►	**3UF7982-0AA10-0**		1	1 unit	42J
Runtime license V7 For execution of the AS modules in an automation system (single license) Required for using the AS modules of the engineering software V7 or the engineering software migration V7-V8 on an additional automation system within a plant Type of delivery: one license for one automation station, without software and documentation	►	**3UF7982-0AA11-0**		1	1 unit	42J
Upgrade for PCS 7 block library SIMOCODE pro, V6.0 or V6.1 to version SIMOCODE pro V7.0/V7.1 For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German/French Scope of supply: AS modules and faceplates for integrating SIMOCODE pro into the PCS 7 process control system, for PCS 7 version V7.0 or V7.1 Type of delivery: Software and documentation on CD, One license for one engineering station One license for one automation station	2	**3UF7982-0AA13-0**		1	1 unit	42J
Engineering software migration V7-V8 For upgrading (migrating) an existing engineering software V7 of the SIMOCODE pro block library for PCS 7 Conditions of use: Availability of the engineering software V7 (license) of the SIMOCODE pro block library for PCS 7 for the PCS 7 version V7.0 or V7.1 Engineering software migration V7-V8 can be installed directly onto a system with PCS 7 version V8; installation of the previous version is unnecessary. For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German/French Scope of supply: AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system, for PCS 7 version V8.0 and higher Type of delivery: Software and documentation on CD, License for upgrading an existing license For one engineering station and the associated runtime licenses of a plant	►	**3UF7982-0AA20-0**		1	1 unit	42J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview



AS-Interface block library for SIMATIC PCS 7 in the CFC chart

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16719/td

Programming Manual for AS-Interface block library for SIMATIC PCS 7:

- Version V8 with Advanced Process Library (APL), see https://support.industry.siemens.com/cs/ww/en/view/90690873
- Version V8 without Advanced Process Library (Migration V7-V8), see https://support.industry.siemens.com/cs/ww/en/view/105795722
- Version V7 without Advanced Process Library, see https://support.industry.siemens.com/cs/ww/en/view/46504691

The AS-Interface function block library for PCS 7 is integrated in the SIMATIC PCS 7 process control system and expands it for integration of the AS-Interface system.

As the result, the advantages of AS-Interface such as the considerable reduction of wiring outlay for distributed actuators/sensors and very simple installation can also be used in a system based on PCS 7.

The library contains modules for accessing the I/O data of AS-i slaves, modules for diagnostics of the AS-i system, and faceplates for the PCS 7 Maintenance Station.

Supported AS-Interface modules

The AS-Interface block library for PCS 7 can be used with the following AS-i master and link modules:

- CM AS-i Master ST (in ET 200SP station) 3RK7137-6SA00-0BC1 (engineering software V8.1 only)
- CP 343-2 (in ET 200M station) 6GK7343-2AH01-0XA0
- CP 343-2P (in ET 200M station) 6GK7343-2AH11-0XA0
- DP/AS-i LINK Advanced single master 6GK1415-2BA10
- DP/AS-i LINK Advanced double master 6GK1415-2BA20
- IE/AS-i LINK PN IO single master 6GK1411-2AB10 (engineering software V8 or V8.1 only)
- IE/AS-i LINK PN IO double master 6GK1411-2AB20 (engineering software V8 or V8.1 only)

The CM AS-i Master ST module is supported with IM 155-6 PN High Feature within an ET 200SP station interfaced via PROFINET.

The AS-i CP 343-2 and CP 343-2P masters are supported within an ET 200M station connected through PROFINET or PROFIBUS.

With the CM AS-i Master ST, CP 343-2 or CP 343-2P modules, digital AS-i slaves with standard addressing and extended addressing (A/B slaves; see also remark under the Area of Application heading) can be operated via the library.

In combination with the IE/AS-i Link PN IO and the DP/AS-i LINK Advanced, it is possible to integrate digital and analog AS-i slaves with standard and extended addressing (A/B slaves).

Hardware and software requirements

The libraries require the following PCS 7 versions:

- Engineering software V8.1: PCS 7 version V8.0 SP1 Update 3 and higher, can also be used for PCS 7 versions V8.1 and V8.2
- Engineering software migration V7-V8: PCS 7 version V8.0 SP1 and higher, can also be used for PCS 7 versions V8.1 and V8.2
- Engineering software V7: PCS 7 version V6.1, V7.0 or V7.1

The engineering software migration V7-V8 comprises the same interconnection logic of the CFC blocks as the engineering software V7 and is recommended for the switch to PCS 7 V8 with only a few adjustments required in the PCS 7 project.

The engineering software V8.1 uses APL interconnection logic and is recommended for new PCS 7 projects.

Benefits

- Easy connection of AS-Interface to PCS 7
- Engineering work reduced to positioning and connecting the blocks in the CFC
- With no additional configuring steps required for connection to the PCS 7 Maintenance Station, diagnostics for the AS-i system are optimally guaranteed.

Application

The AS-Interface block library for PCS 7 is used in systems based on PCS 7 where the actuators and sensors are connected using AS-Interface.

Note:

The AS-i masters CP 343-2 and CP 343-2P do not transmit I/O data from AS-i slaves with a B address via the cyclic process image (partition), but via data records. To prevent delays in the communication of driver blocks for B slaves, we recommended avoiding the use of AS-i slaves with B addresses for PCS 7 configurations with CP 343-2 or CP 343-2P.

Selection and ordering data

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
AS-Interface block library for SIMATIC PCS 7 version V8 with Advanced Process Library (APL)							
 3ZS1635-1XX02-0YA0	**Engineering-Software V8.1** For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German Scope of supply: AS modules and faceplates for integrating AS-Interface into the PCS 7 process control system with Advanced Process Library (APL), for PCS 7 version V8.0 SP1 or higher, can also be used for PCS 7 versions V8.1 and V8.2 Type of delivery: Software and documentation on CD, One license for one engineering station One license for one automation station	►	**3ZS1635-1XX02-0YA0**		1	1 unit	42C
	Runtime license V8 For execution of the AS modules in an automation system (single license) required for using the AS blocks of the engineering software V8 or V8.1 on an additional automation system within a plant Type of delivery: one license for one automation station, without software and documentation	►	**3ZS1635-2XX02-0YB0**		1	1 unit	42C
AS-Interface block library for SIMATIC PCS 7 version V8 without Advanced Process Library (APL)							
 3ZS1635-1XX11-0YE0	**Engineering software migration V7-V8** For upgrading (migrating) an existing engineering software V7 of the AS-Interface block library for PCS 7 For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German Conditions of use: Availability of the engineering software V7 (license) of the AS-Interface block library for PCS 7 for the PCS 7 version V6.1, V7.0 or V7.1 Engineering software migration V7-V8 can be installed directly onto a system with PCS 7 version V8; installation of the previous version is unnecessary. Scope of supply: AS modules and faceplates for integrating AS-Interface into the PCS 7 process control system for PCS 7 versions V8.0 SP1, V8.1 and V8.2 including Service Pack SP2 of the block library Type of delivery: Software and documentation on CD, License for upgrading an existing license For one engineering station and the associated runtime licenses of a plant	2	**3ZS1635-1XX11-0YE0**		1	1 unit	42C

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-Interface block library for SIMATIC PCS 7 version V7 without Advanced Process Library (APL)							
 3ZS1635-1XX01-0YA0	**Engineering software V7** For one engineering station (single license) including runtime software for execution of the AS modules in an automation system (single license), English/German Scope of supply: AS modules and faceplates for integrating AS-Interface into the PCS 7 process control system for PCS 7 version V6.1, V7.0 or V7.1, including Service Pack SP1 of the block library Type of delivery: Software and documentation on CD, One license for one engineering station One license for one automation station	2	**3ZS1635-1XX01-0YA0**		1	1 unit	42C
	Runtime license V7 For execution of the AS modules in an automation system (single license) Required for using the AS modules of the engineering software V7 or the engineering software migration V7-V8 on an additional automation system within a plant Type of delivery: one license for one automation station, without software and documentation	2	**3ZS1635-2XX01-0YB0**		1	1 unit	42C

More information

Note:

The engineering software V8.1 is available as an upgrade package for downloading from the Internet. Existing engineering software V8 + SP1 is required for installation of the upgrade package. Besides the upgrade, a hotfix for the engineering software V8 + SP1 (no upgrade) is available for downloading; see https://support.industry.siemens.com/cs/ww/en/view/109480456

The engineering software product package includes the associated block library service pack, if available.

The service pack for the engineering software V7-V8 or engineering software V7 can only be obtained in the package with the engineering software. The service pack for these two versions is not available for downloading.

For additional information on the use of analog AS-i slaves in a configuration with PCS 7 V8.1, see

- https://support.industry.siemens.com/cs/ww/enview/109474836
- https://support.industry.siemens.com/cs/ww/en/view/109474832

Overview

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/21192/td

SIRIUS Safety ES Programming and Operating Manual, see https://support.industry.siemens.com/cs/ww/en/view/109444445.

SIRIUS Safety ES is the engineering software for the configuration, startup and diagnostics of the 3RK3 Modular Safety System and 3SK2 safety relays. The software combines the configuring of the hardware, the parameterization of the safety functions, and the testing and diagnostics of the safety system.

Efficient engineering with three program versions

The SIRIUS Safety ES software program is available in three versions which differ in their user-friendliness, scope of functions and price.

SIRIUS Safety ES	Basic	Standard	Premium
Access through the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	✓	✓	✓
Test	--	✓	✓
Integrated graphics editor	✓	✓	✓
Importing/exporting parameters	--	✓	✓
Comparison functions	--	✓	✓
Comfort functions	--	✓	✓
Terminal designator	--	✓	✓
Work on sub-diagrams	--	✓	✓
Standard-compliant printout according to EN ISO 7200	✓	✓	✓
Downloading parameterization through PROFIBUS	--	--	✓
Online diagnostics using PROFIBUS	--	--	✓
Creating, importing and exporting macros	--	--	✓

✓ Function available

-- Function not available

Additional functions

Language selection

The program interface language can be switched during use between English, German and French

Help function

A context-sensitive help function provides useful assistance with questions concerning the use of the program

Consistency check

A consistency check provides clear information about function assignment errors and users are taken directly to errors when the corresponding message is clicked on. Checks are carried out automatically when a project is saved and during the configuration test, but they can also be initiated manually.

Lists

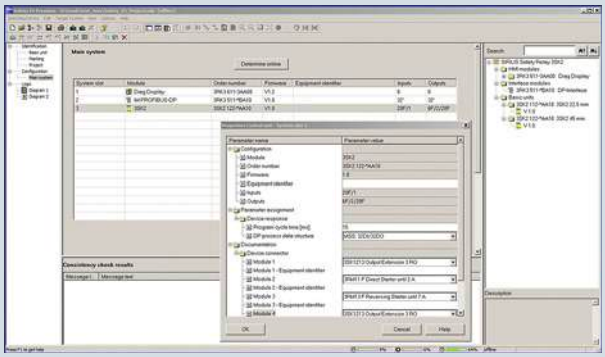
Lists of symbols and cross-references can be issued for effective processing of the project file

Standard-compliant printouts

The programs of the SIRIUS ES software family make machine documentation far easier. They enable parameterization printouts according to EN ISO 7200. The elements to be printed are easy to select and group as required.

Hardware configuration

The device configuration of the 3RK3 or 3SK2 systems is defined in the configuration dialog. The available modules are simply selected from the clearly laid out hardware catalog and positioned in the workspace. Depending on the device system used (3RK3 or 3SK2), only the permitted devices are shown in the hardware catalog in each case. In addition, in the case of the 3RK3, the quantity framework on the AS-i bus can be determined online or configured manually from the AS-i library. For each module, it is optionally possible to issue an equipment ID which is shown in the logic diagram for identification of the inputs and outputs.



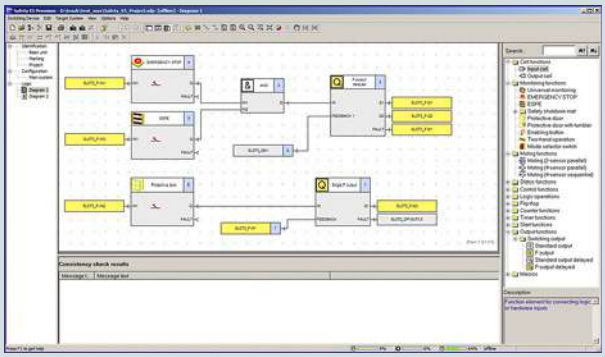
Definition of the hardware layout

Graphic parameterizing of safety logic by drag & drop

The functionality of the safety logic is laid down with a graphics editor designed for intuitive operation. Safe monitoring functions (EMERGENCY-STOP, non-contact protective devices/light arrays, protective doors, etc.), output functions and logic functions (AND/OR operations, counting function, time functions, etc.), non-safety-related input/output functions, device status functions and control functions can be dragged from the extensive functions catalog onto the work interface by drag & drop. Depending on the version, each function has several input and output connecting points through which the functions can be interconnected by simple mouse clicks. Double-clicking on a function symbol opens the related features dialog window in which all the parameters can be displayed and configured: Scope of the function's inputs and outputs, configuring the channel type (single-/two-channel, NC contact/NO contact), activating crossover detection, defining start options, assigning the hardware inputs and outputs, etc. Of course each function can be issued with an individual name so that e.g. the position of a safety switch in the plant can be documented.

The safety logic can be divided into several diagrams in order to enable structured processing of the entire plant. The user can freely position the functions on a quasi infinitely large drawing board, whereby the connecting lines are drawn automatically. If there is not enough space, more pages are automatically added to the diagram in horizontal or vertical direction. Connecting lines extending over several pages are automatically issued with cross-references during print-out. If required in the interest of clarity, the user can divide a connecting line manually into two segments, whereby the mutual reference is marked by reference arrows. For further documentation, freely compilable comment texts can be placed at any point in the diagram. Every point in the logic diagram can be processed with ease by dragging and zooming.

Every project can be saved as a file and be password-protected from unauthorized access.



Processing the safety functions in the graphics editor

AS-Interface

Evaluation of the AS-i slaves connected to the AS-i bus is also parameterized using the tried and tested method described above.

In order to be able to use the AS-i functionalities, a 3RK3 Advanced central unit or 3RK3 ASIsafe central unit (basic/extended) must be used.

User prompting during start up and maintenance

To start up the relevant safety system, the created project file is uploaded to the device. There are two ways of doing this:

- Connect the serial (COM) or USB interface of the PC to the device using an appropriate connection cable.
- Use the DP interface to download the parameterization through any PROFIBUS node.

Access to the device can be restricted using a password concept that includes different protection levels.

After the project is loaded, the user switches the device by means of the software from configuring mode to test mode in which the safety functions can be tested.

Activating the diagnostics shows the status of the individual functions in the graphic logic diagram by means of different colors and symbols. In addition, more detailed information about each function element can be displayed in the logic diagram. For the purpose of testing the logic diagram, it is also possible to manually overwrite the signal state of each function element ("forcing").

If the test is completed successfully, the user releases the configuration and switches the device to protection mode, in which case "forcing" is automatically deactivated.

Service personnel can activate the graphic diagnostics in protection mode as well. The I&M (Identification & Maintenance) data saved in the device facilitate maintenance.

Benefits

- Convenient parameterization, operation, monitoring and testing by means of a user-friendly and clear-cut user interface
- Reliable diagnostic tool
- All functions, such as safety and logic functions, are available as modules, and are easy to link to one another
- Automatic creation of comprehensive documentation of safety functions

Selection and ordering data

SIRIUS Safety ES parameterization, start-up and diagnostics software

- Delivered without PC cable

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
SIRIUS Safety ES Basic						
 3ZS1316-4CC10-0YA5						
Floating license for one user Engineering software in limited-function version for diagnostics purposes, Software and documentation on CD, 3 languages (English/German/French), communication via system interface						
• License key on USB stick, Class A	2	**3ZS1316-4CC10-0YA5**		1	1 unit	42B
• License key download, Class A	▶	**3ZS1316-4CE10-0YB5**		1	1 unit	42B
SIRIUS Safety ES Standard						
 3ZS1316-5CC10-0YA5						
Floating license for one user Engineering software, Software and documentation on CD, 3 languages (English/German/French), communication via system interface						
• License key on USB stick, Class A	5	**3ZS1316-5CC10-0YA5**		1	1 unit	42B
• License key download, Class A	▶	**3ZS1316-5CE10-0YB5**		1	1 unit	42B
Powerpack for SIRIUS Safety ES Basic to Standard Floating license for one user, engineering software, license key on USB flash drive, Class A 3 languages (English/German/French), communication via system interface	2	**3ZS1316-5CC10-0YD5**		1	1 unit	42B
SIRIUS Safety ES Premium						
 3ZS1316-6CC10-0YA5						
Floating license for one user Engineering software, Software and documentation on CD, 3 languages (English/German/French), communication via PROFIBUS or system interface, online diagnostics using PROFIBUS, creating, importing and exporting macros						
• License key on USB stick, Class A	5	**3ZS1316-6CC10-0YA5**		1	1 unit	42B
• License key download, Class A	▶	**3ZS1316-6CE10-0YB5**		1	1 unit	42B
Powerpack for SIRIUS Safety ES Standard to Premium Floating license for one user, engineering software license key on USB flash drive, Class A 3 languages (English/German/French), communication via PROFIBUS or system interface, online diagnostics using PROFIBUS, creating, importing and exporting macros	2	**3ZS1316-6CC10-0YD5**		1	1 unit	42B

Notes:

Please order PC cable separately, see Accessories.

For a description of the software versions, see page 14/34.

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
 3UF7941-0AA00-0						
USB PC cables For connecting to the USB interface of a PC/PG, for communication with 3RK3 and 3SK2 through the system interface, recommended for use in connection with 3RK3 and 3SK2	▶	**3UF7941-0AA00-0**		1	1 unit	42J
USB/serial adapters For connecting an RS 232 PC cable to the USB interface of a PC	5	**3UF7946-0AA00-0**		1	1 unit	42J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Introduction

Overview

Additional information
Homepage see www.siemens.com/sitop
Industry Mall see www.siemens.com/product?SITOP
Further products see Catalog KT 10.1 "SITOP Power Supply"

		6EP1 SITOP compact	6EP1 LOGO!Power	6EP1 SITOP lite	6EP1 SITOP smart
SITOP power supplies					
Phase		1	1	1	1, 3
Rated input voltage	V	100 ... 230 AC, 110 ... 330 DC	100 ... 240 AC, 110 ... 330 DC	120/230 AC	120/230 AC, 400 ... 500 3 AC
Rated output voltage	V DC	24, 12	5, 12, 15, 24	24	24
Rated output current	A	0.6 ... 6.5	1.3 ... 6.3	2.5 ... 10	2.5 ... 40
Connection		Screw terminal connection	Screw terminal connection	Screw terminal connection	Screw terminal connection
Mounting		Standard rail mounting	Standard rail mounting	Standard rail mounting	Standard rail mounting
Approval		NEC Class 2, ㊊, c㊊, ATEX, GL	㊊, c㊊, ABS, GL, FM, ATEX	㊊, c㊊	㊊, c㊊, CSA, ATEX, GL
Page		15/3	15/4	15/5	15/6

		6EP1 - SITOP modular - PSU8600 power supply system	6EP1 Special designs, special applications	6EP1 Expansion modules	6EP1 SITOP DC-UPS uninterruptible power supplies
SITOP power supplies					
Phase		1, 2, 3	1	1	1
Rated input voltage	V	120 ... 230/230 ... 500 AC, 120 ... 230 AC, 400 ... 500 3 AC,	120/230 AC	24 DC	24 DC
Rated output voltage	V DC	24, 48	3 ... 52	U_e – approx. 0.5, U_e – approx. 1	24
Rated output current	A	5 ... 40	10	3.5 ... 20, 40, 4 x 3, 4 x 10	6 ... 40
Connection		Screw terminal connection	Screw terminal connection	Screw terminal connection	Screw terminal connection
Mounting		Standard rail mounting	Standard rail mounting	Standard rail mounting	Standard rail mounting (Exception: wall mounting with SITOP UPS500P)
Approval		㊊, c㊊, CSA, ATEX, GL, ABS	㊊, c㊊	NEC Class 2, ㊊, c㊊, ATEX, GL	㊊, c㊊, ATEX, GL, ABS
Pages		15/7, 15/9	15/10	15/11	15/13

Overview

SITOP compact is a series of power supplies for the low performance range. Thanks to the extremely space-saving slim design, they are especially suited to distributed applications in switchboxes or in small control cabinets.

The switching power supply units are characterized by their low power loss over the entire load range. With losses being extremely small even in no-load operation, these units are predestined for supplying machines and plants which are often in stand-by mode, for example. The switching power supply units have a wide range input for AC and DC networks, with plug-in terminals that facilitate easy electrical connection.

To further increase 24 V availability, the SITOP compact power supply units can be combined with DC-UPS, redundancy and selectivity modules.

- Small mounting area thanks to narrow design
- Single-phase wide range input for 85 V to 264 V AC and 110 V to 300 V DC
- High degree of efficiency over the entire load range, up to 28 % energy savings compared to comparable units
- Low energy consumption in no-load operation and stand-by, possible energy savings of up to 53 %
- Adjustable output voltage
- Green LED for "Output voltage OK"
- Plug-in terminals
- Temperature range from –20 °C to +70 °C
- Extensive certification, such as UL, ATEX, GL and NEC Class 2 (24 V/3.7 A)

Selection and ordering data

	Version	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Rated current $I_{a\ rated}$	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24 V power supplies											
 6EP1331-5BA00	**0.6 A**	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3 %	0.6 A	22.5 x 80 x 100	1	**6EP1331-5BA00**		1	1 unit	584
 6EP1331-5BA10	**1.3 A**	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3 %	1.3 A	30 x 80 x 100	1	**6EP1331-5BA10**		1	1 unit	584
 6EP1332-5BA00	**2.5 A**	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3 %	2.5 A	45 x 80 x 100	1	**6EP1332-5BA00**		1	1 unit	584
 6EP1332-5BA10	**4 A**	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3 %	4 A	52.5 x 80 x 100	1	**6EP1332-5BA10**		1	1 unit	584
 6EP1332-5BA20	**3.7 A NEC Class 2**	120 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3 %	3.7 A	52.5 x 80 x 100	1	**6EP1332-5BA20**		1	1 unit	584
12 V power supplies											
 6EP1321-5BA00	**2 A**	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	12 V DC ± 3 %	2 A	30 x 80 x 100	1	**6EP1321-5BA00**		1	1 unit	584
 6EP1322-5BA10	**6.5 A**	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	12 V DC ± 3 %	6.5 A	52.5 x 80 x 100	1	**6EP1322-5BA10**		1	1 unit	584

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

Our new miniature power supply units in the same design as the logic modules offer great performance in the smallest of spaces: Efficiency has been improved across the entire load range, and the low power losses in no-load operation ensure efficient operation.

The wide-range input for single-phase networks as well as operation with direct voltage, the wide operating temperature range, comprehensive certifications as well as the switch-on behavior optimized for capacitive loads makes them suitable for universal use.

These reliable power supplies with their flat, stepped profile can be used extremely flexibly in numerous applications such as in distribution boards, for example.

To further increase 24 V availability, the LOGO!Power power supply units can be combined with DC-UPS, redundancy and selectivity modules.

- Single-phase wide range input from 85 V to 264 V AC and 110 V to 300 V DC
- Flat type of construction in LOGO!8 design with a depth of just 55 mm
- High efficiency across the entire load range, low no-load losses
- Operation on DC voltage from 110 V to 300 V DC
- Power reserves during starting thanks to 1.5 times the rated current for capacitive loads
- Wide temperature range from –20 °C to +70 °C
- Comprehensive certification, such as cULus, CB, FM, ATEX, cC-SAus Class I Div. 2, GL and ABS

Selection and ordering data


6EP1311-1SH03


6EP1322-1SH03


6EP1332-1SH52

Version	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Rated current $I_{a\ rated}$	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
5 V power supplies										
3 A	100 … 240 V AC (85 … 264 V AC/ 110 … 300 V DC)	5 V DC ± 3 %	3 A	54 x 90 x 52.6	1	**6EP1311-1SH03**		1	1 unit	583
6.3 A	100 … 240 V AC (85 … 264 V AC/ 110 … 300 V DC)	5 V DC ± 3 %	6.3 A	72 x 90 x 52.6	1	**6EP1311-1SH13**		1	1 unit	583
12 V power supplies										
1.9 A	100 … 240 V AC (85 … 264 V AC/ 110 … 300 V DC)	12 V DC ± 3 %	1.9 A	54 x 90 x 52.6	1	**6EP1321-1SH03**		1	1 unit	583
4.5 A	100 … 240 V AC (85 … 264 V AC/ 110 … 300 V DC)	12 V DC ± 3 %	4.5 A	72 x 90 x 52.6	1	**6EP1322-1SH03**		1	1 unit	583
15 V power supplies										
1.9 A	100 … 240 V AC (85 … 264 V AC/ 110 … 300 V DC)	15 V DC ± 3 %	1.9 A	54 x 90 x 52.6	1	**6EP1351-1SH03**		1	1 unit	583
4 A	100 … 240 V AC (85 … 264 V AC/ 110 … 300 V DC)	15 V DC ± 3 %	4 A	72 x 90 x 52.6	1	**6EP1352-1SH03**		1	1 unit	583
24 V power supplies										
1.3 A	100 … 240 V AC (85 … 264 V AC/ 110 … 300 V DC)	24 V DC ± 3 %	1.3 A	54 x 90 x 52.6	1	**6EP1331-1SH03**		1	1 unit	583
2.5 A	100 … 240 V AC (85 … 264 V AC/ 110 … 300 V DC)	24 V DC ± 3 %	2.5 A	72 x 90 x 52.6	1	**6EP1332-1SH43**		1	1 unit	583
4 A	100 … 240 V AC (85 … 264 V AC/ 110 … 300 V DC)	24 V DC ± 3 %	4 A	90 x 90 x 52.6	1	**6EP1332-1SH52**		1	1 unit	583

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

The SITOP lite power supplies are designed for standard requirements in industrial environments and offer all important functions at a favorable price.

The wide range input with manual switchover supports connection to a variety of single-phase supply systems.

Thanks to the slim design, the power supplies have a low space requirement on the standard mounting rail, and their excellent degree of efficiency ensures low thermal losses in the control cabinet.

To further increase 24 V availability, the SITOP lite power supplies can be combined with DC UPS, redundancy and selectivity modules.

- 24 V/2.5 A, 5 A and 10 A for industrial applications with standard requirements
- Single-phase wide range input with manual switchover
- Narrow width
- Excellent degree of efficiency
- Green LED for "24 V OK"
- Can be switched in parallel
- No lateral installation clearances required
- Ambient temperature range from 0 °C to 60 °C (above 45 °C with derating)
- Cooling through natural convection
- Short-circuit and overload protection
- Certification in accordance with CE, cULus and CD

Selection and ordering data

	Version	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Rated current $I_{a\ rated}$	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24 V power supplies											
 6EP1332-1LB00	**2.5 A**	120/230 V AC (93 ...132 V/ 187 ... 264 V AC)	24 V DC ± 3 %	2.5 A	32.5 x 125 x 120	1	**6EP1332-1LB00**		1	1 unit	593
 6EP1333-1LB00	**5 A**	120/230 V AC (93 ...132 V/ 187 ... 264 V AC)	24 V DC ± 3 %	5 A	50 x 125 x 120	1	**6EP1333-1LB00**		1	1 unit	593
 6EP1334-1LB00	**10 A**	120/230 V AC (93 ...132 V/ 187 ... 264 V AC)	24 V DC ± 3 %	10 A	70 x 125 x 120	1	**6EP1334-1LB00**		1	1 unit	593

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Illustrations are approximate

Overview

SITOP smart are the universal and powerful standard power supplies for mechanical and plant engineering.

Despite their compact design, they offer excellent overload behavior: Thanks to a power boost of 150 %, loads with high power consumption can be connected without any problems and the permanent overload capability of 120 % offers power reserves in case of expansions.

The high degree of efficiency results in low energy consumption and minimal heat generation inside the control cabinet.

To further increase 24 V availability, the SITOP smart power supplies can be combined with buffer, DC-UPS, redundancy and selectivity modules.

- For 24 V standard applications up to 40 A
- Compact design, no lateral clearances required
- Extra power with 1.5 times the rated current (5 s/min) for brief operational overloads
- Permanent overload capability with 1.2 times the rated current up to 45 °C ambient temperature
- Adjustable output voltage for compensating voltage drops
- Parallel switching option to increase performance
- High degree of efficiency up to 91.5 %
- Wide temperature range from –25 °C or 0 °C to +70 °C
- Comprehensive certification such as cULus, cCSAus, ATEX, IECEx and GL

Selection and ordering data

	Rated current $I_{a\ rated}$	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Dimensions (W x H x D) mm		SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24 V power supplies											
 6EP1332-2BA20	Limitation of input current harmonics according to IEC 61000-3-2 **2.5 A**	120/230 V AC (85 ... 132 V/ 170 ... 264 V AC)	24 V DC ± 3 %	32.5 x 125 x 120		1	**6EP1332-2BA20**		1	1 unit	582
 6EP1333-2BA20	Limitation of input current harmonics according to IEC 61000-3-2 **5 A**	120/230 V AC (85 ... 132 V/ 170 ... 264 V AC)	24 V DC ± 3 %	50 x 125 x 120		1	**6EP1333-2BA20**		1	1 unit	582
 6EP1334-2BA20	Limitation of input current harmonics according to IEC 61000-3-2 **10 A**	120/230 V AC (85 ... 132 V/ 170 ... 264 V AC)	24 V DC ± 3 %	70 x 125 x 120		1	**6EP1334-2BA20**		1	1 unit	582
 6EP1336-2BA10	**20 A**	120/230 V AC (85 ... 132 V/ 176 ... 264 V AC)	24 V DC ± 3 %	115 x 145 x 150		1	**6EP1336-2BA10**		1	1 unit	582
 6EP1433-2BA20	**5 A**	400 ... 500 V 3 AC (340 ... 550 V 3 AC)	24 V DC ± 3 %	50 x 125 x 120	NEW	1	**6EP1433-2BA20**		1	1 unit	582
 6EP1434-2BA20	**10 A**	400 ... 500 V 3 AC (340 ... 550 V 3 AC)	24 V DC ± 3 %	70 x 125 x 120	NEW	1	**6EP1434-2BA20**		1	1 unit	582
 6EP1436-2BA10	**20 A**	400 ... 500 V 3 AC (340 ... 550 V 3 AC)	24 V DC ± 3 %	90 x 145 x 150		1	**6EP1436-2BA10**		1	1 unit	582
 6EP1437-2BA20	**40 A**	400 ... 500 V 3 AC (360 ... 550 V 3 AC)	24 V DC ± 3 %	150 x 145 x 150		1	**6EP1437-2BA20**		1	1 unit	582

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

SITOP modular are the technology power supplies for demanding solutions and provide maximum functionality for use in complex systems and machines.

The wide-range input enables connection to any power system in the world and ensures high safety even in the event of extreme voltage fluctuations. The power boost provides up to three times the rated current for brief periods, and with the extra power of 150 %, loads with high power consumption can be connected without problems. And in the event of an overload there is a choice between constant current or automatic restart. The very high degree of efficiency keeps energy consumption and heating in the control cabinet low, and the compact metal housing also saves space.

To further increase 24 V availability, the SITOP modular power supply units can be combined with buffer, UPS, redundancy and selectivity modules.

- For demanding applications from 5 A to 40 A
- 48 V/10 A and 20 A enable small conductor cross-sections
- Extremely slim design – no lateral clearances required
- Extra power function for brief operational overloads
- Power boost for tripping protective devices
- Selectable short-circuit behavior
- Optional symmetrical load distribution for parallel operation
- Very high degree of efficiency up to 94 %
- Operating status indicated by 3 LEDs
- Wide temperature range from -25 °C to +70 °C
- Comprehensive certification, including cULus, ATEX, IECex or GL

Selection and ordering data

	Rated current $I_{a\ rated}$	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24 V power supplies										
SITOP modular, single-phase and two-phase										
 6EP3333-8SB00-0AY0	**5 A**	120/230 V AC (85 ... 132 V/ 170 ... 264 V AC)	24 V DC ± 3 %	45 x 125 x 125	1	**6EP3333-8SB00-0AY0**		1	1 unit	581
 6EP3334-8SB00-0AY0	**10 A**	120/230 V AC (85 ... 132 V/ 170 ... 264 V AC)	24 V DC ± 3 %	55 x 125 x 125	1	**6EP3334-8SB00-0AY0**		1	1 unit	581
 6EP1333-3BA10	**5 A**	120 ... 230 V/ 230 ... 500 V AC (85 ... 264 V AC/ 176 ... 550 V AC)	24 V DC ± 3 %	70 x 125 x 125	1	**6EP1333-3BA10**		1	1 unit	581
 6EP1334-3BA10	**10 A**	120 ... 230 V/ 230 ... 500 V AC (85 ... 264 V AC/ 176 ... 550 V AC)	24 V DC ± 3 %	90 x 125 x 125	1	**6EP1334-3BA10**		1	1 unit	581
 6EP1336-3BA10	**20 A**	120 ... 230 V AC (85 ... 275 V AC or 88 ... 350 V DC)	24 V DC ± 3 %	90 x 125 x 125	1	**6EP1336-3BA10**		1	1 unit	581
 6EP3337-8SB00-0AY0	**40 A**	120/230 V AC (85 ... 132 V/ 170 ... 264 V AC)	24 V DC ± 3 %	145 x 145 x 150	1	**6EP3337-8SB00-0AY0**		1	1 unit	581

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Single-, two- and three-phase

	Rated current $I_{a\ rated}$	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power supplies 24 V (continued)										
	SITOP modular, three-phase									
 6EP3436-8SB00-0AY0	**20 A**	400 ... 500 V 3 AC (320 ... 575 V 3 AC)	24 V DC ± 3 %	70 x 125 x 125	1	**6EP3436-8SB00-0AY0**		1	1 unit	581
 6EP1437-3BA10	**40 A**	400 ... 500 V 3 AC (320 ... 575 V 3 AC)	24 V DC ± 3 %	150 x 125 x 150	1	**6EP1437-3BA10**		1	1 unit	581
Power supplies 48 V										
	SITOP modular, three-phase									
 6EP1456-3BA00	**10 A**	400 ... 500 V 3 AC (320 ... 575 V 3 AC)	48 V DC ± 3 %	70 x 125 x 125	1	**6EP1456-3BA00**		1	1 unit	581
 6EP1457-3BA00	**20 A**	400 ... 500 V 3 AC (320 ... 550 V 3 AC)	48 V DC ± 3 %	240 x 125 x 125	1	**6EP1457-3BA00**		1	1 unit	581

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

The three-phase basic units of the SITOP PSU8600 power supply system accommodate within their extremely compact width an Ethernet/PROFINET interface as well as four individually parameterizable outputs (voltage and current threshold) with selective monitoring.

Without wiring overhead, further modules from the modular system can be added to expand the number of outputs (CNX8600) or to increase the mains buffering time (BUF8600) according to requirements.

Comprehensive diagnostic and maintenance information is available via PROFINET. It can be evaluated directly in SIMATIC S7 and visualized in SIMATIC WinCC.

Energy management is also optimally supported by collecting the energy data for each output as well as individual activation and deactivation of the outputs via PROFIenergy.

- Three-phase wide-range input 400 to 500 V 3 AC for global use
- Extremely slim design with very high efficiency of up to 94 %
- Versions with a configurable output with up to 20 A or 40 A and selective monitoring.
- Versions with four integrated, individually configured outputs with up to 5 A or 10 A each and selective monitoring
- Voltage and response threshold can be set separately and are infinitely adjustable for each output
- Extra power with 1.5 times the rated current (5 s/min) for brief functional overload
- Integrated Ethernet/PROFINET interface (2 ports)
- Easy configuration in the TIA Portal
- Comprehensive diagnostic information during operation
- Outputs can be deactivated and activated selectively via PROFIenergy
- Individual expansion options from the modular system (CNX8600 expansion modules, BUF8600 buffer modules) without wiring overhead

Selection and ordering data

	Rated current $I_{a\ rated}$	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Dimensions (W x H x D) mm		SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24 V power supplies											
				SITOP PSU8600 power supply with Ethernet/PROFINET interface							
 6EP3437-8MB00-2CY0	**20 A**	400 ... 500 V 3 AC	24 V DC ± 3 %	80 x 125 x 150	NEW	1	**6EP3436-8SB00-2AY0**		1	1 unit	581
	40 A			125 x 125 x 150	NEW	1	**6EP3437-8SB00-2AY0**		1	1 unit	581
	20 A (4 x 5 A)			100 x 125 x 150	NEW	1	**6EP3436-8MB00-2CY0**		1	1 unit	581
	40 A (4 x 10 A)			125 x 125 x 150		1	**6EP3437-8MB00-2CY0**		1	1 unit	581
				Modular system, expansion of outputs (CNX8600)							
 6EP4436-8XB00-0CY0	**4 x 5 A**		24 V DC ± 3 %	60 x 125 x 150		1	**6EP4436-8XB00-0CY0**		1	1 unit	581
	4 x 10 A			60 x 125 x 150		1	**6EP4437-8XB00-0CY0**		1	1 unit	581
				Modular system, buffering (BUF8600)							
 6EP4297-8HB00-0XY0	**100 ms/ 40 A**		24 V DC ± 3 %	60 x 125 x 150		1	**6EP4297-8HB00-0XY0**		1	1 unit	581
	300 ms/ 40 A			125 x 125 x 150		1	**6EP4297-8HB10-0XY0**		1	1 unit	581
 6EP4293-8HB00-0XY0	**4 s/40 A**			60 x 125 x 150	NEW	1	**6EP4293-8HB00-0XY0**		1	1 unit	581
	10 s/40 A			125 x 125 x 150	NEW	1	**6EP4295-8HB00-0XY0**		1	1 unit	581

Single-phase

Overview

SITOP flexi with steplessly adjustable output voltage:
One standard unit for various special voltages.

Selection and ordering data

	Rated current $I_{a\ rated}$	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power supplies 3 V to 52 V										
 6EP1353-2BA00	Limitation of input current harmonics according to IEC 61000-3-2, adjustable output voltage 3 V to 52 V, output max. 10 A or 120 W									
	max. 10 A or 120 W	120/230 V AC (85 ... 132 V/ 170 ... 264 V AC)	3 ... 52 V DC ± 1 %	75 x 125 x 125	►	**6EP1353-2BA00**		1	1 unit	582

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

A power supply unit on its own cannot guarantee fault-free 24 V supply. Power failures, extreme variations in the mains voltage, or a faulty load can bring plant operation to a standstill and cause high costs. The expansion modules offer extensive protection against malfunctions on the primary and secondary circuits, right through to complete all-round protection.

The redundancy module disconnects two 24 V power supply units of the same type, enabling the configuration of a redundant 24 V power supply. If a power supply fails, the 24 V supply is reliably maintained. Signaling takes place via LED as well as signaling contacts whereby the switching threshold for LED and signaling contacts can be adjusted.

The following applies to the redundant configuration:

- Power supplies up to 5 A:
  One redundancy module with 10 A summation current
- Power supplies up to 10 A:
  Two redundancy modules with 10 A summation current
- Power supplies up to 20 A:
  One redundancy module with 40 A summation current
- Power supplies up to 40 A:
  Two redundancy modules with 40 A summation current

The buffer module bridges brief mains failures for up to several seconds for SITOP smart or SITOP modular 24 V power supply units. Maintenance-free capacitors are used as energy stores.

Buffering times:
200 ms at 40 A,
400 ms at 20 A,
800 ms at 10 A

To increase the buffer time (max. 10 s), up to 8 buffer modules can be connected in parallel. To bridge longer mains failures we recommend using uninterruptible power supplies with capacitors (up into the minutes range) or with battery modules (up into the hours range).

Selection and ordering data

	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Rated current $I_{a\ rated}$	Dimensions (W × H × D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SITOP PSE202U redundancy module										
 6EP1964-2BA00	24 V DC (19 ... 29 V DC)	U_e – approx. 0.5 V	10 A (Summation current)	30 × 80 × 100	1	**6EP1964-2BA00**		1	1 unit	588
 6EP1962-2BA00	24 V DC (19 ... 29 V DC)	U_e – approx. 0.5 V	3.5 A (NEC Class 2)	30 × 80 × 100	1	**6EP1962-2BA00**		1	1 unit	588
 6EP1961-3BA21	24 V DC (24 ... 28.8 V DC)	U_e – approx. 0.5 V	40 A (Summation current)	70 × 125 × 125	1	**6EP1961-3BA21**		1	1 unit	588
Buffer modules										
 6EP1961-3BA01	24 V DC (24 ... 28.8 V DC)	U_e – approx. 1 V	40 A	70 × 125 × 125	1	**6EP1961-3BA01**		1	1 unit	588

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Illustrations are approximate

Overview

The SITOP PSE200U selectivity modules and the SITOP select diagnostics module are used in combination with 24 V power supplies for distributing the load current among several current branches and for monitoring the individual partial currents.

Faults caused by overload or short circuits in individual branches are detected and selectively switched off so that the remaining load current paths remain unaffected. Rapid fault diagnosis is achieved and downtimes are minimized.

Signaling is performed via a group alarm contact or single-channel signaling. The selectivity modules with single-channel signaling output the status of the 4 channels cyclically by means of a serial code which can be read in by a digital PLC input.

Function blocks for SIMATIC S7-1500/1200/300/400 and for SIMOTION CPUs are available free of charge for the evaluation, see https://support.industry.siemens.com/cs/ww/en/view/61450284.

Selection and ordering data

	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Rated current $I_{a\ rated}$	Dimensions (W × H × D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SITOP PSE200U selectivity module										
 6EP1961-2BA11, 6EP1961-2BA21	24 V DC (22 ... 30 V DC)	U_e - 0.2 V	4 x 3 A (0.5 ... 3 A)	72 × 80 × 72	1	**6EP1961-2BA11**		1	1 unit	586
	24 V DC (22 ... 30 V DC)	U_e- 0.2 V	4 x 10 A (3 ... 10 A)	72 × 80 × 72	1	**6EP1961-2BA21**		1	1 unit	586
SITOP PSE200U selectivity modules with single-channel signaling										
 6EP1961-2BA31, 6EP1961-2BA41	24 V DC (22 ... 30 V DC)	U_e - 0.2 V	4 x 3 A (0.5 ... 3 A)	72 × 80 × 72	1	**6EP1961-2BA31**		1	1 unit	586
	24 V DC (22 ... 30 V DC)	U_e - 0.2 V	4 x 10 A (3 ... 10 A)	72 × 80 × 72	1	**6EP1961-2BA41**		1	1 unit	586
SITOP select diagnostics modules										
 6EP1961-2BA00	24 V DC (22 ... 30 V DC)	U_e - 0.3 V	4 x 10 A (2 ... 10 A)	72 × 90 × 90	►	**6EP1961-2BA00**		1	1 unit	586

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

To combat prolonged power failures, the 24 V SITOP power supply units can be upgraded into a 24 V DC uninterruptible power supply.

SITOP offers two systems with different energy stores for this purpose:

- Capacitors for 24 V buffering in the minute range
- Battery modules which provide a buffer in the hours range

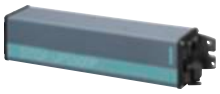
The DC UPS systems are used, for example, in machine tool manufacturing, in the textile industry, on all types of production lines and filling plants, and in conjunction with 24 V industrial PCs. They prevent the negative consequences which often result from mains failures.

DC-UPS with capacitors

To bridge brief power failures, 24 V SITOP power supply units can be expanded with a SITOP UPS500 uninterruptible DC power supply (DC-UPS).

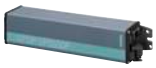
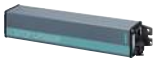
In PC-based automation solutions, the highly capacitive double-layer capacitors of the SITOP UPS500 supply enough energy to safeguard operating and application data and close software applications in a defined manner.

- Buffering into the minutes range depending on the load current and DC-UPS configuration
- SITOP UPS500S basic units for standard mounting rails can be combined with up to 3 UPS501S expansion modules
- SITOP UPS500P in degree of protection IP65 for distributed applications
- Absolutely maintenance-free double-layer capacitors
- Short charging times
- Long service life even at high ambient temperatures
- No ventilation of the installation location required
- USB interface for PC communication
- Easy PC integration thanks to free software tool



	SITOP UPS500S/501S configurations								**UPS500P**	
Basic unit	2.5 kWs	5 kWs	2.5 kWs	5 kWs	2.5 kWs	5 kWs	2.5 kWs	5 kWs	5 kWs	10 kWs
Expansion modules	--	--	1 x 5 kWs	1 x 5 kWs	2 x 5 kWs	2 x 5 kWs	3 x 5 kWs	3 x 5 kWs	--	--
Total energy	2.5 kWs	5 kWs	7.5 kWs	10 kWs	12.5 kWs	15 kWs	17.5 kWs	20 kWs	5 kWs	10 kWs
Load current	**Buffer times**									
0.5 A	134 s	236 s	390 s	478 s	632 s	748 s	851 s	1007 s	284 s	647 s
0.8 A	90 s	167 s	266 s	346 s	440 s	527 s	580 s	706 s	190 s	435 s
1 A	75 s	138 s	219 s	296 s	365 s	414 s	490 s	572 s	153 s	351 s
2 A	38 s	76 s	122 s	156 s	203 s	230 s	265 s	306 s	80 s	152 s
3 A	26 s	52 s	82 s	106 s	136 s	159 s	186 s	213 s	53 s	108 s
4 A	19 s	39 s	61 s	81 s	101 s	120 s	139 s	160 s	40 s	84 s
5 A	15 s	31 s	49 s	65 s	81 s	95 s	111 s	130 s	30 s	68 s
6 A	12 s	26 s	40 s	55 s	67 s	80 s	94 s	106 s	25 s	57 s
7 A	10 s	21 s	34 s	47 s	58 s	69 s	81 s	82 s	21 s	49 s
8 A	8 s	18 s	29 s	40 s	50 s	59 s	69 s	79 s	--	--
10 A	6 s	15 s	23 s	32 s	39 s	47 s	54 s	62 s	--	--
12 A	4 s	12 s	19 s	26 s	32 s	38 s	44 s	52 s	--	--
15 A	3 s	9 s	14 s	20 s	25 s	30 s	35 s	40 s	--	--

Selection and ordering data

	Version	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Rated current $I_{a\ rated}$	Dimensions (W × H × D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SITOP UPS500S											
	Basic units 15 A										
	**2.5 kWs**	24 V DC (22 ... 29 V DC) infeed through SITOP 24 V DC	24 V DC ± 3 %	15.2 A + approx. 2.3 A (charging mode)	120 × 125 × 125	1	**6EP1933-2EC41**		1	1 unit	585
6EP1933-2EC.1, 6EP1935-5PG01	**5 kWs**				120 × 125 × 125	1	**6EP1933-2EC51**		1	1 unit	585
	SITOP UPS501 expansion modules										
	5 kWs	Infeed through basic unit	--	--	70 × 125 × 125	1	**6EP1935-5PG01**		1	1 unit	585
SITOP UPS500P											
	Basic units 7 A, degree of protection IP65										
 6EP1933-2NC01	**5 kWs**	24 V DC (22.5 ... 29 V DC) Infeed through SITOP 24 V DC	24 V DC ± 3 %	7 A + approx. 2 A (charging mode)	400 (without connector) x 80 x 80	1	**6EP1933-2NC01**		1	1 unit	585
 6EP1933-2NC11	**10 kWs**				470 (without connector) x 80 x 80	1	**6EP1933-2NC11**		1	1 unit	585
Accessories											
	Connector set for SITOP UPS500P With input and output connector and assembled USB cable 2 m in length					1	**6EP1975-2ES00**		1	1 unit	591

For DC UPS with battery modules see from page 15/15.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Overview

To bridge longer power failures, 24 V SITOP power supply units can be expanded with a SITOP UPS1600 uninterruptible DC power supply (DC-UPS) and SITOP UPS1100 battery modules.

Intelligent battery management using Energy Storage Link automatically detects the UPS1100 energy storage device, and ensures optimum temperature-controlled charging and continuous monitoring. The compact DC-UPS modules have overload capability, for example, to supply the inrush current of industrial PCs. They enable starting from the battery for stand-alone operation.

The DC-UPS communicates openly over USB or Ethernet/PROFINET and can be easily integrated into the PC or PLC world. Complete integration in TIA offers user-friendly engineering in the TIA Portal and is supported by ready-to-use function blocks for S7 user programs and WinCC faceplates for rapid visualization.

Use of the SITOP UPS manager also enables easy monitoring and configuration in PC systems, e.g. the shutting down of several PCs in accordance with the master-slave principle.

- 24 V buffering in the hour range for continuing processes
- Open communication over USB or two Ethernet/PROFINET ports
- High overload capability for mains and buffering operation
- Intelligent battery management using Energy Storage Link: Automatic detection of the battery modules and selection of the optimal, temperature-controlled charging characteristic, monitoring of operational readiness, battery connection, aging and charge current
- All diagnostic data and alarm messages are available via USB and Ethernet/PROFINET
- Starting from the battery module supports stand-alone mode, e.g. for starting generators
- Remote monitoring via integrated web server
- SITOP UPS Manager (free software download) supports configuration and monitoring on PC-based systems, see https://support.industry.siemens.com/cs/ww/en/view/75854607
- Complete integration in TIA:
  - User-friendly engineering in the TIA Portal, see https://support.automation.siemens.com/WW/view/en/75854606
  - SIMATIC S7 function blocks for integration in user programs (free download), see https://support.industry.siemens.com/cs/ww/en/view/78817848
  - Ready-to-use "faceplates" for SIMATIC Panels and SIMATIC WinCC (free download) see https://support.industry.siemens.com/cs/ww/en/view/78817848

Selection and ordering data

	Rated current $I_{a\ rated}$	Inputs Rated voltage $U_{e\ rated}$	Outputs Rated voltage $U_{a\ rated}$	Dimensions (W × H × D)	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				mm	d					
SITOP UPS1600										
 6EP4134-3AB00-.AY0	**10 A**	24 V DC (21 ... 29 V DC)	24 V DC	50 × 125 × 125						
	• SITOP UPS1600				3	**6EP4134-3AB00-0AY0**		1	1 unit	585
	- with USB interface				3	**6EP4134-3AB00-1AY0**		1	1 unit	585
	- With Ethernet/PROFINET				3	**6EP4134-3AB00-2AY0**		1	1 unit	585
 6EP4136-3AB00-.AY0	**20 A**	24 V DC (21 ... 29 V DC)	24 V DC	50 × 125 × 125						
	• SITOP UPS1600				3	**6EP4136-3AB00-0AY0**		1	1 unit	585
	- With USB interface				3	**6EP4136-3AB00-1AY0**		1	1 unit	585
	- With Ethernet/PROFINET				3	**6EP4136-3AB00-2AY0**		1	1 unit	585
 6EP4137-3AB00-.AY0	**40 A**	24 V DC (21 ... 29 V DC)	24 V DC	70 × 125 × 150						
	• SITOP UPS1600				3	**6EP4137-3AB00-0AY0**		1	1 unit	585
	- With USB interface				3	**6EP4137-3AB00-1AY0**		1	1 unit	585
	- With Ethernet/PROFINET				3	**6EP4137-3AB00-2AY0**		1	1 unit	585

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

SITOP UPS1100 battery modules

Overview

SITOP UPS1100 maintenance-free battery modules with 1.2 Ah to 12 Ah for SITOP UPS1600 DC-UPS modules. The intelligent UPS1600 battery management charges the UPS1100 with the optimal, temperature-controlled charging characteristics and monitors the status (operating data and diagnostics information) via the energy storage link of the connected battery modules.

For longer buffer times, up to six battery modules can be connected in parallel. Mounting is on a standard mounting rail or directly on a wall.





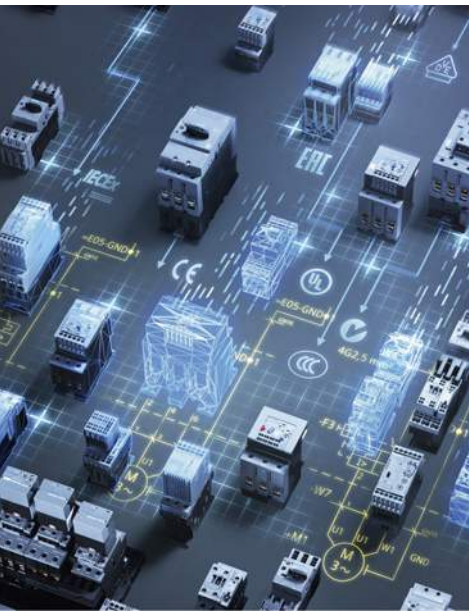

Battery modules	SITOP UPS1100 24 V/1.2 Ah 6EP4131-0GB00-0AY0	SITOP UPS1100 24 V/2.5 Ah High temperature 6EP4132-GB00-0AY0	SITOP UPS1100 24 V/3.2 Ah 6EP4133-0GB00-0AY0	SITOP UPS1100 24 V/5 Ah LiFePo 6EP4133-0JB00-0AY0	SITOP UPS1100 24 V/7 Ah 6EP4134-0GB00-0AY0	SITOP UPS1100 24 V/12 Ah 6EP4135-0GB00-0AY0
Load current	**Buffer times**					
1 A	34 min	1.7 h	2.5 h	5.2 h	5.4 h	10.3 h
2 A	15 min	54.6 h	1 h	2.5 h	2.6 h	4.8 h
3 A	9 min	32.9 min	39 min	1.7 h	1.6 h	3 h
4 A	6 min	20.6 min	27 min	1.25 h	1.2 h	2.3 h
6 A	3.5 min	14.3 min	17.5 min	50.6 min	41 min	1.4 h
8 A	2 min	10.5 min	12 min	37.8 min	28 min	1 h
10 A	1 min	7.2 min	9 min	30.2 min	22 min	48.6 min
12 A	--	6 min	7 min	25.1 min	17 min	40.3 min
14 A	--	4.5 min	5 min	21.6 min	15 min	33.6 min
16 A	--	4.1 min	4 min	18.8 min	12.5 min	26 min
20 A	--	2.9 min	1 min	12.9 min	9.1 min	19.6 min
30 A	--	--	--	--	4.6 min	12.1 min
40 A	--	--	--	--	2.8 min	8.5 min

Selection and ordering data

	Rated current $I_{a\ rated}$ A	Dimensions (W × H × D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SITOP UPS1100 battery modules								
 6EP4131-0GB00-0AY0	***For UPS1600 10 A***							
	1.2 Ah	89 × 130 × 107	3	**6EP4131-0GB00-0AY0**		1	1 unit	585
	For UPS1600 10 A and 20 A							
 6EP4133-0JB00-0AY0	**3.2 Ah**	190 × 169 × 79	3	**6EP4133-0GB00-0AY0**		1	1 unit	585
	5 Ah LiFePo	189× 186 × 113	NEW 1	**6EP4133-0JB00-0AY0**		1	1 unit	585
	7 Ah	186 × 186 × 110	3	**6EP4134-0GB00-0AY0**		1	1 unit	585
SITOP UPS1100 battery modules								
 6EP4135-0GB00-0AY0	***For UPS1600 20 A and 40 A***							
	12 Ah	253 × 186 × 110	3	**6EP4135-0GB00-0AY0**		1	1 unit	585
SITOP UPS1100 battery modules, high-temperature								
 6EP4132-0GB00-0AY0	***For UPS1600 10 A and 20 A***							
	2.5 Ah	265 x 115 x 76	3	**6EP4132-0GB00-0AY0**		1	1 unit	585

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Appendix



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- Exclude expensive faulty planning right from the start.
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- Compliance with quality standards in production
- Increased employee satisfaction and motivation
- Shorter familiarization times following changes in technology and staff

Contact

Visit our site on the Internet at:
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or let us advise you personally. You can request our latest training catalog from:

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Fax: +49 911 895-7576

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We offer a total of about 300 classroom-based courses. You can find us at more than 50 locations in Germany, and in 62 countries worldwide. You can find which course is offered at which location at:
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Skills development

Do you want to develop skills and fill in gaps in your knowledge? Our solution: We will provide a program tailored exactly to your personal requirements. After an individual requirements analysis, we will train you in our training centers near you or directly at your offices. You will practice on the most modern training equipment with special exercise units. The individual training courses are optimally matched to each other and help with the continuous development of knowledge and skills. After finishing a training module, the follow-up measures make success certain, as well as the refreshment and deepening of the knowledge gained.

Things you should know about Catalog IC 10

Catalog IC 10 contains all selection and order-relevant data.

Standard delivery time (SD)

SD in days (d)
► Preferred type
X On request

Preferred types are available immediately from stock, i.e. are dispatched within 24 hours.

Normal quantities of the products are usually delivered within the specified time following receipt of your order at our branch.

In exceptional cases, the actual delivery time may differ from that specified.

The delivery times apply up to the ramp at Siemens AG (products ready for dispatch). The transport times depend on the destination and type of shipping. The standard transport time for Germany is one day.

The delivery times specified here represent the situation in October 2016. They are continuously optimized. For more up-to-the-minute information, please visit www.siemens.com/sirius/mall.

Price units (PU)

The price unit defines the number of units, sets or meters to which the specified price applies.

Packaging sizes (PS)

The packaging size defines the number, e.g. of units, sets or meters, contained in an outer packaging.

Only the quantity defined by the packaging size or a multiple thereof can be ordered.

For multi-unit packing and reusable packaging, see page 16/7.

Price groups (PG)

Each product is assigned to a price group.

Example

3RA2110-0FA15-1AP0

SD: 2 working days
PG: 41D
Order quantity 1 unit or a multiple thereof

3RV1901-0H

SD: Preferred type
PG: 41E
Order quantity 10 units or a multiple thereof

3SU1900-0AB71-0AB0

SD: 5 working days
PG: 41J
Order quantity 10 units or a multiple thereof

SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
2	**3RA2110-0FA15-1AP0**		1	1 unit	41D
►	**3RV1901-0H**		1	10 units	41E
5	**3SU1900-0AB71-0AB0**		100	10 units	41J

Dimensions

All dimensions in mm.

Symbols

In Catalog IC 10 you will find the symbols and their explanations listed alongside.

They are used in conjunction with an orange background to mark and highlight special selection criteria (e.g. connections, types of coordination, etc.).

Connections	Combicon connection
	Insulation piercing method
	Straight-through transformers
	FastConnect
	Spring-type terminals or spring-type terminals (push-in)
	Flat connectors
	Solder pin connections
	Plug-in terminals (push-in)
	Ring terminal lug connections
	Bus connections
	Screw terminals
	Socket terminals (THT)
Types of coordination	Type of coordination "1"
	Type of coordination "2"
Distinguishing between units	Complete units
	Modular system

Logistics

General

With regard to delivery service, communications and environmental protection, our logistics service ensures "quality from the moment of ordering right through to delivery".
By designing our infrastructure according to customer requirements and implementing electronic order processing, we have successfully optimized our logistics processes.

Our delivery processes are designed such that, as a rule, a confirmed deadline is not generally exceeded. In fact, wherever possible, we aim to deliver up to three working days ahead of schedule to optimize the overall delivery situation (e.g. in anticipation of holidays and peak order periods).

We are proud of our personal consulting service, on-time deliveries and one-day delivery within Germany.

To achieve this, we supply the preferred types marked with ► ex warehouse.

We regard the DIN ISO 9001 certification and consistent quality checks as an integral part of our services.

Electronic order processing is fast, cost-efficient and error-free. Please contact us if you want to benefit from these advantages.

Packaging, packing units

The packaging in which our equipment is dispatched provides protection against dust and mechanical damage during transport, thus ensuring that you receive our products in a perfect state.

We select our packaging for maximum environmental compatibility and reusability (e.g. crumpled paper for protection during transport in packages up to 32 kg) and, in particular, with a view to reducing waste.

With our multi-unit packaging and reusable packaging, we offer you specific types of packaging that are both kind to the environment and tailored to your requirements.

Your advantages at a glance:

- Lower order costs
- Cost savings through uniform-type packaging: low/no disposal costs
- Reduced time and cost thanks to short unpacking times
- "Just-in-time" delivery directly to the production line helps reduce stock: cost savings through reduction of storage area
- Fast assembly thanks to supply in sets
- Standard Euro boxes – corresponding to the Euro pallet modular system – suitable for most conveyor systems
- Active contribution to environmental protection

Unless stated otherwise in the "Selection and ordering data" of this catalog, our products are supplied individually packed.

> For small parts/accessories, we offer you economical packaging units as standard packs containing more than one item, e.g. 5, 10, 50 or 100 units. It is essential that whole number multiples of these quantities be ordered to ensure satisfactory quality of the products and problem-free order processing.

The products are delivered in a neutral carton. The label includes warning notices, the CE mark and product description information in English and German.

In addition to the Article No. (MLFB) and the packed number of items in the packaging, the Instr. Order No. of the operating instructions is also specified. This can be obtained from your local Siemens representative, see www.siemens.com/automation-contact.

The device Article No. of most devices can also be acquired through the EAN barcode to simplify ordering and storage logistics.

The related master data are available from your local Siemens representative.

Ordering notes

Multi-unit and reusable packagings

The devices listed in the table on page 16/7 can be ordered in multi-unit or reusable packagings (other versions available on request).

If ordering multi-unit or reusable packagings for the first time, please first consult your local Siemens representative with regard to pack type, quantity, delivery time and the precise order designation. Use of the reusable packaging is reserved solely for customers that have signed a packaging return agreement with their Siemens representative in advance.

Multi-unit and reusable packagings are not available as a pack type for all products. Some products are unsuited for this pack type and would only involve an increased risk of damage in transit.

For both pack types, the quantity of devices ordered (per Article No.) must be divisible by the pack quantity. If this is not the case, the electronic order processing system rounds up to the next integer multiple of packagings.

Multi-unit packaging

Products in a quantity sufficient to fill a multi-unit packaging: 1/2 (W96) and 1/4 (W97) ENK

As standard, multi-unit packs contain uniform-type, unpacked single devices (one device type) in an appropriately sized carton made of recyclable cardboard. The products of the SIRIUS range can be ordered in units of 1/1, 1/2, 1/4 and 1/8 standard Euro boxes (ENK).

Reusable packaging (uniform type)

Standard Euro box (ENK) made of durable molded plastic with foam inserts

Standard reusable packagings contain uniform-type, non-packed individual products (one device type) in a reusable standard Euro box (ENK) made of durable molded plastic with foam inserts for protection during transport.

The standard Euro box (ENK) also serves as transport packaging. The reusable packagings (ENK) plus foam inserts are returned by the customer (free of charge) to the supply base.

Please contact your Siemens representative to clarify the delivery details or conditions for set supply or delivery in reusable packaging (ENK) (to find Siemens representatives, see www.siemens.com/automation-contact). Suitable arrangements will then be agreed with you.

Set deliveries (reusable, different devices)

On request, we also deliver order-related packs of larger quantities of devices in a standard Euro box (ENK).

Please contact your Siemens representative to clarify the delivery details or conditions for set supply or delivery in reusable packagings. Suitable arrangements will then be agreed with you.

Packaging dimensions

Packing material	Length mm	Height mm	Width mm
ENK	596	219	396
W95	575	190	375
W96	375	190	290
W97	290	190	195
W98	290	100	195

Multi-unit and reusable packaging, quantity in units, supplied in indivisible pack quantities with delivery time on request

Devices	Size	Reusable	Multi-unit			
SIRIUS		**X95** (1/1 ENK)	**W95** (1/1 ENK)	**W96** (1/2 ENK)	**W97** (1/4 ENK)	**W98** (1/8 ENK)
Contactors						
3RT201.–1A..1/2	S00	144	--	72	40	--
3RT201.–1B..1/2	S00	72	--	72	40	--
3RT201.–2A/B...	S00	120	--	60	32	--
3RT202.–1A/B..0	S0	48	--	24	12	--
3RT202.–2A/B..0	S0	40	--	18	8	--
3RT203.–....0	S2	30	--	15	6	--
3RT203.–....4	S2	30	--	15	--	--
Snap-on auxiliary switch blocks						
3RH2911–1F./GA/HA..	--	351	--	240	120	60
3RH2911–2F./G./H./N./X...	--	321	--	196	100	50
Contactor relays						
3RH21..–1A..0	S00	144	--	72	40	--
3RH21..–1B..0	S00	72	--	72	40	--
3RH21..–2A/B..0	S00	120	--	60	32	--
Motor starter protectors						
3RV2011–...1/0/5	S00	43	--	24	12	--
3RV2011–...2/0/5	S00	40	--	16	8	--
3RV2021–...1/0/5	S0	43	--	24	12	--
3RV2021–...2/0/5	S0	35	--	16	8	--
3RV2031–...0/5	S2	24	--	12	5	--
Thermally delayed overload relays						
3RU2116–..B0	S00	64	--	32	16	--
3RU2116–..C0	S00	56	--	24	12	--
3RU2126–..B0	S0	56	--	32	16	--
3RU2126–..C0	S0	48	--	24	12	--
3RU2136–..B0	S2	36	--	18	9	--
3RP25 electronic timing relays	On request					

Devices	Multi-unit
SIRIUS ACT	**X90**
3SU1 pushbuttons and indicator lights	
Complete units (3SU11)	20
Compact units (3SU12)	
• Acoustic signaling devices, pushbuttons with extended stroke, potentiometers	50
Actuating and signaling elements (3SU10)	
• Pushbuttons, illuminated pushbuttons, indicator lights	100
• Stop switches, twin pushbuttons, mushroom pushbuttons 30/40 mm, EMERGENCY STOP mushroom pushbuttons 30/40 mm, toggle switches, selector switches, key-operated switches, ID key-operated switches, coordinate switches	50
• Mushroom pushbuttons 60 mm, EMERGENCY STOP mushroom pushbuttons 60 mm	40
Holders (3SU15)	100
Modules for actuators and indicators (3SU14)	
• Contact modules, LED modules	150
Accessories (3SU19)	
• Blanking plugs, label holders, EMERGENCY STOP backing plates, labeling plates for potentiometers, EMERGENCY STOP labeling plate for enclosures without cutouts and without inscription	100

When ordering products in multi-unit packagings, the Article No. of the product concerned must be supplemented with **"–Z"** and, in addition, the order code **X90**, or for products from the SIRIUS range, the order code **W9**.

Ordering example:
3RT2024–1AB00–Z W96
+ quantity: 24

For products packed in reusable packaging, the Article No. must be supplemented with **"–Z"** and the order code **X95**.

Ordering example:
3RT2024–1AB00–Z X95
+ quantity: 48

Ordering notes

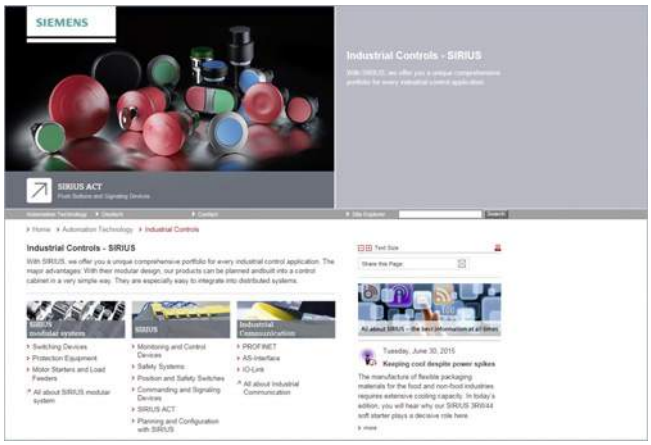
Ordering special versions

When ordering products that differ from the versions listed in the catalog, the article number specified in the catalog must be supplemented with **"–Z"**; the required features must be specified by means of the alphanumeric order codes or in plain text.

Small orders

When small orders are placed, the costs associated with order processing are greater than the order value. We recommend therefore that you combine several small orders. Where this is not possible, we unfortunately have to charge a processing supplement of € 20.– to cover our costs for order processing and invoicing for all orders with a net goods value of less than € 250.–.

Overview



Industrial controls

We regard product support as just as important as the products and systems themselves.

Visit our site on the Internet for a comprehensive range of material on SIRIUS Industrial Controls, such as

- Overview of the entire product portfolio
- Always up to date with newsletters, podcasts, blogs and twitter
- Access to interesting videos on the YouTube channel
- Access to contact persons in more than 190 countries
- Operating instructions and manuals for direct download

and much, much more – all conveniently and easily accessible at:

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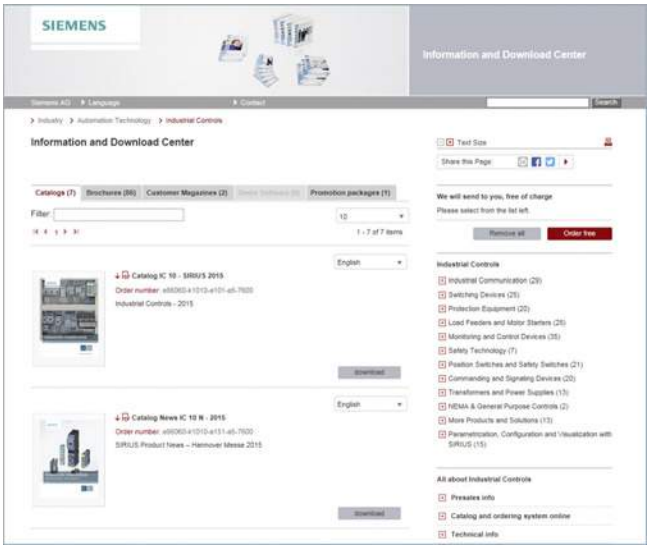
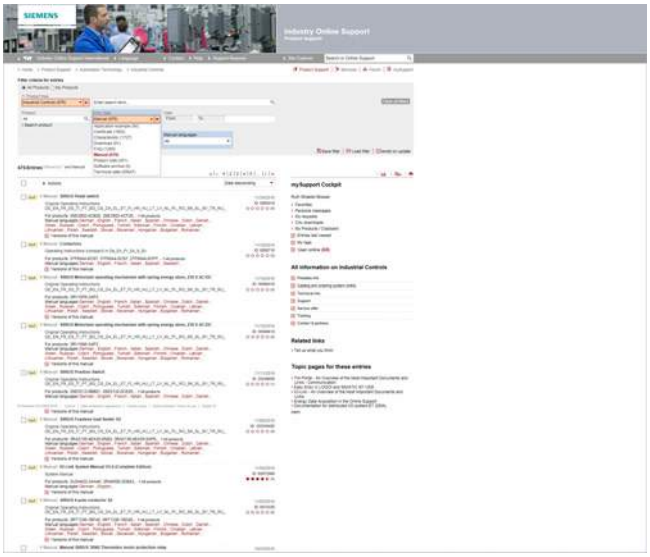


Information and download center

You will find information material such as catalogs, customer magazines, brochures and trial versions of software for Industrial Controls on the Internet at:

www.siemens.com/sirius/infocenter

You can order the available documents or download them in popular file formats (PDF, ZIP) from this site. The larger catalogs, e.g. IC 10, can also be downloaded in their individual chapters if preferred.



Product support

Using the "Entry type" selection box in Product Support, you can download operating instructions and manuals:

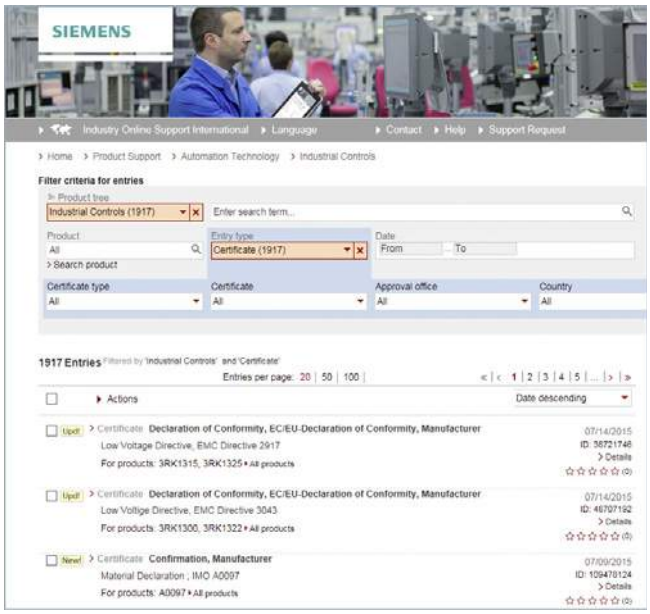
www.siemens.com/sirius/support

Here you will also find application examples, downloads, FAQs, characteristic curves, product reports, technical specifications and certificates.

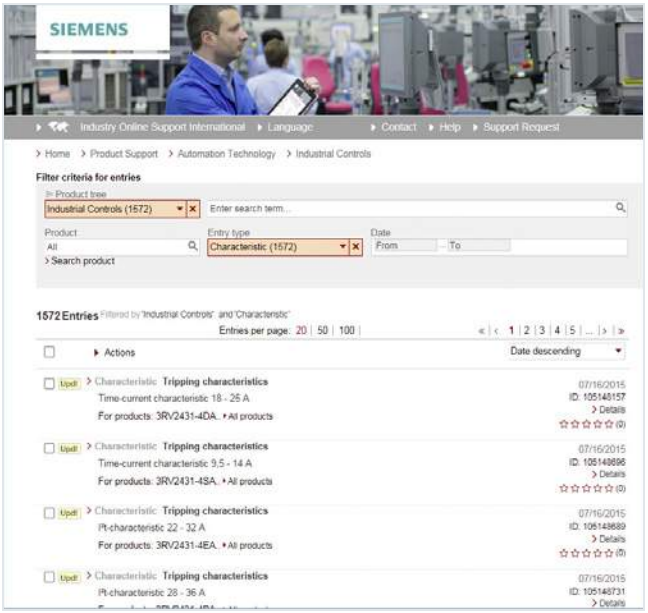
Approvals, test certificates, characteristic curves

An overview of the certificates available for Industrial Control products along with more technical documentation can be consulted daily on the Internet at:

www.siemens.com/sirius/approvals



Product support: Approvals/certificates



Product support: Characteristics

Safety characteristics

In the following standards, the so-called B10 values for calculating the safety integrity or safety integrity level (SIL) in functional safety at a high or continuous demand rate are required also for electromechanical switchgear:

- IEC 62061 "Safety of machines – Functional safety of safety-related electrical, electronic and programmable electronic control systems",
- ISO 13849-1 "Safety of machines – Safety-related components of controls – Part 1: General principles".

Failure rates of electromechanical components are required for calculating the safety integrity or safety integrity level (SIL) in functional safety:

- in the manufacturing industry at a high demand rate (high demand)
- in the process industry at a low demand rate (low demand)

Further requirements are laid down in IEC 61511-1 "Functional safety – Safety instrumented systems for the process industry sector – Part 1: Framework, definitions, system, hardware and software requirements".

The German versions of the above standards are:

- DIN EN 62061
- DIN EN ISO 13849
- DIN EN 61511-1

The TÜV-tested Safety Evaluation Tool assists in calculating the safety function as verification for the machine documentation. It is available as a free download on the Internet at www.siemens.com/safety-evaluation-tool.

At www.siemens.com/safety-integrated you will also find examples of functions with calculations according to the current standards.

Definitions

$\lambda\ (t)\ dt$ is the probability that a unit which has not failed by a certain time t will fail in the following interval $(t;\ t + dt)$.
Failure rates have the dimension 1/time unit, e.g. 1/h.
Failure rates for components are often specified in FIT (failures in time unit): 1 FIT equals 10^{-9}/h.
From the failure rate it is possible to derive a (mathematical) distribution function of the failure probability:

$F(t) = 1 - \exp(-\lambda t)$, with λ as constant failure rate

- The mean value of this exponential distribution is also referred to as:
  - Mean Time To Failure (MTTF) in the case of irreparable components; 63.2 % of components fail by the MTTF.
  - Mean Operating Time Between Failures (MTBF) in the case of reparable components.
- $MTTF = 1/\lambda$
  (MTTF is a statistical mean value but no guarantee for endurance).

Electromechanical components are often irreparable components. In general, the failure rate of monitored units changes with age.

The B10 value for devices subject to wear is expressed in number of operating cycles:

- It is the number of operating cycles after which 10 % of the test specimens fail in the course of an endurance test (or: the number of operating cycles after which 10 % of the devices have failed).

For low demand rates (mainly in the process industry), the failure rate and not the B10 value is used to determine the failure probability.

Standard B10 values at a high demand rate

With the help of the B10 value and a simplified formula (see Section 6.7.8.2.1 of EN 62061), the user can then calculate the total failure rate of an electromechanical component:

$\lambda = 0.1 \times C / B10$

with C = operating cycles per hour. C is specified by the user.

The failure rate is made up of safe (λ_S)- and dangerous (λ_D) failures:

$\lambda = \lambda_S + \lambda_D$

or

λ_D = [proportion of dangerous failures in %] x λ

λ_S = [proportion of safe failures in %] x λ

The failure rate of the dangerous failures λ_D of the components used is needed for further calculations.

Listed in the following table are the standard B10 values and the share of dangerous failures for SIRIUS product groups at a high demand rate.

Standard B10 values (at a high demand rate)

SIRIUS product group (electromechanical components)	Standard B10 value[1] (operating cycles)	Proportion of dangerous failures
3SB2 EMERGENCY OFF/ EMERGENCY STOP control devices (with positive-opening contacts)	100 000	20%
3SU1		
• EMERGENCY OFF/STOP command devices (with positive-opening contacts)	100 000	20%
• Selector switches		
- 3 positions	300 000	20%[2]
- 2 positions, latching	500 000	20%[2]
- 2 positions, latching	100 000	20%[2]
• Key-operated switches		
- Momentary contact	500 000	20%[2]
- 3 positions, latching	300 000	20%[2]
- 2 positions, latching	100 000	20%[2]
3SE7 cable-operated switches for EMERGENCY OFF/EMERGENCY-STOP function (with positive-opening contacts)	100 000	50%
3SE5/3SF1 position switches (with positive-opening contacts)		
• Standard position switches (basic switches only)	10 000 000	20%
• Standard position switches (incl. actuator head)	1 000 000[3]	20%
• With separate actuator	1 000 000	20%
• With tumbler (spring-loaded interlocking)	1 000 000	20%
3SE29 foot switches		
• Momentary contact	1 000 000	50%
• Latching	100 000	50%
Contactors/motor starters for switching motors:		
• 3RT10/3RT20/3TF6	1 000 000[4]	73%
• 3TC	1 000 000[5]	73%
3RH1/3RH2 contactor relays and auxiliary switches (with positively driven contacts)	1 000 000[6]	73%

1) Only applies under the conditions specified in the technical specifications

2) Share of dangerous failures: 50% when using the NO contact (additionally, a positive-opening contact must always be used in a redundant architecture; the sole use of a normally open contact is not permissible)

3) The B10 value can be higher depending on the actuator head used.

4) The B10 value was calculated for 66% of the rated current value I_e and AC-3/400 V. Further values on request.

5) Contact load/utilization category on request.

6) The B10 value was calculated for 33% of the rated current value I_e and AC-15/-14/230 V or DC-13/24 V. Further values on request.

The $B10_d$ value used in EN ISO 13849-1 is determined as follows:

$$B10_d = \frac{B10}{\text{Proportion of dangerous failures}}$$

Calculation example

A protective door is monitored by a position switch with a separate actuator.

The protective door is opened 4 times an hour.

The overall failure rate of the position switch is:

$\lambda = 0.1 \cdot C / B10$ [failures/h]
$\lambda = 0.1 \cdot 4 / 1000000 = 4 \cdot 10^{-7}$ [failures/h]

The dangerous failure rate is calculated with:

λ_D = 20% of $\lambda = 0.2 \cdot 4 \cdot 10^{-7}$ [failures/h]
$\lambda_D = 8 \cdot 10^{-8}$ [failures/h]

Standard failure rates (at a low demand rate)

On the basis of the failure rates, it is possible to calculate the average probability of failure on demand (PFD_{avg}) of a PLT protective device.

A so-called low demand rate is assumed, meaning the rate of demand on the safety-related system amounts to no more than once a year and is not greater than double the frequency of the repeat test.

A repeat test once a year is recommended for electromechanical components in order to reveal passive faults.

For special applications it is possible, in agreement with the inspecting institution (e.g. a technical inspectorate, government agency or the like) to extend the test intervals by using suitable solutions (e.g. a multi-channel version etc.).

Listed in the following table are the standard failure rates and the share of dangerous failures for SIRIUS product groups at a low demand rate.

Standard failure rates at a low demand rate

SIRIUS product group (electromechanical components)	Standard failure rate (in FIT)[1]	Share of dangerous failures[2]
3SB2/3SU1 EMERGENCY OFF/ EMERGENCY STOP control devices (with positive-opening contacts)		
• Pull to unlatch	100	20%
• Rotate to unlatch (also with lock)	100	20%
3SU1		
• Selector switches		
- 3 positions	100	20%[3]
- 2 positions, latching	100	20%[3]
- 2 positions, latching	100	20%[3]
• Key-operated switches		
- Momentary contact	100	20%[3]
- 3 positions, latching	100	20%[3]
- 2 positions, latching	100	20%[3]
3SE7 cable-operated switches for EMERGENCY OFF/EMERGENCY-STOP function (with positive-opening contacts)	100	20%
3SE5/3SF1 position switches (with positive-opening contacts)		
• Standard position switches (incl. actuator head)	100	20%
• With separate actuator	100	20%
• With tumbler (spring-loaded interlocking)	100	20%
Contactors/motor starters (with positive opening contacts or mirror contacts)		
• 3RT10/3RT20//3TF6	100	< 40%
• 3TC	100	< 40%

1) The failure rates specified in the table were limited to 100 FIT.

2) Valid only under the previously mentioned conditions.

3) Share of dangerous failures: 50% when using the NO contact (additionally, a positive-opening contact must always be used in a redundant architecture; the sole use of a normally open contact is not permissible)

Standards and approvals

Standards

IEC	EN	Title
60947-1 60947-2 60947-3	60947-1 60947-2 60947-3	Low-voltage switchgear and controlgear: General rules • Circuit-breakers • Switches, disconnectors, switch-disconnectors and fuse-combination units
60947-4-1 60947-4-2 60947-4-3	60947-4-1 60947-4-2 60947-4-3	• Contactors and motor starters - Electromechanical contactors and motor starters • Contactors and motor starters - AC semiconductor motor controllers and starters, soft starters • AC semiconductor controllers and contactors for non-motor loads
60947-5-1 60947-5-2 60947-5-3 60947-5-5 60947-5-6 60947-5-7 60947-5-8 60947-5-9	60947-5-1 60947-5-2 60947-5-3 60947-5-5 60947-5-6 60947-5-7 60947-5-8 60947-5-9	• Control circuit devices and switching elements - Electromechanical control circuit devices • Control circuit devices and switching elements - Proximity switches • Requirements for proximity devices with defined behaviour under fault conditions • Electrical emergency stop device with mechanical latching function • Control circuit devices and switching elements - DC interface for proximity switches and switching amplifiers (NAMUR) • Requirements for proximity devices with analogue output • Three-position enabling switches • Flow rate switches
60947-6-1 60947-6-2	60947-6-1 60947-6-2	• Multiple function equipment - Transfer switching equipment • Multiple function equipment - Control and protective switching devices (or equipment) (CPS)
60947-7-1 60947-7-2 60947-7-3 60947-7-4	60947-7-1 60947-7-2 60947-7-3 60947-7-4	• Ancillary equipment - Terminal blocks for copper conductors • Ancillary equipment - Protective conductor terminal blocks for copper conductors • Ancillary equipment - Safety requirements for fuse terminal blocks • Ancillary equipment - PCB terminal blocks for copper conductors
60947-8	60947-8	• Control units for built-in thermal protection (PTC) for rotating electrical machines
62026-2	62026-2	• Actuator sensor interface (AS-i)
60269-1 60269-4	60269-1 60269-4	Low-voltage fuses: General requirements Low-voltage fuses: Supplementary requirements for fuse-links for the protection of semiconductor devices
60050-441	--	International Electrotechnical Vocabulary. Switchgear, controlgear and fuses
61439-1 61439-2 61439-3 61439-4 61439-5 61439-6 -- 61140	61439-1 61439-2 61439-3 61439-4 61439-5 61439-6 50274 61140	Low-voltage switchgear and controlgear assemblies: General rules Low-voltage switchgear and controlgear assemblies: Power switchgear and controlgear assemblies Low-voltage switchgear and controlgear assemblies: Distribution boards intended to be operated by ordinary persons (DBO) Low-voltage switchgear and controlgear assemblies: Particular requirements for assemblies for construction sites (ACS) Low-voltage switchgear and controlgear assemblies: Assemblies for power distribution in public networks Low-voltage switchgear assemblies - Part 6: Busbar trunking systems (busways) Low-voltage switchgear and controlgear assemblies – Protection against electric shock – Protection against unintentional direct contact with hazardous live parts Protection against electric shock – Common aspects for installation and equipment
60664-1	60664-1	Insulation coordination for electrical equipment in low-voltage systems; Principles, requirements and tests
60204-1 -- 60079-14 60079-2	60204-1 50178 60079-14 60079-2	Electrical equipment of machines: General requirements Electronic equipment for use in power installations Electrical apparatus for explosive gas atmospheres Electrical installations in hazardous areas (other than mines) Electrical apparatus for explosive gas atmospheres – Part 2 Pressurized Enclosures M "p"
61810-1 61812-1	61810-1 61812-1	Electromechanical elementary relays; General requirements Time relays for industrial and residential use: Part 1: Requirements and tests
60999-1 60999-2	60999-1 60999-2	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors from 0.2 mm^2 up to 35 mm^2 (included) Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: Particular requirements for clamping units for conductors above 35 mm^2 up to 300 mm^2 (included)
61000-4-1	61000-4-1	Electromagnetic compatibility (EMC) – Part 4-1: Testing and measuring techniques; Overview of IEC 61000-4 series
61000-6-2 61000-6-3 61000-6-4	61000-6-2 61000-6-3 61000-6-4	Electromagnetic compatibility (EMC); Generic standards - Immunity for industrial environments Electromagnetic compatibility (EMC); Generic standards - Emission standard for residential, commercial and light-industrial environments Electromagnetic compatibility (EMC); Generic standards - Emission standard for industrial environments
61869-1	61869-1	Instrument transformers: General requirements
61869-2	61869-2	Instrument transformers: Additional requirements for current transformers

UL	CSA C22.2	ASME	JIS	Title
508	--	--	--	Industrial control equipment
60947-1	No. 60947-1	--	--	Low-voltage switchgear and controlgear – Part 1: General rules
60947-4-1	No. 60947-4-1	--	--	Low-voltage switchgear and controlgear – Part 4-1: Contactors and motor starters - electromechanical contactors and motor starters
60947-4-2	No. 60947-4-2	--	--	Low-voltage switchgear and controlgear - Part 4-2: Contactors and motor starters - AC semiconductor motor controllers and starters
60947-5-1	No. 60947-5-1	--	--	Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices
489	No. 5	--	--	Molded case circuit breakers, molded case switches, and circuit breaker enclosures
1012	--	--	--	Power units other than CLASS 2
1059	--	--	--	Terminal blocks
486A-486B	--	--	--	Wire connectors
486E	--	--	--	Equipment wiring terminals for use with aluminum and/or copper conductors
50	--	--	--	Enclosures for electrical equipment – Non-environmental considerations
50E	--	--	--	Enclosures for electrical equipment – Environmental considerations
--	No. 14	--	--	Industrial control equipment
--	No. 107.1	--	--	General use power supplies
--	--	A17.5 / CSA B 44.1	--	Elevator and escalator electrical equipment
--	--	--	C 8201-4-1	Low-voltage switchgear and controlgear; Contactors and motor-starters

Approval requirements valid in different countries

Siemens low-voltage switchgear and controlgear are designed, manufactured and tested according to the relevant German standards (DIN and VDE), IEC publications and European standards (EN) as well as CSA and UL standards. The standards assigned to the single devices are stated in the relevant parts of this catalog.

As far as is economically viable, the requirements of the various standards valid in other countries are also taken into account in the design of the equipment.

In some countries an approval is required for certain low-voltage switchgear and controlgear components (see table below). Depending on the market requirements, these components have been submitted for approval to the authorized testing institutes.

In some cases, CSA for Canada and UL for the USA only approve special switchgear versions. Such special versions are listed separately from the standard versions in the individual parts of this catalog.

For this equipment, partial limitations of the maximum permissible voltages, currents and ratings can be imposed, or special approval and, in some cases, special identification is required.

For use on board ship, the specifications of the marine classification societies must be observed (see table below). In some cases, they require type tests of the components to be approved.

Testing bodies, approval identification and approval requirements

Country	Canada	USA	China	Russia / Belarus / Kazakhstan
Government-appointed or private, officially recognized testing bodies	CSA UL (USA)	UL	CQC	Official national regulation / TR
Mark of conformity	SP c UL c FM c FM US c UL US	UL FM c FM US c UL US	CCC	EAC
Approval requirement	+	+	+	+
Remarks	UL and CSA are authorized to grant approval certificates in accordance with Canadian and North American regulations. Please note: These approvals are not recognized in many cases and must be covered by additional approvals issued by the national testing agency.		CCC	Eurasian customs union

For more information about the approval marks see page 16/16.

Marine classification societies

Country	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA
Name	Germanischer Lloyd	Lloyds Register of Shipping	Bureau Veritas	Det Norske Veritas	Russian Maritime Register of Shipping	Registro Italiano Navale	Polski Rejestre Statków	American Bureau of Shipping
Codes	GL[1)]	LR	BV	DNV[1)]	RS	RINA	PRS	ABS

[1)] DNV and GL have merged and call themselves DNV GL.

Standards and approvals

CE marking

Manufacturers of products which fall within the subject area to which EC directives apply must identify their products, operating instructions or packaging with a CE mark of conformity.

By attaching the CE marking, the manufacturer confirms that the product conforms to the relevant basic requirements of all directives applicable to the product. The mark of conformity is a mandatory requirement for putting products into circulation throughout the EC.

All the products in this catalog are in conformance with the relevant specific EC directives and bear the CE mark of conformity CE.

- Low-voltage directive
- EMC directive
- Machinery directive
- Ex protection directive

ALPHA/LOVAG

Siemens AG sits in the ALPHA committee of "ALPHA in VDE".

The responsibility of manufacturers and the high quality of products are promoted by "ALPHA in VDE" by means of supportive procedural guidelines for testing equipment according to the currently valid standards.

Providing specific conditions are fulfilled, "ALPHA in VDE" can also issue officially recognized product certificates if required. As a member of LOVAG, "ALPHA in VDE" is also working towards obtaining international recognition for declarations of conformity and certificates.

LOVAG (Low-Voltage Agreement Group) is a body comprising international specialists from certification bodies and industry who are working together to create a standardized European certificate.

List of LOVAG members

SGS BELGIUM NV/SA Division SGS CEBEC	Belgium
ALPHA in VDE	Germany
ASEFA	France
ACAE	Italy
IMQ S.p.A	
Intertek Semko	Sweden
APPLUSS + Laboratories	Spain

Accident prevention

Test certificates and approvals from IFA (institute for occupational safety and health of the German social accident insurance), SUVA (Swiss institute for accident prevention), BG ETEM (German trade association for energy, textiles, electrical goods and media products) TÜV and VDE are available for some devices in safety control systems. For details, see the respective product descriptions.

Ex protection certificates for SIRIUS controls

Motor protection devices that protect a motor installed in a potentially explosive atmosphere against overloading must comply with certain special requirements. These requirements are laid down in the following standards:

- EN 50495
- EN 60079-0
- EN 60079-1
- EN 60079-7
- EN 60079-14
- EN 60079-17
- EN 60947-1
- EN 60947-4-1, EN 60947-4-2
- EN 60947-5-1
- EN 60947-8
- EN ISO/IEC 80079-34

Certification

The enactment of EU Directive 94/9/EC (July 2003) ushered in a new era in the field of explosion protection. Since then, only those devices and protection systems that comply with directive 94/9/EC can be brought into circulation within the European Union for operation in potentially explosive atmospheres. Since April 20, 2016 this Directive has been superseded by the new EU Directive 2014/34/EU.

Motor protection devices that are brought into circulation within the member states of the EU must have been constructed and tested according to the above-mentioned standards and must have a declaration of conformity from the manufacturer based on a prototype test certificate. Prototype test certificates that were issued in accordance with 94/9/EC have retained their validity even after 2014/34/EU came into force.

The quality management (QM) system of the manufacturer is subject to certain requirements and a "QM certificate" must be obtained for the manufacturer from a recognized authority.

Certification of the QM system

A certificate of approval for quality assurance production has been issued by DEKRA EXAM GmbH[1)] with the number BVS 11 ATEX ZQS/E111 of DEKRA EXAM GmbH[1)] according to Directive 94/9/EC (from April 20, 2016 2014/34(EU)).

This certificate is valid for equipment groups I and II and categories M2 and 2: Safety and control devices for electrical equipment.

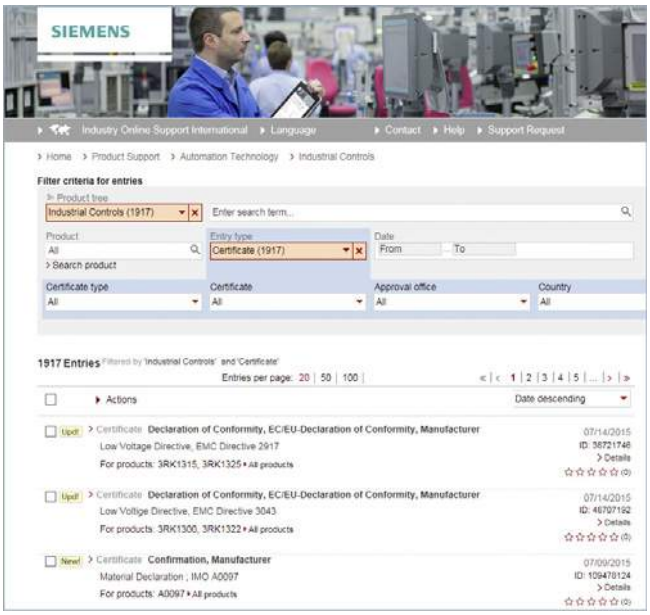
Certificates

For the 3RV, 3RU, 3RB, 3UF, 3RN and 3RW motor protection devices, the corresponding declarations of conformity and prototype test certificates for Category 2D, 2G, and in some cases M2, are available and can be supplied on request

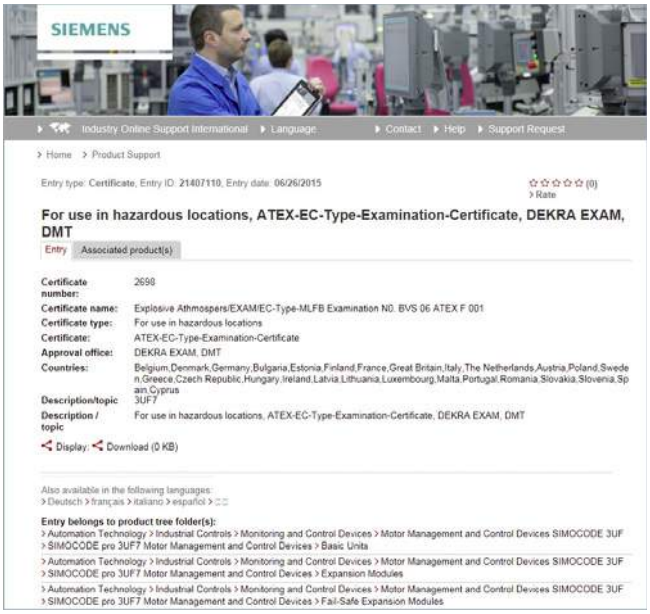
Declarations of conformity and prototype test certificates are available at http://support.industry.siemens.com for viewing and downloading.

You can find more information about industrial controls for applications in explosion-protected areas at www.siemens.com/sirius/atex.

1) DEKRA EXAM GmbH
The certification authority of "DEKRA EXAM GmbH" with authority number 0158 according to Article 13 of Directive 2014/34/EC of the European Parliament and Council, certifies that Siemens Amberg, Cham and Trutnov maintains a quality assurance system for production that satisfies Appendices IV and VII of this Directive.



Selection box



Description of certificate with view and download option

Identifying markings

All equipment must be marked according to the ATEX guideline. The ATEX identification code contains the equipment group, the approved environment, the number of the certification authority and other technical data that was determined from the type test.

Standards and approvals

Certificate of the AS-International Association for AS-Interface products

AS-Interface products are tested and certified by the AS-International Association. The products have been tested in an accredited test laboratory according to testing guidelines.

Special standards for the USA and Canada

In the USA and Canada, for machine tools and processing machines in particular, supply lines are laid using rubber insulated cable enclosed in heavy-duty steel piping similar to that used for gas or water pipe systems.

The tubing system must be completely watertight and electrically conductive (especially sleeving and elbows). Since the tubing system can also be grounded, the cable entries of enclosed units equipped with heavy-gauge or metric threads must be fitted with metal adapters between these threads and the tube thread. The necessary adapters are specified for the switchgear as accessories; they should be ordered separately unless otherwise specified.

Low-voltage switchgear and controlgear for auxiliary circuits (e.g. contactor relays, commanding and signaling devices and auxiliary switches/auxiliary contacts in general) are generally only approved by CSA and UL for **"Heavy Duty"** or **"Standard Duty"** and are identified either with these specifications in addition to the maximum permissible voltage or by using an abbreviation.

The abbreviations are harmonized with IEC 60947-5-1 Appendix 1 Table A.1 and correspond to the stated utilization categories.

For various switching devices detailed in the catalog, a note has been included to the effect that, above a certain voltage, the auxiliary switches/auxiliary contacts can only be used if they have the same polarity. This means that the input terminals can only be connected to the same pole of the actuating voltage, e.g. "600 V AC above 300 V AC same polarity".

Differentiating features of UL approvals (for USA and Canada)

Recognized Component	Listed Product
Devices are identified on the rating plate using the "UL recognition mark": USA: , c us Canada: c , c us	Devices are identified using the "UL listing mark" on the rating plate e.g. USA: LISTED XXX IND. CONT. EQ. Canada: c LISTED XXX IND. CONT. EQ. (XXX stands for: UL Code Classification Number)
Devices are approved as modules for "factory wiring", i.e.: as devices for installation in control systems, which are selected, installed, wired and tested entirely by trained personnel in factories, workshops or elsewhere, **according to the operating conditions**.	Devices are approved for "field wiring", i.e.: • As devices for installation in control systems, which are completely wired by trained personnel in factories, workshops or elsewhere. • As single devices for sale in retail outlets in the USA/Canada.
If devices are or c approved as "listed products", they are also approved as or c "recognized components".	

For more information about UL and CSA, see page 16/13.

Special standards for Russia, Australia and China

EAC approval for Russia/Belarus/Kazakhstan/Armenia

EAC mark

Since 15.02.2013 Russia, Kazakhstan, Belarus and Armenia have been united in the Eurasian EAC customs union. An EAC approval as replacement for the GOST mark is required for all products that are to be sold in Russia.

All devices delivered to the customs union must have these customs certifications.

C-Tick approval for Australia

RCM mark (new)

The RCM mark is required for marketing Siemens electronic devices in Australia. Electronic devices must provide proof of EMC clearance in Australia, similar to the CE mark of conformity laid down by the EMC directive applicable in the EC and bear the "RCM" mark. These requirements have been in force since October 1, 1999.

The RCM mark was introduced on March 1, 2013. The transition period in which the old C-Tick mark will remain valid is three years.

Quality management

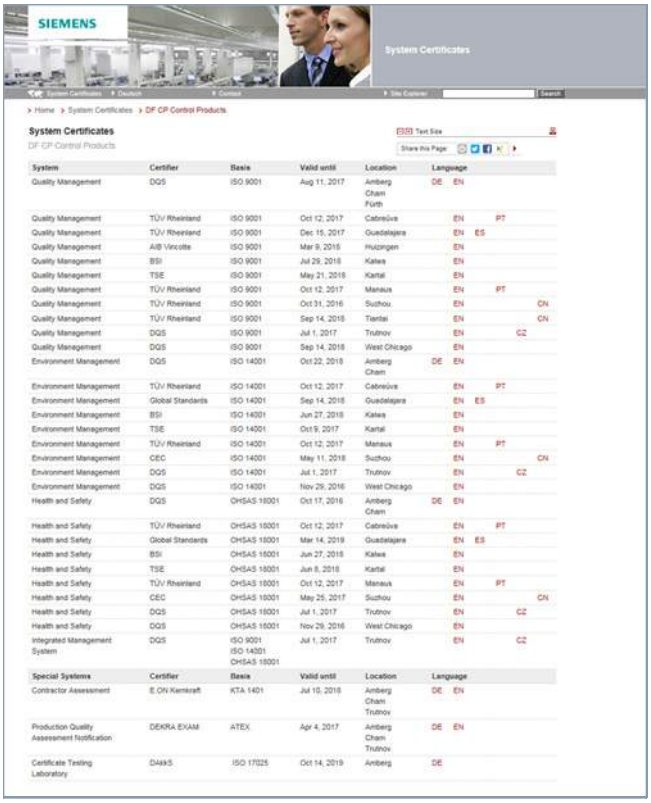
The quality management system of our "Control Products" Business Unit of the "Digital Factory" Division complies with the international standard EN ISO 9001.

The products and systems described in this catalog are developed, manufactured and sold under application of a certified quality management system according to ISO 9001. The certificates are recognized in all IQ Net countries.

Certificates

For information about available certifications of the quality management system for Industrial Controls products, please visit website address:

www.siemens.com/system-certificates/cp

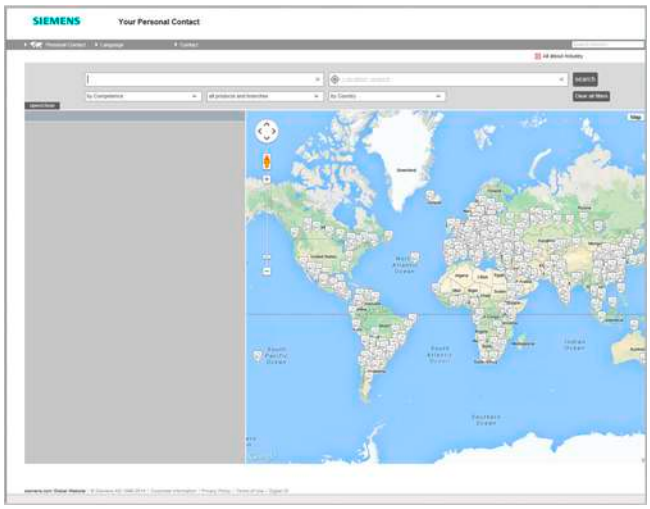


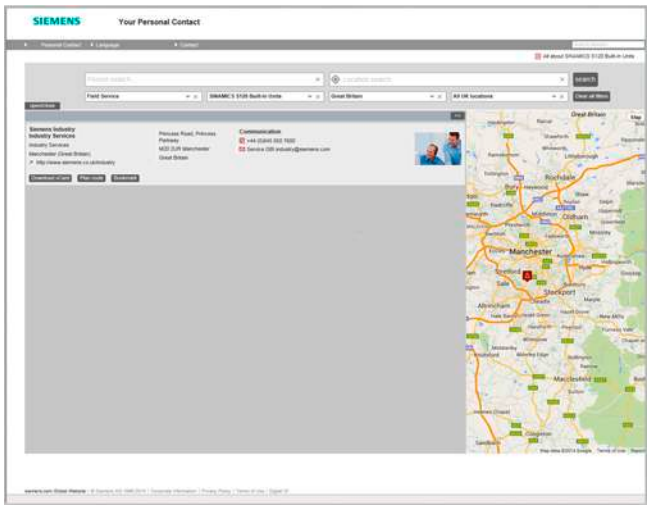
System	Certifier	Basis	Valid until	Location	Language
Quality Management	DQS	ISO 9001	Aug 11, 2017	Amberg Cham Fürth	DE EN
Quality Management	TÜV Rheinland	ISO 9001	Oct 12, 2017	Cabreúva	EN PT
Quality Management	TÜV Rheinland	ISO 9001	Dec 15, 2017	Guadalajara	EN ES
Quality Management	AIB Vincotte	ISO 9001	Mar 9, 2018	Huizingen	EN
Quality Management	BSI	ISO 9001	Jul 29, 2018	Kalwa	EN
Quality Management	TSE	ISO 9001	May 21, 2018	Kartal	EN
Quality Management	TÜV Rheinland	ISO 9001	Oct 12, 2017	Manaus	EN PT
Quality Management	TÜV Rheinland	ISO 9001	Oct 31, 2016	Suzhou	EN CN
Quality Management	TÜV Rheinland	ISO 9001	Sep 14, 2018	Tianjin	EN CN
Quality Management	DQS	ISO 9001	Jul 1, 2017	Trutnov	EN CZ
Quality Management	DQS	ISO 9001	Sep 14, 2018	West Chicago	EN
Environment Management	DQS	ISO 14001	Oct 22, 2018	Amberg Cham	DE EN
Environment Management	TÜV Rheinland	ISO 14001	Oct 12, 2017	Cabreúva	EN PT
Environment Management	Global Standards	ISO 14001	Sep 14, 2018	Guadalajara	EN ES
Environment Management	BSI	ISO 14001	Jun 27, 2018	Kalwa	EN
Environment Management	TSE	ISO 14001	Oct 9, 2017	Kartal	EN
Environment Management	TÜV Rheinland	ISO 14001	Oct 12, 2017	Manaus	EN PT
Environment Management	CEC	ISO 14001	May 11, 2018	Suzhou	EN CN
Environment Management	DQS	ISO 14001	Jul 1, 2017	Trutnov	EN CZ
Environment Management	DQS	ISO 14001	Nov 29, 2016	West Chicago	EN
Health and Safety	DQS	OHSAS 18001	Oct 17, 2016	Amberg Cham	DE EN
Health and Safety	TÜV Rheinland	OHSAS 18001	Oct 12, 2017	Cabreúva	EN PT
Health and Safety	Global Standards	OHSAS 18001	Mar 14, 2019	Guadalajara	EN ES
Health and Safety	BSI	OHSAS 18001	Jun 27, 2018	Kalwa	EN
Health and Safety	TSE	OHSAS 18001	Jun 8, 2018	Kartal	EN
Health and Safety	TÜV Rheinland	OHSAS 18001	Oct 12, 2017	Manaus	EN PT
Health and Safety	CEC	OHSAS 18001	May 25, 2017	Suzhou	EN CN
Health and Safety	DQS	OHSAS 18001	Jul 1, 2017	Trutnov	EN CZ
Health and Safety	DQS	OHSAS 18001	Nov 29, 2016	West Chicago	EN
Integrated Management System	DQS	ISO 9001 ISO 14001 OHSAS 18001	Jul 1, 2017	Trutnov	EN CZ

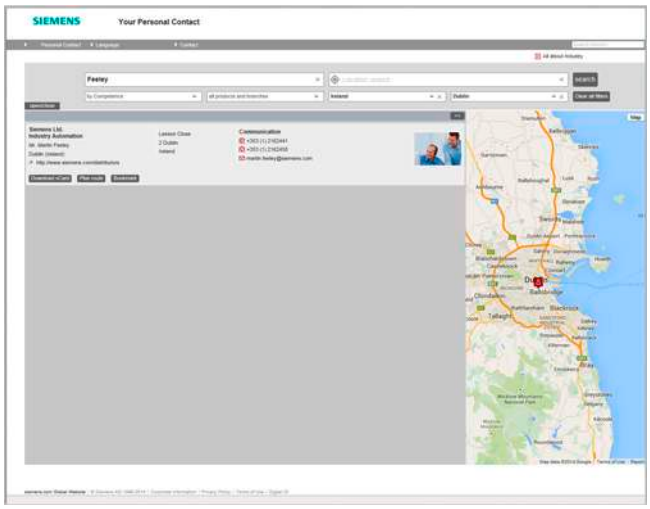
Special Systems	Certifier	Basis	Valid until	Location	Language
Contractor Assessment	E.ON Kernkraft	KTA 1401	Jul 10, 2018	Amberg Cham Trutnov	DE EN
Production Quality Assessment Notification	DEKRA EXAM	ATEX	Apr 4, 2017	Amberg Cham Trutnov	DE EN
Certificate Testing Laboratory	DAkkS	ISO 17025	Oct 14, 2019	Amberg	DE

Partner at Siemens

Overview







At Siemens we are resolutely pursuing the same goal: long-term improvement of your competitive ability.
We are committed to this goal. Thanks to our commitment, we continue to set new standards in automation and drive technology. In all industries – worldwide.

At your service locally, around the globe for consulting, sales, training, service, support, spare parts ... on the entire Digital Factory and Process Industries and Drives.

Your personal contact can be found in our Contacts Database at:
www.siemens.com/automation/partner

You start by selecting

- the required competence,
- products and branches,
- a country,
- a city

or by a

- location search or
- person search.

Overview

Siemens Solution und Approved Partners

Partner Finder

Highest competence in automation and drive technology as well as power distribution

Siemens works closely together with selected partner companies around the world in order to ensure that customer requirements for all aspects of automation and drives, as well as power distribution, are fulfilled as best as possible – wherever you are, and whatever the time. It is for this reason that we systematically train and keep our partners well prepared, in addition to certifying them in specific technologies. It is our declared intention and goal to train and prepare our partners to the same standards as our own employees.

This approach is based on contractually agreed quality criteria as well as optimum support for our partners by providing clearly-defined processes. This ensures that they possess all the qualities to meet customer requirements optimally. The partner emblem is the guarantee and indicator of proven quality.

Solution Partners and Approved Partners

The Siemens Partner Program distinguishes between Solution Partners and Approved Partners.

At present we are working with more than 1,400 Solution Partners worldwide. They represent countless tailored and future-proof automation and drive solutions in the most diverse industries.

With their extensive technical product knowledge, Siemens Approved Partners offer a combination of goods and services that include specialist technologies, customized modifications and the provision of high-quality system and product packages. They also provide qualified technical support and assistance

In the Siemens global Solution Partner program, customers are certain to find the optimum partner for their specific requirements - with no great effort. The Partner Finder is basically a comprehensive database that showcases the profiles of all our solution partners.

Easy selection:
Set filters in the search screen form according to the criteria that are relevant to you. You can also directly enter the name of an existing partner.

Skills at a glance:
Gain a quick insight into the specific competencies of any particular partner with the reference reports.

Direct contact option:
Use our electronic query form:

www.siemens.com/partnerfinder

Additional information on the Siemens Solution Partner Program is available online at:

www.siemens.com/partner-program

External partners

Our partner companies – your partners

- **AXELENT GmbH**
  Tränkestr. 11
  D-70597 Stuttgart
  Tel.: +49 (711) 252 509-12
  Fax.: +49 (711) 252 509-49
  E-mail: sales@axelent.de

- **Hans Georg Brühl GmbH**
  Waldstrasse 63 b
  D-57250 Netphen
  Tel.: +49 (2737) 5934-0
  Fax: +49 (2737) 5919-46
  E-mail: info@schutzeinrichtungen.com

- **EPHY-Mess**
  Gesellschaft für Elektro-Physikalische Messgeräte mbH
  Berta-Cramer-Ring 1
  D-65205 Wiesbaden-Delkenheim
  Tel.: +49 (6122) 9228-0
  Fax: +49 (6122) 9228-99
  E-mail: info@ephy-mess.de
  Internet: www.ephy-mess.de

- **FESTO AG & Co**
  Ruiterstr. 82
  D-73734 Esslingen
  Tel.: +49 (711) 347-0
  Fax: +49 (711) 347-2144
  E-mail: info@festo.de

- **GMC-I Messtechnik GmbH**
  Südwestpark 15
  D-90449 Nürnberg
  Tel.: +49 (911) 8602-111
  Fax: +49 (911) 8602-777
  E-mail: vertrieb@gossenmetrawatt.com

- **Harting Customised Solutions GmbH & Co. KG**
  Simeonscarrè 1
  D-32427 Minden
  Tel.: +49 (5772) 47-0
  Fax: +49 (5772) 47-907711
  E-mail: solution-partner@harting.com
  Internet: www.harting.de

- **KnorrTec**
  Kapellenbergstrasse 34
  D-93176 Beratzhausen
  Tel.: +49 (9493) 951 96 90
  Fax: +49 (9493) 951 96 79
  E-mail: solution-partner@knorrtec.de
  Internet: www.knorrtec.de

- **mdexx GmbH**
  Zeppelinstrasse 30
  D-28844 Weyhe
  Tel.: +49 (421) 5125-0
  Fax: +49 (421) 5125-333
  E-mail: Transformatoren@mdexx.com
  Internet: www.mdexx.com

- **Murrplastik Systemtechnik GmbH**
  Dieselstrasse10
  D-71570 Oppenweiler
  Tel.: +49 (7191) 482-0
  Fax: +49 (7191) 482-280
  E-mail: info@murrplastik.de
  Internet: www.murrplastik.de

- **Weidmüller GmbH & Co. KG**
  Ohmstrasse 9
  D-32758 Detmold
  Tel.: +49 (5231) 1428-0
  Fax: +49 (5231) 1428-116
  E-mail: solution-partner@weidmueller.com

- **WITTWER Industrielle Elektronik**
  Hembacher Str. 4, Postfach 1147
  D-90588 Schwarzenbruck-Lindelburg
  Tel.: +49 (9183) 90 105-0
  Fax: +49 (9183) 90 105-55
  E-mail: info@wittwer.com

The Future of Manufacturing on the Internet

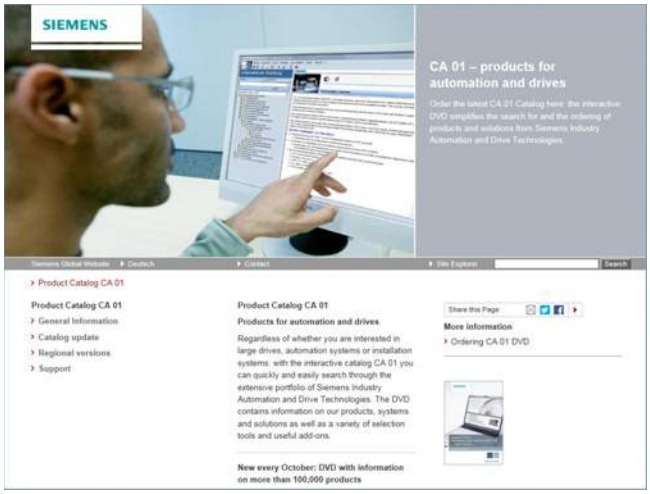
Detailed knowledge of the range of products and services available is essential when planning and engineering automation systems. It goes without saying that this information must always be as up-to-date as possible.

Industry is on the threshold of the fourth industrial revolution as digitization now follows after the automation of production. The goals are to increase productivity and efficiency, speed, and quality. In this way, companies can remain competitive on the path to the future of industry.

You will find everything you need to know about products, systems and services on the internet at:

www.siemens.com/industry

Product Selection Using the Interactive CA 01 Automation and Drives Catalog



Detailed information together with user-friendly interactive functions:
The CA 01 interactive catalog covers more than 100,000 products, thus providing a comprehensive overview of the product range provided by Siemens.

You will find everything you need here for solving tasks in the fields of automation, switching, installation and drives.
All information is provided over a user interface that is both user-friendly and intuitive.

You can order the CA 01 product catalog from your Siemens sales contact or in the Information and Download Center:

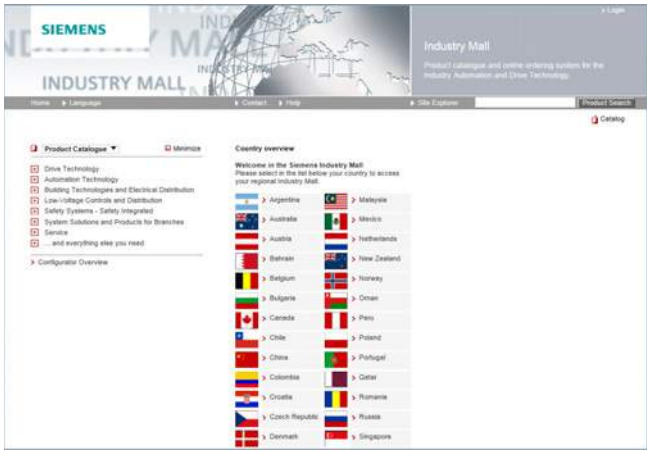
www.siemens.com/industry/infocenter

Information about the CA 01 interactive catalog can be found on the Internet at:

www.siemens.com/automation/ca01

or on DVD.

Easy Shopping with the Industry Mall



The Industry Mall is the electronic ordering platform of Siemens AG on the Internet. Here you have online access to a huge range of products presented in an informative and attractive way.

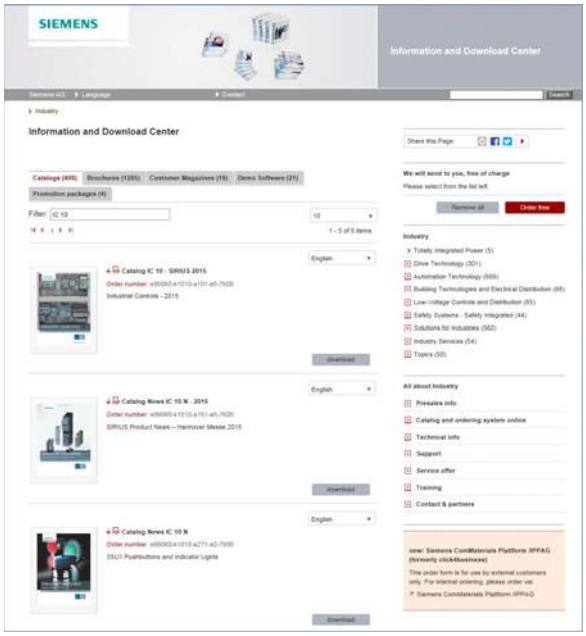
Data transfer via EDIFACT allows the whole procedure, from selection through ordering to tracking and tracing, to be carried out online. Availability checks, customer-specific discounts and bid creation are also possible.

Numerous additional functions are provided for your support. For example, powerful search functions make it easy to select the required products. Configurators enable you to configure complex product and system components quickly and easily. CAx data types are also provided here.

You can find the Industry Mall on the Internet at:

www.siemens.com/industrymall

Downloading Catalogs



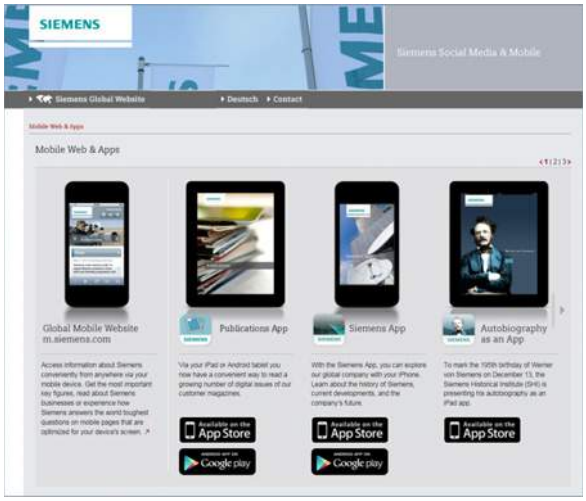
In addition to numerous other useful documents, you can also find the catalogs listed on the back inside cover of this catalog in the Information and Download Center. You can download these catalogs in PDF format without having to register.

The filter dialog above the first catalog displayed makes it possible to carry out targeted searches. If you enter "MD 3" for example, you will find both the MD 30.1 and MD 31.1 catalogs. If you enter "IC 10", both the IC 10 catalog and the associated news or add-ons are displayed.

Visit us at:

www.siemens.com/industry/infocenter

Social and Mobile Media



Connect with Siemens through social media: visit our social networking sites for a wealth of useful information, demos on products and services, the opportunity to provide feedback, to exchange information and ideas with customers and other Siemens employees, and much, much more. Stay in the know and follow us on the ever-expanding global network of social media.

To find out more about Siemens' current social media activities, visit us at:

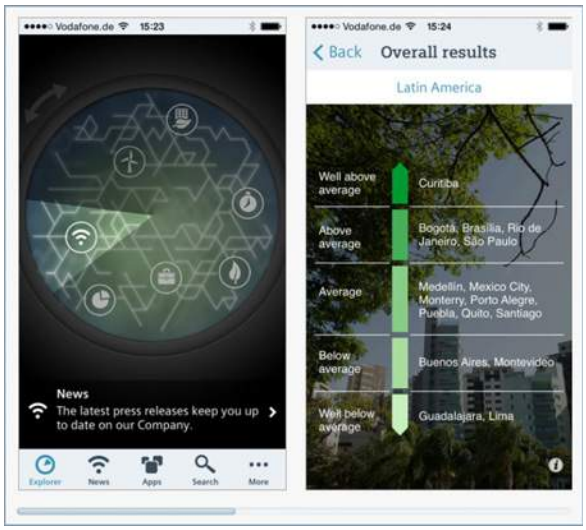
www.siemens.com/socialmedia

Or via our product pages at:

www.siemens.com/automation or www.siemens.com/drives

Connect with Siemens Industry at our central access point to read all the news on the future of manufacturing, watch current videos and inform yourself about all the latest industry developments:

www.siemens.com/future-of-manufacturing



Discover the world of Siemens.

We are also constantly expanding our offering of cross-platform apps for smartphones and tablets. You will find the current Siemens apps at the App Store (iOS) or at Google Play (Android):

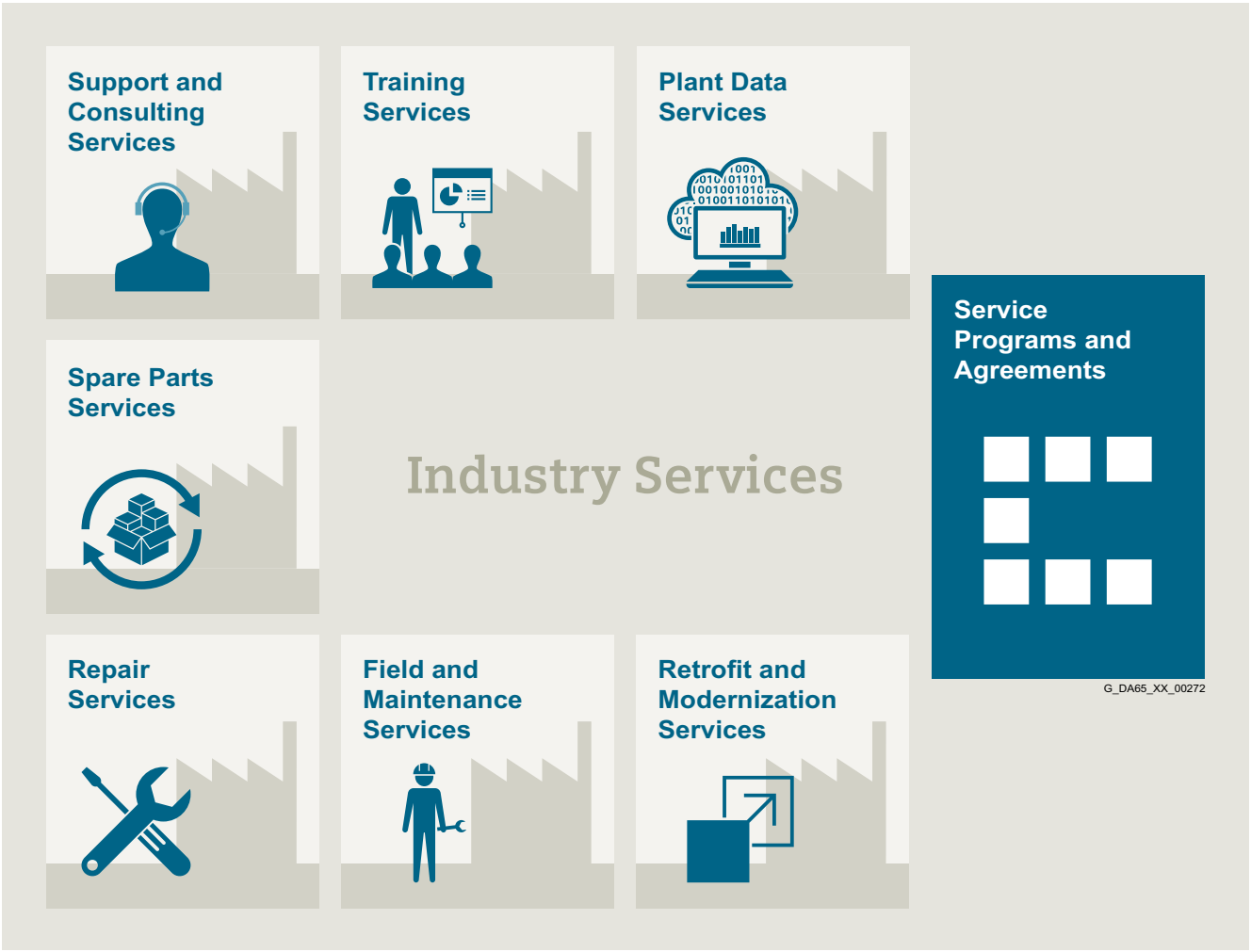
https://itunes.apple.com/en/app/siemens/id452698392?mt=8

https://play.google.com/store/search?q=siemens

The Siemens app, for example, tells you all about the history, latest developments and future plans of the company – with informative pictures, fascinating reports and the most recent press releases.

Overview

Unleash potential – with services from Siemens



Increase your performance – with Industry Services

Optimizing the productivity of your equipment and operations can be a challenge, especially with constantly changing market conditions. Working with our service experts makes it easier. We understand your industry's unique processes and provide the services needed so that you can better achieve your business goals.

You can count on us to maximize your uptime and minimize your downtime, increasing your operations' productivity and reliability. When your operations have to be changed quickly to meet a new demand or business opportunity, our services give you the flexibility to adapt. Of course, we take care that your production is protected against cyber threats. We assist in keeping your operations as energy and resource efficient as possible and reducing your total cost of ownership. As a trendsetter, we ensure that you can capitalize on the opportunities of digitalization and by applying data analytics to enhance decision making: You can be sure that your plant reaches its full potential and retains this over the longer lifespan.

You can rely on our highly dedicated team of engineers, technicians and specialists to deliver the services you need – safely, professionally and in compliance with all regulations. We are there for you, where you need us, when you need us.

Industry Services

Plant Data Services

Make your industrial processes transparent to gain improvements in productivity, asset availability, and energy efficiency.

Production data is generated, filtered and translated with intelligent analytics to enhance decision-making.

This is done whilst taking data security into consideration and with continuous protection against cyber attack threats.

www.industry.siemens.com/services/global/en/portfolio/plant-data-services/Pages/index.aspx

Support and Consulting Services

Industry Online Support site for comprehensive information, application examples, FAQs and support requests.

Technical and Engineering Support for advice and answers for all inquiries about functionality, handling, and fault clearance.

Information & Consulting Services, e.g. SIMATIC System Audit; clarity about the state and service capability of your automation system or Lifecycle Information Services; transparency on the lifecycle of the products in your plants.

www.industry.siemens.com/services/global/en/portfolio/support-consulting/Pages/index.aspx

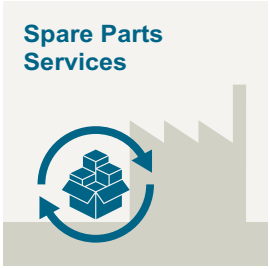
Training Services

From the basics and advanced to specialist skills, SITRAIN courses provide expertise right from the manufacturer – and encompass the entire spectrum of Siemens products and systems for the industry.

Worldwide, SITRAIN courses are available wherever you need a training course in more than 170 locations in over 60 countries.

www.industry.siemens.com/services/global/en/portfolio/training/Pages/index.aspx

Spare Parts Services



Are available worldwide for smooth and fast supply of spare parts – and thus optimal plant availability. Genuine spare parts are available for up to ten years. Logistic experts take care of procurement, transport, custom clearance, storage and order management. Reliable logistics processes ensure that components reach their destination as needed.

Asset optimization services help you design a strategy for parts supply where your investment and carrying costs are reduced and the risk of obsolescence is avoided.

www.industry.siemens.com/services/global/en/portfolio/spare_parts/Pages/index.aspx

Are offered on-site and in regional repair centers for fast restoration of faulty devices' functionality.

Also available are extended repair services, which include additional diagnostic and repair measures, as well as emergency services.

www.industry.siemens.com/services/global/en/portfolio/repair_services/Pages/index.aspx

Provide a cost-effective solution for the expansion of entire plants, optimization of systems or upgrading existing products to the latest technology and software, e.g. migration services for automation systems.

Service experts support projects from planning through commissioning and, if desired over the entire extended lifespan, e.g. Retrofit for Integrated Drive Systems for an extended lifetime of your machines and plants

www.industry.siemens.com/services/global/en/portfolio/retrofit-modernization/Pages/index.aspx

Siemens specialists are available globally to provide expert field and maintenance services, including commissioning, functional testing, preventive maintenance and fault clearance.
All services can be included in customized service agreements with defined reaction times or fixed maintenance intervals.

www.industry.siemens.com/services/global/en/portfolio/field_service/Pages/index.aspx

A technical Service Program or Agreement enables you to easily bundle a wide range of services into a single annual or multi-year agreement.

You pick the services you need to match your unique requirements or fill gaps in your organization's maintenance capabilities.
Programs and agreements can be customized as KPI-based and/or performance-based contracts.

www.industry.siemens.com/services/global/en/portfolio/service_programs/Pages/index.aspx

Online Support

Overview

Online Support is a comprehensive information system for all questions relating to products, systems, and solutions that Siemens has developed for industry over time. With more than 300,000 documents, examples and tools, it offers users of automation and drive technology a way to quickly find up-to-date information. The 24-hour service enables direct, central access to detailed product information as well as numerous solution examples for programming, configuration and application.

The content, in six languages, is increasingly multimedia-based – and now also available as a mobile app. Online support's "Technical Forum" offers users the opportunity to share information with each other. The "Support Request" option can be used to contact Siemens' technical support experts.
The latest content, software updates, and news via newsletters and Twitter ensure that industry users are always up to date.

www.siemens.com/industry/onlinesupport

Online Support App

Using the Online Support app, you can access over 300,000 documents covering all Siemens industrial products – anywhere, any time. Regardless of whether you need help implementing your project, fault-finding, expanding your system or are planning a new machine.

You have access to FAQs, manuals, certificates, characteristic curves, application examples, product notices (e.g. announcements of new products) and information on successor products in the event that a product is discontinued.

Just scan the product code printed on the product directly using the camera of your mobile device to immediately see all technical information available on this product at a glance.
The graphical CAx information (3D model, circuit diagrams or EPLAN macros) is also displayed. You can forward this information to your workplace using the e-mail function.

The search function retrieves product information and articles and supports you with a personalized suggestion list. You can find your favorite pages – articles you need frequently – under "mySupport". You also receive selected news on new functions, important articles or events in the News section.

Scan the QR code for information on our Online Support app.

The app is available free of charge from the Apple App Store (iOS) or from Google Play (Android).

https://support.industry.siemens.com/cs/ww/en/sc/2067

Overview

Software types

Software requiring a license is categorized into types.
The following software types have been defined:

- Engineering software
- Runtime software

Engineering software

This includes all software products for creating (engineering) user software, e.g. for configuring, programming, parameterizing, testing, commissioning or servicing.

Data generated with engineering software and executable programs can be duplicated for your own use or for use by third-parties free-of-charge.

Runtime software

This includes all software products required for plant/machine operation, e.g. operating system, basic system, system expansions, drivers, etc.

The duplication of the runtime software and executable programs created with the runtime software for your own use or for use by third-parties is subject to a charge.

You can find information about license fees according to use in the ordering data (e.g. in the catalog). Examples of categories of use include per CPU, per installation, per channel, per instance, per axis, per control loop, per variable, etc.

Information about extended rights of use for parameterization/configuration tools supplied as integral components of the scope of delivery can be found in the readme file supplied with the relevant product(s).

License types

Siemens Industry Automation & Drive Technologies offers various types of software license:

- Floating license
- Single license
- Rental license
- Rental floating license
- Trial license
- Demo license
- Demo floating license

Floating license

The software may be installed for internal use on any number of devices by the licensee. Only the concurrent user is licensed. The concurrent user is the person using the program. Use begins when the software is started.
A license is required for each concurrent user.

Single license

Unlike the floating license, a single license permits only one installation of the software per license.

The type of use licensed is specified in the ordering data and in the Certificate of License (CoL). Types of use include for example per instance, per axis, per channel, etc.

One single license is required for each type of use defined.

Rental license

A rental license supports the "sporadic use" of engineering software. Once the license key has been installed, the software can be used for a specific period of time (the operating hours do not have to be consecutive).
One license is required for each installation of the software.

Rental floating license

The rental floating license corresponds to the rental license, except that a license is not required for each installation of the software. Rather, one license is required per object (for example, user or device).

Trial license

A trial license supports "short-term use" of the software in a non-productive context, e.g. for testing and evaluation purposes. It can be transferred to another license.

Demo license

The demo license support the "sporadic use" of engineering software in a non-productive context, for example, use for testing and evaluation purposes. It can be transferred to another license. After the installation of the license key, the software can be operated for a specific period of time, whereby usage can be interrupted as often as required.

One license is required per installation of the software.

Demo floating license

The demo floating license corresponds to the demo license, except that a license is not required for each installation of the software. Rather, one license is required per object (for example, user or device).

Certificate of license (CoL)

The CoL is the licensee's proof that the use of the software has been licensed by Siemens. A CoL is required for every type of use and must be kept in a safe place.

Downgrading

The licensee is permitted to use the software or an earlier version/release of the software, provided that the licensee owns such a version/release and its use is technically feasible.

Delivery versions

Software is constantly being updated.
The following delivery versions

- PowerPack
- Upgrade

can be used to access updates.

Existing bug fixes are supplied with the ServicePack version.

PowerPack

PowerPacks can be used to upgrade to more powerful software. The licensee receives a new license agreement and CoL (Certificate of License) with the PowerPack. This CoL, together with the CoL for the original product, proves that the new software is licensed.
A separate PowerPack must be purchased for each original license of the software to be replaced.

Upgrade

An upgrade permits the use of a new version of the software on the condition that a license for a previous version of the product is already held.
The licensee receives a new license agreement and CoL with the upgrade. This CoL, together with the CoL for the previous product, proves that the new version is licensed.
A separate upgrade must be purchased for each original license of the software to be upgraded.

Software licenses

ServicePack

ServicePacks are used to debug existing products. ServicePacks may be duplicated for use as prescribed according to the number of existing original licenses.

License key

Siemens Industry Automation & Drive Technologies supplies software products with and without license keys.

The license key serves as an electronic license stamp and is also the "switch" for activating the software (floating license, rental license, etc.).

The complete installation of software products requiring license keys includes the program to be licensed (the software) and the license key (which represents the license).

Software Update Service (SUS)

As part of the SUS contract, all software updates for the respective product are made available to you free of charge for a period of one year from the invoice date. The contract will automatically be extended for one year if it is not canceled three months before it expires.

The possession of the current version of the respective software is a basic condition for entering into an SUS contract.

You can download explanations concerning license conditions from www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

A

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Overview

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Conditions of sale and delivery

1. General Provisions

By using this catalog you can acquire hardware and software products described therein from Siemens AG subject to the following Terms and Conditions of Sale and Delivery (hereinafter referred to as "T&C"). Please note that the scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity. The following T&C apply exclusively for orders placed with Siemens Aktiengesellschaft, Germany.

1.1 For customers with a seat or registered office in Germany

For customers with a seat or registered office in Germany, the following applies subordinate to the T&C:

- the "General Terms of Payment"[1] and,
- for software products, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or Registered Office in Germany"[1] and,
- for other supplies and services, the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"[1].

1.2 For customers with a seat or registered office outside Germany

For customers with a seat or registered office outside Germany, the following applies subordinate to the T&C:

- the "General Terms of Payment"[1] and,
- for software products, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or Registered Office outside of Germany"[1] and
- for other supplies and/or services, the "General Conditions for Supplies of Siemens Industry for Customers with a Seat or Registered Office outside of Germany"[1].

2. Prices

The prices are in € (Euro) ex point of delivery, exclusive of packaging.

The sales tax (value added tax) is not included in the prices. It shall be charged separately at the respective rate according to the applicable statutory legal regulations.

Prices are subject to change without prior notice. We will charget the prices valid at the time of delivery.

To compensate for variations in the price of raw materials (e.g. silver, copper, aluminum, lead, gold, dysprosium and neodym), surcharges are calculated on a daily basis using the so-called metal factor for products containing these raw materials. A surcharge for the respective raw material is calculated as a supplement to the price of a product if the basic official price of the raw material in question is exceeded.

The metal factor of a product indicates the basic official price (for those raw materials concerned) as of which the surcharges on the price of the product are applied, and with what method of calculation.

An exact explanation of the metal factor can be downloaded at:

www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

To calculate the surcharge (except in the cases of dysprosium and neodym), the official price from the day prior to that on which the order was received or the release order was effected is used.

To calculate the surcharge applicable to dysprosium and neodym ("rare earths"), the corresponding three-month basic average price in the quarter prior to that in which the order was received or the release order was effected is used with a one-month buffer (details on the calculation can be found in the explanation of the metal factor).

3. Additional Terms and Conditions

The dimensions are in mm. In Germany, according to the German law on units in measuring technology, data in inches apply only to devices for export.

Illustrations are not binding.

Insofar as there are no remarks on the individual pages of this catalog - especially with regard to data, dimensions and weights given - these are subject to change without prior notice.

4. Export regulations

We shall not be obligated to fulfill any agreement if such fulfillment is prevented by any impediments arising out of national or international foreign trade or customs requirements or any embargoes and/or other sanctions.

Export of goods listed in this catalog may be subject to licensing requirements. We will indicate in the delivery details whether licenses are required under German, European and US export lists. Goods labeled with "AL" not equal to "N" are subject to European or German export authorization when being exported out of the EU. Goods labeled with "ECCN" not equal to "N" are subject to US re-export authorization.

The export indications can be viewed in advance in the description of the respective goods on the Industry Mall, our online catalog system. Only the export labels "AL" and "ECCN" indicated on order confirmations, delivery notes and invoices are authoritative.

Even without a label, or with label "AL:N" or "ECCN:N", authorization may be required i .a. due to the final disposition and intended use of goods.

If you transfer goods (hardware and/or software and/or technology as well as corresponding documentation, regardless of the mode of provision) delivered by us or works and services (including all kinds of technical support) performed by us to a third party worldwide, you must comply with all applicable national and international (re-)export control regulations.

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The products listed in this catalog may be subject to European/German and/or US export regulations. Any export requiring approval is therefore subject to authorization by the relevant authorities.

Errors excepted and subject to change without prior notice.

[1] The text of the Terms and Conditions of Siemens AG can be downloaded at www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

Notes

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