

Load Feeders and Motor Starters for Use in the Control Cabinet

6

6



	Price Groups PG 041, 101, 121, 143, 191, 230, 231, 241, 250, 260, 2AP, 2F0, 471, 473, 574, 5K2, 5N2, 701, 815, 816,		ET 200S Motor Starters and Safety Motor Starters
6/2	Introduction	6/81	General data
	SIRIUS 3RA2 Load Feeders new	6/85	Standard motor starters
6/4	General data	6/86	Standard terminal modules
6/16	<u>3RA21 Direct-On-Line Starters</u>	6/88	High-Feature motor starters
6/20	For snapping onto standard mounting rails or for screw fixing	6/89	High-Feature terminal modules
6/20	For 60 mm busbar systems	6/90	Power modules
6/24	<u>3RA22 Reversing Starters</u>	6/91	Power module terminal modules
6/24	For snapping onto standard mounting rails or for screw fixing	6/92	ET 200S Failsafe motor starters
6/28	For 60 mm busbar systems	6/94	Failsafe terminal modules
6/32	Accessories	6/95	Safety modules local and PROFIsafe
6/40	3RV29 infeed system for load feeders	6/103	Safety modules local and PROFIsafe terminal modules
	SIRIUS 3RA1 Load Feeders	6/105	Accessories
6/41	General data	6/109	ET 200S – interface modules
6/46	<u>3RA11 Direct-on-Line Starters</u>	6/116	ET 200S – I/O modules
6/47	For snapping onto standard mounting rails or for screw fixing	6/126	ET 200S – Failsafe I/O modules
6/47	For busbar systems	6/129	ET 200S – IO-Link master modules
6/48	<u>3RA12 Reversing Starters</u>	6/130	ET 200S software
6/48	For snapping onto standard mounting rails or for screw fixing		More technical information
6/49	For busbar systems		can be found at
6/50	Accessories		www.siemens.com/industrial-controls/support
6/54	SENTRON 8US busbar systems		under Product List:
	SIRIUS 3RA6 Compact Starters		- Technical specifications
6/55	General data		under Entry List:
6/63	<u>3RA61, 3RA62 Compact Starters</u>		- Updates
6/64	3RA61 direct-on-line starters		- Downloads
6/64	3RA62 reversing starters		- FAQ
6/65	<u>3RA64, 3RA65 Compact Starters for IO-Link</u>		- Manuals
6/65	3RA64 direct-on-line starters		- Characteristics
6/66	3RA65 reversing starters		- Certificates
6/67	Accessories		and at
6/73	Add-on modules for AS-Interface new		www.siemens.com/industrial-controls/configurators
6/75	Infeed systems for 3RA6		- Configurators

Note:

The 3RA1 load feeders (sizes S00/S0 to S12) can be found

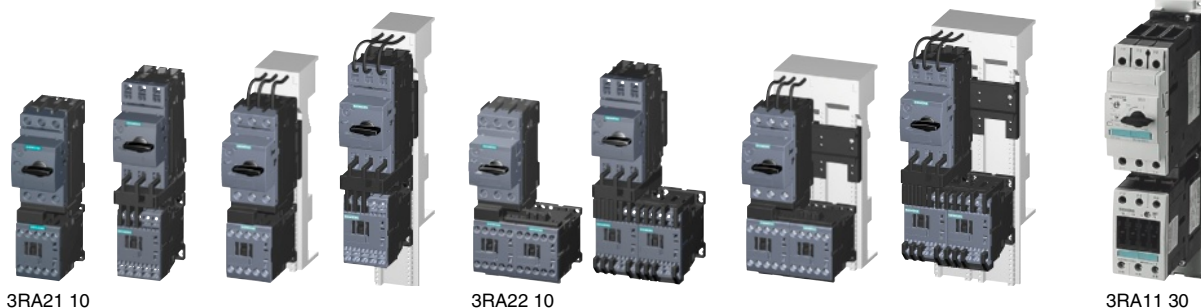
- In the catalog Add-On LV 1 AO · 2011 in the CD/DVD box
- In the catalog Add-On LV 1 AO · 2011 at the Information and Download Center
- In the interactive catalog CA 01
- In the Industry Mall

Load Feeders and Motor Starters

For Use in the Control Cabinet

Introduction

Overview



3RA21 10

3RA22 10

3RA11 30

Order No.	Page
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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).
- 2 sizes (S00, S0)
- Can be supplied for direct-on-line start or reversing duty as
 - Complete unit or
 - 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

6/16

3RA21 direct-on-line starters for 60 mm busbars

- Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC

3RA21

6/20

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

3RA2

6/24

3RA22 reversing starters for 60 mm busbars

- Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC

3RA22

6/28

SIRIUS 3RA1 load feeders

- The 3RA1 fuseless load feeders consist of the 3RV1 motor starter protector and the 3RT1 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).
- 2 sizes (S2, S3)
- Can be supplied for direct-on-line start or reversing duty as
 - Complete unit or
 - Devices for self-assembly
- Can be supplied with screw terminals

3RA11 direct-on-line starters for snapping onto standard mounting rails or for screw fixing

- Rated control supply voltage 230 V AC, 50 Hz and 24 V DC for 35 mm standard mounting rail or for screw fixing

3RA11 30

6/46

3RA11 direct-on-line starters for busbar systems

- Rated control supply voltage 230 V AC, 50 Hz and 24 V DC for 40 and 60 mm busbar systems

Only for self-assembly

6/47

3RA12 reversing starters for snapping onto standard mounting rails or for screw fixing

- Rated control supply voltage 230 V AC, 50 Hz and 24 V DC for 35 mm standard mounting rail or for screw fixing

Only for self-assembly

6/48

3RA12 reversing starters for busbar systems

- Rated control supply voltage 230 V AC, 50 Hz and 24 V DC for 40 and 60 mm busbar systems

Only for self-assembly

6/49

Load Feeders and Motor Starters

For Use in the Control Cabinet

Introduction



3RA61



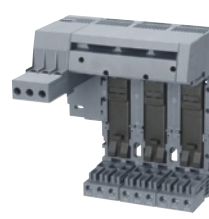
3RA62



3RA64



3RA65



3RA68



3RK1 301

SIRIUS 3RA6 compact starters

	<ul style="list-style-type: none"> Integrated functionality of a circuit breaker, contactor and solid-state overload relay and various functions of optional mountable accessories Usable for direct starting of standard induction motors up to 32 A 		
3RA61 direct-on-line starters	Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	3RA61	6/63
3RA62 reversing starters	Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	3RA62	6/64
3RA64 direct-on-line starters for IO-Link	Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	3RA64	6/65
3RA65 reversing starters for IO-Link	Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	3RA65	6/66
Accessories for 3RA6 direct-on-line and reversing starters		3RA69	6/67
Add-on modules for AS-Interface		3RA69	6/73
Infeed systems for 3RA6	Modular expandability, up to 100 A, terminals up to 70 mm ²	3RA68	6/75

ET 200S motor starters and safety motor starters

ET 200S motor starters	Completely factory-wired motor starters for switching and protecting any AC loads, optionally as direct-on-line, reversing or soft starters		6/81
<ul style="list-style-type: none"> Standard motor starters High-feature motor starters 		3RK1 301	6/85
		3RK1 301	6/88
Power modules for ET 200S motor starters	For supplying and monitoring the auxiliary voltages for motor starters	3RK1 903-0BA00	6/90
ET 200S Failsafe motor starters	High-Feature direct-on-line and reversing starters	3RK1 301	6/92
Terminal modules for ET 200S motor starters	Mechanical modules in which the motor starter and expansion modules are inserted	3RK1 903	
<ul style="list-style-type: none"> Standard terminal modules High-feature terminal modules Failsafe terminal modules Power Module Terminal Modules Safety modules local and PROFIsafe terminal modules 			6/86 6/89 6/94 6/91 6/103
Safety modules local	For safety category 4 acc. to EN 954-1	3RK1 903	6/95
Safety modules PROFIsafe	Sensor and actuator assignment are freely configurable (distributed safety concept)	3RK1 903	6/95
ET 200S – interface modules	Interface modules <ul style="list-style-type: none"> With CPU With failsafe CPU Without CPU 	6ES7 6AG1	6/109
ET 200S – I/O modules	<ul style="list-style-type: none"> Power modules, reserve modules, potential distributor modules, digital/analog solid-state modules Technology modules: SSI modules, 2 PULSE pulse generators, 1 STEP step modules, positioning modules, counter modules, 1 SI interface modules, SIWAREX CS, SIMAREX CF, terminal modules for power and solid-state modules, 4 IQ-Sense and 8 IQ-Sense sensor modules 	6ES7 6AG1 7MH4	6/116
ET 200S – failsafe I/O modules	F power and F solid-state modules, F terminal modules	6ES7 6AG1	6/126
ET 200S – IO-Link master modules	IO-Link 4SI and SIRIUS 4SI electronic modules	6ES7 3RK1	6/129

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 Chapter 4 "Soft Starters and Solid-State Switching Devices" -> "SIRIUS 3RW Soft Starters").

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Overview

3RA2 fuseless load feeders

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 of these innovative 3RT2 controls and 3RV2 protection equipment can be ordered for direct-on-line and reversing starting of standard induction motors up to 32 A (approx. 15 kW/400 V).

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 153 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 32 A in sizes S00 and S0:

Size	Width Direct-on-line starters/ reversing starters	Max. rated current $I_{n \max}$	For induction motors up to
	mm	A	kW
S00	45/90	16	7.5
S0	45/90	32	15

The size of the 3RA2 load feeders is based on the size of the contactor:

Size 3RA2	S00	S0
Size of 3RV2 motor starter protector	S00	S00 ¹⁾ , S0
Size of 3RT2 contactor	S00	S0

¹⁾ The combination of an S00 motor starter protector with an S0 contactor is possible only for screw connection versions.

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 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.

TCC
1

Type of coordination "1"

The fuseless load feeder may be non-operational after a short-circuit has been cleared. Damage to the contactor or to the overload release is permissible. For 3RA2 load feeders, the motor starter protector itself always achieves type of coordination "2".

TCC
2

Type of coordination "2"

There must be no damage to the overload release or to any other component after a short-circuit has been cleared. The 3RA2 fuseless 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 connection. To connect two devices with spring-type connection 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 connection to a contactor with spring-type connection there are special hybrid connection modules for S00 and S0.



Screw terminals



Spring-type terminals

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

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.

There are control supply voltages available of 50/60 Hz 230 V AC and 24 V DC.

A distinction is also drawn between whether the feeder is mounted on a 35 mm standard mounting rail, on a flat surface using screws, or on a 60 mm busbar system.

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. They include the top-connected, transverse auxiliary switch on the motor starter protector, which is available with 1 CO contact or 1 NO contact + 1 NC contact. 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.

Power infeed

On the whole four different infeed possibilities are available (see [3RV29 Infeed System for Load Feeders on page 6/40](#)).

Customer assembly of fuseless load feeders

While the preassembled 3RA2 load feeds can be ordered up to 32 A, combinations up to 40 A (approx. 18.5 kW/400 V) are possible for customer assembly.

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".

For assembly kits for direct-on-line starting or reversing duty for mounting on standard mounting rails or busbars see "Selection and Ordering Data" at "Accessories".

For reversing starters size S0 it is imperative to use a standard mounting rail adapter in order to ensure the necessary mechanical strength. A standard mounting rail adapter is not necessary if a busbar adapter is used.

The 3RA1 fuseless load feeders can be used for fuseless load feeders between 32 and 100 A.

The SENTRON 3VL circuit breakers and the 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 (see preassembled 3RA2 combinations)
- Wye-delta starting (only customer assembly with link module)
- Solid-state/soft starting (only customer assembly with link module)

For more information and assignment tables for combinations of the 3RA2 generation for self-assembly see the configuration manual (can be ordered, see page 6/39).

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

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 communication-capable contactor onto which a 3RA27 11 function module is plugged (various versions for direct-on-line, reversing and wye-delta starts). The design of the SIRIUS load feeders permits a group of up to 4 SIRIUS controls to be conveniently connected through the standardized, open IO-Link system to a control system, thus reducing wiring work 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 Chapter 2 "Industrial Communication"
- For 3RA27 function modules see Chapter 3 "Controls – Contactors and Contactor Assemblies" --> "Function Modules".

Communications integration through 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. This solution also requires a communication-capable contactor and a corresponding 3RA27 12 function module (various versions for direct-on-line, reversing and wye-delta starts). The devices are implemented in A/B technology, making it easy to connect up to 62 feeders to an AS-Interface 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 Chapter 2 "Industrial Communication"
- For 3RA27 function modules see Chapter 3 "Controls – Contactors and Contactor Assemblies" --> "Function Modules".

Contactors with communication interface

Contactors with a communication interface are required for constructing load feeders with a communications interface (AS-Interface or IO-Link). These contactors are not included as standard in the preassembled 3RA2 load feeders. A load feeder with communications 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-Interface, 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 mounting onto TH 35 standard mounting rails according to EN 60715 (depth 15 mm)
- For mounting onto busbar adapters (busbar center-to-center clearance 60 mm, bar thickness 5 to 10 mm with chamfered edges)

The fuseless load feeders are also suitable for screw fixing using two 3RV29 28-0B push-in lugs.

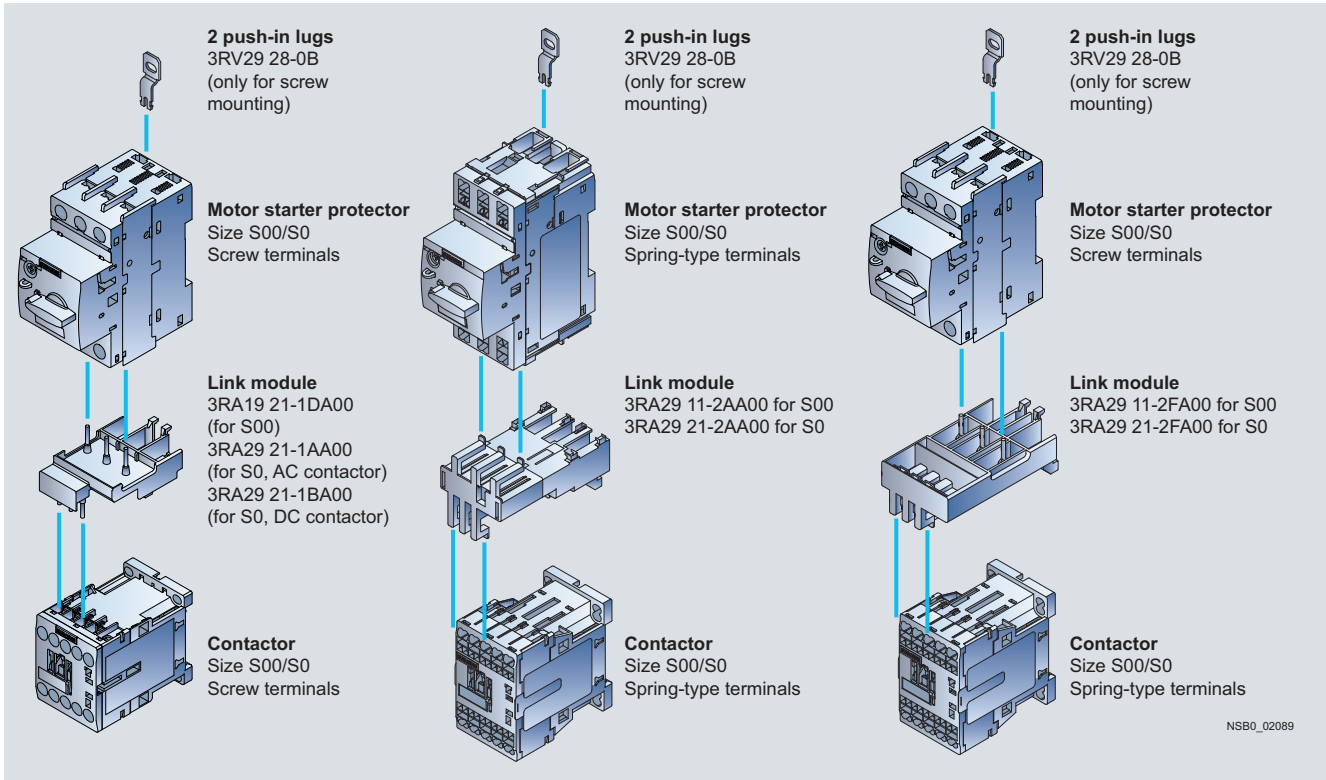
The 3RA2 fuseless load feeders can also be configured with the 3RV29 infeed system (see Chapter 5 "Protection Equipment" --> "SIRIUS 3RV2 Motor Starter Protectors up to 40 A" --> "Accessories" --> "3RV29 Infeed Systems").

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

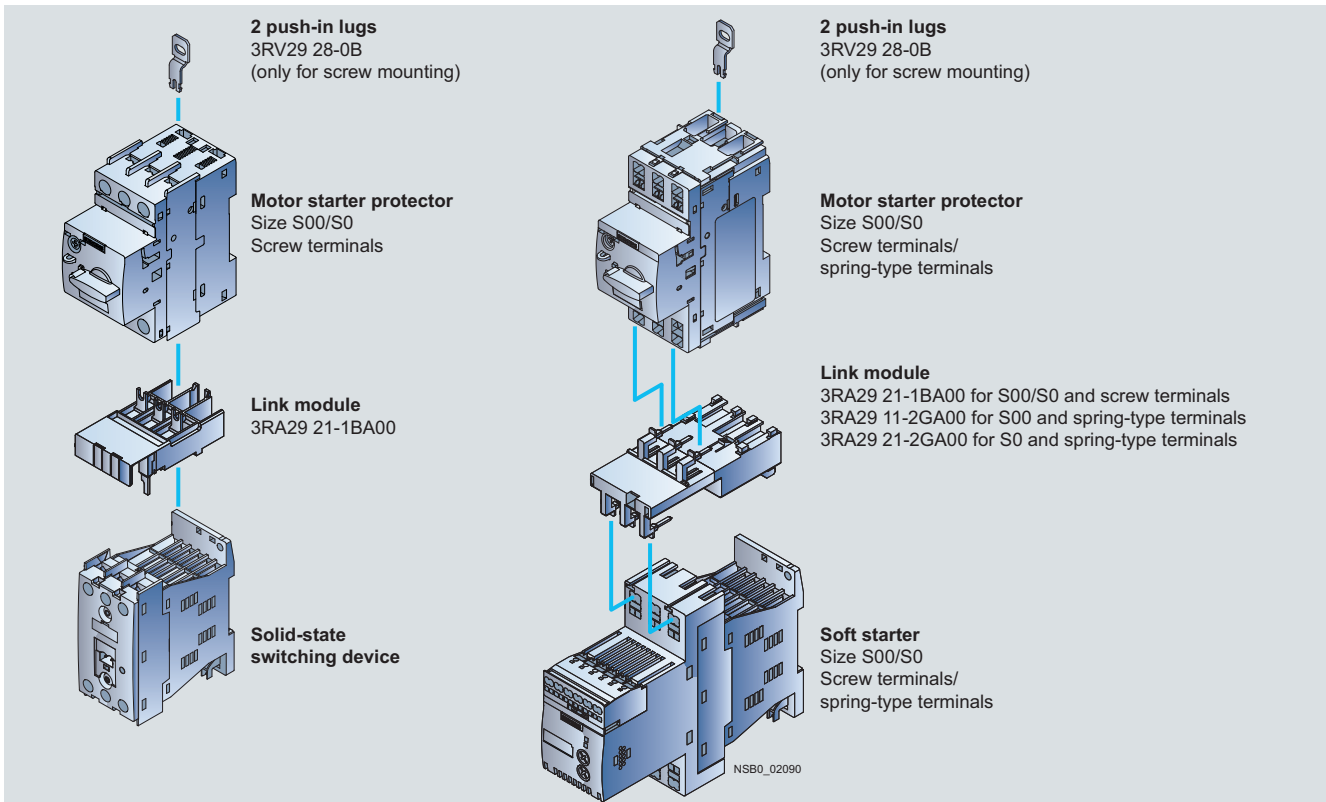
Direct-on-line starting • For standard rail mounting or screw fixing • Sizes S00 and S0



Left: 3RA21 load feeder with screw terminals

Center: 3RA21 load feeder with spring-type terminals

Right: Motor starter protector combination with screw connection, with contactor with spring-type connection



Left: Motor starter protector combination with solid-state switching device with screw connection

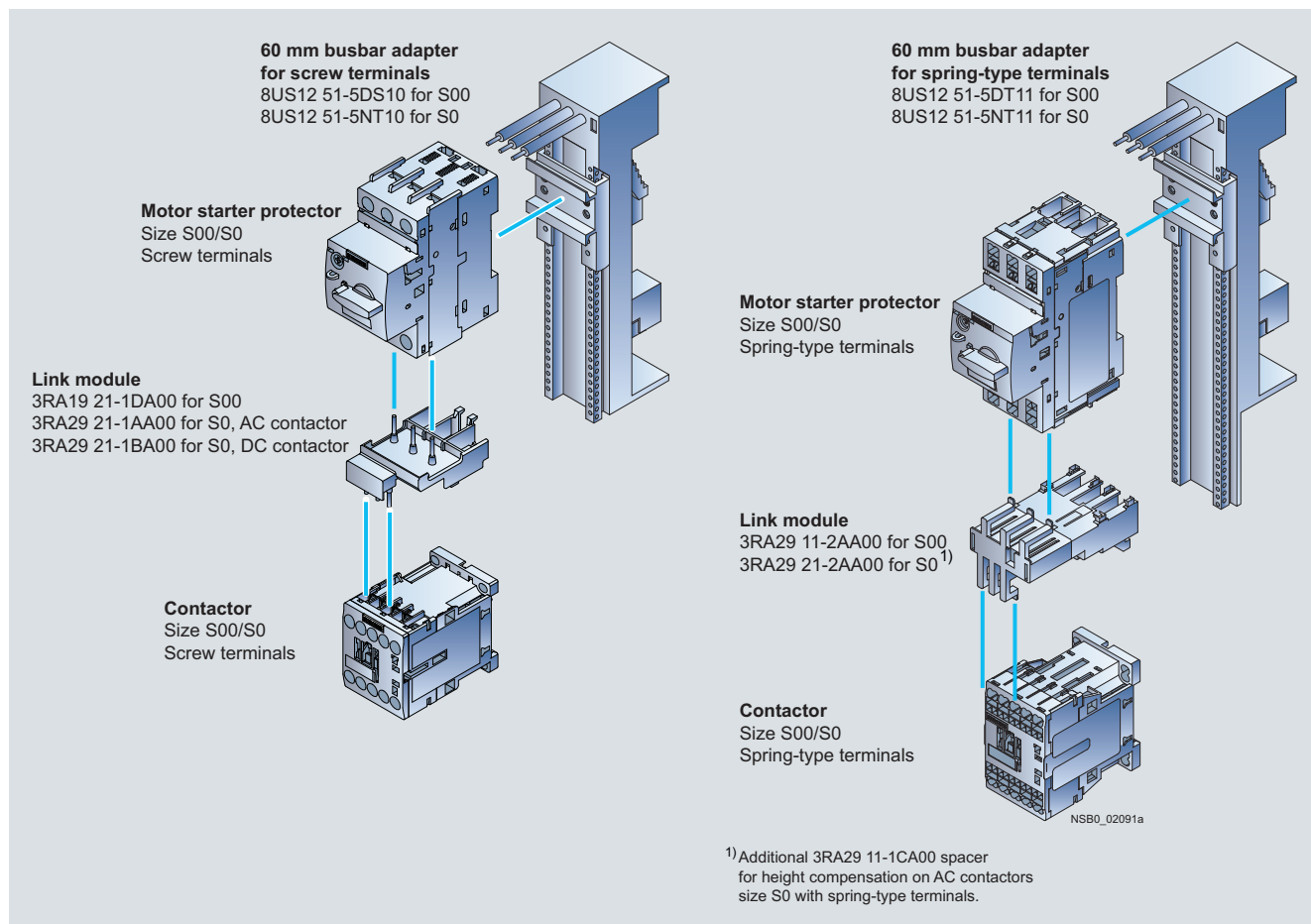
Right: Motor starter protector combination with soft starter with spring-type connection

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Direct-on-line starting • For 60 mm busbar systems • Sizes S00 and S0



Left: 3RA21 load feeder for direct-on-line starting with busbar adapters with screw terminals

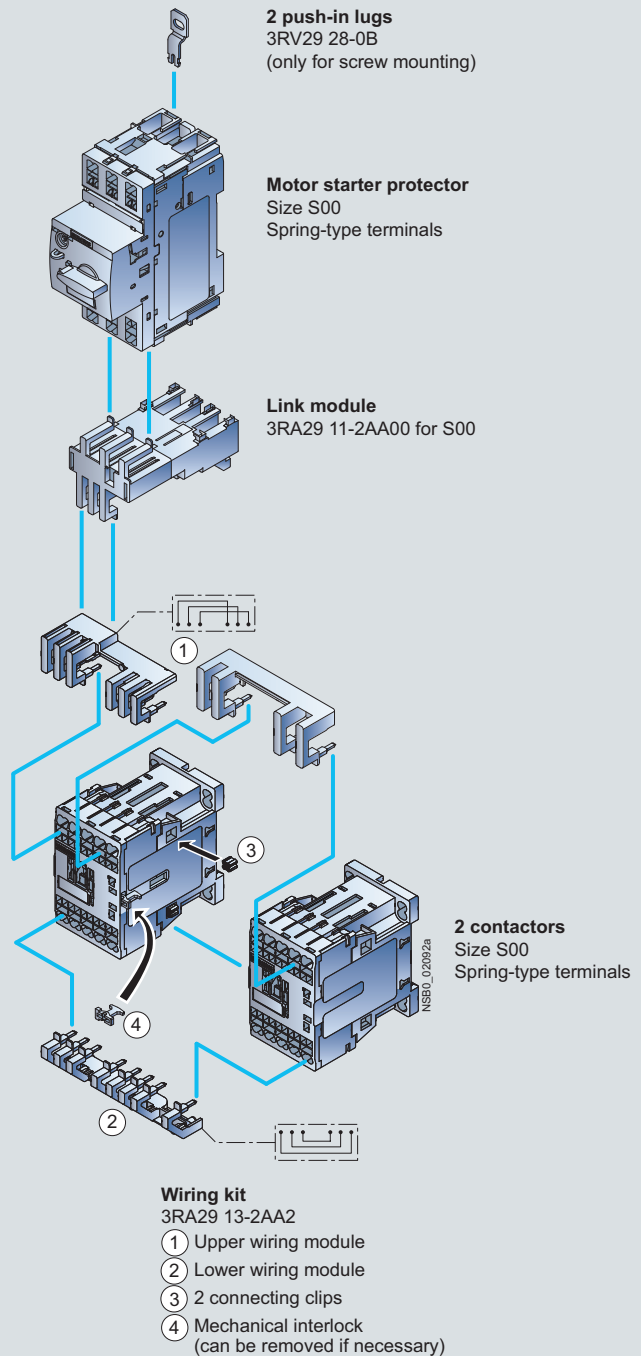
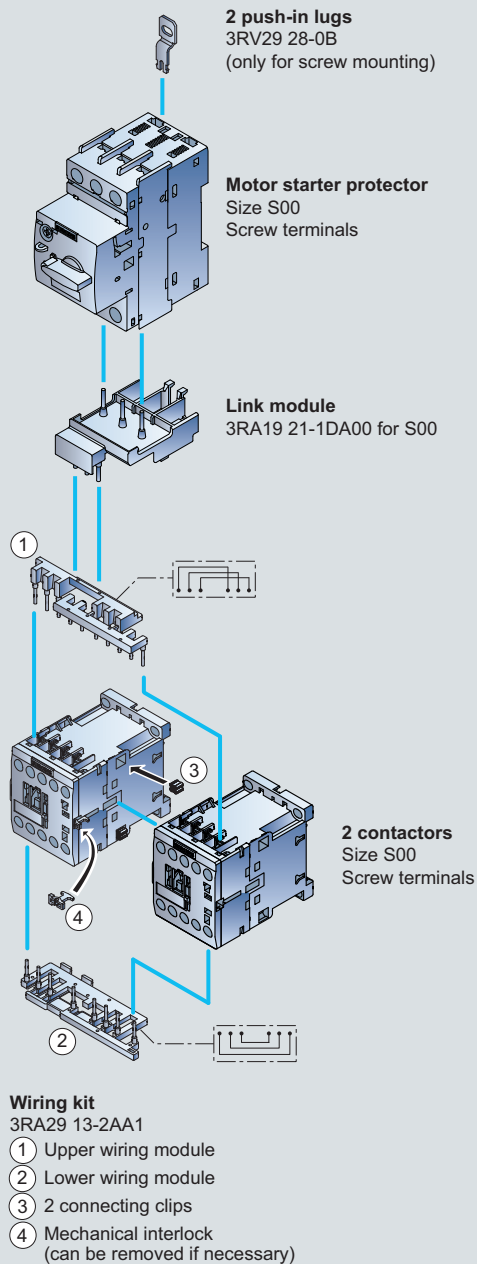
Right: 3RA21 load feeder for direct-on-line starting with busbar adapters with spring-type terminals

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Reversing duty • For standard rail mounting or screw mounting • Size S00



Left: 3RA22 load feeder with screw terminals, push-in lugs, 2 contactors for reversing duty and 3RA29 13-2AA1 wiring kit for connecting the contactors (incl. mechanical interlocking and connecting clips)

Right: 3RA22 load feeder with spring-type terminals, push-in lugs, 2 contactors for reversing duty and 3RA29 13-2AA2 wiring kit (incl. mechanical interlocking and connecting clips)

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Reversing duty • For standard rail mounting • Size S0

RH assembly kit for reversing duty and standard rail mounting in size S0

For screw terminals:

3RA29 23-1BB1

For spring-type terminals:

3RA29 23-1BB2¹⁾

Comprising:

- 1 wiring kit
- 2 standard mounting rail adapters
- 2 connecting wedges

¹⁾Also includes 3RA29 11-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals.

Motor starter protector

Size S0

Screw terminals/
spring-type terminals

Link module

For screw terminals:

3RA29 21-1AA00 (AC)

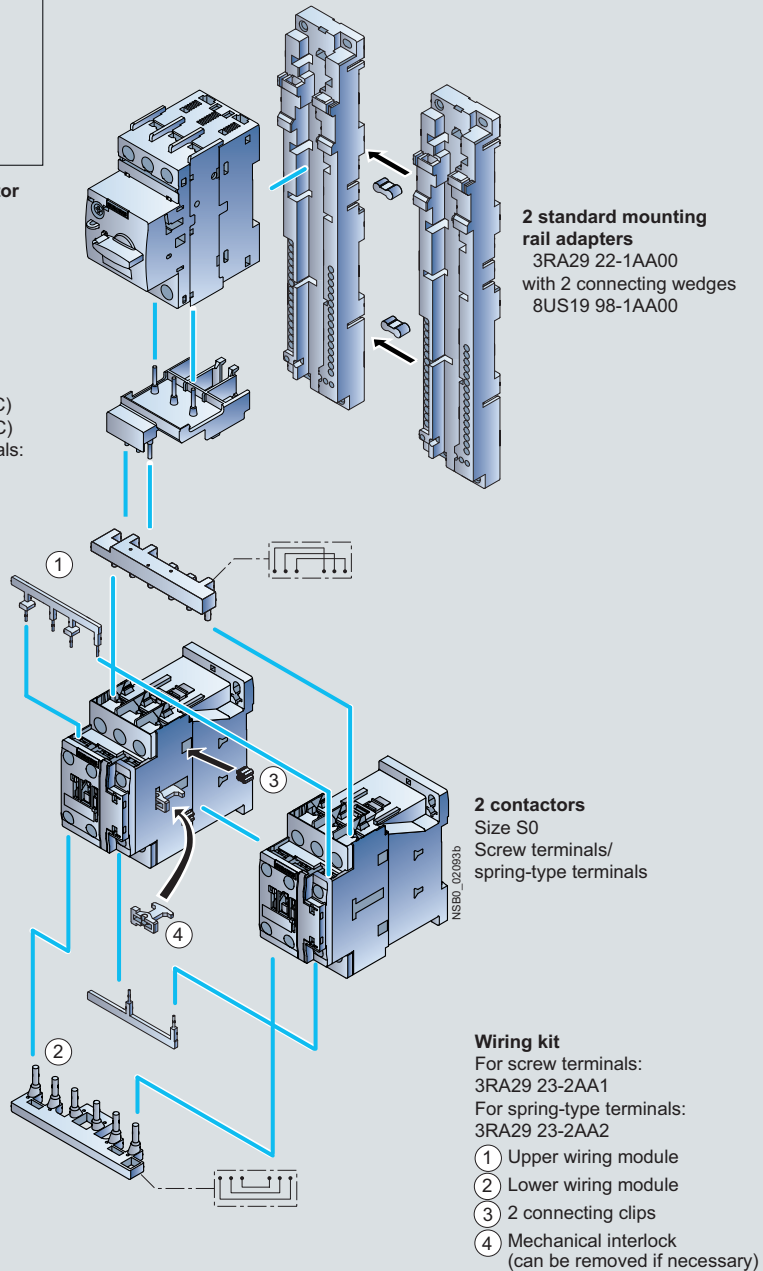
3RA29 21-1BA00 (DC)

For spring-type terminals:
3RA29 21-2AA00²⁾

2 standard mounting rail adapters

3RA29 22-1AA00

with 2 connecting wedges
8US19 98-1AA00



²⁾Additional 3RA29 11-1CA00 spacer 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)

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Reversing duty • For 60 mm busbar systems • Sizes S00 and S0

RS assembly kit for reversing duty and busbar mounting

Screw connection:
3RA29 13-1DB1 for S00
3RA29 23-1DB1 for S0

For spring-type connection:
3RA29 13-1DB2 for S00
3RA29 23-1DB2 for S0¹⁾

Comprising:
1 wiring kit
1 busbar adapter
1 device holder
2 connecting wedges

¹⁾Also includes 3RA29 11-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals.

Motor starter protector

Size S00/S0
Screw terminals/
spring-type terminals

Link module

For screw terminals:
3RA19 21-1DA00 for S00
3RA29 21-1AA00 for S0, AC contactor
3RA29 21-1BA00 for S0, DC contactor
For spring-type terminals:
3RA29 11-2AA00 for S00
3RA29 21-2AA00 for S0²⁾

60 mm busbar adapter

For screw terminals:
8US12 51-5DS10 for S00
8US12 51-5NT10 for S0
For spring-type terminals:
8US12 51-5DT11 for S00
8US12 51-5NT11 for S0

2 connecting wedges
8US19 98-1AA00

60 mm device holder
8US12 51-5AS10

2 contactors

Size S00/S0
Screw terminals/
spring-type terminals

Wiring kit

Screw connection:
3RA29 13-2AA1 for S00
3RA29 23-2AA1 for S0
Spring-type connection:
3RA29 13-2AA2 for S00
3RA29 23-2AA2 for S0

- ① Upper wiring module
- ② Lower wiring module
- ③ 2 connecting clips
- ④ Mechanical interlock (can be removed if necessary)

²⁾Additional 3RA29 11-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals.

3RA22 load feeder for reversing duty and 60 mm standard mounting rail in size S00/S0 (the version with screw terminals is shown in the picture)

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Order No. scheme

Digit of the Order No.	1st - 3rd	4th	5th	6th	7th		8th	9th	10th	11th	12th		13th	14th	15th	16th
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	–	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	–	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SIRIUS feeders	3 R A															
SIRIUS 2nd generation		2														
Type of feeder (direct-on-line starter = 1, reversing starter = 2)			<input type="checkbox"/>													
Size (S00 = 1, S0 = 2)				<input type="checkbox"/>												
Setting range for overload release							<input type="checkbox"/>	<input type="checkbox"/>								
Design type and connection method									<input type="checkbox"/>							
Rated power at 400 V AC										<input type="checkbox"/>	<input type="checkbox"/>					
Integrated auxiliary switches of the contactor												<input type="checkbox"/>				
Operating range / solenoid coil circuit (contactor)													<input type="checkbox"/>			
Rated control supply voltage (contactor)															<input type="checkbox"/>	<input type="checkbox"/>
Example	3 R A	2	1	1	0	–	0	B	A	1	5	–	1	A	P	0

Note:

The Order No. scheme is presented here merely for information purposes and for better understanding of the logic behind the order numbers.

For your orders, please use the order numbers quote in the catalog in the Selection and ordering data.

Benefits

The 3RA2 fuseless load feeders offer a number of benefits:

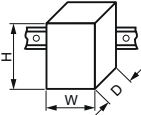
- Minimum planning and assembly work and far less wiring with the preassembled complete units (only one order number 3RA2)
- Plug-in connectors from the motor starter protector to all types of SIRIUS controls, for quicker and error-free assembly of feeders with screw and spring-type connection
- High planning reliability through consistent combination tests for fuseless (400 V according to IEC) and fused configuration (400 V, 500 V and 690 V according to IEC)
- Comprehensive approvals for use world-wide (for overview of approvals see Chapter 13, "Appendix"; please ask for details of availability)
- High operational reliability through short-circuit breaking capacity of 153 kA with type of coordination "1" and "2"
- Uniform accessories for the two sizes S00 and S0
- Spring-type connection possible throughout: Enhanced operational reliability (vibration-resistant wiring) and less wiring work thanks to plug-in connections
- Power loss 5 to 10 % smaller than for comparable devices, hence lower power 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

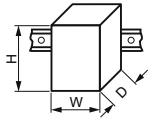
For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Technical specifications

Direct-on-line starters/ reversing starters	Size	Connection methods	Mounting	Control voltage	Width W	Height H	Depth D	
					mm	mm	mm	
Mounting dimensions								
<div></div>	Direct-on-line starters 3RA21.	S00 3RA21 1.	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 3RA21 2.	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	
Reversing starters 3RA22.	S00 3RA22 1.	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 3RA22 2.	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	



Type			3RA2. 1	3RA2. 2
Size			S00	S0
Number of poles			3	3
Mechanics and environment				
Permissible ambient temperature				
• During operation	°C		-20 ... +60	
• Storage and transport	°C		-55 ... +80	
Weight	kg		0.6 ... 1.5	0.8 ... 2.3
Permissible mounting positions				
Shock resistance (sine-wave pulse)	Acc. to IEC 60086 Part 2-27	g	Up to 6	Up to 6
Degree of protection	Acc. to IEC 60947-1		IP20	

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders



General data

Type		3RA2. 1	3RA2. 2
Size		S00	S0
Number of poles		3	3
Electrical specifications			
Standards		IEC 60947-1, EN 60947-1 IEC 60947-2, EN 60947-2 IEC 60947-4-1, EN 60947-4-1	
Max. rated current $I_{n \max}$ (= max. rated operational current I_e)	A	16	32
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	10	
Rated short-circuit current I_g at 50/60 Hz 400 V AC acc. to IEC 60947-4-1, EN 60947-4-1	kA	153	
Types of coordination acc. to IEC 60947-4-1, EN 60947-4-1		See "Selection and ordering data"	
Power loss $P_{V \max}$ of all main current paths	Up to 1.25 A 1.6 ... 6.3 A	W	2 2.3
Dependent on the rated current I_n (upper setting range)	8 ... 12 A 16 A 5 ... 6.3 A 8 ... 12 A 16 ... 32 A	W	3.5 4.3 -- -- --
		W	2.3 3.5 4.3
Power consumption of the solenoid coils for contactors as a function of the standard output P of the motor (when coil is cold and U_s 50 Hz)			
• AC operation			
- Closing	Up to 4 kW 5.5 ... 7.5 kW Up to 5.5 kW 7.5 ... 15 kW P.f.	VA	27 37 -- 65 77 0.82
- Closed	Up to 4 kW 5.5 ... 7.5 kW Up to 5.5 kW 7.5 ... 15 kW P.f.	VA	4.2 5.7 -- 8.5 9.8 0.25
• DC operation	Closing = Closed	W	4 5.9
Magnetic coil operating range for contactors		0.8 ... 1.1 x U_s Low limit at 55 °C At 60 °C	-- --
Endurance of the motor starter protector			
• Mechanical endurance	Operating cycles	100000	
• Electrical endurance	Operating cycles	100000	
• 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 characteristics of the contactors --> Chapter 3 "Controls – Contactors and Contactor Assemblies"	
Touch protection		Acc. to EN 50274	Finger-safe
Phase failure sensitivity of the motor starter protector		Acc. to IEC 60947-1, EN 60947-1	Yes
Isolating features of the motor starter protector		Acc. to IEC 60947-2, EN 60947-2	Yes
Main control and EMER- GENCY-STOP switch charac- teristics of the motor starter protector and accessories		Acc. to IEC 60204-1, EN 60204-1	Yes (with overvoltage releases of category 1 under conditions of proper use)
Protective separation between main and auxiliary circuits	Acc. to EN 60947-1, Appendix N	V	Up to 400
Mirror contacts for contactors		Yes	Yes, from main contact to auxiliary NC contact

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Type	SIRIUS 3RA2 load feeders			
Connection type		 Screw terminals	 Spring-type terminals	
Conductor cross-sections for main conductors Size S00				
		Motor starter protectors, contactors	Motor starter protectors, contactors	
Terminal screw		M3, Pozidriv size 2	--	
Operating devices	mm	Ø 5 ... 6	3.0 x 0.5 and 3.5 x 0.5	
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 mm ² mm ²	2 x (0.5 ... 1.5) ¹⁾ only for contactors, 2 x (0.75 ... 2.5) ¹⁾ , max. 2 x 4	2 x (0.5 ... 4)	
• Finely stranded without end sleeve	mm ²	--	2 x (0.5 ... 2.5)	
• Finely stranded with end sleeves (DIN 46 228 T1)	mm ² mm ²	2 x (0.5 ... 1.5) ¹⁾ 2 x (0.75 ... 2.5) ¹⁾	2 x (0.5 ... 2.5)	
• AWG cables, solid or stranded	AWG AWG AWG	2 x (20 ... 16) ¹⁾ only for contactors, 2 x (18 ... 14) ¹⁾ , 2 x 12	2 x (20 ... 12)	
Max. external diameter of the conductor insulation	mm	--	3.6	
Conductor cross-sections for main conductors Size S0				
		Motor starter protectors, contactors	Motor starter protectors, contactors	
Terminal screw		M4, Pozidriv size 2	--	
Operating devices	mm	Ø 5 ... 6	3.0 x 0.5 and 3.5 x 0.5	
Prescribed tightening torque	Nm	2.0 ... 2.5	--	
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected				
• Solid and stranded	mm ² mm ²	2 x (1.0 ... 2.5) ¹⁾ , 2 x (2.5 ... 10) ¹⁾	2 x (1.0 ... 10)	
• Finely stranded without end sleeve	mm ²	--	2 x (1.0 ... 6.0)	
• Finely stranded with end sleeves (DIN 46 228 T1)	mm ² mm ² mm ²	2 x (1.0 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , max. 1 x 10	2 x (1.0 ... 6.0)	
• AWG cables, solid or stranded	AWG AWG	2 x (16 ... 12) ¹⁾ , 2 x (14 ... 8) ¹⁾	2 x (18 ... 8)	
Max. external diameter of the conductor insulation	mm	--	3.6	
Conductor cross-sections for auxiliary conductors Size S00/S0				
		Contactors (basic unit), motor starter protectors (accessories), contactors (mountable accessories), overload relays	Contactors S00	Contactors S0, motor starter protec- tors (accessories), con- tactors (accessories), overload relays
Terminal screw		M3, Pozidriv size 2	--	
Operating devices	mm	Ø 5 ... 6	3.0 x 0.5 and 3.5 x 0.5	
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 mm ² mm ²	2 x (0.5 ... 1.5) ¹⁾ 2 x (0.75 ... 2.5) ¹⁾ , Max. 2 x 4 only for contactors S00	2 x (0.5 ... 4)	2 x (0.5 ... 2.5)
• Finely stranded without end sleeve	mm ²	--	2 x (0.5 ... 2.5)	2 x (0.5 ... 1.5)
• Finely stranded with end sleeve	mm ² mm ²	2 x (0.5 ... 1.5) ¹⁾ 2 x (0.75 ... 2.5) ¹⁾	2 x (0.5 ... 2.5)	2 x (0.5 ... 1.5)
• AWG cables, solid or stranded	AWG AWG AWG	2 x (20 ... 16) ¹⁾ , 2 x (18 ... 14) ¹⁾ , 2 x 12 only for contactors S00	2 x (20 ... 12)	2 x (20 ... 14)
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 lie in the range specified. If identical cross-sections are used, this restriction does not apply.

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing

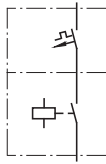
Selection and ordering data



3RA21 10

3RA21 20

Direct-on-line start



Rated control supply voltage 50/60 Hz 230 V AC With screw connections

- Screw fixing with 2 push-in lugs each per load feeder is possible¹⁾
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- Integrated auxiliary switches:
contactor size S00: 1 NO,
contactor size S0: 1 NO + 1 NC

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal over-load release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output <i>P</i>	Motor current <i>I</i> (guide value)	Motor starter protector	+ Contactor	+ Link module		Screw terminals			
							Order No.	Basic price per PU		

kW A A

Type of coordination "2" at $I_q = 153 \text{ kA}$ at 400 V

				3RV20	3RT20	3RA					
								ToC 2			
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP01	19 21-1DA00	A	3RA21 10-0BA15-1AP0	1	1 ST	101
	0.06	0.2	0.18 ... 0.25	11-0CA10			A	3RA21 10-0CA15-1AP0	1	1 ST	101
	0.09	0.3	0.22 ... 0.32	11-0DA10			A	3RA21 10-0DA15-1AP0	1	1 ST	101
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	3RA21 10-0EA15-1AP0	1	1 ST	101
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	3RA21 10-0FA15-1AP0	1	1 ST	101
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	3RA21 10-0GA15-1AP0	1	1 ST	101
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA21 10-0HA15-1AP0	1	1 ST	101
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA21 10-0JA15-1AP0	1	1 ST	101
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA21 10-0KA15-1AP0	1	1 ST	101
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA21 10-1AA15-1AP0	1	1 ST	101
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA21 10-1BA15-1AP0	1	1 ST	101
	0.75	1.9	1.8 ... 2.5	11-1CA10			A	3RA21 10-1CA15-1AP0	1	1 ST	101
	1.1	2.7	2.2 ... 3.2	11-1DA10			A	3RA21 10-1DA15-1AP0	1	1 ST	101
	1.5	3.6	2.8 ... 4	11-1EA10			A	3RA21 10-1EA15-1AP0	1	1 ST	101
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	29 21-1AA00	A	3RA21 20-1FA24-0AP0	1	1 ST	101
	2.2	4.9	4.5 ... 6.3	11-1GA10			A	3RA21 20-1GA24-0AP0	1	1 ST	101
	3	6.5	5.5 ... 8	11-1HA10			A	3RA21 20-1HA24-0AP0	1	1 ST	101
	4	8.5	7 ... 10	11-1JA10			A	3RA21 20-1JA24-0AP0	1	1 ST	101
	5.5	11.5	9 ... 12.5	11-1KA10			A	3RA21 20-1KA24-0AP0	1	1 ST	101
	7.5	15.5	11 ... 16	21-4AA10	26-1AP00		A	3RA21 20-4AA26-0AP0	1	1 ST	101
	7.5	15.5	14 ... 20	21-4BA10			A	3RA21 20-4BA26-0AP0	1	1 ST	101
	11	22	17 ... 22	21-4CA10	27-1AP00		A	3RA21 20-4CA27-0AP0	1	1 ST	101
	11	22	20 ... 25	21-4DA10			A	3RA21 20-4DA27-0AP0	1	1 ST	101
	15	29	27 ... 32	21-4EA10			A	3RA21 20-4EA27-0AP0	1	1 ST	101

Type of coordination "1" at $I_q = 153 \text{ kA}$ at 400 V

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	15-1AP01	19 21-1DA00	A	3RA21 10-1FA15-1AP0	1	1 ST	101
	2.2	4.9	4.5 ... 6.3	11-1GA10			A	3RA21 10-1GA15-1AP0	1	1 ST	101
	3	6.5	5.5 ... 8	11-1HA10			A	3RA21 10-1HA15-1AP0	1	1 ST	101
	4	8.5	7 ... 10	11-1JA10	16-1AP01		A	3RA21 10-1JA16-1AP0	1	1 ST	101
	5.5	11.5	9 ... 12	11-1KA10	17-1AP01		A	3RA21 10-1KA17-1AP0	1	1 ST	101
	7.5	15.5	11 ... 16	11-4AA10	18-1AP01		A	3RA21 10-4AA18-1AP0	1	1 ST	101

¹⁾ For push-in lugs see Accessories.

²⁾ For auxiliary switches see Accessories.

³⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Use in the Control Cabinet

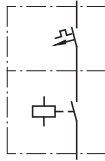
SIRIUS 3RA2 Load Feeders

3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing



3RA21 10 3RA21 20

Direct-on-line start



Rated control supply voltage 50/60 Hz 230 V AC
With spring-type connection

- Screw fixing with 2 push-in lugs each per load feeder is possible¹⁾
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO,
contactor size S0: 1 NO + 1 NC

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ Contactor	+ Link module		Spring-type terminals			
							Order No.	Basic price per PU		

Type of coordination "2" at $I_q = 153 \text{ kA}$ at 400 V
c m atible ith t e c dinati n 1

				3RV20	3RT20	3RA				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP01	29 11-2AA00	A	3RA21 10-0BE15-1AP0	1	1 ST 101
	0.06	0.2	0.18 ... 0.25	11-0CA20			A	3RA21 10-0CE15-1AP0	1	1 ST 101
	0.09	0.3	0.22 ... 0.32	11-0DA20			A	3RA21 10-0DE15-1AP0	1	1 ST 101
	0.09	0.3	0.28 ... 0.4	11-0EA20			A	3RA21 10-0EE15-1AP0	1	1 ST 101
	0.12	0.4	0.35 ... 0.5	11-0FA20			A	3RA21 10-0FE15-1AP0	1	1 ST 101
	0.18	0.6	0.45 ... 0.63	11-0GA20			A	3RA21 10-0GE15-1AP0	1	1 ST 101
	0.18	0.6	0.55 ... 0.8	11-0HA20			A	3RA21 10-0HE15-1AP0	1	1 ST 101
	0.25	0.85	0.7 ... 1	11-0JA20			A	3RA21 10-0JE15-1AP0	1	1 ST 101
	0.37	1.1	0.9 ... 1.25	11-0KA20			A	3RA21 10-0KE15-1AP0	1	1 ST 101
	0.55	1.5	1.1 ... 1.6	11-1AA20			A	3RA21 10-1AE15-1AP0	1	1 ST 101
	0.75	1.9	1.4 ... 2	11-1BA20			A	3RA21 10-1BE15-1AP0	1	1 ST 101
	0.75	1.9	1.8 ... 2.5	11-1CA20			A	3RA21 10-1CE15-1AP0	1	1 ST 101
	1.1	2.7	2.2 ... 3.2	11-1DA20			A	3RA21 10-1DE15-1AP0	1	1 ST 101
	1.5	3.6	2.8 ... 4	11-1EA20			A	3RA21 10-1EE15-1AP0	1	1 ST 101
S0	1.5	3.6	3.5 ... 5	11-1FA20	24-2AP00		A	4)		
	2.2	4.9	4.5 ... 6.3	11-1GA20			A	4)		
	3	6.5	5.5 ... 8	11-1HA20			A	4)		
	4	8.5	7 ... 10	11-1JA20			A	4)		
	5.5	11.5	9 ... 12.5	11-1KA20			A	4)		
	7.5	15.5	11 ... 16	21-4AA20	26-2AP00	29 21-2AA00	A	3RA21 20-4AE26-0AP0	1	1 ST 101
	7.5	15.5	14 ... 20	21-4BA20			A	3RA21 20-4BE26-0AP0	1	1 ST 101
	11	22	17 ... 22	21-4CA20	27-2AP00		A	3RA21 20-4CE27-0AP0	1	1 ST 101
	11	22	20 ... 25	21-4DA20			A	3RA21 20-4DE27-0AP0	1	1 ST 101
	15	29	27 ... 32	21-4EA20			A	3RA21 20-4EE27-0AP0	1	1 ST 101

Type of coordination "1" at $I_q = 153 \text{ kA}$ at 400 V
the m t sta te tect is c m atible ith t e c dinati n 2

S00 For load feeders for lower outputs, see this table at type of coordination "2".

S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP01	29 11-2AA00	A	3RA21 10-1FE15-1AP0	1	1 ST 101
	2.2	4.9	4.5 ... 6.3	11-1GA20			A	3RA21 10-1GE15-1AP0	1	1 ST 101
	3	6.5	5.5 ... 8	11-1HA20			A	3RA21 10-1HE15-1AP0	1	1 ST 101
	4	8.5	7 ... 10	11-1JA20	16-2AP01		A	3RA21 10-1JE16-1AP0	1	1 ST 101
	5.5	11.5	9 ... 12	11-1KA20	17-2AP01		A	3RA21 10-1KE17-1AP0	1	1 ST 101
	7.5	15.5	11 ... 16	11-4AA20	18-2AP01		A	3RA21 10-4AE18-1AP0	1	1 ST 101

¹⁾ For push-in lugs see Accessories.

²⁾ For auxiliary switches see Accessories.

³⁾ Selection depends on the concrete startup and rated data of the protected motor.

⁴⁾ These combinations are not available as preassembled 3RA2 feeders, but they can be constructed as discrete assemblies. Mounting on a standard mounting rail adapter (3RA29 22-1AA00) is possible for feeder-oriented construction, in which case the contactor must be screwed to the adapter.

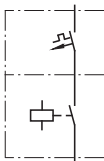
For Use in the Control Cabinet

3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing




3RA21 10 3RA21 20

Direct-on-line start



Rated control supply voltage 24 V DC
With screw connections

- Screw fixing with 2 push-in lugs each per load feeder is possible¹⁾
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- Integrated auxiliary switches:
 Contactor size S00: 1 NO,
 contactor size S0: 1 NO + 1 NC

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal over-load release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output <i>P</i>	Motor current <i>I</i> (guide value)	Motor starter protector	+ Contactor	+ Link module		<div>Screw terminals</div> 			
	kW	A	A				Order No.	Basic price per PU		

Type of coordination "2" at $I_q = 153 \text{ kA}$ at 400 V

								ToC 2				
				3RV20	3RT20	3RA						
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB41	19 21-1DA00	A	3RA21 10-0BA15-1BB4	1	1	ST	101
	0.06	0.2	0.18 ... 0.25	11-0CA10			A	3RA21 10-0CA15-1BB4	1	1	ST	101
	0.09	0.3	0.22 ... 0.32	11-0DA10			A	3RA21 10-0DA15-1BB4	1	1	ST	101
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	3RA21 10-0EA15-1BB4	1	1	ST	101
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	3RA21 10-0FA15-1BB4	1	1	ST	101
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	3RA21 10-0GA15-1BB4	1	1	ST	101
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA21 10-0HA15-1BB4	1	1	ST	101
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA21 10-0JA15-1BB4	1	1	ST	101
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA21 10-0KA15-1BB4	1	1	ST	101
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA21 10-1AA15-1BB4	1	1	ST	101
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA21 10-1BA15-1BB4	1	1	ST	101
	0.75	1.9	1.8 ... 2.5	11-1CA10			A	3RA21 10-1CA15-1BB4	1	1	ST	101
	1.1	2.7	2.2 ... 3.2	11-1DA10			A	3RA21 10-1DA15-1BB4	1	1	ST	101
	1.5	3.6	2.8 ... 4	11-1EA10			A	3RA21 10-1EA15-1BB4	1	1	ST	101
	S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	29 21-BA00	A	3RA21 20-1FA24-0BB4	1	1	ST
2.2		4.9	4.5 ... 6.3	11-1GA10			A	3RA21 20-1GA24-0BB4	1	1	ST	101
3		6.5	5.5 ... 8	11-1HA10			A	3RA21 20-1HA24-0BB4	1	1	ST	101
4		8.5	7 ... 10	11-1JA10			A	3RA21 20-1JA24-0BB4	1	1	ST	101
5.5		11.5	9 ... 12.5	11-1KA10			A	3RA21 20-1KA24-0BB4	1	1	ST	101
7.5		15.5	11 ... 16	21-4AA10	26-1BB40		A	3RA21 20-4AA26-0BB4	1	1	ST	101
7.5		15.5	14 ... 20	21-4BA10			A	3RA21 20-4BA26-0BB4	1	1	ST	101
11		22	17 ... 22	21-4CA10	27-1BB40		A	3RA21 20-4CA27-0BB4	1	1	ST	101
11		22	20 ... 25	21-4DA10			A	3RA21 20-4DA27-0BB4	1	1	ST	101
15		29	27 ... 32	21-4EA10			A	3RA21 20-4EA27-0BB4	1	1	ST	101

Type of coordination "1" at $I_q = 153 \text{ kA}$ at 400 V

S00 For load feeders for lower outputs, see this table at type of coordination "2".

[illegible]

1) For push-in lugs see Accessories.

2) For auxiliary switches see Accessories.

³⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Use in the Control Cabinet

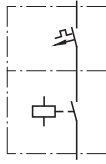
SIRIUS 3RA2 Load Feeders

3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing



3RA21 10 3RA21 20

Direct-on-line start



Rated control supply voltage 24 V DC
With spring-type connection

- Screw fixing with 2 push-in lugs each per load feeder is possible¹⁾
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO,
contactor size S0: 1 NO + 1 NC

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ Contactor	+ Link module		Spring-type terminals			
							Order No.	Basic price per PU		

Type of coordination "2" at $I_q = 153$ kA at 400 V
c m atible ith t e c dinati n 1

				3RV20	3RT20	3RA				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB41	29 11-2AA00	A	3RA21 10-0BE15-1BB4	1	1 ST 101
	0.06	0.2	0.18 ... 0.25	11-0CA20			A	3RA21 10-0CE15-1BB4	1	1 ST 101
	0.09	0.3	0.22 ... 0.32	11-0DA20			A	3RA21 10-0DE15-1BB4	1	1 ST 101
	0.09	0.3	0.28 ... 0.4	11-0EA20			A	3RA21 10-0EE15-1BB4	1	1 ST 101
	0.12	0.4	0.35 ... 0.5	11-0FA20			A	3RA21 10-0FE15-1BB4	1	1 ST 101
	0.18	0.6	0.45 ... 0.63	11-0GA20			A	3RA21 10-0GE15-1BB4	1	1 ST 101
	0.18	0.6	0.55 ... 0.8	11-0HA20			A	3RA21 10-0HE15-1BB4	1	1 ST 101
	0.25	0.85	0.7 ... 1	11-0JA20			A	3RA21 10-0JE15-1BB4	1	1 ST 101
	0.37	1.1	0.9 ... 1.25	11-0KA20			A	3RA21 10-0KE15-1BB4	1	1 ST 101
	0.55	1.5	1.1 ... 1.6	11-1AA20			A	3RA21 10-1AE15-1BB4	1	1 ST 101
	0.75	1.9	1.4 ... 2	11-1BA20			A	3RA21 10-1BE15-1BB4	1	1 ST 101
	0.75	1.9	1.8 ... 2.5	11-1CA20			A	3RA21 10-1CE15-1BB4	1	1 ST 101
	1.1	2.7	2.2 ... 3.2	11-1DA20			A	3RA21 10-1DE15-1BB4	1	1 ST 101
	1.5	3.6	2.8 ... 4	11-1EA20			A	3RA21 10-1EE15-1BB4	1	1 ST 101
S0	1.5	3.6	3.5 ... 5	11-1FA20	24-2BB40		A			
	2.2	4.9	4.5 ... 6.3	11-1GA20			A			
	3	6.5	5.5 ... 8	11-1HA20			A			
	4	8.5	7 ... 10	11-1JA20			A			
	5.5	11.5	9 ... 12.5	11-1KA20			A			
	7.5	15.5	11 ... 16	21-4AA20	26-2BB40	29 21-2AA00	A	3RA21 20-4AE26-0BB4	1	1 ST 101
	7.5	15.5	14 ... 20	21-4BA20			A	3RA21 20-4BE26-0BB4	1	1 ST 101
	11	22	17 ... 22	21-4CA10	27-2BB40		A	3RA21 20-4CE27-0BB4	1	1 ST 101
	11	22	20 ... 25	21-4DA10			A	3RA21 20-4DE27-0BB4	1	1 ST 101
	15	29	27 ... 32	21-4EA10			A	3RA21 20-4EE27-0BB4	1	1 ST 101

Type of coordination "1" at $I_q = 153$ kA at 400 V
the m t sta te tect is c m atible ith t e c dinati n 2

S00 For load feeders for lower outputs, see this table at type of coordination "2".

S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB41	29 11-2AA00	A	3RA21 10-1FE15-1BB4	1	1 ST 101
	2.2	4.9	4.5 ... 6.3	11-1GA20			A	3RA21 10-1GE15-1BB4	1	1 ST 101
	3	6.5	5.5 ... 8	11-1HA20			A	3RA21 10-1HE15-1BB4	1	1 ST 101
	4	8.5	7 ... 10	11-1JA20	16-2BB41		A	3RA21 10-1JE16-1BB4	1	1 ST 101
	5.5	11.5	9 ... 12	11-1KA20	17-2BB41		A	3RA21 10-1KE17-1BB4	1	1 ST 101
	7.5	15.5	11 ... 16	11-4AA20	18-2BB40		A	3RA21 10-4AE18-1BB4	1	1 ST 101

¹⁾ For push-in lugs see Accessories.

²⁾ For auxiliary switches see Accessories.

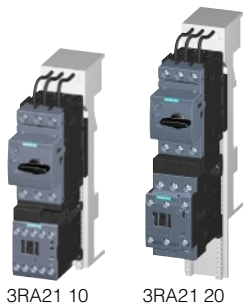
³⁾ Selection depends on the concrete startup and rated data of the protected motor.

⁴⁾ These combinations are not available as preassembled 3RA2 feeders, but they can be constructed as discrete assemblies. Mounting on a standard mounting rail adapter (3RA29 22-1AA00) is possible for feeder-oriented construction, in which case the contactor must be screwed to the adapter.

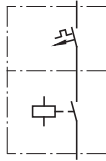
For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

**3RA21 direct-on-line starters
for 60 mm busbar system**



Direct-on-line start



**Rated control supply voltage 50/60 Hz 230 V AC
With screw terminals**

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO,
contactor size S0: 1 NO + 1 NC

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Screw terminals			
							Order No.	Basic price per PU		

Type of coordination "2" at $I_q = 153$ kA at 400 V
c m atible ith t e c dinati n 1

				3RV20	3RT20	3RA				
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP01	19 21-1DA00	A	3RA21 10-0BD15-1AP0	1	1 ST 101
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 8US12 51-	A	3RA21 10-0CD15-1AP0	1	1 ST 101
	0.09	0.3	0.22 ... 0.32	11-0DA10		5DS10	A	3RA21 10-0DD15-1AP0	1	1 ST 101
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	3RA21 10-0ED15-1AP0	1	1 ST 101
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	3RA21 10-0FD15-1AP0	1	1 ST 101
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	3RA21 10-0GD15-1AP0	1	1 ST 101
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA21 10-0HD15-1AP0	1	1 ST 101
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA21 10-0JD15-1AP0	1	1 ST 101
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA21 10-0KD15-1AP0	1	1 ST 101
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA21 10-1AD15-1AP0	1	1 ST 101
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA21 10-1BD15-1AP0	1	1 ST 101
	0.75	1.9	1.8 ... 2.5	11-1CA10			A	3RA21 10-1CD15-1AP0	1	1 ST 101
	1.1	2.7	2.2 ... 3.2	11-1DA10			A	3RA21 10-1DD15-1AP0	1	1 ST 101
	1.5	3.6	2.8 ... 4	11-1EA10			A	3RA21 10-1ED15-1AP0	1	1 ST 101
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	29 21-1AA00	A	3RA21 20-1FD24-0AP0	1	1 ST 101
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US12 51-	A	3RA21 20-1GD24-0AP0	1	1 ST 101
	3	6.5	5.5 ... 8	11-1HA10		5NT10	A	3RA21 20-1HD24-0AP0	1	1 ST 101
	4	8.5	7 ... 10	11-1JA10			A	3RA21 20-1JD24-0AP0	1	1 ST 101
	5.5	11.5	9 ... 12.5	11-1KA10			A	3RA21 20-1KD24-0AP0	1	1 ST 101
	7.5	15.5	11 ... 16	21-4AA10	26-1AP00		A	3RA21 20-4AD26-0AP0	1	1 ST 101
	7.5	15.5	14 ... 20	21-4BA10			A	3RA21 20-4BD26-0AP0	1	1 ST 101
	11	22	17 ... 22	21-4CA10	27-1AP00		A	3RA21 20-4CD27-0AP0	1	1 ST 101
	11	22	20 ... 25	21-4DA10			A	3RA21 20-4DD27-0AP0	1	1 ST 101
	15	29	27 ... 32	21-4EA10			A	3RA21 20-4ED27-0AP0	1	1 ST 101

Type of coordination "1" at $I_q = 153$ kA at 400 V
the m t sta te tect is c m atible ith t e c dinati n 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	15-1AP01	19 21-1DA00	A	3RA21 10-1FD15-1AP0	1	1 ST 101
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US12 51-	A	3RA21 10-1GD15-1AP0	1	1 ST 101
	3	6.5	5.5 ... 8	11-1HA10		5DS10	A	3RA21 10-1HD15-1AP0	1	1 ST 101
	4	8.5	7 ... 10	11-1JA10	16-1AP01		A	3RA21 10-1JD16-1AP0	1	1 ST 101
	5.5	11.5	9 ... 12	11-1KA10	17-1AP01		A	3RA21 10-1KD17-1AP0	1	1 ST 101
	7.5	15.5	11 ... 16	11-4AA10	18-1AP01		A	3RA21 10-4AD18-1AP0	1	1 ST 101

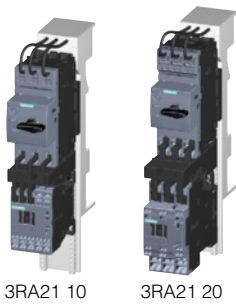
¹⁾ For auxiliary switches see Accessories.

²⁾ Selection depends on the concrete startup and rated data of the protected motor.

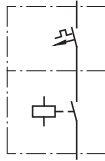
For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

**3RA21 direct-on-line starters
for 60 mm busbar system**



Direct-on-line start



**Rated control supply voltage 50/60 Hz 230 V AC
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 switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO,
contactor size S0: 1 NO + 1 NC

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal over-load release	Consisting of the following single devices			DT	Fuseless load feeders	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			
							Order No.	Basic price per PU		

Type of coordination "2" at $I_q = 153$ kA at 400 V
c m atible ith t e c dinati n 1

				3RV20	3RT20	3RA				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP01	29 11-2AA00	A	3RA21 10-0BH15-1AP0	1	1 ST 101
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 8US12 51-5DT11	A	3RA21 10-0CH15-1AP0	1	1 ST 101
	0.09	0.3	0.22 ... 0.32	11-0DA20			A	3RA21 10-0DH15-1AP0	1	1 ST 101
	0.09	0.3	0.28 ... 0.4	11-0EA20			A	3RA21 10-0EH15-1AP0	1	1 ST 101
	0.12	0.4	0.35 ... 0.5	11-0FA20			A	3RA21 10-0FH15-1AP0	1	1 ST 101
	0.18	0.6	0.45 ... 0.63	11-0GA20			A	3RA21 10-0GH15-1AP0	1	1 ST 101
	0.18	0.6	0.55 ... 0.8	11-0HA20			A	3RA21 10-0HH15-1AP0	1	1 ST 101
	0.25	0.85	0.7 ... 1	11-0JA20			A	3RA21 10-0JH15-1AP0	1	1 ST 101
	0.37	1.1	0.9 ... 1.25	11-0KA20			A	3RA21 10-0KH15-1AP0	1	1 ST 101
	0.55	1.5	1.1 ... 1.6	11-1AA20			A	3RA21 10-1AH15-1AP0	1	1 ST 101
	0.75	1.9	1.4 ... 2	11-1BA20			A	3RA21 10-1BH15-1AP0	1	1 ST 101
	0.75	1.9	1.8 ... 2.5	11-1CA20			A	3RA21 10-1CH15-1AP0	1	1 ST 101
	1.1	2.7	2.2 ... 3.2	11-1DA20			A	3RA21 10-1DH15-1AP0	1	1 ST 101
	1.5	3.6	2.8 ... 4	11-1EA20			A	3RA21 10-1EH15-1AP0	1	1 ST 101
S0	1.5	3.6	3.5 ... 5	11-1FA20	24-2AP00		3)			
	2.2	4.9	4.5 ... 6.3	11-1GA20			3)			
	3	6.5	5.5 ... 8	11-1HA20			3)			
	4	8.5	7 ... 10	11-1JA20			3)			
	5.5	11.5	9 ... 12.5	11-1KA20			3)			
	7.5	15.5	11 ... 16	21-4AA20	26-2AP00	29 21-2AA00	A	3RA21 20-4AH26-0AP0	1	1 ST 101
	7.5	15.5	14 ... 20	21-4BA20		+ 8US12 51-5NT11 ⁴⁾	A	3RA21 20-4BH26-0AP0	1	1 ST 101
	11	22	17 ... 22	21-4CA20	27-2AP00		A	3RA21 20-4CH27-0AP0	1	1 ST 101
	11	22	20 ... 25	21-4DA20			A	3RA21 20-4DH27-0AP0	1	1 ST 101
	15	29	27 ... 32	21-4EA20			A	3RA21 20-4EH27-0AP0	1	1 ST 101

Type of coordination "1" at $I_q = 153$ kA at 400 V
the m t sta te tect is c m atible ith t e c dinati n 2

S00	For load feeders for lower outputs, see this table at type of coordination "2".									
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP01	29 11-2AA00	A	3RA21 10-1FH15-1AP0	1	1 ST 101
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 8US12 51-5DT11	A	3RA21 10-1GH15-1AP0	1	1 ST 101
	3	6.5	5.5 ... 8	11-1HA20			A	3RA21 10-1HH15-1AP0	1	1 ST 101
	4	8.5	7 ... 10	11-1JA20	16-2AP01		A	3RA21 10-1JH16-1AP0	1	1 ST 101
	5.5	11.5	9 ... 12	11-1KA20	17-2AP01		A	3RA21 10-1KH17-1AP0	1	1 ST 101
	7.5	15.5	11 ... 16	11-4AA20	18-2AP01		A	3RA21 10-4AH18-1AP0	1	1 ST 101

¹⁾ For auxiliary switches see Accessories.

²⁾ Selection depends on the concrete startup and rated data of the protected motor.

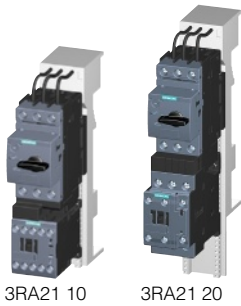
³⁾ These combinations are not available as preassembled 3RA2 feeders, but they can be constructed as discrete assemblies. Mounting on a standard mounting rail adapter (3RA29 22-1AA00) is possible for feeder-oriented construction, in which case the contactor must be screwed to the adapter.

⁴⁾ A 3RA29 11-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals is included in the scope of supply.

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

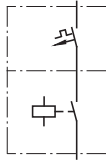
**3RA21 direct-on-line starters
for 60 mm busbar system**



3RA21 10

3RA21 20

Direct-on-line start



**Rated control supply voltage 24 V DC
With screw connections**

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO,
contactor size S0: 1 NO + 1 NC

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Screw terminals			
							Order No.	Basic price per PU		

Type of coordination "2" at $I_q = 153$ kA at 400 V
c m atible ith t e c dinati n 1

				3RV20	3RT20	3RA				
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB41	19 21-1DA00	A	3RA21 10-0BD15-1BB4	1	1 ST 101
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 8US12 51-5DS10	A	3RA21 10-0CD15-1BB4	1	1 ST 101
	0.09	0.3	0.22 ... 0.32	11-0DA10			A	3RA21 10-0DD15-1BB4	1	1 ST 101
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	3RA21 10-0ED15-1BB4	1	1 ST 101
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	3RA21 10-0FD15-1BB4	1	1 ST 101
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	3RA21 10-0GD15-1BB4	1	1 ST 101
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA21 10-0HD15-1BB4	1	1 ST 101
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA21 10-0JD15-1BB4	1	1 ST 101
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA21 10-0KD15-1BB4	1	1 ST 101
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA21 10-1AD15-1BB4	1	1 ST 101
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA21 10-1BD15-1BB4	1	1 ST 101
	0.75	1.9	1.8 ... 2.5	11-1CA10			A	3RA21 10-1CD15-1BB4	1	1 ST 101
	1.1	2.7	2.2 ... 3.2	11-1DA10			A	3RA21 10-1DD15-1BB4	1	1 ST 101
	1.5	3.6	2.8 ... 4	11-1EA10			A	3RA21 10-1ED15-1BB4	1	1 ST 101
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	29 21-BA00	A	3RA21 20-1FD24-0BB4	1	1 ST 101
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US12 51-5NT10	A	3RA21 20-1GD24-0BB4	1	1 ST 101
	3	6.5	5.5 ... 8	11-1HA10			A	3RA21 20-1HD24-0BB4	1	1 ST 101
	4	8.5	7 ... 10	11-1JA10			A	3RA21 20-1JD24-0BB4	1	1 ST 101
	5.5	11.5	9 ... 12.5	11-1KA10			A	3RA21 20-1KD24-0BB4	1	1 ST 101
	7.5	15.5	11 ... 16	21-4AA10	26-1BB40		A	3RA21 20-4AD26-0BB4	1	1 ST 101
	7.5	15.5	14 ... 20	21-4BA10			A	3RA21 20-4BD26-0BB4	1	1 ST 101
	11	22	17 ... 22	21-4CA10	27-1BB40		A	3RA21 20-4CD27-0BB4	1	1 ST 101
	11	22	20 ... 25	21-4DA10			A	3RA21 20-4DD27-0BB4	1	1 ST 101
	15	29	27 ... 32	21-4EA10			A	3RA21 20-4ED27-0BB4	1	1 ST 101

Type of coordination "1" at $I_q = 153$ kA at 400 V
the m t sta te tect is c m atible ith t e c dinati n 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	15-1BB41	19 21-1DA00	A	3RA21 10-1FD15-1BB4	1	1 ST 101
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US12 51-5DS10	A	3RA21 10-1GD15-1BB4	1	1 ST 101
	3	6.5	5.5 ... 8	11-1HA10			A	3RA21 10-1HD15-1BB4	1	1 ST 101
	4	8.5	7 ... 10	11-1JA10	16-1BB41		A	3RA21 10-1JD16-1BB4	1	1 ST 101
	5.5	11.5	9 ... 12	11-1KA10	17-1BB41		A	3RA21 10-1KD17-1BB4	1	1 ST 101
	7.5	15.5	11 ... 16	11-4AA10	18-1BB41		A	3RA21 10-4AD18-1BB4	1	1 ST 101

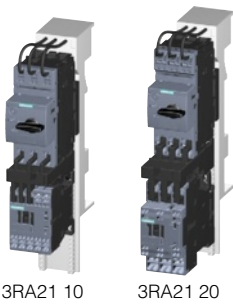
¹⁾ For auxiliary switches see Accessories.

²⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Use in the Control Cabinet

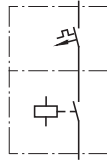
SIRIUS 3RA2 Load Feeders

**3RA21 direct-on-line starters
for 60 mm busbar system**



3RA21 10 3RA21 20

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 switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO,
contactor size S0: 1 NO + 1 NC

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal over-load release	Consisting of the following single devices			DT	Fuseless load feeders	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			
							Order No.	Basic price per PU		

Type of coordination "2" at $I_q = 153$ kA at 400 V
c m atible ith t e c dinati n 1

				3RV20	3RT20	3RA				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB41	29 11-2AA00	A	3RA21 10-0BH15-1BB4	1	1 ST 101
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 8US12 51-5DT11	A	3RA21 10-0CH15-1BB4	1	1 ST 101
	0.09	0.3	0.22 ... 0.32	11-0DA20			A	3RA21 10-0DH15-1BB4	1	1 ST 101
	0.09	0.3	0.28 ... 0.4	11-0EA20			A	3RA21 10-0EH15-1BB4	1	1 ST 101
	0.12	0.4	0.35 ... 0.5	11-0FA20			A	3RA21 10-0FH15-1BB4	1	1 ST 101
	0.18	0.6	0.45 ... 0.63	11-0GA20			A	3RA21 10-0GH15-1BB4	1	1 ST 101
	0.18	0.6	0.55 ... 0.8	11-0HA20			A	3RA21 10-0HH15-1BB4	1	1 ST 101
	0.25	0.85	0.7 ... 1	11-0JA20			A	3RA21 10-0JH15-1BB4	1	1 ST 101
	0.37	1.1	0.9 ... 1.25	11-0KA20			A	3RA21 10-0KH15-1BB4	1	1 ST 101
	0.55	1.5	1.1 ... 1.6	11-1AA20			A	3RA21 10-1AH15-1BB4	1	1 ST 101
	0.75	1.9	1.4 ... 2	11-1BA20			A	3RA21 10-1BH15-1BB4	1	1 ST 101
	0.75	1.9	1.8 ... 2.5	11-1CA20			A	3RA21 10-1CH15-1BB4	1	1 ST 101
	1.1	2.7	2.2 ... 3.2	11-1DA20			A	3RA21 10-1DH15-1BB4	1	1 ST 101
	1.5	3.6	2.8 ... 4	11-1EA20			A	3RA21 10-1EH15-1BB4	1	1 ST 101
S0	1.5	3.6	3.5 ... 5	11-1FA20	24-2BB40		3)			
	2.2	4.9	4.5 ... 6.3	11-1GA20			3)			
	3	6.5	5.5 ... 8	11-1HA20			3)			
	4	8.5	7 ... 10	11-1JA20			3)			
	5.5	11.5	9 ... 12.5	11-1KA20			3)			
	7.5	15.5	11 ... 16	21-4AA20	26-2BB40	29 21-2AA00	A	3RA21 20-4AH26-0BB4	1	1 ST 101
	7.5	15.5	14 ... 20	21-4BA20		+ 8US12 51-5NT11	A	3RA21 20-4BH26-0BB4	1	1 ST 101
	11	22	17 ... 22	21-4CA10	27-2BB40		A	3RA21 20-4CH27-0BB4	1	1 ST 101
	11	22	20 ... 25	21-4DA10			A	3RA21 20-4DH27-0BB4	1	1 ST 101
	15	29	27 ... 32	21-4EA10			A	3RA21 20-4EH27-0BB4	1	1 ST 101

Type of coordination "1" at $I_q = 153$ kA at 400 V
the m t sta te tect is c m atible ith t e c dinati n 2

S00	For load feeders for lower outputs, see this table at type of coordination "2".									
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB41	29 11-2AA00	A	3RA21 10-1FH15-1BB4	1	1 ST 101
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 8US12 51-5DT11	A	3RA21 10-1GH15-1BB4	1	1 ST 101
	3	6.5	5.5 ... 8	11-1HA20			A	3RA21 10-1HH15-1BB4	1	1 ST 101
	4	8.5	7 ... 10	11-1JA20	16-2BB41		A	3RA21 10-1JH16-1BB4	1	1 ST 101
	5.5	11.5	9 ... 12	11-1KA20	17-2BB41		A	3RA21 10-1KH17-1BB4	1	1 ST 101
	7.5	15.5	11 ... 16	11-4AA20	18-2BB40		A	3RA21 10-4AH18-1BB4	1	1 ST 101

¹⁾ For auxiliary switches see Accessories.

²⁾ Selection depends on the concrete startup and rated data of the protected motor.

³⁾ These combinations are not available as preassembled 3RA2 feeders, but they can be constructed as discrete assemblies. Mounting on a standard mounting rail adapter (3RA29 22-1AA00) is possible for feeder-oriented construction, in which case the contactor must be screwed to the adapter.

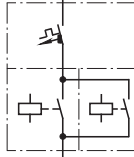
For Use in the Control Cabinet

3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing




3RA22 10 3RA22 20

Reversing duty



Rated control supply voltage 50/60 Hz 230 V AC
With spring-type connection

- Screw fixing with 2 push-in lugs each per load feeder is possible¹⁾
- 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 switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output <i>P</i>	Motor current <i>I</i> (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RH ⁴⁾ /Wiring kit		Spring-type terminals 			
	kW	A	A				Order No.	Basic price per PU		

Type of coordination "2" at $I_g = 153$ kA at 400 V

Compatible with the constitution

				3RV20	3RT20	3RA					ToC 2			
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP02	29 11-2AA00	A	3RA22 10-0BE15-2AP0		1	1 ST	101		
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 29 13-2AA2	A	3RA22 10-0CE15-2AP0		1	1 ST	101		
	0.09	0.3	0.22 ... 0.32	11-0DA20		A	3RA22 10-0DE15-2AP0	1		1 ST	101			
	0.09	0.3	0.28 ... 0.4	11-0EA20		A	3RA22 10-0EE15-2AP0	1		1 ST	101			
	0.12	0.4	0.35 ... 0.5	11-0FA20		A	3RA22 10-0FE15-2AP0	1		1 ST	101			
	0.18	0.6	0.45 ... 0.63	11-0GA20		A	3RA22 10-0GE15-2AP0	1		1 ST	101			
	0.18	0.6	0.55 ... 0.8	11-0HA20		A	3RA22 10-0HE15-2AP0	1		1 ST	101			
	0.25	0.85	0.7 ... 1	11-0JA20		A	3RA22 10-0JE15-2AP0	1		1 ST	101			
	0.37	1.1	0.9 ... 1.25	11-0KA20		A	3RA22 10-0KE15-2AP0	1		1 ST	101			
	0.55	1.5	1.1 ... 1.6	11-1AA20		A	3RA22 10-1AE15-2AP0	1		1 ST	101			
	0.75	1.9	1.4 ... 2	11-1BA20		A	3RA22 10-1BE15-2AP0	1		1 ST	101			
	0.75	1.9	1.8 ... 2.5	11-1CA20		A	3RA22 10-1CE15-2AP0	1		1 ST	101			
	1.1	2.7	2.2 ... 3.2	11-1DA20		A	3RA22 10-1DE15-2AP0	1		1 ST	101			
	1.5	3.6	2.8 ... 4	11-1EA20		A	3RA22 10-1EE15-2AP0	1		1 ST	101			
S0	1.5	3.6	3.5 ... 5	11-1FA20	24-2AP00	29 23-2AA2	5)							
	2.2	4.9	4.5 ... 6.3	11-1GA20		5)								
	3	6.5	5.5 ... 8	11-1HA20		5)								
	4	8.5	7 ... 10	11-1JA20		5)								
	5.5	11.5	9 ... 12.5	11-1KA20		5)								
	7.5	15.5	11 ... 16	21-4AA20	26-2AP00	29 21-2AA00	A	3RA22 20-4AF26-0AP0	1	1 ST	101			
	7.5	15.5	14 ... 20	21-4BA20		+ 29 23-1BB2 ⁶⁾	A	3RA22 20-4BF26-0AP0	1	1 ST	101			
	11	22	17 ... 22	21-4CA20	27-2AP00		A	3RA22 20-4CF27-0AP0	1	1 ST	101			
	11	22	20 ... 25	21-4DA20			A	3RA22 20-4DF27-0AP0	1	1 ST	101			
	15	29	27 ... 32	21-4EA20			A	3RA22 20-4EF27-0AP0	1	1 ST	101			

Type of coordination "1" at $I_g = 153$ kA at 400 V

the m t sta te tect is c m atible ith t e c dinati n 2

S00	For load feeders for lower outputs, see this table at type of coordination "2".						TgC 1					
S00	1.5	3.6	3.5 ... 5	11-1FA10	15-2AP02	29 11-2AA00	A	3RA22 10-1FE15-2AP0		1	1 ST	101
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 29 13-2AA2	A	3RA22 10-1GE15-2AP0		1	1 ST	101
	3	6.5	5.5 ... 8	11-1HA10			A	3RA22 10-1HE15-2AP0		1	1 ST	101
	4	8.5	7 ... 10	11-1JA10	16-2AP02		A	3RA22 10-1JE16-2AP0		1	1 ST	101
	5.5	11.5	9 ... 12	11-1KA10	17-2AP02		A	3RA22 10-1KE17-2AP0		1	1 ST	101
	7.5	15.5	11 ... 16	11-4AA10	18-2AP02		A	3RA22 10-4AE18-2AP0		1	1 ST	101

1) For push-in lugs see Accessories.

2) For auxiliary switches see Accessories.

3) Selection depends on the concrete startup and rated data of the protected motor.

⁴⁾ RH = assembly kit for reversing duty and standard rail mounting in size S0.

⁵⁾ These combinations are not available as preassembled 3RA2 feeders, but they can be constructed as discrete assemblies. The RH assembly kit for reversing duty and standard rail mounting (3RA29 23-1BB2) can be used for feeder-oriented construction instead of the 3RA29 23-2AA2 wiring kit, in which case the contactor must be screwed to the adapter.

6) The RH assembly kit also includes the 3RA29 11-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals.

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

For Use in the Control Cabinet

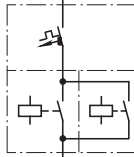
SIRIUS 3RA2 Load Feeders

3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing





3RA22 10 3RA22 20

Reversing duty



Rated control supply voltage 24 V DC
With screw connections

- Screw fixing with 2 push-in lugs each per load feeder is possible¹⁾
- 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 switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output <i>P</i>	Motor current <i>I</i> (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RH ⁴⁾ /Wiring kit		Screw terminals 			
kW	A	A					Order No.	Basic price per PU		

Type of coordination "2" at I _q = 153 kA at 400 V c m a t i b l e i t h t e c d i n a t i o n 1												
				3RV20	3RT20	3RA		ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	19 21-1DA00	A	3RA22 10-0BA15-2BB4 3RA22 10-0CA15-2BB4 3RA22 10-0DA15-2BB4 3RA22 10-0EA15-2BB4 3RA22 10-0FA15-2BB4 3RA22 10-0GA15-2BB4 3RA22 10-0HA15-2BB4 3RA22 10-0JA15-2BB4 3RA22 10-0KA15-2BB4 3RA22 10-1AA15-2BB4 3RA22 10-1BA15-2BB4 3RA22 10-1CA15-2BB4 3RA22 10-1DA15-2BB4 3RA22 10-1EA15-2BB4		1	1 ST	101
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 29 13-2AA1	A			1	1 ST	101
	0.09	0.3	0.22 ... 0.32	11-0DA10		A	1			1 ST	101	
	0.09	0.3	0.28 ... 0.4	11-0EA10		A	1			1 ST	101	
	0.12	0.4	0.35 ... 0.5	11-0FA10		A	1			1 ST	101	
	0.18	0.6	0.45 ... 0.63	11-0GA10		A	1			1 ST	101	
	0.18	0.6	0.55 ... 0.8	11-0HA10		A	1			1 ST	101	
	0.25	0.85	0.7 ... 1	11-0JA10		A	1			1 ST	101	
	0.37	1.1	0.9 ... 1.25	11-0KA10		A	1			1 ST	101	
	0.55	1.5	1.1 ... 1.6	11-1AA10		A	1			1 ST	101	
0.75	1.9	1.4 ... 2	11-1BA10		A	1	1 ST	101				
0.75	1.9	1.8 ... 2.5	11-1CA10		A	1	1 ST	101				
1.1	2.7	2.2 ... 3.2	11-1DA10		A	1	1 ST	101				
1.5	3.6	2.8 ... 4	11-1EA10		A	1	1 ST	101				
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	29 21-1BA00	A	3RA22 20-1FB24-0BB4 3RA22 20-1GB24-0BB4 3RA22 20-1HB24-0BB4 3RA22 20-1JB24-0BB4 3RA22 20-1KB24-0BB4 3RA22 20-4AB26-0BB4 3RA22 20-4BB26-0BB4 3RA22 20-4CB27-0BB4 3RA22 20-4DB27-0BB4 3RA22 20-4EB27-0BB4		1	1 ST	101
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 29 23-1BB1	A			1	1 ST	101
	3	6.5	5.5 ... 8	11-1HA10		A	1			1 ST	101	
	4	8.5	7 ... 10	11-1JA10		A	1			1 ST	101	
	5.5	11.5	9 ... 12.5	11-1KA10		A	1			1 ST	101	
	7.5	15.5	11 ... 16	21-4AA10	26-1BB40	A	1			1 ST	101	
	7.5	15.5	14 ... 20	21-4BA10		A	1			1 ST	101	
	11	22	17 ... 22	21-4CA10	27-1BB40	A	1			1 ST	101	
	11	22	20 ... 25	21-4DA10		A	1			1 ST	101	
	15	29	27 ... 32	21-4EA10		A	1			1 ST	101	

Type of coordination "1" at $I_q = 153 \text{ kA}$ at 400 V											
the m t s t a t e t e c t i s c m a t i b l e i t h t e c d i n a t i o n 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	19 21-1DA00	A	3RA22 10-1FA15-2BB4	1	1 ST	101
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 29 13-2AA1	A	3RA22 10-1GA15-2BB4	1	1 ST	101
	3	6.5	5.5 ... 8	11-1HA10			A	3RA22 10-1HA15-2BB4	1	1 ST	101
	4	8.5	7 ... 10	11-1JA10	16-1BB42		A	3RA22 10-1JA16-2BB4	1	1 ST	101
	5.5	11.5	9 ... 12	11-1KA10	17-1BB42		A	3RA22 10-1KA17-2BB4	1	1 ST	101
	7.5	15.5	11 ... 16	11-4AA10	18-1BB42		A	3RA22 10-4AA18-2BB4	1	1 ST	101

1) For push-in lugs see Accessories.

2) For auxiliary switches see Accessories.

3) Selection depends on the concrete startup and rated data of the protected motor.

4) RH = assembly kit for reversing duty and standard rail mounting in size S0.

For Use in the Control Cabinet

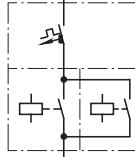
SIRIUS 3RA2 Load Feeders

3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing



3RA22 10 3RA22 20

Reversing duty



Rated control supply voltage 24 V DC With spring-type connection

- Screw fixing with 2 push-in lugs each per load feeder is possible¹⁾
- 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 switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RH ⁴⁾ /Wiring kit		Spring-type terminals			
							Order No.	Basic price per PU		

Type of coordination "2" at $I_q = 153 \text{ kA}$ at 400 V

	3RV20	3RT20	3RA29							
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB42	29 11-2AA00	A	3RA22 10-0BE15-2BB4	1	1 ST 101
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 29 13-2AA2	A	3RA22 10-0CE15-2BB4	1	1 ST 101
	0.09	0.3	0.22 ... 0.32	11-0DA20			A	3RA22 10-0DE15-2BB4	1	1 ST 101
	0.09	0.3	0.28 ... 0.4	11-0EA20			A	3RA22 10-0EE15-2BB4	1	1 ST 101
	0.12	0.4	0.35 ... 0.5	11-0FA20			A	3RA22 10-0FE15-2BB4	1	1 ST 101
	0.18	0.6	0.45 ... 0.63	11-0GA20			A	3RA22 10-0GE15-2BB4	1	1 ST 101
	0.18	0.6	0.55 ... 0.8	11-0HA20			A	3RA22 10-0HE15-2BB4	1	1 ST 101
	0.25	0.85	0.7 ... 1	11-0JA20			A	3RA22 10-0JE15-2BB4	1	1 ST 101
	0.37	1.1	0.9 ... 1.25	11-0KA20			A	3RA22 10-0KE15-2BB4	1	1 ST 101
	0.55	1.5	1.1 ... 1.6	11-1AA20			A	3RA22 10-1AE15-2BB4	1	1 ST 101
	0.75	1.9	1.4 ... 2	11-1BA20			A	3RA22 10-1BE15-2BB4	1	1 ST 101
	0.75	1.9	1.8 ... 2.5	11-1CA20			A	3RA22 10-1CE15-2BB4	1	1 ST 101
	1.1	2.7	2.2 ... 3.2	11-1DA20			A	3RA22 10-1DE15-2BB4	1	1 ST 101
	1.5	3.6	2.8 ... 4	11-1EA20			A	3RA22 10-1EE15-2BB4	1	1 ST 101
S0	1.5	3.6	3.5 ... 5	11-1FA20	24-2BB40	29 23-2AA2	5)			
	2.2	4.9	4.5 ... 6.3	11-1GA20			5)			
	3	6.5	5.5 ... 8	11-1HA20			5)			
	4	8.5	7 ... 10	11-1JA20			5)			
	5.5	11.5	9 ... 12.5	11-1KA20			5)			
	7.5	15.5	11 ... 16	21-4AA20	26-2BB40	29 21-2AA00	A	3RA22 20-4AF26-0BB4	1	1 ST 101
	7.5	15.5	14 ... 20	21-4BA20		+ 29 23-1BB2	A	3RA22 20-4BF26-0BB4	1	1 ST 101
	11	22	17 ... 22	21-4CA20	27-2BB40		A	3RA22 20-4CF27-0BB4	1	1 ST 101
	11	22	20 ... 25	21-4DA20			A	3RA22 20-4DF27-0BB4	1	1 ST 101
	15	29	27 ... 32	21-4EA20			A	3RA22 20-4EF27-0BB4	1	1 ST 101

Type of coordination "1" at $I_q = 153 \text{ kA}$ at 400 V

	3RV20	3RT20	3RA29							
S00	For load feeders for lower outputs, see this table at type of coordination "2".									
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB42	29 11-2AA00	A	3RA22 10-1FE15-2BB4	1	1 ST 101
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 29 13-2AA2	A	3RA22 10-1GE15-2BB4	1	1 ST 101
	3	6.5	5.5 ... 8	11-1HA20			A	3RA22 10-1HE15-2BB4	1	1 ST 101
	4	8.5	7 ... 10	11-1JA20	16-2BB42		A	3RA22 10-1JE16-2BB4	1	1 ST 101
	5.5	11.5	9 ... 12	11-1KA20	17-2BB42		A	3RA22 10-1KE17-2BB4	1	1 ST 101
	7.5	15.5	11 ... 16	11-4AA20	18-2BB42		A	3RA22 10-4AE18-2BB4	1	1 ST 101

¹⁾ For push-in lugs see Accessories.

²⁾ For auxiliary switches see Accessories.

³⁾ Selection depends on the concrete startup and rated data of the protected motor.

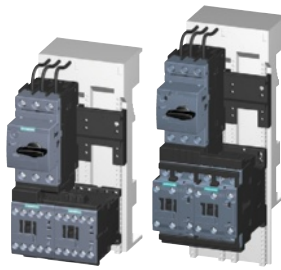
⁴⁾ RH = assembly kit for reversing duty and standard rail mounting in size S0.

⁵⁾ These combinations are not available as preassembled 3RA2 feeders, but they can be constructed as discrete assemblies. The RH assembly kit for reversing duty and standard rail mounting (3RA29 23-1BB2) can be used for feeder-oriented construction instead of the 3RA29 23-2AA2 wiring kit, in which case the contactor must be screwed to the adapter.

For Use in the Control Cabinet

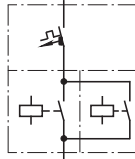
SIRIUS 3RA2 Load Feeders

3RA22 reversing starters for 60 mm busbar system



3RA22 10 3RA22 20

Reversing duty



Rated control supply voltage 50/60 Hz 230 V AC 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 switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS ³⁾ /Wiring kit		Screw terminals			
							Order No.	Basic price per PU		

kW A A

Type of coordination "2" at $I_q = 153 \text{ kA}$ at 400 V

	3RV20			3RT20			3RA			ToC 2		
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP02	19 21-1DA00	A	3RA22 10-0BD15-2AP0	1	1 ST	101	
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 29 13-1DB1	A	3RA22 10-0CD15-2AP0	1	1 ST	101	
	0.09	0.3	0.22 ... 0.32	11-0DA10			A	3RA22 10-0DD15-2AP0	1	1 ST	101	
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	3RA22 10-0ED15-2AP0	1	1 ST	101	
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	3RA22 10-0FD15-2AP0	1	1 ST	101	
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	3RA22 10-0GD15-2AP0	1	1 ST	101	
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA22 10-0HD15-2AP0	1	1 ST	101	
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA22 10-0JD15-2AP0	1	1 ST	101	
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA22 10-0KD15-2AP0	1	1 ST	101	
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA22 10-1AD15-2AP0	1	1 ST	101	
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA22 10-1BD15-2AP0	1	1 ST	101	
	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1AP02		A	3RA22 10-1CD15-2AP0	1	1 ST	101	
	1.1	2.7	2.2 ... 3.2	11-1DA10			A	3RA22 10-1DD15-2AP0	1	1 ST	101	
	1.5	3.6	2.8 ... 4	11-1EA10			A	3RA22 10-1ED15-2AP0	1	1 ST	101	
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	29 21-1AA00	A	3RA22 20-1FD24-0AP0	1	1 ST	101	
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 29 23-1DB1	A	3RA22 20-1GD24-0AP0	1	1 ST	101	
	3	6.5	5.5 ... 8	11-1HA10			A	3RA22 20-1HD24-0AP0	1	1 ST	101	
	4	8.5	7 ... 10	11-1JA10			A	3RA22 20-1JD24-0AP0	1	1 ST	101	
	5.5	11.5	9 ... 12.5	11-1KA10			A	3RA22 20-1KD24-0AP0	1	1 ST	101	
	7.5	15.5	11 ... 16	21-4AA10	26-1AP00		A	3RA22 20-4AD26-0AP0	1	1 ST	101	
	7.5	15.5	14 ... 20	21-4BA10			A	3RA22 20-4BD26-0AP0	1	1 ST	101	
	11	22	17 ... 22	21-4CA10	27-1AP00		A	3RA22 20-4CD27-0AP0	1	1 ST	101	
	11	22	20 ... 25	21-4DA10			A	3RA22 20-4DD27-0AP0	1	1 ST	101	
	15	29	27 ... 32	21-4EA10			A	3RA22 20-4ED27-0AP0	1	1 ST	101	

Type of coordination "1" at $I_q = 153 \text{ kA}$ at 400 V

S00 For load feeders for lower outputs, see this table at type of coordination "2".

	3RV20			3RT20			3RA			ToC 1		
S00	1.5	3.6	3.5 ... 5	11-1FA10	15-1AP02	19 21-1DA00	A	3RA22 10-1FD15-2AP0	1	1 ST	101	
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 29 13-1DB1	A	3RA22 10-1GD15-2AP0	1	1 ST	101	
	3	6.5	5.5 ... 8	11-1HA10			A	3RA22 10-1HD15-2AP0	1	1 ST	101	
	4	8.5	7 ... 10	11-1JA10	16-1AP02		A	3RA22 10-1JD16-2AP0	1	1 ST	101	
	5.5	11.5	9 ... 12	11-1KA10	17-1AP02		A	3RA22 10-1KD17-2AP0	1	1 ST	101	
	7.5	15.5	11 ... 16	11-4AA10	18-1AP02		A	3RA22 10-4AD18-2AP0	1	1 ST	101	

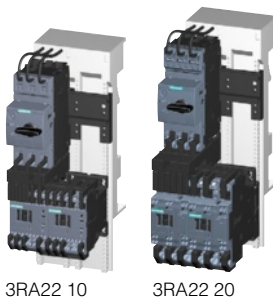
¹⁾ For auxiliary switches see Accessories.

²⁾ Selection depends on the concrete startup and rated data of the protected motor.

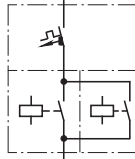
³⁾ RS = assembly kit for reversing duty and busbar mounting.

For Use in the Control Cabinet

3RA22 reversing starters for 60 mm busbar system




Reversing duty



Rated control supply voltage 50/60 Hz 230 V AC
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 switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output <i>P</i>	Motor current <i>I</i> (guide value)					Spring-type terminals 			
			Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS ³⁾ /Wiring kit		Order No. <div></div> Basic price per PU			

Type of coordination "2" at $I_q = 153$ kA at 400 V

				3RV20	3RT20	3RA			ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP02	29 11-2AA00	A	3RA22 10-0BH15-2AP0		1	1	ST	101
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 29 13-1DB2	A	3RA22 10-0CH15-2AP0		1	1	ST	101
	0.09	0.3	0.22 ... 0.32	11-0DA20		A	3RA22 10-0DH15-2AP0		1	1	ST	101	
	0.09	0.3	0.28 ... 0.4	11-0EA20		A	3RA22 10-0EH15-2AP0		1	1	ST	101	
	0.12	0.4	0.35 ... 0.5	11-0FA20		A	3RA22 10-0FH15-2AP0		1	1	ST	101	
	0.18	0.6	0.45 ... 0.63	11-0GA20		A	3RA22 10-0GH15-2AP0		1	1	ST	101	
	0.18	0.6	0.55 ... 0.8	11-0HA20		A	3RA22 10-0HH15-2AP0		1	1	ST	101	
	0.25	0.85	0.7 ... 1	11-0JA20		A	3RA22 10-0JH15-2AP0		1	1	ST	101	
	0.37	1.1	0.9 ... 1.25	11-0KA20		A	3RA22 10-0KH15-2AP0		1	1	ST	101	
	0.55	1.5	1.1 ... 1.6	11-1AA20		A	3RA22 10-1AH15-2AP0		1	1	ST	101	
	0.75	1.9	1.4 ... 2	11-1BA20		A	3RA22 10-1BH15-2AP0		1	1	ST	101	
	0.75	1.9	1.8 ... 2.5	11-1CA20		A	3RA22 10-1CH15-2AP0		1	1	ST	101	
	1.1	2.7	2.2 ... 3.2	11-1DA20		A	3RA22 10-1DH15-2AP0		1	1	ST	101	
	1.5	3.6	2.8 ... 4	11-1EA20		A	3RA22 10-1EH15-2AP0		1	1	ST	101	
	S0	1.5	3.6	3.5 ... 5	11-1FA20	24-2AP00	29 23-2AA2	4)					
2.2		4.9	4.5 ... 6.3	11-1GA20			4)						
3		6.5	5.5 ... 8	11-1HA20			4						
4		8.5	7 ... 10	11-1JA20			4)						
5.5		11.5	9 ... 12.5	11-1KA20			4						
7.5		15.5	11 ... 16	21-4AA20	26-2AP00	29 21-2AA00	A	3RA22 20-4AH26-0AP0		1	1	ST	101
7.5		15.5	14 ... 20	21-4BA20		+ 29 23-1DB2 ⁵⁾	A	3RA22 20-4BH26-0AP0		1	1	ST	101
11		22	17 ... 22	21-4CA20			A	3RA22 20-4CH27-0AP0		1	1	ST	101
11		22	20 ... 25	21-4DA20	27-2AP00		A	3RA22 20-4DH27-0AP0		1	1	ST	101
15		29	27 ... 32	21-4EA20			A	3RA22 20-4EH27-0AP0		1	1	ST	101

Type of coordination "1" at $I_q = 153 \text{ kA}$ at 400 V

S00 For load feeders for lower outputs, see this table at type of coordination "2".

[illegible]

1) For auxiliary switches see Accessories.

2) Selection depends on the concrete startup and rated data of the protected motor.

³⁾ RS = assembly kit for reversing duty and busbar mounting.

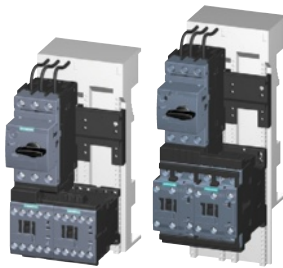
4) These combinations are not available as preassembled 3RA2 feeders, but they can be constructed as discrete assemblies. The RH assembly kit for reversing duty and standard rail mounting (3RA29 23-1BB2) can be used for feeder-oriented construction instead of the 3RA29 23-2AA2 wiring kit, in which case the contactor must be screwed to the adapter.

5) The RS assembly kit also includes the 3RA29 11-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals.

For Use in the Control Cabinet

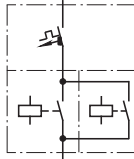
SIRIUS 3RA2 Load Feeders

3RA22 reversing starters for 60 mm busbar system



3RA22 10 3RA22 20

Reversing duty



Rated control supply voltage 24 V DC With screw connections

- 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 switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS ³⁾ /Wiring kit		Screw terminals			
							Order No.	Basic price per PU		

kW A A

Type of coordination "2" at $I_q = 153 \text{ kA}$ at 400 V

				3RV20	3RT20	3RA					
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	19 21-1DA00	A	3RA22 10-0BD15-2BB4	1	1 ST	101
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 29 13-1DB1	A	3RA22 10-0CD15-2BB4	1	1 ST	101
	0.09	0.3	0.22 ... 0.32	11-0DA10			A	3RA22 10-0DD15-2BB4	1	1 ST	101
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	3RA22 10-0ED15-2BB4	1	1 ST	101
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	3RA22 10-0FD15-2BB4	1	1 ST	101
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	3RA22 10-0GD15-2BB4	1	1 ST	101
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA22 10-0HD15-2BB4	1	1 ST	101
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA22 10-0JD15-2BB4	1	1 ST	101
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA22 10-0KD15-2BB4	1	1 ST	101
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA22 10-1AD15-2BB4	1	1 ST	101
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA22 10-1BD15-2BB4	1	1 ST	101
	0.75	1.9	1.8 ... 2.5	11-1CA10			A	3RA22 10-1CD15-2BB4	1	1 ST	101
	1.1	2.7	2.2 ... 3.2	11-1DA10			A	3RA22 10-1DD15-2BB4	1	1 ST	101
	1.5	3.6	2.8 ... 4	11-1EA10			A	3RA22 10-1ED15-2BB4	1	1 ST	101
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	29 21-1BA00	A	3RA22 20-1FD24-0BB4	1	1 ST	101
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 29 23-1DB1	A	3RA22 20-1GD24-0BB4	1	1 ST	101
	3	6.5	5.5 ... 8	11-1HA10			A	3RA22 20-1HD24-0BB4	1	1 ST	101
	4	8.5	7 ... 10	11-1JA10			A	3RA22 20-1JD24-0BB4	1	1 ST	101
	5.5	11.5	9 ... 12.5	11-1KA10			A	3RA22 20-1KD24-0BB4	1	1 ST	101
	7.5	15.5	11 ... 16	21-4AA10	26-1BB40		A	3RA22 20-4AD26-0BB4	1	1 ST	101
	7.5	15.5	14 ... 20	21-4BA10			A	3RA22 20-4BD26-0BB4	1	1 ST	101
	11	22	17 ... 22	21-4CA10	27-1BB40		A	3RA22 20-4CD27-0BB4	1	1 ST	101
	11	22	20 ... 25	21-4DA10			A	3RA22 20-4DD27-0BB4	1	1 ST	101
	15	29	27 ... 32	21-4EA10			A	3RA22 20-4ED27-0BB4	1	1 ST	101

Type of coordination "1" at $I_q = 153 \text{ kA}$ at 400 V

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	19 21-1DA00	A	3RA22 10-1FD15-2BB4	1	1 ST	101
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 29 13-1DB1	A	3RA22 10-1GD15-2BB4	1	1 ST	101
	3	6.5	5.5 ... 8	11-1HA10			A	3RA22 10-1HD15-2BB4	1	1 ST	101
	4	8.5	7 ... 10	11-1JA10	16-1BB42		A	3RA22 10-1JD16-2BB4	1	1 ST	101
	5.5	11.5	9 ... 12	11-1KA10	17-1BB42		A	3RA22 10-1KD17-2BB4	1	1 ST	101
	7.5	15.5	11 ... 16	11-4AA10	18-1BB42		A	3RA22 10-4AD18-2BB4	1	1 ST	101

¹⁾ For auxiliary switches see Accessories.

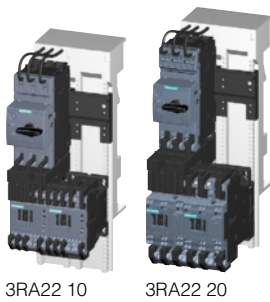
²⁾ Selection depends on the concrete startup and rated data of the protected motor.

³⁾ RS = assembly kit for reversing duty and busbar mounting.

For Use in the Control Cabinet

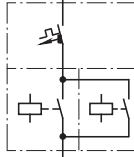
SIRIUS 3RA2 Load Feeders

**3RA22 reversing starters
for 60 mm busbar system**



3RA22 10 3RA22 20

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 switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS ³⁾ /Wiring kit					
							Spring-type terminals			
							Order No.	Basic price per PU		

Type of coordination "2" at $I_q = 153 \text{ kA}$ at 400 V										
c m atible ith t e c dinati n 1										
	kW	A	A		3RV20	3RT20	3RA29			
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB42	29 11-2AA00	A	3RA22 10-0BH15-2BB4	1	1 ST 101
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 29 13-1DB2	A	3RA22 10-0CH15-2BB4	1	1 ST 101
	0.09	0.3	0.22 ... 0.32	11-0DA20			A	3RA22 10-0DH15-2BB4	1	1 ST 101
	0.09	0.3	0.28 ... 0.4	11-0EA20			A	3RA22 10-0EH15-2BB4	1	1 ST 101
	0.12	0.4	0.35 ... 0.5	11-0FA20			A	3RA22 10-0FH15-2BB4	1	1 ST 101
	0.18	0.6	0.45 ... 0.63	11-0GA20			A	3RA22 10-0GH15-2BB4	1	1 ST 101
	0.18	0.6	0.55 ... 0.8	11-0HA20			A	3RA22 10-0HH15-2BB4	1	1 ST 101
	0.25	0.85	0.7 ... 1	11-0JA20			A	3RA22 10-0JH15-2BB4	1	1 ST 101
	0.37	1.1	0.9 ... 1.25	11-0KA20			A	3RA22 10-0KH15-2BB4	1	1 ST 101
	0.55	1.5	1.1 ... 1.6	11-1AA20			A	3RA22 10-1AH15-2BB4	1	1 ST 101
	0.75	1.9	1.4 ... 2	11-1BA20			A	3RA22 10-1BH15-2BB4	1	1 ST 101
	0.75	1.9	1.8 ... 2.5	11-1CA20			A	3RA22 10-1CH15-2BB4	1	1 ST 101
	1.1	2.7	2.2 ... 3.2	11-1DA20			A	3RA22 10-1DH15-2BB4	1	1 ST 101
	1.5	3.6	2.8 ... 4	11-1EA20			A	3RA22 10-1EH15-2BB4	1	1 ST 101
S0	1.5	3.6	3.5 ... 5	11-1FA20	24-2BB40	29 23-2AA2	4)			
	2.2	4.9	4.5 ... 6.3	11-1GA20			4)			
	3	6.5	5.5 ... 8	11-1HA20			4)			
	4	8.5	7 ... 10	11-1JA20			4)			
	5.5	11.5	9 ... 12.5	11-1KA20			4)			
	7.5	15.5	11 ... 16	21-4AA20	26-2BB40	29 21-2AA00	A	3RA22 20-4AH26-0BB4	1	1 ST 101
	7.5	15.5	14 ... 20	21-4BA20		+ 29 23-1DB2	A	3RA22 20-4BH26-0BB4	1	1 ST 101
	11	22	17 ... 22	21-4CA20	27-2BB40		A	3RA22 20-4CH27-0BB4	1	1 ST 101
	11	22	20 ... 25	21-4DA20			A	3RA22 20-4DH27-0BB4	1	1 ST 101
	15	29	27 ... 32	21-4EA20			A	3RA22 20-4EH27-0BB4	1	1 ST 101

Type of coordination "1" at $I_q = 153 \text{ kA}$ at 400 V										
the m t sta te tect is c m atible ith t e c dinati n 2										
S00	For load feeders for lower outputs, see this table at type of coordination "2".									
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB42	29 11-2AA00	A	3RA22 10-1FH15-2BB4	1	1 ST 101
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 29 13-1DB2	A	3RA22 10-1GH15-2BB4	1	1 ST 101
	3	6.5	5.5 ... 8	11-1HA20			A	3RA22 10-1HH15-2BB4	1	1 ST 101
	4	8.5	7 ... 10	11-1JA20	16-2BB42		A	3RA22 10-1JH16-2BB4	1	1 ST 101
	5.5	11.5	9 ... 12	11-1KA20	17-2BB42		A	3RA22 10-1KH17-2BB4	1	1 ST 101
	7.5	15.5	11 ... 16	11-4AA20	18-2BB42		A	3RA22 10-4AH18-2BB4	1	1 ST 101

¹⁾ For auxiliary switches see Accessories.

²⁾ Selection depends on the concrete startup and rated data of the protected motor.

³⁾ RS = assembly kit for reversing duty and busbar mounting.

⁴⁾ These combinations are not available as preassembled 3RA2 feeders, but they can be constructed as discrete assemblies. The RH assembly kit for reversing duty and standard rail mounting (3RA29 23-1BB2) can be used for feeder-oriented construction instead of the 3RA29 23-2AA2 wiring kit, in which case the contactor must be screwed to the adapter.

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

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

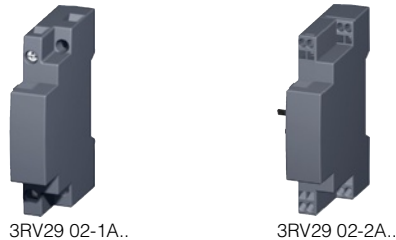
Accessories for motor starter protectors



PU (UNIT, SET, M)=1
PS* =1 unit
PG =101

Version	For motor starter protectors	DT	Screw terminals	DT	Spring-type terminals	
			Order No.	Price per PU	Order No.	Price per PU
Size						
Auxiliary switches						
Transverse auxiliary switches						
For front mounting						
1 CO	S00/S0	▶	3RV29 01-1D		--	
1 NO + 1 NC		▶	3RV29 01-1E	▶	3RV29 01-2E	
Lateral auxiliary switches						
Mountable on the left						
1 NO + 1 NC	S00/S0	▶	3RV29 01-1A	▶	3RV29 01-2A	

1) Each motor starter protector 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.



Rated control supply voltage U_s				For motor starter protectors	DT	Screw terminals	DT	Spring-type terminals	
AC 50 Hz	AC 60 Hz	AC 50/60 Hz	AC/DC 50/60 Hz, DC 5 s ON period ¹⁾			Order No.	Price per PU	Order No.	Price per PU
V	V	V	V	Size					
Auxiliary releases for motor starter protectors ³⁾									
Undervoltage releases									
230	240	--	--	S00/S0	▶	3RV29 02-1AP0	▶	3RV29 02-2AP0	
Shunt releases									
--	--	210 ... 240	190 ... 330	S00/S0	▶	3RV29 02-1DP0	▶	3RV29 02-2DP0	

- 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 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 (does not apply to 3RV21 motor starter protectors with overload relay function).







The complete range of accessories for the motor starter protectors can be found in Chapter 5 "Protection Equipment" --> "SIRIUS 3RV2 Motor Starter Protectors up to 40 A" --> "Accessories".

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

Accessories for contactors

For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size							
Auxiliary switch blocks for snapping onto the front of contactors							
 3RH29 11-1BA..	Cable entry from below						
	S00	1-pole					
		- 1 NO	▶ 3RH29 11-1BA10		1	1 ST	101
		- 1 NC	▶ 3RH29 11-1BA01		1	1 ST	101
 3RH29 11-1MA..	S00	2-pole					
		- 1 NO + 1 NC	▶ 3RH29 11-1MA11		1	1 ST	101
		- 2 NO	▶ 3RH29 11-1MA20		1	1 ST	101
Laterally mountable auxiliary switch blocks for contactors							
 3 29 11 1 A..	S00	2 NC	A 3RH29 11-1DA02		1	1 ST	101
	S00	1 NO + 1 NC	A 3RH29 11-1DA11		1	1 ST	101
	S00	2 NO	A 3RH29 11-1DA20		1	1 ST	101
	S0	2 NC	A 3RH29 21-1DA02		1	1 ST	101
	S0	1 NO + 1 NC	A 3RH29 21-1DA11		1	1 ST	101
	S0	2 NO	A 3RH29 21-1DA20		1	1 ST	101
 3 29 11 2 A..	S00	2 NC	A 3RH29 11-2DA02		1	1 ST	101
	S00	1 NO + 1 NC	A 3RH29 11-2DA11		1	1 ST	101
	S00	2 NO	A 3RH29 11-2DA20		1	1 ST	101
	S0	2 NC	A 3RH29 21-2DA02		1	1 ST	101
	S0	1 NO + 1 NC	A 3RH29 21-2DA11		1	1 ST	101
	S0	2 NO	A 3RH29 21-2DA20		1	1 ST	101
Connection modules for contactors with screw terminals (can be used only for direct-on-line starters)							
 3RT19 26-4RD01	Adapters for contactors						
	Ambient temperature $T_{u \max.} = 60 \text{ °C}$						
	S00	Rated operational current I_e at AC-3/400 V: 20 A	C 3RT19 16-4RD01		1	1 ST	101
	S0	Rated operational current I_e at AC-3/400 V: 25 A	C 3RT19 26-4RD01		1	1 ST	101
 3RT19 00-4RE01	Plugs for contactors						
	S00, S0	--	B 3RT19 00-4RE01		1	1 ST	101

The complete range of accessories for the contactors can be found in Chapter 3 "Controls – Contactors and Contactor Assemblies" --> "Accessories and Spare Parts".

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

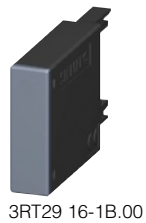
Accessories

For contactors	Version	Rated control supply voltage U_s ¹⁾	DT	Order No. ²⁾	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V						

Surge suppressors without LED for contactors

Size S00

For plugging onto the front side of the contactors with and without auxiliary switch blocks



3RT2.	Varistors	24 ... 48 AC, 24 ... 70 DC	▶	3RT29 16-1BB00	1	1 ST	101
		127 ... 240 AC, 150 ... 250 DC	▶	3RT29 16-1BD00	1	1 ST	101
3RT2.	RC elements	24 ... 48 AC, 24 ... 70 DC	▶	3RT29 16-1CB00	1	1 ST	101
		127 ... 240 AC, 150 ... 250 DC	▶	3RT29 16-1CD00	1	1 ST	101
3RT2.	Noise suppression diodes	12 ... 250 DC	▶	3RT29 16-1DG00	1	1 ST	101
3RT2.	Diode assemblies (diode and Zener diode) for DC operation and short break times	12 ... 250 DC	▶	3RT29 16-1EH00	1	1 ST	101

Size S0

For plugging onto the front side of the contactors (prior to mounting of the auxiliary switch block)



3RT20 2	Varistors	24 ... 48 AC, 24 ... 70 DC	▶	3RT29 26-1BB00	1	1 ST	101
		127 ... 240 AC, 150 ... 250 DC	▶	3RT29 26-1BD00	1	1 ST	101
3RT20 2	RC elements	24 ... 48 AC, 24 ... 70 DC	▶	3RT29 26-1CB00	1	1 ST	101
		127 ... 240 AC, 150 ... 250 DC	▶	3RT29 26-1CD00	1	1 ST	101
3RT20 2	Diode assemblies for DC operation and short break times	24 DC	▶	3RT29 26-1ER00	1	1 ST	101
		30 ... 250 DC	▶	3RT29 26-1ES00	1	1 ST	101

¹⁾ Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

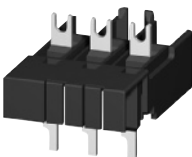

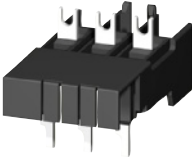
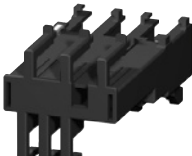

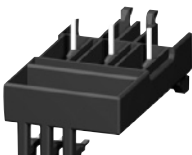
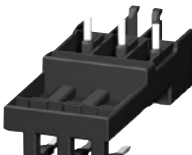
²⁾ For packs of 10 or 5 units "-Z" and order code "X90" must be added to the Order No.

For Use in the Control Cabinet

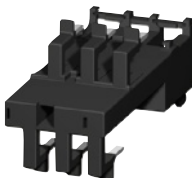
SIRIUS 3RA2 Load Feeders

Accessories

Accessories for the customer assembly of fuseless load feeders

	For motor starter protectors	For contactors	Actuating voltage of contactor	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Size							
Link modules from motor starter protector to contactor									
	Electrical and mechanical link between motor starter protector and contactor				Screw terminals 				
	Single-unit packaging								
	S00/S0	S00	AC and DC	►	3RA19 21-1DA00		1	1 ST	101
	S00/S0	S0	AC	A	3RA29 21-1AA00		1	1 ST	101
S00/S0	S0	DC	A	3RA29 21-1BA00		1	1 ST	101	
3RA29 21-1AA00									
	Multi-unit packaging								
	S00/S0	S00	AC and DC	►	3RA19 21-1D		1	10 ST	101
	S00/S0	S0	AC	A	3RA29 21-1A		1	10 ST	101
	S00/S0	S0	DC	A	3RA29 21-1B		1	10 ST	101
3RA29 21-1BA00									
	Electrical and mechanical link between motor starter protector and contactor				Spring-type terminals 				
	Single-unit packaging								
	S00	S00	AC and DC	►	3RA29 11-2AA00		1	1 ST	101
	S0	S0	AC ¹⁾ and DC	►	3RA29 21-2AA00		1	1 ST	101
Multi-unit packaging									
S00	S00	AC and DC	►	3RA29 11-2A		1	10 ST	101	
S0	S0	AC ¹⁾ and DC	►	3RA29 21-2A		1	10 ST	101	
3RA29 11-2AA00									
Hybrid link modules from motor starter protector to contactor									
	Mechanical and electrical connection between motor starter protector with screw terminals and contactor with spring-type terminals								
	Single-unit packaging								
	S00	S00	AC and DC	►	3RA29 11-2FA00		1	1 ST	101
	S0	S0	AC ¹⁾ and DC	►	3RA29 21-2FA00		1	1 ST	101
3RA29 11-2FA00									
	Multi-unit packaging								
	S00	S00	AC and DC	►	3RA29 11-2F		1	10 ST	101
	S0	S0	AC ¹⁾ and DC	►	3RA29 21-2F		1	10 ST	101
	3RA29 21-2FA00								

¹⁾ A spacer for height compensation on AC contactors with spring-type terminals, size S0, is optionally available, see page 6/39.

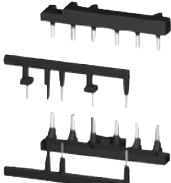
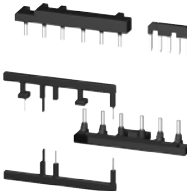



	For motor starter protectors	For soft starters	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Size						
Link modules from motor starter protector to soft starter								
 3RA29 21-2GA00	Electrical and mechanical link between motor starter protector and soft starter or solid-state contactor							
	Single-unit packaging							
	S00/S0	S00/S0	A	3RA29 21-1BA00		1	1 ST	101
	Multi-unit packaging							
	S00/S0	S00/S0	A	3RA29 21-1B		1	10 ST	101
	Electrical and mechanical link between motor starter protector and soft starter							
	Single-unit packaging							
	S00	S00	▶	3RA29 11-2GA00		1	1 ST	101
	S0	S0	▶	3RA29 21-2GA00		1	1 ST	101
	Multi-unit packaging							
	S00	S00	▶	3RA29 11-2G		1	10 ST	101
	S0		▶	3RA29 21-2G		1	10 ST	101

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

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders



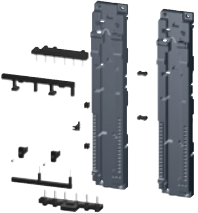

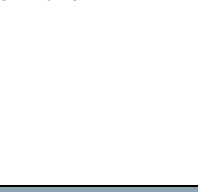


Accessories

For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Size								
Wiring kits for contactors								
 3RA29 23-2AA1	S00 S0	Reversing duty Electrical and mechanical link for reversing contactors, optionally with integrated electrical and mechanical interlock	A A	Screw terminals		1 1	1 ST 1 ST	101 101
 3RA29 23-2BB1	S00 S0	Wye-delta starting Electrical and mechanical link for three contactors of same size	A A			1 1	1 ST 1 ST	101 101
 3RA29 23-2AA2	S00 S0	Reversing duty Electrical and mechanical link for reversing contactors, optionally with integrated electrical and mechanical interlock	A A	Spring-type terminals		1 1	1 ST 1 ST	101 101
 3RA29 23-2BB2	S00 S0	Wye-delta starting Electrical and mechanical link for three contactors of same size	A A			1 1	1 ST 1 ST	101 101
Safety main current connectors for 2 contactors								
 3RA29 16-1A	S00 S0	Switches 2 contactors in series	A A	Screw terminals		1 1	1 ST 1 ST	101 101

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

For motor starter protectors Size	For contactors Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Standard mounting rail adapters								
		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	A	3RA29 22-1AA00	1	1 ST	101
	S00, S0	S00, S0	Multi-unit packaging	A	3RA29 22-1A	1	5 ST	101
Side modules for standard mounting rail adapters								
	S00/S0	S00/S0	For standard mounting rail adapters 10 mm wide, 96 mm long, for widening standard mounting rail adapters when using lateral auxiliary switches, 2 units required	▶	3RA19 02-1B	1	10 ST	101
RH assembly kits for reversing duty and standard rail mounting in size S0								
RH assembly kit for screw terminals								
	S0	S0	Consisting of: • Wiring kit • 2 standard mounting rail adapters • 2 connecting wedges Link modules must be ordered separately.	A	Screw terminals  3RA29 23-1BB1	1	1 ST	101
RH assembly kits for spring-type terminals								
	S0	S0	Consisting of: • Wiring kit • 2 standard mounting rail adapters • 2 connecting wedges • Spacers Link modules must be ordered separately.	A	Spring-type terminals  3RA29 23-1BB2	1	1 ST	101
Push-in lugs for screw fixing								
	S00, S0	--	For screwing the motor starter protector (of the load feeder) onto mounting plates; 2 units are required for each motor starter protector	A	3RV29 28-0B	100	10 ST	101

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

Busbar adapters



8US12 51-5DS10





8US12 51-5DT11





8US12 50-5AS10



8US12 50-5AT10






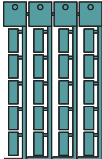
For load feeders	Rated current	Connecting cable	Adapter length	Adapter width	Rated voltage	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	A	AWG	mm	mm	V						
Busbar adapters for 60 mm systems											
For flat copper profiles according to DIN 46433 Width: 12 mm and 30 mm Thickness: 5 mm and 10 mm also for T and double-T special profiles											
• For load feeders with screw terminals							Screw terminals 				
S00	16	12	200	45	690	▶	8US12 51-5DS10		1	1 ST	143
S00 (motor starter protector) / S0 (contactor)	25 A	12	260	45	690	▶	8US12 51-5DT10		1	1 ST	143
S0	32	10	260	45	690	▶	8US12 51-5NT10		1	1 ST	143
• For load feeders with spring-type terminals							Spring-type terminals 				
S00	16	12	260	45	690	▶	8US12 51-5DT11		1	1 ST	143
S0	32	10	260	45	690	▶	8US12 51-5NT11		1	1 ST	143
Accessories											
Device holders for lateral attachment to busbar adapters	--	--	200	45	--	▶	8US12 50-5AS10		1	1 ST	143
	--	--	260	45	--	▶	8US12 50-5AT10		1	1 ST	143
Side modules for widening busbar adapters	--	--	200	9	--	A	8US19 98-2BJ10		1	1 ST	143
Spacers for fixing the load feeder onto the busbar adapter	--	--	--	--	--	▶	8US19 98-1BA10		1	10 ST	143
Vibration and shock kits For high vibration and shock loads	--	--	--	--	--	▶	8US19 98-1CA10		1	2 ST	143

For motor starter protectors	For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Size							
Reversing duty for 60 mm busbar systems								
RS assembly kits for screw terminals				Screw terminals 				
S00, S0	S00	Consisting of: <ul style="list-style-type: none">• Wiring kit• Busbar adapters• Device holders• 2 connecting wedges• Side modules Link modules must be ordered separately.	A	3RA29 13-1DB1		1	1 ST	101
S0	S0		A	3RA29 23-1DB1		1	1 ST	101
S00	S0		A	3RA29 23-1EB1		1	1 ST	101
RS assembly kits for spring-type terminals				Spring-type terminals 				
S00	S00	Consisting of: <ul style="list-style-type: none">• Wiring kit• Busbar adapters• Device holders• 2 connecting wedges• Spacers• Side modules Link modules must be ordered separately.	A	3RA29 13-1DB2		1	1 ST	101
S0	S0		A	3RA29 23-1DB2		1	1 ST	101

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

	For motor starter protectors	For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Size							
Connecting wedges									
<div></div> <div>8US19 98-1AA00</div>					▶	8US19 98-1AA00	100	100 ST	143
Spacers									
<div></div> <div>3RA29 11-1CA00</div>						Spring-type terminals <div></div>			
For height compensation on AC contactors size S0 with spring-type terminals									
S0S0Single-unit packaging					A	3RA29 11-1CA00	1	1 ST	101
S0S0Multi-unit packaging					A	3RA29 11-1C	1	5 ST	101
	Version			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-type terminals by hand									
<div></div> <div>3RA29 08-1A</div>						Spring-type terminals <div></div>			
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					A	3RA29 08-1A	1	1 ST	101
Blank labels									
<div></div> <div>3RT19 00-1SB20</div>					D	3RT19 00-1SB20	100	340 ST	101
Unit labeling plates ¹⁾									
for SIRIUS devices									
20 mm x 7 mm, pastel turquoise									
Documentation									
Configuration manuals for new combinations of load feeders									
Information and assignment tables for combinations for customer assembly									
• English					C	3ZX1012-0RA21-1AC0	1	1 ST	191

¹⁾ PC labeling system for individual inscription of unit labeling plates available from:
murrplastik Systemtechnik GmbH
www.murrplastik.de

For Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

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:

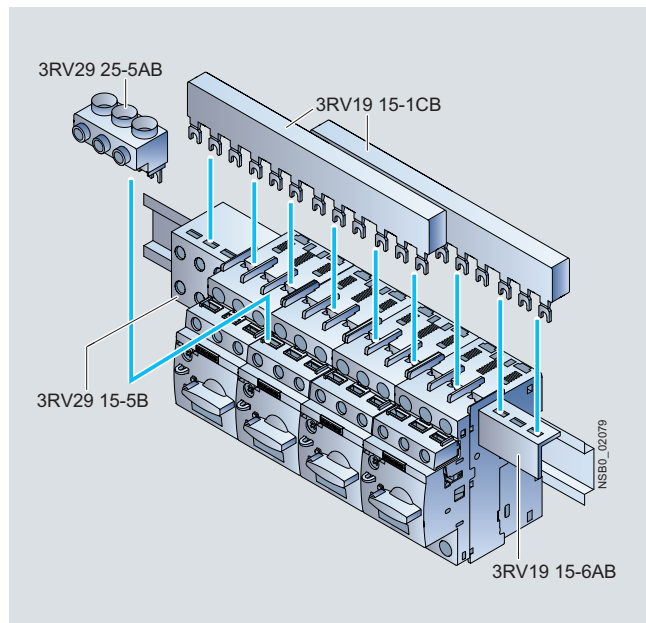
- Parallel wiring
- Use of three-phase busbars (combination with SIRIUS motor starter protectors and contactors possible)
- 8US busbar adapters
- SIRIUS 3RV29 infeed systems

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 2 and 5 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 are supplied by appropriate feeder terminals.



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. Special feeder terminals must be used for this purpose however.

For selection and ordering data see Chapter 5 "Protection Equipment" --> "SIRIUS 3RV2 Motor Starter Protectors up to 40 A" --> "Accessories" --> "Busbar Accessories".

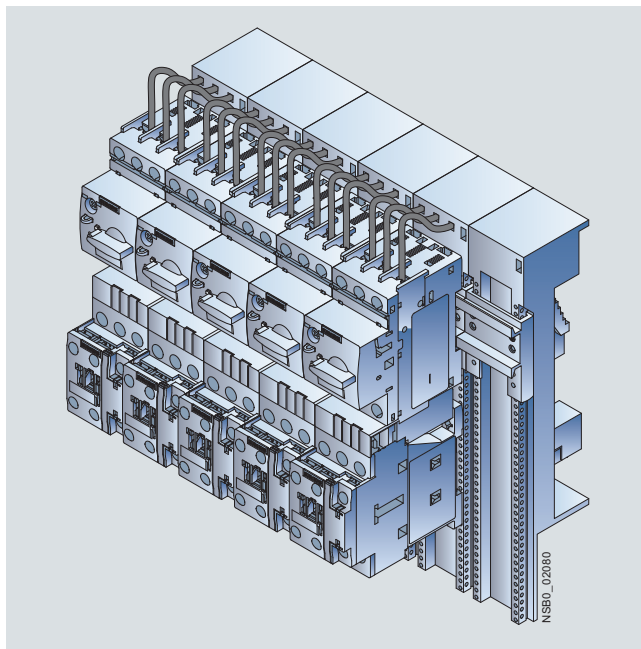
8US busbar adapters for 60 mm systems

The load feeders are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center spacing in order to save space and to reduce infeed times and costs.

The busbar adapters for busbar systems with 60 mm center-to-center spacing 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 6/38.



Load feeders with busbar adapters snapped onto busbars

SIRIUS 3RV29 infeed systems

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 3RV29 infeed systems see Chapter 5 "Protection Equipment" --> "SIRIUS 3RV2 Motor Starter Protectors up to 40 A" --> "Accessories" --> "3RV29 Infeed Systems".

For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders

General data

Overview

3RA1 fuseless load feeders

Note:

The 3RA1 fuseless load feeders, including sizes S00 and S0, can be found

- In the catalog Add-On LV 1 AO · 2011 in the CD/DVD box
- In the catalog Add-On LV 1 AO · 2011 at the Information and Download Center
- In the interactive catalog CA 01
- In the Industry Mall

The 3RA1 fuseless load feeders consist of the 3RV1 motor starter protector and the 3RT1 contactor. Motor starter protectors and contactors are electrically and mechanically connected using pre-assembled assembly kits (link modules, wiring kits and standard mounting rail or busbar adapters).

As the 3RA1 fuseless load feeders are constructed from 3RV1 motor starter protectors and 3RT1 contactors, the same accessories can be used for the 3RA1 fuseless load feeders as for these motor starter protectors and contactors.

Pre-assembled link modules are available as accessories for the power spectrum 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.

The 3RV1 motor starter protector is responsible for overload and short-circuit protection in the fuseless load feeder. Back-up protective devices, such as melting fuses or limiters, are superfluous here, as the circuit breaker is capable of withstanding short-circuits of up to 50 or 100 kA at 400 V.

The 3RT1 contactor is particularly suitable for extremely complex switching tasks requiring the greatest endurance.

The permissible ambient temperature is 60 °C with butt-mounting and without derating (70 °C possible subject to certain restrictions).

3RA1 fuseless load feeders are available for motors up to 45 kW at AC-3 and 400 V (grounded network) and setting ranges from 0.14 A to 100 A.

Only sizes S2 and S3 of the 3RA1 fuseless load feeders are covered in Catalog IC 10. 3RA2 fuseless load feeders are available if sizes S00 and S0 are required (see page 6/4).

Size	Width of direct-on-line starter mm	Max. rated current I_n max A	For induction motors up to kW
S2	55	50	22
S3	70	100	45

3RA1 load feeder sizes S2 and S3 can be ordered preassembled only as direct-on-line starters in size S2. The direct-on-line starter size S3 and the reversing starter sizes S2 and S3 are available only for self-assembly.

The SENTRON 3VL circuit breakers and the SIRIUS 3RT contactors can be used for fuseless load feeders >100 A. The corresponding distances from grounded or live parts, as detailed in the technical specifications, must be observed.

More information and assignment tables for self-assembly combinations for 400 V, 440 V, 480 V, 500 V, 550 V and 690 V can be found in the configuration manual "SIRIUS Configuration: Selection Data for Load Feeders in Fuseless Designs" (can be ordered, see page 6/53).

Operating conditions

3RA1 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.

Overload tripping times

All 3RA1 fuseless 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.

Types of coordination

EN 60947-4-1 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 fuseless load feeder may be non-operational after a short-circuit has been cleared. Damage to the contactor or to the overload release is permissible. For 3RA1 load feeders, the motor starter protector itself always achieves type of coordination "2".

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 3RA1 fuseless 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.

Connection methods

3RA1 load feeders are offered with screw terminals.



Screw terminals

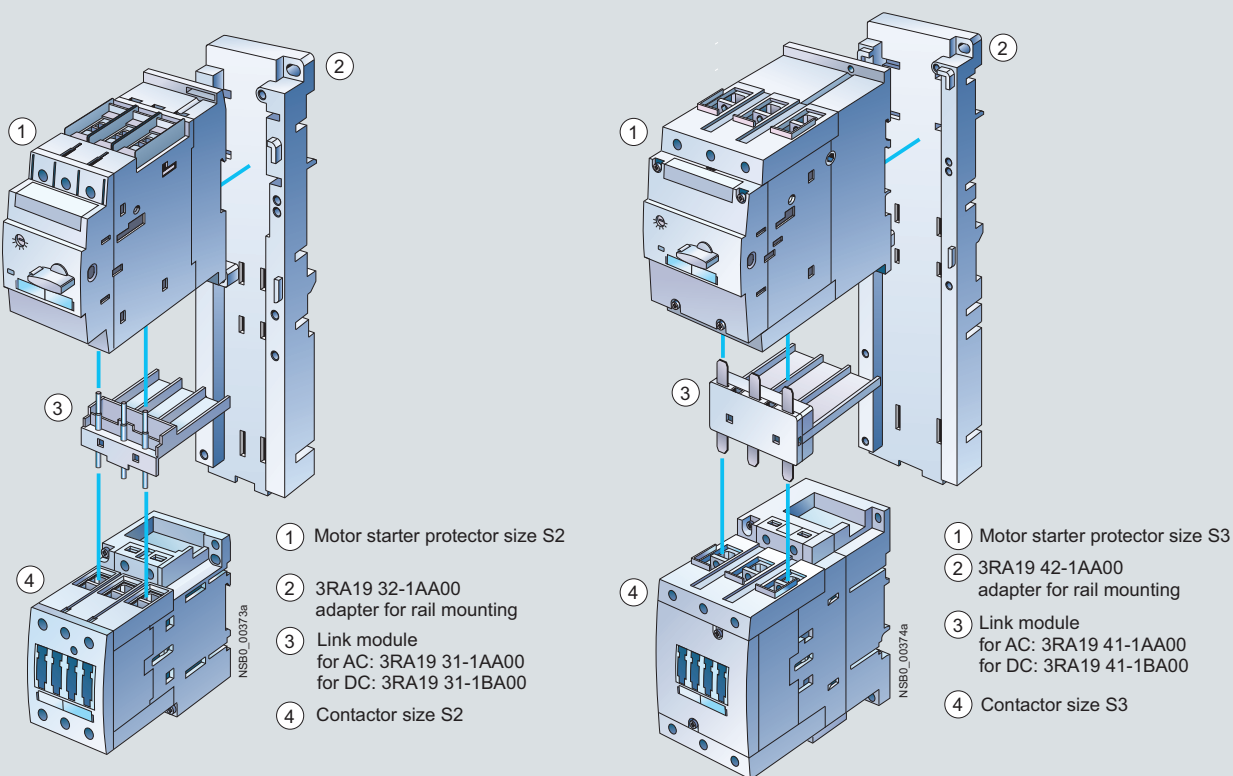
The terminals are indicated in the corresponding tables by the symbol shown on an orange background.

For Use in the Control Cabinet

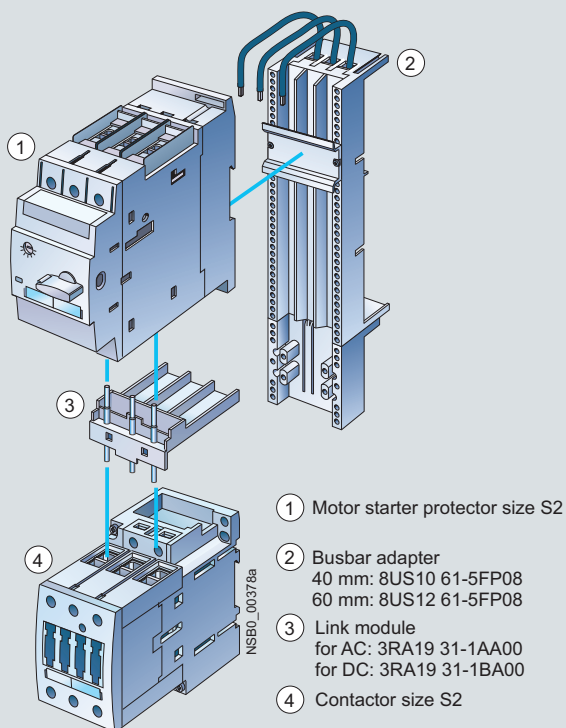
SIRIUS 3RA1 Load Feeders

General data

Direct-on-line start • For standard rail mounting • Size S2 and S3



Direct-on-line starting • For 40 mm and 60 mm busbar systems • Size S2



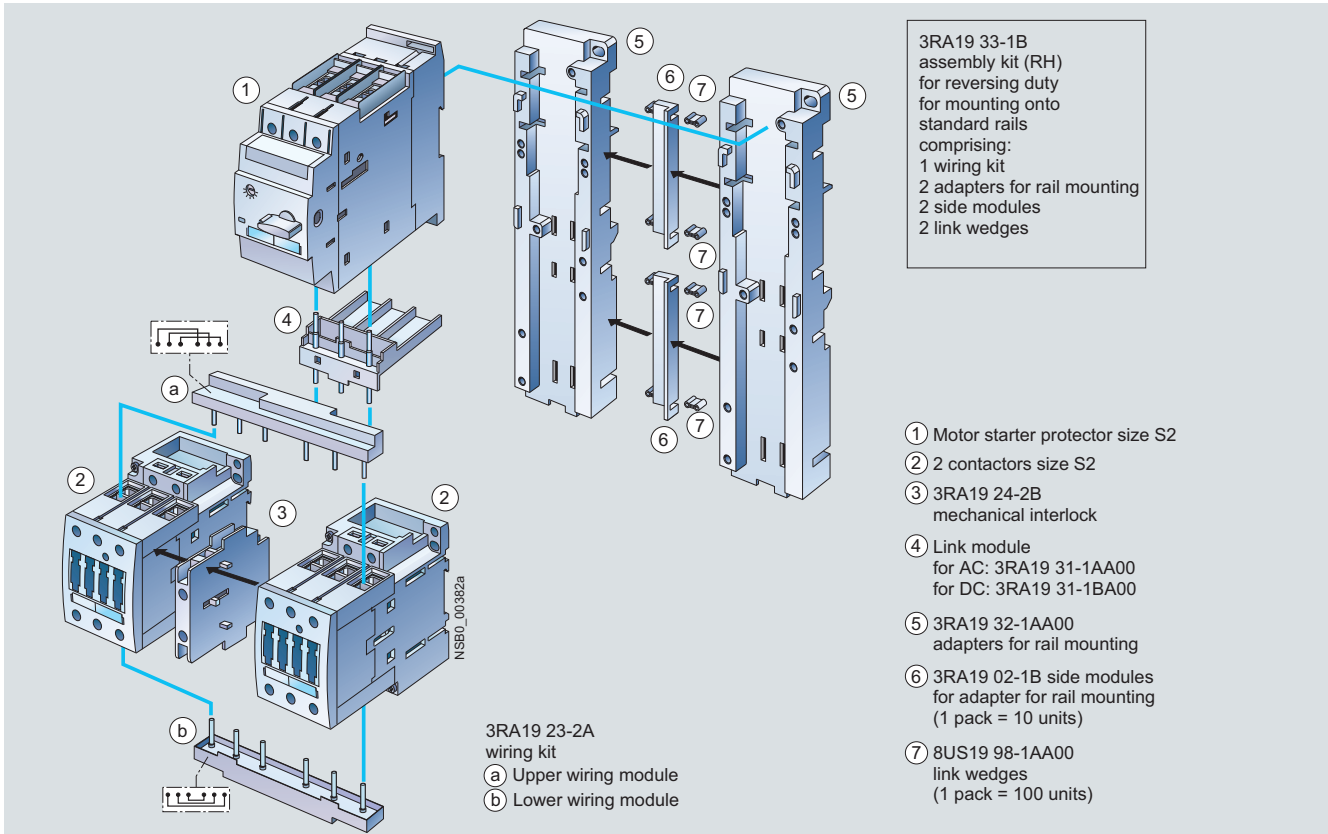
These graphical overviews are shown without small mounting parts (screws etc.).

For Use in the Control Cabinet

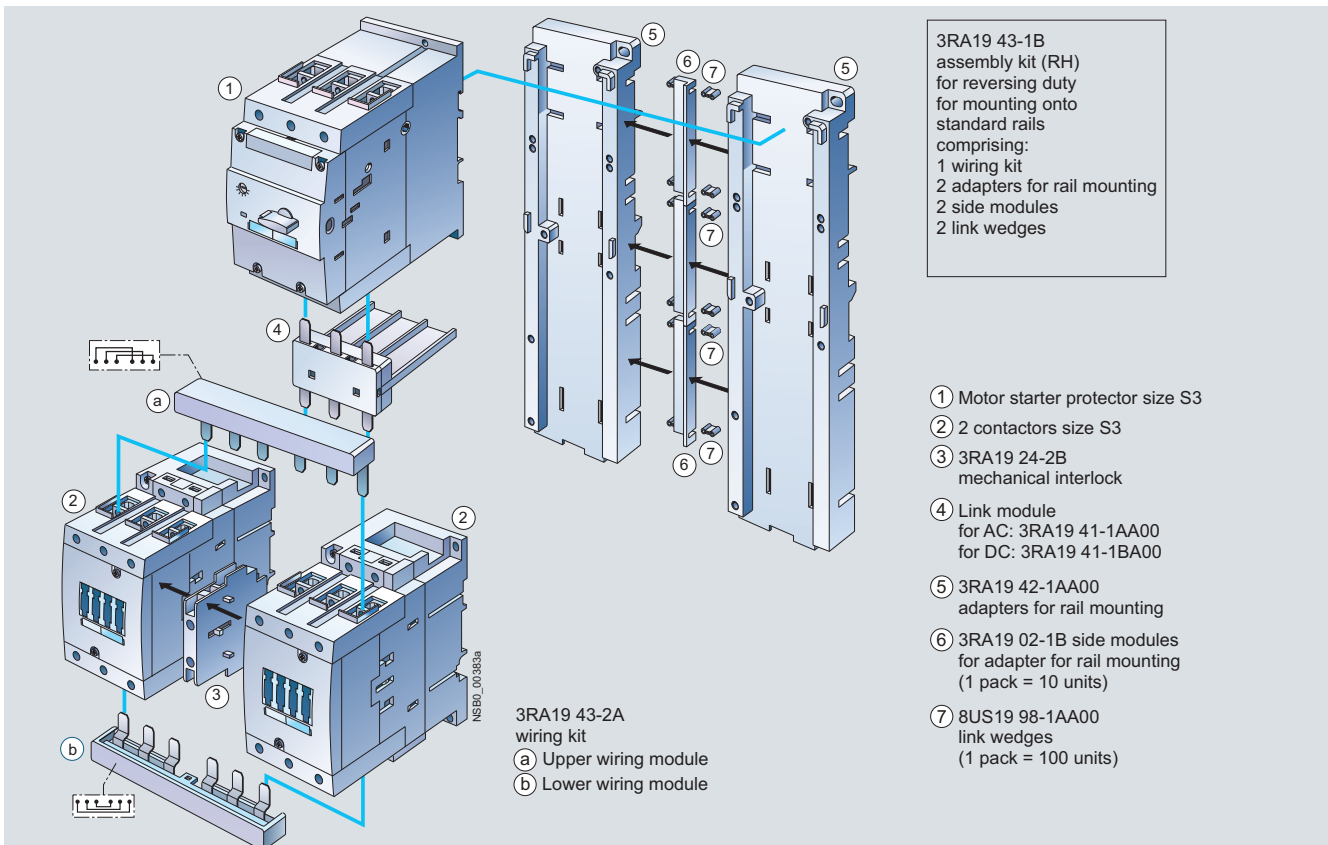
SIRIUS 3RA1 Load Feeders

General data

Reversing duty • For standard rail mounting • Size S2



Reversing duty • For standard rail mounting • Size S3



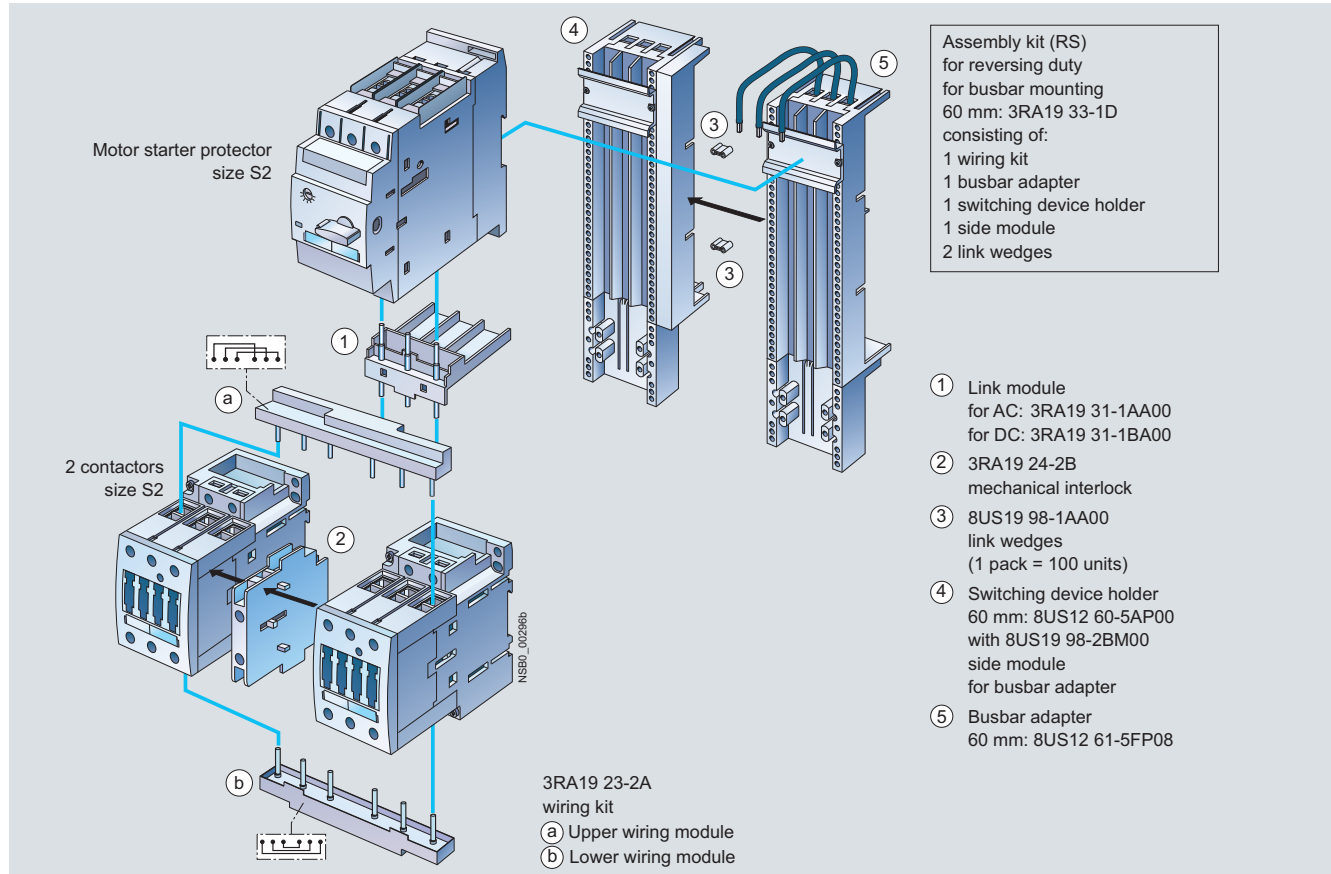
This graphical overview is shown without small mounting hardware (screws etc.).

For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders

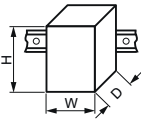
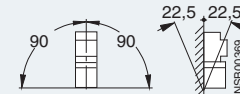
General data

Reversing duty • For 60 mm busbar systems • Size S2



These graphical overviews are shown without small mounting parts (screws etc.).

Technical specifications

Direct-on-line starters/reversing starters	Size	Connection methods	Mounting	Control voltage	Width W	Height H	Depth D	
					mm	mm	mm	
Mounting dimensions								
	3RA11. direct-on-line starters	S2	Screw terminals	Standard mounting rails	AC/DC	55	295	168
		3RA11 3.		Busbar adapters	AC/DC	55	276	176
		S3	Screw terminals	Standard mounting rails	AC/DC	70	330	192
3RA12. reversing starters	S2	Screw terminals	Standard mounting rails	AC/DC	120	295	168	
			Busbar adapters	AC/DC	120	276	176	
	S3	Screw terminals	Standard mounting rail adapters	AC/DC	150	330	192	
Type								
Size								
Number of poles								
					3RA1. 3	3RA1. 4		
					S2	S3		
					3	3		
Mechanics and environment								
Permissible ambient temperature								
• During operation					°C	-20 ... +70 (up to +60 °C without restriction)		
• Storage and transport					°C	-55 ... +80		
Weight the 3 A11 30. direct on line starters					kg	2.1 at 230 V AC 2.7 at 24 V DC		
Permissible mounting positions								
					Important: Acc. to DIN 43602 start command "I" at the right or top			
Shock resistance (sine-wave pulse)		Acc. to IEC 60086 Part 2-27		g	Up to 8			
Degree of protection		Acc. to IEC 60947-1		IP20				
				Up to 6				

For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders

General data

Type		3RA1. 3	3RA1. 4
Size		S2	S3
Number of poles		3	3
Electrical specifications			
Standards		IEC 60947-1, EN 60947-1 IEC 60947-2, EN 60947-2 IEC 60947-4-1, EN 60947-4-1	
Max. rated current $I_{n \max}$ (= max. rated operational current I_e)	A	50	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		10
Rated short-circuit current I_{cs} at 50/60 Hz 400 V AC acc. to IEC 60947-4-1, EN 60947-4-1	kA	50	
Types of coordination acc. to IEC 60947-4-1, EN 60947-4-1		See selection and ordering data	
Power loss $P_{V \max}$ of all main current paths			
Dependent on the rated current I_n (upper setting range)			
25 ... 32 A	W	19	--
40 A	W	28	--
45 ... 50 A	W	35	--
63 A	W	--	29
75 ... 90 A	W	--	45
100 A	W	--	60
Power consumption of the solenoid coils in the case of contactors			
(for cold coil and U_s 50 Hz)			
• AC operation	Closing	VA	127
	P.f.		0.82
	Closed	VA	13.5
	P.f.		0.34
• DC operation	Closing = Closed	W	11.5
			15
Endurance of the motor starter protector			
• Mechanical endurance	Operating cycles	50 000	
• Electrical endurance	Operating cycles	50 000	
• Max. switching frequency per hour (motor starts)	1/h	15	
Endurance of contactor			
• Mechanical endurance	Operating cycles	10 million	
• Electrical endurance	Operating cycles	See endurance characteristics of the contactors under Chapter 3 "Controls: Contactors and Contactor Assemblies".	
Touch protection		Acc. to EN 50274	
		Finger-safe	
Phase failure sensitivity of the motor starter protector		Acc. to IEC 60947-1, EN 60947-1	
		Yes	
Isolating features of the motor starter protector		Acc. to IEC 60947-2, EN 60947-2	
		Yes	
Main control and EMERGENCY-STOP switch characteristics of the motor starter protector and accessories		Acc. to IEC 60204-1, EN 60204-1	
		Yes, (with overvoltage releases of category 1 under conditions of proper use)	
Protective separation between main and auxiliary circuits		Acc. to EN 60947-1, Appendix N	V
		Up to 400	
Positively-driven operation at contactors			
Yes, from main contact to auxiliary NC contact			
Conductor cross-sections of main circuit			
Standards		IEC 60947-1, EN 60947-1 IEC 60947-2, EN 60947-2 IEC 60947-4-1, EN 60947-4-1	
Connection type		Box terminals	Box terminals
Terminal screw		Pozidriv size 2	Allen screw
Conductor cross-sections (min. ... max.)			
• Finely stranded with end sleeve			
- 1 conductor	mm²	0.75 ... 25	2.5 ... 50
- 2 conductors	mm²	2 x (0.75 ... 16)	2 x (2.5 ... 35)
• Solid			
- 1 conductor	mm²	0.7 ... 35	2.5 ... 16
- 2 conductors	mm²	2 x (0.75 ... 16)	2 x (2.5 ... 16)
• Stranded			
- 1 conductor	mm²	0.7 ... 35	2.5 ... 70
- 2 conductors	mm²	2 x (0.75 ... 25)	2 x (2.5 ... 50)
Connection, main contacts, ribbon cable conductors		Yes	Yes
Busbar connections			Yes
• Solid or stranded	AWG	2 x (30 ... 2)	--
• Stranded	AWG	--	2 x (10 ... 1/0)

For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders

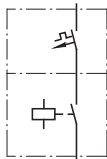
3RA11 direct-on-line starters for snapping onto standard mounting rails or for screw fixing

Selection and ordering data



3RA11 30

Direct-on-line start



Rated control supply voltage 50 Hz 230 V AC or 24 V DC for TH 35 standard mounting rail or for screw mounting

- Motor starter protector and contactor are linked electrically and mechanically by means of a link module
- As from size S2 with standard mounting rail adapter¹⁾ for mechanical reinforcement
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protectors	+ Contactor	+ Link module + Standard mounting rail adapter					
	kW	A					Order No.	Price per PU		
Type of coordination "2" at $I_q = 50 \text{ kA}/100 \text{ kA}$ at 400 V (compatible with type of coordination "1") ⁴⁾										
			3RV10	3RT10	3RA19					

Rated control supply voltage 50 Hz 230 V AC

S2	11	22	18 ... 25	31-4DA10	34-1AP00	31-1AA00	A	3RA11 30-4DB34-0AP0	1	1 unit	101
	15	29	22 ... 32	31-4EA10		+	A	3RA11 30-4EB34-0AP0	1	1 unit	101
	18.5	35	28 ... 40	31-4FA10	35-1AP00	32-1AA00	A	3RA11 30-4FB35-0AP0	1	1 unit	101
	22	41	36 ... 45	31-4GA10	36-1AP00		A	3RA11 30-4GB36-0AP0	1	1 unit	101
	22	41	40 ... 50	31-4HA10			A	3RA11 30-4HB36-0AP0	1	1 unit	101
S3	30	55	45 ... 63	41-4JA10	44-1AP00	41-1AA00		Size S3 is only available for self-assembly.			
	37	66	57 ... 75	41-4KA10	45-1AP00	+					
	45	80	70 ... 90	41-4LA10	46-1AP00	42-1AA00					
	45	80	80 ... 100	41-4MA10							

Rated control supply voltage 24 V DC

S2	11	22	18 ... 25	31-4DA10	34-1BB40	31-1BA00	A	3RA11 30-4DB34-0BB4	1	1 unit	101
	15	29	22 ... 32	31-4EA10		+	A	3RA11 30-4EB34-0BB4	1	1 unit	101
	18.5	35	28 ... 40	31-4FA10	35-1BB40	32-1AA00	A	3RA11 30-4FB35-0BB4	1	1 unit	101
	22	41	36 ... 45	31-4GA10	36-1BB40		A	3RA11 30-4GB36-0BB4	1	1 unit	101
	22	41	40 ... 50	31-4HA10			A	3RA11 30-4HB36-0BB4	1	1 unit	101
S3	30	55	45 ... 63	41-4JA10	44-1BB40	41-1BA00		Size S3 is only available for self-assembly.			
	37	66	57 ... 75	41-4KA10	45-1BB40	+					
	45	80	70 ... 90	41-4LA10	46-1BB40	42-1AA00					
	45	80	80 ... 100	41-4MA10							

¹⁾ Standard mounting rail adapter is also suitable for screw fixing.

²⁾ For auxiliary switches see Accessories for Direct-On-Line and Reversing Starters.

³⁾ Selection depends on the concrete startup and rated data of the protected motor.

⁴⁾ For load feeders with $I_q \geq 100 \text{ kA}$ see note on Technical Information on page 6/1.

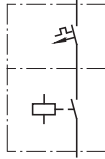
For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders

**3RA11 direct-on-line starters
for busbar systems**

Selection and ordering data

Direct-on-line start



Rated control supply voltage 50 Hz 230 V AC or 24 V DC for 40 and 60 mm busbar systems

- Motor starter protector and contactor are linked electrically and mechanically by means of a link module
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protectors	+ Contactor	+ Link module + Busbar adapter		Screw terminals			
	kW	A					Order No. ³⁾	Price per PU		

Type of coordination "2" at $I_q = 50$ kA at 400 V (compatible with type of coordination "1")

3RV10

3RT10

ToC 2

Rated control supply voltage 50 Hz 230 V AC

S2	11	22	18 ... 25	31-4DA10	34-1AP00	3RA19 31-1AA00	Size S2 is only available for self-assembly.
	15	29	22 ... 32	31-4EA10		+	
	18.5	35	28 ... 40	31-4FA10	35-1AP00	40 mm	
	22	41	36 ... 45	31-4GA10	36-1AP00	8US10 61-5FP08 or 60 mm	
	22	41	40 ... 50	31-4HA10		8US12 61-5FP08	
S3	30	55	45 ... 63	41-4JA10	44-1AP00	3RA19 41-1AA00	Size S3 is only available for self-assembly. For size S3, a busbar adapter is not necessary.
	37	66	57 ... 75	41-4KA10	45-1AP00		
	45	80	70 ... 90	41-4LA10	46-1AP00		
	45	80	80 ... 100	41-4MA10			

Rated control supply voltage 24 V DC

S2	11	22	18 ... 25	31-4DA10	34-1BB40	3RA19 31-1BA00	Size S2 is only available for self-assembly.
	15	29	22 ... 32	31-4EA10		+	
	18.5	35	28 ... 40	31-4FA10	35-1BB40	40 mm	
	22	41	36 ... 45	31-4GA10	36-1BB40	8US10 61-5FP08 or 60 mm	
	22	41	40 ... 50	31-4HA10		8US12 61-5FP08	
S3	30	55	45 ... 63	41-4JA10	44-1BB40	3RA19 41-1BA00	Size S3 is only available for self-assembly. For size S3, a busbar adapter is not necessary.
	37	66	57 ... 75	41-4KA10	45-1BB40	+	
	45	80	70 ... 90	41-4LA10	46-1BB40	not available	
	45	80	80 ... 100	41-4MA10			

¹⁾ For auxiliary switches see Accessories for Direct-On-Line and Reversing Starters.

²⁾ Selection depends on the concrete startup and rated data of the protected motor.

³⁾ For Order Nos. see single devices. Selection and ordering data for the 3RV10 motor starter protectors can be found in Chapter 5 "Protection Equipment" and for the 3RT10 contactors in Chapter 3 "Controls – Contactors and Contactor Assemblies".

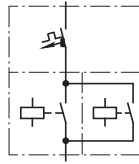
For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA12 reversing starters for snapping onto standard mounting rails or for screw fixing

Selection and ordering data

Reversing duty



Rated control supply voltage 50 Hz 230 V AC or 24 V DC for TH 35 standard mounting rail or for screw mounting

- The motor starter protector and contactor are mechanically and electrically connected by means of the link module
- with standard mounting rail adapter¹⁾ for mechanical reinforcement
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system
- Complete unit always with electrical and mechanical interlock

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protectors	+ 2 contactors	+ Link module + Assembly kit RH ¹⁾⁴⁾					
	kW	A								
Type of coordination "2" at $I_q = 50 \text{ kA}/100 \text{ kA}$ at 400 V (compatible with type of coordination "1") ⁵⁾										
			3RV10	3RT10	3RA19					

Rated control supply voltage 50 Hz 230 V AC

S2	11	22	18 ... 25	31-4DA10	34-1AP00	31-1AA00	Size S2 is only available for self-assembly.
	15	29	22 ... 32	31-4EA10		+	
	18.5	35	28 ... 40	31-4FA10	35-1AP00	33-1B ⁶⁾	
	22	41	36 ... 45	31-4GA10	36-1AP00		
	22	41	40 ... 50	31-4HA10			
S3	30	55	45 ... 63	41-4JA10	44-1AP00	41-1AA00	Size S3 is only available for self-assembly.
	37	66	57 ... 75	41-4KA10	45-1AP00	+	
	45	80	70 ... 90	41-4LA10	46-1AP00	43-1B ⁶⁾	
	45	80	80 ... 100	41-4MA10			

Rated control supply voltage 24 V DC

S2	11	22	18 ... 25	31-4DA10	34-1BB40	31-1BA00	Size S2 is only available for self-assembly.
	15	29	22 ... 32	31-4EA10		+	
	18.5	35	28 ... 40	31-4FA10	35-1BB40	33-1B ⁶⁾	
	22	41	36 ... 45	31-4GA10	36-1BB40		
	22	41	40 ... 50	31-4HA10			
S3	30	55	45 ... 63	41-4JA10	44-1BB40	41-1BA00	Size S3 is only available for self-assembly.
	37	66	57 ... 75	41-4KA10	45-1BB40	+	
	45	80	70 ... 90	41-4LA10	46-1BB40	43-1B ⁶⁾	
	45	80	80 ... 100	41-4MA10			

¹⁾ Assembly kit for standard mounting rail adapter also suitable for screw fixing.

²⁾ For auxiliary switches see Accessories for Direct-On-Line and Reversing Starters.

³⁾ Selection depends on the concrete startup and rated data of the protected motor.

⁴⁾ RH = Reversing duty for standard rail mounting.

⁵⁾ For load feeders with $I_q \geq 100 \text{ kA}$ see note on Technical Information on page 6/1.

⁶⁾ Mechanical locking device must be ordered separately (see "Accessories for Direct-On-Line and Reversing Starters").

⁷⁾ For Order Nos. see single devices. Selection and ordering data for the 3RV10 motor starter protectors can be found in Chapter 5 "Protection Equipment" and for the 3RT10 contactors in Chapter 3 "Controls – Contactors and Contactor Assemblies".

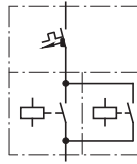
For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders

**3RA12 reversing starters
for busbar systems**

Selection and ordering data

Reversing duty



Rated control supply voltage 50 Hz 230 V AC or 24 V DC for 40 and 60 mm busbar systems

- The motor starter protector and contactor are mechanically and electrically connected by means of the link module
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system
- Complete unit always with electrical and mechanical interlock

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protectors	+ 2 contactors	+ Link module + Assembly kit RS ³⁾					
	kW	A					Screw terminals			
							Order No. ⁴⁾	Price per PU		

Type of coordination "2" at $I_q = 50$ kA at 400 V (compatible with type of coordination "1")

3RV10

3RT10

3RA19

ToC 2

Rated control supply voltage 50 Hz 230 V AC

S2	11	22	18 ... 25	31-4DA10	34-1AP00	31-1AA00	Size S2 is only available for self-assembly.
	15	29	22 ... 32	31-4EA10		+	
	18.5	35	28 ... 40	31-4FA10	35-1AP00	40 mm	
	22	41	36 ... 45	31-4GA10	36-1AP00	33-1C ⁴⁾	
	22	41	40 ... 50	31-4HA10		or 60 mm	
						33-1D ⁴⁾	
S3	30	55	45 ... 63	41-4JA10	44-1AP00	41-1AA00	For size S3, a busbar adapter is not necessary.
	37	66	57 ... 75	41-4KA10	45-1AP00	+	
	45	80	70 ... 90	41-4LA10	46-1AP00	not available	
	45	80	80 ... 100	41-4MA10			

Rated control supply voltage 24 V DC

S2	11	22	18 ... 25	31-4DA10	34-1BB40	31-1BA00	Size S2 is only available for self-assembly.
	15	29	22 ... 32	31-4EA10		+	
	18.5	35	28 ... 40	31-4FA10	35-1BB40	40 mm	
	22	41	36 ... 45	31-4GA10	36-1BB40	33-1C ⁴⁾	
	22	41	40 ... 50	31-4HA10		or 60 mm	
						33-1D ⁴⁾	
S3	30	55	45 ... 63	41-4JA10	44-1BB40	41-1BA00	For size S3, a busbar adapter is not necessary.
	37	66	57 ... 75	41-4KA10	45-1BB40	+	
	45	80	70 ... 90	41-4LA10	46-1BB40	not available	
	45	80	80 ... 100	41-4MA10			

¹⁾ For auxiliary switches see Accessories for Direct-On-Line and Reversing Starters.

²⁾ Selection depends on the concrete startup and rated data of the protected motor.

³⁾ RS = Reversing duty for busbar systems.




⁴⁾ For Order Nos. see single devices. Selection and ordering data for the 3RV10 motor starter protectors can be found in Chapter 5 "Protection Equipment" and for the 3RT10 contactors in Chapter 3 "Controls – Contactor and Contactor Assemblies".

For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders

Accessories


Selection and ordering data

	For motor starter protectors	For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Size							
Motor starter protectors¹⁾									
 3RV19 01-1E	S2 ... S3	--	Auxiliary switches						
			Transverse	1 CO contact	▶	3RV19 01-1D	1	1 unit	101
			Transverse	1 NO + 1 NC	▶	3RV19 01-1E	1	1 unit	101
 3RV19 01-1A	S2 ... S3	--	Laterally mountable	1 NO + 1 NC	▶	3RV19 01-1A	1	1 unit	101
			Undervoltage releases		▶	3RV19 02-1AP0	1	1 unit	101
			50 Hz 230 V AC						
 3RV19 02-1...	S2 ... S3	--	Shunt releases		▶	3RV19 02-1DP0	1	1 unit	101
			50 Hz 230 V AC						

Contactors ²⁾								
Snap-on auxiliary switch blocks								
Connection from below								
--	S2 ... S3	2-pole	1 NO + 1 NC	▶	3RH19 21-1MA11	1	1 unit	101
			2 NO	▶	3RH19 21-1MA20	1	1 unit	101
			2 NC	▶	3RH19 21-1MA02	1	1 unit	101
Connection from 2 sides								
--	S2 ... S3	1-pole	1 NO	▶	3RH19 21-1CA10	1	1 unit	101
			1 NC	▶	3RH19 21-1CA01	1	1 unit	101
--	S2 ... S3	4-pole	2 NO + 2 NC	▶	3RH19 21-1FA22	1	1 unit	101

¹⁾ See also Chapter 5 "Protection Equipment" --> "SIRIUS 3RV1 Motor Starter Protectors up to 100 A".

²⁾ See also Chapter 3 "Controls – Contactors and Contactor Assemblies".

	For contactors	Version	Rated control supply voltage $U_s^{1)}$	DT	Order No. ²⁾	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Type								
Surge suppressors without LED									
	Sizes S2 and S3								
		For fitting onto the coil terminals at top or bottom							
 3RT10 3, 3RT10 4	3RT10 3, 3RT10 4	Varistors	24 ... 48 V AC	▶	3RT19 26-1BB00		1	1 unit	101
			24 ... 70 V DC						
	127 ... 240 V AC	▶	3RT19 26-1BD00		1	1 unit	101		
		150 ... 250 V DC							
	3RT10 3, 3RT10 4	RC elements	24 ... 48 V AC	▶	3RT19 36-1CB00		1	1 unit	101
			24 ... 70 V DC						
3RT19 36-1C.00	3RT10 3, 3RT10 4	Diode assemblies	127 ... 240 V AC	▶	3RT19 36-1CD00		1	1 unit	101
			150 ... 250 V DC						
	3RT10 3, 3RT10 4	For DC operation and short break times							
		• Can be plugged in at bottom	24 V DC	▶	3RT19 36-1TR00		1	1 unit	101
			30 ... 250 V DC	B	3RT19 36-1TS00		1	1 unit	101

¹⁾ Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

²⁾ For packs of 10 or 5 units "-Z" and order code "X90" must be added to the Order No.

For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders

Accessories

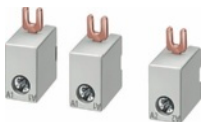
For motor starter protectors Size	For contactors Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Link modules								
Electrical and mechanical link between motor starter protector and contactor.								
Single-unit packaging								
Actuating voltage of contactor								
S2	S2	AC	▶	3RA19 31-1AA00		1	1 unit	101
S3	S3		▶	3RA19 41-1AA00		1	1 unit	101
S2	S2	DC	▶	3RA19 31-1BA00		1	1 unit	101
S3	S3		▶	3RA19 41-1BA00		1	1 unit	101
Multi-unit packaging								
Actuating voltage of contactor								
S2	S2	AC	▶	3RA19 31-1A		1	5 units	101
S3	S3		▶	3RA19 41-1A		1	5 units	101
S2	S2	DC	▶	3RA19 31-1B		1	5 units	101
S3	S3		▶	3RA19 41-1B		1	5 units	101
Wiring kits								
--	S2	Reversing duty	▶	3RA19 33-2A		1	1 unit	101
	S3	Electrical and mechanical link for reversing contactors. Can be combined with link module. For sizes S2 to S3: mechanical locking device must be ordered separately.	▶	3RA19 43-2A		1	1 unit	101
--	S2	Wye-delta starting	▶	3RA19 33-2B		1	1 unit	101
	S3	Electrical and mechanical link for three contactors of same size	▶	3RA19 43-2B		1	1 unit	101
Mechanical interlocks								
--	S2, S3	For reversing contactors, laterally mountable with 1 auxiliary contact (1 NC) each per contactor.	▶	3RA19 24-2B		1	1 unit	101
Coil repeat terminals								
--	S2, S3	For A1 and A2 of the reversing contactors (one set contains 10 x A1 and 5 x A2)	B	3RA19 23-3B		1	1 unit	101



3RA19 31-1AA00



3RA19 24-2B






3RA19 23-3B

For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders


Accessories

	For motor starter protectors Size	For contactors Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Standard mounting rail adapters									
 3RA19 32 3RA19 22	Single-unit packaging								
	S2	S2	For mechanical fixing of motor starter protector and contactor; for snapping onto standard mounting rail or for screw fixing	►	3RA19 32-1AA00 3RA19 42-1AA00		1	1 unit	101
	S3	S3		►			1	1 unit	101
	Multi-unit packaging								
	S2	S2	For mechanical fixing of motor starter protector and contactor; for snapping onto standard mounting rail or for screw fixing	►	3RA19 32-1A 3RA19 42-1A		1	5 units	101
	S3	S3		►			1	5 units	101
Side modules									
 3RA19 02	S2 ... S3	S2 ... S3	For standard mounting rail adapter 10 mm wide, 96 mm long, for widening standard mounting rail adapters. For size S2: 2 units required. For size S3: 3 units required.	►	3RA19 02-1B		1	10 units	101
Assembly kits (RH) for reversing duty for standard mounting rails									
 3RA19 33-1B	S2	S2	Also suitable for screw fixing. Consisting of:	A	3RA19 33-1B		1	1 unit	101
	S3	S3	Wiring kit, standard mounting rail adapters, side modules. Link modules to be ordered separately. Mechanical locking device also to be ordered separately.	A	3RA19 43-1B		1	1 unit	101

For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders

Accessories

For motor starter protectors Size	For contactors Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Busbar adapters								
			Busbar center-to-center clearance mm					
S2	S2	55 mm wide, 242 mm long including screw and spacer	40 ▶ 60 ▶	8US10 61-5FP08 8US12 61-5FP08		1 1	1 unit 1 unit	143 143
Device holders								
S2	S2	55 mm wide, 242 mm long including screw and spacer	60 ▶	8US12 60-5AP00		1	1 unit	143
Assembly kits (RS) for reversing duty for 40 mm and 60 mm busbar systems								
			Busbar center-to-center clearance mm					
S2	S2	Consisting of wiring kit, busbar adapter, device holder, and side module. Link modules and mechanical locking devices to be ordered separately.	60 A	3RA19 33-1D		1	1 unit	101
Connecting wedges								
 8US19 98-1AA00	--	--	For mechanical linking of busbar adapters and device holders or of standard mounting rail adapters (2 units per combination required) (1 pack = 100 units)	▶	8US19 98-1AA00	100	100 units	143
	Version		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Documentation								
Configuration manuals			C	3ZX1012-0RA21-0AB0		1	1 unit	191
"SIRIUS Configuration: Selection Data for Load Feeders in Fuseless Designs" More information and assignment tables for self-assembly combinations for 400 V, 440 V, 480 V, 500 V, 550 V and 690 V								

For Use in the Control Cabinet

SIRIUS 3RA1 Load Feeders

SENTRON 8US busbar systems

Overview

Insulated three-phase busbar system

Three-phase busbar systems provide an easy, time-saving and clearly arranged means of feeding 3RA1 load feeders with screw terminals. Different versions are available for size S2 and can also be used for the various different types of motor starter protectors.

The busbars are suitable for between 2 and 5 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.

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" size S2 according to UL/CSA. Special feeder terminals must be used for this purpose however.

For selection and ordering data see Chapter 5 "Protection Equipment" --> "SIRIUS 3RV1 Motor Starter Protectors up to 100 A" --> "Busbar Accessories".

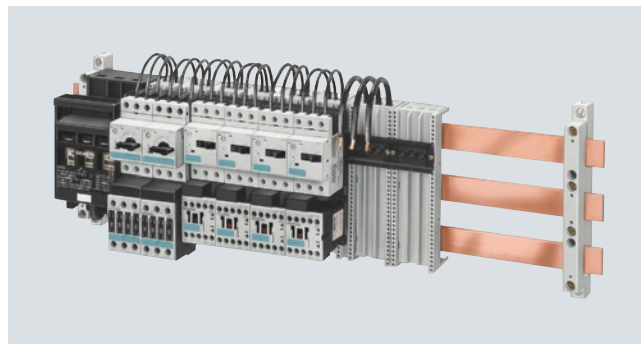
Busbar adapters for 40 mm and 60 mm systems

The load feeders are mounted directly with the aid of busbar adapters on busbar systems with 40 mm and 60 mm center-to-center spacing in order to save space and to reduce infeed times and costs.

Busbar adapters for busbar systems with 40 mm center-to-center spacing are suitable for copper busbars with a width of 12 mm to 15 mm, while those with 60 mm center-to-center spacing are suitable for copper busbars with a width of 12 mm 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 Chapter 5 "Protection Equipment" --> "SIRIUS 3RV1 Motor Starter Protectors up to 100 A" --> "Busbar Accessories".



SIRIUS motor starter protectors and load feeders with busbar adapters snapped onto busbars

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Overview

3RA6 fuseless compact starters and infeed system for 3RA6



3RA62 reversing starters

Integrated functionality

The SIRIUS 3RA6 compact starters are a generation of innovative load feeders with the integrated functionality of a motor starter protector, contactor and solid-state overload relay. In addition, various functions of optional mountable accessories (e.g. auxiliary switches, surge suppressors) are already integrated in the SIRIUS compact starter.

Application

The SIRIUS compact starters can be used wherever standard induction motors up to 32 A (approx. 15 kW/400 V) are directly started.

The compact starters are not suitable for the protection of single-phase AC or DC loads.

Approvals according to IEC, UL and CSA standards have been issued for the compact starters.

Low equipment variance

Thanks to wide setting ranges for the rated current and wide voltage ranges, the equipment variance is greatly reduced compared to conventional load feeders.

Very high operational reliability

Through the high short-circuit breaking capacity and defined shut-down when the end of service life is reached means 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. It is thus possible to use the devices for safe disconnection, e.g. emergency-stops, up to Category 2 (EN 954-1) and together with other redundancy switching devices up to Category 3 or 4.

Communications integration through AS-Interface

To enable communications integration through AS-Interface there is an AS-Interface 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-Interface add-on module permits a group of up to 62 starters 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 4 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 4SI SIRIUS 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 communications integration using IO-Link see Chapter 2 "Industrial Communication" --> "IO-Link".

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 starter with IO-Link from the control cabinet door.

Permanent wiring/easy replacement

Using the SIRIUS infeed system for 3RA6 (see page 6/75) it is possible to carry out the wiring in advance without a compact starter needing 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.

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 connections

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.

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 6/75)

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

To comply with the clearance and creepage distances demanded according to UL 508 there are the following infeed possibilities:

Type of infeed	Feeder terminal (acc. to UL 508, type E)	Type
Parallel wiring	Terminal block for "Self-Protected Combination Motor Controller (Type E)"	3RV19 28-1H
Three-phase busbars	Three-phase infeed terminal for constructing "Type E Starters", UL 508	3RV19 25-5EB
Infeed systems for 3RA6	Infeed on left, 50/70 mm ² , screw terminal with 3 sockets, outgoing terminal with screw/spring-type connections, including PE bar	3RA68 13-8AB (screw terminals), 3RA68 13-8AC (spring-type terminals)

SIRIUS 3RA6 compact starters

The SIRIUS 3RA6 compact starters are universal motor feeders according to IEC/EN 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 a solid-state overload relay in one enclosure. Direct-on-line starters with 45 mm width and reversing starters with 90 mm width 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 / EN 60947-2 and can be used as disconnecter units (main control switch according to EN 60204-1). Isolation is effected by moving the handle into the "OFF" position; disconnection by means of the control contacts is not enough.

3RA6 fuseless load feeders are supplied for 5 different current setting ranges. The 3RA61 and 3RA62 have 3 control voltage ranges (AC/DC), the 3RA64 and 3RA65 have one control voltage range (DC):

Current setting range	At 400 V AC for induction 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	24
0.32 ... 1.25	0.37	42 ... 70	
1 ... 4	1.5	110 ... 240	
3 ... 12	5.5		
8 ... 32	15		

Note:

The 3RA1 load feeders can be used for fuseless load feeders > 32 A up to 100 A.

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/EN 60947-6-2 is 53 kA at 400 V.

Note:

The maximum permissible short-circuit currents of the device versions for the various forms of power supply and voltages are available on request from Technical Assistance:

Tel.: +49 (9 11) 8 95-59 00

E-mail: technical-assistance@siemens.com.

Overload tripping times

The overload tripping time 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 3 minutes cooling time.

With autoreset 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 indication
 - 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 variants for 3RA6 compact starters

- For standard mounting rail or screw mounting: 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

Already integrated in the 3RA61/3RA62 – and connectable using the two 6-pole removable control circuit terminals – in addition to the control supply voltage are the signaling contacts "overload" (1 CO) and "short-circuit / malfunction" (1 NO). The 3RA61 has two auxiliary contacts (1 NO + 1 NC) for indicating 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.

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

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, page 6/68).

Unlike the direct-on-line starter, the 3RA62 reversing starter has one auxiliary contact (1 NO) per direction of rotation per main contact.

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 version 3RA69 13-1A, each with one NO contact and one NO contact.

Order No. scheme

Digit of the Order No.	1st - 4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th
	□□□□	□	□	□	-	□	□	□	□	-	□	□	□
SIRIUS 3RA6 compact starters	3 R A 6												
Version (direct-on-line starter = 1, reversing starter = 2, direct-on-line starter for IO-Link = 4, reversing starter for IO-Link = 5, infeed system = 8, accessories = 9)		□											
Details of accessories			□	□									
Connection method (0 = without terminals, 1 = screw terminals, 2 = spring-type terminals)					□								
Setting range						□							
Rated control supply voltage							□	□					
Terminals complement variant									□				
Special versions										□	□	□	□
Example	3 R A 6	1	2	0	-	0	A	B	3	0			

Note:

The Order No. scheme is presented here merely for information purposes and for better understanding of the logic behind the order numbers.

For your orders, please use the order numbers quote in the catalog in the Selection and ordering data.

Benefits

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 order number
- Little variance through 3 wide voltage ranges and 5 wide setting ranges for the rated current mean low stock levels
- High plant availability through integrated functionalities such as prevention of main contact welding and shut-down at end of service life
- Greater 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 incoming feeders up to a cross-section of 70 mm²
- 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

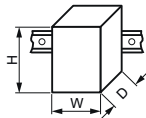
The SIRIUS 3RA6 compact starters create the basis for high-availability and future-proof machine concepts.

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Technical specifications

Type			3RA61	3RA62	3RA64	3RA65	
Size			S0				
Number of poles			3				
Mechanics and environment							
Mounting dimensions (WxHxD)							
• 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			°C	-20 ... +60, with restriction up to +70			
• For operation	(for permissible operational current see the following section "Electrical Specifications")		°C	-55 ... +80			
• During storage			°C	-55 ... +80			
• During transport			°C	-55 ... +80			
Weight			kg	1.4	2.3 -2.4	1.3	2.3
Permissible mounting positions			No restrictions, preferably vertical or horizontal installation				
Shock resistance (sine-wave pulse)			$a = 60 \text{ m/s}^2 = 6 \text{ g}$ with 10 ms; for every 3 shocks in all axes				
Vibratory load			$f = 4 \dots 5.8 \text{ Hz}$; $d = 15 \text{ mm}$; $f = 5.8 \dots 500 \text{ Hz}$; $a = 20 \text{ m/s}^2$; 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			
Pollution degree			3				
Electrical specifications							
Device standard			IEC/EN 60947-6-2				
Maximum rated operational voltage U_e			V	690			
			V	400 at 3RA62 50-.E... and 3RA65 00-.E... (reversing starter 32 A versions)			
Rated current I_e and setting range for overload release	0.1 ... 0.4 A	A	0.4				
	0.32 ... 1.25 A	A	1.25				
	1 ... 4 A	A	4				
	3 ... 12 A	A	12				
	8 ... 32 A	A	32				
Permissible operational current of the compact starter							
when several compact starters are mounted side-by-side on a vertical standard mounting rail or in the infeed system for 3RA6							
• For a control cabinet inside temperature of	+40 °C	%	100				
• For a control cabinet inside temperature of	+60 °C	%	80				
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	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			
Power loss $P_{V \max}$ of all main current paths dependent on the rated current I_n (upper setting range)	0.4 A	mW	10				
	1.25 A	mW	100				
	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 EN 50274	Finger-safe			
Isolating features of the compact starter			Acc. to IEC/EN 60947-3	Yes: Isolation is assured only by moving the handle into the "OFF" position.			
Main and EMERGENCY-STOP switch characteristics of the compact starter and accessories			Acc. to IEC/EN 60204	Yes			

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Type			3RA61	3RA62	3RA64	3RA65
Size			S0			
Number of poles			3			
Electrical specifications (continued)						
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/EN 60947-1		Corresponds to degree of severity 3			
Conductor-related interference	BURST acc. to IEC/EN 61000-4-4					
• In the main circuit		kV	4		4	
• In the auxiliary circuit		kV	3		2	
Conductor-related interference	SURGE acc. to IEC/EN 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	42 ... 70 AC/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 At 50 kA	mm ² mm ²	2.5 4	See let-through energy characteristic curves of the voltage variants on the Internet at www.siemens.com/industrial-controls/technical-assistance		
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 Up to 32 A	kW kW	5.5 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

¹⁾ To maintain maximum interference immunity in a harsh electromagnetic environment, additional overvoltage protection should be provided in the control circuit. A suitable answer is for example the Dehn Blitzductor BVT AD 24 V, Art. No. 918 402 or an equivalent protection element.
Manufacturer: DEHN+SÖHNE GmbH+Co. KG, Hans-Dehn-Straße, 1, Postfach 1640, D-92306 Neumarkt

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Type		3RA61 20-□B3., 3RA62 50-□B3. □ = A, B, C or D Rated operational current ≤ 12 A				3RA61 20-EB3., 3RA62 50-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		3RA61 20-□E3., 3RA62 50-□E3. □ = A, B, C or D Rated operational current ≤ 12 A				3RA61 20-EE3., 3RA62 50-EE3. Rated operational current 32 A			
Rated control supply voltage	V	42 AC	70 AC	42 DC	70 DC	42 AC	70 AC	42 DC	70 DC
Inrush peak current	A	0.44	0.50	0.32	0.53	0.47	0.63	0.34	0.56
Hold current	A	0.08	0.08	0.06	0.04	0.09	0.08	0.09	0.07
Closed	W	2.6	3.1	2.2	2.2	2.7	3.2	3.6	4.2
Operating times, typical									
• On	ms	<160	<140	<160	<140	<150	<140	<150	<140
• Off	ms	<35	<50	<35	<40	<30	<40	<30	<40
Type		3RA61 20-□P3., 3RA62 50-□P3. □ = A, B, C or D Rated operational current ≤ 12 A				3RA61 20-EP3., 3RA62 50-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		3RA64 00-□B4., 3RA65 00-□B4. □ = A, B, C or D Rated operational current ≤ 12A				3RA64 00-EB4., 3RA65 00-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.

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

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 switches	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 stability	At 17 V and 5 mA	Oper- ating 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	10			
• Short-circuit current $I_K < 400$ A	Miniature circuit breaker up to 230 V with C characteristic	A	10			

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Type		3RA61	3RA62	3RA64	3RA65
Size		S0			
Number of poles		3			
Signaling switches					
Endurance in operating cycles					
<ul style="list-style-type: none"> Mechanical endurance Electrical endurance AC-15 		At 230 V and 3 A	20 000 6 050		
Contact stability		At 17 V and 5 mA	Operating cycles	1 incorrect switching operation per 100 000 000	
Short-circuit protection					
<ul style="list-style-type: none"> Short-circuit current $I_K \leq 1.1 \text{ kA}$ 		Fuse links operational class gG - NEOZED Type 5SE - DIAZED Type 5SB - LV HRC Type 3NA	A	6	
<ul style="list-style-type: none"> Short-circuit current $I_K < 400 \text{ A}$ 		Miniature circuit breaker up to 230 V with C characteristic	A	6	
Overload (short-circuit current $I_K \leq 1.1 \text{ kA}$)		Fuse links operational class gG - NEOZED Type 5SE - DIAZED Type 5SB - LV HRC Type 3NA	A	4	

For Use in the Control Cabinet

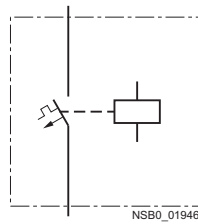
SIRIUS 3RA6 Compact Starters

3RA61, 3RA62 compact starters
3RA61 direct-on-line starters

Selection and ordering data



Direct-on-line start



Width 45 mm

A set of 3RA69 40-0A adapters is required for screw fixing.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 121

3RA61 20-1CB32

3RA61 20-2EB32

Standard induction motor 4-pole at 400 V AC ¹⁾ Standard output <i>P</i>	Setting range for electronic overload release	DT ²⁾	Order No.	Price per PU	DT ²⁾	Order No.	Price per PU
kW	A						
For use with the infeed system for 3RA6 and with the AS-i add-on module or as a replacement device, without main and control circuit terminals							
0.09	0.1 ... 0.4	C	3RA61 20-0A□30		--		
0.37	0.32 ... 1.25	C	3RA61 20-0B□30		--		
1.5	1 ... 4	A	3RA61 20-0C□30		--		
5.5	3 ... 12	A	3RA61 20-0D□30		--		
15	8 ... 32	A	3RA61 20-0E□30		--		

Screw terminals



Spring-type terminals



For standard mounting rail or screw mounting, including 1 pair of main circuit terminals and 1 pair of control circuit terminals

0.09	0.1 ... 0.4	A	3RA61 20-1A□32	A	3RA61 20-2A□32
0.37	0.32 ... 1.25	A	3RA61 20-1B□32	A	3RA61 20-2B□32
1.5	1 ... 4	A	3RA61 20-1C□32	A	3RA61 20-2C□32
5.5	3 ... 12	A	3RA61 20-1D□32	A	3RA61 20-2D□32
15	8 ... 32	A	3RA61 20-1E□32	A	3RA61 20-2E□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	C	3RA61 20-1A□33	C	3RA61 20-2A□33
0.37	0.32 ... 1.25	A	3RA61 20-1B□33	C	3RA61 20-2B□33
1.5	1 ... 4	A	3RA61 20-1C□33	A	3RA61 20-2C□33
5.5	3 ... 12	A	3RA61 20-1D□33	A	3RA61 20-2D□33
15	8 ... 32	A	3RA61 20-1E□33	A	3RA61 20-2E□33

For standard mounting rail or screw mounting when using the AS-i add-on module with 1 pair of main circuit terminals without control circuit terminals

0.09	0.1 ... 0.4	C	3RA61 20-1A□34	C	3RA61 20-2A□34
0.37	0.32 ... 1.25	C	3RA61 20-1B□34	C	3RA61 20-2B□34
1.5	1 ... 4	C	3RA61 20-1C□34	C	3RA61 20-2C□34
5.5	3 ... 12	A	3RA61 20-1D□34	C	3RA61 20-2D□34
15	8 ... 32	C	3RA61 20-1E□34	C	3RA61 20-2E□34

Order No. supplements for rated control supply voltage

- 24 V AC/DC (for combining with AS-i add-on module)
- 42 ... 70 V AC/DC
- 110 ... 240 V AC/DC

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

²⁾ The delivery time classes apply for a rated control supply voltage of 24 V AC/DC. For the other rated control supply voltages, longer delivery times are possible.

B
E
P

B
E
P

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

3RA61, 3RA62 compact starters
3RA62 reversing starters

Selection and ordering data

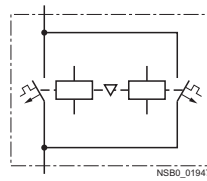


3RA62 50-1CP32



3RA62 50-2DP32

Reversing duty



NS80_01947

Width 90 mm

Two sets of 3RA69 40-0A adapters are required for screw fixing.

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 121

Standard induction motor
 4-pole at 400 V AC¹⁾
 Standard output *P*

Setting range
 for electronic overload release

DT²⁾

Order No.

Price
 per PU

DT²⁾

Order No.

Price
 per PU

kW

A

For use with the infeed system for 3RA6 and with
 the AS-i add-on module or as a replacement device,
 without main and control circuit terminals

0.09

0.1 ... 0.4

C

3RA62 50-0A□30

--

0.37

0.32 ... 1.25

C

3RA62 50-0B□30

--

1.5

1 ... 4

C

3RA62 50-0C□30

--

5.5

3 ... 12

C

3RA62 50-0D□30

--

15

8 ... 32

C

3RA62 50-0E□30

--

Screw terminals



Spring-type terminals



For standard mounting rail or screw mounting,
 including 1 pair of main circuit terminals and
 1 pair of control circuit terminals

0.09

0.1 ... 0.4

C

3RA62 50-1A□32

C

3RA62 50-2A□32

0.37

0.32 ... 1.25

A

3RA62 50-1B□32

A

3RA62 50-2B□32

1.5

1 ... 4

C

3RA62 50-1C□32

A

3RA62 50-2C□32

5.5

3 ... 12

A

3RA62 50-1D□32

A

3RA62 50-2D□32

15

8 ... 32

C

3RA62 50-1E□32

C

3RA62 50-2E□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

C

3RA62 50-1A□33

C

3RA62 50-2A□33

0.37

0.32 ... 1.25

C

3RA62 50-1B□33

C

3RA62 50-2B□33

1.5

1 ... 4

C

3RA62 50-1C□33

C

3RA62 50-2C□33

5.5

3 ... 12

C

3RA62 50-1D□33

C

3RA62 50-2D□33

15

8 ... 32

C

3RA62 50-1E□33

C

3RA62 50-2E□33

For standard mounting rail or screw mounting
 when using the AS-i add-on module
 with 1 pair of main circuit terminals without control circuit terminals

0.09

0.1 ... 0.4

C

3RA62 50-1A□34

C

3RA62 50-2A□34

0.37

0.32 ... 1.25

C

3RA62 50-1B□34

C

3RA62 50-2B□34

1.5

1 ... 4

A

3RA62 50-1C□34

C

3RA62 50-2C□34

5.5

3 ... 12

C

3RA62 50-1D□34

C

3RA62 50-2D□34

15

8 ... 32

C

3RA62 50-1E□34

C

3RA62 50-2E□34

Order No. supplements for rated control supply voltage

- 24 V AC/DC (for combining with AS-i add-on module)
- 42 ... 70 V AC/DC
- 110 ... 240 V AC/DC

B
E
P

B
E
P

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

²⁾ The delivery time classes apply for a rated control supply voltage of 24 V AC/DC. For the other rated control supply voltages, longer delivery times are possible.

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

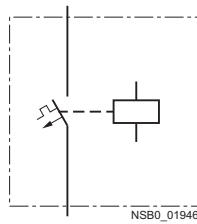
3RA64, 3RA65 compact starters for IO-Link
3RA64 direct-on-line starters

Selection and ordering data



3RA64 with 3RA69 11-1A
auxiliary switch block

Direct-on-line start






Rated control supply voltage 24 V DC

Width 45 mm

A set of 3RA69 40-0A adapters is required for screw fixing.

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 121

Standard induction motor 4-pole at 400 V AC ¹⁾ Standard output <i>P</i>		Setting range for electronic overload release	DT	Screw terminals		DT	Spring-type terminals	
				Order No.	Price per PU		Order No.	Price per PU
kW	A							
For standard mounting rail or screw mounting, including 1 ai main ci cuit te minals and 1 ai c nt l ci cuit te minals								
0.09	0.1 ... 0.4	C	3RA64 00-1AB42	C	3RA64 00-2AB42			
0.37	0.32 ... 1.25	A	3RA64 00-1BB42	A	3RA64 00-2BB42			
1.5	1 ... 4	A	3RA64 00-1CB42	A	3RA64 00-2CB42			
5.5	3 ... 12	A	3RA64 00-1DB42	A	3RA64 00-2DB42			
15	8 ... 32	C	3RA64 00-1EB42	C	3RA64 00-2EB42			
For use in the infeed system for 3RA6, ith ut main ci cuit te minals ith 1 ai c nt l ci cuit te minals								
0.09	0.1 ... 0.4	C	3RA64 00-1AB43	C	3RA64 00-2AB43			
0.37	0.32 ... 1.25	A	3RA64 00-1BB43	A	3RA64 00-2BB43			
1.5	1 ... 4	A	3RA64 00-1CB43	A	3RA64 00-2CB43			
5.5	3 ... 12	A	3RA64 00-1DB43	A	3RA64 00-2DB43			
15	8 ... 32	C	3RA64 00-1EB43	C	3RA64 00-2EB43			

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

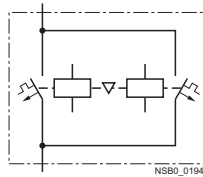
3RA64, 3RA65 compact starters for IO-Link
3RA65 reversing starters

Selection and ordering data



3RA65 with 3RA69 11-1A
auxiliary switch block

Reversing duty




Rated control supply voltage 24 V DC

Width 90 mm

Two sets of 3RA69 40-0A adapters are required for screw fixing.

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 121

Standard induction motor 4-pole at 400 V AC ¹⁾ Standard output <i>P</i>		Setting range for electronic overload release	DT	Screw terminals		DT	Spring-type terminals	
				Order No.	Price per PU		Order No.	Price per PU
kW		A						
For standard mounting rail or screw mounting, including 1 auxiliary main circuit terminals and 1 auxiliary control circuit terminals								
0.09		0.1 ... 0.4	C	3RA65 00-1AB42	C	3RA65 00-2AB42		
0.37		0.32 ... 1.25	A	3RA65 00-1BB42	A	3RA65 00-2BB42		
1.5		1 ... 4	A	3RA65 00-1CB42	A	3RA65 00-2CB42		
5.5		3 ... 12	A	3RA65 00-1DB42	A	3RA65 00-2DB42		
15		8 ... 32	C	3RA65 00-1EB42	C	3RA65 00-2EB42		
For use in the infeed system for 3RA6, with 4 main circuit terminals with 1 auxiliary control circuit terminals								
0.09		0.1 ... 0.4	C	3RA65 00-1AB43	C	3RA65 00-2AB43		
0.37		0.32 ... 1.25	A	3RA65 00-1BB43	A	3RA65 00-2BB43		
1.5		1 ... 4	A	3RA65 00-1CB43	A	3RA65 00-2CB43		
5.5		3 ... 12	A	3RA65 00-1DB43	A	3RA65 00-2DB43		
15		8 ... 32	C	3RA65 00-1EB43	C	3RA65 00-2EB43		

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Accessories

Overview

Accessories for SIRIUS 3RA6 compact starters

The following accessories are available specially for the 3RA6 compact starters:

- AS-i add-on module: [see AS-Interface Add-On Modules for 3RA6, page 6/73](#)
- External auxiliary switch blocks: Snap-on auxiliary switch as versions 2 NO, 2 NC and 1 NO + 1 NC with screw or spring-type connections; 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 in order 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 terminals: Available with screw and spring-type terminals
- Main circuit terminals mixed connection method: With the main circuit terminals mixed connection method it is also possible in the main circuit to switch from screw terminals on the line side to spring-type terminals on the outgoing side. This enables for example the side-by-side mounting of several compact starters and their cost-efficient connection using 3-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 2 and 5 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.

A connecting piece is required for the combination with 3RV1 motor starter protector size S00. 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 feeder terminals. Special feeder 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 starters 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 10.1, Chapter 10, "Busbar Systems".

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:


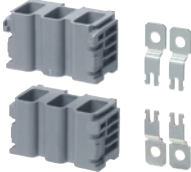








- The 4SI SIRIUS electronic module as IO-Link master allows for the simple and economical connection of SIRIUS controls with IO-Link (e.g. up to four groups of 4 compact starters) to the multifunctional SIMATIC ET 200S distributed I/O system.
- Additional connection cables for side-by-side mounting of up to 4 compact starters
- Operator panel for on-site control and diagnostics of up to 4 compact starters coupled to each other

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Accessories

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories specially for 3RA6 compact starters						
 3RA69 50-0A	Control kits For mechanical actuation of the compact starter	A	3RA69 50-0A	1	1 unit	121
 3RA69 40-0A	Adapters for screw fixing the compact starter (set including push-in lugs) Direct-on-line starters require 1 set, reversing starters 2 sets.	A	3RA69 40-0A	1	1 unit	121
Screw terminals 						
 3RA69 11-1A	Auxiliary switch blocks for compact starters					
	• 2 NO	A	3RA69 11-1A	1	1 unit	121
	• 2 NC	A	3RA69 12-1A	1	1 unit	121
 3RA69 13-1A	• 1 NO + 1 NC (these auxiliary contacts are positively driven.)	A	3RA69 13-1A	1	1 unit	121
	Main circuit terminals (incoming and outgoing side)	A	3RA69 20-1A	1	1 unit	121
 3RA69 20-1B	Control circuit terminals					
	• For 3RA61	A	3RA69 20-1B	1	1 unit	121
	• For 3RA62	A	3RA69 20-1C	1	1 unit	121
Spring-type terminals 						
 3RA69 11-2A	Auxiliary switch blocks for compact starters					
	• 2 NO	A	3RA69 11-2A	1	1 unit	121
	• 2 NC	A	3RA69 12-2A	1	1 unit	121
 3RA69 13-2A	• 1 NO + 1 NC (These auxiliary contacts are positively driven.)	A	3RA69 13-2A	1	1 unit	121
	Main circuit terminals (incoming and outgoing side)	A	3RA69 20-2A	1	1 unit	121
 3RA69 20-2B	Control circuit terminals					
	• For 3RA61	A	3RA69 20-2B	1	1 unit	121
	• For 3RA62	A	3RA69 20-2C	1	1 unit	121

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Accessories specially for 3RA6 compact starters c ntinued



3RA69 20-3A

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

C

3RA69 20-3A

1

1 unit

121

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Accessories especially for 3RA64, 3RA65 compact starters with IO-Link



3RA69 31-0A

Additional connection cables (flat) for side-by-side mounting of up to 4 compact starters

- 10-pole
- 8 mm¹⁾
- 200 mm¹⁾
- 14-pole
- 8 mm²⁾
- 200 mm

A

3RA69 32-0A

1

5 units

121

A

3RA69 33-0B

1

5 units

121

A

3RA69 31-0A

1

5 units

121

A

3RA69 33-0C

1

5 units

121



3RA69 35-0A

Operator panels

(incl. enabling module, blanking cover and mounting bracket)

A

3RA69 35-0A

1

1 unit

121

Enabling modules

A

3RA69 36-0A

1

1 unit

121

Blanking covers

A

3RA69 36-0B

1

5 units

121

Connection cables (round) for connecting the operator panel

A

3RA69 33-0A

1

1 unit

121

10-pole, 2000 mm

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 Chapter 2 "Industrial Communication" --> "IO-Link" --> "Masters".

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Terminals for "Self-Protected Combination Motor Controllers (Type E)" acc. to UL 508 for infeed through parallel wiring with compact starters



3RV19 28-1H

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)

►

3RV19 28-1H

1

1 unit

101





For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Accessories

Number of compact starters and motor starter protectors that can be connected Without lateral accessories	Modular spacing	Rated current I_n at 690 V	For motor starter protectors	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm	A	Size						


Three-phase busbars for infeed with 3RA6

	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.								
3RV19 15-1AB	2	45	63	S00, S0 ¹⁾	▶	3RV19 15-1AB	1	1 unit	101
	3	45	63	S00, S0 ¹⁾	▶	3RV19 15-1BB	1	1 unit	101
3RV19 15-1BB	4	45	63	S00, S0 ¹⁾	▶	3RV19 15-1CB	1	1 unit	101
	5	45	63	S00, S0 ¹⁾	▶	3RV19 15-1DB	1	1 unit	101
3RV19 15-1CB									
									
3RV19 15-1DB									


¹⁾ Not suitable for 3RV11/3RV21 motor starter protectors for motor protection with overload relay function and for 3RV17/3RV27 and 3RV18/3RV28 circuit breakers according to UL 489 / CSA C22.2 No.5-02.
Joint clamping of 3RV1 motor starter protector sizes S00 and S0 is not possible on account of the different modular spacings and the different height of the terminals. The 3RV19 15-5DB connecting piece is available for connecting the compact starters to the 3RV1 motor starter protector size S00. Motor starter protectors S00/S0 of the 3RV2 series can be jointly clamped; no connecting piece has to be used.

Version	Modular spacing	For motor starter protectors	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm	Size						

Connecting pieces for three-phase busbars



	For connecting compact starters (left) and 3RV1 motor starter protectors size S00 (right)	45	S00	▶	3RV19 15-5DB		1	1 unit	101
3RV19 15-5DB									

Covers for connection tags of the three-phase busbars

	Touch protection for empty positions	--	S00, S0	▶	3RV19 15-6AB		1	10 units	101
3RV19 15-6AB									

Conductor cross-section	Tightening torque	For compact starters and motor starter protectors	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded						
mm ²	mm ²	AWG	Nm	Size				

Three-phase feeder terminals for three-phase busbars

	Connection from top								
3RV19 25-5AB	2.5 ... 25 4 ... 16 10-4	4	S0	▶	3RV19 25-5AB		1	1 unit	101
	Connection from below¹⁾								
3RV19 15-5B	2.5 ... 25 4 ... 16 10-4	Input: 4; Output: 2 ... 2.5	S00, S0	▶	3RV19 15-5B		1	1 unit	101

Three-phase feeder terminals for constructing "Type E Starters" according to UL 508 for three-phase busbars

Connection from top								
2.5 ... 25	4 ... 16	10-4	--	S0	A	3RV19 25-5EB	1	1 unit
							101	

¹⁾ This terminal is connected in place of a switch, please take the space requirement into account.

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Busbar adapters for 60 mm system



8US12 11-1NS10

For flat copper profiles according to DIN 46433
Width: 12 ... 30 mm
Thickness: 4 ... 5 mm or 10 mm

**8US12 11-1NS10**

1

1 unit

143

Device holders for lateral mounting along side the busbar adapter for 60 mm system



8US12 50-1AA10

Required in addition to the busbar adapter for
mounting a reversing starter

**8US12 50-1AA10**

1

1 unit

143

Version	Color of handle	Version of extension shaft mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Door-coupling rotary operating mechanisms for operating the compact starter with closed control cabinet doors



3RV29 26-0B

The door-coupling rotary operating mechanisms consist of a knob, a coupling driver and a 130/330 mm long extension shaft (6 mm x 6 mm). The door-coupling rotary operating mechanisms are designed to degree of protection IP65. 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

**3RV29 26-0B**

1

1 unit

101

**EMERGENCY-STOP
door-coupling
rotary operating
mechanisms**

Red/yellow

130

**3RV29 26-0C**

1



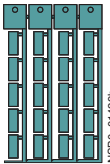

1 unit

101

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-type terminals by hand						
 3RA29 08-1A	A	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	 Spring-type terminals 3RA29 08-1A	1	1 unit	101
Blank labels						
 3RT19 00-1SB20	D	Unit labeling plates¹⁾ for SIRIUS devices 20 mm x 7 mm, pastel turquoise	 System manuals SIRIUS Compact Starters and Accessories English	100	340 units	101
Documentation ²⁾						
	X		3RA69 92-0A	1	1 unit	191

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH www.murrplastik.de.

²⁾ This manual and other language versions are currently available from the download center of the Service & Support portal at <https://support.automation.siemens.com/WW/view/en/27136554/133300>.

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Add-on modules for AS-Interface

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 on-site controller

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 "+" connections 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.

On-site control

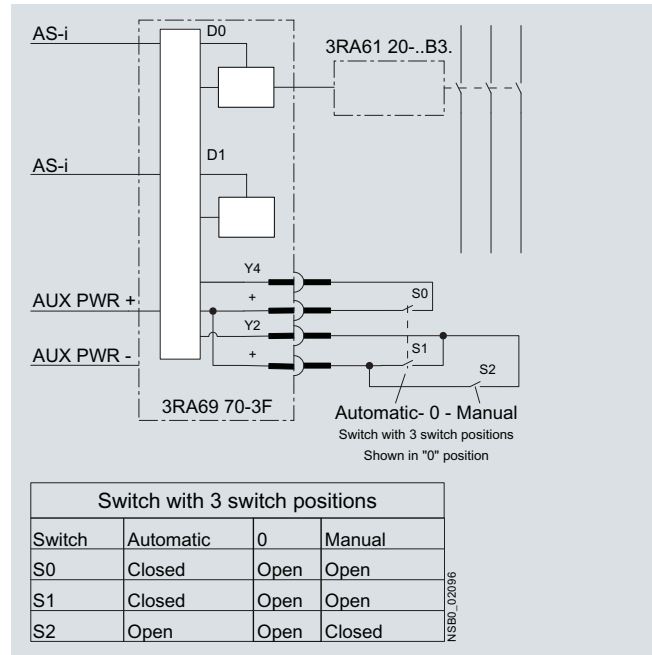
Opening the two inputs Y2 and Y4 will result in the direct disconnection of the compact starter. Operation through AS-i Communication is ended and the compact starter can now be switched on and off directly using NO contacts (one NO contact per direction of rotation on the reversing starter).

"LED AUX Power" must light up green, the 24 V DC supply must be assured and the AS-i control supply voltage must no longer be applied.

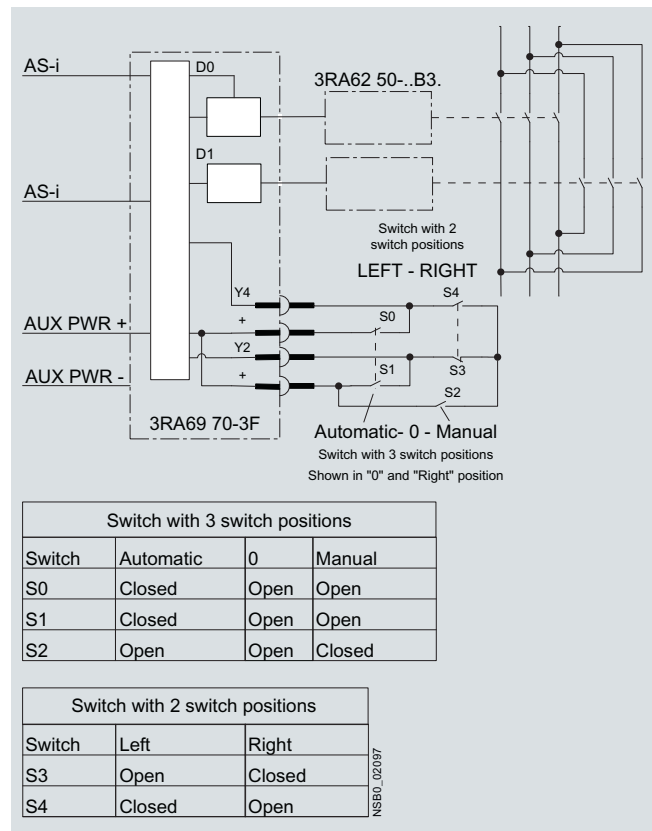
Resetting to "Automatic" mode

Simultaneous application of a "1" signal 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.



Circuit example for controlling a 3RA61 20 direct-on-line starter using an AS-i add-on module for on-site control






Circuit example for controlling a 3RA62 50 reversing line starter using an AS-i add-on module for on-site control

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Add-on modules for AS-Interface

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-i add-on modules						
 3RA69 70-3A  3RA69 70-3B to -3F	Standard version	A	3RA69 70-3A	1	1 unit	121
	For communication of the compact starter with the control system using AS-Interface					
	With two local inputs	A	3RA69 70-3B	1	1 unit	121
	For safe disconnection through local safety relays, e.g. cable-operated switches					
	With two free external inputs	A	3RA69 70-3C	1	1 unit	121
	Replaces the digital standard inputs "Motor On" and "Group warning"					
	With one free external input and one free external output	A	3RA69 70-3D	1	1 unit	121
	Replaces the digital standard input "Group warning"					
	With two free external outputs	A	3RA69 70-3E	1	1 unit	121
	Only for direct-on-line starters, replaces the digital standard output "Motor left"					
	For local control	A	3RA69 70-3F	1	1 unit	121
	Control of the compact starter optionally using AS-Interface or local switches					
Accessories for AS-i add-on modules						
 3RK19 04-2AB01	Addressing units	▶	3RK19 04-2AB01	1	1 unit	121
	<ul style="list-style-type: none"> • For active AS-Interface modules, intelligent sensors and actuators • Acc. to AS-Interface Version 2.1 • Including expanded addressing mode • Scope of supply <ul style="list-style-type: none"> - 1 addressing unit - 1 operating manual (German, English, French, Spanish, Italian) - 1 addressing cable (1.5 m long, with jack plug) 					

For matching AS-Interface masters, routers and power supply units see Chapter 2 "Industrial Communication" --> "AS-Interface".

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed systems for 3RA6

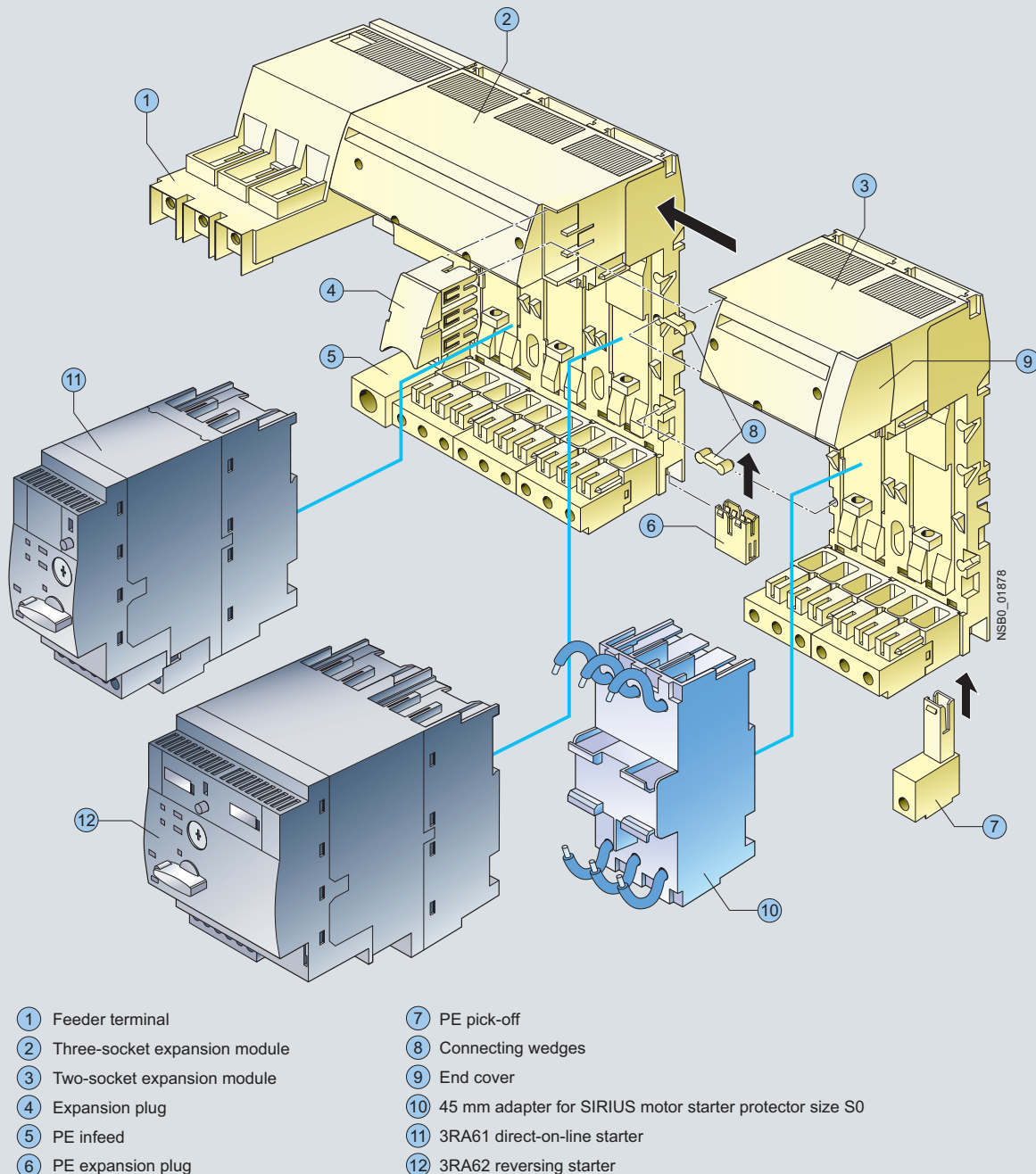
Overview

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).

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 feeder terminal block.

The infeed system can be mounted on a standard mounting rail or flat surfaces.



Infeed system for 3RA6 compact starters

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed systems for 3RA6

① Infeed

The 3-phase infeed is available with screw connection (25/35 mm² up to 63 A or 50/70 mm² up to 100 A) and spring-type connection (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 infeeds with screw connection enable connection of the main conductors (L1, L2, L3) either from above or from below.

The infeed with screw connection is supplied complete with 1 end cover, the infeed with spring-type connection complete with 2 end covers.

② Three-socket expansion modules

The expansion module with 3 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 2 connecting wedges and 1 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 mounted and removed even when live.

Optional possibilities:

- PE connection on motor outgoing side
- Outfeed for external auxiliary devices
- Connection to 3RV19 infeed system
- Integration of SIRIUS 3RV1 motor starter protectors size S0 (using 3RA68 90-0BA adapter)

③ Two-socket expansion modules

If only 2 instead of 3 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 infeeds

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 right or left to 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 2 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 motor starter protectors

SIRIUS 3RV1 motor starter protectors size S0 with screw connection can be fitted to the adapter, enabling them to be plugged into the infeed system.

Terminal blocks

Using the terminal block the 3 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 3RV19 infeed systems

After the end cover is pulled out, the expansion plug for the SIRIUS 3RV19 infeed system can be plugged onto an expansion module. It connects the infeed system for 3RA6 compact starters with the SIRIUS 3RV19 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
Infeed with screw connection 50/70 mm ²	100
Infeed with screw connection 25/35 mm ²	63
Infeed with spring-type connection 25/35 mm ²	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 mm ²	Inscriptions	Proposal for upstream short-circuit protection device
Short-circuit protection for infeed block (25 mm²/35 mm²) with screw connection		
2.5 ... 35	$I_{d, \max} = 19 \text{ kA}$, $I^2t = 440 \text{ kA}^2\text{s}$	3RV10 41-4JA10
Short-circuit protection for infeed block (50/70 mm²) with screw connection		
2.5 ... 70	$I_{d, \max} = \text{approx. } 22 \text{ kA}$	3RV10 41-4MA10
Short-circuit protection for infeed block with spring-type connection		
4	$I_{d, \max} = 9.5 \text{ kA}$, $I^2t = 85 \text{ kA}^2\text{s}$	3RV10 21-4DA10
6	$I_{d, \max} = 12.5 \text{ kA}$, $I^2t = 140 \text{ kA}^2\text{s}$	3RV10 31-4EA10
10	$I_{d, \max} = 15 \text{ kA}$, $I^2t = 180 \text{ kA}^2\text{s}$	3RV10 31-4HA10
16/25	$I_{d, \max} = 19 \text{ kA}$, $I^2t = 440 \text{ kA}^2\text{s}$	3RV10 41-4JA10
Short-circuit protection for terminal block		
1.5	$I_{d, \max} = 7.5 \text{ kA}$	5SY... 1)
2.5	$I_{d, \max} = 9.5 \text{ kA}$	
4	$I_{d, \max} = 9.5 \text{ kA}$	
6	$I_{d, \max} = 12.5 \text{ kA}$	

1) To prevent the possibility of short-circuits, the cables on the terminal block must be installed so that they are short-circuit proof according to EN 60439-1 Section 7.5.5.1.2.

For Use in the Control Cabinet

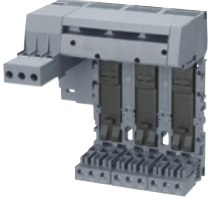


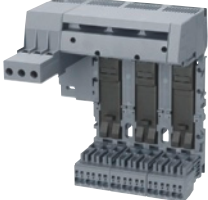
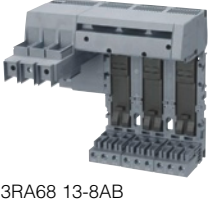


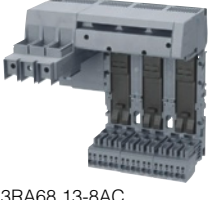


SIRIUS 3RA6 Compact Starters

Infeed systems for 3RA6

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Three-phase infeeds and expansion modules

	Infeeds with screw connection 25/35 mm² left							
3RA68 12-8AB	Infeed with screw connection at line side with a permanently fitted 3-socket expansion module with screw or spring-type connection 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							
	<ul style="list-style-type: none">Screw terminals on the outgoing side		A	3RA68 12-8AB	1	1 unit	121	
	<ul style="list-style-type: none">Spring-type terminals on the outgoing side		A	3RA68 12-8AC	1	1 unit	121	
								
3RA68 12-8AC								
	Infeeds with screw connection 50/70 mm² left							
3RA68 13-8AB	Infeed with screw connection at line side with a permanently fitted 3-socket expansion module with screw or spring-type connection 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							
	<ul style="list-style-type: none">Screw terminals on the outgoing side		A	3RA68 13-8AB	1	1 unit	121	
	<ul style="list-style-type: none">Spring-type terminals on the outgoing side		A	3RA68 13-8AC	1	1 unit	121	
								
3RA68 13-8AC								
	Infeeds with screw connection 25/35 mm² left or right							
3RA68 30-5AC	Up to 63 A		A	Spring-type terminals		1	1 unit	121
				3RA68 30-5AC				

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed systems for 3RA6

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
---------	----	-----------	-----------------	-------------------------	-----	----

Expansion modules



3RA68 22-0AB

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 are included in the scope of supply.

- Screw terminals

A

Screw terminals

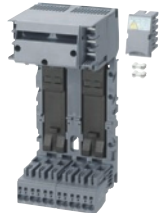


3RA68 22-0AB

1

1 unit

121



3RA68 22-0AC

- Spring-type terminals

A

Spring-type terminals



3RA68 22-0AC

1

1 unit

121



3RA68 23-0AB

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 are included in the scope of supply.

- Screw terminals

A

Screw terminals



3RA68 23-0AB

1

1 unit

121



3RA68 23-0AC

- Spring-type terminals

A

Spring-type terminals



3RA68 23-0AC

1

1 unit

121

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed systems for 3RA6

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
---------	----	-----------	-----------------	-------------------------	-----	----

Accessories for infeed systems for 3RA6

PE infeeds 25/35 mm²



3RA68 60-6AB

- Screw terminals

A

Screw terminals



3RA68 60-6AB

1

1 unit

121



3RA68 60-5AC

- Spring-type terminals

A

Spring-type terminals



3RA68 60-5AC

1

1 unit

121

PE pick-offs 6/10 mm²



3RA68 70-4AB

- Screw terminals

A

Screw terminals



3RA68 70-4AB

1

1 unit

121



3RA68 70-3AC

- Spring-type terminals

A

Spring-type terminals



3RA68 70-3AC

1

1 unit

121

Expansion plugs

PE expansion plugs



3RA68 90-0EA

A

3RA68 90-0EA

1

1 unit

121

Expansion plugs

between 2 expansion modules

Is included in the scope of supply of the expansion modules.

A

3RA68 90-1AB

1

1 unit

121



3RA68 90-1AB

Expansion plugs for SIRIUS 3RV19 infeed system

Connects infeed system for 3RA6 to 3RV19 infeed system

A

3RA68 90-1AA

1

1 unit

121



3RA68 90-1AA

For Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed systems for 3RA6

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
---------	----	-----------	-----------------	-------------------------	-----	----

Accessories for infeed systems for 3RA6 C ntinued

45 mm adapters

For SIRIUS 3RV1 motor starter protectors size S0

- Screw terminals

A

Screw terminals



3RA68 90-0BA

1

1 unit

121



3RA68 90-0BA

Terminal blocks

For integration of single-phase, 2-phase and 3-phase external components

- Spring-type terminals

A

Spring-type terminals



3RV19 17-5D

1

1 unit

101



3RV19 17-5D

Tools for opening spring-type terminals by hand

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

A

Spring-type terminals



3RA29 08-1A

1

1 unit

101



3RA29 08-1A

For Use in the Control Cabinet

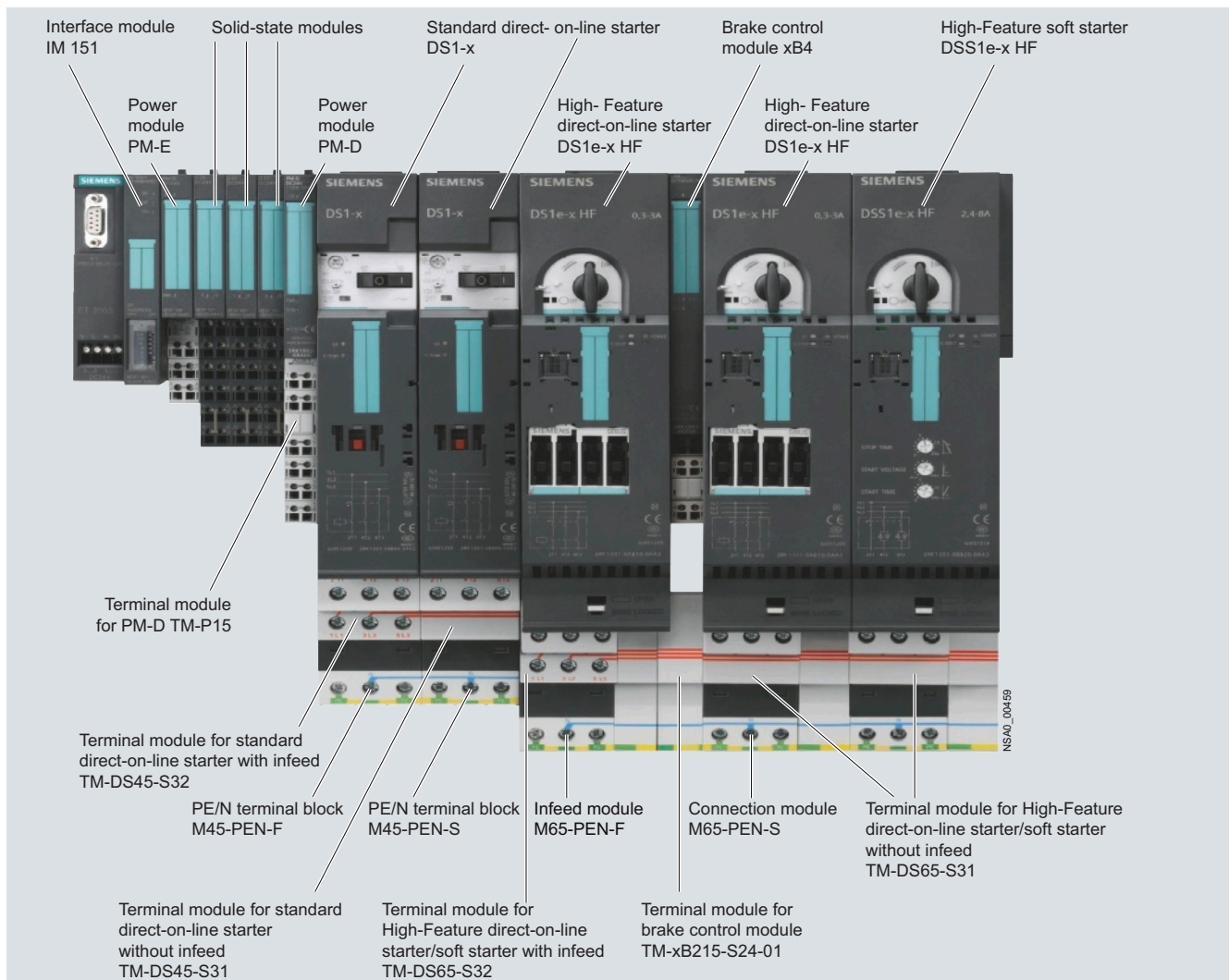
ET 200S Motor Starters and Safety Motor Starters

General data

Overview

ET 200S motor starters

- Completely factory-wired motor starters for switching and protecting any AC loads
- Can be used as a direct-on-line, reversing or soft starter
- Standard motor starter with motor starter protector and contactor assembly up to 5.5 kW
- High-Feature motor starter with a combination comprising a starter protector, solid-state overload protection and contactor or soft starter up to 7.5 kW
- With self-assembling 40/50 A power bus, i.e. the load voltage is only supplied once for a group of motor starters
- Hot swapping is permissible
- Inputs and outputs for activating and signaling the statistics have been integrated
- Diagnostics capability for active monitoring of the switching and protection functions
- Can be combined with expansion modules: Brake control module for controlling electromechanical brakes in induction motors and with two optional inputs for special functions (for quick stop with the Standard motor starter and for parameterizable special functions with the High-Feature motor starter)
- For combining with safety technology for use in safety-related system components (EN 954-1).



Interplay of ET 200S motor starter components

With the ET 200S motor starters, any AC loads can be protected and switched. The communications interface makes them ideal for operation in distributed control cabinets or control enclosures.

As the motor starters are completely factory-wired, power control cabinets can be assembled far more quickly and compactly. Configuration is made easier by the fine modular structure. When using the ET 200S motor starters, the list of parts per load feeder is reduced to two main items: The passive terminal module and the motor starter. This makes the ET 200S ideal for modular machine concepts as well.

All ET 200S motor starters are set up without fuses. Contactors and soft starters are activated through the integrated outputs. If a brake control module is arranged next to a motor starter, its solid-state brake switch is operated by an output of the motor starter. This module must always be arranged next to the motor starter on the right-hand side. The inputs of the motor starters evaluate the signal states of the protective devices (short-circuit or overload), the switching states of contactor(s) or soft starters, and system faults.

The motor starter protector signaling is freely programmable with regard to group fault signals (group fault at motor starter protector "Off"/group fault signal at motor starter protector "Off" only in case of "On" command from the motor starter).

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

General data

Expansions are easily possible through the subsequent adding of terminal modules. With their modular terminal design (10 mm²) the latter also do away with the distribution wiring otherwise required. Through the permanent wiring and the hot swapping function (disconnection and connection during operation) a motor starter can be replaced within seconds if necessary. The motor starters are therefore recommendable in particular for applications with special demands on availability.

The possibility of expanding the motor starters with brake control modules xB1-xB4 means that motors with 24 V DC brakes (xB1, xB3) as well as motors with 500 V DC brakes (xB2, xB4) can be controlled. The 24 V DC brakes have an external supply and can be vented independently of the switching state of the motor starter. By contrast the 500 V DC brakes mostly have a direct supply from the terminal board of the motor through a rectifier module and therefore cannot be vented when the motor starter is switched off. These brakes cannot be used in combination with the DSS1e-x motor starter (soft starter).

The outputs of the brake control modules can be used alternatively for other purposes, e.g. for controlling DC valves. With two locally acting inputs optionally available on the brake control modules (xB3, xB4) and another two on the control module of the High-Feature motor starter it is possible to realize autonomous special functions which work independently of the bus and the higher-level control system, e.g. as a quick stop on gate valve controls. In parallel with this, the states of these inputs are signaled to the control system.

As the result of the selective protection concept with solid-state overload evaluation and the use of SIRIUS switchgear size S0, additional advantages are realized on the High-Feature motor starters – advantages which soon make themselves positively felt particularly in manufacturing processes with high plant stoppage costs:

- Only two variants up to 7.5 kW
- All settings can be parameterized by bus
- Separate overload and short-circuit signals
- Overload can be acknowledged by remote reset
- Current unbalance monitoring
- Stall protection
- Emergency start function in the event of overload
- Current value transmission by bus
- Current limit monitoring
- CLASS 10 or 20 can be parameterized
- Type of coordination "2" (still functional after short-circuit with magnitude of 50 kA)
- Very high contact endurance

Power is supplied through the terminal modules for motor starters. While the auxiliary voltages must be fed in once through the PM-D or PM-DFx power module, which is to be plugged in on the left side of the first motor starter, the load voltage must be fed in at the first TM-xxxxS32 terminal module (on the left) of a motor starter. The other TM-xxxxS31 terminal modules are automatically supplied as well through the integrated power bus when they are mounted side by side.

If the power bus is utilized to its full capacity of 40 A (Standard motor starters) or 50 A (High-Feature motor starters), a new supply is fed in through an additional TM-xxxxS32 terminal module. This also applies when transferring from a Standard motor starter to a High-Feature motor starter and vice versa. In this case, however, no PM-D power module must be placed in between.

Terminal modules for motor starters

- Mechanical modules in which the motor starter and expansion modules are inserted
- For constructing the permanent wiring and self-assembling voltage bus
- For connecting the motor connection cables
- Positive-locking connection to ensure enhanced vibration resistance

Terminal modules are purely mechanical components for accommodating the ET 200S peripherals. The self-assembling voltage buses integrated in the terminal modules reduce wiring outlay to the single infeed. All modules following on the right are automatically supplied upon plugging the terminal modules together. The robust design and keyed connection technology enables use in harsh industrial conditions.

Terminal modules for TM-DS and TM-RS motor starters

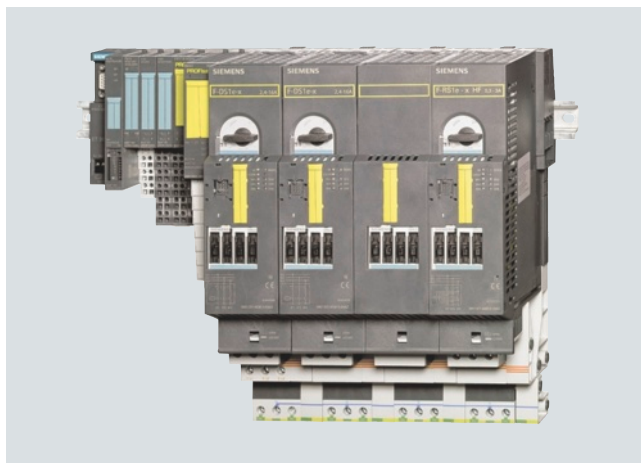
The TM-DS and TM-RS terminal modules are available in various versions for the Standard motor starters and the High-Feature motor starters. The terminal modules with the suffix "-S32" have connection terminals for feeding into the integrated 40 A/50 A power bus and connection terminals for the motor connection cable. They are mounted at the beginning (left) of a power bus segment.

The terminal modules with the suffix "-S31" have only connection terminals for the motor connection cable. These terminal modules follow on the right after a "-S32" terminal module. To configure a new load group, another "-S32" terminal module is plugged in. All connection terminals of the terminal modules for motor starters are equipped with strong 10 mm² terminals. The "-S32" terminal modules are supplied with three caps for closing the power bus contacts on the final terminal module of a segment.

Terminal module for power module

- Connection by means of screw terminals
- Light colored enclosure for visual distinction
- Always before the first TM-DS/TM-RS

ET 200S Safety motor starters Solutions local/PROFIsafe



The ET 200S Safety motor starter Solutions are preferred in all production and process automation fields in which the enhancement of plant availability and flexibility plays a key role.

- **Safety motor starters 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.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

General data

- **Safety motor starters 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 bus systems PROFINET or PROFIBUS with the PROFIsafe profile.

The ET 200S Safety motor starters Solutions comprise:

- Safety modules
- Standard motor starters
- High-Feature motor starters
- Failsafe motor starters

With the ET 200S Solutions safety motor starters there is no complicated and hence cost-intensive configuring and wiring compared to the conventional safety systems. The ET 200S Solutions safety motor starters are designed for Category 4 according to EN 954-1 or SIL 3 according to IEC 61508.

They enable the use of safety-oriented direct-on-line starters or reversing starters in the SIMATIC ET 200S distributed peripherals system on PROFINET or PROFIBUS. The fine modular architecture of the system permits optimum imaging of machine or plant applications.

Within an ET 200S station the Solutions safety motor starters can also be combined with Standard motor starters or High Feature motor starters without safety functions or the SIMATIC ET 200S FC frequency converters up to max. 4 kW up to Category 3 according to EN 954-1 or SIL 2 according to IEC 61508.

ET 200S motor starters

The "SIMATIC ET 200S Configurator" software can be found in Catalog CA 01 on CD or DVD. You can also download the "SIMATIC ET 200 Configurator" software from the Internet:

www.siemens.com/sirius-starting

www.siemens.com/ET200S-motorstarter

Note:

For safety characteristics for motor starters, see "Appendix" --> "Standards and Approvals"

Motor Starter ES software

The Motor Starter ES software is used for the parameterization, monitoring, diagnostics and testing of motor starters.

See Chapter 12 "Parametrization, Configuration and Visualization with SIRIUS".

SIRIUS Motor Starter Block Library for SIMATIC PCS 7

With the SIRIUS motor starter PCS 7 block library, SIRIUS ET 200S motor starters (direct and reversing starters, direct-on-line soft starters) can be easily and simply integrated into the SIMATIC PCS 7 process control system. The SIRIUS motor starter PCS 7 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.

See Chapter 12 "Parametrization, Configuration and Visualization with SIRIUS".

		Motor starters Standard DS1-x, RS1-x	Motor starters High-Feature DS1e-x, RS1e-x	Motor starters High-Feature DSS1e-x
Device functions				
Stall protection		No	Yes, $8 \times I_e / 1 \text{ s}$	
Motor starter protector signaling		Yes	Parameterizable: always / only in case of "On" commands	
Overload warning		No, only tripping	Yes	
Emergency start function		No	Yes	
Number of outputs		4	16	16
Number of inputs		4	16	16
Address area required per module				
• With summary	bit	4	--	--
• Without summary	byte	1	2	2
Diagnostics functions				
• Group fault "SF"		Red LED		
• Switching state "C-STAT"		Red/green/yellow LED		
• Device state "DEVICE"		--	Red/green/yellow LED	
Configurable through PROFIBUS DP		Yes		
Auxiliary switch for enabling circuit of the ET 200S safety technology already integrated (up to category 4 EN 954-1)		No, F-Kit required	Yes	No (max. Category 1 attainable)
Setting options for soft starters (locally on the device)				
• Starting time	s	--	--	0 ... 20
• Starting voltage	%	--	--	30 ... 100 of U_e
• Ramp-down time	s	--	--	0 ... 20
Process image		3I/3O	8I/5O + 6I motor current	9I/5O + 6I motor current
Diagnostics using PROFIBUS		Yes, see manual		

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

General data

Technical specifications

ET 200S motor starters

		Motor starters Standard DS1-x, RS1-x	Motor starters High-Feature DS1e-x, RS1e-x	Motor starters High-Feature DSS1e-x
Mechanics and environment				
Motor starters for connection to ET 200S, max. ¹⁾		42	17	
Mounting dimensions (W x H x D)				
• Direct-on-line starters	mm	45 x (265 + 45) x (120 + 27); (45: PE/N module; 27: Auxil. switch contactor from F-Kit)	65 x (290 + 45) x (150 + 23); (45: PE/N module; 23: Control module)	
• Reversing starters	mm	90 x (265 + 45) x (120 + 27); (45: PE/N module; 27: Aux. switch contactor from F-Kit)	130 x (290 + 45) x (150 + 23); (45: PE/N module; 23: Control module)	
Permissible ambient temperature				
• During operation	°C	0 ... +60, From +40 with derating	0 ... +60 With horizontal mounting up to +40	
• During storage	°C	-40 ... +70	-40 ... +70	
• Permissible mounting positions		Vertical, horizontal With derating	Vertical, horizontal	
Vibration resistance acc. to IEC 60068, Part 2-6		g	2	
Shock resistance acc. to IEC 60068, Part 2-27		g/ms	Square 5/11	
Conductor cross-section				
• Solid	mm ²	2 x (1 ... 2.5) ²⁾ ; 2 x (2.5 ... 6) ²⁾ , according to IEC 60947: max. 1 x 10		
• Finely stranded with end sleeve	mm ²	2 x (1 ... 2.5) ²⁾ ; 2 x (2.5 ... 6) ²⁾		
• AWG cables, solid or stranded	AWG	2 x (14 ...10)		
Degree of protection		IP20, finger-safe (this also applies to terminal modules on a dismantled motor starter)		
Mechanical endurance				
• Motor starter protectors	Oper- ating cycles	100 000		
• Contactor		30 million	10 million	--
• Contactor with safety functionality (F-Kit)		10 million	--	--
Electrical specifications				
Power consumption				
• From auxiliary circuit L+/M (U ₁)	mA	Approx. 20	Approx. 40	Approx. 40
• From auxiliary circuit A1/A2 (U ₂)	mA	Approx. 100	Approx. 1 700 (80 ms long), approx. 350 (after 80 ms)	Approx. 30
Rated operational current for TM-D terminal modules I _e		A	40	50
Rated operational voltage U _e		V	400	
Approval to DIN VDE 0106 Part 101		V	Yes, up to 500	Yes, up to 500
CSA and U _L approval		V	Yes, up to 600	Yes, up to 600
Rated operational current I _e for motor starters				
• AC-1/2/3 at 60 °C	A			
- At 400 V		12	16	3 / 8 / 16
- At 500 V		9	11	--
• AC-4 at 60 °C	A			
- At 400 V		4.1	9	--
Rated short-circuit breaking capacity		kA	50 at 400 V	
Power of induction motors at 500 V		kW	5.5	7.5
Utilization categories		AC-1, AC-2, AC-3, AC-4		
Protective separation between main and auxiliary circuits		V	400, acc. to DIN VDE 0106, Part 101	
Positively-driven operation of contactor relay (NC)		Yes		--
Trip class		CLASS 10		0.3 ... 3 A: CLASS 10/10A, can be parameterized 2.4 ... 8 A: CLASS 10A 2.4 ... 16 A: CLASS 10A
Type of coordination		Up to 1.6 A: 2 Up to 12 A: 1		Up to 16 A: 1
Electrical endurance				
• Motor starter protectors	h	100 000		
• Contactor		See manual	See manual	--
Permissible switching frequency with a starting time t _A = 0.1 s and a relative ON period t _{OP} = 50 %		1/h	< 80	See manual
Induction protection		Already installed		

¹⁾ Additional limits: Process image, max. design width 2 m.



²⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in the range specified. If identical cross-sections are used, this restriction does not apply.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Standard motor starters

Selection and ordering data

	Induction motor 4-pole at 400 V AC, standard output <i>P</i>	Setting range of the electronic release	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	kW	A						
Standard motor starters, with diagnostics, electromechanical, fuseless, expandable with brake control module								
DS1-x direct-on-line starters								
	< 0.06	0.14 ... 0.20	A	3RK1 301-0BB00-0AA2		1	1 unit	121
	0.06	0.18 ... 0.25	A	3RK1 301-0CB00-0AA2		1	1 unit	121
	0.09	0.22 ... 0.32	A	3RK1 301-0DB00-0AA2		1	1 unit	121
	0.10	0.28 ... 0.40	A	3RK1 301-0EB00-0AA2		1	1 unit	121
	0.12	0.35 ... 0.50	A	3RK1 301-0FB00-0AA2		1	1 unit	121
	0.18	0.45 ... 0.63	A	3RK1 301-0GB00-0AA2		1	1 unit	121
	0.21	0.55 ... 0.80	A	3RK1 301-0HB00-0AA2		1	1 unit	121
	0.25	0.70 ... 1.00	A	3RK1 301-0JB00-0AA2		1	1 unit	121
	0.37	0.90 ... 1.25	A	3RK1 301-0KB00-0AA2		1	1 unit	121
	0.55	1.1 ... 1.6	A	3RK1 301-1AB00-0AA2		1	1 unit	121
	0.75	1.4 ... 2.0	A	3RK1 301-1BB00-0AA2		1	1 unit	121
	0.90	1.8 ... 2.5	A	3RK1 301-1CB00-0AA2		1	1 unit	121
	1.1	2.2 ... 3.2	A	3RK1 301-1DB00-0AA2		1	1 unit	121
	1.5	2.8 ... 4.0	A	3RK1 301-1EB00-0AA2		1	1 unit	121
	1.9	3.5 ... 5.0	A	3RK1 301-1FB00-0AA2		1	1 unit	121
	2.2	4.5 ... 6.3	A	3RK1 301-1GB00-0AA2		1	1 unit	121
	3.0	5.5 ... 8.0	A	3RK1 301-1HB00-0AA2		1	1 unit	121
	4.0	7 ... 10	A	3RK1 301-1JB00-0AA2		1	1 unit	121
	5.5	9 ... 12	A	3RK1 301-1KB00-0AA2		1	1 unit	121
RS1-x reversing starters								
	< 0.06	0.14 ... 0.20	A	3RK1 301-0BB00-1AA2		1	1 unit	121
	0.06	0.18 ... 0.25	A	3RK1 301-0CB00-1AA2		1	1 unit	121
	0.09	0.22 ... 0.32	A	3RK1 301-0DB00-1AA2		1	1 unit	121
	0.10	0.28 ... 0.40	A	3RK1 301-0EB00-1AA2		1	1 unit	121
	0.12	0.35 ... 0.50	A	3RK1 301-0FB00-1AA2		1	1 unit	121
	0.18	0.45 ... 0.63	A	3RK1 301-0GB00-1AA2		1	1 unit	121
	0.21	0.55 ... 0.80	A	3RK1 301-0HB00-1AA2		1	1 unit	121
	0.25	0.70 ... 1.00	A	3RK1 301-0JB00-1AA2		1	1 unit	121
	0.37	0.90 ... 1.25	A	3RK1 301-0KB00-1AA2		1	1 unit	121
	0.55	1.1 ... 1.6	A	3RK1 301-1AB00-1AA2		1	1 unit	121
	0.75	1.4 ... 2.0	A	3RK1 301-1BB00-1AA2		1	1 unit	121
	0.90	1.8 ... 2.5	A	3RK1 301-1CB00-1AA2		1	1 unit	121
	1.1	2.2 ... 3.2	A	3RK1 301-1DB00-1AA2		1	1 unit	121
	1.5	2.8 ... 4.0	A	3RK1 301-1EB00-1AA2		1	1 unit	121
	1.9	3.5 ... 5.0	A	3RK1 301-1FB00-1AA2		1	1 unit	121
	2.2	4.5 ... 6.3	A	3RK1 301-1GB00-1AA2		1	1 unit	121
	3.0	5.5 ... 8.0	A	3RK1 301-1HB00-1AA2		1	1 unit	121
	4.0	7 ... 10	A	3RK1 301-1JB00-1AA2		1	1 unit	121
	5.5	9 ... 12	A	3RK1 301-1KB00-1AA2		1	1 unit	121

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Standard terminal modules

Overview

TM-DS, TM-RS

- "S32" version with supply terminals: 2 x 3 x 10 mm² screw terminals for power bus and motor feeder
- "S31" version without supply terminals: 1 x 3 x 10 mm² screw terminals for motor feeder
- Optionally expandable with PE/N modules ([see Accessories](#))
- Applies only to Standard motor starters: For applications with high motor currents (> 6.3 A) or high ambient temperatures (> 40 °C) it is recommended to use the DM-V15 distance module ([see Accessories](#)) between two DS1-x motor starters

Technical specifications

TM-DS45 and TM-DS65/TM-FDS65 terminal modules

		TM-DS45	TM-DS65/TM-FDS65
Dimensions			
• Mounting dimensions (W x H x D)	mm	45 x 264 x 100	65 x 290 x 100
• Height with PE/N terminal block	mm	306	332
• Depth with motor starter	mm	127	150
• Depth with motor starter and F-Kit (safety technology)	mm	152	--
• Depth with motor starter and 2DI control module	mm	--	173
Rated voltages, currents and frequencies for the power bus			
• Rated insulation voltage U_i	V	690	
• Rated operational voltage U_o	V	500 AC	
• Rated impulse withstand voltage U_{imp}	kV	6	
• Rated operational current I_o	A	40	50
• Rated frequency	Hz	50/60	
Conductor cross-sections			
• Solid	mm ²	2 x (1 ... 2.5) ¹⁾ or 2 x (2.5 ... 6) ¹⁾	
• Finely stranded with end sleeve	mm ²	1 x 10 or 2 x (1 ... 2.5) ¹⁾ or 2 x (2.5 ... 6) ¹⁾ Acc. to IEC 60947	
• AWG cables, solid or stranded	AWG	2 x (14 ... 10)	
• With additional three-phase feeder terminal if required			
- Solid or stranded	mm ²	1 x 2.5 ... 25	
- Finely stranded with end sleeve	mm ²	1 x 2.5 ... 25	
- AWG cables, solid or stranded	AWG	1 x 12 ... 4	
Wiring			
• Required tool		Standard screwdriver size 2 and Pozidriv 2	
• Tightening torque	Nm	2.0 ... 2.5	

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in the range specified. If identical cross-sections are used, this restriction does not apply.

TM-RS90 and TM-RS130/TM-FRS130 terminal module

		TM-RS90	TM-RS130/TM-FRS130
Dimensions			
• Mounting dimensions (W x H x D)	mm	90 x 264 x 100	130 x 290 x 100
• Height with PE/N	mm	306	332
• Depth with motor starter	mm	127	150
• Depth with motor starter and F-Kit (safety technology)	mm	152	--
• Depth with motor starter and 2DI control module	mm	--	173
Rated voltages, currents and frequencies for the power bus			
• Rated insulation voltage U_i	V	690	
• Rated operational voltage U_o	V	500 AC	
• Rated impulse withstand voltage U_{imp}	kV	6	
• Rated operational current I_o	A	40	50
• Rated frequency	Hz	50/60	

For Use in the Control Cabinet




ET 200S Motor Starters and Safety Motor Starters

Standard terminal modules

	TM-RS90	TM-RS130/TM-FRS130
Conductor cross-sections		
• Solid	mm ² 2 x (1 ... 2.5) ¹⁾ or 2 x (2.5 ... 6) ¹⁾	
• Finely stranded with end sleeve	mm ² 1 x 10 or 2 x (1 ... 2.5) ¹⁾ or 2 x (2.5 ... 6) ¹⁾ Acc. to IEC 60947	
• AWG cables, solid or stranded	AWG 2 x (14 ... 10)	
• With additional three-phase feeder terminal if required		
- Solid or stranded	mm ² 1 x 2.5 ... 25	
- Finely stranded with end sleeve	mm ² 1 x 2.5 ... 25	
- AWG cables, solid or stranded	AWG 1 x 12 ... 4	
Wiring		
• Required tool		Standard screwdriver size 2 and Pozidriv 2
• Tightening torque	Nm 2.0 ... 2.5	

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in the range specified. If identical cross-sections are used, this restriction does not apply.

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal modules for Standard motor starters							
	TM-DS45-S32 for DS1-x direct-on-line starters with incoming power bus connection including three caps for terminating the power bus	A	3RK1 903-0AB00		1	1 unit	121
3RK1 903-0AB00							
	TM-DS45-S31 for DS1-x direct-on-line starters without incoming power bus connection	A	3RK1 903-0AB10		1	1 unit	121
3RK1 903-0AB10							
	TM-RS90-S32 for RS1-x reversing starters with incoming power bus connection including three caps for terminating the power bus	A	3RK1 903-0AC00		1	1 unit	121
3RK1 903-0AC00							
	TM-RS90-S31 for RS1-x reversing starters without incoming power bus connection	A	3RK1 903-0AC10		1	1 unit	121

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

High-Feature motor starters

Selection and ordering data

Setting range of the electronic release	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A						
High-Feature motor starters, with diagnostics, solid-state overload protection, fuseless, expandable with brake control module						
DS1e-x direct-on-line starters with switch interface						
0.3 ... 3	A	3RK1 301-0AB10-0AA4		1	1 unit	121
2.4 ... 8	A	3RK1 301-0BB10-0AA4		1	1 unit	121
2.4 ... 16	A	3RK1 301-0CB10-0AA4		1	1 unit	121
RS1e-x reversing starters						
0.3 ... 3	A	3RK1 301-0AB10-1AA4		1	1 unit	121
2.4 ... 8	A	3RK1 301-0BB10-1AA4		1	1 unit	121
2.4 ... 16	A	3RK1 301-0CB10-1AA4		1	1 unit	121
DSS1e-x soft starters						
0.3 ... 3	A	3RK1 301-0AB20-0AA4		1	1 unit	121
2.4 ... 8	A	3RK1 301-0BB20-0AA4		1	1 unit	121
2.4 ... 16	A	3RK1 301-0CB20-0AA4		1	1 unit	121



DS1e-x

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

High-Feature terminal modules

Overview


TM-DS, TM-RS

- "-S32" version with supply terminals: 2 x 3 x 10 mm² screw terminals for power bus and motor feeder
- "-S31" version without supply terminals: 1 x 3 x 10 mm² screw terminals for motor feeder
- Optionally expandable with PE/N modules ([see Accessories](#))

Technical specifications

See "Technical Specifications" on "Standard Terminal Modules"

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal modules for High-Feature motor starters							
 3RK1 903-0AK00	TM-DS65-S32 for DS1e-x and DSS1e-x direct-on-line starters with incoming power bus connection including three caps for terminating the power bus	A	3RK1 903-0AK00		1	1 unit	121
	TM-DS65-S31 for DS1e-x and DSS1e-x direct-on-line starters without incoming power bus connection	A	3RK1 903-0AK10		1	1 unit	121
	TM-RS130-S32 for RS1e-x reversing starters with incoming power bus connection including three caps for terminating the power bus	A	3RK1 903-0AL00		1	1 unit	121
	TM-RS130-S31 for RS1e-x reversing starters without incoming power bus connection	A	3RK1 903-0AL10		1	1 unit	121

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Power modules

Overview

- Disconnection of a complete group of motor starters is possible without any additional outlay (safety category 1 according to ISO 13849-1)
- PM-D power modules are plugged onto the TM-P15 terminal modules. (A PM-D power module must be followed by at least one motor starter or one frequency converter.)

Application

PM-D power modules are used for monitoring the two 24 V DC auxiliary voltages for the group of motor starters following on the right or for supplying power to the group of frequency converters following on the right. The voltage is fed in through TM-D terminal modules to the self-assembling potential bars.


A voltage failure is signaled through PROFIBUS diagnostics to the higher-level master. Additional LEDs inform locally about the status of the auxiliary voltages.

The separation of auxiliary voltages for signal checkback and power section actuation enables the entire group to be shut down while maintaining the diagnostics capability.

Technical specifications

		PM-D power modules 3RK1 903-0BA00
Rated control supply voltage U_s up to 60 °C	V	20.4 ... 28
Rated operational current I_e		
• Recommended short-circuit protection	A	10
• Melting fuse	A	10
• Miniature circuit breakers	A	10, tripping characteristic B
Power consumption from the backplane bus	mA	≤ 10
Supplying		
• Motor starters		Yes
• Frequency converters		Yes
• Motor starters for safety technology		No
• Solid-state modules		No
• Ex(i) modules		No
Alarms		None
Diagnostics functions		Yes
• System fault/device fault		Red "SF" LED
• Monitoring the supply voltage for solid-state modules U_1		Green "PWR" LED
• Monitoring the supply voltage for contactors U_2		Green "CON" LED
• Diagnostics information can be read out		Yes
Conductor cross-sections		
• Flexible with end sleeve	mm ²	1.5
• Rigid	mm ²	2.5
Mounting dimensions (W x H x D)	mm	15 x 195.5 x 117.5

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power modules							
 3RK1 903-0BA00	PM-D power modules for 24 V DC with diagnostics		3RK1 903-0BA00		1	1 unit	121

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters


Power module terminal modules

Overview

Terminal module for power module

For supplying load and sensor voltage to the self-assembling potential bars of the Standard motor starters, High-Feature motor starters and frequency converters. Power modules for voltage monitoring are plugged onto TM-P modules. TM-P modules can be used any number of times within the ET 200S. A power module must always be plugged upstream from the first motor starter/frequency converter.

Selection and ordering data

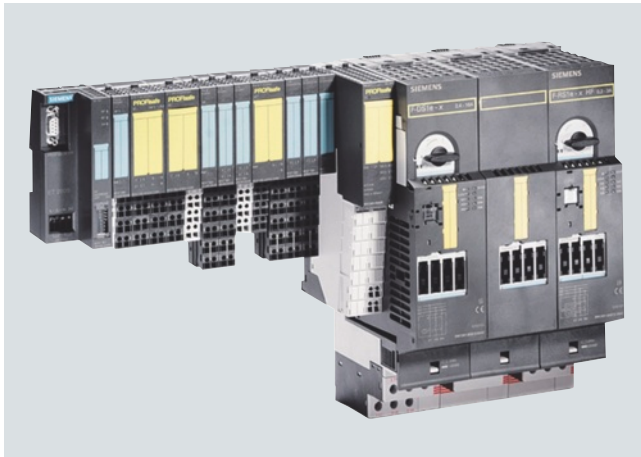
Version		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal modules for power module							
 3RK1 903-0AA00	TM-P15 S27-01 terminal modules for PM-D power module		A	3RK1 903-0AA00	1	1 unit	121

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S Failsafe motor starters

Overview



The Failsafe motor starter has been developed on the basis of the High-Feature motor starter. It differs in that, in addition to a motor starter protector and contactor assembly, a safe solid-state evaluation circuit is installed for error detection purposes which makes the motor starter failsafe.

If the contactor to be switched fails in an EMERGENCY-STOP case, the evaluation electronics detects a fault and opens the motor starter protector in the motor starter through a shunt release in a failsafe manner. The second redundant shutdown component is therefore no longer a main contactor, as is generally the case, but the motor starter protector installed in the motor.

All functions of the High-Feature starter are already integrated

The new failsafe motor starters are characterized by easy, space-saving assembly as well as minimal wiring outlay. Like the High-Feature starters, the Failsafe motor starters have a switching capacity of up to 7.5 kW (16 A) which is achieved with just two motor starter versions. Another important feature is the high availability due to the high short-circuit strength (type of coordination "2").

Benefits

Advantages over conventional safety technology

- Significant savings in components (less hardware)
- Less mounting and installation work
- Motor starters are failsafe and offer high availability

Application

Use

The Failsafe motor starter is predestined for use in combination with PROFIsafe (see figure ET 200S Safety Motor Starter Solution PROFIsafe with Failsafe Motor Starters on page 6/99). Another field of application is in combination with ASIsafe or safety relays (see example 2 on page 6/97 Failsafe Motor Starters with ASIsafe and 3TK28).

High degree of flexibility with safety technology

PROFIsafe solution with PM-D F PROFIsafe

In EMERGENCY-STOP applications, the Failsafe motor starters are selectively switched off through the upstream PM-D F PROFIsafe safety module. For each safety module, six switch-off groups can be formed. In the first delivery stage, the failsafe freely-programmable logic of the SIMATIC controller is used to interface with the relevant Failsafe sensor technology. The interface between PROFIsafe and installations that use conventional safety technologies is implemented through the F-CM Failsafe contact multiplier with four floating contacts.

Solution local with PM-D FX1

Failsafe motor starter with safety relay (Version 1) or ASIsafe (Version 2, see example 2, page 6/97):

Signals with relevance for safety can be input to ET 200S through a PM-D F X1 infeed terminal module through the enabling circuits of the AS-i Safety Monitor or the safety relay to control the Failsafe motor starters which then selectively switch off the downstream motors.

Technical specifications

F-DS1e-x direct-on-line starters/F-RS1e-x reversing starter

		Direct-on-line starters	Reversing starters
Dimensions			
Dimensions (W x H x D)	mm	65 x 290 x 150 (incl. terminal module)	130 x 290 x 150 (incl. terminal module)
Height with PE/N module	mm	332	
Depth with 2DI control module (not safe)	mm	173	
Module-specific specifications			
Type of coordination		Type 2 up to $I_{\theta} \leq 16$ A at 400 V	
Internal power supply		U1 (from PM-D F/PM-DF X1)	
Maximum achievable safety class		SIL 3 Shutdown class 6 (AK6) Category 4	
Safety characteristics			
Low demand	PFD _{AVG} (10a)	3.5×10^{-5} 8.0×10^{-5}	
• Test interval 3 months			
• Test interval 6 months			
High demand/continuous mode	PFH	8.1×10^{-10} 1.8×10^{-9}	
• Test interval 3 months	1/h		
• Test interval 6 months	1/h		
Proof-test interval	Years	10	

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

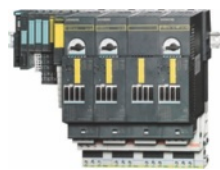
ET 200S Failsafe motor starters

		Direct-on-line starters	Reversing starters
Voltages, currents, potentials			
Switching capacity	A	Up to 7.5 kW at 400 V AC in three setting ranges: 0.3 ... 3 2.4 ... 8 2.4 ... 16	
	A		
	A		
Status, alarms, diagnostics			
Status display		SF, DEVICE and C-STAT, SG1 ... SG6	
Diagnostics functions			
Group fault display		Red LED (SF)	
Diagnostics information can be read out		Available	
Control circuit			
Rated operational voltage for electronics U_1	V	24 DC (20.4 ... 28.8 DC)	24 DC (21.6 ... 26.4 DC)
Reverse polarity protection for electronics U_1		Yes	
Rated operational voltage for contactor U_2	V	24 DC (20.4 ... 28.8 DC)	
Reverse polarity protection for contactor U_2		Yes	
Power consumption			
• From electronics supply U_1	mA	Approx. 40	Approx. 100
• From contactor supply U_2			
- Pickup	A	1.7 (for 80 ms)	--
- Hold	mA	max. 350	--
• From SG1 up to 6			
- Pickup	mA	250 (for 200 ms)	
- Hold	mA	max. 55	
• Test function of the shunt release/starter protector (50 ms) from U_1	A	Approx. 1.5	
• From the backplane bus	mA	Approx. 20	
Main circuit			
Rated operational voltage U_0			
• Acc. to IEC 60947-1, EN 60947-1	V	500 AC	
• Protective separation between main and auxiliary circuits	V	400	
• UL, CSA	V	600 AC	
Rated insulation voltage U_i	V	500 AC	
Rated impulse withstand voltage U_{imp}	kV	6	
Rated frequency	Hz	50/60	

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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ET 200S Failsafe motor starters



F-DS1e-x direct-on-line starter

F-DS1e-x direct-on-line starters

Failsafe direct-on-line starters up to 7.5 kW at 400 V AC
Mechanically switching
Solid-state UE protection

• 0.3 ... 3 A	A	3RK1 301-0AB13-0AA4	1	1 unit	121
• 2.4 ... 8 A	A	3RK1 301-0BB13-0AA4	1	1 unit	121
• 2.4 ... 16 A	A	3RK1 301-0CB13-0AA4	1	1 unit	121

F-RS1e-x reversing starters

Failsafe reversing starters up to 7.5 kW at 400 V AC
Mechanically switching
Solid-state UE protection, fuseless

• 0.3 ... 3 A	A	3RK1 301-0AB13-1AA4	1	1 unit	121
• 2.4 ... 8 A	A	3RK1 301-0BB13-1AA4	1	1 unit	121
• 2.4 ... 16 A	A	3RK1 301-0CB13-1AA4	1	1 unit	121

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Failsafe terminal modules

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal modules for Failsafe motor starters						
TM-FDS65-S32-01/S31-01 terminal modules for F-DS1e-x direct-on-line starters with coding						
• With incoming power bus connection (TM-FDS65-S32-01)	A	3RK1 903-3AC00		1	1 unit	121
• Without incoming power bus connection (TM-FDS65-S31-01)	A	3RK1 903-3AC10		1	1 unit	121
TM-FRS130-S32-01/S31-01 terminal modules for F-RS1e-x reversing starter with coding						
• With incoming power bus connection (TM-FRS130-S32-01)	A	3RK1 903-3AD00		1	1 unit	121
• Without incoming power bus connection (TM-FRS130-S31-01)	A	3RK1 903-3AD10		1	1 unit	121

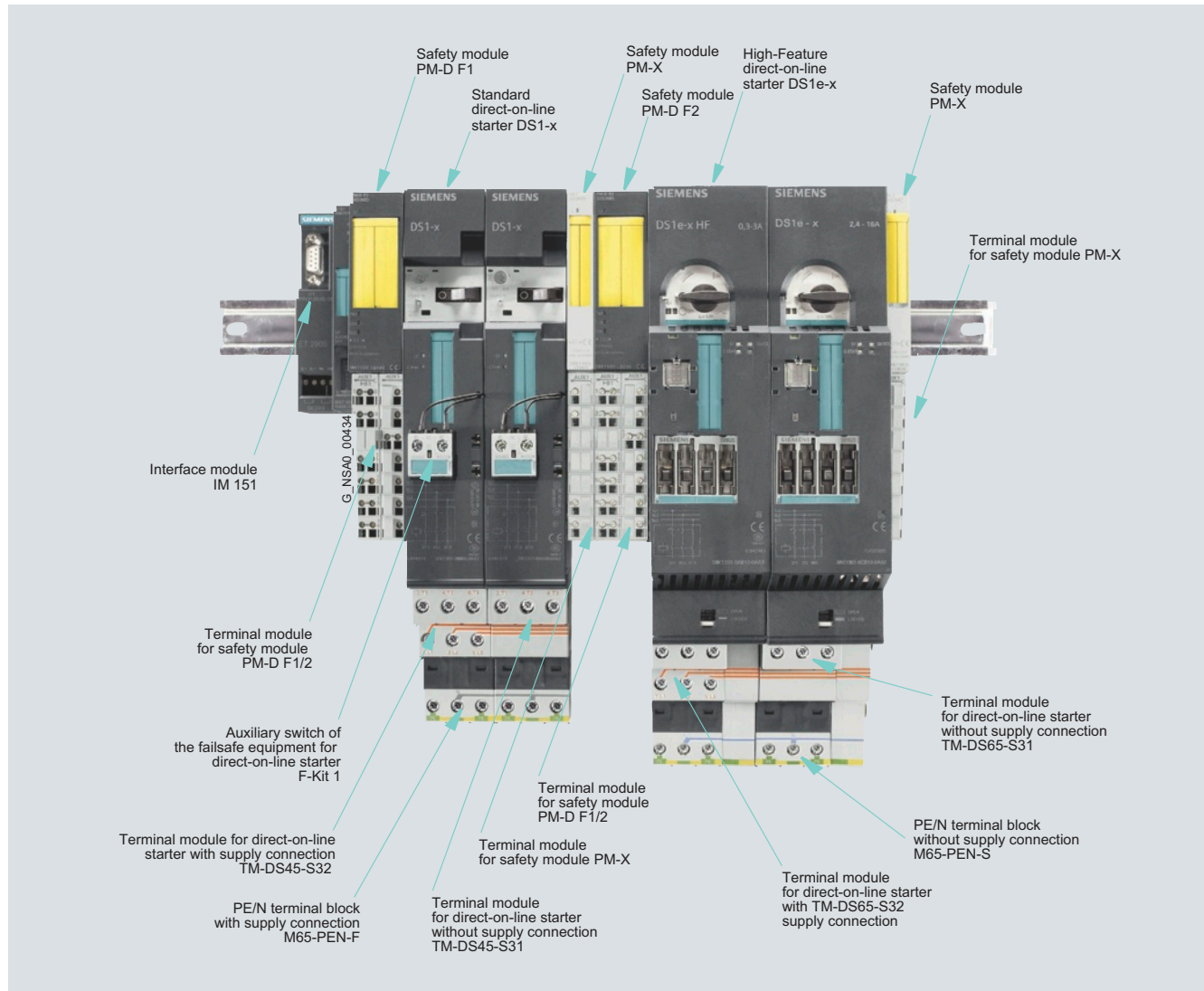
For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety modules local and PROFIsafe

Overview

Safety modules local



Interplay of ET 200S safety motor starters Solutions local components



PM-D F1 safety module

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety modules local and PROFIsafe

Safety motor starters Solutions local

With the Safety motor starters Solutions local it is easy to configure several safety circuits. The safety sensors are connected directly and locally to the safety modules. These safety modules perform the work of the otherwise obligatory safety relays and safely shut down the downstream motor starters in accordance with the function selected. The crosslinks required for this are already integrated in the system and need no additional wiring. All signals from the safety modules are automatically relayed as diagnostic signals, e.g. in the event of crossover in the EMERGENCY-STOP circuit.

The highest safety category 4 according to EN 954-1 can be obtained with safety motor starters Solutions local. They can thus be used for evaluation of EMERGENCY-STOP circuits or for monitoring protective doors and also for time-delayed disconnections. With the contact multiplier the safety-relevant signals can also be made available to external systems.

All standard safety applications can be covered through combination of different TM-PF30 terminal modules. Needless to say, ET 200S motor starters can also be used in conjunction with external safety relays or with ASIsafe.

Use of the PM-DFX1 safety module: The PM-DFX1 safety module is used for feeding in 1 to 6 switch-off groups. The infeed voltage can be switched using 1 to 6 external safety shutdown devices (either ASIsafe monitors or 3TK28 safety relays). This safety module is used in applications with external safety shutdown devices where there is a need for the fully selective safety shutdown of failsafe motor starters/frequency converters (see example 2, page 6/97).

With the Safety Motor Starter Solutions local, up to 80 % of wiring is saved compared to conventional safety systems with local safety applications.

The safety module evaluates the signal state of the connected safety sensors and, using the integrated safety relays, shuts down the group(s) of downstream motor starters. The shutdown function is monitored by the module, and the auxiliary voltages likewise.

Safety-relevant system signals, e.g. due to an actuated EMERGENCY-STOP switch or a missing auxiliary voltage, are automatically generated and notified to the interface module. The latter assigns an unambiguous ID to the fault. Using the PROFIBUS DP diagnostics module, faults of this type can be identified and localized without a great deal of programming work.

- For use of Standard, High-Feature or Failsafe motor starters in systems with safety categories 2 to 4 (according to ISO 13849-1)
- No complex wiring for conventional safety technology
- Can also be used in combination with external safety relays
- Can also be used to activate external safety systems
- Safety module available for function-monitored and automatic starting
- Safety module available for Stop category 0 and 1
- Safety module for monitoring the auxiliary voltages for motor starters
- Safety modules can be plugged into the TM-PF30 terminal modules

PM-D F1/F2/F3/F4/F5 safety modules

- PM-D F1/F2/F3/F4 safety modules monitor auxiliary voltages and contain the complete functionality of a safety relay:
 - PM-D F1
For evaluation of EMERGENCY-STOP circuits with the function "monitored start".
 - PM-D F2
For monitoring of protective doors with the function "automatic start".
 - PM-D F3
Expansion to PM-D F1/F2 for time-delayed disconnection.
 - PM-D F4
For expansion of safety circuits with other ET 200S motor starters, e.g. in a different line.
 - PM-D F5
Transmits the status from PM-D F1 ... 4 through four floating enabling circuits to external safety equipment (contact multipliers)
- The PM-D F1 and PM-D F2 modules can be combined with the PM-D F3 or PM-D F4 modules.
- A PM-D F5 can be positioned at any point between a PM-D F1 ... 4 and a PM-X.
- Safety modules monitor the U1 and U2 auxiliary voltages. A voltage failure is relayed as a diagnostic signal over the bus.
 - No additional PM-D safety module is required when the safety modules are used.
 - Each safety circuit, beginning with a PM-D F1 ... 4, must be terminated with one PM-X each.

Terminal modules for (TM-PF30) safety module

For supplying load and sensor voltage to the potential bars of the motor starters, and for connection of the 2-channel sensor circuit (e.g. EMERGENCY-STOP pushbutton) and a reset button. Different terminal modules are available for the configuring of separate safety circuits or for the cascading of safety circuits, and for applications with time-delayed disconnection.

Terminal modules for (TM-X) safety module

For connection of an external infeed contactor (2nd shutdown possibility). With terminals for contactor coil and feedback contact. Is always required to terminate a group of safety-oriented motor starters.

Failsafe Kit

The Failsafe Kit (F-Kit) must be added to each Standard motor starter in a safety segment in order to monitor the switching function.

F-Kit 1 supplements the DS1-x direct-on-line starter, F-Kit 2 the RS1-x reversing starter.

The F-Kits are comprised of:

- Contact supports for the terminal modules
- One or two auxiliary switch blocks for the contactor/contactors of the motor starter
- Connecting cables

High-Feature motor starters and their terminal modules come as standard with the functionality of the F-Kits integrated.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety modules local and PROFIsafe

Components needed for applications with safety requirement

Components needed	Safety category acc. to EN 954-1			
	1	2	3	4
PM-D	X	--	--	--
PM-D F1/-F2/-F4	--	X	X	X
PM-D F3	--	X	X	--
F-Kit 1/2	--	X ¹⁾	X ¹⁾	X ¹⁾
PM-X	--	X	X	X
PM-DFX1	--	X	X	X
External infeed contactor	--	--	X	X

¹⁾ F-Kit needed only for Standard motor starter; already integrated in High-Feature motor starter.

Possible combinations of safety and terminal modules

Terminal modules	PM-D F1	PM-D F2	PM-D F3	PM-D F4	PM-D F5	PM-X	PM-DFX1	FCM
TM-PF30 S47-B0	X	X	--	--	--	--	--	--
TM-PF30 S47-B1	X	X	--	--	--	--	--	--
TM-PF30 S47-C0	--	--	X	X	--	--	--	--
TM-PF30 S47-C1	--	--	X	X	--	--	--	--
TM-PF30 S47-D0	--	--	--	--	X	--	--	--
TM-X15 S27-01	--	--	--	--	--	X	--	--
TM-PFX30 S47-G0	--	--	--	--	--	--	X	--
TM-PFX30 S47-G1	--	--	--	--	--	--	X	--
TM-FCM30 S47	--	--	--	--	--	--	--	X

Examples

The diverse possible uses of the safety motor starter Solutions local are presented in the manual SIMATIC ET 200S Motor Starters in the context of typical sample applications.

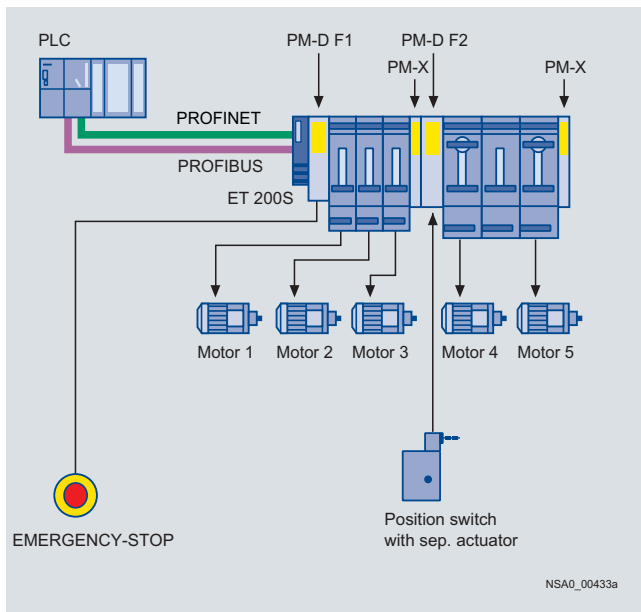
Safety functional examples for easy, quick and low-cost implementations of applications with Safety motor starters Solutions local are available on the Internet:

You can find more information on the Internet at:

www.siemens.com/sirius-starting

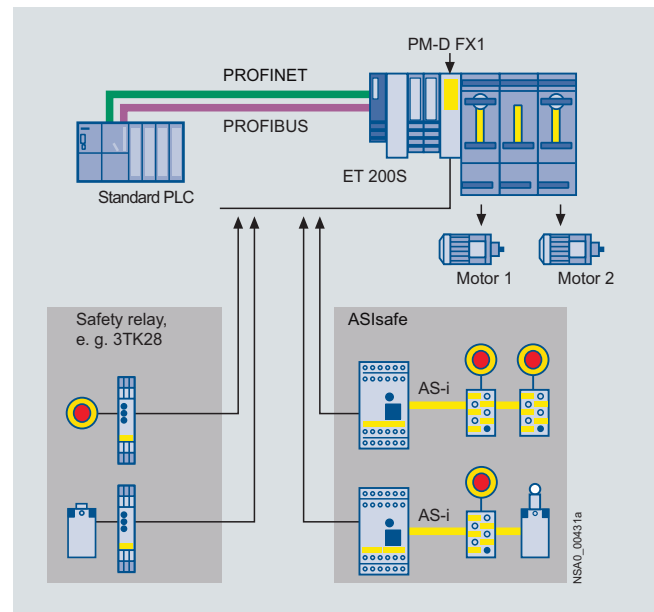
www.siemens.com/ET200S-motorstarter

Example 1:



ET 200S safety motor starter Solutions local with 2 safety circuits (= switch-off groups), Standard motor starters and High-Feature motor starters.

Example 2:



ET 200S safety motor starter Solutions local with 2 external safety assemblies (= safety relays or ASIsafe monitors) and with Failsafe motor starters (PM-DFX1 application). 2 of the 6 available safe switch-off groups are used.

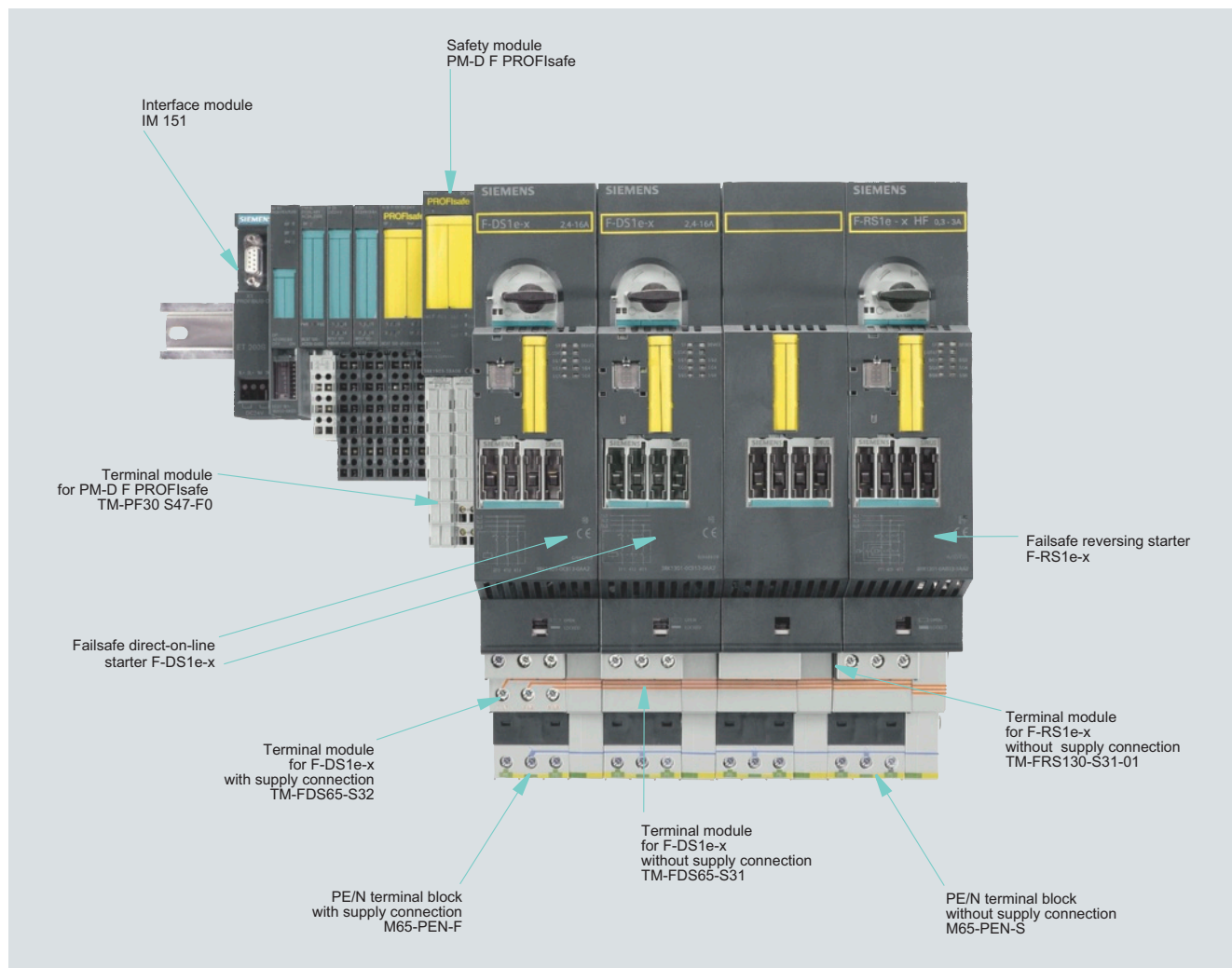
Signals with relevance for safety can be input to ET 200S through a PM-DFX1 infeed terminal module through the enabling circuits of the ASIsafe monitor or the safety relay to control the Failsafe motor starters which then selectively switch off the downstream motors.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

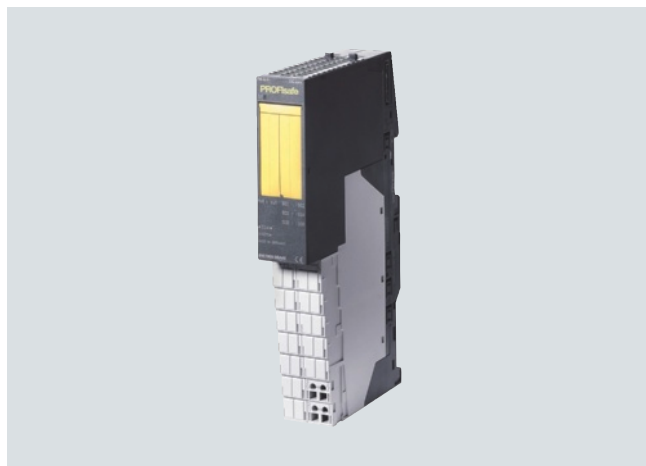
Safety modules local and PROFIsafe

Safety modules PROFIsafe



Interplay of ET 200S Safety motor starter Solutions PROFIsafe components

Safety motor starters Solutions PROFIsafe



PM-D F PROFIsafe with TM-PF30 S47-F0 terminal module

Sensor and actuator assignment are freely configurable within the framework of the distributed safety concept:

The logic of the safety functions is implemented by software. Safety-oriented PROFIsafe communication and the use of a safety-oriented control system are required.

Integration of the safety technology in the standard automation is realized through a single bus system (see Advantages of PROFIsafe), using PROFIBUS as well as PROFINET.

- For the use of Failsafe motor starters in plants with safety category 2 to 4 according to EN 954-1 and SIL 2 and 3 acc. to IEC 61508. The use of Standard or High-Feature motor starters is also possible with certain assemblies
- High flexibility (any assignment of sensors to motor starters using the PLC)
- Full selectivity of disconnection of the Failsafe motor starters
- No complex wiring for conventional safety systems, e.g. no in-feed contactors even in the highest safety category
- Can also be used to activate external safety systems through F-CM contact multiplier
- Safety module available for any safety function
- Safety module available for Stop category 0 and 1
- Safety module for monitoring the auxiliary voltages for motor starters
- Safety modules can be plugged into the TM-PF30 terminal modules

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety modules local and PROFIsafe

High degree of flexibility with safety technology Failsafe motor starters for PROFIsafe:

In EMERGENCY-STOP applications, the Failsafe motor starters are selectively switched off through the upstream PM-D F PROFIsafe safety module. For each safety module, six switch-off groups can be formed. In the first delivery stage, the failsafe freely-programmable logic of the SIMATIC controller is used to interface with the relevant Failsafe sensor technology. The interface between PROFIsafe and installations that use conventional safety technologies is implemented through the F-CM Failsafe contact multiplier with four floating contacts.

Example:

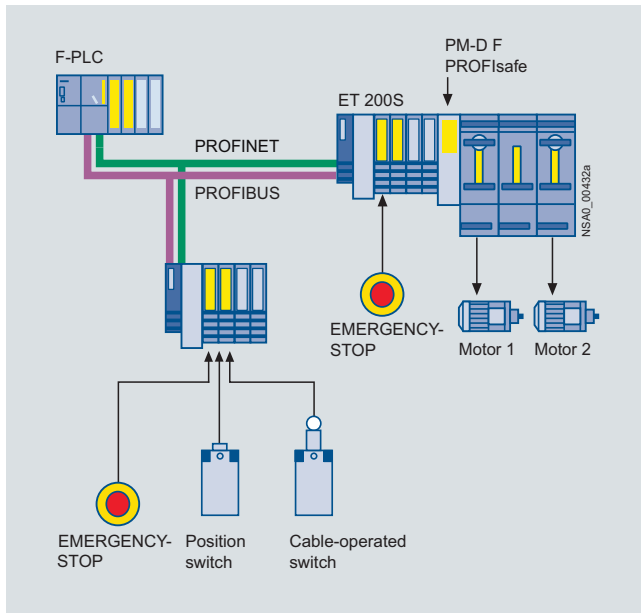
The diverse possible uses of the Safety motor starter Solutions PROFIsafe are presented in the manual SIMATIC ET 200S Motor Starters in the context of typical sample applications.

Safety functional examples for easy, quick and low-cost implementations of applications with safety motor starters Solution PROFIsafe are available on the Internet:

You can find more information on the Internet at:

www.siemens.com/sirius-starting

www.siemens.com/ET200S



ET 200S Safety motor starters Solutions PROFIsafe with Failsafe motor starters and fully selective disconnection (PM-DF PROFIsafe application)

Within an ET 200S station the Failsafe motor starters are assigned to one of 6 safety segments. For plants with distributed configuration the shutdown signals of these safety segments are preferably issued by a higher-level, safety-oriented control system through PROFIsafe. This permits the greatest flexibility for assigning the motor starters to different safety circuits.

Alternatively, an ET 200S F-CPU can also be used for control purposes.

If a safety-oriented SIMATIC CPU is used, the ET 200S is available as a safety-oriented peripheral. Nevertheless, in such a station it is possible to configure conventional motor starters and input/output modules mixed with modules with safety functions.

Thanks to the PROFIsafe profile, the safety functions are available in the complete network, which means that the Safety motor starter Solutions PROFIsafe enable the selective disconnection of a Failsafe motor starters or the disconnection of a group of Standard and High-Feature motor starters regardless of where and on which peripheral station the safe control devices were connected. As such, this solution provides an unprecedented level of flexibility and reduction of wiring for applications in

wide-spread plants or with a sporadic demand for changes in the assignment of safety segments.

The Solution PROFIsafe safety motor starters are ideally suited for safety concepts with Cat. 2 to 4 according to EN 954-1- or up to SIL 3 according to IEC 61508.

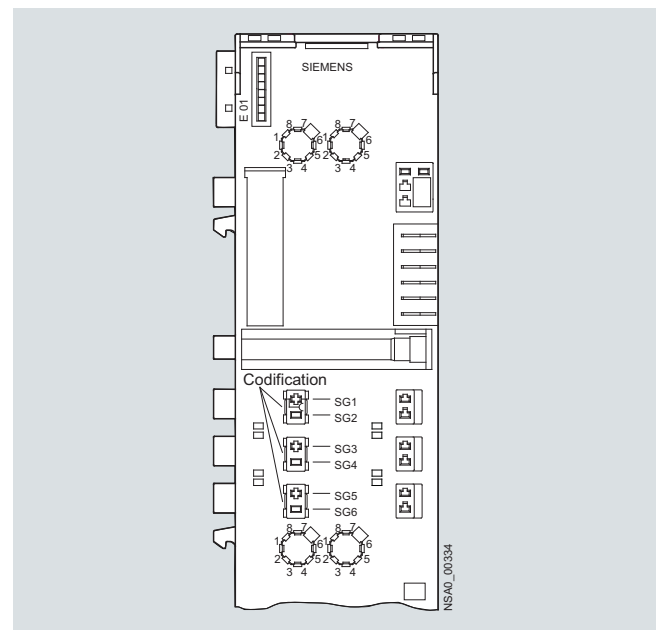
Each safety module switches up to 6 switch-off groups for Failsafe motor starters/frequency converters.

PM-D F PROFIsafe safety modules

The PM-D F PROFIsafe safety module receives the shutdown signal from the interface module of the ET 200S and safely switches off 1 to 6 switch-off groups. This safety module is used in PROFIsafe applications where there is a need for the selective safety shutdown of Failsafe motor starters/frequency converters.

The terminal assignment of the terminal modules for safe motor starters corresponds to the terminal assignment of the 45 and 65 mm terminal modules. The terminal modules for safe motor starters have a coding module in addition. This enables the safe motor starter to be assigned to one of the six switch-off groups.

The terminal module contains three coding elements which fully cover the three coding openings in the terminal module. The labeled coding element contains (in the chamber marked with the dash) the busbar tap; the non-labeled coding elements are used only to cover the coding openings. Switch-off group 1 (AG1 or SG1) is coded in the as-delivered state. The coding can be changed to switch-off group 2 by releasing the coding element and turning it through 180°. Changing the coding to switch-off group 3 is possible by exchanging the labeled and blank coding elements. In this case the dash on the labeled coding element must correlate with the dash of the required switch-off group (symbolized busbar).



The Failsafe motor starters are assigned to one of the six possible switch-off groups.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety modules local and PROFIsafe

Technical specifications

PM-D F1, F2, F3, F4 and F5 safety modules		
Mechanical endurance	Operating cycles	10×10^6
Electrical endurance		200 000 at I_e
Utilization categories		DC-13
Control times		
• Minimum command duration	ms	200
• Recovery time	s	< 1
• Off-delay	ms	30
Control circuit U_1		
• Rated control supply voltage U_s	V	24 DC
• Operating range DC up to 60 °C		0.85 ... 1.2 x U_s
• Power consumption	W	2.4
• Recommended short-circuit protection		gG 2 A
• Output OUT+/OUT- for control of expansion modules		24 V DC/< 50 mA (PTC fuse)
Switched auxiliary circuit U_2		
• Rated control supply voltage U_s	V	24 DC
• Operating range DC up to 60 °C		0.85 ... 1.2 x U_s
• Rated operational current I_e (13 ... 24 V DC)	A	4
• Uninterrupted thermal current I_{th}	A	5
Recommended short-circuit protection for enabling and signaling circuits		Fuse links: NH type 3NA, DIAZED type 5SB, NEOZED type 5SE Operational class gG 6 A
Supplying		
• Motor starters		Yes
• Solid-state modules		No
• Ex(i) modules		No
• BG certification		Yes
• UL-, CSA certification		Yes
Cable length for EMERGENCY-STOP and ON pushbuttons	m	Max. 1 000
Mounting dimensions (W x H x D)	mm	30 x 196.5 x 117.5 (incl. terminal module)
Enabling circuits with PM-D F5		4 (floating)

PM-D FX1 safety module (infeed terminal module)		
Dimensions		
Mounting dimensions (W x H x D)	mm	30 x 196.5 x 117.5 (incl. terminal module)
Module-specific specifications		
Ambient temperature	°C	0 ... +60
Degree of protection		IP20
Maximum achievable safety classes		SIL 3
• IEC 62508		Shutdown class 5 and 6
• DIN V 19250		Category 4
• EN 954-1		
Safety characteristics		
Proof-test interval		10 years
Voltages, currents, potentials		
Rated control supply voltage U_s	V	21.6 ... 26.4 DC up to 60 °C
Rated operational current I_e	A	6
Recommended upstream short-circuit protection	A	Internal protection with 7 A melting fuse (quick) Melting fuse gG 6.3
Supplying		
• Failsafe motor starters		Yes
• Failsafe frequency converters		Yes
• Solid-state modules		No
• Ex[i] modules		No
Power consumption		
• From the backplane bus	mA	≤ 10
• From U_1	mA	≤ 35
• From SGx	mA	≤ 15
Status, alarms, diagnostics		
Alarms		None
Diagnostics functions		
• Group fault/device fault		Red "SF" LED
• Monitoring the supply voltage for solid-state modules U1 (PWR)		Green PWR LED
• Monitoring of six switch-off groups		Green LED SG1 ... SG6
• Diagnostics information can be read out		Yes
Standards, approvals		
• TÜV		Yes
• UL-, CSA certification		Yes

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety modules local and PROFIsafe


F-CM contact multipliers		
Dimensions		
Dimensions (W x H x D)	mm	30 x 196.5 x 117.5 (incl. terminal module)
Module-specific specifications		
Number of relay outputs		4 (4 x 1-channel or 2 x 2-channel safe coupling/contact multiplication)
Internal power supply for bar		U1 (from PM-D F/PM-D FX1)
Maximum achievable safety class		SIL3
• Acc. to IEC 61508		AK 6
• Acc. to DIN VDE 0801		Cat. 4
• Acc. to EN 954		
Voltages, currents, potentials		
Switching capacity of the relay outputs		Utilization category DC-13 (I_e/U_e): 1.5 A / 24 V
Electrical separation		Yes
• Between outputs and backplane bus		Yes
• Between outputs and power supply		Yes
• Between outputs		Yes
• Between outputs/power supply and shield		Yes
Status, alarms, diagnostics		
Status display		PWR and STAT
Alarms: Diagnostics alarm		None
Diagnostics functions		Yes
• Group fault display		Red LED (SF)
• Diagnostics information can be read out		Available
• Monitoring the supply voltage for solid-state modules U_1 (PWR)		Green PWR LED
• Monitoring the switching state of the enabling circuit		Red/green STAT LED
PM-D F PROFIsafe safety modules		
Dimensions		
Dimensions (W x H x D)	mm	30 x 196.5 x 117.5 (incl. terminal module)
Module-specific specifications		
Number of outputs, source input		6 switch-off groups (safety group 1 ... 6)
Internal power supply for bar		U1
Assigned address range		
• In PAE	byte	5
• In PAA	byte	5
Maximum achievable safety class		SIL3
• Acc. to IEC 61508		AK 6
• Acc. to DIN VDE 0801		Cat. 4
• Acc. to EN 954		
Voltages, currents, potentials		
Control supply voltage	V	24 DC
Electrical separation		Yes
• Between outputs and backplane bus		No
• Between outputs and power supply		No
• Between outputs		No
• Between outputs/power supply and shield		Yes
Status, alarms, diagnostics		
Status display		Green LED per SG Green LED for electronics supply Green LED for load voltage
Alarms: Diagnostics alarm		"TO"
Diagnostics functions		Red LED (SF)
• Group fault display		Available
• Diagnostics information can be read out		
Settings		
Module address		Diverse: 1. Using a safety-oriented parameter in the parameterization message frame over the backplane bus 2. Using the 10-pole DIL switch (binary-coded) on the left side of the module The received address is then compared with the DIL switch setting.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety modules local and PROFIsafe

Selection and ordering data

Version		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Safety modules local							
 3RK1 903-3DA00	PM-D F1 With diagnostics Safety module for EMERGENCY-STOP application Monitored start	A	3RK1 903-1BA00		1	1 unit	121
	PM-D F2 With diagnostics Safety module for protective door monitoring Automatic start	A	3RK1 903-1BB00		1	1 unit	121
	PM-D F3 With diagnostics Safety module for expanding PM-D F1/2 for another voltage group Time-delayed 0 to 15 s	A	3RK1 903-1BD00		1	1 unit	121
	PM-D F4 With diagnostics Safety module for expanding PM-D F1/2 for another voltage group	A	3RK1 903-1BC00		1	1 unit	121
	PM-D F5 With diagnostics Safety module for expanding PM-D F1...4 with four floating enabling circuits Contact multipliers	A	3RK1 903-1BE00		1	1 unit	121
	PM-D FX1 With diagnostics Infeed terminal module for supply of 1 to 6 switch-off groups	A	3RK1 903-3DA00		1	1 unit	121
	FC-M contact multipliers With 4 safe floating contacts	A	3RK1 903-3CA00		1	1 unit	121
Safety modules PROFIsafe							
	PM-D F PROFIsafe safety modules For PROFIBUS and PROFINET For Failsafe motor starters For Failsafe contact multipliers With six switch-off groups (SG1 to SG6)	A	3RK1 903-3BA01		1	1 unit	121
	F-CM contact multipliers With 4 safe floating contacts	A	3RK1 903-3CA00		1	1 unit	121

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety modules local
and PROFIsafe terminal modules

Overview

Terminal modules for safety modules

For supplying load and sensor voltage to the self-assembling potential bars of the Standard motor starters, High-Feature motor starters and frequency converters. Safety modules for voltage monitoring are plugged onto TM-P modules. TM-P modules can be used any number of times within the ET 200S. A safety module must always be plugged upstream from the first motor starter.

Different safety circuits can be functionally separated or else cascaded using different terminal modules. Each group in such a case must be terminated with a PM-X connection module.

TM-PF30 S47-B1

The terminal module is always positioned at the beginning of a safety segment and accommodates the PM-DF1 safety module for EMERGENCY-STOP applications or the PM-DF2 safety module for protective door monitorings. The 24 V supply voltages for the electronics (U1) and those for supplying the contactors (U2) of the motor starters must be connected along with the 2-channel connection of the safety sensors (e.g. EMERGENCY-STOP pushbuttons) to this terminal module. Connections for the ON button (enabling) and safe output of the safety module are available in addition.

TM-PF30 S47-B0

The terminal module is used to cascade lower level safety segments and accommodates the PM-DF1 safety module for EMERGENCY-STOP applications or the PM-DF2 safety module for protective door monitorings. No other auxiliary voltage has to be connected to this terminal module. The supply comes from the preceding PM-DF1 or PM-DF2 module over the potential bars of the terminal modules. Once the potential of the preceding safety module is disconnected, this sub-potential also has no voltage.

TM-PF30 S47-C1

The terminal module is always positioned at the beginning of a safety segment expansion in a new station, e.g. at an interlace point. It accommodates the PM-D F3 safety module for time-delayed shutdown or the PM-D F4 safety module for direct shutdown in separately located ET 200S stations. The 24 V supply voltages for the electronics (U1) and those for supplying the contactors (U2) are fed in new.

The shutdown command from an upstream ET 200S station is received through a safe input. Separate terminals are available to connect the feedback circuit to the upstream ET 200S station. No safety sensors can be connected to this terminal module.

TM-PF30 S47-C0

The terminal module is used to cascade lower level safety segments and accommodates the PM-D F3 safety module for time-delayed shutdown or the PM-D F4 safety module. Only the U2 supply voltage for the contactors must be connected to this terminal module. The U1 supply comes from the preceding safety module (sub-potential group) over the potential bars of the terminal modules. No safety sensors can be connected to this terminal module.

TM-PF30 S47-D0

The terminal module is used to accommodate the PM-D F5 safety module. On this terminal module, safe signals can be relayed to external systems through four groups, each with two safety relay contacts configured with redundancy. The terminal module must always be positioned between one of the above mentioned terminal modules and a terminal module for the TM-X connection module. No safety sensors can be connected to this terminal module.

Terminal modules for connection modules (TM-X)

For connection of an external infeed contactor (second shutdown option) for category 3 and 4. The connection module is plugged on the right alongside the last motor starter of a safety segment. On the TM-X terminal module there are the terminals for connecting the positively driven NC contact of the contactors as well as the terminals for connecting the contactor coil. If no contactor with redundant switching is required, e.g. for category 2 (EN 954-1), the feedback circuit has to be closed at these terminals with a jumper. In applications with external safety relays it is also used instead of the safety module as interface to the external safety relay.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety modules local and PROFIsafe terminal modules


Technical specifications

TM-PFX30 S47/TM-PF30 S47 terminal modules			
Dimensions			
Mounting dimensions (W x H x D)	mm	30 x 196.5 x 102	
Depth with power module	mm	117.5	
Insulation voltages and rated currents			
Insulation voltage	V	500	
Rated operational voltage	V	24 DC	
Rated operational current	A	10	
Conductor cross-sections			
Solid	mm ²	1 x (0.14 ... 2.5), according to IEC 60947 1 x 2.5	
Finely stranded with end sleeve	mm ²	1 x (0.14 ... 1.5), according to IEC 60947	
AWG cables, solid or stranded	AWG	1 x (18 ... 22)	
Wiring			
Required tool		Standard screwdriver size 1	
Tightening torque	Nm	0.4 ... 0.7	

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Terminal modules for Safety modules local

	Terminal modules					
	TM-PF30 S47-B1 For PM-D F1/2 Safety Modules With infeed U1/U2 and sensor connection	A	3RK1 903-1AA00	1	1 unit	121
	TM-PF30 S47-B0 For PM-D F1/2 Safety Modules With sensor connection	A	3RK1 903-1AA10	1	1 unit	121
	TM-PF30 S47-C1 For PM-D F3/4 Safety Modules With infeed U1/U2 and control input IN+/IN-	A	3RK1 903-1AC00	1	1 unit	121
	TM-PF30 S47-C0 For PM-D F3/4 Safety Modules With infeed U2	A	3RK1 903-1AC10	1	1 unit	121
	TM-PF30 S47-D0 For PM-D F5 Safety Modules	A	3RK1 903-1AD10	1	1 unit	121
	TM-X15 S27-01 For PM-X Safety Module	A	3RK1 903-1AB00	1	1 unit	121
	TM-P15-S27-01 terminal modules For PM-D power module	A	3RK1 903-0AA00	1	1 unit	121
	TM-PFX30 S47-G0/G1 terminal modules For PM-D FX1 safety modules (infeed terminal modules)					
	• Infeed left (TM-PFX30 S47-G0)	A	3RK1 903-3AE10	1	1 unit	121
	• Infeed center (TM-PFX30 S47-G1)	A	3RK1 903-3AE00	1	1 unit	121
	TM-FCM30 S47-F01 terminal modules For F-CM contact multipliers	A	3RK1 903-3AB10	1	1 unit	121

Terminal modules for Safety modules PROFIsafe

TM-PF30 S47-F0 terminal modules For PM-D F PROFIsafe safety modules	A	3RK1 903-3AA00	1	1 unit	121
TM-FCM30 S47-F01 terminal modules For F-CM contact multipliers	A	3RK1 903-3AB10	1	1 unit	121

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Accessories

Overview

Accessories for Standard motor starters

Control kits

The control kit for the Standard motor starter provides the possibility of testing the motor during start-up or service by actuating the motor starter protector. Using the control kit with the motor starter protector tripped, the contactor is mechanically locked in ON position.

Control unit

With the control unit the contactor coils of the Standard motor starter can be directly controlled using 24 V DC. The motor starter can thus be started as normal using a on-site control point without PLC or bus.

Note:

The control unit cannot be used in combination with the safety system or a brake control module.

DM-V15 distance module

- Passive module without bus connection and terminals
- Does not need a separate terminal module
- Follows a TM-DS45 or TM-RS90 or TM-xB if required
- Does not need to be taken into account when configuring the GSD file

The distance module is available for applications with high motor currents or high ambient temperatures involving Standard motor starters. It can be used to the right and left of a DS1-x direct-on-line starter or to the right of an xB1-4 brake module in order to improve heat removal to the side. The distance module is a completely passive module and does not need to be taken into account with regard to the control system during configuration. Details of the distance module can be found in the manual "SIMATIC ET 200S". If you have any queries concerning the use of the distance module, contact Technical Support for Siemens Low-Voltage Controls and Distribution (fax: +49(0)911/895-5907).

Accessories for High-Feature motor starters

2DI 24 V DC COM control module

The 2DI 24 V DC COM control module is plugged onto the interface on the front of the motor starter. The module provides two inputs which can receive signals from the process and be assigned directly to the starter.

The functionality can be selected from a list of various control functions as part of the PROFIBUS parameterization. On-site control point, emergency start and quick stop, for example, are available as functions. The signal levels can also be parameterized (NO/NC). For more extensive control functions the two inputs of a xB3 or x4 brake control module, which is plugged in alongside on the right, can be integrated in addition. The signal states of all inputs are transmitted in parallel with the internal use to the higher-level control system.

When a motor starter is replaced, the parameterization is automatically transmitted by download to the new starter. The inputs on the motor starter ensure autonomous operation, e.g. in the event of PLC failure, on the one hand and short response times through direct processing in the starter on the other hand. Another advantage results from the direct assignment of functions to modular machine concepts.

The 2DI 24 V DC COM control module has in addition a PC interface for connecting the Switch ES Motor Starter parameterization and diagnostics software (Version 2.0 and higher). The module works solely on High-Feature motor starters with ES Motor Starter interface. The Logo!-PC cable is used as connecting

cable between the 2DI 24 V DC COM control module and the High-Feature motor starter.

Accessories for Standard and High-Feature motor starters

PE/N bridge module

PE/N bridge modules are used to bridge gaps in the PE/N bus which are caused, for example, by using brake control modules, PM-D(F) power modules or PM-X connection modules. If a bridge module is used, the supply must not be fed in anew. They are available in widths of 15 and 30 mm.

L123 bridge modules

The L123 bridge modules are used to bridge gaps in the power bus (see above). They are available in widths of 15 and 30 mm.

Brake control module

for motors with mechanical brake

Terminal modules for brake control modules

The TM-xB terminal modules are used to accommodate the xB1, xB2, xB3 and xB4 brake control modules. The TM-xB terminal module must always follow directly after a terminal module for Standard motor starters, High-Feature motor starters or frequency converters as control of the solid-state braking switch is provided through an output of the motor starter/frequency converter. The xB215 terminal modules for the brake control modules have not only the terminals for connecting the cable for the motor brake but also the terminals of the two local acting inputs. These local inputs are not evaluated by a frequency converter, which is why the xB215 terminal module can only be switched behind a motor starter.

Accessories for Standard, High Feature, Failsafe motor starters

PE/N terminal blocks

The PE/N terminal block is required for direct connection of the protective conductor in the motor cable without intermediate terminals. It is plugged together with the terminal module for motor starters or frequency converters before the latter is mounted on the standard mounting rail. With two PE terminals and one N terminal the "-F" version is connected to the "-S32" terminal modules for motor starters or frequency converters. The "-S" version is combined with the "-S31" terminal module. The "F" terminal modules are delivered with two caps for closing the PE/N bus contacts on the final terminal module of a segment. The modules for the Standard motor starters have a width of 45 mm and the modules for the High-Feature motor starters and frequency converters have a width of 65 mm.

There is no electrical connection between the terminals of the PE/N terminal block and the integrated shielding of the frequency converter. The PE/N terminal block must therefore not be used for the shielding of the motor cable.

For Use in the Control Cabinet





ET 200S Motor Starters and Safety Motor Starters

Accessories

Technical specifications

		Brake control module XB1	Brake control module XB3	Brake control module XB2	Brake control module XB4
Dimensions (W x H x D)	mm	15 x 196.5 x 125.5 including terminal module on 7.5 mm standard mounting rail			
Number of assigned outputs for the (left-hand) motor starter		1			
Rated operational voltage	V	24 DC		500 DC (min. 100)	
Power supply		Externally through terminal module		From brake rectifier through terminal module	
Rated operational current	A	4		0.7	
Reverse polarity protection		No, in the event of polarity reversal the brake is released and the overload/short-circuit protection is not effective			
Overload/short-circuit protection		Yes, solid-state			
Conductor cross-section of the terminal module for the brake control module	mm ²	1 x 2.5 without end sleeve 1 x 1.5 with end sleeve			
Number of outputs		0	1 (used internally)	0	1 (used internally)
Number of inputs		0	2	0	2
Address area required per module					
• With summary		0	2 bits	0	2 bits
• Without summary		0	1 byte	0	1 byte
Diagnostics functions					
• Group fault "SF"		Red LED			
• Switching state for brake "STAT"		Yellow LED			
• Inputs 1 and 5		--	Green LED	--	Green LED
Parameters (default values underlined)					
• Brake overload diagnostics		--	<u>Disable/Enable</u>	--	<u>Disable/Enable</u>
• Input delay	ms	--	0 / 0.1 / 0.5 / <u>3</u> / 15	--	0 / 0.1 / 0.5 / <u>3</u> / 15
Module width	mm	15			

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for Standard motor starters							
	Control kits for manually operating the contactor contacts during start-up and servicing (one set contains five control kits)	A	3RK1 903-0CA00		1	1 unit	121
	Control units for direct contactor control (manual control) 24 V DC	A	3RK1 903-0CG00		1	1 unit	121
	DM-V15 distance modules for DS1-x direct-on-line starters with high temperatures or high current loading 15 mm wide	A	3RK1 903-0CD00		1	1 unit	121
	PE/N M45-PEN-F terminal blocks 45 mm wide including two caps in combination with TM-DS45-S32 / TM-RS90-S32	A	3RK1 903-2AA00		1	1 unit	121

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters





Accessories

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	PE/N M45-PEN-S terminal blocks 45 mm wide in combination with TM-DS45-S31 / TM-RS90-S31	A	3RK1 903-2AA10		1	1 unit	121
Accessories for High-Feature motor starters							
	2DI 24 V DC COM control modules Digital input module with 2 inputs (cable length up to 100 m) for local motor starter functions for mounting onto the front of motor starters, operational voltage 24 V DC (supplied from U_1), short-circuit proof, floating contact with serial interface for connecting ES motor starters, connected using LOGO!-PC cable	A	3RK1 903-0CH20		1	1 unit	121
	LOGO! PC cables for connecting the High-Feature motor starter with ES interface switch to a PC	A	6ED1 057-1AA00-0BA0		1	1 unit	200
	Hand-held devices for ET 200S High-Feature motor starters, (also for ET 200pro and ECOFAST), for on-site operation. A serial interface cable must be ordered separately.	B	3RK1 922-3BA00		1	1 unit	121
	M65-PEN-F terminal blocks 65 mm wide, including two caps, in combination with TM-DS65-S32 / TM-RS130-S32	A	3RK1 903-2AC00		1	1 unit	121
	M65-PEN-S terminal blocks 65 mm wide, in combination with TM-DS65-S31 / TM-RS130-S31	A	3RK1 903-2AC10		1	1 unit	121
Accessories for Standard / High-Feature motor starters							
	M15-PE/N bridge modules 15 mm wide for bridging a 15 mm module	A	3RK1 903-0AH00		1	1 unit	121
	M30-PE/N bridge modules 30 mm wide for bridging a 30 mm module	A	3RK1 903-0AJ00		1	1 unit	121
	M15-L123 bridge modules 15 mm wide for bridging a 15 mm module	A	3RK1 903-0AE00		1	1 unit	121
	M30-L123 bridge modules 30 mm wide for bridging a 30 mm module	A	3RK1 903-0AF00		1	1 unit	121

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Accessories

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1 903-0AF20	Sealing caps for L123 bridge modules and PE/N		A	3RK1 903-0AF20	1	20 units	121
	Brake control modules for motors with mechanical brakes						
	<ul style="list-style-type: none">• xB1 for motor starters 24 V DC/4 A	A	3RK1 903-0CB00	1	1 unit	121	
	<ul style="list-style-type: none">• xB2 for motor starters 500 V DC/0.7 A	A	3RK1 903-0CC00	1	1 unit	121	
 3RK1 903-0CB00	<ul style="list-style-type: none">• xB3 for motor starters 24 V DC / 4 A / 2 DI 24 V DC local control with diagnostics, with two inputs	A	3RK1 903-0CE00	1	1 unit	121	
	<ul style="list-style-type: none">• xB4 for motor starters 500 V DC / 0.7 A / 2 DI 24 V DC local control with diagnostics, with two inputs	A	3RK1 903-0CF00	1	1 unit	121	
	Terminal modules for brake control modules						
	<ul style="list-style-type: none">• TM-xB15 S24-01 for xB1 or xB2	A	3RK1 903-0AG00	1	1 unit	121	
	<ul style="list-style-type: none">• TM-xB215 S24-01 for xB3 or xB4	A	3RK1 903-0AG01	1	1 unit	121	
Accessories for Failsafe motor starters							
	PE/N M65-PEN-F terminal blocks With incoming connection, with caps	A	3RK1 903-2AC00	1	1 unit	121	
	M65-PEN-S terminal blocks without incoming connection	A	3RK1 903-2AC10	1	1 unit	121	
Accessories for power modules							
	Color coding plates 6 x 200 color coding plates for terminal modules One set contains 10 strips of 20 color coding plates per color						
	<ul style="list-style-type: none">• White	X	6ES7 193-4LA10-0AA0			1 unit	2F0
	<ul style="list-style-type: none">• Yellow	X	6ES7 193-4LB10-0AA0			1 unit	2F0
	<ul style="list-style-type: none">• Yellow and green	X	6ES7 193-4LC10-0AA0			1 unit	2F0
	<ul style="list-style-type: none">• Red	X	6ES7 193-4LD10-0AA0			1 unit	2F0
	<ul style="list-style-type: none">• Blue	X	6ES7 193-4LF10-0AA0			1 unit	2F0
	<ul style="list-style-type: none">• Brown	X	6ES7 193-4LG10-0AA0			1 unit	2F0
Accessories for Safety modules local							
 3RK1 903-1CA00	PM-X safety modules With diagnostics Module for connecting a safety group and for connecting an external infeed contactor or for connecting to an external safety circuit		A	3RK1 903-1CB00	1	1 unit	121
	F-Kit 1 Failsafe equipment for DS1-x ¹⁾ Standard motor starters	A	3RK1 903-1CA00	1	1 unit	121	
	F-Kit 2 Failsafe equipment for RS1-x ¹⁾ Standard motor starters	A	3RK1 903-1CA01	1	1 unit	121	
 3RK1 903-1CA01							

¹⁾ The function of the Failsafe-Kit is already integrated into High-Feature motor starters.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – interface modules with CPU

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 151-7 CPU interface modules						
IM 151-7 CPU FO (48 K) interface modules including termination module	A	6ES7 151-7AB00-0AB0		1	1 unit	250
IM 151-7 CPU (96 K) interface modules including termination module	A	6ES7 151-7AA20-0AB0		1	1 unit	250
Accessories						
MMC 64 Kbyte¹⁾ For program backups	A	6ES7 953-8LF20-0AA0		1	1 unit	230
MMC 128 Kbyte¹⁾ For program backups	A	6ES7 953-8LG11-0AA0		1	1 unit	230
MMC 512 Kbyte¹⁾ For program backups	A	6ES7 953-8LJ20-0AA0		1	1 unit	230
MMC 2 MByte¹⁾ For program backups and/or the firmware update	A	6ES7 953-8LL20-0AA0		1	1 unit	230
MMC 4 MByte¹⁾ For program backups	A	6ES7 953-8LM20-0AA0		1	1 unit	230
MMC 8 MByte¹⁾ For program backups	A	6ES7 953-8LP20-0AA0		1	1 unit	230
External Prommer For e.g. MMC with USB interface	A	6ES7 792-0AA00-0XA0		1	1 unit	260
PG with integrated MMC interface		On req.				
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu						
Termination modules As spare part for ET 200S	A	6ES7 193-4JA00-0AA0		1	1 unit	250
SIMATIC S5, 35 mm standard mounting rails						
• 483 mm long for 19" cabinets	A	6ES5 710-8MA11		1	1 unit	250
• 530 mm long for 600 mm cabinets	A	6ES5 710-8MA21		1	1 unit	250
• 830 mm long for 900 mm cabinets	A	6ES5 710-8MA31		1	1 unit	250
• Length 2 m	A	6ES5 710-8MA41		1	1 unit	250
IM 151-8 PN/DP CPU interface modules						
IM 151-8 PN/DP CPU interface modules (192 K)	A	6ES7 151-8AB01-0AB0		1	1 unit	250
Accessories						
MMC 64 Kbyte¹⁾ For program backups	A	6ES7 953-8LF20-0AA0		1	1 unit	230
MMC 128 Kbyte¹⁾ For program backups	A	6ES7 953-8LG11-0AA0		1	1 unit	230
MMC 512 Kbyte¹⁾ For program backups	A	6ES7 953-8LJ20-0AA0		1	1 unit	230
MMC 2 MByte¹⁾ For program backups and/or the firmware update	A	6ES7 953-8LL20-0AA0		1	1 unit	230
MMC 4 MByte¹⁾ For program backups	A	6ES7 953-8LM20-0AA0		1	1 unit	230
MMC 8 MByte¹⁾ For program backups	A	6ES7 953-8LP20-0AA0		1	1 unit	230
External Prommer For e.g. MMC with USB interface	A	6ES7 792-0AA00-0XA0		1	1 unit	260
PG with integrated MMC interface		On req.				
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu						

¹⁾ For operation of the CPU, an MMC is essential.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – interface modules with CPU

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 151-8 PN/DP CPU interface modules (continued)						
Termination modules As spare part for ET 200S	A	6ES7 193-4JA00-0AA0		1	1 unit	250
SIMATIC S5, 35 mm standard mounting rails						
• 483 mm long for 19" cabinets	A	6ES5 710-8MA11		1	1 unit	250
• 530 mm long for 600 mm cabinets	A	6ES5 710-8MA21		1	1 unit	250
• 830 mm long for 900 mm cabinets	A	6ES5 710-8MA31		1	1 unit	250
• Length 2 m	A	6ES5 710-8MA41		1	1 unit	250
Industrial Ethernet FC RJ45 Plug 180 RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated cutting and clamping contacts for connection of Industrial Ethernet FC installation cables; with 180° cable feeder						
• 1 unit	A	6GK1 901-1BB10-2AA0		1	1 unit	5K2
• 10 units	A	6GK1 901-1BB10-2AB0		1	1 unit	5K2
• 50 units	A	6GK1 901-1BB10-2AE0		1	1 unit	5K2
Industrial Ethernet Fast Connect installation cables						
• Fast Connect standard cables	A	6XV1 840-2AH10		1	1 m	5K2
• Fast Connect trailing cables	A	6XV1 840-3AH10		1	1 m	5K2
• Fast Connect marine cables	A	6XV1 840-4AH10		1	1 m	5K2
Industrial Ethernet Fast Connect stripping tools	A	6GK1 901-1GA00		1	1 unit	5K2
Master interface modules for IM 151-7(8) CPU/ IM 151-7 F-CPU interface modules						
Master interface modules for IM 151-7 CPU/ IM 151-7 F-CPU interface modules	A	6ES7 138-4HA00-0AB0		1	1 unit	250
Accessories						
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu						

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – interface modules with failsafe CPU

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 151-7 F-CPU interface modules						
IM 151-7 F-CPU interface modules For constructing a failsafe automation system	A	6ES7 151-7FA20-0AB0		1	1 unit	241
Accessories						
Distributed Safety V5.4 programming tools						
Task: Configuration software for configuring failsafe user programs for SIMATIC S7-300F, S7-400F and ET 200S						
Requirements: STEP 7 V5.3 SP3 and higher						
• Floating license						
• Software Update Service						
	A	6ES7 833-1FC02-0YA5		1	1 unit	241
	B	6ES7 833-1FC00-0YX2		1	1 unit	241
Distributed Safety upgrade from V5.x to V5.3; floating license for 1 user	B	6ES7 833-1FC02-0YE5		1	1 unit	241
MMC 64 Kbyte For program backups	A	6ES7 953-8LF20-0AA0		1	1 unit	230
MMC 128 Kbyte For program backups	A	6ES7 953-8LG11-0AA0		1	1 unit	230
MMC 512 Kbyte For program backups	A	6ES7 953-8LJ20-0AA0		1	1 unit	230
MMC 2 MByte For program backups and/or the firmware update	A	6ES7 953-8LL20-0AA0		1	1 unit	230
MMC 4 MByte For program backups	A	6ES7 953-8LM20-0AA0		1	1 unit	230
External Prommer For MMC with USB interface	A	6ES7 792-0AA00-0XA0		1	1 unit	260
Termination modules As spare part for ET 200S	A	6ES7 193-4JA00-0AA0		1	1 unit	250
SIMATIC S5, 35 mm standard mounting rails						
• 483 mm long for 19" cabinets						
• 530 mm long for 600 mm cabinets						
• 830 mm long for 900 mm cabinets						
• Length 2 m						
	A	6ES5 710-8MA11		1	1 unit	250
	A	6ES5 710-8MA21		1	1 unit	250
	A	6ES5 710-8MA31		1	1 unit	250
	A	6ES5 710-8MA41		1	1 unit	250
SIPLUS IM 151-7 F-CPU interface modules (extended temperature range)						
SIPLUS IM 151-7 F-CPU interface modules For constructing a failsafe automation system	D	6AG1 151-7FA20-2AB0		1	1 unit	473
SIPLUS ET200S IM151-7 CPU -25 ... +70 °C based on 6ES7151-7AA20-0AB0	D	6AG1 151-7AA20-7AB0		1	1 unit	471
SIPLUS ET200S IM151-8 PN/DP CPU For medial loading with conformal coating based on 6ES7151-8AB00-0AB0	D	6AG1 151-8AB00-4AB0		1	1 unit	471
SIPLUS ET200S IM151-8 PN/DP CPU -25 ... +70 °C with conformal coating based on 6ES7151-8AB00-0AB0	D	6AG1 151-8AB00-7AB0		1	1 unit	471
SIPLUS ET200S IM151-8F PN/DP CPU -25 ... +60 °C with conformal coating based on 6ES7151-8FB00-0AB0	D	6AG1 151-8FB00-2AB0		1	1 unit	471
Accessories						
For ordering data see IM 151-7 F-CPU interface modules						

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – interface modules with failsafe CPU

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 151-8F PN/DP CPU interface modules						
IM 151-8F PN/DP CPU interface modules (256 K) including termination module	A	6ES7 151-8FB01-0AB0		1	1 unit	241
Accessories						
Distributed Safety V5.4 programming tools						
Task: Configuration software for configuring failsafe user programs for SIMATIC S7-300F, S7-400F and ET 200S						
Requirements: STEP 7 V5.3 SP3 and higher						
<ul style="list-style-type: none"> Floating license Software Update Service 						
	A	6ES7 833-1FC02-0YA5		1	1 unit	241
	B	6ES7 833-1FC00-0YX2		1	1 unit	241
Distributed Safety upgrade From V5.3 to V5.4; floating license for 1 user	B	6ES7 833-1FC02-0YE5		1	1 unit	241
MMC 64 Kbyte¹⁾ For program backups	A	6ES7 953-8LF20-0AA0		1	1 unit	230
MMC 128 Kbyte¹⁾ For program backups	A	6ES7 953-8LG11-0AA0		1	1 unit	230
MMC 512 Kbyte¹⁾ For program backups	A	6ES7 953-8LJ20-0AA0		1	1 unit	230
MMC 2 MByte¹⁾ For program backups and/or the firmware update	A	6ES7 953-8LL20-0AA0		1	1 unit	230
MMC 4 MByte¹⁾ For program backups	A	6ES7 953-8LM20-0AA0		1	1 unit	230
MMC 8 MByte¹⁾ For program backups	A	6ES7 953-8LP20-0AA0		1	1 unit	230
External Prommer For e.g. MMC with USB interface	A	6ES7 792-0AA00-0XA0		1	1 unit	260
PG with integrated MMC interface		On req.				
Inscription sheets in A4 format (10 units)						
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
<ul style="list-style-type: none"> Petrol Red Yellow Light beige 						
	A	6ES7 193-4BH00-0AA0		1	1 unit	250
	A	6ES7 193-4BD00-0AA0		1	1 unit	250
	A	6ES7 193-4BB00-0AA0		1	1 unit	250
	A	6ES7 193-4BA00-0AA0		1	1 unit	250
Manuals for ET 200S distributed I/O system						
Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu						
Termination modules As spare part for ET 200S	A	6ES7 193-4JA00-0AA0		1	1 unit	250
SIMATIC S5, 35 mm standard mounting rails						
<ul style="list-style-type: none"> 483 mm long for 19" cabinets 530 mm long for 600 mm cabinets 830 mm long for 900 mm cabinets Length 2 m 						
	A	6ES5 710-8MA11		1	1 unit	250
	A	6ES5 710-8MA21		1	1 unit	250
	A	6ES5 710-8MA31		1	1 unit	250
	A	6ES5 710-8MA41		1	1 unit	250
Industrial Ethernet FC RJ45 Plug 180						
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated cutting and clamping contacts for connection of Industrial Ethernet FC installation cables; with 180° cable feeder						
<ul style="list-style-type: none"> 1 unit 10 units 50 units 						
	A	6GK1 901-1BB10-2AA0		1	1 unit	5K2
	A	6GK1 901-1BB10-2AB0		1	1 unit	5K2
	A	6GK1 901-1BB10-2AE0		1	1 unit	5K2
Industrial Ethernet Fast Connect installation cables						
<ul style="list-style-type: none"> Fast Connect standard cables Fast Connect trailing cables Fast Connect marine cables 						
	A	6XV1 840-2AH10		1	1 m	5K2
	A	6XV1 840-3AH10		1	1 m	5K2
	A	6XV1 840-4AH10		1	1 m	5K2
Industrial Ethernet Fast Connect stripping tools	A	6GK1 901-1GA00		1	1 unit	5K2

¹⁾ For operation of the CPU, an MMC is essential.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – interface modules without CPU

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 151-1 interface modules						
IM 151-1 BASIC interface modules For ET 200S; transmission rates up to 12 Mbit/s; up to 12 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1CA00-0AB0		1	1 unit	250
IM 151-1 COMPACT 32 DI 24 V DC interface modules For ET 200S; transmission rates up to 12 Mbit/s; 32 digital inputs, up to 12 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1CA00-1BL0		1	1 unit	250
IM 151-1 COMPACT 16 DI 24 V DC / 16 DO 24 V/0.5 A interface modules For ET 200S; transmission rates up to 12 Mbit/s; 16 digital inputs and 16 digital outputs, up to 12 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1CA00-3BL0		1	1 unit	250
IM 151-1 STANDARD interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1AA05-0AB0		1	1 unit	250
IM 151-1 FO STANDARD interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 128 bytes each for inputs and outputs; up to 63 power, solid-state and motor starter modules can be connected; connection to bus using integrated fiber-optic cable including bus termination module	A	6ES7151-1AB05-0AB0		1	1 unit	250
IM 151-1 HIGH-FEATURE interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 modules can be connected; connection of PROFI-safe modules, isochrone mode (clocked operation); connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1BA02-0AB0		1	1 unit	250
Accessories						
TM-C120S terminal modules Terminal module for ET 200S COMPACT, screw terminals	A	6ES7 193-4DL10-0AA0		1	1 unit	250
TM-C120C terminal modules Terminal module for ET 200S COMPACT, spring-type terminals	A	6ES7 193-4DL00-0AA0		1	1 unit	250
TE-U120S4x10 additional terminals Additional terminal for TM-C120x terminal modules of ET 200S COMPACT; screw terminals for 3-conductor connection; please order two for 4-conductor connection. Can also be plugged into TM-E/TM-P if the same height of the terminal modules exists over a width of at least 120 mm	A	6ES7 193-4FL10-0AA0		1	1 unit	250
TE-U120C4x10 additional terminals Additional terminal for TM-C120x terminal modules of ET 200S COMPACT; spring-type terminals for 3-conductor connection; please order two for 4-conductor connection Can also be plugged into TM-E/TM-P if the same height of the terminal modules exists over a width of at least 120 mm.	A	6ES7 193-4FL00-0AA0		1	1 unit	250
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu						
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)	A	6ES7 998-8XC01-8YE0		1	1 unit	230
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	C	6ES7 998-8XC01-8YE2		1	1 unit	230
PROFIBUS DP interface RS485 bus connectors With 90° cable feeder for FastConnect connections, max. transmission rate 12 Mbit/s						
• Without PG interface	A	6ES7 972-0BA52-0XA0		1	1 unit	250
• With PG interface	A	6ES7 972-0BB52-0XA0		1	1 unit	250
100 Simplex connectors For plastic fiber-optic cable including 5 polishing sets	A	6GK1 901-0FB00-0AA0		1	1 set	5K2
50 plug-in adapters each for 2 Simplex connectors	A	6ES7 195-1BE00-0XA0		1	1 unit	250
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – interface modules without CPU

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 151-1 interface modules (continued)						
Inscription sheets in A4 format (10 units)						
Can be used for ET 200S COMPACT.						
Each sheet contains 10 labeling strips						
• Beige	A	6ES7 193-4BA10-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB10-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD10-0AA0		1	1 unit	250
• Petrol	A	6ES7 193-4BH10-0AA0		1	1 unit	250
Termination modules						
As spare part for ET 200S						
A		6ES7 193-4JA00-0AA0		1	1 unit	250
Power supply plugs						
Spare parts; for connection to control supply voltage 24 V DC						
• With push-in terminals	A	6ES7 193-4JB00-0AA0		1	1 unit	250
• With screw terminals	A	6ES7 193-4JB50-0AA0		1	1 unit	250
SIMATIC S5, 35 mm standard mounting rails						
• 483 mm long for 19" cabinets	A	6ES5 710-8MA11		1	1 unit	250
• 530 mm long for 600 mm cabinets	A	6ES5 710-8MA21		1	1 unit	250
• 830 mm long for 900 mm cabinets	A	6ES5 710-8MA31		1	1 unit	250
• Length 2 m	A	6ES5 710-8MA41		1	1 unit	250
SIPLUS IM 151-1 interface modules (extended temperature range)						
SIPLUS IM 151-1 STANDARD interface modules						
for ET 200S; transmission rates up to 12 Mbit/s;						
data volume of 244 bytes each for inputs and outputs;						
up to 63 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module						
D		6AG1 151-1AA05-7AB0		1	1 unit	471
SIPLUS IM 151-1 HIGH-FEATURE interface modules						
(extended temperature range and medial load)						
for ET 200S; transmission rates up to 12 Mbit/s;						
data volume of 244 bytes each for inputs and outputs;						
up to 63 modules can be connected; connection of PROFIsafe modules, isochrone mode (clocked operation);						
connection to bus through 9-pole Sub-D including bus termination module						
D		6AG1 151-1BA02-2AB0		1	1 unit	471
Accessories						
For ordering data see IM 151-1 interface modules						
IM 151-3 PN interface modules						
IM 151-3 PN interface modules						
For ET 200S; transmission rates up to 100 Mbit/s; data volume dependent on number of modules mounted, up to 63 modules can be connected, connection to bus through RJ45						
A		6ES7 151-3AA23-0AB0		1	1 unit	250
IM 151-3 PN PROFINET High-Feature interface modules						
For ET 200S; transmission rates up to 100 Mbit/s; up to 63 modules with max. width of 2 m can be connected, connection to bus through RJ45, including termination module						
A		6ES7 151-3BA23-0AB0		1	1 unit	250
IM 151-3 FO interface modules						
For ET 200S;						
with 2 PROFINET fiberoptic interfaces and integrated 2-port switch, up to 63 modules up to 2 m wide can be connected, including bus termination module						
A		6ES7 151-3BB23-0AB0		1	1 unit	250
Accessories						
Industrial Ethernet FC RJ45 Plug 90						
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated cutting and clamping contacts for connection of Industrial Ethernet FC installation cables; with 90° cable feeder						
• 1 unit	A	6GK1 901-1BB20-2AA0		1	1 unit	5K2
• 10 units	A	6GK1 901-1BB20-2AB0		1	1 unit	5K2
• 50 units	A	6GK1 901-1BB20-2AE0		1	1 unit	5K2
Industrial Ethernet Fast Connect installation cables						
• Fast Connect standard cables						
• Fast Connect trailing cables						
• Fast Connect marine cables						
A		6XV1 840-2AH10		1	1 m	5K2
A		6XV1 840-3AH10		1	1 m	5K2
A		6XV1 840-4AH10		1	1 m	5K2
Termination kits						
• SC RJ POF Plug						
Termination kit for local mounting of SC RJ connectors, comprising insulation stripping tool, kevlar shears, microscope, abrasive paper and support						
A		6GK1 900-0ML00-0AA0		1	1 unit	5K2
• IE SC RJ POF Plug						
Threaded connectors for local mounting on POF fiber-optic cables (1 pack = 20 units)						
A		6GK1 900-0MB00-0AC0		1	1 unit	5K2
• IE SC RJ Refill Set POF						
Refill set for SC RJ POF Plug termination kit, comprising abrasive paper and disk (set of 5)						
A		6GK1 900-0MN00-0AA0		1	1 unit	5K2
• SC RJ PCF Plug						
Termination kit for local mounting of SC RJ connectors, comprising insulation stripping tool, buffer insulation stripping tool, kevlar shears, fiber cleaver, microscope						
A		6GK1 900-0NL00-0AA0		1	1 unit	5K2
• Industrial Ethernet SC RJ PCF Plug						
Threaded connectors for local mounting on PCF fiber-optic cables (1 pack = 10 units)						
A		6GK1 900-0NB00-0AC0		1	1 unit	5K2
Industrial Ethernet Fast Connect stripping tools						
A		6GK1 901-1GA00		1	1 unit	5K2

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

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – interface modules without CPU

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 151-3 PN interface modules (continued)						
MMC 64 Kbyte¹⁾ For storing the unit's name	A	6ES7 953-8LF20-0AA0		1	1 unit	230
MMC 128 Kbyte¹⁾ For storing the unit's name	A	6ES7 953-8LG11-0AA0		1	1 unit	230
MMC 512 Kbyte¹⁾ For storing the unit's name	A	6ES7 953-8LJ20-0AA0		1	1 unit	230
MMC 2 MByte¹⁾ For storing the unit's name and/or the firmware update	A	6ES7 953-8LL20-0AA0		1	1 unit	230
MMC 4 MByte¹⁾ For storing the unit's name and/or the firmware update	A	6ES7 953-8LM20-0AA0		1	1 unit	230
MMC 8 MByte¹⁾ For storing the unit's name and/or the firmware update	A	6ES7 953-8LP20-0AA0		1	1 unit	230
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu						
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)	A	6ES7 998-8XC01-8YE0		1	1 unit	230
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	C	6ES7 998-8XC01-8YE2		1	1 unit	230
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
Termination modules As spare part for ET 200S	A	6ES7 193-4JA00-0AA0		1	1 unit	250
Power supply plugs Spare parts; for connection to control supply voltage 24 V DC						
• With push-in terminals	A	6ES7 193-4JB00-0AA0		1	1 unit	250
• With screw terminals	A	6ES7 193-4JB50-0AA0		1	1 unit	250
35 mm standard mounting rails						
• 483 mm long for 19" cabinets	A	6ES5 710-8MA11		1	1 unit	250
• 530 mm long for 600 mm cabinets	A	6ES5 710-8MA21		1	1 unit	250
• 830 mm long for 900 mm cabinets	A	6ES5 710-8MA31		1	1 unit	250
• Length 2 m	A	6ES5 710-8MA41		1	1 unit	250
Industrial Ethernet switches Managed Industrial Ethernet switches; isochronous real-time, LED diagnostics, error signaling contacts with SET button, redundant power supply						
• SCALANCE X202-2P IRT 2 x 10/100 Mbit/s RJ45 ports, 2 x 100 Mbit/s POF/PCF SC RJ	A	6GK5 202-2BH00-2BA3		1	1 unit	5N2
• SCALANCE X201-3P IRT 1 x 10/100 Mbit/s RJ45 ports, 3 x 100 Mbit/s POF/PCF SC RJ	A	6GK5 201-3BH00-2BA3		1	1 unit	5N2
• SCALANCE X200-4P IRT 4 x 100 Mbit/s POF/PCF SC RJ	A	6GK5 200-4AH00-2BA3		1	1 unit	5N2
SIPLUS IM 151-3 PN interface modules (extended temperature range)						
SIPLUS IM 151-3 PN interface modules For ET 200S; transmission rates up to 100 Mbit/s; data volume dependent on number of modules mounted, up to 63 modules can be connected, connection to bus through RJ45	D	6AG1 151-3AA22-2AB0		1	1 unit	471

Accessories

For ordering data see IM 151-3PN interface modules

¹⁾ For operation of the IM 151-3, an MMC is essential.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – I/O modules

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
PM-E power modules for solid-state modules						
PM-E power modules 24 V DC¹⁾						
For solid-state modules, with diagnostics						
• 1 unit	A	6ES7 138-4CA01-0AA0		1	1 unit	250
• 5 units	A	6ES7 138-4CA01-1AA0		1	1 unit	250
PM-E power modules 24 V DC, High-Feature¹⁾						
For solid-state modules, with diagnostics	A	6ES7 138-4CA60-0AB0		1	1 unit	250
PM-E power modules 24 ... 48 V DC						
For solid-state modules, with diagnostics, with status bit "Load voltage available"						
• 1 unit	A	6ES7 138-4CA50-0AB0		1	1 unit	250
• 5 units	A	6ES7 138-4CA50-1AB0		1	1 unit	250
PM-E power modules 24 ... 48 V DC, 42 ... 230 V AC						
For solid-state modules, with diagnostics and fuse	A	6ES7 138-4CB11-0AB0		1	1 unit	250
Accessories						
Inscription sheets in A4 format (10 units)						
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
SIPLUS PM-E power modules for solid-state modules (extended temperature range)						
SIPLUS PM-E power modules						
PM-E power modules 24 V DC¹⁾						
For solid-state modules, with diagnostics	D	6AG1 138-4CA01-2AA0		1	1 unit	471
PM-E power modules 24 ... 48 V DC						
For solid-state modules, with diagnostics, with status bit "Load voltage available"	D	6AG1 138-4CA50-2AB0		1	1 unit	471
PM-E power modules 24 ... 48 V DC, 24 ... 230 V AC						
For solid-state modules, with diagnostics and fuse	C	6AG1 138-4CB11-2AB0		1	1 unit	471
Accessories						
For ordering data see power modules for PM-E solid-state modules						
Reserve modules						
Reserve modules for ET 200S						
For reserving space in unused slots						
• 15 mm width (5 units)	A	6ES7 138-4AA01-0AA0		1	1 unit	250
• 30 mm width (1 unit)	A	6ES7 138-4AA11-0AA0		1	1 unit	250
Potential distributor modules						
Potential distributor modules for ET 200S						
For supplying the load voltage to additional terminals, 15 mm wide, 1 unit	A	6ES7138-4FD00-0AA0		1	1 unit	250
Accessories for inscription						
Inscription sheets in A4 format (10 units)						
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250

¹⁾ For all solid-state and technology modules except 2 DI 120 V AC/2 DI 230 V AC/2 DO 120/230 V AC.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – I/O modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Digital solid-state modules						
Digital input modules						
Order unit 5 units						
• 2 DI 24 V DC Standard	A	6ES7 131-4BB01-0AA0		1	1 unit	250
• 2 DI 24 V DC High Feature	A	6ES7 131-4BB01-0AB0		1	1 unit	250
• 4 DI 24 V DC Standard	A	6ES7 131-4BD01-0AA0		1	1 unit	250
• 4 DI 24 V DC High Feature	A	6ES7 131-4BD01-0AB0		1	1 unit	250
• 2 DI 120 V AC	A	6ES7 131-4EB00-0AB0		1	1 unit	250
• 2 DI 230 V AC	A	6ES7 131-4FB00-0AB0		1	1 unit	250
• 4 DI 24 ... 48 V UC	A	6ES7 131-4CD02-0AB0		1	1 unit	250
• 4 DI 24 V DC SOURCE INPUT	A	6ES7 131-4BD51-0AA0		1	1 unit	250
Order unit 1 unit						
• 4 DI 24 V DC NAMUR	A	6ES7 131-4RD00-0AB0		1	1 unit	250
• 8 DI 24 V DC Standard	A	6ES7 131-4BF00-0AA0		1	1 unit	250
• 8 DI 24 V DC Standard SOURCE INPUT	A	6ES7 131-4BF50-0AA0		1	1 unit	250
Digital output modules						
Order unit 5 units						
• 2 DO 24 V DC/0.5 A Standard	A	6ES7 132-4BB01-0AA0		1	1 unit	250
• 2 DO 24 V DC/0.5 A High Feature	A	6ES7 132-4BB01-0AB0		1	1 unit	250
• 2 DO 24 V DC/2 A Standard	A	6ES7 132-4BB31-0AA0		1	1 unit	250
• 2 DO 24 V DC/2 A High Feature	A	6ES7 132-4BB31-0AB0		1	1 unit	250
• 4 DO 24 V DC/0.5 A Standard	A	6ES7 132-4BD02-0AA0		1	1 unit	250
• 4 DO 24 V DC/0.5 A Standard SOURCE OUTPUT	A	6ES7 132-4BD50-0AA0		1	1 unit	250
• 4 DO 24 V DC/0.5 A High Feature	A	6ES7 132-4BD00-0AB0		1	1 unit	250
• 8 DO 24 V DC/0.5 A High Feature	A	6ES7 132-4BF00-0AB0		1	1 unit	250
• 4 DO 24 V DC/2 A Standard	A	6ES7 132-4BD32-0AA0		1	1 unit	250
• 4 DO 24 V DC/2 A High Feature	A	6ES7 132-4BD30-0AB0		1	1 unit	250
• 2 DO 24 V to 230 V AC /1 A	A	6ES7 132-4FB01-0AB0		1	1 unit	250
• 2 DO 24 V DC to 230 V AC/5 A relay, NO contact	A	6ES7 132-4HB01-0AB0		1	1 unit	250
• 2 DO 24 ... 48 V DC to 230 V AC/5 A relay, CO contact	A	6ES7 132-4HB12-0AB0		1	1 unit	250
Order unit 1 unit						
• 8 DO 24 V DC/0.5 A Standard	A	6ES7 132-4BF00-0AA0		1	1 unit	250
• 8 DO 24 V DC/0.5 A Standard SOURCE OUTPUT	A	6ES7 132-4BF50-0AA0		1	1 unit	250
• 2 DO 24 ... 48 V DC/5 A, 24 ... 230 V AC/5 A relay, CO contact	A	6ES7 132-4HB50-0AB0		1	1 unit	250
Accessories						
Inscription sheets in A4 format (10 units)						
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
SIPLUS digital solid-state modules (extended temperature range)						
SIPLUS digital input modules						
Order unit 5 units						
• 4 DI 24 V DC Standard	D	6AG1 131-4BD01-2AA0		1	1 unit	471
• 8 DI 24 V DC Standard	D	6AG1 131-4BF00-7AA0		1	1 unit	471
• SIPLUS ET200S EM 4DI HF -25...+70 °C based on 6ES7131-4BD01-0AB0	D	6AG1 131-4BD01-7AB0		1	1 unit	471
SIPLUS digital output modules						
Order unit 5 units						
• 2 DO 24 V DC/0.5 A High Feature	D	6AG1 132-4BB01-2AB0		1	1 unit	471
• 2 DO 24 V DC/2 A High Feature	D	6AG1 132-4BB31-7AB0		1	1 unit	471
• 4 DO 24 V DC/0.5 A Standard	D	6AG1 132-4BD02-7AA0		1	1 unit	471
• 4 DO 24 V DC/2 A Standard	D	6AG1 132-4BD32-2AA0		1	1 unit	471
• 2 DO 24 V DC to 230 V AC/5 A relay, NO contact	D	6AG1 132-4HB01-2AB0		1	1 unit	471
• 2 DO 24 ... V DC to 230 V AC/5 A relay, CO contact	D	6AG1 132-4HB10-2AB0		1	1 unit	471
Order unit 1 unit						
• SIPLUS ET200S EM 8 DO -25 ... + 70 °C with conformal coating based on 6ES7132-4BF00-0AA0 .	D	6AG1 132-4BF00-7AA0		1	1 unit	471
Solid-state modules for ET 200S, 8 DO 24 V DC/0.5 A 15 mm width						

Accessories

For ordering data see digital solid-state modules

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – I/O modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Analog solid-state modules						
Analog input modules						
Order unit 1 unit						
• 2 AI U Standard	A	6ES7 134-4FB01-0AB0		1	1 unit	250
• 2 AI U High Speed	A	6ES7 134-4FB52-0AB0		1	1 unit	250
• 2 AI U High Feature	A	6ES7 134-4LB02-0AB0		1	1 unit	250
• 2 AI I Standard 2-wire	A	6ES7 134-4GB01-0AB0		1	1 unit	250
• 2 AI I High Speed 2-wire	A	6ES7 134-4GB52-0AB0		1	1 unit	250
• 2 AI I Standard 4-wire	A	6ES7 134-4GB11-0AB0		1	1 unit	250
• 2 AI High Speed 1-4 wire	A	6ES7 134-4GB62-0AB0		1	1 unit	250
• 2 AI I High Feature 2-1/4-wire (15 bits + sign)	A	6ES7 134-4MB02-0AB0		1	1 unit	250
• 2 AI RTD Standard	A	6ES7 134-4JB51-0AB0		1	1 unit	250
• 2 AI TC Standard	A	6ES7 134-4JB01-0AB0		1	1 unit	250
• 2 AI RTD High Feature	A	6ES7 134-4NB51-0AB0		1	1 unit	250
• 2 AI TC High Feature	A	6ES7 134-4NB01-0AB0		1	1 unit	250
• 4 AI Standard 2-wire	A	6ES7 134-4GD00-0AB0		1	1 unit	250
• 4 AI TC Standard	A	6ES7 134-4JD00-0AB0		1	1 unit	250
Analog output modules						
Order unit 1 unit						
• 2 AO U Standard	A	6ES7 135-4FB01-0AB0		1	1 unit	250
• 2 AO U High Speed	A	6ES7 135-4FB52-0AB0		1	1 unit	250
• 2 AO U High Feature	A	6ES7 135-4LB02-0AB0		1	1 unit	250
• 2 AO I Standard	A	6ES7 135-4GB01-0AB0		1	1 unit	250
• 2 AO I High Speed	A	6ES7 135-4GB52-0AB0		1	1 unit	250
• 2 AO I High Feature	A	6ES7 135-4MB02-0AB0		1	1 unit	250
Accessories for inscription						
Inscription sheets in A4 format (10 units)						
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
Accessories for system-integrated shield connections						
Shield attachments						
Order unit 5 units	A	6ES7 193-4GA00-0AA0		1	1 unit	250
For plugging into TM-E and TM-P						
Shield terminals						
Order unit 5 units	A	6ES7 193-4GB00-0AA0		1	1 unit	250
For busbars 3 × 10 mm						
Ground connection terminals						
Order unit 1 unit	C	8WA2 868		1	50 units	041
For conductor cross-sections up to 25 mm ²						
Busbars 3 x 10 mm						
Order unit 1 unit	A	8WA2 842		1	1 unit	041
SIPLUS analog solid-state modules (extended temperature range)						
SIPLUS analog input modules						
• 2 AI I Standard 2-wire	D	6AG1 134-4GB01-2AB0		1	1 unit	471
• 2 AI I Standard 4-wire	D	6AG1 134-4GB11-2AB0		1	1 unit	471
• 2 AI high Speed 2-wire	D	6AG1 134-4GB52-2AB0		1	1 unit	471
SIPLUS ET200S EM 4 AI I 2-wire -25 ... +60 °C with conformal coating based on 6ES7134-4GD00-0AB0 : Solid-state module 4 ... 20 mA; 13 bit, 15 mm width for 2-wire measuring transducer, cycle time 40 ms/module with SF LED (group fault)	D	6AG1 134-4GD00-2AB0		1	1 unit	471
SIPLUS ET200S EM 2AI RTD -25 ... +70 °C with conformal coating based on 6ES7134-4JB51-0AB0	D	6AG1 134-4JB51-7AB0		1	1 unit	471
SIPLUS ET200S EM 2AI TC HF -25 ... +60 °C based on 6ES7134-4NB01-0AB0	D	6AG1 134-4NB01-2AB0		1	1 unit	471
SIPLUS ET200S EM 2AI RTD HF -25 ... +60 °C based on 6ES7134-4NB51-0AB0	D	6AG1 134-4NB51-2AB0		1	1 unit	471
SIPLUS ET200S EM 2AO U -25 ... +60 °C based on 6ES7135-4FB01-0AB0	D	6AG1 135-4FB01-2AB0		1	1 unit	471
SIPLUS ET200S EM 2AO I STANDARD -25 ... +70 °C with conformal coating based on 6ES7135-4GB01-0AB0 : +/-20 mA; 13 bit + sign, 4 ... 20 mA; 13 bit cycle time smaller than 1 ms with SF LED (group faults)	D	6AG1 135-4GB01-2AB0		1	1 unit	471
SIPLUS ET200S 2AO U HIGH FEATURE -25 ... +60 °C based on 6ES7135-4LB02-0AB0	D	6AG1 135-4LB02-7AB0		1	1 unit	471

Accessories

For ordering data see analog solid-state modules

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – I/O modules Technology modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SSI modules						
SSI modules For the connection of absolute encoders with SSI interface	A	6ES7 138-4DB03-0AB0		1	1 unit	250
Accessories						
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
Signal cables Assembled for SSI absolute encoders 6FX2001-5, without Sub-D connector, UL/DESINA	B	6FX5 002-2CC12-....		1	1 unit	701
2PULSE pulse generators						
2PULSE pulse generators and timer modules For ET 200S	A	6ES7 138-4DD00-0AB0		1	1 unit	2AP
Accessories						
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
1STEP step modules						
1STEP step modules For simple positioning tasks with stepper motor axes	A	6ES7 138-4DC00-0AB0		1	1 unit	2AP
Accessories						
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
SIMOSTEP stepper motors		see ST 70 Catalog				
Power sections for stepper motors FM STEPDRIVE		see ST 70 Catalog				
1POS U positioning modules						
1POS U positioning modules Single-channel positioning module for ET 200S for positioning of adjusting and operating axes	A	6ES7 138-4DL00-0AB0		1	1 unit	250

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – I/O modules Technology modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
1 COUNT 24 V/100 kHz counter modules						
1 COUNT 24 V/100 kHz counter modules For universal counting and measuring tasks with ET 200S	A	6ES7 138-4DA04-0AB0		1	1 unit	250
Accessories						
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
Shield attachments For TM-P and TM-E terminal modules, as support for busbar 3 x 10 mm, 5 units	A	6ES7 193-4GA00-0AA0		1	1 unit	250
Shield terminals For connection of braided shields to busbars, 5 units	A	6ES7 193-4GB00-0AA0		1	1 unit	250
SIMODRIVE sensor incremental encoders Mountable sensor, optically incremental with HTL level, operational voltage 10 ... 30 V		6FX2 001-4....				
Signal cables Assembled, for HTL and TTL sensors, without Sub-D connector, UL/DESINA	B	6FX5 002-2CA12-....		1	1 unit	701
SIPLUS 1 COUNT 24 V/100 kHz counter modules (extended temperature range)						
1 COUNT 24 V/100 kHz counter modules For universal counting and measuring tasks with ET 200S	D	6AG1 138-4DA04-2AB0		1	1 unit	471
Accessories						
For ordering data see 1 COUNT 24 V/100 kHz counter module						
1 COUNT 5 V/500 kHz counter modules						
1 COUNT 5 V/500 kHz counter modules For universal counting and measuring tasks with ET 200S	A	6ES7 138-4DE02-0AB0		1	1 unit	250
Accessories						
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.						
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250
Shield attachments For TM-P and TM-E terminal modules, as support for busbar 3 x 10 mm, 5 units	A	6ES7 193-4GA00-0AA0		1	1 unit	250
Shield terminals For connection of braided shields to busbars, 5 units	A	6ES7 193-4GB00-0AA0		1	1 unit	250
SIMODRIVE incremental encoders With RS 422 (TTL), operational voltage 10 ... 30 V		6FX2 001-2....				
Signal cables Assembled, for HTL and TTL sensors, without Sub-D connector, UL/DESINA	B	6FX5 002-2CA12-....		1	1 unit	701
1 SI interface modules						
1SI interface modules						
• ASCII and 3964(R) protocol	A	6ES7 138-4DF01-0AB0		1	1 unit	250
• Modbus and USS protocol	A	6ES7 138-4DF11-0AB0		1	1 unit	250
Accessories						
TM-E15S 26-A1 terminal modules Order unit 5 units	A	6ES7 193-4CA40-0AA0		1	1 unit	250
TM-E15C26-A1 terminal modules Order unit 5 units	A	6ES7 193-4CA50-0AA0		1	1 unit	250
TM-E15N24-A1 terminal modules Order unit 5 units	A	6ES7 193-4CA80-0AA0		1	1 unit	250
TM-E15S24-01 terminal modules Order unit 5 units	A	6ES7 193-4CB20-0AA0		1	1 unit	250
TM-E15C24-01 terminal modules Order unit 5 units	A	6ES7 193-4CB30-0AA0		1	1 unit	250
TM-E15N24-01 terminal modules Order unit 5 units	A	6ES7 193-4CB70-0AA0		1	1 unit	250

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – I/O modules Technology modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIWAREX CS						
SIWAREX CS Weighing electronics for weighers in SIMATIC ET 200S	B	7MH4910-0AA01		1	1 unit	816
SIWAREX CS manuals In various languages Free download from: http://www.siemens.com/weightingtechnology						
SIWAREX CS "Getting started" Sample software for a simple introduction to programming weighers in STEP 7. Free download from: http://www.siemens.com/weightingtechnology						
SIWAREX CS configuration package on CD-ROM for SIMATIC S7, Version V5.4 and higher	C	7MH4910-0AK01		1	1 unit	816
<ul style="list-style-type: none"> • SIWATOOL CS software for weigher calibration (in various languages) • Manuals on CD (in various languages) • SIWAREX CD "Getting started" 						
SIWATOOL connection cables from SIWAREX U/CS with serial PC interface, for 9-pole PC interfaces (RS 232), length 3 m	C	7MH4607-8CA		1	1 unit	815
Installation materials (essential)						
Terminal modules TM-E 30 mm wide (required for each SIWAREX module)	A	6ES7193-4CG20-0AA0 or compatible		1	1 unit	250
Shield attachments Contents 5 units, sufficient for 5 cables	A	6ES7193-4GA00-0AA0		1	1 unit	250
Shield connection terminals Contents: 5 units, sufficient for 5 cables <i>Note:</i> One shield connection terminal is required for	A	6ES7193-4GB00-0AA0		1	1 unit	250
<ul style="list-style-type: none"> • Weigher connection and • The TTY interface or • RS 232 interface 						
N busbars, galvanized 3 x 10 mm, 1 m long	A	8WA2842		1	1 unit	041
Feeder terminals for N busbar	C	8WA2868		1	50 units	041
Remote displays (optional) The digital remote displays can be connected directly through the TTY interface to the SIWAREX CS. Usable remote display: S102 Siebert Industrieelektronik GmbH Postfach 1180 D-66565 Eppelborn, Germany Tel.: 06806/980-0 Fax: 06806/980-999 Internet: http://www.siebert.de Detailed information is available from the manufacturer.						
Accessories						
SIWAREX JB junction boxes, aluminium housing For parallel switching of up to 4 weigh-cells and for connecting several connection boxes	C	7MH4710-1BA		1	1 unit	815
SIWAREX JB junction boxes, stainless steel housing For parallel switching of up to 4 weigh-cells	D	7MH4710-1EA		1	1 unit	815
Ex-Interface, type SIWAREX Pi with UL and FM approval, but without ATEX approval For the inherently safe connection of weigh-cells, suitable for the weigher modules SIWAREX U, CS, MS, FTA, FTC and M. Use in the EU is not possible.	D	7MH4710-5AA		1	1 unit	815
SIWAREX Pi Ex-Interface manuals	X	C71000-T5974-C29		1	1 unit	815
Ex-Interface, type SIWAREX IS with ATEX approval, but without UL and FM approval For the inherently safe connection of weigh-cells, including manual, suitable for the weigher modules SIWAREX U, CS, MS, FTA, FTC, M and CF, use in the EU is possible.						
<ul style="list-style-type: none"> • With short-circuit current < DC 199 mA • With short-circuit current < DC 137 mA 						
	C	7MH4710-5BA		1	1 unit	815
	C	7MH4710-5CA		1	1 unit	815

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – I/O modules Technology modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIWAREX CS (continued)						
Cables (optional)						
Cables Li2Y 1 x 2 x 0.75 ST + 2 x (2 x 0.34 ST) – CY, sheath color orange For connecting SIWAREX U, CS, MS, FTA, FTC, M and CF to the connection and distribution box (JB), extension box (EB) or Ex-Interface (Ex-I) and between two JB's, for local laying, occasional bending is possible, 10.8 mm external diameter, for ambient temperature -40 ... +80 °C	C	7MH4702-8AG		1	1 m	815
Cables Li2Y 1 x 2 x 0.75 ST + 2 x (2 x 0.34 ST) – CY, sheath color blue Connecting of connection and distribution box (JB) or extension box (EB) in hazardous areas and Ex-Interface (Ex-I), for local laying, occasional bending is possible, blue PVC insulating covering, approx. 10.8 mm external diameter, for ambient temperature -40 ... +80 °C	C	7MH4702-8AF		1	1 m	815
Cables LiYCY 4 x 2 x 0.25 mm² For TTY (switch 2 core pairs each in parallel), for connecting a remote indication	C	7MH4407-8BD0		1	1 m	815
SIWAREX CF						
SIWAREX CF Force measuring module for DMS sensors in SIMATIC ET 200S (SIWAREX CF configuration package not required)	C	7MH4920-0AA01		1	1 unit	816
SIWAREX CF manuals • English Free download from: www.siemens.com/weighingtechnology						
SIWAREX CF "Getting started" Sample software for a simple introduction to programming in STEP 7. Free download from: www.siemens.com/weighingtechnology						
Installation materials (essential)						
Terminal modules TM-E 30 mm wide (required for each SIWAREX module)	A	6ES7193-4CG20-0AA0 or compatible		1	1 unit	250
Shield attachments Contents 5 units, sufficient for 5 cables	A	6ES7193-4GA00-0AA0		1	1 unit	250
Shield connection terminals Contents: 5 units, sufficient for 5 cables One shield connection terminal is required for each sensor cable	A	6ES7193-4GB00-0AA0		1	1 unit	250
N busbars, galvanized 3 x 10 mm, 1.5 m long	A	8WA2842		1	1 unit	041
Feeder terminals for N busbar	C	8WA2868		1	50 units	041
Accessories						
SIWAREX EB extension boxes For extending sensor cables	C	7MH4710-2AA		1	1 unit	815
Ex-Interface, type SIWAREX IS with ATEX approval, but without UL and FM approval For the inherently safe connection of weigh-cells, including manual, suitable for the weigher modules SIWAREX U, CS, MS, FTA, FTC, M and CF, use in the EU is possible. • With short-circuit current < DC 199 mA • With short-circuit current < DC 137 mA	C C	7MH4710-5BA 7MH4710-5CA		1 1	1 unit 1 unit	815 815
Cables (optional)						
Cables Li2Y 1 x 2 x 0.75 ST + 2 x (2 x 0.34 ST) – CY, sheath color orange For connecting SIWAREX U, CS, MS, FTA, FTC, M and CF to the connection and distribution box (JB), extension box (EB) or Ex-Interface (Ex-I) and between two JB's, for local laying, occasional bending is possible, 10.8 mm external diameter, for ambient temperature -40 ... +80 °C	C	7MH4702-8AG		1	1 m	815

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

**ET 200S – I/O modules, terminal modules
for power and solid-state modules**

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal modules for power and solid-state modules						
TM-P terminal modules for PM-E power modules						
TM-P15S23-A1 Order unit: 1 unit 2 × 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CC20-0AA0		1	1 unit	250
TM-P15C23-A1 Order unit: 1 unit 2 × 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CC30-0AA0		1	1 unit	250
TM-P15N23-A1 Order unit: 1 unit 2 × 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CC70-0AA0		1	1 unit	250
TM-P15S23-A0 Order unit: 1 unit 2 × 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals	A	6ES7 193-4CD20-0AA0		1	1 unit	250
TM-P15C23-A0 Order unit: 1 unit 2 × 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals	A	6ES7 193-4CD30-0AA0		1	1 unit	250
TM-P15N23-A0 Order unit: 1 unit 2 × 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, FastConnect	A	6ES7 193-4CD70-0AA0		1	1 unit	250
TM-P15S22-01 Order unit: 1 unit 2 × 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CE00-0AA0		1	1 unit	250
TM-P15C22-01 Order unit: 1 unit 2 × 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CE10-0AA0		1	1 unit	250
TM-P15N22-01 Order unit: 1 unit 2 × 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CE60-0AA0		1	1 unit	250
TM-P30S44-A0 Order unit: 1 unit 7 × 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals for PM-E F PROFIsafe	A	6ES7 193-4CK20-0AA0		1	1 unit	241
TM-P30C44-A0 Order unit: 1 unit 7 × 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals for PM-E F PROFIsafe	A	6ES7 193-4CK30-0AA0		1	1 unit	241
TM-E terminal modules for solid-state modules¹⁾						
TM-E15S24-A1 Order unit: 5 units 2 × 4 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CA20-0AA0		1	1 unit	250
TM-E15C24-A1 Order unit: 5 units 2 × 4 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CA30-0AA0		1	1 unit	250
TM-E15S24-01 Order unit: 5 units 2 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CB20-0AA0		1	1 unit	250
TM-E15C24-01 Order unit: 5 units 2 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CB30-0AA0		1	1 unit	250
TM-E15S23-01 Order unit: 5 units 2 × 3 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CB00-0AA0		1	1 unit	250
TM-E15C23-01 Order unit: 5 units 2 × 3 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CB10-0AA0		1	1 unit	250
TM-E15N23-01 Order unit: 5 units 2 × 3 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CB60-0AA0		1	1 unit	250

¹⁾ Note for selecting suitable TM-E and TM-P configuration aids.

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

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – I/O modules, terminal modules for power and solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal modules for power and solid-state modules (continued)						
TM-E terminal modules for solid-state modules¹⁾ (continued)						
TM-E15N24-01 Order unit: 5 units 2 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CB70-0AA0		1	1 unit	250
TM-E15S26-A1 Order unit: 5 units 2 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CA40-0AA0		1	1 unit	250
TM-E15C26-A1 Order unit: 5 units 2 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CA50-0AA0		1	1 unit	250
TM-E15N24-A1 Order unit: 5 units 2 × 4 terminals, termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CA70-0AA0		1	1 unit	250
TM-E15N26-A1 Order unit: 5 units 2 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CA80-0AA0		1	1 unit	250
TM-E30S44-01 Order unit: 1 unit 4 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CG20-0AA0		1	1 unit	250
TM-E30C44-01 Order unit: 1 unit 4 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CG30-0AA0		1	1 unit	250
TM-E30S46-A1 Order unit: 1 unit 4 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CF40-0AA0		1	1 unit	250
TM-E30C46-A1 Order unit: 1 unit 4 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CF50-0AA0		1	1 unit	250
TM-E15S24-AT Order unit: 1 unit for internal temperature compensation for 2 AI TC High Feature, screw terminals	A	6ES7 193-4CL20-0AA0		1	1 unit	250
TM-E15C24-AT Order unit: 1 unit for internal temperature compensation for 2 AI TC High Feature, spring-type terminals	A	6ES7 193-4CL30-0AA0		1	1 unit	250
Accessories for shield connection						
Shield attachments Order unit: 5 units, for plugging into TM-E and TM-P	A	6ES7 193-4GA00-0AA0		1	1 unit	250
Shield terminals Order unit: 5 units, for busbars 3 × 10 mm	A	6ES7 193-4GB00-0AA0		1	1 unit	250
Ground connection terminals Order unit: 1 unit, for conductor cross-sections up to 25 mm ²	C	8WA2 868		1	50 units	041
Busbars 3 x 10 mm Order unit 1 unit	A	8WA2 842		1	1 unit	041
Accessories for coding						
Color coding plates Order unit: 200 units for TM-P, TM-E						
• White	A	6ES7 193-4LA20-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4LB20-0AA0		1	1 unit	250
• Yellow and green	A	6ES7 193-4LC20-0AA0		1	1 unit	250
• Red	A	6ES7 193-4LD20-0AA0		1	1 unit	250
• Blue	A	6ES7 193-4LF20-0AA0		1	1 unit	250
• Brown	A	6ES7 193-4LG20-0AA0		1	1 unit	250
• Turquoise	A	6ES7 193-4LH20-0AA0		1	1 unit	250
Inscription labels, with inscription Order unit: 1 set						
• 200 units for slot numbering (1 ... 20) 10 ×	A	8WA8 861-0AB		100	200 units	041
• 200 units for slot numbering (1 ... 40) 5 ×	A	8WA8 861-0AC		100	200 units	041
• 200 units for slot numbering (1 ... 64) 1 ×, (1 ... 68) 2 ×	C	8WA8 861-0DA		100	200 units	041
Inscription labels, blank 200 units for slot numbering	A	8WA8 848-2AY		100	100 units	041

¹⁾ Note for selecting suitable TM-E and TM-P configuration aids.

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – I/O modules, terminal modules for power and solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIPLUS terminal modules for power and solid-state modules (extended temperature range)						
TM-P terminal modules for PM-E power modules						
TM-P15S23-A0 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals	D	6AG1 193-4CD20-2AA0		1	1 unit	471
TM-P15C23-A0 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals	C	6AG1 193-4CD30-2AA0		1	1 unit	473
TM-E terminal modules for solid-state modules (extended temperature range and medial load)						
TM-E15C24-A1 Order unit: 5 units 2 x 4 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	D	6AG1 193-4CA30-2AA0		1	1 unit	473
TM-E15S26-A1 Order unit: 5 units 2 x 6 terminals, terminal connections with termination onto AUX1 rail, AUX1 connected through, screw terminals	D	6AG1 193-4CA40-2AA0		1	1 unit	471
TM-E15C26-A1 Order unit: 5 units 2 x 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	D	6AG1 193-4CA50-2AA0		1	1 unit	473
TM-E15C24-A1 Order unit: 5 units 2 x 4 terminals, terminal connections with termination onto AUX1 rail, AUX1 connected through, spring-type terminals	D	6AG1 193-4CB30-2AA0		1	1 unit	471
TM-E30C44-01 Order unit: 1 unit 4 x 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	D	6AG1 193-4CG30-2AA0		1	1 unit	471
TM-E15C24-AT Order unit: 1 unit for internal temperature compensation for 2 AI TC High Feature, spring-type terminals	D	6AG1 193-4CL30-2AA0		1	1 unit	471
Accessories for shield connection		For ordering data see terminal modules for power and solid-state modules				
4 IQ-Sense and 8 IQ-Sense sensor modules						
4 IQ-Sense sensor modules	A	6ES7 138-4GA00-0AB0		1	1 unit	250
8 IQ-Sense sensor modules	A	6ES7 338-7XF00-0AB0		1	1 unit	231
Sensors						
For connecting to the 4 IQ-Sense sensor module						
• Diffuse sensor, type C40 IQ-Sense	X	3SF7 240-3JQ00		1	1 unit	574
• Diffuse sensor, type K80 IQ-Sense	X	3SF7 210-3JQ00		1	1 unit	574
• Retroreflective sensor, type C40 IQ-Sense	X	3SF7 241-3JQ00		1	1 unit	574
• Retroreflective sensor, type K80 IQ-Sense	X	3SF7 211-3JQ00		1	1 unit	574
• Diffuse sensor with background suppression, type K80 IQ-Sense	X	3SF7 214-3JQ00		1	1 unit	574
• M18 IQ-Sense ultrasonic sensors, detection range 5 ... 30 cm	D	3SF6 232-3JA00		1	1 unit	574
• M18 IQ-Sense ultrasonic sensors, detection range 15 ... 100 cm	D	3SF6 233-3JA00		1	1 unit	574

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – Failsafe I/O modules

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
PM-E F PROFIsafe F power modules						
PM-E F pm PROFIsafe 24 V DC power modules For the safe disconnection of digital output modules	A	6ES7 138-4CF03-0AB0		1	1 unit	241
PM-E F pp PROFIsafe 24 V DC power modules For the safe disconnection of digital output modules	A	6ES7 138-4CF42-0AB0		1	1 unit	241
Accessories						
IM 151-1 HIGH-FEATURE interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 modules can be connected; connection of PROFIsafe modules, isochrone mode (clocked operation); connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1BA02-0AB0		1	1 unit	250
IM 151-3 PN HF interface modules For ET 200S; transmission rates up to 100 Mbit/s; up to 63 I/O modules up to 2 m width can be connected; 2 x connection to bus with RJ45 plug, including bus termination module	A	6ES7 151-3BA23-0AB0		1	1 unit	250
IM 151-3 PN FO interface modules For ET 200S; 2 PROFINET fiberoptic interfaces, integrated 2-port switch, up to 63 I/O modules up to 2 m wide can be connected, including bus termination module	A	6ES7151-3BB23-0AB0		1	1 unit	250
Terminal modules for power modules						
TM-P30S44-A0 Order unit: 1 unit 7 x 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals for PM-E F PROFIsafe	A	6ES7 193-4CK20-0AA0		1	1 unit	241
TM-P30C44-A0 Order unit: 1 unit 7 x 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals for PM-E F PROFIsafe	A	6ES7 193-4CK30-0AA0		1	1 unit	241
Distributed Safety V5.4 programming tools						
Task: Configuration software for configuring failsafe user programs for SIMATIC S7-300F, S7-400F and ET 200S Precondition: STEP 7 V5.3 SP3 and higher						
• Floating license	A	6ES7 833-1FC02-0YA5		1	1 unit	241
• Software Update Service	B	6ES7 833-1FC00-0YX2		1	1 unit	241
Distributed Safety upgrade from V5.x to V5.3; floating license for 1 user	B	6ES7 833-1FC02-0YE5		1	1 unit	241
SIMATIC Manual Collection Manuals on DVD-ROM, five languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET	A	6ES7 998-8XC01-8YE0		1	1 unit	230
SIMATIC Manual Collection update service for 1 year	C	6ES7 998-8XC01-8YE2		1	1 unit	230
F solid-state modules						
4/8 F-DI PROFIsafe 24 V DC solid-state modules 30 mm width, up to Category 4 (EN 954-1)	A	6ES7 138-4FA04-0AB0		1	1 unit	241
4 F-DO PROFIsafe 24 V DC/2 A solid-state modules 30 mm width, up to Category 4 (EN 954-1)	A	6ES7 138-4FB03-0AB0		1	1 unit	241
4 F-DI / 3 F-DO PROFIsafe 24 V DC/2 A solid-state modules 30 mm width, up to Category 3 (EN 954-1) / SIL 2 (IEC 62061)	A	6ES7 138-4FC01-0AB0		1	1 unit	241
Accessories						
Terminal modules for solid-state modules		See F terminal modules				
IM151-1 High-Feature interface modules For ET200S; transmission rates up to 12 Mbit/s; up to 63 modules can be connected, with isochrone mode, connection to bus through 9-pole Sub-D, including termination module	A	6ES7 151-1BA02-0AB0		1	1 unit	250
IM151-3 PN HF interface modules For ET 200S; transmission rates up to 100 Mbit/s; up to 63 I/O modules up to 2 m width can be connected; 2 x connection to bus with RJ45 plug, including bus termination module	A	6ES7 151-3BA23-0AB0		1	1 unit	250
IM151-3 PN FO interface modules For ET 200S; 2 PROFINET fiberoptic interfaces, integrated 2-port switch, up to 63 I/O modules up to 2 m wide can be connected, including bus termination module	A	6ES7 151-3BB23-0AB0		1	1 unit	250
Distributed Safety V5.4 programming tools						
Task: Configuration software for configuring failsafe user programs for SIMATIC S7-300F, S7-400F and ET 200S Precondition: STEP 7 V5.3 SP3 and higher						
• Floating license	A	6ES7 833-1FC02-0YA5		1	1 unit	241
• Software Update Service	B	6ES7 833-1FC00-0YX2		1	1 unit	241
Distributed Safety upgrade from V5.x to V5.3; floating license for 1 user	B	6ES7 833-1FC02-0YE5		1	1 unit	241

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – Failsafe I/O modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
F solid-state modules (continued)						
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)	A	6ES7 998-8XC01-8YE0		1	1 unit	230
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	C	6ES7 998-8XC01-8YE2		1	1 unit	230
SIPLUS F solid-state modules (extended temperature range)						
SIPLUS F solid-state modules						
SIPLUS ET200S F-DO 24 V PROFISAF -25 ... +60 °C with conformal coating based on 6ES7138-4FB03-0AB0 30 mm width, up to Category 4 (EN 954-1)	D	6AG1 138-4FB03-2AB0		1	1 unit	471
4 F-DO PROFIsafe 24 V DC/2 A solid-state modules 30 mm width, up to Category 4 (EN 954-1)	X	6AG1 138-4FB02-2AB0		1	1 unit	471
Accessories		For ordering data see F solid-state modules				
RELAY F solid-state modules						
1 F-RO 24 V DC/5A 24 ... 230 V AC/5A solid-state modules	A	6ES7 138-4FR00-0AA0		1	1 unit	241
Accessories						
Terminal modules for solid-state modules		See F terminal modules				
IM151-1 High-Feature interface modules For ET200S; transmission rates up to 12 Mbit/s; up to 63 modules can be connected, with isochrone mode, connection to bus through 9-pole Sub-D, including termination module	A	6ES7 151-1BA02-0AB0		1	1 unit	250
IM151-3 PN HF interface modules For ET 200S; transmission rates up to 100 Mbit/s; up to 63 I/O modules up to 2 m width can be connected; 2 x connection to bus with RJ45 plug, including bus termination module	A	6ES7 151-3BA23-0AB0		1	1 unit	250
IM151-3 PN FO interface modules For ET 200S; 2 PROFINET fiberoptic interfaces, integrated 2-port switch, up to 63 I/O modules up to 2 m wide can be connected, including bus termination module	A	6ES7 151-3BB23-0AB0		1	1 unit	250
Distributed Safety V5.4 programming tools <i>Task:</i> Configuration software for configuring failsafe user programs for SIMATIC S7-300F, S7-400F and ET 200S <i>Precondition:</i> STEP 7 V5.3 SP3 and higher						
• Floating license • Software Update Service	A	6ES7 833-1FC02-0YA5		1	1 unit	241
	B	6ES7 833-1FC00-0YX2		1	1 unit	241
Distributed Safety upgrade from V5.x to V5.3; floating license for 1 user	B	6ES7 833-1FC02-0YE5		1	1 unit	241
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)	A	6ES7 998-8XC01-8YE0		1	1 unit	230
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	C	6ES7 998-8XC01-8YE2		1	1 unit	230
F terminal modules						
F terminal modules for power modules						
TM-P15S23-A1 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CC20-0AA0		1	1 unit	250
TM-P15C23-A1 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CC30-0AA0		1	1 unit	250

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – Failsafe I/O modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
F terminal modules (continued)						
TM-P15S23-A0 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals	A	6ES7 193-4CD20-0AA0		1	1 unit	250
TM-P15C23-A0 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals	A	6ES7 193-4CD30-0AA0		1	1 unit	250
TM-P15S22-01 Order unit: 1 unit 2 x 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CE00-0AA0		1	1 unit	250
TM-P15C22-01 Order unit: 1 unit 2 x 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CE10-0AA0		1	1 unit	250
TM-P30S44-A0 Order unit: 1 unit 7 x 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals for PM-E F PROFIsafe	A	6ES7 193-4CK20-0AA0		1	1 unit	241
TM-P30C44-A0 Order unit: 1 unit 7 x 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals for PM-E F PROFIsafe	A	6ES7 193-4CK30-0AA0		1	1 unit	241
F terminal modules for solid-state modules						
TM-E30S44-01 Order unit: 1 unit 4 x 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CG20-0AA0		1	1 unit	250
TM-E30C44-01 Order unit: 1 unit 4 x 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CG30-0AA0		1	1 unit	250
TM-E30S46-A1 Order unit: 1 unit 4 x 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CF40-0AA0		1	1 unit	250
TM-E30C46-A1 Order unit: 1 unit 4 x 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CF50-0AA0		1	1 unit	250
Accessories						
Color coding plates Order unit: 200 units for TM-P, TM-E						
• White	A	6ES7 193-4LA20-0AA0		1	1 unit	250
• Yellow	A	6ES7 193-4LB20-0AA0		1	1 unit	250
• Yellow and green	A	6ES7 193-4LC20-0AA0		1	1 unit	250
• Red	A	6ES7 193-4LD20-0AA0		1	1 unit	250
• Blue	A	6ES7 193-4LF20-0AA0		1	1 unit	250
• Brown	A	6ES7 193-4LG20-0AA0		1	1 unit	250
• Turquoise	A	6ES7 193-4LH20-0AA0		1	1 unit	250
Ground connection terminals Order unit 1 unit For conductor cross-sections up to 25 mm ²						
	C	8WA2 868		1	50 units	041
Busbars 3 x 10 mm Order unit 1 unit						
	A	8WA2 842		1	1 unit	041
Inscription labels, with inscription Order unit: 1 set						
• 200 units for slot numbering (1 ... 20) 10 x	A	8WA8 861-0AB		100	200 units	041
• 200 units for slot numbering (1 ... 40) 5 x	A	8WA8 861-0AC		100	200 units	041
• 200 units for slot numbering (1 ... 64) 1 x, (1 ... 68) 2 x	C	8WA8 861-0DA		100	200 units	041
Inscription labels, blank 200 units for slot numbering						
	A	8WA8 848-2AY		100	100 units	041

For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S – IO-Link master modules

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
4SI IO-Link electronic modules						
IO-Link masters Connection method: Screw terminals, spring-type terminals or FastConnect	A	6ES7 138-4GA50-0AB0		1	1 unit	250
SIRIUS 4SI electronic modules						
IO-Link masters Connection method: Screw terminals, spring-type terminals or FastConnect	A	3RK1 005-0LB00-0AA0		1	1 unit	121

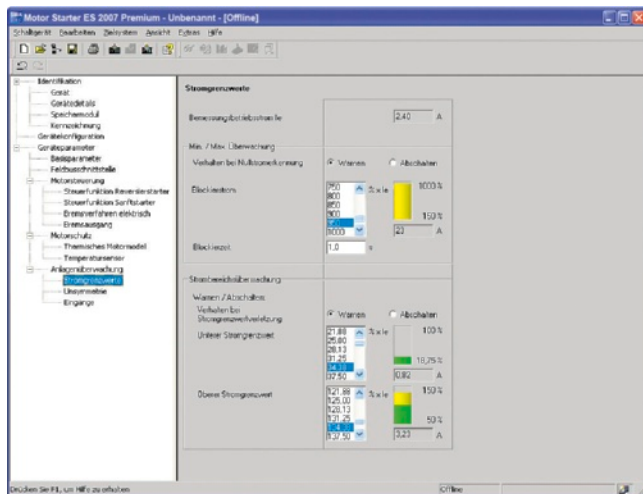
For Use in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S software
Motor Starter ES, block library for PCS 7

Overview

Motor Starter ES

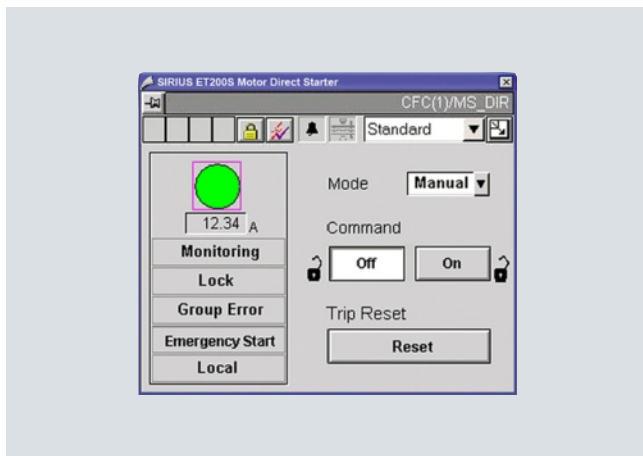


Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

Motor Starter ES is used for start-up, parameterization, diagnostics, documentation and the preventative maintenance of the motor starters in the SIMATIC ET 200S, SIMATIC ET 200pro, ECOFAST and SIRIUS M200D product families.

For detailed information on the Motor Starter ES software see Chapter 12 "Parametrization, Configuration and Visualization with SIRIUS".

SIRIUS motor starter block library for SIMATIC PCS 7



Faceplate of the motor block

With the SIRIUS motor starter PCS 7 block library, SIRIUS ET 200S motor starters (direct and reversing starters, direct-on-line soft starters) can be easily and simply integrated into the SIMATIC PCS 7 process control system. The SIRIUS motor starter PCS 7 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 about the block library for SIRIUS motor starters for SIMATIC PCS 7 see Chapter 12 "Parametrization, Configuration and Visualization with SIRIUS".