Motor Starters, Soft Starters and Load Feeders

6

Note:
For safety characteristics for motor starters see "Appendix" --> "Standards and approvals" --> "Overview".

Introduction

Overview


3RW30


3RW40


3RW44


3RA11


3RA12


3RV19


3RA61

		Order No.	Page
For operation in the control cabinet			
3RW soft starters for standard applications			
	• Application areas - Fans - Building/construction machines - Escalators - Air conditioning systems - Assembly lines - Operating mechanisms - Pumps - Presses - Transport systems - Fans - Compressors and coolers		
3RW30 soft starters	• SIRIUS 3RW30 soft starters for soft starting and smooth ramp-down of three-phase asynchronous motors • Performance range of up to 55 kW (at 400 V)	**3RW30**	6/5
3RW40 soft starters	• SIRIUS 3RW40 soft starters with the integral functions - Solid-state motor overload and intrinsic device protection and - Adjustable current limiting for the soft starting and stopping of three-phase asynchronous motors • Performance range of up to 250 kW (at 400 V)	**3RW40**	6/9
3RW soft starters for high-feature applications			
	• Application areas - Pumps - Compressors - Industrial refrigerating systems - Conveying systems - Machine tools - Fans - Cooling systems - Water transport - Hydraulics - Mills		
3RW44 soft starters	• In addition to soft starting and soft ramp-down, the solid-state SIRIUS 3RW44 soft starters provide numerous functions for higher-level requirements • Performance range - Up to 710 kW (at 400 V) in inline circuit and - Up to 1200 kW (at 400 V) in inside-delta circuit	**3RW44**	6/17
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 connected in pre-assembled kits (link modules, wiring kits and standard mounting rail or busbar adapters). The motor starter protector and contactor are mechanically and electrically connected by means of the link module • 4 sizes (S00, S0, S2, S3) • Can be supplied for direct start or reversing duty as - complete unit or - single devices for self-assembly		
3RA11 direct-on-line starters for snapping onto standard mounting rails or for screw fixing	• Rated control supply voltage 50 Hz 230 V AC and 24 V DC for 35 mm standard mounting rail or screw fixing	**3RA11**	6/29
3RA11 direct-on-line starters for busbar systems	• Rated control supply voltage 50 Hz 230 V AC and 24 V DC for 40 mm and 60 mm busbar systems	**3RA11**	6/33
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 screw fixing	**3RA12**	6/37
3RA12 reversing starters for busbar systems	• Rated control supply voltage 50 Hz 230 V AC and 24 V DC for 40 mm and 60 mm busbar systems	**3RA12**	6/41
3RV19 infeed system	• Convenient means of energy supply and distribution	**3RV19**	6/53
3RA6 compact feeders			
	• 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**	6/59
3RA62 reversing starters	• Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	**3RA62**	6/60
Accessories for 3RA6 direct-on-line and reversing starters	• Auxiliary switches, AS-i add-on modules	**3RA69**	6/61
Infeed systems for 3RA6	• Modular expandability, up to 100 A, terminals up to 70 mm^2	**3RA68**	6/66


3RA62


3RA68


3RK1 301


3RK1 304


3RK1 322


3RE10

		Order No.	Page
ET 200S 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	**3RK1 301**	6/72
Power modules for ET 200S motor starters	• For supplying and monitoring the auxiliary voltages for motor starters	**3RK1 903-0BA00**	6/79
Terminal modules for ET 200S motor starters	• Mechanical modules in which the motor starter and expansion modules are inserted	**3RK1 903**	6/80
Interface/solid-state modules	• Interface modules, power modules, reserve modules, digital/analog solid-state modules, F power and F solid-state modules, F terminal modules, 4 IQ-Sense sensor module, SSI module, 1 STEP step module, positioning modules, counter modules, terminal modules for power and solid-state modules	**6ES7 1**	6/84
ET 200S Safety motor starters Solutions local/PROFIsafe			
ET 200S Failsafe motor starters	• High-Feature direct-on-line and reversing starters	**3RK1 301**	6/104
Safety Module local	• For safety category 4 according to EN 954-1	**3RK1 903**	6/106
Safety Module PROFIsafe	• Sensor and actuator assignment are freely configurable (distributed safety concept)	**3RK1 903**	6/111
For operation in the field, high degree of protection			
ET 200pro motor starters			
ET 200pro motor starters	• Standard and High Feature	**3RK1 304**	6/114
ET 200pro isolator modules	• With switch disconnector function for safe disconnection	**3RK1 304**	6/116
Safety modules	• Isolator module and 400 V disconnecting module	**3RK1 304**	6/117
Accessories for ET 200pro motor starters	• Interface, expansion and power modules	**6ES7 1**	6/119
AS-Interface compact starters, 400 V AC			
	• Completely factory-wired load feeders with degree of protection IP65, designed for switching and protecting any type of AC loads, in particular standard induction motors in direct-on-line or reversing duty	**3RK1 322**	6/130
ECOFAST motor starters and soft starters			
3RK1 3 ECOFAST motor starters and soft starters	• Distributed motor starters for PROFIBUS and AS-Interface • Functionality ranges from direct-on-line starters, through reversing starters and soft starters as far as frequency converters	**3RK1 3**	6/133
3RE encapsulated starters			
	• The 3RE1 encapsulated starters are used for switching and for the inverse-time delayed protection of load feeders up to 22 kW at 400 V AC • The starters are available as direct-on-line starters for motors with a single direction of rotation and as reversing starters for motors with two directions of rotation		
3RE10 direct-on-line starters	• Molded-plastic enclosure, degree of protection IP65, including contactor	**3RE10**	6/135
3RE13 reversing starters	• Molded-plastic enclosure, degree of protection IP65, including contactor assembly	**3RE13**	6/136
Accessories	• Molded-plastic enclosure, degree of protection IP65, for direct-on-line and reversing starters	**3RE19**	6/137
AS-Interface motor starters and soft starters			
IP65/67 motor starters and load feeders			
Motor starters, 24 V DC	• For the lowest performance range up to 70 W, 24 V DC motors and the associated sensor technology can also be directly and locally connected to AS-Interface quickly and easily. Three different versions are available: - Single direct-on-line starters - Double direct-on-line starters - Reversing starters	**3RK1 400-1**	6/138

General data

Overview

The advantages of the SIRIUS soft starters at a glance:

- Soft starting and smooth ramp-down[1)]
- Stepless starting
- Reduction of current peaks
- Avoidance of mains voltage fluctuations during starting
- Reduced load on the power supply network
- Reduction of the mechanical load in the operating mechanism
- Considerable space savings and reduced wiring compared with conventional starters
- Maintenance-free switching
- Very easy handling
- Fits perfectly in the SIRIUS modular system




		SIRIUS 3RW30 Standard applications	SIRIUS 3RW40 Standard applications	SIRIUS 3RW44 High-Feature applications
Rated current up to 40 °C	A	3 ... 106	12.5 ... 432	29 ... 1214
Rated operational voltage	V	200 ... 480	200 ... 600	200 ... 690
Motor rating at 400 V				
• Inline circuit	kW	1.5 ... 55	5.5 ... 250	15 ... 710
• Inside-delta circuit	kW	--	--	22 ... 1200
Ambient temperature	°C	-25 ... +60	-25 ... +60	0 ... +60
Soft starting/ramp-down		✔[1)]	✔	✔
Voltage ramp		✔	✔	✔
Starting/stopping voltage	%	40 ... 100	40 ... 100	20 ... 100
Starting and ramp-down time	s	0 ... 20	0 ... 20	1 ... 360
Torque control		--	--	✔
Starting/stopping torque	%	--	--	20 ... 100
Torque limit	%	--	--	20 ... 200
Ramp time	s	--	--	1 ... 360
Integral bypass contact system		✔	✔	✔
Intrinsic device protection		--	✔	✔
Motor overload protection		--	✔	✔
Thermistor motor protection		--	✔[2)]	✔
Integrated remote RESET		--	✔[3)]	✔
Adjustable current limiting		--	✔	✔
Inside-delta circuit		--	--	✔
Breakaway pulse		--	--	✔
Creep speed in both directions of rotation		--	--	✔
Pump ramp-down		--	--	✔[4)]
DC braking		--	--	✔[4) 5)]
Combined braking		--	--	✔[4) 5)]
Motor heating		--	--	✔
Communication		--	--	With PROFIBUS DP (optional)
External display and operator module		--	--	(optional)
Operating measured value display		--	--	✔
Error logbook		--	--	✔
Event list		--	--	✔
Slave pointer function		--	--	✔
Trace function		--	--	✔[6)]
Programmable control inputs and outputs		--	--	✔
Number of parameter sets		1	1	3
Parameterization software (Soft Starter ES)		--	--	✔
Power semiconductors (thyristors)		2 controlled phases	2 controlled phases	3 controlled phases
Screw terminals		✔	✔	✔
Spring-type terminals		✔	✔	✔
UL/CSA		✔	✔	✔
CE marking		✔	✔	✔
Soft starting under heavy starting conditions		--	--	✔[4)]
Configuring support		Win-Soft Starter, electronic selection slider ruler, Technical Assistance Tel.: +49 (0)911 895 5900		

✔ Function is available; -- Function is not available.

1) Only soft starting available for 3RW30.
2) Optional up to size S3 (device variant).
3) Available for 3RW40 2. to 3RW40 4.; optional for 3RW40 5. and 3RW40 7..
4) Calculate soft starter and motor with size allowance where required.
5) Not possible in inside-delta circuit.
6) Trace function with Soft Starter ES software.

You can find further information on the Internet at:
http://www.siemens.com/softstarter

Overview

The SIRIUS 3RW30 soft starters reduce the motor voltage through variable phase control and increase it in ramp-like mode from a selectable starting voltage up to mains voltage. During starting, these devices limit the torque as well as the current and prevent the shocks which arise during direct starts or wye-delta starts. In this way, mechanical loads and mains voltage dips can be reliably reduced.

Soft starting reduces the stress on the connected equipment and results in lower wear and therefore longer periods of trouble-free production. The selectable start value means that the soft starters can be adjusted individually to the requirements of the application in question and unlike wye-delta starters are not restricted to two-stage starting with fixed voltage ratios.

The SIRIUS 3RW30 soft starters are characterized above all by their small space requirements. Integrated bypass contacts mean that no power loss has to be taken into the bargain at the power semiconductors (thyristors) after the motor has started up. This cuts down on heat losses, enabling a more compact design and making external bypass circuits superfluous.

Various versions of the SIRIUS 3RW30 soft starters are available:

- Standard version for fixed-speed three-phase motors, sizes S00, S0, S2 and S3, with integrated bypass contact system
- Version for fixed-speed three-phase motors in a 22.5 mm enclosure without bypass

Soft starters rated up to 55 kW (at 400 V) for standard applications in three-phase networks are available. Extremely small sizes, low power losses and simple start-up are just three of the many advantages of this soft starter.

Application

The 3RW30 soft starters are suitable for soft starting of three-phase asynchronous motors.

Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire starting time. Due to continuous voltage influencing, current and torque peaks, which are unavoidable in the case of wye-delta starters, for instance, do not occur.

Application areas

- Pumps
- Heat pumps
- Hydraulic pumps
- Presses
- Conveyors
- Roller conveyor
- Screw conveyors

3RW30
for standard applications

Selection and ordering data


3RW30 18-1BB14


3RW30 28-1BB14


3RW30 38-1BB14


3RW30 47-1BB14


3RW30 03-2CB54

Ambient temperature 40 °C				Ambient temperature 50 °C					Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current I_e [1]	Rated power of induction motors for rated operational voltage U_e			Rated operational current I_e [1]	Rated power of induction motors for rated operational voltage U_e											
	230 V	400 V	500 V		200 V	230 V	460 V	575 V								
A	kW	kW	kW	A	hp	hp	hp	hp								
Rated operational voltage U_e 200 ... 480 V [2]																
• With screw terminals																
3.6	0.75	**1.5**	--	3	0.5	0.5	**1.5**	--	**S00**	▶	**3RW30 13-1BB□4**		1	1 unit	131	0.580
6.5	1.5	**3**	--	4.8	1	1	**3**	--	**S00**	▶	**3RW30 14-1BB□4**		1	1 unit	131	0.580
9	2.2	**4**	--	7.8	2	2	**5**	--	**S00**	▶	**3RW30 16-1BB□4**		1	1 unit	131	0.580
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S00**	▶	**3RW30 17-1BB□4**		1	1 unit	131	0.580
17.6	4	**7.5**	--	17	3	3	**10**	--	**S00**	▶	**3RW30 18-1BB□4**		1	1 unit	131	0.580
• With spring-type terminals																
3.6	0.75	**1.5**	--	3	0.5	0.5	**1.5**	--	**S00**	B	**3RW30 13-2BB□4**		1	1 unit	131	0.580
6.5	1.5	**3**	--	4.8	1	1	**3**	--	**S00**	B	**3RW30 14-2BB□4**		1	1 unit	131	0.580
9	2.2	**4**	--	7.8	2	2	**5**	--	**S00**	B	**3RW30 16-2BB□4**		1	1 unit	131	0.580
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S00**	B	**3RW30 17-2BB□4**		1	1 unit	131	0.580
17.6	4	**7.5**	--	17	3	3	**10**	--	**S00**	B	**3RW30 18-2BB□4**		1	1 unit	131	0.580
• With screw terminals																
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	▶	**3RW30 26-1BB□4**		1	1 unit	131	0.690
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	▶	**3RW30 27-1BB□4**		1	1 unit	131	0.690
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	▶	**3RW30 28-1BB□4**		1	1 unit	131	0.690
• With spring-type terminals																
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	B	**3RW30 26-2BB□4**		1	1 unit	131	0.690
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	B	**3RW30 27-2BB□4**		1	1 unit	131	0.690
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	B	**3RW30 28-2BB□4**		1	1 unit	131	0.690
• With screw-type or spring-type terminals																
45	11	**22**	--	42	10	15	**30**	--	**S2**	▶	**3RW30 36-□BB□4**		1	1 unit	131	1.200
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	▶	**3RW30 37-□BB□4**		1	1 unit	131	1.200
72	22	**37**	--	62	20	20	**40**	--	**S2**	▶	**3RW30 38-□BB□4**		1	1 unit	131	1.200
• With screw-type or spring-type terminals																
80	22	**45**	--	73	20	25	**50**	--	**S3**	▶	**3RW30 46-□BB□4**		1	1 unit	131	1.710
106	30	**55**	--	98	30	30	**75**	--	**S3**	▶	**3RW30 47-□BB□4**		1	1 unit	131	1.710
Order No. supplement for connection types																
• With screw terminals											**1**					
• With spring-type terminals [3]											**2**					
Order No. supplement for rated control supply voltage U_s																
• 24 V AC/DC												**0**				
• 110 ... 230 V												**1**				
Soft starters for easy starting conditions and high switching frequency, rated operational voltage U_e 200 ... 400 V, rated control supply voltage U_s 24 ... 230 V AC/DC																
3	0.55	**1.1**	--	2.6	0.5	**0.5**	--	--	22.5 mm							
• With screw terminals										▶	**3RW30 03-1CB54**		1	1 unit	131	0.207
• With spring-type terminals										A	**3RW30 03-2CB54**		1	1 unit	131	0.188

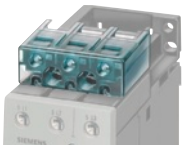
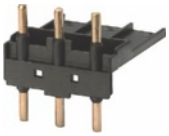
1) Stand-alone installation.
2) Soft starter with screw terminals: delivery times ▶ (preferred type).
3) Main circuit connection: screw terminals.

Note:
Selection of the soft starter depends on the rated motor current.

The SIRIUS 3RW30 solid-state soft starters are designed for easy starting conditions. $J_{Load} < 10 \times J_{Motor}$. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device.
Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see technical specifications.

*** You can order this quantity or a multiple thereof.**

Accessories

	For soft starters Type	Size	Motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Auxiliary terminals										
	Auxiliary terminals, 3-pole									
	3RW30 4.	**S3**		B	**3RT19 46-4F**		1	1 unit	101	0.035
Covers for soft starters										
	**Terminal covers for box terminals** Additional touch protection to be fitted at the box terminals (2 units required per device)									
	3RW30 3.	**S2**		►	**3RT19 36-4EA2**		1	1 unit	101	0.020
	3RW30 4.	**S3**		►	**3RT19 46-4EA2**		1	1 unit	101	0.025
	**Terminal covers for cable lugs and busbar connections** For complying with the phase clearances and as touch protection if box terminal is removed (2 units required per contactor)									
	3RW30 4.	**S3**		►	**3RT19 46-4EA1**		1	1 unit	101	0.040
Link modules to motor starter protectors										
	3RW30 13, 3RW30 14, 3RW30 16, 3RW30 17, 3RW30 18	**S00**	**S0**	►	**3RA19 21-1A**		1	10 units	101	0.028
	3RW30 26	**S0**	**S0**	►	**3RA19 21-1A**		1	10 units	101	0.028
	3RW30 36	**S2**	**S2**	►	**3RA19 31-1A**		1	5 units	101	0.033
	3RW30 46, 3RW30 47	**S3**	**S3**	►	**3RA19 41-1A**		1	5 units	101	0.072
Operating instructions[1]										
	For soft starters									
	3RW30 1.	**S00**			**3ZX10 12-0RW30-2DA1**					
	3RW30 2.	**S0**								
	3RW30 3.	**S2**								
	3RW30 4.	**S3**								

[1] The operating instructions are included in the scope of supply.

	Version	Functionality Functions	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Covers and push-in lugs (only for 3RW30 03)									
	**Sealable covers**	For securing against unauthorized adjustment of setting knobs	►	**3RP1 902**		1	5 units	101	0.004
3RP1 902									
	**Push-in lugs** For screw fixing		►	**3RP1 903**		1	10 units	101	0.002
3RP1 903									

* You can order this quantity or a multiple thereof.

More information

Application examples for normal starting (Class 10)

Normal starting Class 10 (up to 20 s with 300 % $I_{n\ motor}$),
The soft starter rating can be selected to be as high as the rating of the motor used.

Application		Conveyor belt	Roller conveyor	Compressor	Small fan	Pump	Hydraulic pump
Starting parameters							
• Voltage ramp and current limiting							
- Starting voltage	%	70	60	50	40	40	40
- Starting time	s	10	10	20	20	10	10

Note:
These tables present sample set values and device sizes. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during start-up.
The soft starter dimensions should be checked where necessary with the Win-Soft Starter software or with the help of Technical Assistance.

Configuration

The 3RW solid-state motor controllers are designed for easy starting conditions. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. For accurate dimensioning, use the Win-Soft Starter selection and simulation program.

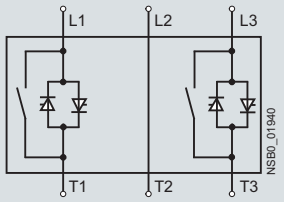
If necessary, an overload relay for heavy starting must be selected where long starting times are involved. PTC sensors are recommended.

In the motor feeder between the SIRIUS 3RW soft starter and the motor, no capacitive elements are permitted (e. g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses, controls and overload relays) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately. Please observe the maximum switching frequencies specified in the technical specifications.

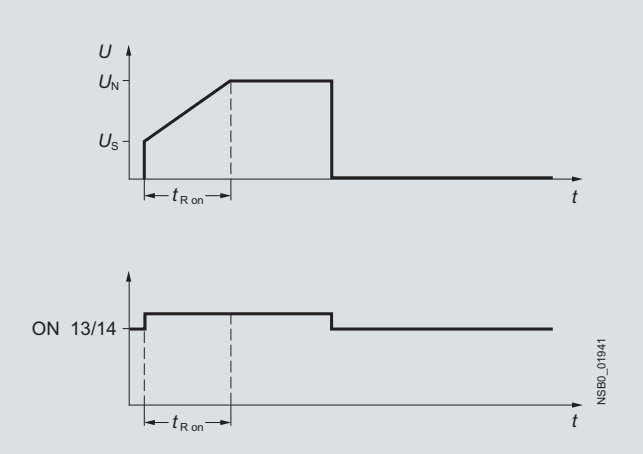
Note:
When induction motors are switched on, voltage drops normally appear on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

Power electronics schematic circuit diagram



A bypass contact system is already integrated in the 3RW30 soft starter and therefore does not have to be ordered separately.

Status graphs



Win-Soft Starter selection and simulation program

With this software, you can simulate and select all Siemens soft starters, taking into account various parameters such as mains properties, motor and load data, and special application requirements.

The software is a valuable tool, which makes complicated, lengthy manual calculations for determining the required soft starters superfluous.

The Win-Soft Starter selection and simulation program can be downloaded from:
http://www.siemens.de/sanftstarter > Software

More information can be found on the Internet at:
http://www.siemens.de/sanftstarter

Overview

SIRIUS 3RW40 soft starters have all the same advantages as the 3RW30 soft starters.

The SIRIUS 3RW40 soft starters are characterized above all by their small space requirements. Integrated bypass contacts mean that no power loss has to be taken into the bargain at the power semiconductors (thyristors) after the motor has started up. This cuts down on heat losses, enabling a more compact design and making external bypass circuits superfluous.

At the same time this soft starter comes with additional integrated functions such as adjustable current limiting, motor overload and intrinsic device protection, and optional thermistor motor protection. The higher the motor rating, the more important these functions because they make it unnecessary to purchase and install protection equipment such as overload relays.

Internal intrinsic device protection prevents the thermal overloading of the thyristors and the power section defects this can cause. As an option the thyristors can also be protected by semiconductor fuses from short-circuiting.

Thanks to integrated status monitoring and fault monitoring, this compact soft starter offers many different diagnostics options. Up to four LEDs and relay outputs permit differentiated monitoring and diagnostics of the operating mechanism by indicating the operating state as well as for example mains or phase failure, missing load, non-permissible tripping time/class setting, thermal overloading or device faults.

Soft starters rated up to 250 kW (at 400 V) for standard applications in three-phase networks are available. Extremely small sizes, low power losses and simple start-up are just three of the many advantages of the SIRIUS 3RW40 soft starters.

"Increased safety" type of protection EEx e according to ATEX directive 94/9/EC

The 3RW40 soft starter sizes S0 to S12 are suitable for the starting of explosion-proof motors with "increased safety" type of protection EEx e.
See "Appendix" –> "Standards and approvals" –> "Type overview of approved devices for potentially explosive areas (ATEX explosion protection)".

Application

The SIRIUS 3RW40 solid-state soft starters are suitable for soft starting and stopping of three-phase asynchronous motors.

Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire starting time and disturbing direct current components are eliminated in addition. This not only enables the two-phase starting of motors up to 250 kW (at 400 V) but also avoids the current and torque peaks which occur e. g. with wye-delta starters.

Application areas

- Pumps
- Heat pumps
- Hydraulic pumps
- Presses
- Conveyors
- Roller conveyor
- Screw conveyors
- Escalators
- Piston compressors
- Screw compressors
- Small fans
- Centrifugal blowers
- Bow thrusters
- Stirrers
- Extruders
- Lathes
- Milling machines

Selection and ordering data


3RW40 28-1BB14


3RW40 38-1BB14


3RW40 47-1BB14

Ambient temperature 40 °C				Ambient temperature 50 °C					Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current I_e [1]	Rated power of induction motors for rated operational voltage U_e			Rated operational current I_e [1]	Rated power of induction motors for rated operational voltage U_e											
	230 V	400 V	500 V		200 V	230 V	460 V	575 V								
A	kW	kW	kW	A	hp	hp	hp	hp								kg
Rated operational voltage U_e 200 ... 480 V [2]																
• With screw terminals																
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S0**	▶	**3RW40 24-1BB□4**		1	1 unit	131	0.770
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	▶	**3RW40 26-1BB□4**		1	1 unit	131	0.770
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	▶	**3RW40 27-1BB□4**		1	1 unit	131	0.770
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	▶	**3RW40 28-1BB□4**		1	1 unit	131	0.770
• With spring-type terminals																
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S0**	B	**3RW40 24-2BB□4**		1	1 unit	131	0.770
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	B	**3RW40 26-2BB□4**		1	1 unit	131	0.770
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	B	**3RW40 27-2BB□4**		1	1 unit	131	0.770
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	B	**3RW40 28-2BB□4**		1	1 unit	131	0.770
• With screw or spring-type terminals																
45	11	**22**	--	42	10	15	**30**	--	**S2**	▶	**3RW40 36-□BB□4**		1	1 unit	131	1.350
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	▶	**3RW40 37-□BB□4**		1	1 unit	131	1.350
72	22	**37**	--	62	20	20	**40**	--	**S2**	▶	**3RW40 38-□BB□4**		1	1 unit	131	1.350
• With screw or spring-type terminals																
80	22	**45**	--	73	20	25	**50**	--	**S3**	▶	**3RW40 46-□BB□4**		1	1 unit	131	1.900
106	30	**55**	--	98	30	30	**75**	--	**S3**	▶	**3RW40 47-□BB□4**		1	1 unit	131	1.900
Rated operational voltage U_e 400 ... 600 V																
• With screw terminals																
12.5	--	5.5	**7.5**	11	--	--	7.5	**10**	**S0**	B	**3RW40 24-1BB□5**		1	1 unit	131	0.770
25	--	11	**15**	23	--	--	15	**20**	**S0**	B	**3RW40 26-1BB□5**		1	1 unit	131	0.770
32	--	15	**18.5**	29	--	--	20	**25**	**S0**	B	**3RW40 27-1BB□5**		1	1 unit	131	0.770
38	--	18.5	**22**	34	--	--	25	**30**	**S0**	B	**3RW40 28-1BB□5**		1	1 unit	131	0.770
• With spring-type terminals																
12.5	--	5.5	**7.5**	11	--	--	7.5	**10**	**S0**	B	**3RW40 24-2BB□5**		1	1 unit	131	0.770
25	--	11	**15**	23	--	--	15	**20**	**S0**	B	**3RW40 26-2BB□5**		1	1 unit	131	0.770
32	--	15	**18.5**	29	--	--	20	**25**	**S0**	B	**3RW40 27-2BB□5**		1	1 unit	131	0.770
38	--	18.5	**22**	34	--	--	25	**30**	**S0**	B	**3RW40 28-2BB□5**		1	1 unit	131	0.770
• With screw or spring-type terminals																
45	--	22	**30**	42	--	--	30	**40**	**S2**	B	**3RW40 36-□BB□5**		1	1 unit	131	1.350
63	--	30	**37**	58	--	--	40	**50**	**S2**	B	**3RW40 37-□BB□5**		1	1 unit	131	1.350
72	--	37	**45**	62	--	--	40	**60**	**S2**	B	**3RW40 38-□BB□5**		1	1 unit	131	1.350
• With screw or spring-type terminals																
80	--	45	**55**	73	--	--	50	**60**	**S3**	B	**3RW40 46-□BB□5**		1	1 unit	131	1.900
106	--	55	**75**	98	--	--	75	**75**	**S3**	B	**3RW40 47-□BB□5**		1	1 unit	131	1.900

Order No. supplement for connection types

- With screw terminals **1**
- With spring-type terminals [3] **2**

Order No. supplement for rated control supply voltage U_s

- 24 V AC/DC **0**
- 110 ... 230 V AC/DC **1**

[1] Stand-alone installation without auxiliary fan.

[2] Soft starter with screw terminals: delivery times ▶ (preferred type).

[3] Main circuit connection: screw terminals.

Note:
Selection of the soft starter depends on the rated motor current.
The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions. $J_{Load} < 10 \times J_{Motor}$. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see technical specifications.

* You can order this quantity or a multiple thereof.


3RW40 28-1TB04


3RW40 38-1TB04


3RW40 47-1TB04

Ambient temperature 40 °C				Ambient temperature 50 °C					Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current I_e [1]	Rated power of induction motors for rated operational voltage U_e			Rated operational current I_e [1]	Rated power of induction motors for rated operational voltage U_e											
	230 V	400 V	500 V		200 V	230 V	460 V	575 V								
A	kW	kW	kW	A	hp	hp	hp	hp								kg
Rated operational voltage U_e 200 ... 480 V[2], with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC																
• With screw terminals																
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S0**	▶	**3RW40 24-1TB04**		1	1 unit	131	0.770
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	▶	**3RW40 26-1TB04**		1	1 unit	131	0.770
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	▶	**3RW40 27-1TB04**		1	1 unit	131	0.770
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	▶	**3RW40 28-1TB04**		1	1 unit	131	0.770
• With spring-type terminals																
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S0**	B	**3RW40 24-2TB04**		1	1 unit	131	0.770
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	B	**3RW40 26-2TB04**		1	1 unit	131	0.770
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	B	**3RW40 27-2TB04**		1	1 unit	131	0.770
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	B	**3RW40 28-2TB04**		1	1 unit	131	0.770
• With screw or spring-type terminals																
45	11	**22**	--	42	10	15	**30**	--	**S2**	▶	**3RW40 36-☐TB04**		1	1 unit	131	1.350
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	▶	**3RW40 37-☐TB04**		1	1 unit	131	1.350
72	22	**37**	--	62	20	20	**40**	--	**S2**	▶	**3RW40 38-☐TB04**		1	1 unit	131	1.350
• With screw or spring-type terminals																
80	22	**45**	--	73	20	25	**50**	--	**S3**	▶	**3RW40 46-☐TB04**		1	1 unit	131	1.900
106	30	**55**	--	98	30	30	**75**	--	**S3**	▶	**3RW40 47-☐TB04**		1	1 unit	131	1.900
Rated operational voltage U_e 400 ... 600 V, with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC																
• With screw terminals																
12.5	--	5.5	**7.5**	11	--	--	7.5	**10**	**S0**	B	**3RW40 24-1TB05**		1	1 unit	131	0.770
25	--	11	**15**	23	--	--	15	**20**	**S0**	B	**3RW40 26-1TB05**		1	1 unit	131	0.770
32	--	15	**18.5**	29	--	--	20	**25**	**S0**	B	**3RW40 27-1TB05**		1	1 unit	131	0.770
38	--	18.5	**22**	34	--	--	25	**30**	**S0**	B	**3RW40 28-1TB05**		1	1 unit	131	0.770
• With spring-type terminals																
12.5	--	5.5	**7.5**	11	--	--	7.5	**10**	**S0**	B	**3RW40 24-2TB05**		1	1 unit	131	0.770
25	--	11	**15**	23	--	--	15	**20**	**S0**	B	**3RW40 26-2TB05**		1	1 unit	131	0.770
32	--	15	**18.5**	29	--	--	20	**25**	**S0**	B	**3RW40 27-2TB05**		1	1 unit	131	0.770
38	--	18.5	**22**	34	--	--	25	**30**	**S0**	B	**3RW40 28-2TB05**		1	1 unit	131	0.770
• With screw or spring-type terminals																
45	--	22	**30**	42	--	--	30	**40**	**S2**	B	**3RW40 36-☐TB05**		1	1 unit	131	1.350
63	--	30	**37**	58	--	--	40	**50**	**S2**	B	**3RW40 37-☐TB05**		1	1 unit	131	1.350
72	--	37	**45**	62	--	--	40	**60**	**S2**	B	**3RW40 38-☐TB05**		1	1 unit	131	1.350
• With screw or spring-type terminals																
80	--	45	**55**	73	--	--	50	**60**	**S3**	B	**3RW40 46-☐TB05**		1	1 unit	131	1.900
106	--	55	**75**	98	--	--	75	**75**	**S3**	B	**3RW40 47-☐TB05**		1	1 unit	131	1.900

Order No. supplement for connection types

	1
• With screw terminals	
• With spring-type terminals[3]	2

1) Stand-alone installation without auxiliary fan.

2) Soft starter with screw terminals: delivery times ▶ (preferred type).

3) Main circuit connection: screw terminals.

Note:
Selection of the soft starter depends on the rated motor current.
The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions. $J_{Load} < 10 \times J_{Motor}$. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see technical specifications.

*** You can order this quantity or a multiple thereof.**

3RW Soft Starters

3RW40
for standard applications

3RW40 56-6BB44

3RW40 76-6BB44

Ambient temperature 40 °C				Ambient temperature 50 °C					Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current I_e [1]	Rated power of induction motors for rated operational voltage U_e			Rated operational current I_e [1]	Rated power of induction motors for rated operational voltage U_e											
	230 V	400 V	500 V		200 V	230 V	460 V	575 V								
A	kW	kW	kW	A	hp	hp	hp	hp								kg
Rated operational voltage U_e 200 ... 460 V [2]																
• With screw or spring-type terminals																
134	37	**75**	--	117	30	40	**75**	--	**S6**	B	**3RW40 55-□BB□4**		1	1 unit	131	4.900
162	45	**90**	--	145	40	50	**100**	--		B	**3RW40 56-□BB□4**		1	1 unit	131	6.900
• With screw or spring-type terminals																
230	75	**132**	--	205	60	75	**150**	--	**S12**	B	**3RW40 73-□BB□4**		1	1 unit	131	8.900
280	90	**160**	--	248	75	100	**200**	--		B	**3RW40 74-□BB□4**		1	1 unit	131	8.900
356	110	**200**	--	315	100	125	**250**	--		B	**3RW40 75-□BB□4**		1	1 unit	131	8.900
432	132	**250**	--	385	125	150	**300**	--		B	**3RW40 76-□BB□4**		1	1 unit	131	8.900
Rated operational voltage U_e 400 ... 600 V [3]																
• With screw or spring-type terminals																
134	--	75	**90**	117	--	--	75	**100**	**S6**	B	**3RW40 55-□BB□5**		1	1 unit	131	4.900
162	--	90	**110**	145	--	--	100	**150**		B	**3RW40 56-□BB□5**		1	1 unit	131	6.900
• With screw or spring-type terminals																
230	--	132	**160**	205	--	--	150	**200**	**S12**	B	**3RW40 73-□BB□5**		1	1 unit	131	8.900
280	--	160	**200**	248	--	--	200	**250**		B	**3RW40 74-□BB□5**		1	1 unit	131	8.900
356	--	200	**250**	315	--	--	250	**300**		B	**3RW40 75-□BB□5**		1	1 unit	131	8.900
432	--	250	**315**	385	--	--	300	**400**		B	**3RW40 76-□BB□5**		1	1 unit	131	8.900

Order No. supplement for connection types [4]

- With screw terminals — **6**
- With spring-type terminals — **2**

Order No. supplement for the rated control supply voltage U_s [5]

- 115 V AC — **3**
- 230 V AC — **4**

1) Stand-alone installation.

2) Soft starter with screw terminals: delivery times ▶ (preferred type).

3) Soft starter with screw terminals: delivery time A.

4) Main circuit connection: busbar connection.

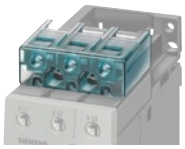
5) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:
Selection of the soft starter depends on the rated motor current.

The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions. $J_{Load} < 10 \times J_{Motor}$. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see technical specifications.

* You can order this quantity or a multiple thereof.

Accessories

	For soft starters Type	Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Box terminal blocks for soft starters										
	**For round and ribbon cables**									
	3RW40 5.	**S6**	• Up to 70 mm²	▶	**3RT19 55-4G**		1	1 unit	101	0.230
			• Up to 120 mm²	▶	**3RT19 56-4G**		1	1 unit	101	0.260
	3RW40 7.	**S12**	• Up to 240 mm²	▶	**3RT19 66-4G**		1	1 unit	101	0.676
Auxiliary terminals										
	Auxiliary terminals, 3-pole									
	3RW40 4.	**S3**		B	**3RT19 46-4F**		1	1 unit	101	0.035
Covers for soft starters										
	**Terminal covers for box terminals**									
	Additional touch protection to be fitted at the box terminals (2 units required per device)									
	3RW40 3.	**S2**		▶	**3RT19 36-4EA2**		1	1 unit	101	0.020
	3RW40 4.	**S3**		▶	**3RT19 46-4EA2**		1	1 unit	101	0.025
	3RW40 5.	**S6**		▶	**3RT19 56-4EA2**		1	1 unit	101	0.030
	3RW40 7.	**S12**		▶	**3RT19 66-4EA2**		1	1 unit	101	0.040
	**Terminal covers for cable lugs and busbar connections**									
	3RW40 4.	**S3**	For complying with the phase clearances and as touch protection if box terminal is removed (2 units required per contactor)	▶	**3RT19 46-4EA1**		1	1 unit	101	0.040
	3RW40 5.	**S6**		▶	**3RT19 56-4EA1**		1	1 unit	101	0.070
	3RW40 7.	**S12**		▶	**3RT19 66-4EA1**		1	1 unit	101	0.130
	**Sealing covers**									
	3RW40 2. to 3RW40 4.	**S0, S2, S3**		▶	**3RW49 00-0PB10**		1	1 unit	131	0.005
	3RW40 5. and 3RW40 7.	**S6, S12**		▶	**3RW49 00-0PB00**		1	1 unit	131	0.010
Modules for RESET[1)]										
	**Modules for remote RESET, electrical**									
	Operating range 0.85 ... 1.1 x U_s, power consumption 80 VA AC, 70 W DC, ON period 0.2 s ... 4 s, switching frequency 60/h									
	3RW40 5. and 3RW40 7.	**S6, S12**	• 24 ... 30 V AC/DC	▶	**3RU19 00-2AB71**		1	1 unit	101	0.066
			• 110 ... 127 V AC/DC	▶	**3RU19 00-2AF71**		1	1 unit	101	0.067
			• 220 ... 250 V AC/DC	▶	**3RU19 00-2AM71**		1	1 unit	101	0.066
	**Mechanical RESET comprising**									
	3RW40 5. and 3RW40 7.	**S6, S12**	• Resetting plungers, holders and formers	▶	**3RU19 00-1A**		1	1 unit	101	0.038
			• Suitable pushbutton IP65, Ø 22 mm, 12 mm stroke	B	**3SB30 00-0EA11**		1	1 unit	102	0.020
			• Extension plunger	A	**3SX13 35**		1	1 unit	102	0.004
	**Cable releases with holder for RESET**									
	For Ø 6.5 mm holes in the control panel; max. control panel thickness 8 mm									
	3RW40 5. and 3RW40 7.	**S6, S12**	• Length 400 mm	▶	**3RU19 00-1B**		1	1 unit	101	0.063
			• Length 600 mm	▶	**3RU19 00-1C**		1	1 unit	101	0.073

[1)] Remote RESET already integrated in the 3RW40 2. to 3RW40 4. soft starters.

* You can order this quantity or a multiple thereof.

3RW40
for standard applications

For soft starters Type	Size	Motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Link modules to motor starter protectors									
									
3RW40 24, 3RW40 26	**S0**	**S0**	►	**3RA19 21-1A**		1	10 units	101	0.028
3RW40 36	**S2**	**S2**	►	**3RA19 31-1A**		1	5 units	101	0.033
3RW40 46, 3RW40 47	**S3**	**S3**	►	**3RA19 41-1A**		1	5 units	101	0.072
Fans (to increase switching frequency and for device mounting in positions different from the normal position)									
									
3RW40 2.	**S0**		►	**3RW49 28-8VB00**		1	1 unit	131	0.010
3RW40 3., 3RW40 4.	**S2, S3**		►	**3RW49 47-8VB00**		1	1 unit	131	0.020
Operating instructions[1)]									
For soft starters									
3RW40 2.	**S0**			**3ZX10 12-0RW40-1AA1**					
3RW40 3.	**S2**								
3RW40 4.	**S3**								
3RW40 5.	**S6**			**3ZX10 12-0RW40-2DA1**					
3RW40 7.	**S12**								

[1)] The operating instructions are included in the scope of supply.

Spare parts

For soft starters Type	Size	Version Rated control supply voltage U_s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Fans									
									
Fans									
3RW40 5.-.BB3.	**S6**	115 V AC	►	**3RW49 36-8VX30**		1	1 unit	131	0.300
3RW40 5.-.BB4.	**S6**	230 V AC	►	**3RW49 36-8VX40**		1	1 unit	131	0.300
3RW40 7.-.BB3.	**S12**	115 V AC	►	**3RW49 47-8VX30**		1	1 unit	131	0.500
3RW40 7.-.BB4.	**S12**	230 V AC	►	**3RW49 47-8VX40**		1	1 unit	131	0.500

* You can order this quantity or a multiple thereof.

More information

Application examples for normal starting (Class 10)

Normal starting Class 10 (up to 20 s with 350 % $I_{n\ motor}$),
The soft starter rating can be selected to be as high as the rating of the motor used.

Application		Conveyor belt	Roller conveyor	Compressor	Small fan	Pump	Hydraulic pump
Starting parameters							
• Voltage ramp and current limiting							
- Starting voltage	%	70	60	50	40	40	40
- Starting time	s	10	10	10	10	10	10
- Current limit value		5 x I_M	5 x I_M	4 x I_M	4 x I_M	4 x I_M	4 x I_M
Ramp-down time	s	5	5	0	0	10	0

Application examples for heavy starting (Class 20)

Heavy starting Class 20 (up to 40 s with 350 % $I_{n\ motor}$),
The soft starter has to be selected at least one rating class higher than the motor used.

Application		Stirrer	Centrifuge
Starting parameters			
• Voltage ramp and current limiting			
- Starting voltage	%	40	40
- Starting time	s	20	20
- Current limit value		4 x I_M	4 x I_M
Ramp-down time		0	0

Note:
These tables present sample set values and device sizes. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during start-up.
The soft starter dimensions should be checked where necessary with the Win-Soft Starter software or with the help of Technical Assistance.

3RW40
for standard applications

Configuration

The 3RW solid-state soft starters are designed for easy starting conditions. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. For accurate dimensioning, use the Win-Soft Starter selection and simulation program.

Where long starting times are involved, the integrated solid-state overload relay for heavy starting should not be disconnected. PTC sensors are recommended. This also applies for the smooth ramp-down because during the ramp-down time an additional current loading applies in contrast to free ramp-down.

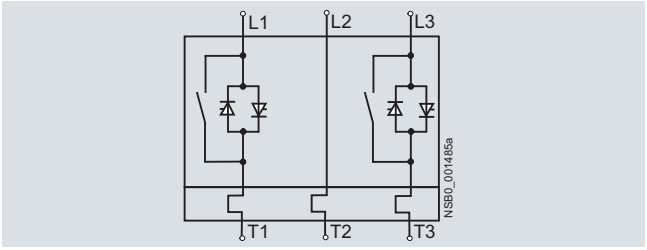
In the case of high switching frequencies in S4 mode, Siemens recommends the use of PTC sensors. For corresponding device versions with integrated thermistor motor protection or separate thermistor evaluation devices see Chapter 7 “Monitoring and Control Devices“.

In the motor feeder between the SIRIUS 3RW soft starter and the motor, no capacitive elements are permitted (e. g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses and controls) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately. Please observe the maximum switching frequencies specified in the technical specifications.

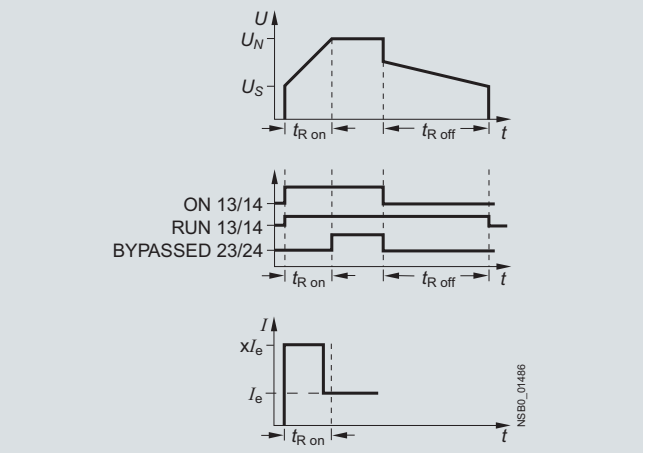
Note:
When induction motors are switched on, voltage drops normally appear on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

Power electronics schematic circuit diagram



A bypass contact system and solid-state overload relay are already integrated in the 3RW40 soft starter and therefore do not have to be ordered separately.

Status graphs



Win-Soft Starter selection and simulation program

With this software, you can simulate and select all Siemens soft starters, taking into account various parameters such as mains properties, motor and load data, and special application requirements.

The software is a valuable tool, which makes complicated, lengthy manual calculations for determining the required soft starters superfluous.

The Win-Soft Starter selection and simulation program can be downloaded from:
http://www.siemens.com/softstarter > Software

More information can be found on the Internet at:
http://www.siemens.com/softstarter

Overview

In addition to soft starting and soft ramp-down, the solid-state SIRIUS 3RW44 soft starters provide numerous functions for higher-level requirements. They cover a performance range up to 710 kW (at 400 V) in the inline circuit and up to 1200 kW (at 400 V) in the inside-delta circuit.

The SIRIUS 3RW44 soft starters are characterized by a compact design for space-saving and clearly arranged control cabinet layouts. For optimized motor starting and stopping the innovative SIRIUS 3RW44 soft starters are an attractive alternative with considerable savings potential compared to applications with a frequency converter. The new torque control and adjustable current limiting enable the High-Feature soft starters to be used in nearly every conceivable task. They guarantee the reliable avoidance of sudden torque applications and current peaks during motor starting and stopping. This creates savings potential when calculating the size of the switchgear and when servicing the machinery installed. Be it for inline circuits or inside-delta circuits – the SIRIUS 3RW44 soft starter offers savings especially in terms of size and equipment costs.

The bypass contacts already integrated in the soft starter bypass the thyristors after a motor ramp-up is detected. This results in a further great reduction in the heat loss occuring during operation of the soft starter at rated value.

Combinations of various starting, operating and ramp-down possibilities ensure an optimum adaptation to the application-specific requirements. Operation and commissioning can be performed with the menu-controlled keypad and a menu-prompted, multi-line graphic display with background lighting. The optimized motor ramp-up and ramp-down can be effected quickly, easily and reliably by means of just a few settings with a previously selected language. Four-key operation and plain-text displays for each menu point guarantee full clarity at every moment of the parameterization and operation.

Applicable standards

- IEC 60947-4-2
- UL/CSA

Soft Starter ES parameterization software

Soft Starter ES software is used for the parameterization, monitoring and service diagnostics of SIRIUS 3RW44 High Feature soft starters.
See Chapter 12 "Planning and Configuration with SIRIUS".

Application

The SIRIUS 3RW44 solid-state soft starters are suitable for the torque-controlled soft starting and smooth ramp-down as well as braking of three-phase asynchronous motors.

Application areas, e. g.

- Pumps
- Fans
- Compressors
- Water transport
- Conveying systems and lifts
- Hydraulics
- Machine tools
- Mills
- Saws
- Breakers
- Mixers
- Centrifuges
- Industrial cooling and refrigerating systems

3RW44
for high-feature applications

Selection and ordering data


3RW44 27-1BC44


3RW44 36-6BC44


3RW44 47-6BC44


3RW44 58-6BC44


3RW44 66-6BC44

Ambient temperature 40 °C						Ambient temperature 50 °C					DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e										
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V							
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp							kg
Inline circuits, rated operational voltage 200 ... 460 V[1]																	
29	5.5	**15**	--	--	--	26	7.5	7.5	**15**	--	▶	**3RW44 22-□BC□4**		1	1 unit	131	6.500
36	7.5	**18.5**	--	--	--	32	10	10	**20**	--	▶	**3RW44 23-□BC□4**		1	1 unit	131	6.500
47	11	**22**	--	--	--	42	10	15	**25**	--	▶	**3RW44 24-□BC□4**		1	1 unit	131	6.500
57	15	**30**	--	--	--	51	15	15	**30**	--	▶	**3RW44 25-□BC□4**		1	1 unit	131	6.500
77	18.5	**37**	--	--	--	68	20	20	**50**	--	▶	**3RW44 26-□BC□4**		1	1 unit	131	6.500
93	22	**45**	--	--	--	82	25	25	**60**	--	▶	**3RW44 27-□BC□4**		1	1 unit	131	6.500
Order No. supplement for connection types																	
• With spring-type terminals												**3**					
• With screw terminals												**1**					
113	30	**55**	--	--	--	100	30	30	**75**	--	B	**3RW44 34-□BC□4**		1	1 unit	131	7.900
134	37	**75**	--	--	--	117	30	40	**75**	--	B	**3RW44 35-□BC□4**		1	1 unit	131	7.900
162	45	**90**	--	--	--	145	40	50	**100**	--	B	**3RW44 36-□BC□4**		1	1 unit	131	7.900
203	55	**110**	--	--	--	180	50	60	**125**	--	B	**3RW44 43-□BC□4**		1	1 unit	131	11.500
250	75	**132**	--	--	--	215	60	75	**150**	--	B	**3RW44 44-□BC□4**		1	1 unit	131	11.500
313	90	**160**	--	--	--	280	75	100	**200**	--	B	**3RW44 45-□BC□4**		1	1 unit	131	11.500
356	110	**200**	--	--	--	315	100	125	**250**	--	B	**3RW44 46-□BC□4**		1	1 unit	131	11.500
432	132	**250**	--	--	--	385	125	150	**300**	--	B	**3RW44 47-□BC□4**		1	1 unit	131	11.500
551	160	**315**	--	--	--	494	150	200	**400**	--	C	**3RW44 53-□BC□4**		1	1 unit	131	50.000
615	200	**355**	--	--	--	551	150	200	**450**	--	C	**3RW44 54-□BC□4**		1	1 unit	131	50.000
693	200	**400**	--	--	--	615	200	250	**500**	--	C	**3RW44 55-□BC□4**		1	1 unit	131	50.000
780	250	**450**	--	--	--	693	200	250	**600**	--	C	**3RW44 56-□BC□4**		1	1 unit	131	50.000
880	250	**500**	--	--	--	780	250	300	**700**	--	C	**3RW44 57-□BC□4**		1	1 unit	131	50.000
970	315	**560**	--	--	--	850	300	350	**750**	--	C	**3RW44 58-□BC□4**		1	1 unit	131	50.000
1076	355	**630**	--	--	--	970	350	400	**850**	--	C	**3RW44 65-□BC□4**		1	1 unit	131	78.000
1214	400	**710**	--	--	--	1076	350	450	**950**	--	C	**3RW44 66-□BC□4**		1	1 unit	131	78.000
Order No. supplement for connection types																	
• With spring-type terminals												**2**					
• With screw terminals												**6**					
Order No. supplement for the rated control supply voltage U_s[2]																	
• 115 V AC													**3**				
• 230 V AC													**4**				

[1] 3RW44 2. ... 3RW44 4. soft starters with screw terminals: delivery times ▶ (preferred type).

[2] Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:
Soft starter selection depends on the rated motor current.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism J_{Load} <10 x J_{Motor}; starting current 350 % x I_e for 20 s similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. See Technical specifications for information about rated currents for ambient temperatures > 40 °C and switching frequency.

* You can order this quantity or a multiple thereof.

Ambient temperature 40 °C						Ambient temperature 50 °C					DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e										
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V							
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp							kg
Inline circuits, rated operational voltage 400 ... 600 V[1]																	
29	--	15	**18.5**	--	--	26	--	--	15	**20**	A	**3RW44 22-□BC□5**		1	1 unit	131	6.500
36	--	18.5	**22**	--	--	32	--	--	20	**25**	A	**3RW44 23-□BC□5**		1	1 unit	131	6.500
47	--	22	**30**	--	--	42	--	--	25	**30**	A	**3RW44 24-□BC□5**		1	1 unit	131	6.500
57	--	30	**37**	--	--	51	--	--	30	**40**	A	**3RW44 25-□BC□5**		1	1 unit	131	6.500
77	--	37	**45**	--	--	68	--	--	50	**50**	A	**3RW44 26-□BC□5**		1	1 unit	131	6.500
93	--	45	**55**	--	--	82	--	--	60	**75**	A	**3RW44 27-□BC□5**		1	1 unit	131	6.500
Order No. supplement for connection types																	
• With spring-type terminals												**3**					
• With screw terminals												**1**					
113	--	55	**75**	--	--	100	--	--	75	**75**	B	**3RW44 34-□BC□5**		1	1 unit	131	7.900
134	--	75	**90**	--	--	117	--	--	75	**100**	B	**3RW44 35-□BC□5**		1	1 unit	131	7.900
162	--	90	**110**	--	--	145	--	--	100	**125**	B	**3RW44 36-□BC□5**		1	1 unit	131	7.900
203	--	110	**132**	--	--	180	--	--	125	**150**	B	**3RW44 43-□BC□5**		1	1 unit	131	11.500
250	--	132	**160**	--	--	215	--	--	150	**200**	B	**3RW44 44-□BC□5**		1	1 unit	131	11.500
313	--	160	**200**	--	--	280	--	--	200	**250**	B	**3RW44 45-□BC□5**		1	1 unit	131	11.500
356	--	200	**250**	--	--	315	--	--	250	**300**	B	**3RW44 46-□BC□5**		1	1 unit	131	11.500
432	--	250	**315**	--	--	385	--	--	300	**400**	B	**3RW44 47-□BC□5**		1	1 unit	131	11.500
551	--	315	**355**	--	--	494	--	--	400	**500**	C	**3RW44 53-□BC□5**		1	1 unit	131	50.000
615	--	355	**400**	--	--	551	--	--	450	**600**	C	**3RW44 54-□BC□5**		1	1 unit	131	50.000
693	--	400	**500**	--	--	615	--	--	500	**700**	C	**3RW44 55-□BC□5**		1	1 unit	131	50.000
780	--	450	**560**	--	--	693	--	--	600	**750**	C	**3RW44 56-□BC□5**		1	1 unit	131	50.000
880	--	500	**630**	--	--	780	--	--	700	**850**	C	**3RW44 57-□BC□5**		1	1 unit	131	50.000
970	--	560	**710**	--	--	850	--	--	750	**900**	C	**3RW44 58-□BC□5**		1	1 unit	131	50.000
1076	--	630	**800**	--	--	970	--	--	850	**1100**	C	**3RW44 65-□BC□5**		1	1 unit	131	78.000
1214	--	710	**900**	--	--	1076	--	--	950	**1200**	C	**3RW44 66-□BC□5**		1	1 unit	131	78.000
Order No. supplement for connection types																	
• With spring-type terminals												**2**					
• With screw terminals												**6**					
Order No. supplement for the rated control supply voltage U_s[2]																	
• 115 V AC													**3**				
• 230 V AC													**4**				

[1] Soft starter with screw terminals:
3RW44 2. ... 3RW44 4. Delivery time A,
3RW44 5. ... 3RW44 6. Delivery time B.

[2] Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:
Soft starter selection depends on the rated motor current.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current 350 % x I_e for 20 s similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. See Technical specifications for information about rated currents for ambient temperatures > 40 °C and switching frequency.

*** You can order this quantity or a multiple thereof.**

3RW44
for high-feature applications

Ambient temperature 40 °C						Ambient temperature 50 °C					DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e										
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V							
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp							kg
Inline circuits, rated operational voltage 400 ... 690 V																	
29	--	15	18.5	**30**	--	26	--	--	15	**20**	B	**3RW44 22-□BC□6**		1	1 unit	131	6.500
36	--	18.5	22	**37**	--	32	--	--	20	**25**	B	**3RW44 23-□BC□6**		1	1 unit	131	6.500
47	--	22	30	**45**	--	42	--	--	25	**30**	B	**3RW44 24-□BC□6**		1	1 unit	131	6.500
57	--	30	37	**55**	--	51	--	--	30	**40**	B	**3RW44 25-□BC□6**		1	1 unit	131	6.500
77	--	37	45	**75**	--	68	--	--	50	**50**	B	**3RW44 26-□BC□6**		1	1 unit	131	6.500
93	--	45	55	**90**	--	82	--	--	60	**75**	B	**3RW44 27-□BC□6**		1	1 unit	131	6.500
Order No. supplement for connection types																	
• With spring-type terminals												**3**					
• With screw terminals												**1**					
113	--	55	75	**110**	--	100	--	--	75	**75**	B	**3RW44 34-□BC□6**		1	1 unit	131	7.900
134	--	75	90	**132**	--	117	--	--	75	**100**	B	**3RW44 35-□BC□6**		1	1 unit	131	7.900
162	--	90	110	**160**	--	145	--	--	100	**125**	B	**3RW44 36-□BC□6**		1	1 unit	131	7.900
203	--	110	132	**200**	--	180	--	--	125	**150**	B	**3RW44 43-□BC□6**		1	1 unit	131	11.500
250	--	132	160	**250**	--	215	--	--	150	**200**	B	**3RW44 44-□BC□6**		1	1 unit	131	11.500
313	--	160	200	**315**	--	280	--	--	200	**250**	B	**3RW44 45-□BC□6**		1	1 unit	131	11.500
356	--	200	250	**355**	--	315	--	--	250	**300**	B	**3RW44 46-□BC□6**		1	1 unit	131	11.500
432	--	250	315	**400**	--	385	--	--	300	**400**	B	**3RW44 47-□BC□6**		1	1 unit	131	11.500
551	--	315	355	**560**	--	494	--	--	400	**500**	C	**3RW44 53-□BC□6**		1	1 unit	131	50.000
615	--	355	400	**630**	--	551	--	--	450	**600**	C	**3RW44 54-□BC□6**		1	1 unit	131	50.000
693	--	400	500	**710**	--	615	--	--	500	**700**	C	**3RW44 55-□BC□6**		1	1 unit	131	50.000
780	--	450	560	**800**	--	693	--	--	600	**750**	C	**3RW44 56-□BC□6**		1	1 unit	131	50.000
880	--	500	630	**900**	--	780	--	--	700	**850**	C	**3RW44 57-□BC□6**		1	1 unit	131	50.000
970	--	560	710	**1000**	--	850	--	--	750	**900**	C	**3RW44 58-□BC□6**		1	1 unit	131	50.000
1076	--	630	800	**1100**	--	970	--	--	850	**1100**	C	**3RW44 65-□BC□6**		1	1 unit	131	78.000
1214	--	710	900	**1200**	--	1076	--	--	950	**1200**	C	**3RW44 66-□BC□6**		1	1 unit	131	78.000
Order No. supplement for connection types																	
• With spring-type terminals												**2**					
• With screw terminals												**6**					
Order No. supplement for the rated control supply voltage U_s [1)]																	
• 115 V AC													**3**				
• 230 V AC													**4**				

1) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:
Soft starter selection depends on the rated motor current.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism J_{Load} <10 x J_{Motor}; starting current 350 % x I_e for 20 s similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. See Technical specifications for information about rated currents for ambient temperatures > 40 °C and switching frequency.

* You can order this quantity or a multiple thereof.


3RW44 27-1BC44


3RW44 36-6BC44


3RW44 47-6BC44


3RW44 58-6BC44


3RW44 66-6BC44

Ambient temperature 40 °C						Ambient temperature 50 °C					DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current I_e [1]	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e										
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V							
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp							kg
Inside-delta circuits, rated operational voltage 200 ... 460 V [2]																	
50	15	**22**	--	--	--	45	10	15	**30**	--	▶	**3RW44 22-□BC□4**		1	1 unit	131	6.500
62	18.5	**30**	--	--	--	55	15	20	**40**	--	▶	**3RW44 23-□BC□4**		1	1 unit	131	6.500
81	22	**45**	--	--	--	73	20	25	**50**	--	▶	**3RW44 24-□BC□4**		1	1 unit	131	6.500
99	30	**55**	--	--	--	88	25	30	**60**	--	▶	**3RW44 25-□BC□4**		1	1 unit	131	6.500
133	37	**75**	--	--	--	118	30	40	**75**	--	▶	**3RW44 26-□BC□4**		1	1 unit	131	6.500
161	45	**90**	--	--	--	142	40	50	**100**	--	▶	**3RW44 27-□BC□4**		1	1 unit	131	6.500
Order No. supplement for connection types																	
• With spring-type terminals												**3**					
• With screw terminals												**1**					
196	55	**110**	--	--	--	173	50	60	**125**	--	B	**3RW44 34-□BC□4**		1	1 unit	131	7.900
232	75	**132**	--	--	--	203	60	75	**150**	--	B	**3RW44 35-□BC□4**		1	1 unit	131	7.900
281	90	**160**	--	--	--	251	75	100	**200**	--	B	**3RW44 36-□BC□4**		1	1 unit	131	7.900
352	110	**200**	--	--	--	312	100	125	**250**	--	B	**3RW44 43-□BC□4**		1	1 unit	131	11.500
433	132	**250**	--	--	--	372	125	150	**300**	--	B	**3RW44 44-□BC□4**		1	1 unit	131	11.500
542	160	**315**	--	--	--	485	150	200	**400**	--	B	**3RW44 45-□BC□4**		1	1 unit	131	11.500
617	200	**355**	--	--	--	546	150	200	**450**	--	B	**3RW44 46-□BC□4**		1	1 unit	131	11.500
748	250	**400**	--	--	--	667	200	250	**600**	--	B	**3RW44 47-□BC□4**		1	1 unit	131	11.500
954	315	**560**	--	--	--	856	300	350	**750**	--	C	**3RW44 53-□BC□4**		1	1 unit	131	50.000
1065	355	**630**	--	--	--	954	350	400	**850**	--	C	**3RW44 54-□BC□4**		1	1 unit	131	50.000
1200	400	**710**	--	--	--	1065	350	450	**950**	--	C	**3RW44 55-□BC□4**		1	1 unit	131	50.000
1351	450	**800**	--	--	--	1200	450	500	**1050**	--	C	**3RW44 56-□BC□4**		1	1 unit	131	50.000
1524	500	**900**	--	--	--	1351	450	600	**1200**	--	C	**3RW44 57-□BC□4**		1	1 unit	131	50.000
1680	560	**1000**	--	--	--	1472	550	650	**1300**	--	C	**3RW44 58-□BC□4**		1	1 unit	131	50.000
1864	630	**1100**	--	--	--	1680	650	750	**1500**	--	C	**3RW44 65-□BC□4**		1	1 unit	131	78.000
2103	710	**1200**	--	--	--	1864	700	850	**1700**	--	C	**3RW44 66-□BC□4**		1	1 unit	131	78.000
Order No. supplement for connection types																	
• With spring-type terminals												**2**					
• With screw terminals												**6**					
Order No. supplement for the rated control supply voltage U_s [3]																	
• 115 V AC													**3**				
• 230 V AC													**4**				

[1] In the selection table, the unit rated current I_e refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

[2] 3RW44 2. ... 3RW44 4. soft starters with screw terminals: delivery times ▶ (preferred type),

[3] Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:
Soft starter selection depends on the rated motor current.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current 350 % x I_e for 20 s similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. See Technical specifications for information about rated currents for ambient temperatures > 40 °C and switching frequency.

*** You can order this quantity or a multiple thereof.**

3RW44
for high-feature applications

Ambient temperature 40 °C						Ambient temperature 50 °C					DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current I_e [1]	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e										
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V							
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp							kg
Inside-delta circuits, rated operational voltage 400 ... 600 V [2]																	
50	--	22	**30**	--	--	45	--	--	30	**40**	A	**3RW44 22-□BC□5**		1	1 unit	131	6.500
62	--	30	**37**	--	--	55	--	--	40	**50**	A	**3RW44 23-□BC□5**		1	1 unit	131	6.500
81	--	45	**45**	--	--	73	--	--	50	**60**	A	**3RW44 24-□BC□5**		1	1 unit	131	6.500
99	--	55	**55**	--	--	88	--	--	60	**75**	A	**3RW44 25-□BC□5**		1	1 unit	131	6.500
133	--	75	**90**	--	--	118	--	--	75	**100**	A	**3RW44 26-□BC□5**		1	1 unit	131	6.500
161	--	90	**110**	--	--	142	--	--	100	**125**	A	**3RW44 27-□BC□5**		1	1 unit	131	6.500
Order No. supplement for connection types																	
• With spring-type terminals												**3**					
• With screw terminals												**1**					
196	--	110	**132**	--	--	173	--	--	125	**150**	B	**3RW44 34-□BC□5**		1	1 unit	131	7.900
232	--	132	**160**	--	--	203	--	--	150	**200**	B	**3RW44 35-□BC□5**		1	1 unit	131	7.900
281	--	160	**200**	--	--	251	--	--	200	**250**	B	**3RW44 36-□BC□5**		1	1 unit	131	7.900
352	--	200	**250**	--	--	312	--	--	250	**300**	B	**3RW44 43-□BC□5**		1	1 unit	131	11.500
433	--	250	**315**	--	--	372	--	--	300	**350**	B	**3RW44 44-□BC□5**		1	1 unit	131	11.500
542	--	315	**355**	--	--	485	--	--	400	**500**	B	**3RW44 45-□BC□5**		1	1 unit	131	11.500
617	--	355	**450**	--	--	546	--	--	450	**600**	B	**3RW44 46-□BC□5**		1	1 unit	131	11.500
748	--	400	**500**	--	--	667	--	--	600	**750**	B	**3RW44 47-□BC□5**		1	1 unit	131	11.500
954	--	560	**630**	--	--	856	--	--	750	**950**	C	**3RW44 53-□BC□5**		1	1 unit	131	50.000
1065	--	630	**710**	--	--	954	--	--	850	**1050**	C	**3RW44 54-□BC□5**		1	1 unit	131	50.000
1200	--	710	**800**	--	--	1065	--	--	950	**1200**	C	**3RW44 55-□BC□5**		1	1 unit	131	50.000
1351	--	800	**900**	--	--	1200	--	--	1050	**1350**	C	**3RW44 56-□BC□5**		1	1 unit	131	50.000
1524	--	900	**1000**	--	--	1351	--	--	1200	**1500**	C	**3RW44 57-□BC□5**		1	1 unit	131	50.000
1680	--	1000	**1200**	--	--	1472	--	--	1300	**1650**	C	**3RW44 58-□BC□5**		1	1 unit	131	50.000
1864	--	1100	**1350**	--	--	1680	--	--	1500	**1900**	C	**3RW44 65-□BC□5**		1	1 unit	131	78.000
2103	--	1200	**1500**	--	--	1864	--	--	1700	**2100**	C	**3RW44 66-□BC□5**		1	1 unit	131	78.000
Order No. supplement for connection types																	
• With spring-type terminals												**2**					
• With screw terminals												**6**					
Order No. supplement for the rated control supply voltage U_s [3]																	
• 115 V AC													**3**				
• 230 V AC													**4**				

1) In the selection table, the unit rated current I_e refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

2) Soft starter with screw terminals:
3RW44 2. ... 3RW44 4. Delivery time A
3RW44 5. ... 3RW44 6. Delivery time B.

3) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:
Soft starter selection depends on the rated motor current.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current 350 % x I_e for 20 s similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. See Technical specifications for information about rated currents for ambient temperatures > 40 °C and switching frequency.

* You can order this quantity or a multiple thereof.

Accessories

	For soft starters / Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Soft Starter ES 2007 PC communication programs[2]									
		**Soft Starter ES 2007 Basic** Floating license for one user E-SW, software and documentation on CD, 3 languages (English/French/German), communication through system interface							
		• License key on USB stick, Class A, including CD	B	**3ZS1 313-4CC10-0YA5**		1	1 unit	131	0.230
		Soft Starter ES 2007 Standard Floating license for one user E-SW, software and documentation on CD, 3 languages (English/French/German), communication through system interface							
		• License key on USB stick, Class A, including CD	B	**3ZS1 313-5CC10-0YA5**		1	1 unit	131	0.230
		Soft Starter ES 2007 Premium Floating license for one user E-SW, software and documentation on CD, 3 languages (English/French/German), communication through system interface or PROFIBUS							
		• License key on USB stick, Class A, including CD	B	**3ZS1 313-6CC10-0YA5**		1	1 unit	131	0.230
PC cables									
 3UF7 940-0AA00-0		**For PC/PG communication with SIRIUS 3RW44 soft starters** Through the system interface, for connecting to the serial interface of the PC/PG	A	**3UF7 940-0AA00-0**		1	1 unit	131	0.150
USB/serial adapters									
		For connecting the PC cable to the USB interface of a PC We recommend, in conjunction with 3RW44 soft starter, using SIMOCODE pro 3UF7, 3RK3 modular safety system, ET 200S/ECOFAST/ET 200pro motor starters, AS-i safety monitor, AS-i analyzer	B	**3UF7 946-0AA00-0**		1	1 unit	131	0.150
PROFIBUS communication modules									
 3RW49 00-0KC00		Modules can be plugged into the soft starters for integrating the starters in the PROFIBUS network with DPV1 slave functionality. On Y-link the soft starter has only DPV0 slave functionality.	A	**3RW49 00-0KC00**		1	1 unit	131	0.320
External display and operator modules									
 3RW49 00-0AC00		For indicating and operating the functions provided by the soft starter using an externally mounted display and operator module in degree of protection IP54 (e. g. in the control cabinet door)	▶	**3RW49 00-0AC00**		1	1 unit	131	0.320
		Connection cables From the device interface (serial) of the 3RW44 soft starter to the external display and operator module							
		• Length 0.5 m, flat	A	**3UF7 932-0AA00-0**		1	1 unit	131	0.020
		• Length 0.5 m, round	A	**3UF7 932-0BA00-0**		1	1 unit	131	0.050
		• Length 1.0 m, round	A	**3UF7 937-0BA00-0**		1	1 unit	131	0.100
		• Length 2.5 m, round	A	**3UF7 933-0BA00-0**		1	1 unit	131	0.150
Box terminal blocks for soft starters									
 3RT19		**Box terminal blocks**							
	3RW44 2.	Included in the scope of supply							
	3RW44 3.	• Up to 70 mm^2	▶	**3RT19 55-4G**		1	1 unit	101	0.230
		• Up to 120 mm^2	▶	**3RT19 56-4G**		1	1 unit	101	0.260
	3RW44 4.	• Up to 240 mm^2	▶	**3RT19 66-4G**		1	1 unit	101	0.676

* You can order this quantity or a multiple thereof.

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for high-feature applications

	For soft starters	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type								kg
Covers for soft starters									
	Terminal covers for box terminals								
	Additional touch protection to be fitted at the box terminals (2 units required per device)								
	3RW44 2. and 3RW44 3.		►	**3RT19 56-4EA2**		1	1 unit	101	0.030
	3RW44 4.		►	**3RT19 66-4EA2**		1	1 unit	101	0.040
 3RT19 .6-4EA1	**Terminal covers for cable lugs and busbar connections**								
	3RW44 2. and 3RW44 3.		►	**3RT19 56-4EA1**		1	1 unit	101	0.070
	3RW44 4.		►	**3RT19 66-4EA1**		1	1 unit	101	0.130
Operating instructions[1]									
	For 3RW44 soft starters			**3ZX10 12-0RW44-1AA1**					

[1] The operating instructions are included in the scope of supply.

[2] For more information on the Soft Starter ES software see Chapter 12 "Planning and Configuration with SIRIUS".

Spare parts

	For soft starters	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type								kg
Fans									
 3RW49	**Fans**								
	3RW44 2. and 3RW44 3.	115 V AC	►	**3RW49 36-8VX30**		1	1 unit	131	0.300
		230 V AC	►	**3RW49 36-8VX40**		1	1 unit	131	0.300
	3RW44 4.	115 V AC	►	**3RW49 47-8VX30**		1	1 unit	131	0.500
		230 V AC	►	**3RW49 47-8VX40**		1	1 unit	131	0.500
	3RW44 5. and 3RW44 6.[1]	115 V AC	►	**3RW49 57-8VX30**		1	1 unit	131	0.800
		230 V AC	►	**3RW49 57-8VX40**		1	1 unit	131	0.800
	3RW44 6.[2]	115 V AC	►	**3RW49 66-8VX30**		1	1 unit	131	0.300
		230 V AC	►	**3RW49 66-8VX40**		1	1 unit	131	0.300

[1] 3RW44 6. mounting on output side.

[2] For mounting on front side.

* You can order this quantity or a multiple thereof.

More information

Application examples for normal starting (Class 10)

Normal starting Class 10 (up to 20 s with 350 % $I_{n\ motor}$),
The soft starter rating can be selected to be as high as the rating of the motor used.

Application		Conveyor belt	Roller conveyor	Compressor	Small fan	Pump	Hydraulic pump
Starting parameters							
• Voltage ramp and current limiting							
- Starting voltage	%	70	60	50	30	30	30
- Starting time	s	10	10	10	10	10	10
- Current limit value		Deactivated	Deactivated	4 x I_M	4 x I_M	Deactivated	Deactivated
• Torque ramp							
- Starting torque		60	50	40	20	10	10
- End torque		150	150	150	150	150	150
- Starting time		10	10	10	10	10	10
• Breakaway pulse		Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)
Ramp-down mode		Smooth ramp-down	Smooth ramp-down	Free ramp-down	Free ramp-down	Pump ramp-down	Free ramp-down

Application examples for heavy starting (Class 20)

Heavy starting Class 20 (up to 40 s with 350 % $I_{n\ motor}$),
The soft starter has to be selected one rating class higher than the motor used.

Application		Stirrer	Centrifuge	Milling machine
Starting parameters				
• Voltage ramp and current limiting				
- Starting voltage	%	30	30	30
- Starting time	s	30	30	30
- Current limit value		4 x I_M	4 x I_M	4 x I_M
• Torque ramp				
- Starting torque		30	30	30
- End torque		150	150	150
- Starting time		30	30	30
• Breakaway pulse		Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)
Ramp-down mode		Free ramp-down	Free ramp-down	Free ramp-down or DC braking

Application examples for very heavy starting (Class 30)

Very heavy starting Class 30 (up to 60 s with 350 % $I_{n\ motor}$),
The soft starter has to be selected two rating classes higher than the motor used.

Application		Large fan	Mill	Breakers	Circular saw/bandsaw
Starting parameters					
• Voltage ramp and current limiting					
- Starting voltage	%	30	50	50	30
- Starting time	s	60	60	60	60
- Current limit value		4 x I_M	4 x I_M	4 x I_M	4 x I_M
• Torque ramp					
- Starting torque		20	50	50	20
- End torque		150	150	150	150
- Starting time		60	60	60	60
• Breakaway pulse		Deactivated (0 ms)	80 %, 300 ms	80 %, 300 ms	Deactivated (0 ms)
Ramp-down mode		Free ramp-down	Free ramp-down	Free ramp-down	Free ramp-down

Note:
These tables present sample set values and device sizes. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during start-up.
The soft starter dimensions should be checked where necessary with the Win-Soft Starter software or with the help of Technical Assistance.

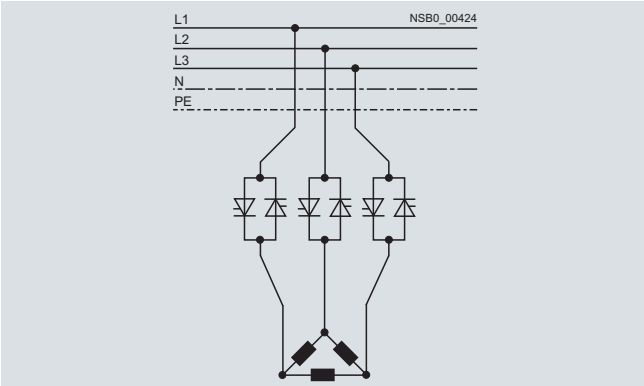
3RW44
for high-feature applications

Circuit concept

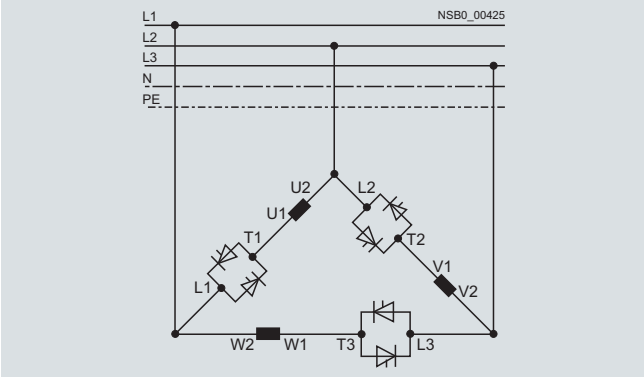
The SIRIUS 3RW44 soft starters can be operated in two different types of circuit.

- Inline circuit
  The controls for isolating and protecting the motor are simply connected in series with the soft starter. The motor is connected to the soft starter with three cables.
- Inside-delta circuit
  The wiring is similar to that of wye-delta starters. The phases of the soft starter are connected in series with the individual motor windings. The soft starter then only has to carry the phase current, amounting to about 58 % of the rated motor current (conductor current).

Comparison of the types of circuit



Inline circuit:
Rated current I_e corresponds to the rated motor current I_n,
3 cables to the motor



Inside-delta circuit:
Rated current I_e corresponds to approx. 58 % of the rated motor current I_n, 6 cables to the motor (as with wye-delta starters)

Which circuit?

Using the inline circuit involves the lowest wiring outlay. If the soft starter to motor connections are long, this circuit is preferable. With the inside-delta circuit there is double the wiring complexity but a smaller size of device can be used at the same rating.

Thanks to the choice of operating mode between the inline circuit and inside-delta circuit, it is always possible to select the most favorable solution.

The braking function is possible only in the inline circuit.

Configuration

The 3RW44 solid-state soft starters are designed for normal starting. In case of heavy starting or increased starting frequency, a larger device must be selected.

For long starting times it is recommended to have a PTC sensor in the motor. This also applies for the ramp-down modes smooth ramp-down, pump ramp-down and DC braking, because during the ramp-down time in these modes, an additional current loading applies in contrast to free ramp-down.

In the motor feeder between the SIRIUS 3RW soft starter and the motor, no capacitive elements are permitted (e. g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses and controls) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately.

A bypass contact system and solid-state overload relay are already integrated in the 3RW44 soft starter and therefore do not have to be ordered separately.

The harmonic component load for starting currents must be taken into consideration for the selection of motor starter protectors (selection of release).

Note:
When induction motors are switched on, voltage drops normally appear on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

Device interface, PROFIBUS DP communication module, Soft Starter ES parameterizing and operating software

The 3RW44 electronic soft starters have a PC interface for communicating with the Soft Starter ES software or for connecting the external display and operator module. If the optional PROFIBUS communication module is used, the 3RW44 soft starter can be integrated in the PROFIBUS network and communicate using the GSD file or Soft Starter ES Premium software.

Manual for SIRIUS 3RW44

Besides containing all important information on configuring, commissioning and servicing, the manual also contains example circuits and the technical specifications for all devices.

Win-Soft Starter selection and simulation program

With this software, you can simulate and select all Siemens soft starters, taking into account various parameters such as mains properties, motor and load data, and special application requirements.

The software is a valuable tool, which makes complicated, lengthy manual calculations for determining the required soft starters superfluous.

The Win-Soft Starter selection and simulation program can be downloaded from:
http://www.siemens.com/softstarter > Software

More information can be found on the Internet at:
http://www.siemens.com/softstarter

SIRIUS soft starter training course (SD-SIRIUSO)

Siemens offers a 2-day training course on the SIRIUS solid-state soft starters to keep customers and own personnel up-to-date on configuring, commissioning and servicing issues.

Please direct enquiries and applications to:

Siemens AG
Training Center for Automation and Industrial Solution
Gleiwitzer Straße 555
90475 Nürnberg
GERMANY
Tel.: +49 (0)911 895 3202
Fax: +49 (0)911 895 3275
E-mail: ingeborg.hoier@siemens.com
http://www.siemens.com/sitrain-cd

General data

Overview

3RA1 fuseless load feeders

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 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 3RA fuseless load feeders as for these motor starter protectors and contactors.

Pre-assembled kits 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 not needed here, as the motor starter protector 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.

3RA1 fuseless load feeders are supplied in four different sizes:

Size	Width	Max. rated current $I_{n\ max}$	For induction motors up to
	mm	A	kW
S00	45	12	5.5
S0	45	25	11
S2	55	50	22
S3	70	100	45

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 brochure "SIRIUS Configuration: Selection Data for Load Feeders in Fuseless Designs",
Order No. E86060-T1815-A101-A2

or as a PDF file on the Internet at

http://www.siemens.com/lowvoltage/infomaterial

under the tab "Brochures".

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, which are designated type of coordination "1" and type of coordination "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, it is permissible to weld the contactor contacts if they can be disconnected easily without any significant deformation.

These types of coordination are indicated in the selection and ordering data by orange backgrounds.

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

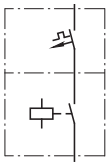
Selection and ordering data


3RA11 10


3RA11 20


3RA11 30

Direct start



Rated control supply voltage 50 Hz 230 V AC[1]
for 35 mm standard mounting rail or screw fixing

- Motor starter protector and contactor are linked electrically and mechanically by means of a link module
- As from size S2 with standard mounting rail adapter[2] for mechanical reinforcement
- Auxiliary switches[3] on the motor starter protector and the contactor can be easily fitted due to the modular system (on contactor size S00: 1 NO integrated)

Size	Standard induction motor 4-pole at 400 V AC[4]		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	ToC 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ contactor	+ link module + standard mounting rail adapter		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA/100 kA at 400 V (compatible with type of coordination "1")[5]				**3RV10**	**3RT10**	**3RA19**							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP01	11-1AA00	A	**3RA11 10-0BA15-1AP0**		1	1 unit	101	0.454
	0.06	0.2	0.18 ... 0.25	11-0CA10		+[6]	A	**3RA11 10-0CA15-1AP0**		1	1 unit	101	0.450
	0.09	0.3	0.22 ... 0.32	11-0DA10			A	**3RA11 10-0DA15-1AP0**		1	1 unit	101	0.450
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	**3RA11 10-0EA15-1AP0**		1	1 unit	101	0.452
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	**3RA11 10-0FA15-1AP0**		1	1 unit	101	0.450
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	**3RA11 10-0GA15-1AP0**		1	1 unit	101	0.448
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA11 10-0HA15-1AP0**		1	1 unit	101	0.446
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA11 10-0JA15-1AP0**		1	1 unit	101	0.451
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA11 10-0KA15-1AP0**		1	1 unit	101	0.495
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA11 10-1AA15-1AP0**		1	1 unit	101	0.502
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA11 10-1BA15-1AP0**		1	1 unit	101	0.490
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1AP00	21-1AA00	A	**3RA11 20-1CA24-0AP0**		1	1 unit	101	0.720
	1.1	2.7	2.2 ... 3.2	21-1DA10		+[6]	A	**3RA11 20-1DA24-0AP0**		1	1 unit	101	0.720
	1.5	3.6	2.8 ... 4	21-1EA10			A	**3RA11 20-1EA24-0AP0**		1	1 unit	101	0.710
	1.5	3.6	3.5 ... 5	21-1FA10			A	**3RA11 20-1FA24-0AP0**		1	1 unit	101	0.723
	2.2	4.9	4.5 ... 6.3	21-1GA10			A	**3RA11 20-1GA24-0AP0**		1	1 unit	101	0.717
	3	6.5	5.5 ... 8	21-1HA10			A	**3RA11 20-1HA24-0AP0**		1	1 unit	101	0.730
	4	8.5	7 ... 10	21-1JA10	26-1AP00		A	**3RA11 20-1JA26-0AP0**		1	1 unit	101	0.720
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA11 20-1KA26-0AP0**		1	1 unit	101	0.725
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA11 20-4AA26-0AP0**		1	1 unit	101	0.720
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA11 20-4BA26-0AP0**		1	1 unit	101	0.722
S2	11	22	18 ... 25	31-4DA10	34-1AP00	31-1AA00	A	**3RA11 30-4DB34-0AP0**		1	1 unit	101	2.070
	15	29	22 ... 32	31-4EA10		+	A	**3RA11 30-4EB34-0AP0**		1	1 unit	101	2.083
	18.5	35	28 ... 40	31-4FA10	35-1AP00	32-1AA00	A	**3RA11 30-4FB35-0AP0**		1	1 unit	101	2.126
	22	41	36 ... 45	31-4GA10	36-1AP00		A	**3RA11 30-4GB36-0AP0**		1	1 unit	101	2.130
	22	41	40 ... 50	31-4HA10			A	**3RA11 30-4HB36-0AP0**		1	1 unit	101	2.091
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									

1) Size S00 also suitable for 60 Hz.

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

3) For auxiliary switches, see "Accessories for Direct-On-Line and Reversing Starters".

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

5) See load feeders with $I_q \geq 100$ kA in the Technical Information LV 1 T.

6) Screw fixing with 1 push-in lug each per load feeder is possible (see "Accessories for Direct-On-Line and Reversing Starters").

* You can order this quantity or a multiple thereof.

3RA1 Fuseless Load Feeders

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

Size	Standard induction motor 4-pole at 400 V AC[1]		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	ToC 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ contactor	+ link module + standard mounting rail adapter		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "1" at I_q = 50 kA at 400 V[2] (the motor starter protector is compatible with type of coordination "2")													
S00	0.75	1.9	1.4 ... 2					For load feeders for lower outputs, see table above (type of coordination "2").					
				3RV10	**3RT10**	**3RA19**							
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1AP01	11-1AA00 +[3]	A	**3RA11 10-1CA15-1AP0**		1	1 unit	101	0.497
	1.1	2.7	2.2 ... 3.2	11-1DA10			A	**3RA11 10-1DA15-1AP0**		1	1 unit	101	0.498
	1.5	3.6	2.8 ... 4	11-1EA10			A	**3RA11 10-1EA15-1AP0**		1	1 unit	101	0.500
	1.5	3.6	3.5 ... 5	11-1FA10			A	**3RA11 10-1FA15-1AP0**		1	1 unit	101	0.501
	2.2	4.9	4.5 ... 6.3	11-1GA10			A	**3RA11 10-1GA15-1AP0**		1	1 unit	101	0.508
	3	6.5	5.5 ... 8	11-1HA10			A	**3RA11 10-1HA15-1AP0**		1	1 unit	101	0.508
	4	8.5	7 ... 10	11-1JA10	16-1AP01		A	**3RA11 10-1JA16-1AP0**		1	1 unit	101	0.493
	5.5	11.5	9 ... 12	11-1KA10	17-1AP01		A	**3RA11 10-1KA17-1AP0**		1	1 unit	101	0.500
S0	7.5	15.5	11 ... 16	21-4AA10	25-1AP00	21-1AA00 +[3]	A	**3RA11 20-4AA25-0AP0**		1	1 unit	101	0.729
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA11 20-4BA25-0AP0**		1	1 unit	101	0.724
	11	22	17 ... 22	21-4CA10	26-1AP00		A	**3RA11 20-4CA26-0AP0**		1	1 unit	101	0.721
	11	22	18 ... 25	21-4DA10	26-1AP00		A	**3RA11 20-4DA26-0AP0**		1	1 unit	101	0.729
S2	15	29	22 ... 32					For load feeders for higher outputs, see table above (type of coordination "2").					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

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

2) See load feeders with $I_q \geq 100$ kA in the Technical Information LV 1 T.

3) Screw fixing with 1 push-in lug each per load feeder is possible (see "Accessories for Direct-On-Line and Reversing Starters").

6

* You can order this quantity or a multiple thereof.

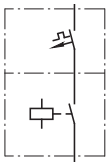
3RA11 direct-on-line starters for snapping onto standard mounting rails or for screw fixing


3RA11 10


3RA11 20


3RA11 30

Direct start



Rated control supply voltage 24 V DC
for 35 mm standard mounting rail or screw fixing

- Motor starter protector and contactor are linked electrically and mechanically by means of a link module
- As from size S2 with standard mounting rail adapter[1] for mechanical reinforcement
- Auxiliary switches[2] on the motor starter protector and the contactor can be easily fitted due to the modular system (on contactor size S00: 1 NO integrated)

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	ToC 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ contactor	+ link module + standard mounting rail adapter		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA/100 kA at 400 V (compatible with type of coordination "1")[4]				**3RV10**	**3RT10**	**3RA19**							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB41	11-1AA00	A	**3RA11 10-0BA15-1BB4**		1	1 unit	101	0.510
	0.06	0.2	0.18 ... 0.25	11-0CA10		+[5]	A	**3RA11 10-0CA15-1BB4**		1	1 unit	101	0.512
	0.09	0.3	0.22 ... 0.32	11-0DA10			A	**3RA11 10-0DA15-1BB4**		1	1 unit	101	0.505
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	**3RA11 10-0EA15-1BB4**		1	1 unit	101	0.508
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	**3RA11 10-0FA15-1BB4**		1	1 unit	101	0.500
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	**3RA11 10-0GA15-1BB4**		1	1 unit	101	0.505
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA11 10-0HA15-1BB4**		1	1 unit	101	0.513
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA11 10-0JA15-1BB4**		1	1 unit	101	0.508
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA11 10-0KA15-1BB4**		1	1 unit	101	0.556
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA11 10-1AA15-1BB4**		1	1 unit	101	0.553
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA11 10-1BA15-1BB4**		1	1 unit	101	0.554
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1BB40	21-1BA00	A	**3RA11 20-1CA24-0BB4**		1	1 unit	101	0.947
	1.1	2.7	2.2 ... 3.2	21-1DA10		+[5]	A	**3RA11 20-1DA24-0BB4**		1	1 unit	101	0.940
	1.5	3.6	2.8 ... 4	21-1EA10			A	**3RA11 20-1EA24-0BB4**		1	1 unit	101	0.945
	1.5	3.6	3.5 ... 5	21-1FA10			A	**3RA11 20-1FA24-0BB4**		1	1 unit	101	0.951
	2.2	4.9	4.5 ... 6.3	21-1GA10			A	**3RA11 20-1GA24-0BB4**		1	1 unit	101	0.948
	3	6.5	5.5 ... 8	21-1HA10			A	**3RA11 20-1HA24-0BB4**		1	1 unit	101	0.960
	4	8.5	7 ... 10	21-1JA10	26-1BB40		A	**3RA11 20-1JA26-0BB4**		1	1 unit	101	0.951
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA11 20-1KA26-0BB4**		1	1 unit	101	0.940
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA11 20-4AA26-0BB4**		1	1 unit	101	0.959
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA11 20-4BA26-0BB4**		1	1 unit	101	0.950
S2	11	22	18 ... 25	31-4DA10	34-1BB40	31-1BA00	A	**3RA11 30-4DB34-0BB4**		1	1 unit	101	2.700
	15	29	22 ... 32	31-4EA10		+	A	**3RA11 30-4EB34-0BB4**		1	1 unit	101	2.700
	18.5	35	28 ... 40	31-4FA10	35-1BB40	32-1AA00	A	**3RA11 30-4FB35-0BB4**		1	1 unit	101	2.730
	22	41	36 ... 45	31-4GA10	36-1BB40		A	**3RA11 30-4GB36-0BB4**		1	1 unit	101	2.699
	22	41	40 ... 50	31-4HA10			A	**3RA11 30-4HB36-0BB4**		1	1 unit	101	2.696
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) See load feeders with $I_q \geq 100$ kA in the Technical Information LV 1 T.

5) Screw fixing with 1 push-in lug each per load feeder is possible (see "Accessories for Direct-On-Line and Reversing Starters").

* You can order this quantity or a multiple thereof.

3RA1 Fuseless Load Feeders

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

Size	Standard induction motor 4-pole at 400 V AC[1]		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	ToC 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ contactor	+ link module + standard mounting rail adapter		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "1" at I_q = 50 kA at 400 V[2] (the motor starter protector is compatible with type of coordination "2")													
S00	0.75	1.9	1.4 ... 2					For load feeders for lower outputs, see table above (type of coordination "2").					
				3RV10	**3RT10**	**3RA19**							
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1BB41	11-1AA00 +[3]	A	**3RA11 10-1CA15-1BB4**		1	1 unit	101	0.563
	1.1	2.7	2.2 ... 3.2	11-1DA10			A	**3RA11 10-1DA15-1BB4**		1	1 unit	101	0.555
	1.5	3.6	2.8 ... 4	11-1EA10			A	**3RA11 10-1EA15-1BB4**		1	1 unit	101	0.555
	1.5	3.6	3.5 ... 5	11-1FA10			A	**3RA11 10-1FA15-1BB4**		1	1 unit	101	0.567
	2.2	4.9	4.5 ... 6.3	11-1GA10			A	**3RA11 10-1GA15-1BB4**		1	1 unit	101	0.558
	3	6.5	5.5 ... 8	11-1HA10			A	**3RA11 10-1HA15-1BB4**		1	1 unit	101	0.560
	4	8.5	7 ... 10	11-1JA10	16-1BB41		A	**3RA11 10-1JA16-1BB4**		1	1 unit	101	0.555
	5.5	11.5	9 ... 12	11-1KA10	17-1BB41		A	**3RA11 10-1KA17-1BB4**		1	1 unit	101	0.560
S0	7.5	15.5	11 ... 16	21-4AA10	25-1BB40	21-1BA00 +[3]	A	**3RA11 20-4AA25-0BB4**		1	1 unit	101	0.960
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA11 20-4BA25-0BB4**		1	1 unit	101	0.952
	11	22	17 ... 22	21-4CA10	26-1BB40		A	**3RA11 20-4CA26-0BB4**		1	1 unit	101	0.961
	11	22	18 ... 25	21-4DA10			A	**3RA11 20-4DA26-0BB4**		1	1 unit	101	0.960
S2	15	29	22 ... 32					For load feeders for higher outputs, see table above (type of coordination "2").					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

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

2) See load feeders with $I_q \geq 100$ kA in the Technical Information LV 1 T.

3) Screw fixing with 1 push-in lug each per load feeder is possible (see "Accessories for Direct-On-Line and Reversing Starters").

6

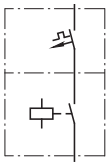
* You can order this quantity or a multiple thereof.

Selection and ordering data

3RA11 10

3RA11 20

Direct start



Rated control supply voltage 50 Hz 230 V AC[1] for 40 and 60 mm busbar systems

- Motor starter protector and contactor are linked electrically and mechanically by means of a link module
- Auxiliary switches[2] on the motor starter protector and the contactor can be easily fitted due to the modular system (on contactor size S00: 1 NO integrated)

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	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ contactor	+ link module + busbar adapter		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA at 400 V (compatible with type of coordination "1")													
				3RV10	**3RT10**								
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP01	3RA19 11-1AA00	A	**3RA11 10-0B☐15-1AP0**		1	1 unit	101	0.790
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	**3RA11 10-0C☐15-1AP0**		1	1 unit	101	0.702
	0.09	0.3	0.22 ... 0.32	11-0DA10		40 mm	A	**3RA11 10-0D☐15-1AP0**		1	1 unit	101	0.675
	0.09	0.3	0.28 ... 0.4	11-0EA10		8US10 51-5DM07	A	**3RA11 10-0E☐15-1AP0**		1	1 unit	101	0.670
	0.12	0.4	0.35 ... 0.5	11-0FA10		or 60 mm	A	**3RA11 10-0F☐15-1AP0**		1	1 unit	101	0.680
	0.18	0.6	0.45 ... 0.63	11-0GA10		8US12 51-5DM07	A	**3RA11 10-0G☐15-1AP0**		1	1 unit	101	0.670
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA11 10-0H☐15-1AP0**		1	1 unit	101	0.670
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA11 10-0J ☐15-1AP0**		1	1 unit	101	0.667
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA11 10-0K☐15-1AP0**		1	1 unit	101	0.715
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA11 10-1A☐15-1AP0**		1	1 unit	101	0.715
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA11 10-1B☐15-1AP0**		1	1 unit	101	0.715
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1AP00	3RA19 21-1AA00	A	**3RA11 20-1C☐24-0AP0**		1	1 unit	101	0.939
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	**3RA11 20-1D☐24-0AP0**		1	1 unit	101	0.940
	1.5	3.6	2.8 ... 4	21-1EA10		40 mm	A	**3RA11 20-1E☐24-0AP0**		1	1 unit	101	0.940
	1.5	3.6	3.5 ... 5	21-1FA10		8US10 51-5DM07	A	**3RA11 20-1F ☐24-0AP0**		1	1 unit	101	0.927
	2.2	4.9	4.5 ... 6.3	21-1GA10		or 60 mm	A	**3RA11 20-1G☐24-0AP0**		1	1 unit	101	0.927
	3	6.5	5.5 ... 8	21-1HA10		8US12 51-5DM07	A	**3RA11 20-1H☐24-0AP0**		1	1 unit	101	0.931
	4	8.5	7 ... 10	21-1JA10	26-1AP00		A	**3RA11 20-1J ☐26-0AP0**		1	1 unit	101	0.935
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA11 20-1K☐26-0AP0**		1	1 unit	101	0.936
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA11 20-4A☐26-0AP0**		1	1 unit	101	0.940
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA11 20-4B☐26-0AP0**		1	1 unit	101	0.943
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							
	22	41	40 ... 50	31-4HA10		or 60 mm							
						8US12 61-5FP08							
S3	30	55	45 ... 63	41-4JA10	44-1AP00	3RA19 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								
	45	80	80 ... 100	41-4MA10									

Order No. supplement for busbar center-to-center clearance

40 mm	**C**
60 mm	**D**

1) Size S00 also suitable for 60 Hz.

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.

* You can order this quantity or a multiple thereof.

3RA1 Fuseless Load Feeders

3RA11 direct-on-line starters for busbar systems

Size	Standard induction motor 4-pole at 400 V AC[1]		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	ToC 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ contactor	+ link module + busbar adapter		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "1" at I_q = 50 kA at 400 V (the motor starter protector is compatible with type of coordination "2")													
S00	0.75	1.9	1.4 ... 2					For load feeders for lower outputs, see table above (type of coordination "2").					
				3RV10	**3RT10**								
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1AP01	3RA19 11-1AA00	A	**3RA11 10-1C☐15-1AP0**		1	1 unit	101	0.714
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A	**3RA11 10-1D☐15-1AP0**		1	1 unit	101	0.716
	1.5	3.6	2.8 ... 4	11-1EA10		40 mm	A	**3RA11 10-1E☐15-1AP0**		1	1 unit	101	0.715
	1.5	3.6	3.5 ... 5	11-1FA10		8US10 51-5DM07	A	**3RA11 10-1F☐15-1AP0**		1	1 unit	101	0.717
	2.2	4.9	4.5 ... 6.3	11-1GA10		or 60 mm	A	**3RA11 10-1G☐15-1AP0**		1	1 unit	101	0.502
	3	6.5	5.5 ... 8	11-1HA10		8US12 51-5DM07	A	**3RA11 10-1H☐15-1AP0**		1	1 unit	101	0.695
	4	8.5	7 ... 10	11-1JA10	16-1AP01		A	**3RA11 10-1J ☐16-1AP0**		1	1 unit	101	0.650
	5.5	11.5	9 ... 12	11-1KA10	17-1AP01		A	**3RA11 10-1K☐17-1AP0**		1	1 unit	101	0.717
S0	7.5	15.5	11 ... 16	21-4AA10	25-1AP00	3RA19 21-1AA00	A	**3RA11 20-4A☐25-0AP0**		1	1 unit	101	0.940
	7.5	15.5	14 ... 20	21-4BA10		+	A	**3RA11 20-4B☐25-0AP0**		1	1 unit	101	0.939
	11	22	17 ... 22	21-4CA10	26-1AP00	40 mm	A	**3RA11 20-4C☐26-0AP0**		1	1 unit	101	0.935
	11	22	18 ... 25	21-4DA10		8US10 51-5DM07 or 60 mm 8US12 51-5DM07	A	**3RA11 20-4D☐26-0AP0**		1	1 unit	101	0.937
S2	15	29	22 ... 32					For load feeders for higher outputs, see table above (type of coordination "2").					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

Order No. supplement for busbar center-to-center clearance

40 mm	**C**
60 mm	**D**

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

6

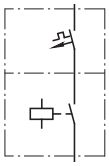
* You can order this quantity or a multiple thereof.

3RA11 direct-on-line starters for busbar systems

3RA11 10

3RA11 20

Direct start



Rated control supply voltage 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 switches[1] on the motor starter protector and the contactor can be easily fitted due to the modular system (on contactor size S00: 1 NO integrated)

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	ToC 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ contactor	+ link module + busbar adapter		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA at 400 V (compatible with type of coordination "1")													
				3RV10	3RT10								
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB41	3RA19 11-1AA00	A	**3RA11 10-0B☐15-1BB4**		1	1 unit	101	0.730
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	**3RA11 10-0C☐15-1BB4**		1	1 unit	101	0.720
	0.09	0.3	0.22 ... 0.32	11-0DA10		40 mm	A	**3RA11 10-0D☐15-1BB4**		1	1 unit	101	0.711
	0.09	0.3	0.28 ... 0.4	11-0EA10		8US10 51-5DM07	A	**3RA11 10-0E☐15-1BB4**		1	1 unit	101	0.716
	0.12	0.4	0.35 ... 0.5	11-0FA10		or 60 mm	A	**3RA11 10-0F☐15-1BB4**		1	1 unit	101	0.720
	0.18	0.6	0.45 ... 0.63	11-0GA10		8US12 51-5DM07	A	**3RA11 10-0G☐15-1BB4**		1	1 unit	101	0.728
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA11 10-0H☐15-1BB4**		1	1 unit	101	0.714
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA11 10-0J ☐15-1BB4**		1	1 unit	101	0.724
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA11 10-0K☐15-1BB4**		1	1 unit	101	0.780
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA11 10-1A☐15-1BB4**		1	1 unit	101	0.767
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA11 10-1B☐15-1BB4**		1	1 unit	101	0.764
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1BB40	3RA19 21-1BA00	A	**3RA11 20-1C☐24-0BB4**		1	1 unit	101	1.158
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	**3RA11 20-1D☐24-0BB4**		1	1 unit	101	1.133
	1.5	3.6	2.8 ... 4	21-1EA10		40 mm	A	**3RA11 20-1E☐24-0BB4**		1	1 unit	101	1.132
	1.5	3.6	3.5 ... 5	21-1FA10		8US10 51-5DM07	A	**3RA11 20-1F☐24-0BB4**		1	1 unit	101	1.160
	2.2	4.9	4.5 ... 6.3	21-1GA10		or 60 mm	A	**3RA11 20-1G☐24-0BB4**		1	1 unit	101	1.165
	3	6.5	5.5 ... 8	21-1HA10		8US12 51-5DM07	A	**3RA11 20-1H☐24-0BB4**		1	1 unit	101	1.170
	4	8.5	7 ... 10	21-1JA10	26-1BB40		A	**3RA11 20-1J ☐26-0BB4**		1	1 unit	101	1.167
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA11 20-1K☐26-0BB4**		1	1 unit	101	1.163
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA11 20-4A☐26-0BB4**		1	1 unit	101	1.172
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA11 20-4B☐26-0BB4**		1	1 unit	101	1.168
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							
	22	41	40 ... 50	31-4HA10		or 60 mm							
						8US12 61-5FP08							
S3	30	55	45 ... 63	41-4JA10	44-1BB40	3RA19 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									

Order No. supplement for busbar center-to-center clearance

40 mm	**C**
60 mm	**D**

[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.

*** You can order this quantity or a multiple thereof.**

3RA1 Fuseless Load Feeders

3RA11 direct-on-line starters for busbar systems

Size	Standard induction motor 4-pole at 400 V AC[1]		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	ToC 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ contactor	+ link module + busbar adapter		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "1" at I_q = 50 kA at 400 V (the motor starter protector is compatible with type of coordination "2")													
S00	0.75	1.9	1.4 ... 2					For load feeders for lower outputs, see table above (type of coordination "2").					
				3RV10	**3RT10**								
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1BB41	3RA19 11-1AA00	A	**3RA11 10-1C☐15-1BB4**		1	1 unit	101	0.784
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A	**3RA11 10-1D☐15-1BB4**		1	1 unit	101	0.775
	1.5	3.6	2.8 ... 4	11-1EA10		40 mm	A	**3RA11 10-1E☐15-1BB4**		1	1 unit	101	0.781
	1.5	3.6	3.5 ... 5	11-1FA10		8US10 51-5DM07	A	**3RA11 10-1F☐15-1BB4**		1	1 unit	101	0.782
	2.2	4.9	4.5 ... 6.3	11-1GA10		or 60 mm	A	**3RA11 10-1G☐15-1BB4**		1	1 unit	101	0.780
	3	6.5	5.5 ... 8	11-1HA10		8US12 51-5DM07	A	**3RA11 10-1H☐15-1BB4**		1	1 unit	101	0.770
	4	8.5	7 ... 10	11-1JA10	16-1BB41		A	**3RA11 10-1J ☐16-1BB4**		1	1 unit	101	0.774
	5.5	11.5	9 ... 12	11-1KA10	17-1BB41		A	**3RA11 10-1K☐17-1BB4**		1	1 unit	101	0.772
S0	7.5	15.5	11 ... 16	21-4AA10	25-1BB40	3RA19 21-1BA00	A	**3RA11 20-4A☐25-0BB4**		1	1 unit	101	1.177
	7.5	15.5	14 ... 20	21-4BA10		+	A	**3RA11 20-4B☐25-0BB4**		1	1 unit	101	1.163
	11	22	17 ... 22	21-4CA10	26-1BB40	40 mm	A	**3RA11 20-4C☐26-0BB4**		1	1 unit	101	1.164
	11	22	18 ... 25	21-4DA10		8US10 51-5DM07 or 60 mm 8US12 51-5DM07	A	**3RA11 20-4D☐26-0BB4**		1	1 unit	101	1.175
S2	15	29	22 ... 32					For load feeders for higher outputs, see table above (type of coordination "2").					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

Order No. supplement for busbar center-to-center clearance

40 mm **C**
60 mm **D**

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

6

* You can order this quantity or a multiple thereof.

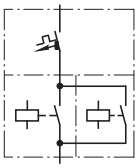
3RA12 reversing starters for snapping onto standard mounting rails or for screw fixing

Selection and ordering data

3RA12 10

3RA12 20

Reversing duty



Rated control supply voltage 50 Hz 230 V AC[1] for 35 mm standard mounting rail or screw fixing

- The motor starter protector and contactor are mechanically and electrically connected by means of the link module
- As from size S0 with standard mounting rail adapter[2] for mechanical reinforcement
- Auxiliary switches[3] 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[4]		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	ToC 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ link module + assembly kit RH[2)5)]		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA/100 kA at 400 V (compatible with type of coordination "1")[6]				**3RV10**	**3RT10**	**3RA19**							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP02	11-1AA00	A	**3RA12 10-0BA15-0AP0**		1	1 unit	101	0.717
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	**3RA12 10-0CA15-0AP0**		1	1 unit	101	0.700
	0.09	0.3	0.22 ... 0.32	11-0DA10		13-2A[7]	A	**3RA12 10-0DA15-0AP0**		1	1 unit	101	0.700
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	**3RA12 10-0EA15-0AP0**		1	1 unit	101	0.720
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	**3RA12 10-0FA15-0AP0**		1	1 unit	101	0.708
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	**3RA12 10-0GA15-0AP0**		1	1 unit	101	0.717
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA12 10-0HA15-0AP0**		1	1 unit	101	0.710
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA12 10-0JA15-0AP0**		1	1 unit	101	0.710
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA12 10-0KA15-0AP0**		1	1 unit	101	0.755
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA12 10-1AA15-0AP0**		1	1 unit	101	0.765
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA12 10-1BA15-0AP0**		1	1 unit	101	0.765
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1AP00	21-1AA00	A	**3RA12 20-1CB24-0AP0**		1	1 unit	101	1.400
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	**3RA12 20-1DB24-0AP0**		1	1 unit	101	1.394
	1.5	3.6	2.8 ... 4	21-1EA10		23-1B[8]	A	**3RA12 20-1EB24-0AP0**		1	1 unit	101	1.385
	1.5	3.6	3.5 ... 5	21-1FA10			A	**3RA12 20-1FB24-0AP0**		1	1 unit	101	1.387
	2.2	4.9	4.5 ... 6.3	21-1GA10			A	**3RA12 20-1GB24-0AP0**		1	1 unit	101	1.390
	3	6.5	5.5 ... 8	21-1HA10			A	**3RA12 20-1HB24-0AP0**		1	1 unit	101	1.389
	4	8.5	7 ... 10	21-1JA10	26-1AP00		A	**3RA12 20-1JB26-0AP0**		1	1 unit	101	1.389
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA12 20-1KB26-0AP0**		1	1 unit	101	1.386
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA12 20-4AB26-0AP0**		1	1 unit	101	1.408
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA12 20-4BB26-0AP0**		1	1 unit	101	1.400
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[8]							
	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[8]							
	45	80	80 ... 100	41-4MA10									

1) Size S00 also suitable for 60 Hz.

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

3) For auxiliary switches, see "Accessories for Direct-On-Line and Reversing Starters".

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

5) RH = Reversing duty for standard rail mounting.

6) See load feeders with $I_q \geq 100$ kA in the Technical Information LV 1 T.

7) Wiring kit necessary: for screw fixing with 1 push-in lug each per load feeder, see "Accessories for Direct-On-Line and Reversing Starters".

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

*** You can order this quantity or a multiple thereof.**

3RA1 Fuseless Load Feeders

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

Size	Standard induction motor 4-pole at 400 V AC[1]		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	ToC 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ link module + assembly kit RH[2)3)]		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "1" at I_q = 50 kA at 400 V[4] (the motor starter protector is compatible with type of coordination "2")													
S00	0.75	1.9	1.4 ... 2					For load feeders for lower outputs, see table above (type of coordination "2").					
				3RV10	**3RT10**	**3RA19**							
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1AP02	11-1AA00	A	**3RA12 10-1CA15-0AP0**		1	1 unit	101	0.755
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A	**3RA12 10-1DA15-0AP0**		1	1 unit	101	0.760
	1.5	3.6	2.8 ... 4	11-1EA10		13-2A[5)]	A	**3RA12 10-1EA15-0AP0**		1	1 unit	101	0.764
	1.5	3.6	3.5 ... 5	11-1FA10			A	**3RA12 10-1FA15-0AP0**		1	1 unit	101	0.766
	2.2	4.9	4.5 ... 6.3	11-1GA10			A	**3RA12 10-1GA15-0AP0**		1	1 unit	101	0.760
	3	6.5	5.5 ... 8	11-1HA10			A	**3RA12 10-1HA15-0AP0**		1	1 unit	101	0.755
	4	8.5	7 ... 10	11-1JA10	16-1AP02		A	**3RA12 10-1JA16-0AP0**		1	1 unit	101	0.761
	5.5	11.5	9 ... 12	11-1KA10	17-1AP02		A	**3RA12 10-1KA17-0AP0**		1	1 unit	101	0.760
S0	7.5	15.5	11 ... 16	21-4AA10	25-1AP00	21-1AA00	A	**3RA12 20-4AB25-0AP0**		1	1 unit	101	1.397
	7.5	15.5	14 ... 20	21-4BA10		+	A	**3RA12 20-4BB25-0AP0**		1	1 unit	101	1.385
	11	22	17 ... 22	21-4CA10	26-1AP00	23-1B[6)]	A	**3RA12 20-4CB26-0AP0**		1	1 unit	101	1.400
	11	22	20 ... 25	21-4DA10			A	**3RA12 20-4DB26-0AP0**		1	1 unit	101	1.420
S2	15	29	22 ... 32					For load feeders for higher outputs, see table above (type of coordination "2").					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

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

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

3) RH = Reversing duty for standard rail mounting.

4) See load feeders with $I_q \geq 100$ kA in the Technical Information LV 1 T.

5) Wiring kit necessary: For screw fixing with 1 push-in lug each per load feeder (see "Accessories for Direct-On-Line and Reversing Starters").

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

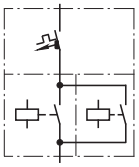
* You can order this quantity or a multiple thereof.

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

3RA12 10

3RA12 20

Reversing duty



Rated control supply voltage 24 V DC
for 35 mm standard mounting rail or screw fixing

- The motor starter protector and contactor are mechanically and electrically connected by means of the link module
- As from size S0 with standard mounting rail adapter[1] for mechanical reinforcement
- Auxiliary switches[2] 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	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ link module + assembly kit RH[4]		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA/100 kA at 400 V (compatible with type of coordination "1")[5]				**3RV10**	**3RT10**	**3RA19**							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	11-1AA00	A	**3RA12 10-0BA15-0BB4**		1	1 unit	101	0.832
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	**3RA12 10-0CA15-0BB4**		1	1 unit	101	0.830
	0.09	0.3	0.22 ... 0.32	11-0DA10		13-2A[6]	A	**3RA12 10-0DA15-0BB4**		1	1 unit	101	0.826
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	**3RA12 10-0EA15-0BB4**		1	1 unit	101	0.833
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	**3RA12 10-0FA15-0BB4**		1	1 unit	101	0.824
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	**3RA12 10-0GA15-0BB4**		1	1 unit	101	0.835
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA12 10-0HA15-0BB4**		1	1 unit	101	0.830
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA12 10-0JA15-0BB4**		1	1 unit	101	0.830
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA12 10-0KA15-0BB4**		1	1 unit	101	0.878
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA12 10-1AA15-0BB4**		1	1 unit	101	0.880
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA12 10-1BA15-0BB4**		1	1 unit	101	0.875
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1BB40	21-1BA00	A	**3RA12 20-1CB24-0BB4**		1	1 unit	101	1.847
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	**3RA12 20-1DB24-0BB4**		1	1 unit	101	1.855
	1.5	3.6	2.8 ... 4	21-1EA10		23-1B[7]	A	**3RA12 20-1EB24-0BB4**		1	1 unit	101	1.852
	1.5	3.6	3.5 ... 5	21-1FA10			A	**3RA12 20-1FB24-0BB4**		1	1 unit	101	1.856
	2.2	4.9	4.5 ... 6.3	21-1GA10			A	**3RA12 20-1GB24-0BB4**		1	1 unit	101	1.848
	3	6.5	5.5 ... 8	21-1HA10			A	**3RA12 20-1HB24-0BB4**		1	1 unit	101	1.851
	4	8.5	7 ... 10	21-1JA10	26-1BB40		A	**3RA12 20-1JB26-0BB4**		1	1 unit	101	1.854
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA12 20-1KB26-0BB4**		1	1 unit	101	1.858
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA12 20-4AB26-0BB4**		1	1 unit	101	1.863
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA12 20-4BB26-0BB4**		1	1 unit	101	1.852
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[7]							
	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[7]							
	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) See load feeders with $I_q \geq 100$ kA in the Technical Information LV 1 T.

6) Wiring kit necessary: screw fixing with 1 push-in lug each per load feeder is possible (see "Accessories for Direct-On-Line and Reversing Starters").

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

* You can order this quantity or a multiple thereof.

3RA1 Fuseless Load Feeders

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

Size	Standard induction motor 4-pole at 400 V AC[1]		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	ToC 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ link module + assembly kit RH[2)3)]		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "1" at I_q = 50 kA at 400 V[4] (the motor starter protector is compatible with type of coordination "2")													
S00	0.75	1.9	1.4 ... 2					For load feeders for lower outputs, see table above (type of coordination "2").					
				3RV10	**3RT10**	**3RA19**							
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1BB42	11-1AA00	A	**3RA12 10-1CA15-0BB4**		1	1 unit	101	0.883
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A	**3RA12 10-1DA15-0BB4**		1	1 unit	101	0.882
	1.5	3.6	2.8 ... 4	11-1EA10		13-2A[5]	A	**3RA12 10-1EA15-0BB4**		1	1 unit	101	0.879
	1.5	3.6	3.5 ... 5	11-1FA10			A	**3RA12 10-1FA15-0BB4**		1	1 unit	101	0.881
	2.2	4.9	4.5 ... 6.3	11-1GA10			A	**3RA12 10-1GA15-0BB4**		1	1 unit	101	0.888
	3	6.5	5.5 ... 8	11-1HA10			A	**3RA12 10-1HA15-0BB4**		1	1 unit	101	0.890
	4	8.5	7 ... 10	11-1JA10	16-1BB42		A	**3RA12 10-1JA16-0BB4**		1	1 unit	101	0.882
	5.5	11.5	9 ... 12	11-1KA10	17-1BB42		A	**3RA12 10-1KA17-0BB4**		1	1 unit	101	0.872
S0	7.5	15.5	11 ... 16	21-4AA10	25-1BB40	21-1BA00	A	**3RA12 20-4AB25-0BB4**		1	1 unit	101	1.857
	7.5	15.5	14 ... 20	21-4BA10		+	A	**3RA12 20-4BB25-0BB4**		1	1 unit	101	1.853
	11	22	17 ... 22	21-4CA10	26-1BB40	23-1B[6]	A	**3RA12 20-4CB26-0BB4**		1	1 unit	101	1.858
	11	22	20 ... 25	21-4DA10			A	**3RA12 20-4DB26-0BB4**		1	1 unit	101	1.860
S2	15	29	22 ... 32					For load feeders for higher outputs, see table above (type of coordination "2").					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

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

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

3) RH = Reversing duty for standard rail mounting.

4) See load feeders with $I_q \geq 100$ kA in the Technical Information LV 1 T.

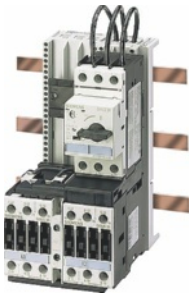
5) Wiring kit necessary: Screw fixing with 1 push-in lug each per load feeder is possible (see "Accessories for Direct-On-Line and Reversing Starters").

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

* You can order this quantity or a multiple thereof.

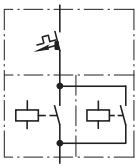
Selection and ordering data

3RA12 10



3RA12 20

Reversing duty



Rated control supply voltage 50 Hz 230 V AC[1] 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 switches[2] 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	ToC 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ link module + assembly kit RS[4]		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA at 400 V (compatible with type of coordination "1")				**3RV10**	**3RT10**	**3RA19**							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP02	11-1AA00	A	**3RA12 10-0B☐15-0AP0**		1	1 unit	101	1.080
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	**3RA12 10-0C☐15-0AP0**		1	1 unit	101	1.100
	0.09	0.3	0.22 ... 0.32	11-0DA10		40 mm	A	**3RA12 10-0D☐15-0AP0**		1	1 unit	101	1.100
	0.09	0.3	0.28 ... 0.4	11-0EA10		13-1C	A	**3RA12 10-0E☐15-0AP0**		1	1 unit	101	1.123
	0.12	0.4	0.35 ... 0.5	11-0FA10		or 60 mm	A	**3RA12 10-0F☐15-0AP0**		1	1 unit	101	1.050
	0.18	0.6	0.45 ... 0.63	11-0GA10		13-1D	A	**3RA12 10-0G☐15-0AP0**		1	1 unit	101	1.070
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA12 10-0H☐15-0AP0**		1	1 unit	101	1.075
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA12 10-0J ☐15-0AP0**		1	1 unit	101	1.058
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA12 10-0K☐15-0AP0**		1	1 unit	101	1.103
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA12 10-1A☐15-0AP0**		1	1 unit	101	1.104
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA12 10-1B☐15-0AP0**		1	1 unit	101	1.111
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1AP00	21-1AA00	A	**3RA12 20-1C☐24-0AP0**		1	1 unit	101	1.512
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	**3RA12 20-1D☐24-0AP0**		1	1 unit	101	1.548
	1.5	3.6	2.8 ... 4	21-1EA10		40 mm	A	**3RA12 20-1E ☐24-0AP0**		1	1 unit	101	1.532
	1.5	3.6	3.5 ... 5	21-1FA10		23-1C[5]	A	**3RA12 20-1F ☐24-0AP0**		1	1 unit	101	1.550
	2.2	4.9	4.5 ... 6.3	21-1GA10		or 60 mm	A	**3RA12 20-1G☐24-0AP0**		1	1 unit	101	1.558
	3	6.5	5.5 ... 8	21-1HA10		23-1D[5]	A	**3RA12 20-1H☐24-0AP0**		1	1 unit	101	1.545
	4	8.5	7 ... 10	21-1JA10	26-1AP00		A	**3RA12 20-1J ☐26-0AP0**		1	1 unit	101	1.557
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA12 20-1K☐26-0AP0**		1	1 unit	101	1.575
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA12 20-4A☐26-0AP0**		1	1 unit	101	1.549
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA12 20-4B☐26-0AP0**		1	1 unit	101	1.544
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[5]							
	22	41	40 ... 50	31-4HA10		or 60 mm							
						33-1D[5]							
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									

Order No. supplement for busbar center-to-center clearance

40 mm	**C**
60 mm	**D**

1) Size S00 also suitable for 60 Hz.

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) RS = Reversing duty for busbar systems.

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

* You can order this quantity or a multiple thereof.

3RA1 Fuseless Load Feeders

3RA12 reversing starters for busbar systems

Size	Standard induction motor 4-pole at 400 V AC[1]		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	ToC 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ link module + assembly kit RS[2]		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "1" at I_q = 50 kA at 400 V (the motor starter protector is compatible with type of coordination "2")													
S00	0.75	1.9	1.4 ... 2					For load feeders for lower outputs, see table above (type of coordination "2").					
				3RV10	**3RT10**	**3RA19**							
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1AP02	11-1AA00	A	**3RA12 10-1C☐15-0AP0**		1	1 unit	101	1.115
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A	**3RA12 10-1D☐15-0AP0**		1	1 unit	101	1.105
	1.5	3.6	2.8 ... 4	11-1EA10		40 mm	A	**3RA12 10-1E☐15-0AP0**		1	1 unit	101	1.116
	1.5	3.6	3.5 ... 5	11-1FA10		13-1C	A	**3RA12 10-1F☐15-0AP0**		1	1 unit	101	1.118
	2.2	4.9	4.5 ... 6.3	11-1GA10		or 60 mm	A	**3RA12 10-1G☐15-0AP0**		1	1 unit	101	1.129
	3	6.5	5.5 ... 8	11-1HA10		13-1D	A	**3RA12 10-1H☐15-0AP0**		1	1 unit	101	1.122
	4	8.5	7 ... 10	11-1JA10	16-1AP02		A	**3RA12 10-1J ☐16-0AP0**		1	1 unit	101	1.108
	5.5	11.5	9 ... 12	11-1KA10	17-1AP02		A	**3RA12 10-1K☐17-0AP0**		1	1 unit	101	1.100
S0	7.5	15.5	11 ... 16	21-4AA10	25-1AP00	21-1AA00	A	**3RA12 20-4A☐25-0AP0**		1	1 unit	101	1.600
	7.5	15.5	14 ... 20	21-4BA10		+	A	**3RA12 20-4B☐25-0AP0**		1	1 unit	101	1.600
	11	22	17 ... 22	21-4CA10	26-1AP00	40 mm	A	**3RA12 20-4C☐26-0AP0**		1	1 unit	101	1.570
	11	22	20 ... 25	21-4DA10		23-1C[3]	A	**3RA12 20-4D☐26-0AP0**		1	1 unit	101	1.557
						or 60 mm 23-1D[3]							
S2	15	29	22 ... 32					For load feeders for higher outputs, see table above (type of coordination "2").					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

Order No. supplement for busbar center-to-center clearance

40 mm **C**
60 mm **D**

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

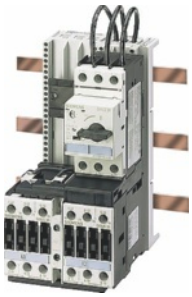
2) RS = Reversing duty for busbar systems.

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

* You can order this quantity or a multiple thereof.

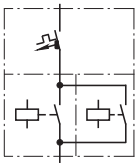
3RA12 reversing starters for busbar systems

3RA12 10



3RA12 20

Reversing duty



Rated control supply voltage 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 switches[1] 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	ToC 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ link module + assembly kit RS[3]		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA at 400 V (compatible with type of coordination "1")				**3RV10**	**3RT10**	**3RA19**							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	11-1AA00	A	**3RA12 10-0B☐15-0BB4**		1	1 unit	101	1.195
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	**3RA12 10-0C☐15-0BB4**		1	1 unit	101	1.234
	0.09	0.3	0.22 ... 0.32	11-0DA10		40 mm	A	**3RA12 10-0D☐15-0BB4**		1	1 unit	101	1.223
	0.09	0.3	0.28 ... 0.4	11-0EA10		13-1C	A	**3RA12 10-0E☐15-0BB4**		1	1 unit	101	1.185
	0.12	0.4	0.35 ... 0.5	11-0FA10		or 60 mm	A	**3RA12 10-0F☐15-0BB4**		1	1 unit	101	1.190
	0.18	0.6	0.45 ... 0.63	11-0GA10		13-1D	A	**3RA12 10-0G☐15-0BB4**		1	1 unit	101	1.195
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA12 10-0H☐15-0BB4**		1	1 unit	101	1.190
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA12 10-0J ☐15-0BB4**		1	1 unit	101	1.197
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA12 10-0K☐15-0BB4**		1	1 unit	101	1.160
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA12 10-1A☐15-0BB4**		1	1 unit	101	1.246
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA12 10-1B☐15-0BB4**		1	1 unit	101	1.233
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1BB40	21-1BA00	A	**3RA12 20-1C☐24-0BB4**		1	1 unit	101	1.985
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	**3RA12 20-1D☐24-0BB4**		1	1 unit	101	2.017
	1.5	3.6	2.8 ... 4	21-1EA10		40 mm	A	**3RA12 20-1E☐24-0BB4**		1	1 unit	101	1.998
	1.5	3.6	3.5 ... 5	21-1FA10		23-1C[4]	A	**3RA12 20-1F☐24-0BB4**		1	1 unit	101	2.013
	2.2	4.9	4.5 ... 6.3	21-1GA10		or 60 mm	A	**3RA12 20-1G☐24-0BB4**		1	1 unit	101	2.018
	3	6.5	5.5 ... 8	21-1HA10		23-1D[4]	A	**3RA12 20-1H☐24-0BB4**		1	1 unit	101	2.003
	4	8.5	7 ... 10	21-1JA10	26-1BB40		A	**3RA12 20-1J ☐26-0BB4**		1	1 unit	101	2.013
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA12 20-1K☐26-0BB4**		1	1 unit	101	2.017
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA12 20-4A☐26-0BB4**		1	1 unit	101	2.010
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA12 20-4B☐26-0BB4**		1	1 unit	101	2.002
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									

Order No. supplement for busbar center-to-center clearance

40 mm	**C**
60 mm	**D**

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

*** You can order this quantity or a multiple thereof.**

3RA1 Fuseless Load Feeders

3RA12 reversing starters for busbar systems

Size	Standard induction motor 4-pole at 400 V AC[1]		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	ToC 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ link module + assembly kit RS[2]		Order No.	Price per PU				
	kW	A	A										kg
Type of coordination "1" at I_q = 50 kA at 400 V (the motor starter protector is compatible with type of coordination "2")													
S00	0.75	1.9	1.4 ... 2					For load feeders for lower outputs, see table above (type of coordination "2").					
				3RV10	**3RT10**	**3RA19**							
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1BB42	11-1AA00	A	**3RA12 10-1C☐15-0BB4**		1	1 unit	101	1.233
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A	**3RA12 10-1D☐15-0BB4**		1	1 unit	101	1.240
	1.5	3.6	2.8 ... 4	11-1EA10		40 mm	A	**3RA12 10-1E☐15-0BB4**		1	1 unit	101	1.265
	1.5	3.6	3.5 ... 5	11-1FA10		13-1C	A	**3RA12 10-1F☐15-0BB4**		1	1 unit	101	1.245
	2.2	4.9	4.5 ... 6.3	11-1GA10		or 60 mm	A	**3RA12 10-1G☐15-0BB4**		1	1 unit	101	1.240
	3	6.5	5.5 ... 8	11-1HA10		13-1D	A	**3RA12 10-1H☐15-0BB4**		1	1 unit	101	1.233
	4	8.5	7 ... 10	11-1JA10	16-1BB42		A	**3RA12 10-1J ☐16-0BB4**		1	1 unit	101	1.242
	5.5	11.5	9 ... 12	11-1KA10	17-1BB42		A	**3RA12 10-1K☐17-0BB4**		1	1 unit	101	1.210
S0	7.5	15.5	11 ... 16	21-4AA10	25-1BB40	21-1BA00	A	**3RA12 20-4A☐25-0BB4**		1	1 unit	101	2.100
	7.5	15.5	14 ... 20	21-4BA10		+	A	**3RA12 20-4B☐25-0BB4**		1	1 unit	101	2.100
	11	22	17 ... 22	21-4CA10	26-1BB40	40 mm	A	**3RA12 20-4C☐26-0BB4**		1	1 unit	101	2.023
	11	22	20 ... 25	21-4DA10		23-1C[3]	A	**3RA12 20-4D☐26-0BB4**		1	1 unit	101	2.018
						or 60 mm 23-1D[3]							
S2	15	29	22 ... 32					For load feeders for higher outputs, see table above (type of coordination "2").					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

Order No. supplement for busbar center-to-center clearance

40 mm **C**
60 mm **D**

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

2) RS = Reversing duty for busbar systems.

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

* You can order this quantity or a multiple thereof.

Selection and ordering data

	For motor starter protectors Size	For contactors Size	Version		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Motor starter protectors[1]											
			Auxiliary switches								
 3RV19 01-1E	S00 ...S3	--	Transverse	1 CO	▶	**3RV19 01-1D**		1	1 unit	101	0.015
			Transverse	1 NO + 1 NC	▶	**3RV19 01-1E**		1	1 unit	101	0.018
 3RV19 01-1A	S00 ...S3	--	Laterally mountable	1 NO + 1 NC	▶	**3RV19 01-1A**		1	1 unit	101	0.045
 3RV19 02-1...	S00 ...S3	--	**Undervoltage trip units** AC 50 Hz 230 V		▶	**3RV19 02-1AP0**		1	1 unit	101	0.131
	S00 ...S3	--	**Shunt trip units** AC 50 Hz 230 V		▶	**3RV19 02-1DP0**		1	1 unit	101	0.130
Contactors[2]											
			Snap-on auxiliary switch blocks								
			Connection from below								
 3RH19 11-1BA..	--	S00	1-pole	1 NO	▶	**3RH19 11-1BA10**		1	1 unit	101	0.015
				1 NC	▶	**3RH19 11-1BA01**		1	1 unit	101	0.015
	--	S00	2-pole	1 NO + 1 NC	▶	**3RH19 11-1MA11**		1	1 unit	101	0.045
				2 NO	▶	**3RH19 11-1MA20**		1	1 unit	101	0.045
	--	S0 ... S3		1 NO + 1 NC	▶	**3RH19 21-1MA11**		1	1 unit	101	0.075
				2 NO	▶	**3RH19 21-1MA20**		1	1 unit	101	0.075
				2 NC	▶	**3RH19 21-1MA02**		1	1 unit	101	0.075
			Connection from 2 sides								
 3RH19 11-1F...	--	S00	4-pole	2 NO + 2 NC	▶	**3RH19 11-1FA22**		1	1 unit	101	0.060
	--	S0 ... S3	1-pole	1 NO	▶	**3RH19 21-1CA10**		1	1 unit	101	0.020
				1 NC	▶	**3RH19 21-1CA01**		1	1 unit	101	0.020
	--	S0 ... S3	4-pole	2 NO + 2 NC	▶	**3RH19 21-1FA22**		1	1 unit	101	0.075

[1] See also "Protection Equipment: 3RV Motor Starter Protectors".

[2] See also "Controls: Contactors and Contactor Assemblies".

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* You can order this quantity or a multiple thereof.

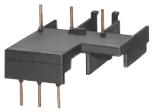
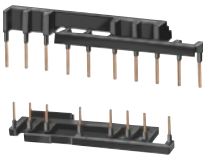
Accessories for 3RA1 direct-on-line and reversing starters

	For contactors	Version	Rated control supply voltage U_s [1]	DT	Order No. [2]	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type									kg
Surge suppressors without LED										
	Size S00									
 3RT19 16-1DG00		**For plugging onto the front side of the contactors with and without auxiliary switch blocks**								
	3RT1.	**Varistors**	24 ... 48 V AC 24 ... 70 V DC	▶	**3RT19 16-1BB00**		1	1 unit	101	0.010
			127 ... 240 V AC 150 ... 250 V DC	A	**3RT19 16-1BD00**		1	1 unit	101	0.010
	3RT1.	**RC elements**	24 ... 48 V AC 24 ... 70 V DC	▶	**3RT19 16-1CB00**		1	1 unit	101	0.010
			127 ... 240 V AC 150 ... 250 V DC	▶	**3RT19 16-1CD00**		1	1 unit	101	0.010
	3RT1.	**Noise suppression diodes**	12 ... 250 V DC	▶	**3RT19 16-1DG00**		1	1 unit	101	0.010
	3RT1.	**Diode assemblies** (diode and Zener diode) for DC operation and short break times	12 ... 250 V DC	▶	**3RT19 16-1EH00**		1	1 unit	101	0.010
	Size S0									
 3RT19 26-1B.00		**For fitting onto the coil terminals at top or bottom**								
	3RT10 2	**Varistors**	24 ... 48 V AC 24 ... 70 V DC	▶	**3RT19 26-1BB00**		1	1 unit	101	0.025
			127 ... 240 V AC 150 ... 250 V DC	▶	**3RT19 26-1BD00**		1	1 unit	101	0.025
	3RT10 2	**RC elements**	24 ... 48 V AC 24 ... 70 V DC	▶	**3RT19 26-1CB00**		1	1 unit	101	0.025
			127 ... 240 V AC 150 ... 250 V DC	▶	**3RT19 26-1CD00**		1	1 unit	101	0.025
	3RT10 2	**Diode assemblies** For DC operation and short break times								
		• Can be plugged in at bottom	24 V DC	▶	**3RT19 26-1TR00**		1	1 unit	101	0.025
			30 ... 250 V DC	A	**3RT19 26-1TS00**		1	1 unit	101	0.025
	Sizes S2 and S3									
		For fitting onto the coil terminals at top or bottom								
	3RT10 3, 3RT10 4	**Varistors**	24 V ... 48 V AC 24 V ... 70 V DC	▶	**3RT19 26-1BB00**		1	1 unit	101	0.025
			127 V ... 240 V AC 150 V ... 250 V DC	▶	**3RT19 26-1BD00**		1	1 unit	101	0.025
 3RT19 36-1C.00	3RT10 3, 3RT10 4	**RC elements**	24 ... 48 V AC 24 ... 70 V DC	▶	**3RT19 36-1CB00**		1	1 unit	101	0.040
			127 ... 240 V AC 150 ... 250 V DC	▶	**3RT19 36-1CD00**		1	1 unit	101	0.040
	3RT10 3, 3RT10 4	**Diode assemblies** For DC operation and short break times								
		• Can be plugged in at bottom	24 V DC	▶	**3RT19 36-1TR00**		1	1 unit	101	0.025
			30 ... 250 V DC	B	**3RT19 36-1TS00**		1	1 unit	101	0.025

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

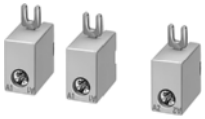
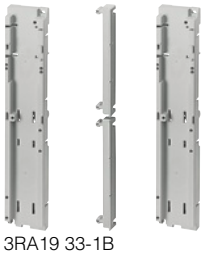
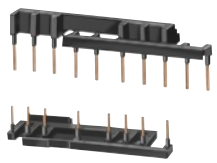
[2] For packs of 10 or 5 units **"-Z"** and order code **"X90"** must be added to the Order No.

* You can order this quantity or a multiple thereof.

For motor starter protectors Size	For contactors Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Link modules									
 3RA19 11-1A		Electrical and mechanical link between motor starter protector and contactor.							
		Single-unit packaging							
		Actuating voltage of contactor							
S00	S00	AC and DC	▶	**3RA19 11-1AA00**		1	1 unit	101	0.027
S0	S00		▶	**3RA19 21-1DA00**		1	1 unit	101	0.028
S0	S0	AC	▶	**3RA19 21-1AA00**		1	1 unit	101	0.037
S2	S2		▶	**3RA19 31-1AA00**		1	1 unit	101	0.042
S3	S3		▶	**3RA19 41-1AA00**		1	1 unit	101	0.090
S0	S0	DC	▶	**3RA19 21-1BA00**		1	1 unit	101	0.039
S2	S2		▶	**3RA19 31-1BA00**		1	1 unit	101	0.043
S3	S3		▶	**3RA19 41-1BA00**		1	1 unit	101	0.089
 3RA19 21-1A		***Multi-unit packaging***							
		Actuating voltage of contactor							
S00	S00	AC and DC	▶	**3RA19 11-1A**		1	10 units	101	0.019
S0	S00		▶	**3RA19 21-1D**		1	10 units	101	0.021
S0	S0	AC	▶	**3RA19 21-1A**		1	10 units	101	0.028
S2	S2		▶	**3RA19 31-1A**		1	5 units	101	0.033
S3	S3		▶	**3RA19 41-1A**		1	5 units	101	0.072
S0	S0	DC	▶	**3RA19 21-1B**		1	10 units	101	0.030
S2	S2		▶	**3RA19 31-1B**		1	5 units	101	0.034
S3	S3		▶	**3RA19 41-1B**		1	5 units	101	0.073
Hybrid link modules									
 3RA19 21-2FA00	Screw terminals	Cage Clamp terminals	Electrical and mechanical connection between motor starter protector with screw terminals and contactor with Cage Clamp terminals						
		Single-unit packaging							
		Actuating voltage of contactor							
S00	S00	AC and DC	▶	**3RA19 11-2FA00**		1	1 unit	101	0.038
S0	S00		▶	**3RA19 21-2FA00**		1	1 unit	101	0.028
		Multi-unit packaging							
		Actuating voltage of contactor							
S00	S00	AC and DC	▶	**3RA19 11-2F**		1	10 units	101	0.031
S0	S00		▶	**3RA19 21-2F**		1	10 units	101	0.030
Wiring kits									
 3RA19 13-2A		**Reversing duty**							
--	S00	Electrical and mechanical link for reversing contactors. Can be combined with link module. For size S00: optionally with integrated electrical and mechanical locking. For sizes S0 to S3: mechanical locking device must be ordered separately.	▶	**3RA19 13-2A**		1	1 unit	101	0.040
	S0		▶	**3RA19 23-2A**		1	1 unit	101	0.060
	S2		▶	**3RA19 33-2A**		1	1 unit	101	0.120
	S3		▶	**3RA19 43-2A**		1	1 unit	101	0.300
		Wye-delta starting							
--	S00	Electrical and mechanical link for three contactors of same size	▶	**3RA19 13-2B**		1	1 unit	101	0.050
	S0		▶	**3RA19 23-2B**		1	1 unit	101	0.060
	S2		▶	**3RA19 33-2B**		1	1 unit	101	0.070
	S3		▶	**3RA19 43-2B**		1	1 unit	101	0.160
Connection modules for contactors with screw terminals									
		Size S00, S0							
 3RT19 26-4RD01		**Adapters for contactors** Ambient temperature $T_{u\,max.}$ = 60 °C							
--	S00	Size S00, rated operational current I_e at AC-3/400 V: 20 A	B	**3RT19 16-4RD01**		1	1 unit	101	0.020
--	S0	Size S0, rated operational current I_e at AC-3/400 V: 25 A	B	**3RT19 26-4RD01**		1	1 unit	101	0.200
 3RT19 00-4RE01	--	S00, S0	**Plugs for contactors** Size S00, S0	B	**3RT19 00-4RE01**		1	1 unit	101	0.025

* You can order this quantity or a multiple thereof.

Accessories for 3RA1 direct-on-line and reversing starters

	For motor starter protectors Size	For contactors Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Mechanical interlocks										
 3RA19 24-2B	--	S0, S2, S3	For reversing contactors, laterally fittable with 1 auxiliary contact (1 NC) each per contactor.	▶	**3RA19 24-2B**		1	1 unit	101	0.060
Coil repeat terminals										
 3RA19 23-3B	--	S0, 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	0.080
Standard mounting rail adapters										
			Single-unit packaging							
 3RA19 32 3RA19 22	S00, S0	S00, S0	For mechanical fixing of	▶	**3RA19 22-1AA00**		1	1 unit	101	0.104
	S2	S2	motor starter protector and	▶	**3RA19 32-1AA00**		1	1 unit	101	0.202
	S3	S3	contactor; for snapping onto standard mounting rail or for screw fixing	▶	**3RA19 42-1AA00**		1	1 unit	101	0.264
			Multi-unit packaging							
	S00, S0	S00, S0	For mechanical fixing of	▶	**3RA19 22-1A**		1	5 units	101	0.095
	S2	S2	motor starter protector and	▶	**3RA19 32-1A**		1	5 units	101	0.187
	S3	S3	contactor; for snapping onto standard mounting rail or for screw fixing	▶	**3RA19 42-1A**		1	5 units	101	0.238
Side modules										
 3RA19 02	S00 ...S3	S00 ...S3	For standard mounting rail adapter 10 mm wide, 96 mm long, for widening standard mounting rail adapters. For sizes S00 to S2: 2 units required. For size S3: 3 units required.	▶	**3RA19 02-1B**		1	10 units	101	0.009
Assembly kits (RH) for reversing duty for standard mounting rails										
 3RA19 33-1B	S0	S0	Also suitable for screw fixing.	A	**3RA19 23-1B**		1	1 unit	101	0.288
	S2	S2	Consisting of:	A	**3RA19 33-1B**		1	1 unit	101	0.557
	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	0.818
										

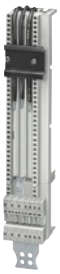
* You can order this quantity or a multiple thereof.

Accessories for 3RA1 direct-on-line and reversing starters

	For motor starter protectors	For contactors	Version	Busbar center-to-center clearance	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Size	Size		mm							kg
Accessories, adapters and link modules for Cage Clamp terminals											
 3RA19 11-2A + 8US10 51-5CM47	S00	--	**Link modules, Cage Clamp** Electrical connection between motor starter protector and contactor (1 pack = 10 units)	--	▶	**3RA19 11-2A**		1	10 units	101	0.016
	S00	--	**Link modules, Cage Clamp with mechanical connections** Mechanical and electrical connection between motor starter protector and contactor (1 pack = 10 units)	--	▶	**3RA19 11-2E**		1	10 units	101	0.028
		--	**Standard mounting rail adapters** For Cage Clamp with 2 standard mounting rails, one is movable, 45 mm wide	--	▶	**3RA19 22-1L**		1	5 units	101	0.413
 3RA19 11-2E		--	**Busbar adapters** 45 mm wide, 182 mm long, adapted for Cage Clamp motor starter protectors. If there is an additional contactor, a further standard mounting rail must be fitted.	40	▶	**8US10 51-5CM47**		1	1 unit	143	0.193
		--		60	▶	**8US12 51-5CM47**		1	1 unit	143	0.190
		--	**Standard mounting rails 35 mm** Plastic incl. fixing screws (1 pack = 10 units)	--	A	**8US19 98-7CA15**		1	10 units	143	0.009
Push-in lugs for screw fixing											
  3RB19 00-0B	S00, S0	--	For 3RV1 motor starter protectors: 2 units each required, for 3RA1 fuseless load feeders: 1 unit each required, for AS-Interface switching device holder: 2 units each required (1 pack = 10 units)	--	A	**3RB19 00-0B**		100	10 units	101	0.100
Busbar adapters											
 8US12 51-5DM07	S00, S0	S00, S0	45 mm wide, 182 mm long for busbars	40	▶	**8US10 51-5DM07**		1	1 unit	143	0.184
				60	▶	**8US12 51-5DM07**		1	1 unit	143	0.183
	S2	S2	55 mm wide, 242 mm long including screw and spacer	40	▶	**8US10 61-5FP08**		1	1 unit	143	0.308
				60	▶	**8US12 61-5FP08**		1	1 unit	143	0.292
Device holders											
 8US12 50-5AM00	S00, S0	S00, S0	With standard mounting rail, without connecting cables 45 mm wide, 182 mm long for busbars	40	▶	**8US10 50-5AM00**		1	1 unit	143	0.182
				60	▶	**8US12 50-5AM00**		1	1 unit	143	0.158
	S0	S0	55 mm wide, 182 mm long	40	▶	**8US10 60-5AM00**		1	1 unit	143	0.197
				60	▶	**8US12 60-5AM00**		1	1 unit	143	0.202
	S2	S2	55 mm wide, 242 mm long including screw and spacer	60	▶	**8US12 60-5AP00**		1	1 unit	143	0.243

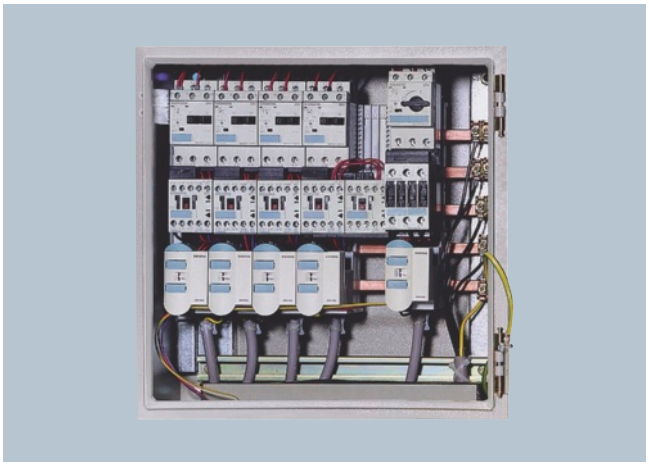
* You can order this quantity or a multiple thereof.

Accessories for 3RA1 direct-on-line and reversing starters

	For motor starter protectors	For contactors	Version	Busbar center-to-center clearance	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Size	Size		mm							kg
Side modules											
 8US19 98-2BM00	--	--	Including connecting plates for widening busbar adapters or switching device holders, 13.5 mm wide, 182 mm long	--	A	**8US19 98-2BM00**		1	4 units	143	0.036
Assembly kits (RS) for reversing duty for 40 mm and 60 mm busbar systems											
	S00, S0	S00	Consisting of wiring kit, busbar adapter, device holder, and side module. Link modules and mechanical locking devices to be ordered separately. Only for size S00 is mechanical locking always included.	40	A	**3RA19 13-1C**		1	1 unit	101	0.433
	S0	S0			A	**3RA19 23-1C**		1	1 unit	101	0.472
	S00, S0	S00		60	A	**3RA19 13-1D**		1	1 unit	101	0.431
	S0	S0			A	**3RA19 23-1D**		1	1 unit	101	0.475
	S2	S2			A	**3RA19 33-1D**		1	1 unit	101	0.743
Connecting plates											
 8US19 98-1AA00	--	--	For mechanical linking of busbar adapters and switching device holders or of standard mounting rail adapters (2 units per combination) (1 pack = 100 units)	--	►	**8US19 98-1AA00**		100	100 units	143	0.100
Load-side terminal strips, separable											
 8US12 51-5DM07 with 8US19 98-8AM07	S00, S0	S00, S0	Light gray with carrier for mounting onto busbar adapter 45 mm wide, 91 mm long 3 x 2.5 mm² plug-in terminals, 400 V 4 x 1.5 mm² plug -in terminals, 250 V	--	A	**8US19 98-8AM07**		1	1 unit	143	0.061
Spacers											
 8US19 98-1BA00	--	S00, S0	Fixes the load feeder onto the busbar adapter (1 pack = 100 units)	--	►	**8US19 98-1BA00**		100	100 units	143	0.100
Screw holders											
 8US19 98-1CA00	--	S00, S0	Allows additional fixing of the branch with screws (1 pack = 20 units)	--	B	**8US19 98-1CA00**		100	20 unit	143	0.100

* You can order this quantity or a multiple thereof.

Overview



The AS-Interface load feeder module adds an input/output module to the conventional busbar and standard mounting rail adapters. With this module the control circuit of a load feeder is available completely factory-wired. The series has been optimized for operation in conjunction with the SIRIUS load feeders size S00 and S0. Connection to the higher-level automation system is made through the AS-Interface interface of the load feeder module. A non-shielded standard litz wire can be used as data line and for the auxiliary current supply. Connection to the AS-Interface load feeder module is made using two connectors with the insulation displacement connection.

Four different AS-Interface load feeder modules are available: Differences exist in the number of inputs and outputs and in the type of outputs. The units with solid-stated outputs are designed for 24 V DC, those with relay outputs are suitable for voltages of max. 230 AC. Direct-on-line and reversing starters as well as double direct-on-line starters and starter combinations can be wired therefore for pole reversal. The inputs can be used to separately scan the feedbacks from motor starter protectors and contactors. The outputs can be used for direct control of the contactor coils.

As the outputs already have overvoltage protection integrated, no additional measures for the contactors are required.

The outputs are supplied with separate auxiliary voltage – a selectively configured EMERGENCY-STOP concept is possible therefore. The inputs are supplied from the AS-Interface data line. Inputs and outputs have to be wired using integrated, spring-type terminals, each connected to a common potential.

AS-Interface load feeder modules

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 3RK1 400-1KG01-0AA1 3RK1 400-1MG01-0AA1							
AS-Interface load feeder modules for standard rail mounting, for contactors size S00 and S0, for mounting onto 40 mm or 60 mm busbar systems and SIRIUS standard mounting rail adapters the matching support is required (see Accessories) The AS-Interface connectors for the data and auxiliary supply cable (yellow and black) must be ordered separately (see Accessories).							
Type — *Supply in V*							
• 2 inputs/1 output — 24 DC[1])	A	**3RK1 400-1KG01-0AA1**		1	1 unit	121	0.097
• 4 inputs/2 outputs	A	**3RK1 400-1MG01-0AA1**		1	1 unit	121	0.100
• 2 inputs/1relay output — 120/230 AC[2])	A	**3RK1 402-3KG02-0AA1**		1	1 unit	121	0.124
• 3 inputs/2 relay outputs	B	**3RK1 402-3LG02-0AA1**		1	1 unit	121	0.143
Accessories[3)]							
Manuals for AS-Interface load feeder modules							
• English, German	▶	**3RK1 701-2GB00-0AA0**		1	1 unit	192	0.197
• French, Italian	A	**3RK1 701-2HB00-0AA0**		1	1 unit	192	0.196
 Holder with mounted 3RK1 901-3.A00 power connector coupling							
Supports for AS-Interface load feeder modules							
• With PE and N conductor connection, for mounting on busbar adapter with 40 mm center-to-center spacing. 3RK1 901-0EA00 power connector set is required							
- 45 mm width	B	**3RK1 901-3AA00**		1	1 unit	121	0.073
- 54 mm width	B	**3RK1 901-3BA00**		1	1 unit	121	0.082
• With PE and N conductor connection, for mounting on busbar adapter with 60 mm center-to-center spacing. 3RK1 901-0EA00 power connector set is required							
- 45 mm width	B	**3RK1 901-3CA00**		1	1 unit	121	0.069
- 54 mm width	B	**3RK1 901-3DA00**		1	1 unit	121	0.080
• Without PE/ground and N conductor connection, for mounting on busbar adapter with 40 mm or 60 mm center-to-center spacing							
- 45 mm width	B	**3RK1 901-3EA00**		1	1 unit	121	0.064
- 54 mm width	B	**3RK1 901-3FA00**		1	1 unit	121	0.073
• For mounting onto 3RA19 22-1A SIRIUS standard mounting rail adapter							
- 45 mm width	B	**3RK1 901-3GA00**		1	1 unit	121	0.048
 3RK1 901-0EA00							
Power connector sets 5-pole, 2.5 mm^2 (1 set includes 1 plug and 1 coupling)	C	**3RK1 901-0EA00**		1	5 units	121	0.111
 3RK1 901-0NA00 3RK1 901-0PA00							
AS-Interface connectors for data and auxiliary supply cables With insulation displacement terminals for 2 x (0.5 to 0.75 mm^2) standard litz wire							
• Yellow	C	**3RK1 901-0NA00**		1	5 units	121	0.015
• Black	C	**3RK1 901-0PA00**		1	5 units	121	0.015

1) Without connectors for data and auxiliary power (yellow and black).

2) With one connector each for data and auxiliary power (yellow and red).

3) For busbar accessories, see Chapter 14, "SIVACON Power Distribution Boards, Busway and Cubicle Systems".

* You can order this quantity or a multiple thereof.

Overview

The 3RV19 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.

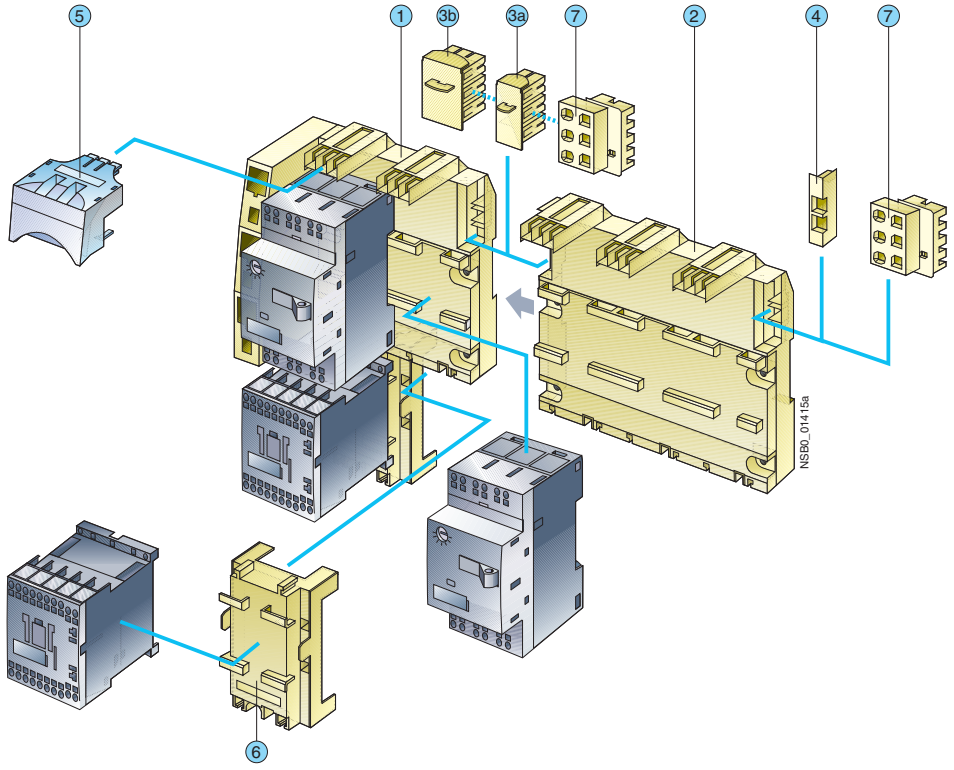
The devices with spring-type connections are available in the SIRIUS modular system up to 5.5 kW at 400 V AC. The motor starter protectors and load feeders with screw terminals for sizes S00 and S0 can also be integrated in the system at the same time.

The system is based on a basic module complete with a lateral incoming unit (three-phase busbar with infeed). This infeed with spring-type terminals is mounted on the right or left depending on the version and can be supplied with a maximum conductor cross-section of 25 mm^2 (with end sleeve). A basic module has two sockets onto each of which a motor starter protector can be snapped.

Expansion modules are available for extending the system (3-phase busbars for system expansion). The individual modules are connected through an expansion plug.

The electrical connection between the three-phase busbars and the motor starter protectors is implemented through plug-in connectors. The complete system can be mounted on a TH 35 standard mounting rail to EN 60715 and can be expanded as required up to a maximum current carrying capacity of 80 A.

The system is mounted extremely quickly and easily thanks to the simple plug-in technique. Thanks to the lateral infeed, the system also saves space in the control cabinet. The additional overall height required for the infeed unit is only 30 mm. The alternative infeed possibilities on each side offer a high degree of flexibility for configuring the control cabinet: Infeed on left-hand or right-hand side, ring infeed or infeed on one side and outfeed from the other side to supply further loads are all possible. A terminal block with spring-type connections in combination with a standard mounting rail enables the integration of not only SIRIUS motor starter protectors but also single-phase, two-phase and three-phase components such as 5SY miniature circuit breakers or SIRIUS relay components.



1 3-phase busbar with infeed
2 3-phase busbar for system expansion
3a Expansion plug
3b Extra-wide expansion plug
4 End cover
5 Plug-in connector
6 Contactor base
7 Terminal block

3RV19 infeed systems

① *Three-phase busbars with infeed*

A three-phase busbar with infeed unit is required for connecting the incoming supply. This module comprises one infeed module and 2 sockets which each accept one motor starter protector. A choice of two versions with infeed on the left or right is available. The infeed is connected using spring-type terminals. The Cage Clamp springs permit conductor cross-sections of up to 25 mm^2 with end sleeves. An end cover is supplied with each module.

② *Three-phase busbars for system expansion*

The three-phase busbars for system expansion support expansion of the system. There is a choice of modules with 2 or 3 sockets. The system can be expanded as required up to a maximum current carrying capacity of 63 A. An expansion plug is supplied with each module.

③a *Expansion plug*

The expansion plug is used for electrical connection of adjacent three-phase busbars. The current carrying capacity of this plug equals 63 A. One expansion plug is supplied with each three-phase busbar for system expansion. Additional expansion plugs are therefore only required as spare parts.

③b *Extra-wide expansion plug*

The extra-wide expansion plug makes the electrical connection between two three-phase busbars, thus performing the same function as the 3RV19 17-5BA00 expansion plug; the electrical characteristics (e. g. a current carrying capacity of 63 A) are identical.

The 3RV19 17-5E expansion plug is 10 mm wider than the 3RV19 17-5BA00 expansion plug, hence in the plugged state there is a distance of 10 mm between the connected three-phase busbars. This distance can be used to lay the auxiliary current and control current wiring ("wiring duct"). The motor starter protector and contactor can be wired from underneath, which means that the complete cable duct above the system can be omitted.

④ *End cover*

The end cover is used to cover the three-phase busbar at the open end of the system. This cover is therefore only required once for each system. An end cover is supplied with each three-phase busbar system with infeed. Further end covers are therefore only required as spare parts.

⑤ *Plug-in connector*

The plug-in connector is used for the electrical connection between the three-phase busbar and the motor starter protector. There are three different versions:

- One version for 3RV motor starter protectors size S00 with screw terminals
- One version for 3RV motor starter protectors size S0 with screw terminals
- One version for 3RV motor starter protectors size S00 with spring-type terminals

⑥ *Contactor base*

Load feeders can be assembled in the system using the contactor base. The contactor bases are suitable for contactors of size S00 with spring-type terminals and are simply snapped onto the three-phase busbars. Direct-on-line starters and reversing starters are possible. One contactor base is required for direct-on-line starters and two are required for reversing starters. To assemble load feeders for reversing starters, the contactor bases can be arranged either below each other (45 mm overall width) or alongside each other (90 mm overall width). It is important to note that mechanical interlocking of the contactors is only possible when they are arranged vertically.

The infeed system is designed for mounting on a 35 mm standard mounting rail with 7.5 mm overall depth. This standard mounting rail gives the contactor base a stable mounting surface to sit on. If standard mounting rails with a depth of 15 mm are used, the spacer connected to the bottom of the contactor base must be knocked out and plugged into the mating piece that is also on the underside. Then the contactor base also has a stable mounting surface. When standard mounting rails with a depth of 7.5 mm are used, the spacer has no function and can be removed.

As an alternative to using a contactor base, the 3RA19 11-2E electrical link modules can also be used for direct start load feeders of size S00. Motor starter protector and contactor assemblies can then be directly snapped onto the sockets of the three-phase busbars. For feeders of size S00 and S0, the corresponding 3RA19 11-1.... or 3RA19 21-1... link modules should generally be used. For size S0, it is only possible integrate direct start load feeders and they must be integrated in the system as complete assemblies.

⑦ *Terminal block*

The 3RV19 17-5D terminal block enables the integration of not only SIRIUS motor starter protectors but also single-phase, two-phase and three-phase components in addition. Using the terminal block the 3 phases can be fed out of the system; single-phase loads can also be integrated in the system as the result. The terminal block is plugged into the slot of the expansion plug and thus enables outfeeding from the middle or end of the infeed system. The terminal block can be rotated through 180 ° and be locked to the support modules of the infeed system. The 3RV19 17-7B 45 mm standard mounting rail for screwing onto the support plate is available in addition in order to be able to plug the single-phase, two-phase and three-phase components onto the infeed system.

Selection and ordering data

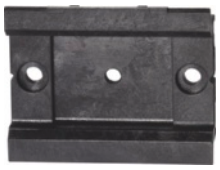
Type	Version	For motor starter protector Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Three-phase busbars with infeed									
 3RV19 17-1A **Three-phase busbars with infeed** Incl. 3RV19 17-6A end cover	For 2 motor starter protectors with infeed from the left	S00 (Cage Clamp)[1], S00, S0 (screw)	A	**3RV19 17-1A**		1	1 unit	101	0.438
	For 2 motor starter protectors with infeed from the right	S00 (Cage Clamp)[1], S00, S0 (screw)	A	**3RV19 17-1E**		1	1 unit	101	0.438
Three-phase busbars for system expansion									
 3RV19 17-4B **Three-phase busbars** Incl. 3RV19 17-5BA00 expansion plug	For 2 motor starter protectors	S00 (Cage Clamp)[1], S00, S0 (screw)	A	**3RV19 17-4A**		1	1 unit	101	0.261
	For 3 motor starter protectors	S00 (Cage Clamp)[1], S00, S0 (screw)	A	**3RV19 17-4B**		1	1 unit	101	0.364
Plug-in connectors									
 3RV19 17-5AA00 **Plug-in connectors** To make contact with the motor starter protectors	Single-unit packaging	S00 (Cage Clamp)[1]	A	**3RV19 17-5AA00**		1	1 unit	101	0.053
	Multi-unit packaging	S00 (Cage Clamp)[1]	A	**3RV19 17-5A**		1	10 units	101	0.048
 3RV19 27-5AA00	Single-unit packaging	S00 (screw)	A	**3RV19 17-5CA00**		1	1 unit	101	0.040
	Multi-unit packaging	S00 (screw)	A	**3RV19 17-5C**		1	10 units	101	0.036
	Single-unit packaging	S0 (screw)	A	**3RV19 27-5AA00**		1	1 unit	101	0.040
	Multi-unit packaging	S0 (screw)	A	**3RV19 27-5A**		1	10 units	101	0.036

[1] Compatible with the following motor starter protectors: 3RV10 11-...2. (size S00, Cage Clamp) product version E03 and upwards.

Type	Version	For contactors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Contactor bases									
 3RV19 17-7A **Contactor bases** For mounting direct-on-line or reversing starters	Single-unit packaging	S00	A	**3RV19 17-7AA00**		1	1 unit	101	0.042
	Multi-unit packaging	S00	A	**3RV19 17-7A**		1	10 units	101	0.048

* You can order this quantity or a multiple thereof.

3RV19 infeed systems

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal blocks									
 3RV19 17-5D	**Terminal blocks** For integration of single-phase, two-phase and three-phase components	Single-unit packaging	A	**3RV19 17-5D**		1	1 unit	101	0.050
45 mm standard mounting rails									
 3RV19 17-7B	**45 mm standard mounting rails** for mounting onto three-phase busbars	Single-unit packaging	A	**3RV19 17-7B**		1	1 unit	101	0.261
Extra-wide expansion plugs									
 3RV19 17-5E	**Extra-wide expansion plugs** As accessory	Single-unit packaging	A	**3RV19 17-5E**		1	1 unit	101	0.050
Expansion plugs									
 3RV19 17-5BA00	**Expansion plugs**[1] As spare part	Single-unit packaging	A	**3RV19 17-5BA00**		1	1 unit	101	0.035
End covers									
 3RV19 17-6A	**End covers**[2] As spare part	Multi-unit packaging	A	**3RV19 17-6A**		100	10 units	101	0.500

[1] The expansion plug is included in the scope of supply of the 3RV19 17-4 three-phase busbars for system expansion.

[2] The end cover is included in the scope of supply of the 3RV19 17-1 three-phase busbars with infeed system.

* You can order this quantity or a multiple thereof.

Overview

3RA6 fuseless compact feeders and infeed system for 3RA6

Integrated functionality

The SIRIUS 3RA6 compact feeders are a generation of innovative load feeders with the integrated functionality of a circuit breaker, 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 feeder.

Application

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

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 feeder 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 of the 3RA6 compact feeders 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-i add-on module (also available as a version with two local inputs for safe disconnection) which can be mounted instead of the control circuit terminals on the SIRIUS compact feeder.

The design of the AS-i add-on module permits a group of up to 62 feeders with a total of four cables to be connected to the control system. This reduces wiring work considerably compared to the parallel wiring method.

Permanent wiring/easy replacement

Using the SIRIUS infeed system for 3RA6 it is possible to carry out the wiring in advance without a compact feeder needing to be connected.

A compact feeder 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 feeder.

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 mm^2 and connecting the motor cable directly without additional intermediate terminals.

Screw and spring-type connections

The SIRIUS compact feeders and the SIRIUS infeed system for 3RA6 are available with screw and spring-type connections.

	Screw connection
	Spring-type connection
	The terminals are indicated in the selection and ordering data by 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 feeders and matching infeed.

Types of infeed for the 3RA6 fuseless compact feeders

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

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

Type of infeed	Feeder terminal (according to UL 508, type E)	Order No.
Parallel wiring	Terminal 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 feeders

The SIRIUS 3RA6 compact feeders 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 a single enclosure and can be used wherever standard induction motors up to 32 A (up to approx. 15 kW at 400 V AC) are started directly. Direct-on-line and reversing starters are available as variants.

The reversing starter version comes with not only an internal electrical interlock but also with a mechanical interlock to prevent simultaneous actuation of both directions of rotation.

3RA6 fuseless compact feeders are available with 5 current setting ranges and 3 control voltage ranges:

General data

Overall width of direct-on-line starter	Overall width of reversing starter	Current setting range	At 400 V AC for induction motors up to
mm	mm	A	kW
45	90	0.1 ... 0.4	0.09
45	90	0.32 ... 1.25	0.37
45	90	1 ... 4	1.5
45	90	3 ... 12	5.5
45	90	8 ... 32	15

The 3 control voltage ranges are:
- 24 V AC/DC
- 42 ... 70 V AC/DC
- 110 ... 240 V AC/DC

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.

For information see Chapter 3 “Controls - Contactors and Contactor Assemblies“ --> “3RT,3TB, 3TF Contactors for Switching Motors“, Chapter 16 “SENTRON Switching and Protection Devices - Molded Case Circuit Breakers“ --> “3VL Molded Case Circuit Breakers“ and Technical Information LV 1 T.

Operating conditions

The SIRIUS 3RA6 compact feeders 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 feeders are generally designed to degree of protection IP20. The permissible ambient temperature during operation is -20 ... +60 °C.

The limited short-circuit current based on IEC/EN 60947-6-2 is 53 kA at 400 V.

Note:

More technical specifications can be found in the system manual at

http://www.siemens.de/kompaktabzweig

Overload tripping times

The overload tripping time can be set on the device to less than 10 s (CLASS 10) and less than 20 s (CLASS 20 for heavy starting). As the breaker mechanism still remains closed after an overload, resetting is possible by either local manual reset or autoreset after 3 minutes cooling time.

With autoreset there is no need to open the control cabinet.

Diagnostics options

The compact feeder 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 be evaluated in addition in the higher-level control system by means of the integrated auxiliary switches and signal switches of the compact feeder.

Four complement variants for 3RA6 compact feeders
- For standard mounting rail or screw fixing:
  basic version including 1 pair of main circuit terminals and 1 pair of control circuit terminals
- For standard mounting rail or screw fixing when using the AS~i add-on module:
  without control circuit terminals because the AS-i add-on module is plugged on instead
- For use with the infeed system for 3RA6:
  without main circuit terminals because they are supplied with the infeed system and the expansion modules
- For use with the infeed system for 3RA6 and AS-i add-on module:
  without terminal complement (also for reordering when replacing the compact feeder)

Benefits

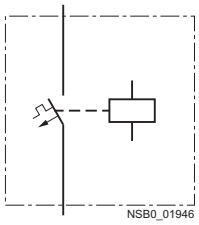
The SIRIUS 3RA6 compact feeders offer a number of advantages, the most important being:
- Compact design saves space in the control cabinet
- Little planning and assembly work and far less wiring thanks to a single complete unit with one order number
- Little variance through 3 wide voltage ranges and 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 mm^2
- When using the infeed system for 3RA6, possibility of directly connecting the motor cable without intermediate terminals
- Integration in Totally Integrated Automation thanks to the optional connection to AS-Interface

Selection and ordering data

3RA61 20-1CB32

3RA61 20-2EB32

Direct start



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

Standard induction motor 4-pole at 400 V AC[1] Standard output *P*	Setting range for solid-state overload release	DT[2]	**Compact feeder** Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
kW	A							kg
0.09	0.1 ...0.4		**3RA61 20-□A□3□**		1	1 unit	121	1.3
0.37	0.32 ... 1.25		**3RA61 20-□B□3□**		1	1 unit	121	1.3
1.5	1 ... 4		**3RA61 20-□C□3□**		1	1 unit	121	1.3
5.5	3 ... 12		**3RA61 20-□D□3□**		1	1 unit	121	1.3
15	8 ... 32		**3RA61 20-□E□3□**		1	1 unit	121	1.3

				Additional price/ Price reduction	
Order No. supplement for connection type					
• Without terminals for use with the infeed system for 3RA6 and the AS-i add-on module	**0**			Δ	
• With screw terminals	**1**			Without	
• With spring-type terminals	**2**			x	
Order No. supplement for rated control supply voltage					
• 24 V AC/DC (for combining with AS-i add-on module)		**B**		Without	
• 42 ... 70 V AC/DC		**E**		Without	
• 110 ... 240 V AC/DC		**P**		Without	
Order No. supplement for complement variant					
• For standard mounting rail or screw mounting: Basic version including 1 pair of main circuit terminals and 1 pair of control circuit terminals			**2**	Without	
• For use with the infeed system for 3RA6 without main circuit terminals (with control circuit terminals)			**3**	Δ Δ	For screw terminals For spring-type terminals
• For standard mounting rail or screw mounting when using the AS-i add-on module without control circuit terminals (with main circuit terminals)			**4**	Δ Δ	For screw terminals For spring-type terminals

Δ = Price reduction

x = Additional price

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

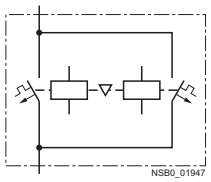
2) Delivery time is dependent on connection type, rated control supply voltage and complement variant: temporarily C or X, later A or B.

* You can order this quantity or a multiple thereof.

3RA62 reversing starters

Selection and ordering data

Reversing duty



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

3RA62 50-1CP32

3RA62 50-2DP32

Standard induction motor 4-pole at 400 V AC[1] Standard output *P*	Setting range for solid-state overload release	DT[2]	**Compact feeder** Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
kW	A							kg
0.09	0.1 ...0.4		**3RA62 50-□A□3□**		1	1 unit	121	2.3
0.37	0.32 ... 1.25		**3RA62 50-□B□3□**		1	1 unit	121	2.3
1.5	1 ... 4		**3RA62 50-□C□3□**		1	1 unit	121	2.3
5.5	3 ... 12		**3RA62 50-□D□3□**		1	1 unit	121	2.3
15	8 ... 32		**3RA62 50-□E□3□**		1	1 unit	121	2.3

				Additional price/ Price reduction	
Order No. supplement for connection type					
• Without terminals for use with the infeed system for 3RA6 and the AS-i add-on module	**0**			Δ	
• With screw terminals	**1**			Without	
• With spring-type terminals	**2**			x	
Order No. supplement for rated control supply voltage					
• 24 V AC/DC (for combining with AS-i add-on module)		**B**		Without	
• 42 ... 70 V AC/DC		**E**		Without	
• 110 ... 240 V AC/DC		**P**		Without	
Order No. supplement for complement variant					
• For standard mounting rail or screw mounting: Basic version including 1 pair of main circuit terminals and 1 pair of control circuit terminals			**2**	Without	
• For use with the infeed system for 3RA6 without main circuit terminals (with control circuit terminals)			**3**	Δ Δ	For screw terminals For spring-type terminals
• For standard mounting rail or screw mounting when using the AS-i add-on module without control circuit terminals (with main circuit terminals)			**4**	Δ Δ	For screw terminals For spring-type terminals

Δ = Price reduction

x = Additional price

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

2) Delivery time is dependent on connection type, rated control supply voltage and complement variant: temporarily C or X, later A or B.

* You can order this quantity or a multiple thereof.

Overview

Accessories for SIRIUS 3RA6 compact feeders

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

- AS-i add-on module: For communication of the compact feeder with the control system using AS-Interface; also available as a version with two local inputs for safe disconnection. The AS-i add-on module can be combined only in connection with compact feeders with a rated control supply voltage of 24 V AC/DC.
- Addressing unit for addressing the AS-i add-on module
- 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 feeder. 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 feeder, including push-in lugs
- Main conductor terminal: available with screw and spring-type connection

Accessories for parallel wiring

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 feeders with screw connection. Circuit breaker 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 circuit breaker.

A connecting piece is required for the combination with circuit breaker size S00. 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 feeders or circuit breakers.

Busbar adapters for 60 mm systems

The compact feeders are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs. These feeders are suitable for copper busbars with a width from 12 to 30 mm. The busbars can be 4 to 5 mm or 10 mm thick.

The 8US busbar system can be loaded with a maximum summation current of 630 A.

The "reversing starter" version requires a device holder along side the busbar adapter for lateral mounting.

The compact 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.

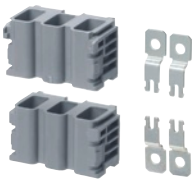
For more accessories such as incoming and outgoing terminals, flat copper profiles etc., see Chapter 17, "8US Busbar Systems --> 60 mm Busbar System".

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 feeder with closed control cabinet doors.

Accessories
for 3RA6 direct-on-line and reversing starters

Selection and ordering data

	Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Accessories specially for 3RA6 compact feeders								
 3RA69 70-3A	**AS-i add-on modules for compact feeders** For communication of the compact feeder with the control system using AS-Interface	A	**3RA69 70-3A**		1	1 unit	121	0.045
	AS-i add-on modules with two local inputs for safe disconnection	A	**3RA69 70-3B**		1	1 unit	121	0.045
 3RK19 04-2AB01	**Addressing units for AS-i add-on modules** • For active AS-Interface modules, intelligent sensors and actuators • According to AS-Interface Version 2.1 • Including expanded addressing mode • Scope of supply - 1 addressing unit - 1 operating manual (English, French, German, Italian, Spanish) - 1 addressing cable (1.5 m, with jack plug)	►	**3RK19 04-2AB01**		1	1 unit	121	0.540
 3RA69 50-0A	**Control kits** For mechanical actuation of the compact feeder	A	**3RA69 50-0A**		1	1 unit	121	0.004
 3RA69 40-0A	**Adapters for screw fixing the compact feeder** (set including push-in lugs Direct-on-line starters require 1 set, reversing starters 2 sets.	A	**3RA69 40-0A**		1	1 unit	121	0.152

* You can order this quantity or a multiple thereof.

Accessories specially for 3RA6 compact feeders

Screw terminals

Auxiliary switch blocks for compact feeders


3RA6911-1A

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	2 NO	A	**3RA69 11-1A**		1	1 unit	121	0.018
	2 NC	A	**3RA69 12-1A**		1	1 unit	121	0.018
	1 NO +1 NC	A	**3RA69 13-1A**		1	1 unit	121	0.018


3RA6920-1A

Main circuit terminals (incoming and outgoing side)		A	**3RA69 20-1A**		1	1 unit	121	0.038

Spring-type connection

Auxiliary switch blocks for compact feeders

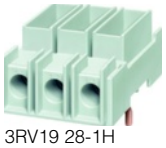

3RA6911-2A

	2 NO	A	**3RA69 11-2A**		1	1 unit	121	0.018
	2 NC	A	**3RA69 12-2A**		1	1 unit	121	0.018
	1 NO + 1 NC	A	**3RA69 13-2A**		1	1 unit	121	0.018


3RA6920-2A

Main circuit terminals (incoming and outgoing side)		A	**3RA69 20-2A**		1	1 unit	121	0.049

Terminals for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508 for infeed through parallel wiring with compact feeders


3RV19 28-1H

Note: UL 508 demands for "Combination Motor Controller Type E" 1-inch clearance and 2-inch creepage distance at line side. Terminal blocks are not required for use according to CSA. With size S0, these terminal blocks cannot be used in combination with 3RV19 .5 three-phase busbars.

Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal blocks type E For extended clearance and creepage distances (1 and 2 inch)	►	**3RV19 28-1H**		1	1 unit	101	0.083

* You can order this quantity or a multiple thereof.

Accessories for 3RA6 direct-on-line and reversing starters

Three-phase busbars for infeed with 3RA6


3RV19 15-1AB


3RV19 15-1BB


3RV19 15-1CB


3RV19 15-1DB

For feeding several compact feeders and/or motor starter protectors with screw terminals, mounted side by side on standard mounting rails, insulated, with touch protection.

Number of compact feeders and circuit breakers that can be connected without lateral accessories	Modular spacing	Rated current I_n at 690 V	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm	A								kg
2	45	63	S0[1]	►	**3RV19 15-1AB**		1	1 unit	101	0.044
3	45	63	S0[1]	►	**3RV19 15-1BB**		1	1 unit	101	0.071
4	45	63	S0[1]	►	**3RV19 15-1CB**		1	1 unit	101	0.099
5	45	63	S0[1]	►	**3RV19 15-1DB**		1	1 unit	101	0.124

[1] Not suitable for 3RV11 motor starter protectors with overload relay function. Common clamping of S00 and S0 motor starter protectors is not possible, due to the different modular spacings and terminal heights. The 3RV19 15-5DB connecting piece is available for connecting the compact feeders to circuit breakers size S00.

Connecting piece for three-phase busbars


3RV19 15-5DB

Covers for connection tags of the three-phase busbars


3RV19 15-6AB

Version	Modular spacing	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm								kg
For connecting compact feeders (left) and circuit breakers size S00 (right)	45	S00	►	**3RV19 15-5DB**		1	1 unit	101	0.042
Touch protection for empty positions		S00, S0	►	**3RV19 15-6AB**		1	10 units	101	0.003

Three-phase feeder terminals for three-phase busbars


3RV19 25-5AB


3RV19 15-5B

Conductor cross-section: Solid or stranded	Conductor cross-section: Finely stranded with end sleeve	Conductor cross-section: AWG cables, solid or stranded	For compact feeders and motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
mm²	mm²	AWG								kg
Connection from top										
2.5 ... 25	4 ... 16	12-4	S0	►	**3RV19 25-5AB**		1	1 unit	121	0.041
Connection from below[1]										
2.5 ... 25	4 ... 16	12-4	S00, S0	►	**3RV19 15-5B**		1	1 unit	121	0.110

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	C	**3RV19 25-5EB**		1	1 unit	121	0.055

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

* You can order this quantity or a multiple thereof.

Accessories for 3RA6 direct-on-line and reversing starters

Busbar adapters for 60 mm systems


8US12 11-1NS10

Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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		0.337

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


8US12 50-1AA10

Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Required in addition to the busbar adapter for mounting a reversing starter ►		**8US12 50-1AA10**		1	1 unit		0.239

Door-coupling rotary operating mechanisms for operating the compact feeder with closed control cabinet doors


3RV19 26-0B

The door-coupling rotary operating mechanisms consist of a knob, a coupling driver and an extension shaft of 130/330 mm in length (5 mm x 5 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.

Type	Color of handle	Version of extension shaft mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Door-coupling rotary operating mechanisms	Black	130	►	**3RV19 26-0B**		1	1 unit	101	0.111
EMERGENCY-STOP door-coupling rotary operating mechanisms	Red/ Yellow	130	►	**3RV19 26-0C**		1	1 unit	101	0.110

Tools for spring-type terminals


8WA2 803

Version	Size/Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
			Spring-type connection					
Screwdrivers								
3.5 mm x 0.5 mm, suitable for a max. conductor cross-section of 2.5 mm^2	Length approx. 175 mm; green	C	**8WA2 803**		1	1 unit	041	0.024

Documentation

Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
System manuals							
• German: SIRIUS compact feeder and accessories	X	**3RA69 91-0A**		1	1 unit	121	0.460
• English: SIRIUS compact starter and accessories	X	**3RA69 92-0A**		1	1 unit	121	0.460

* You can order this quantity or a multiple thereof.

Infeed systems for 3RA6

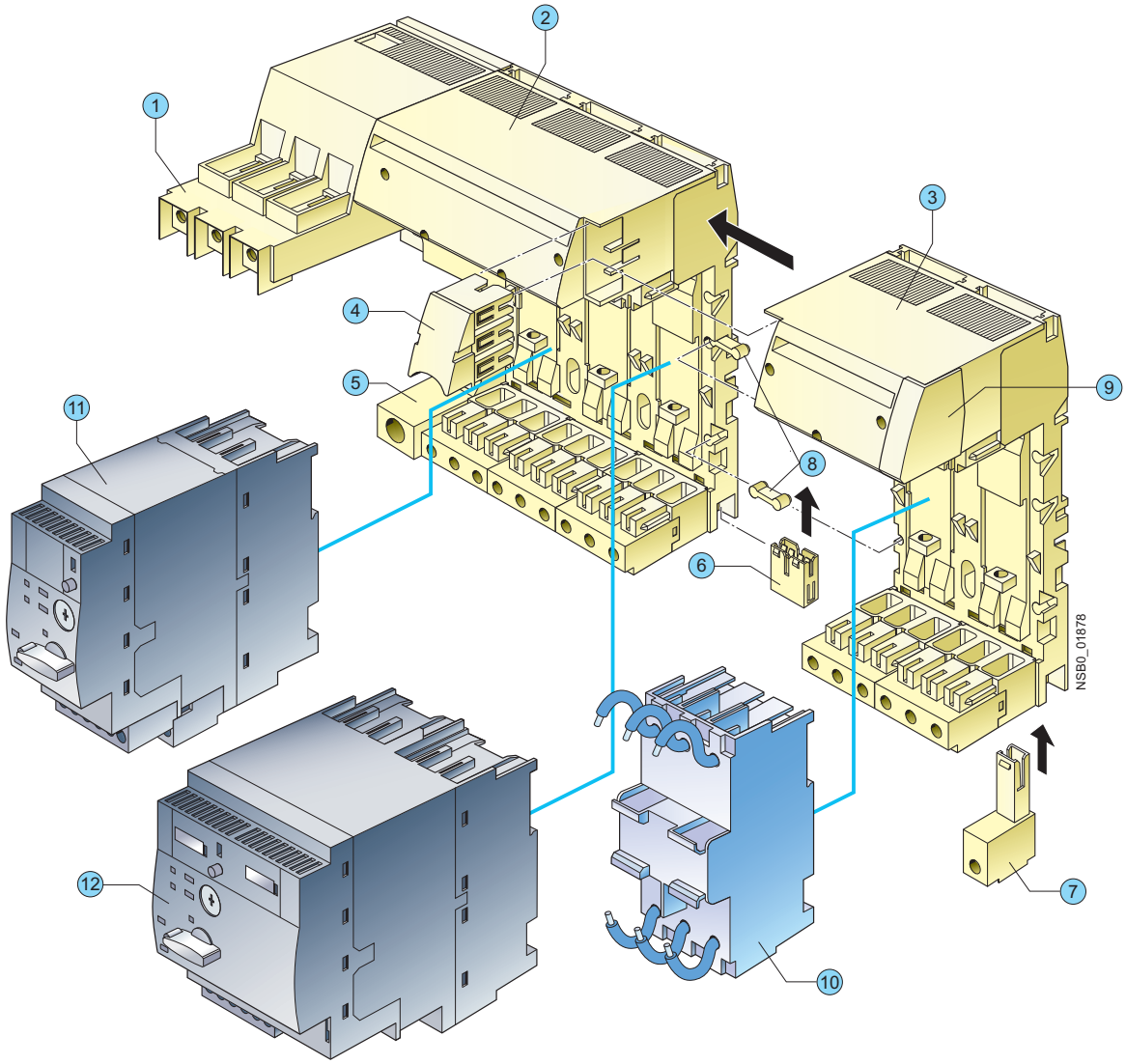
Overview

The infeed system for 3RA6 compact feeders enables far less wiring in the main circuit and, thanks to the easy exchangeability of the compact feeders, 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 feeder needing to be connected at the same time. As the result of the removable terminals in the main circuit, compact feeders 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 feeders is designed for summation currents up to 100 A with a conductor cross-section of max. 70 mm^2 on the feeder terminal block.

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



① Feeder terminal
② Three-socket expansion module
③ Two-socket expansion module
④ Expansion plug
⑤ PE infeed
⑥ PE expansion plug
⑦ PE pick-off
⑧ Connecting plate
⑨ End cover
⑩ 45 mm adapter for SIRIUS motor starter protector size S0
⑪ 3RA61 direct-on-line starter
⑫ 3RA62 reversing starter

Infeed systems for 3RA6

① Infeed

The three-phase infeed is available with screw connection (25/35 mm^2 up to 63 A or 50/70 mm^2 up to 100 A) and spring-type connection (25/35 mm^2 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 feeders 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 plates 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 feeders (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 motor starter protectors size S00 and 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 mm^2) 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 mm^2). It is snapped into the infeed system from below.

⑧ Connecting plates

Two connecting plates are used to hold together 2 expansion modules.

⑨ End covers

On the last expansion module of a row, the slot provided for the expansion plug can be covered by inserting the end cover.

⑩ 45 mm adapters for SIRIUS motor starter protectors

SIRIUS 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 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

In a row of several expansion modules, the maximum rated operational current from the 2nd expansion module to the end of the row is 63 A.

Proposal for upstream short-circuit protection devices

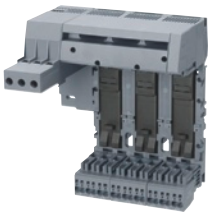
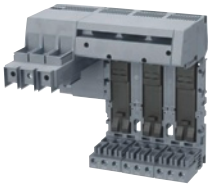
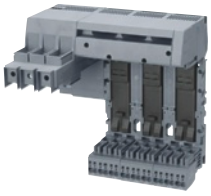
The following short-circuit data apply for the components of the infeed system for 3RA6:

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 kA, I^2t = 440 kA^{2}s	**3RV10 41-4JA10**
Short-circuit protection for infeed block (50 mm²/70mm²) with screw connection		
2.5 ... 70	$I_{d,max}$ = approx. 22 kA	**3RV10 41-4MA10**
Short-circuit protection for infeed block with spring-type connection		
4	$I_{d,max}$ = 9.5 kA, I^2t = 85 kA^{2}s	**3RV10 21-4DA10**
6	$I_{d,max}$ = 12.5 kA, I^2t = 140 kA^{2}s	**3RV10 31-4EA10**
10	$I_{d,max}$ = 15 kA, I^2t = 180 kA^{2}s	**3RV10 31-4HA10**
16 / 25	$I_{d,max}$ = 19 kA, I^2t = 440 kA^{2}s	**3RV10 41-4JA10**
Short-circuit protection for terminal block		
1.5	$I_{d,max}$ = 7.5 kA	**5SY...** [1]
2.5	$I_{d,max}$ = 9.5 kA	
4	$I_{d,max}$ = 9.5 kA	
6	$I_{d,max}$ = 12.5 kA	

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

Infeed systems for 3RA6

Selection and ordering data

	Type		Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Three-phase infeeds and expansion modules								
 3RA68 12-8AB	**Infeeds with screw connection 25/35 mm² on left** with permanently fitted **3-socket expansion module with screw connection** on 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	A	**3RA68 12-8AB**		1	1 unit	121	0.957
 3RA68 12-8AC	**Infeeds with screw connection 25/35 mm² on left** with permanently fitted **3-socket expansion module with spring-type connection** on 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	A	**3RA68 12-8AC**		1	1 unit	121	0.990
 3RA68 13-8AB	**Infeeds with screw connection 50/70 mm² on left** with permanently fitted **3-socket expansion module with screw connection** on 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 duty according to UL 508 Type E	A	**3RA68 13-8AB**		1	1 unit	121	1.146
 3RA68 13-8AC	**Infeeds with screw connection 50/70 mm² on left** with permanently fitted **3-socket expansion module with spring-type connection** on 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 duty according to UL 508 Type E	A	**3RA68 13-8AC**		1	1 unit	121	1.179
 3RA68 30-5AC	**Infeeds with spring-type connection 25/35 mm² on left or on right** up to 63 A	A	**3RA68 30-5AC**		1	1 unit	121	0.283

* You can order this quantity or a multiple thereof.

	Type		Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Expansion modules								
			Screw terminals					
 3RA68 22-0AB	**2-socket expansion modules with screw connection** and integrated PE bar with 2 sockets for 2 direct-on-line starters or 1 reversing starter Expansion plug and 2 connecting plates are included in the scope of supply.	A	**3RA68 22-0AB**		1	1 unit	121	0.505
 3RA68 23-0AB	**3-socket expansion modules with screw 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 plates are included in the scope of supply.	A	**3RA68 23-0AB**		1	1 unit	121	0.717
			Spring-type terminals					
 3RA68 22-0AC	**2-socket expansion modules with 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 plates are included in the scope of supply.	A	**3RA68 22-0AC**		1	1 unit	121	0.527
 3RA68 23-0AC	**3-socket expansion modules with 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 plates are included in the scope of supply.	A	**3RA68 23-0AC**		1	1 unit	121	0.750

* You can order this quantity or a multiple thereof.

Infeed systems for 3RA6

	Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Accessories for infeed systems for 3RA6								
 3RA68 60-6AB			**Screw terminals**					
	PE infeeds 25/35 mm² with screw connection	A	**3RA68 60-6AB**		1	1 unit	121	0.060
 3RA68 60-5AC			**Spring-type terminals**					
	PE infeeds 25/35 mm² with spring-type connection	A	**3RA68 60-5AC**		1	1 unit	121	0.070
 3RA68 70-4AB			**Screw terminals**					
	PE pick-offs 6/10 mm² with screw connection	A	**3RA68 70-4AB**		1	1 unit	121	0.019
 3RA68 70-3AC			**Spring-type terminals**					
	PE pick-offs 6/10 mm² with spring-type connection	A	**3RA68 70-3AC**		1	1 unit	121	0.017
 3RA68 90-0EA	**PE expansion plugs**	A	**3RA68 90-0EA**		1	1 unit	121	0.008
 3RA68 90-1AB	**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	0.029
 3RA68 90-1AA	**Expansion plugs for SIRIUS 3RV19 infeed system** Connects infeed system for 3RA6 to 3RV19 infeed system	A	**3RA68 90-1AA**		1	1 unit	121	0.079

* You can order this quantity or a multiple thereof.

Infeed systems for 3RA6

	Type		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
				Screw terminals					
 3RA68 90-0BA	**45 mm adapters for SIRIUS motor starter protectors** Size S0 with screw connection		A	**3RA68 90-0BA**		1	1 unit	121	0.152
				Spring-type terminals					
 3RV19 17-5D	**Terminal blocks** With spring-type connection for integration of single-phase, two-phase and three-phase external components		A	**3RV19 17-5D**		1	1 unit	101	0.050

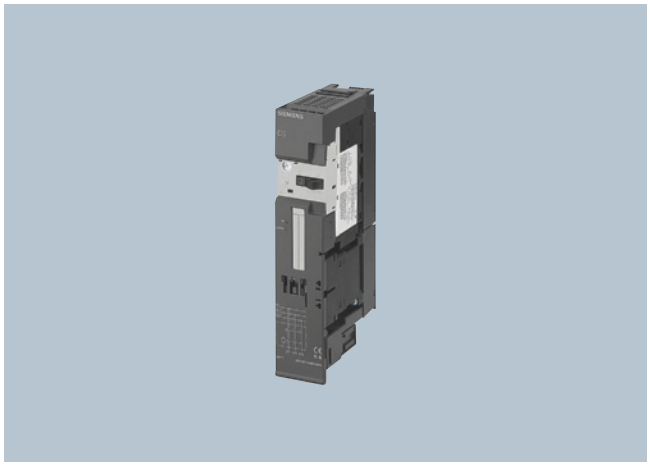
	Version	Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Tools for spring-type terminals									
				Spring-type terminals					
 8WA2 803	**Screwdrivers** 3.5 mm x 0.5 mm, suitable for a max. conductor cross-section of 2.5 mm^2	Length approx. 175 mm; green	C	**8WA2 803**		1	1 unit	041	0.024

6

* You can order this quantity or a multiple thereof.

ET 200S motor starters

Overview



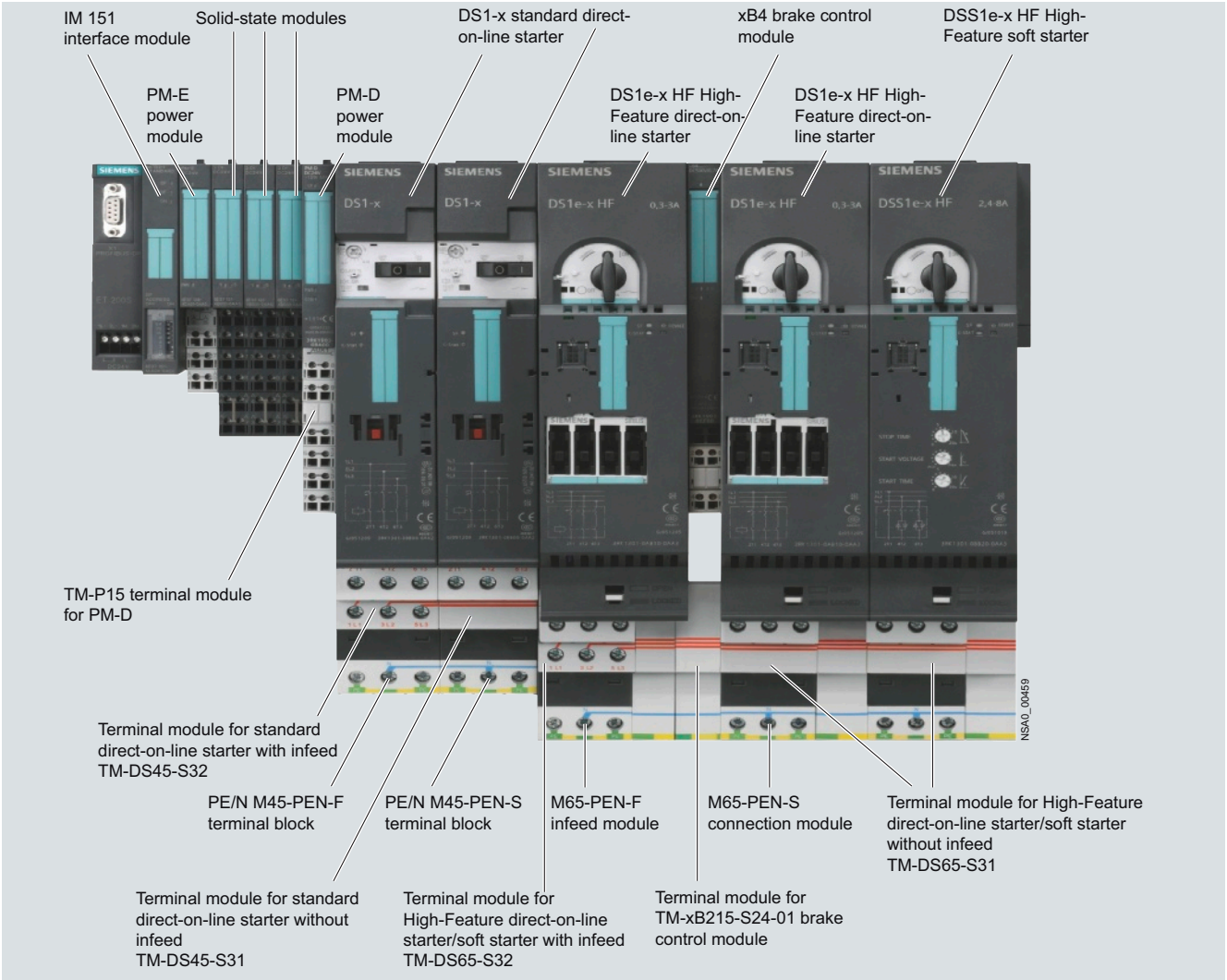
Motor starter, Standard, DS1-x direct-on-line starter

Motor starter, High-Feature, DS1e-x direct-on-line starter

- 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 (see ET 200S Solutions Local/PROFIsafe Safety Motor Starters, page 6/103 onwards) for use in safety-related system components (EN 954-1).

Motor Starter ES software

Motor Starter ES software for parameterization, monitoring, diagnostics and testing of motor starters.
See Chapter 12 "Planning and Configuration with SIRIUS".



Interplay of ET 200S motor starter components

Application

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.

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.

ET 200S motor starters

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 versions 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

Accessories

Following accessories are available:

DM-V15 distance module

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-online 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 (Fax: +49 (0)911/895-5907).

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.

L1/L2/L3 bridge module

The L1/L2/L3 bridge modules are used to bridge gaps in the power bus (see above). They are available in widths of 15 and 30 mm.

Motor Starter ES software

The Motor Starter ES software is available for the parameterization and diagnostics.
See Chapter 12 "Planning and Configuration with SIRIUS".

Selection and ordering data

Standard motor starters, with diagnostics, electromechanical, fuseless, expandable with brake control module


DS1-x

DS1-x direct-on-line starters

Motor rating of induction motor 4-pole at 400 V AC, standard output P	Setting range of the electronic trip unit	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
kW	A							kg
< 0.06	0.14 ... 0.20	A	**3RK1 301-0BB00-0AA2**		1	1 unit	121	0.922
0.06	0.18 ... 0.25	A	**3RK1 301-0CB00-0AA2**		1	1 unit	121	0.923
0.09	0.22 ... 0.32	A	**3RK1 301-0DB00-0AA2**		1	1 unit	121	0.919
0.10	0.28 ... 0.40	A	**3RK1 301-0EB00-0AA2**		1	1 unit	121	0.925
0.12	0.35 ... 0.50	A	**3RK1 301-0FB00-0AA2**		1	1 unit	121	0.929
0.18	0.45 ... 0.63	A	**3RK1 301-0GB00-0AA2**		1	1 unit	121	0.922
0.21	0.55 ... 0.80	A	**3RK1 301-0HB00-0AA2**		1	1 unit	121	0.928
0.25	0.70 ... 1.00	A	**3RK1 301-0JB00-0AA2**		1	1 unit	121	0.923
0.37	0.90 ... 1.25	A	**3RK1 301-0KB00-0AA2**		1	1 unit	121	0.971
0.55	1.1 ... 1.6	A	**3RK1 301-1AB00-0AA2**		1	1 unit	121	0.970
0.75	1.4 ... 2.0	A	**3RK1 301-1BB00-0AA2**		1	1 unit	121	0.968
0.90	1.8 ... 2.5	A	**3RK1 301-1CB00-0AA2**		1	1 unit	121	0.972
1.1	2.2 ... 3.2	A	**3RK1 301-1DB00-0AA2**		1	1 unit	121	0.976
1.5	2.8 ... 4.0	A	**3RK1 301-1EB00-0AA2**		1	1 unit	121	0.974
1.9	3.5 ... 5.0	A	**3RK1 301-1FB00-0AA2**		1	1 unit	121	0.973
2.2	4.5 ... 6.3	A	**3RK1 301-1GB00-0AA2**		1	1 unit	121	0.989
3.0	5.5 ... 8.0	A	**3RK1 301-1HB00-0AA2**		1	1 unit	121	0.969
4.0	7 ... 10	A	**3RK1 301-1JB00-0AA2**		1	1 unit	121	0.971
5.5	9 ... 12	A	**3RK1 301-1KB00-0AA2**		1	1 unit	121	0.966


RS1-x

RS1-x reversing starters

kW	A							
< 0.06	0.14 ... 0.20	A	**3RK1 301-0BB00-1AA2**		1	1 unit	121	1.342
0.06	0.18 ... 0.25	A	**3RK1 301-0CB00-1AA2**		1	1 unit	121	1.360
0.09	0.22 ... 0.32	A	**3RK1 301-0DB00-1AA2**		1	1 unit	121	1.365
0.10	0.28 ... 0.40	A	**3RK1 301-0EB00-1AA2**		1	1 unit	121	1.320
0.12	0.35 ... 0.50	A	**3RK1 301-0FB00-1AA2**		1	1 unit	121	1.326
0.18	0.45 ... 0.63	A	**3RK1 301-0GB00-1AA2**		1	1 unit	121	1.318
0.21	0.55 ... 0.80	A	**3RK1 301-0HB00-1AA2**		1	1 unit	121	1.341
0.25	0.70 ... 1.00	A	**3RK1 301-0JB00-1AA2**		1	1 unit	121	1.336
0.37	0.90 ... 1.25	A	**3RK1 301-0KB00-1AA2**		1	1 unit	121	1.390
0.55	1.1 ... 1.6	A	**3RK1 301-1AB00-1AA2**		1	1 unit	121	1.390
0.75	1.4 ... 2.0	A	**3RK1 301-1BB00-1AA2**		1	1 unit	121	1.388
0.90	1.8 ... 2.5	A	**3RK1 301-1CB00-1AA2**		1	1 unit	121	1.370
1.1	2.2 ... 3.2	A	**3RK1 301-1DB00-1AA2**		1	1 unit	121	1.372
1.5	2.8 ... 4.0	A	**3RK1 301-1EB00-1AA2**		1	1 unit	121	1.384
1.9	3.5 ... 5.0	A	**3RK1 301-1FB00-1AA2**		1	1 unit	121	1.370
2.2	4.5 ... 6.3	A	**3RK1 301-1GB00-1AA2**		1	1 unit	121	1.394
3.0	5.5 ... 8.0	A	**3RK1 301-1HB00-1AA2**		1	1 unit	121	1.374
4.0	7 ... 10	A	**3RK1 301-1JB00-1AA2**		1	1 unit	121	1.370
5.5	9 ... 12	A	**3RK1 301-1KB00-1AA2**		1	1 unit	121	1.390

* You can order this quantity or a multiple thereof.

ET 200S motor starters

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
High-Feature motor starters, with diagnostics, solid-state overload protection, fuseless, expandable with brake control module								
 DS1e-x	**DS1e-x direct-on-line starters** With switch interface							
	Setting range of the electronic trip unit in A							
	0.3 ... 3	A	**3RK1 301-0AB10-0AA4**		1	1 unit	121	1.340
	2.4 ... 8	A	**3RK1 301-0BB10-0AA4**		1	1 unit	121	1.327
	2.4 ... 16	A	**3RK1 301-0CB10-0AA4**		1	1 unit	121	1.330
	RS1e-x reversing starters							
	Setting range of the electronic trip unit in A							
	0.3 ... 3	A	**3RK1 301-0AB10-1AA4**		1	1 unit	121	1.950
	2.4 ... 8	A	**3RK1 301-0BB10-1AA4**		1	1 unit	121	1.940
	2.4 ... 16	A	**3RK1 301-0CB10-1AA4**		1	1 unit	121	1.943
	DSS1e-x soft starters							
	Setting range of the electronic trip unit in A							
	0.3 ... 3	A	**3RK1 301-0AB20-0AA4**		1	1 unit	121	1.168
	2.4 ... 8	A	**3RK1 301-0BB20-0AA4**		1	1 unit	121	1.195
	2.4 ... 16	A	**3RK1 301-0CB20-0AA4**		1	1 unit	121	1.198

* You can order this quantity or a multiple thereof.

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Acessories								
Accessories for motor starters, standard								
 3RK1 903-0CA00	**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	0.015
 3RK1 903-0CG00	**Control units** For direct contactor control (manual control) 24 V DC	A	**3RK1 903-0CG00**		1	1 unit	121	0.038
 3RK1 903-0CD00	**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	0.128
Accessories for High-Feature motor starters								
 3RK1 903-0CH20	**Control modules 2DI DC 24 V COM** Digital input module with 2 inputs for local motor starter functions for mounting onto the front of motor starters Operational voltage 24 V DC (supplied from U_1), short-circuit resistant, floating contact with serial interface for connecting Switch ES Connected using LOGO!-PC cable, max. cable length (out and back) 50 m	A	**3RK1 903-0CH20**		1	1 unit	121	0.025
	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	0.176
 3RK1 922-3BA00	**Hand-held devices** For ET 200S High-Feature motor starter, (also for ET 200pro and ECOFAST), for local operation. A serial interface cable must be ordered separately.	B	**3RK1 922-3BA00**		1	1 unit	121	0.130

* You can order this quantity or a multiple thereof.

ET 200S motor starters

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Accessories for Standard / High-Feature motor starters and frequency converters							
 3RK1 903-0AH00	**M15-PEN bridge modules** 15 mm wide for bridging a 15 mm module	A	**3RK1 903-0AH00**		1	1 unit	121	0.019
 3RK1 903-0AJ00	**M30-PEN bridge modules** 30 mm wide for bridging a 30 mm module	A	**3RK1 903-0AJ00**		1	1 unit	121	0.032
 3RK1 903-0AE00	**M15-L123 bridge modules** 15 mm wide for bridging a 15 mm module	A	**3RK1 903-0AE00**		1	1 unit	121	0.027
 3RK1 903-0AF00	**M30-L123 bridge modules** 30 mm wide for bridging a 30 mm module	A	**3RK1 903-0AF00**		1	1 unit	121	0.046
 3RK1 903-0CB00	**Brake control modules** For motors with mechanical brakes							
	• **xB1 for motor starters and frequency converters** 24 V DC/4 A	A	**3RK1 903-0CB00**		1	1 unit	121	0.106
	• **xB2 for motor starters and frequency converters** 500 V DC/ 0.7 A	A	**3RK1 903-0CC00**		1	1 unit	121	0.109
	• **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	0.110
	• **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	0.114
	Terminal modules for brake control modules							
	• **TM-xB15 S24-01** For xB1 or xB2	A	**3RK1 903-0AG00**		1	1 unit	121	0.174
	• **TM-xB215 S24-01** For xB3 or xB4	A	**3RK1 903-0AG01**		1	1 unit	121	0.188
	EMC filters for frequency converters For achieving EMC Class A, the frequency converter is connected upstream to the shared power bus; EMC-compatible design with shielded motor cables required							
	• Rated current 25 A	A	**6SL3 203-0BE22-5AA0**		1	1 unit	337	2.700
	• Rated current 50 A	A	**6SL3 203-0BE25-0AA0**		1	1 unit	337	3.000
	MMC parameter memory for frequency converters Suitable for MMC slot of ICU24/ICU24F control module; other memory cards are not accepted	A	**6SL3 254-0AM00-0AA0**		1	1 unit	335	0.050
	RS 232/zero modem cables (5 m) Connection cable for starting up the ET 200S FC frequency converter with the "STARTER" PC tool	A	**6ES7 901-1BF00-0XA0**		1	1 unit	261	0.280

* You can order this quantity or a multiple thereof.

Power modules for ET 200S motor starters

Overview

- For supplying and monitoring the auxiliary voltages for motor starters and frequency converters
- Disconnection of a complete group of motor starters is possible without any additional outlay (safety category 1 according to EN 954-1)
- For plugging onto TM-P15 terminal module

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.

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 3RK1 903-0BA00	**PM-D power modules** For 24 V DC with diagnostics	A	**3RK1 903-0BA00**		1	1 unit	121	0.071
Accessories								
	Color coding plates 200 color coding plates for terminal modules							
	• White	A	**6ES7 193-4LA20-0AA0**		1	1 unit	250	0.039
	• Yellow	A	**6ES7 193-4LB20-0AA0**		1	1 unit	250	0.038
	• Yellow and green	A	**6ES7 193-4LC20-0AA0**		1	1 unit	250	0.037
	• Red	A	**6ES7 193-4LD20-0AA0**		1	1 unit	250	0.038
	• Blue	A	**6ES7 193-4LF20-0AA0**		1	1 unit	250	0.038
	• Brown	A	**6ES7 193-4LG20-0AA0**		1	1 unit	250	0.036

* You can order this quantity or a multiple thereof.

Terminal modules for ET 200S motor starters

Overview

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 for frequency converters

- Mechanical modules in which the components of the frequency converter are inserted
- For constructing the permanent wiring and self-assembling voltage bus
- For connecting the motor cables
- Integrated screen attachment for EMC-compatible wiring for complying with EMC Class A acc. to EN 55011

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

Application

Terminal modules for motor starters and frequency converters

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.

The terminal modules for motor starters and frequency converters are available in different versions:

- Terminal modules for TM-DS and TM-RS motor starters
- Terminal modules for frequency converters:
  - TM-ICU for the control modules
  - TM-IPM for the power sections
- Terminal modules for expansion modules (TM-xB)

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 mm^2 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 modules for frequency converters

The TM-ICU terminal module is used for both ICU24 and ICU24F control modules (without or with integrated safety functions). A TM-IPM is then always plugged in after a TM-ICU. The TM-IPM with a width of 65 mm is used to accommodate the IPM25 power section with 0.75 kW. A terminal module with a width of 130 mm is needed for the power sections with 2.2 or 4.0 kW.
Each TM-IPM terminal module has an integrated screen attachment for complying with EMC Class A acc. to EN 55011.
The terminal modules with the suffix "-S32" have connection terminals for feeding into the integrated 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 frequency converters are equipped with strong 10 mm^2 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 modules for ET 200S motor starters

Terminal modules for expansion modules (TM-xB)

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; for this reason the xB215 terminal module may be plugged in only downstream from a motor starter (Technical specifications, Selection and ordering data, see the section "Accessories for Motor Starters and Frequency Converters").

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 supplied with two caps for closing the PE/N bus contacts on the final terminal block 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.

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Components for Standard motor starters								
	Terminal modules							
 3RK1 903-0AB00	• **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	0.376
 3RK1 903-0AB10	• **TM-DS45-S31** **for DS1-x direct-on-line starters** Without incoming power bus connection	A	**3RK1 903-0AB10**		1	1 unit	121	0.374
 3RK1 903-0AC00	• **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	0.498
	• **TM-RS90-S31** **for RS1-x reversing starters** Without incoming power bus connection	A	**3RK1 903-0AC10**		1	1 unit	121	0.618
 3RK1 903-2AA00	**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	0.077

* You can order this quantity or a multiple thereof.

Terminal modules for ET 200S motor starters

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 3RK1 903-2AA10	**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	0.087
Components for High-Feature motor starters								
 3RK1 903-0AK00	**Terminal modules**							
	• **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	0.473
	• **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	0.472
	• **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	0.787
	• **TM-RS130-S31** **for RS1e-x reversing starters** Without incoming power bus connection	A	**3RK1 903-0AL10**		1	1 unit	121	0.847
	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	0.093
	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	0.099
Components for power modules								
 3RK1 903-0AA00	**TM-P15 S27-01 terminal modules** For PM-D power module	A	**3RK1 903-0AA00**		1	1 unit	121	0.224

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* You can order this quantity or a multiple thereof.

Terminal modules for ET 200S motor starters

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Components for frequency converters and Failsafe frequency converters								
	TM-ICU15 terminal modules For ICU24/ICU24F control module of the frequency converter	A	**3RK1 903-3EA10**		1	1 unit	121	0.097
	TM-IPM65 terminal modules For IPM25 power section, 0.75 kW, of the frequency converter							
	• With incoming power bus connection (TM-IPM65-S32)	A	**3RK1 903-3EC00**		1	1 unit	121	0.020
	• Without incoming power bus connection (TM-IPM65-S31)	A	**3RK1 903-3EC10**		1	1 unit	121	0.020
	TM-IPM130 terminal modules For IPM25 power section, 2.2 kW and 4.0 kW, of the frequency converter							
	• With incoming power bus connection (TM-IPM130-S32)	A	**3RK1 903-3ED00**		1	1 unit	121	0.020
	• Without incoming power bus connection (TM-IPM130-S31)	A	**3RK1 903-3ED10**		1	1 unit	121	0.020
	M65-PEN-F terminal blocks	A	**3RK1 903-2AC00**		1	1 unit	121	0.093
	M65-PEN-S terminal blocks	A	**3RK1 903-2AC10**		1	1 unit	121	0.099

* You can order this quantity or a multiple thereof.

Interface/solid-state modules

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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	**6ES7 151-1CA00-0AB0**		1	1 unit	250	0.181
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	**6ES7 151-1CA00-1BL0**		1	1 unit	250	0.290
IM 151-1 COMPACT 16 DI DC 24V / 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	**6ES7 151-1CA00-3BL0**		1	1 unit	250	0.299
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	**6ES7 151-1AA04-0AB0**		1	1 unit	250	0.172
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	**6ES7 151-1AB02-0AB0**		1	1 unit	250	0.195
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	**6ES7 151-1BA02-0AB0**		1	1 unit	250	0.184
Accessories							
TM-C120S terminal modules Terminal module for ET 200S COMPACT, screw terminals	A	**6ES7 193-4DL10-0AA0**		1	1 unit	250	0.140
TM-C120C terminal modules Terminal module for ET 200S COMPACT, spring-type terminals	A	**6ES7 193-4DL00-0AA0**		1	1 unit	250	0.396
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	0.205
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	0.161
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: http://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	0.227
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.300
PROFIBUS DP interface RS485 connectors With 90° cable feeder for FastConnect connections, max. transmission rate 12 Mbit/s							
• Without PG interface	A	**6ES7 972-0BA51-0XA0**		1	1 unit	250	0.057
• With PG interface	A	**6ES7 972-0BB51-0XA0**		1	1 unit	250	0.060
100 Simplex connectors For plastic fiber-optic cable including 5 polishing sets	A	**6GK1 901-0FB00-0AA0**		1	1 set	552	0.124
50 plug-in adapters Each for 2 Simplex connectors	A	**6ES7 195-1BE00-0XA0**		1	1 unit	250	0.119
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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	0.234
• Yellow	A	**6ES7 193-4BB10-0AA0**		1	1 unit	250	0.229
• Red	A	**6ES7 193-4BD10-0AA0**		1	1 unit	250	0.228
• Petrol	A	**6ES7 193-4BH10-0AA0**		1	1 unit	250	0.232
Termination modules As spare part for ET 200S	A	**6ES7 193-4JA00-0AA0**		1	1 unit	250	0.027
SIMATIC S5, 35 mm standard mounting rails							
• 483 mm long for 19" cabinets	A	**6ES5 710-8MA11**		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets	A	**6ES5 710-8MA21**		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets	A	**6ES5 710-8MA31**		1	1 unit	250	0.820
• Length 2 m	A	**6ES5 710-8MA41**		1	1 unit	250	1.930
SIPLUS IM 151-1 interface modules (extended temperature range)							
SIPLUS IM 151-1 STANDARD 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 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	D	**6AG1 151-1AA04-2AB0**		1	1 unit	471	0.186
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	0.180
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	0.202
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	0.200
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 151-3BB22-0AB0**		1	1 unit	250	0.236
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	530	0.030
• 10 units	A	**6GK1 901-1BB20-2AB0**		1	1 unit	530	0.300
• 50 units	A	**6GK1 901-1BB20-2AE0**		1	1 unit	530	1.500
Industrial Ethernet Fast Connect installation cables							
• Fast Connect standard cables	A	**6XV1 840-2AH10**		1	1 M	527	0.068
• Fast Connect trailing cables	A	**6XV1 840-3AH10**		1	1 M	527	0.055
• Fast Connect marine cables	A	**6XV1 840-4AH10**		1	1 M	527	0.055
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	520	3.400
• 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	552	0.200
• 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	552	0.150
• 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	552	3.400
• 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	552	0.200
Industrial Ethernet Fast Connect stripping tools	A	**6GK1 901-1GA00**		1	1 unit	530	0.100

* You can order this quantity or a multiple thereof.

Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 151-3 PN interface modules (continued)							
MMC 64 Kbyte[1)] For storing the unit's name	A	**6ES7 953-8LF20-0AA0**		1	1 unit	230	0.012
MMC 128 Kbyte[1)] For storing the unit's name	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.013
MMC 512 Kbyte[1)] For storing the unit's name	A	**6ES7 953-8LJ20-0AA0**		1	1 unit	230	0.013
MMC 2 MByte[1)] For storing the unit's name and/or the firmware update	A	**6ES7 953-8LL20-0AA0**		1	1 unit	230	0.016
MMC 4 MByte[1)] For storing the unit's name and/or the firmware update	A	**6ES7 953-8LM20-0AA0**		1	1 unit	230	0.013
MMC 8 MByte[1)] For storing the unit's name and/or the firmware update	A	**6ES7 953-8LP20-0AA0**		1	1 unit	230	1.414
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: http://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	0.227
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.300
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
Termination modules as spare part for ET 200S	A	**6ES7 193-4JA00-0AA0**		1	1 unit	250	0.027
35 mm standard mounting rails							
• 483 mm long for 19" cabinets	A	**6ES5 710-8MA11**		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets	A	**6ES5 710-8MA21**		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets	A	**6ES5 710-8MA31**		1	1 unit	250	0.820
• Length 2 m	A	**6ES5 710-8MA41**		1	1 unit	250	1,930
SIPLUS IM 151-3 PN interface modules (extended temperature range)							
SIPLUS IM 151-3 PN interface modules (extended temperature range and medial load) 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	0.188
Accessories		For ordering data see IM 151-3PN interface modules					

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

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* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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	0.252
IM 151-7 CPU (96 K) interface modules Including termination module	A	**6ES7 151-7AA20-0AB0**		1	1 unit	250	0.245
Accessories							
MMC 64 Kbyte[1)] For program backups	A	**6ES7 953-8LF20-0AA0**		1	1 unit	230	0.012
MMC 128 Kbyte[1)] For program backups	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.013
MMC 512 Kbyte[1)] For program backups	A	**6ES7 953-8LJ20-0AA0**		1	1 unit	230	0.013
MMC 2 MByte[1)] For program backups and/or the firmware update	A	**6ES7 953-8LL20-0AA0**		1	1 unit	230	0.016
MMC 4 MByte[1)] For program backups	A	**6ES7 953-8LM20-0AA0**		1	1 unit	230	0.013
MMC 8 MByte[1)] For program backups	A	**6ES7 953-8LP20-0AA0**		1	1 unit	230	1.414
External Prommer For e. g. MMC with USB interface	A	**6ES7 792-0AA00-0XA0**		1	1 unit	260	1.282
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: http://www.siemens.com/simatic-docu							
Termination modules As spare part for ET 200S	A	**6ES7 193-4JA00-0AA0**		1	1 unit	250	0.027
SIMATIC S5, 35 mm standard mounting rails							
• 483 mm long for 19" cabinets	A	**6ES5 710-8MA11**		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets	A	**6ES5 710-8MA21**		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets	A	**6ES5 710-8MA31**		1	1 unit	250	0.820
• Length 2 m	A	**6ES5 710-8MA41**		1	1 unit	250	1.930
IM 151-8 PN/DP CPU interface modules							
IM 151-8 PN/DP CPU interface modules (128 K)	A	**6ES7 151-8AB00-0AB0**		1	1 unit	250	0.320
IM 151-8F PN/DP CPU interface modules (192 K) Including termination module	A	**6ES7 151-8FB00-0AB0**			1 unit	241	0.320
Accessories							
MMC 64 Kbyte[1)] For program backups	A	**6ES7 953-8LF20-0AA0**		1	1 unit	230	0.012
MMC 128 Kbyte[1)] For program backups	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.013
MMC 512 Kbyte[1)] For program backups	A	**6ES7 953-8LJ20-0AA0**		1	1 unit	230	0.013
MMC 2 MByte[1)] For program backups and/or the firmware update	A	**6ES7 953-8LL20-0AA0**		1	1 unit	230	0.016
MMC 4 MByte[1)] For program backups	A	**6ES7 953-8LM20-0AA0**		1	1 unit	230	0.013
MMC 8 MByte[1)] For program backups	A	**6ES7 953-8LP20-0AA0**		1	1 unit	230	1.414
External Prommer For e. g. MMC with USB interface	A	**6ES7 792-0AA00-0XA0**		1	1 unit	260	1.282
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: http://www.siemens.com/simatic-docu							

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

*** You can order this quantity or a multiple thereof.**

Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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	0.027
SIMATIC S5, 35 mm standard mounting rails							
• 483 mm long for 19" cabinets	A	**6ES5 710-8MA11**		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets	A	**6ES5 710-8MA21**		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets	A	**6ES5 710-8MA31**		1	1 unit	250	0.820
• Length 2 m	A	**6ES5 710-8MA41**		1	1 unit	250	1.930
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	530	0.030
• 10 units	A	**6GK1 901-1BB10-2AB0**		1	1 unit	530	0.300
• 50 units	A	**6GK1 901-1BB10-2AE0**		1	1 unit	530	1.500
Industrial Ethernet Fast Connect installation cables							
• Fast Connect standard cables	A	**6XV1 840-2AH10**		1	1 M	527	0.068
• Fast Connect trailing cables	A	**6XV1 840-3AH10**		1	1 M	527	0.055
• Fast Connect marine cables	A	**6XV1 840-4AH10**		1	1 M	527	0.055
Industrial Ethernet Fast Connect stripping tools	A	**6GK1 901-1GA00**		1	1 unit	530	0.100
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	0.126
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: http://www.siemens.com/simatic-docu							
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	0.243
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	A	**6ES7 833-1FC02-0YA5**		1	1 unit	241	0.300
• Software Update Service	X	**6ES7 833-1FC00-0YX2**		1	1 unit	241	0.300
Distributed Safety upgrade From V5.x to V5.3; floating license for 1 user	A	**6ES7 833-1FC02-0YE5**		1	1 unit	241	0.300
MMC 64 Kbyte For program backups	A	**6ES7 953-8LF20-0AA0**		1	1 unit	230	0.012
MMC 128 Kbyte For program backups	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.013
MMC 512 Kbyte For program backups	A	**6ES7 953-8LJ20-0AA0**		1	1 unit	230	0.013
MMC 2 MByte For program backups and/or the firmware update	A	**6ES7 953-8LL20-0AA0**		1	1 unit	230	0.016
MMC 4 MByte For program backups	A	**6ES7 953-8LM20-0AA0**		1	1 unit	230	0.013
External Prommer For MMC with USB interface	A	**6ES7 792-0AA00-0XA0**		1	1 unit	260	1.282
Termination modules As spare part for ET 200S	A	**6ES7 193-4JA00-0AA0**		1	1 unit	250	0.027
SIMATIC S5, 35 mm standard mounting rails							
• 483 mm long for 19" cabinets	A	**6ES5 710-8MA11**		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets	A	**6ES5 710-8MA21**		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets	A	**6ES5 710-8MA31**		1	1 unit	250	0.820
• Length 2 m	A	**6ES5 710-8MA41**		1	1 unit	250	1.930
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 (extended temperature range and medial load)	D	**6AG1 151-7FA20-2AB0**		1	1 unit	473	0.247
Accessories		For ordering data see IM 151-7 F-CPU interface modules					

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 151-8F PN/DP CPU interface modules							
IM 151-8F PN/DP CPU interface modules (192 K) Including termination module	A	**6ES7 151-8FB00-0AB0**			1 unit	241	0.320
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	A	**6ES7 833-1FC02-0YA5**		1	1 unit	241	0.300
• Software Update Service	X	**6ES7 833-1FC00-0YX2**		1	1 unit	241	0.300
Distributed Safety upgrade From V5.3 to V5.4; floating license for 1 user	A	**6ES7 833-1FC02-0YE5**		1	1 unit	241	0.300
MMC 64 Kbyte[1)] For program backups	A	**6ES7 953-8LF20-0AA0**		1	1 unit	230	0.012
MMC 128 Kbyte[1)] For program backups	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.013
MMC 512 Kbyte[1)] For program backups	A	**6ES7 953-8LJ20-0AA0**		1	1 unit	230	0.013
MMC 2 MByte[1)] For program backups and/or the firmware update	A	**6ES7 953-8LL20-0AA0**		1	1 unit	230	0.016
MMC 4 MByte[1)] For program backups	A	**6ES7 953-8LM20-0AA0**		1	1 unit	230	0.013
MMC 8 MByte[1)] For program backups	A	**6ES7 953-8LP20-0AA0**		1	1 unit	230	1.414
External Prommer For e. g. MMC with USB interface	A	**6ES7 792-0AA00-0XA0**		1	1 unit	260	1.282
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: http://www.siemens.com/simatic-docu							
Termination modules As spare part for ET 200S	A	**6ES7 193-4JA00-0AA0**		1	1 unit	250	0.027
SIMATIC S5, 35 mm standard mounting rails							
• 483 mm long for 19" cabinets	A	**6ES5 710-8MA11**		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets	A	**6ES5 710-8MA21**		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets	A	**6ES5 710-8MA31**		1	1 unit	250	0.820
• Length 2 m	A	**6ES5 710-8MA41**		1	1 unit	250	1.930
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	530	0.030
• 10 units	A	**6GK1 901-1BB10-2AB0**		1	1 unit	530	0.300
• 50 units	A	**6GK1 901-1BB10-2AE0**		1	1 unit	530	1.500
Industrial Ethernet Fast Connect installation cables							
• Fast Connect standard cables	A	**6XV1 840-2AH10**		1	1 M	527	0.068
• Fast Connect trailing cables	A	**6XV1 840-3AH10**		1	1 M	527	0.055
• Fast Connect marine cables	A	**6XV1 840-4AH10**		1	1 M	527	0.055
Industrial Ethernet Fast Connect stripping tools	A	**6GK1 901-1GA00**		1	1 unit	530	0.100

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

* You can order this quantity or a multiple thereof.

Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
PM-E power modules for solid-state modules							
PM-E power modules 24 V DC [1] For solid-state modules, with diagnostics	A	**6ES7 138-4CA01-0AA0**		1	1 unit	250	0.041
PM-E power modules 24 to 48 V DC For solid-state modules, with diagnostics, with status bit "Load voltage available"	A	**6ES7 138-4CA50-0AB0**		1	1 unit	250	0.041
PM-E power modules 24 to 48 V DC, 42 to 230 V AC For solid-state modules, with diagnostics and fuse	A	**6ES7 138-4CB11-0AB0**		1	1 unit	250	0.045
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
Power modules for SIPLUS PM-E solid-state modules (extended temperature range)							
SIPLUS PM-E power modules (extended temperature range and medial load)							
PM-E power modules 24 V DC [1] For solid-state modules, with diagnostics	D	**6AG1 138-4CA01-2AA0**		1	1 unit	471	0.040
PM-E power modules 24 to 48 V DC For solid-state modules, with diagnostics, with status bit "Load voltage available"	D	**6AG1 138-4CA50-2AB0**		1	1 unit	471	0.041
PM-E power modules 24 to 48 V DC, 24 to 230 V AC For solid-state modules, with diagnostics and fuse	C	**6AG1 138-4CB11-2AB0**		1	1 unit	471	0.045
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	0.135
• 30 mm width (1 unit)	A	**6ES7 138-4AA11-0AA0**		1	1 unit	250	0.042
Potential distributor modules							
Potential distributor modules for ET 200S For supplying the load voltage to additional terminals, 15 mm wide, 1 unit	A	**6ES7 138-4FD00-0AA0**		1	1 unit	250	0.041
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227

[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.

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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	0.175
• 2 DI 24 V DC High Feature	A	**6ES7 131-4BB01-0AB0**		1	1 unit	250	0.177
• 4 DI 24 V DC Standard	A	**6ES7 131-4BD01-0AA0**		1	1 unit	250	0.176
• 4 DI 24 V DC High Feature	A	**6ES7 131-4BD01-0AB0**		1	1 unit	250	0.181
• 2 DI 120 V AC	A	**6ES7 131-4EB00-0AB0**		1	1 unit	250	0.175
• 2 DI 230 V AC	A	**6ES7 131-4FB00-0AB0**		1	1 unit	250	0.175
• 4 DI 24 ... 48 V UC	A	**6ES7 131-4CD00-0AB0**		1	1 unit	250	0.198
• 4 DI 24 V DC SOURCE INPUT	A	**6ES7 131-4BD51-0AA0**		1	1 unit	250	0.176
Order unit 1 unit							
• 4 DI 24 V DC NAMUR	A	**6ES7 131-4RD00-0AB0**		1	1 unit	250	0.044
• 8 DI 24 V DC Standard	A	**6ES7 131-4BF00-0AA0**		1	1 unit	250	0.042
• 8 DI 24 V DC Standard SOURCE INPUT	A	**6ES7 131-4BF50-0AA0**		1	1 unit	250	0.043
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	0.179
• 2 DO 24 V DC/0.5 A High Feature	A	**6ES7 132-4BB01-0AB0**		1	1 unit	250	0.186
• 2 DO 24 V DC/2 A Standard	A	**6ES7 132-4BB31-0AA0**		1	1 unit	250	0.180
• 2 DO 24 V DC/2 A High Feature	A	**6ES7 132-4BB31-0AB0**		1	1 unit	250	0.198
• 4 DO 24 V DC/0.5 A Standard	A	**6ES7 132-4BD02-0AA0**		1	1 unit	250	0.184
• 4 DO 24 V DC/0.5 A Standard SOURCE OUTPUT	A	**6ES7 132-4BD50-0AA0**		1	1 unit	250	0.185
• 4 DO 24 V DC/2 A Standard	A	**6ES7 132-4BD32-0AA0**		1	1 unit	250	0.188
• 2 DO 24 V to 230 V AC /1 A	A	**6ES7 132-4FB01-0AB0**		1	1 unit	250	0.215
• 2 DO 24 V DC to 230 V AC/5 A relay, NO contact	A	**6ES7 132-4HB01-0AB0**		1	1 unit	250	0.219
• 2 DO 24...48 V DC to 230 V AC/5 A relay, CO	A	**6ES7 132-4HB10-0AB0**		1	1 unit	250	0.231
Order unit 1 unit							
• 8 DO 24 V DC/0.5 A Standard	A	**6ES7 132-4BF00-0AA0**		1	1 unit	250	0.044
• 8 DO 24 V DC/0.5 A Standard SOURCE OUTPUT	A	**6ES7 132-4BF50-0AA0**		1	1 unit	250	0.045
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
SIPLUS digital solid-state modules (extended temperature range)							
SIPLUS digital input modules							
(extended temperature range and medial load)							
Order unit 5 units							
• 4 DI 24 V DC Standard	D	**6AG1 131-4BD01-2AA0**		1	1 unit	471	0.180
• 8 DI 24 V DC Standard	D	**6AG1 131-4BF00-7AA0**		1	1 unit	471	0.042
SIPLUS digital output modules							
(extended temperature range and medial load)							
Order unit 5 units							
• 2 DO 24 V DC/0.5 A High Feature	D	**6AG1 132-4BB01-2AB0**		1	1 unit	471	0.187
• 2 DO 24 V DC/2 A High Feature	D	**6AG1 132-4BB31-7AB0**		1	1 unit	471	0.198
• 4 DO 24 V DC/0.5 A Standard	C	**6AG1 132-4BD01-2AA0**		1	1 unit	473	0.187
• 4 DO 24 V DC/0.5 A Standard	D	**6AG1 132-4BD02-7AA0**		1	1 unit	471	0.184
• 4 DO 24 V DC/2 A Standard	D	**6AG1 132-4BD32-2AA0**		1	1 unit	471	0.189
• 2 DO 24 V DC to 230 V AC/5 A relay, NO	D	**6AG1 132-4HB01-2AB0**		1	1 unit	471	0.218
• 2 DO 24 ... V DC to 230 V AC/5 A relay, CO	D	**6AG1 132-4HB10-2AB0**		1	1 unit	471	0.200
Order unit 1 unit							
• 8 DO 24 V DC/5 A Standard		**6AG1 132-4BF00-0AA0**					
Accessories		For ordering data see digital solid-state modules					

* You can order this quantity or a multiple thereof.

Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Analog solid-state modules							
Analog input modules Order unit 1 unit							
• 2 AI U Standard	A	**6ES7 134-4FB01-0AB0**		1	1 unit	250	0.045
• 2 AI U High Speed	A	**6ES7 134-4FB52-0AB0**		1	1 unit	250	0.060
• 2 AI U High Feature	A	**6ES7 134-4LB02-0AB0**		1	1 unit	250	0.056
• 2 AI I Standard 2-wire	A	**6ES7 134-4GB01-0AB0**		1	1 unit	250	0.045
• 2 AI I High Speed 2-wire	A	**6ES7 134-4GB52-0AB0**		1	1 unit	250	0.060
• 2 AI I Standard 4-wire	A	**6ES7 134-4GB11-0AB0**		1	1 unit	250	0.045
• 2 AI High Speed 1-4 wire	A	**6ES7 134-4GB62-0AB0**		1	1 unit	250	0.033
• 2 AI I High Feature 2/4-wire (15 bits + sign)	A	**6ES7 134-4MB02-0AB0**		1	1 unit	250	0.055
• 2 AI RTD Standard	A	**6ES7 134-4JB50-0AB0**		1	1 unit	250	0.047
• 2 AI TC Standard	A	**6ES7 134-4JB00-0AB0**		1	1 unit	250	0.044
• 2 AI RTD High Feature	A	**6ES7 134-4NB51-0AB0**		1	1 unit	250	0.046
• 2 AI TC High Feature	A	**6ES7 134-4NB01-0AB0**		1	1 unit	250	0.045
• 4 AI Standard 2-wire	A	**6ES7 134-4GD00-0AB0**		1	1 unit	250	0.045
Analog output modules Order unit 1 unit							
• 2 AO U Standard	A	**6ES7 135-4FB01-0AB0**		1	1 unit	250	0.045
• 2 AO U High Speed	A	**6ES7 135-4FB52-0AB0**		1	1 unit	250	0.057
• 2 AO U High Feature	A	**6ES7 135-4LB02-0AB0**		1	1 unit	250	0.046
• 2 AO I Standard	A	**6ES7 135-4GB01-0AB0**		1	1 unit	250	0.046
• 2 AO I High Speed	A	**6ES7 135-4GB52-0AB0**		1	1 unit	250	0.046
• 2 AO I High Feature	A	**6ES7 135-4MB02-0AB0**		1	1 unit	250	0.045
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
Accessories for system-integrated shield connections							
Shield attachments Order unit 5 units for plugging into TM-E and TM-P	A	**6ES7 193-4GA00-0AA0**		1	1 unit	250	0.044
Shield terminals Order unit 5 units for busbars 3 × 10 mm	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.063
Ground connection terminals Order unit 1 unit for conductor cross-sections up to 25 mm^2	C	**8WA2 868**		1	50 units	041	0.014
Busbars 3 x 10 mm Order unit 1 unit	A	**8WA2 842**		1	1 unit	041	0.267
SIPLUS analog solid-state modules (extended temperature range)							
SIPLUS anolog input modules (extended temperature range and medial load)							
• 2 AI I Standard 2-wire	D	**6AG1 134-4GB01-2AB0**		1	1 unit	471	0.045
• 2 AI I Standard 4-wire	D	**6AG1 134-4GB11-2AB0**		1	1 unit	471	0.045
• 2 AI High Speed 2-wire	D	**6AG1 134-4GB52-2AB0**		1	1 unit	471	0.060
• 2 AI RTD Standard	D	**6AG1 134-4JB50-2AB0**		1	1 unit	471	0.047
Accessories		For ordering data see anlaog solid-state modules					

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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 138-4CF02-0AB0**		1	1 unit	241	0.097
PM-E F pp PROFIsafe 24 V DC power modules For the safe disconnection of digital output modules	A	**6ES7 138-4CF41-0AB0**		1	1 unit	241	0.098
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	**6ES7 151-1BA02-0AB0**		1	1 unit	250	0.184
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	0.200
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		**6ES7 151-1BB22-0AB0**					
Terminal modules for power modules							
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	0.138
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	0.124
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	0.300
• Software Update Service	X	**6ES7 833-1FC00-0YX2**		1	1 unit	241	0.300
Distributed Safety upgrade From V5.x to V5.3; floating license for 1 user	A	**6ES7 833-1FC02-0YE5**		1	1 unit	241	0.300
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	0.227
SIMATIC Manual Collection update service for 1 year	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.300
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 138-4FA03-0AB0**		1	1 unit	241	0.089
4 F-DO PROFIsafe 24 V DC/2 A solid-state modules 30 mm width, up to Category 4 (EN 954-1)	A	**6ES7 138-4FB02-0AB0**		1	1 unit	241	0.100
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 138-4FC00-0AB0**		1	1 unit	241	0.087
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; connection to bus through 9-pole Sub-D, including termination module	A	**6ES7 151-1BA02-0AB0**		1	1 unit	250	0.184
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	0.200
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 151-3BB22-0AB0**		1	1 unit	250	0.236
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	0.300
• Software Update Service	X	**6ES7 833-1FC00-0YX2**		1	1 unit	241	0.300
Distributed Safety upgrade From V5.x to V5.3; floating license for 1 user	A	**6ES7 833-1FC02-0YE5**		1	1 unit	241	0.300

* You can order this quantity or a multiple thereof.

Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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	0.227
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.300
SIPLUS F solid-state modules (extended temperature range)							
SIPLUS F solid-state modules (extended temperature range and medial load)							
4/8 F-DI PROFIsafe 24 V DC solid-state modules 30 mm width, up to Category 4 (EN 954-1)	D	**6AG1 138-4FA03-2AB0**		1	1 unit	471	0.090
4 F-DO PROFIsafe 24 V DC/2 A solid-state modules 30 mm width, up to Category 4 (EN 954-1)	D	**6AG1 138-4FB02-2AB0**		1	1 unit	471	0.100
Accessories		For ordering data see F solid-state modules					
RELAY F solid-state modules							
1 F-RO 24 V DC/5A 24 V..230 AC/5A solid-state modules	A	**6ES7 138-4FR00-0AA0**		1	1 unit	241	0.108
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; connection to bus through 9-pole Sub-D, including termination module	A	**6ES7 151-1BA02-0AB0**		1	1 unit	250	0.184
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	0.200
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 151-3BB22-0AB0**		1	1 unit	250	0.236
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	0.300
• Software Update Service	X	**6ES7 833-1FC00-0YX2**		1	1 unit	241	0.300
Distributed Safety upgrade from V5.x to V5.3; floating license for 1 user	A	**6ES7 833-1FC02-0YE5**		1	1 unit	241	0.300
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	0.227
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.300
Distributed Safety V5.4 programming tools							
• Floating license	A	**6ES7 833-1FC02-0YA5**		1	1 unit	241	0.300
• Software Update Service	X	**6ES7 833-1FC00-0YX2**		1	1 unit	241	0.300
• Distributed Safety upgrade	A	**6ES7 833-1FC02-0YE5**		1	1 unit	241	0.300
• SIMATIC Manual Collection	A	**6ES7 998-8XC01-8YE0**		1	1 unit	230	0.227
• SIMATIC Manual Collection – Update service for 1 year	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.300
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	0.071
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	0.063
TM-P15N23-A1 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	**6ES7 193-4CC70-0AA0**		1	1 unit	250	0.081

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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	0.071
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	0.069
TM-P15N23-A0 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 interrupted to the left, FastConnect	A	**6ES7 193-4CD70-0AA0**		1	1 unit	250	0.081
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	0.061
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	0.061
TM-P15N22-01 Order unit: 1 unit 2 x 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	**6ES7 193-4CE60-0AA0**		1	1 unit	250	0.072
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	0.138
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	0.124
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	0.146
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	0.128
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	0.186
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	0.159
Accessories							
Color coding plates Order unit: 200 units for TM-P, TM-E							
• White	A	**6ES7 193-4LA20-0AA0**		1	1 unit	250	0.025
• Yellow	A	**6ES7 193-4LB20-0AA0**		1	1 unit	250	0.027
• Yellow and green	A	**6ES7 193-4LC20-0AA0**		1	1 unit	250	0.024
• Red	A	**6ES7 193-4LD20-0AA0**		1	1 unit	250	0.023
• Blue	A	**6ES7 193-4LF20-0AA0**		1	1 unit	250	0.025
• Brown	A	**6ES7 193-4LG20-0AA0**		1	1 unit	250	0.025
• Turquoise	A	**6ES7 193-4LH20-0AA0**		1	1 unit	250	0.026
Ground connection terminals Order unit 1 unit for conductor cross-sections up to 25 mm^2	C	**8WA2 868**		1	50 units	041	0.014
Busbars 3 x 10 mm Order unit 1 unit	A	**8WA2 842**		1	1 unit	041	0.267
Inscription labels, with inscription Order unit: 1 set							
• 200 units for slot numbering (1 to 20) 10 ×	A	**8WA8 861-0AB**		100	200 units	041	0.080
• 200 units for slot numbering (1 to 40) 5 ×	A	**8WA8 861-0AC**		100	200 units	041	0.080
• 200 units for slot numbering (1 to 64) 1 ×, (1 to 68) 2 ×	C	**8WA8 861-0DA**		100	200 units	041	0.080
Inscription labels, blank 200 units for slot numbering	A	**8WA8 848-2AY**		100	100 units	041	0.080

* You can order this quantity or a multiple thereof.

Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
4 IQ-Sense and 8 IQ-Sense sensor modules							
4 IQ-Sense sensor modules	A	**6ES7 138-4GA00-0AB0**		1	1 unit	250	0.204
8 x IQ-Sense sensor modules	A	**6ES7 338-7XF00-0AB0**		1	1 unit	230	0.241
Sensors For connecting to the 4 IQ-Sense sensor module							
• Diffuse sensor, type C40 IQ-Sense	▶	**3SF7 240-3JQ00**		1	1 unit	575	0.170
• Diffuse sensor, type K80 IQ-Sense	▶	**3SF7 210-3JQ00**		1	1 unit	575	0.101
• Retroflective sensor, type C40 IQ-Sense	▶	**3SF7 241-3JQ00**		1	1 unit	575	0.170
• Retroflective sensor, type K80 IQ-Sense	▶	**3SF7 211-3JQ00**		1	1 unit	575	0.096
• Diffuse sensor with background suppression, type K80 IQ-Sense	A	**3SF7 214-3JQ00**		1	1 unit	575	0.101
• M18 IQ-Sense ultrasonic sensors Detection range 5 to 30 cm	C	**3SF6 232-3JA00**		1	1 unit	575	0.076
• M18 IQ-Sense ultrasonic sensors Detection range 15 to 100 cm	C	**3SF6 233-3JA00**		1	1 unit	575	0.078
SSI modules							
SSI modules For the connection of absolute encoders with SSI interface	A	**6ES7 138-4DB03-0AB0**		1	1 unit	250	0.048
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
Signal cables Assembled for SSI absolute encoders 6FX2001-5, without Sub-D connector, UL/DESINA	B	**6FX5 002-2CC12-....**		1	1 unit	701	0.460
2 PULSE pulse generators							
2 PULSE pulse generators and timer modules For ET 200S	A	**6ES7 138-4DD00-0AB0**		1	1 unit	250	0.050
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
1 STEP step modules							
1 STEP step modules For simple positioning tasks with stepper motor axes	A	**6ES7 138-4DC00-0AB0**		1	1 unit	250	0.048
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
SIMOSTEP stepper motors		see ST 70 Catalog					
Power sections for stepper motors FM STEPDRIVE		see ST 70 Catalog					
1 POS U positioning modules							
1 POS 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	0.081

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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	0.048
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
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	0.044
Shield terminalF for connection of braided shields to busbars, 5 units	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.063
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	0.110
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	0.054
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	0.080
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	0.240
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.233
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.230
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.227
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	0.044
Shield terminals For connection of braided shields to busbars, 5 units	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.063
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	0.110
1 SI interface modules							
1 SI interface modules							
• ASCII and 3964(R) protocol	A	**6ES7 138-4DF01-0AB0**		1	1 unit	250	0.047
• Modbus and USS protocol	A	**6ES7 138-4DF11-0AB0**		1	1 unit	250	0.046
Accessories							
TM-E15S 26-A1 terminal modules Order unit 5 units	A	**6ES7 193-4CA40-0AA0**		1	1 unit	250	0.500
TM-E15C26-A1 terminal modules Order unit 5 units	A	**6ES7 193-4CA50-0AA0**		1	1 unit	250	0.402
TM-E15N24-A1 terminal modules Order unit 5 units	A	**6ES7 193-4CA80-0AA0**		1	1 unit	250	0.559
TM-E15S24-01 terminal modules Order unit 5 units	A	**6ES7 193-4CB20-0AA0**		1	1 unit	250	0.384
TM-E15C24-01 terminal modules Order unit 5 units	A	**6ES7 193-4CB30-0AA0**		1	1 unit	250	0.335
TM-E15N24-01 terminal modules Order unit 5 units	A	**6ES7 193-4CB70-0AA0**		1	1 unit	250	0.443

* You can order this quantity or a multiple thereof.

Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SIWAREX CS							
SIWAREX CS Weighing electronics for weighers in SIMATIC ET 200S	B	**7MH4910-0AA01**		1	1 unit	816	0.093
SIWAREX CS manuals • In various languages Free download from: http://www.siemens.com/weighingtechnology							
SIWAREX CS "Getting started" Sample software for a simple introduction to programming weighers in STEP 7. Free download from: http://www.siemens.com/weighingtechnology							
SIWAREX CS configuration package on CD-ROM for SIMATIC S7, Version V5.4 and higher • SIWATOOL CS software for weigher calibration (in various languages) • Manuals on CD (in various languages) • SIWAREX CD "Getting started"	C	**7MH4910-0AK01**		1	1 unit	816	0.216
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	0.250
Installation materials *(essential)*							
Terminal modules TM-E 30 mm wide (required for each SIWAREX module)	A	**6ES7 193-4CG20-0AA0** or compatible		1	1 unit	250	0.146
Shield attachments Contents 5 units, sufficient for 5 cables	A	**6ES7 193-4GA00-0AA0**		1	1 unit	250	0.044
Shield connection terminals Contents: 5 units, sufficient for 5 cables *Note:* One shield connection terminal is required for • Weigher connection and • The TTY interface or • RS 232 interface	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.063
N busbars, galvanized 3 x 10 mm, 1.5 m long	A	**8WA2 842**		1	1 unit	041	0.267
Feeder terminals for N busbar	C	**8WA2 868**		1	50 units	041	0.014
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* *66565 Eppelborn* *GERMANY* *Tel.: +49 (0)6806/980-0* *Fax: +49 (0)6806/980-999* *Internet: http://www.siebert.de* Detailed information is available from the manufacturer.							
Accessories							
SIWAREX JB connection boxes, aluminium enclosure For parallel switching of up to 4 weigh-cells and for connecting several connection boxes	C	**7MH4710-1BA**		1	1 unit	815	1.520
SIWAREX JB connection boxes, high-grade steel enclosure For parallel switching of up to 4 weigh-cells	D	**7MH4710-1EA**		1	1 unit	815	1.203
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	2.850
SIWAREX Pi Ex-Interface manuals		**C71000-T5974-C29**					
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	C	**7MH4710-5BA**		1	1 unit	815	0.500
• With short-circuit current < DC 137 mA	C	**7MH4710-5CA**		1	1 unit	815	0.500

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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 JBs, for local laying, occasional bending is possible, 10.8 mm external diameter, for ambient temperature -40 to +80 °C	C	**7MH4702-8AG**		1	1 M	815	0.142
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 to +80 °C	C	**7MH4702-8AF**		1	1 M	815	0.160
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	0.080
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	0.093
SIWAREX CF manuals • German, English Free download from: http://www.siemens.com/weighingtechnology							
SIWAREX CF "Getting started" Sample software for a simple introduction to programming in STEP 7. Free download from: http://www.siemens.com/weighingtechnology							
***Installation materials** (essential)*							
Terminal modules TM-E 30 mm wide (required for each SIWAREX module)	A	**6ES7 193-4CG20-0AA0** or compatible		1	1 unit	250	0.146
Shield attachments Contents 5 units, sufficient for 5 cables	A	**6ES7 193-4GA00-0AA0**		1	1 unit	250	0.044
Shield connection terminals Contents: 5 units, sufficient for 5 cables One shield connection terminal is required for each sensor cable	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.063
N busbars, galvanized 3 x 10 mm, 1.5 m long	A	**8WA2 842**		1	1 unit	041	0.267
Feeder terminals for N busbar	C	**8WA2 868**		1	50 units	041	0.014
Accessories							
SIWAREX EB extension boxes For extending sensor cables	C	**7MH4710-2AA**		1	1 unit	815	0.500
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	C	**7MH4710-5BA**		1	1 unit	815	0.500
• With short-circuit current < DC 137 mA	C	**7MH4710-5CA**		1	1 unit	815	0.500
***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 JBs, for local laying, occasional bending is possible, 10.8 mm external diameter, for ambient temperature -40 to +80 °C	C	**7MH4702-8AG**		1	1 M	815	0.142
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	0.071
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	0.063
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	0.081

* You can order this quantity or a multiple thereof.

Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal modules for power and solid-state modules (continued)							
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	0.071
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	0.069
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	0.081
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	0.061
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	0.061
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	0.072
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	0.138
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	0.124
TM-E terminal modules for solid-state modules[1)]							
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	0.401
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	0.354
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	0.384
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	0.335
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	0.328
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	0.320
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	0.381
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	0.443
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	0.500
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	0.402

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

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal modules for power and solid-state modules (continued)							
TM-E terminal modules for solid-state modules[1] *(continued)*							
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	0.436
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	0.559
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	0.146
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	0.128
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	0.186
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	0.159
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	0.074
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	0.068
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	0.044
Shield terminals Order unit: 5 units, for busbars 3 × 10 mm	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.063
Ground connection terminals Order unit: 1 unit, for conductor cross-sections up to 25 mm^2	C	**8WA2 868**		1	50 units	041	0.014
Busbars 3 x 10 mm Order unit 1 unit	A	**8WA2 842**		1	1 unit	041	0.267
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	0.025
• Yellow	A	**6ES7 193-4LB20-0AA0**		1	1 unit	250	0.027
• Yellow and green	A	**6ES7 193-4LC20-0AA0**		1	1 unit	250	0.024
• Red	A	**6ES7 193-4LD20-0AA0**		1	1 unit	250	0.023
• Blue	A	**6ES7 193-4LF20-0AA0**		1	1 unit	250	0.025
• Brown	A	**6ES7 193-4LG20-0AA0**		1	1 unit	250	0.025
• Turquoise	A	**6ES7 193-4LH20-0AA0**		1	1 unit	250	0.026
Inscription labels, with inscription Order unit: 1 set							
• 200 units for slot numbering (1 to 20) 10 ×	A	**8WA8 861-0AB**		100	200 units	041	0.080
• 200 units for slot numbering (1 to 40) 5 ×	A	**8WA8 861-0AC**		100	200 units	041	0.080
• 200 units for slot numbering (1 to 64) 1 ×, (1 to 68) 2 ×	C	**8WA8 861-0DA**		100	200 units	041	0.080
Inscription labels, blank 200 units for slot numbering	A	**8WA8 848-2AY**		100	100 units	041	0.080

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

* You can order this quantity or a multiple thereof.

Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal modules for SIPLUS power and solid-state modules (extended temperature range)							
TM-P terminal modules for PM-E power modules (extended temperature range and medial load)							
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	0.077
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	0.070
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 disconnected through to the left, spring-type terminals	D	**6AG1 193-4CA30-2AA0**		1	1 unit	473	0.060
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	0.480
TM-E15C26-A1 Order unit: 5 units 2 x 6 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals	D	**6AG1 193-4CA50-2AA0**		1	1 unit	473	0.440
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	0.300
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	0.120
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	0.064
Accessories for shield connection		For ordering data see terminal modules for power and solid-state modules					

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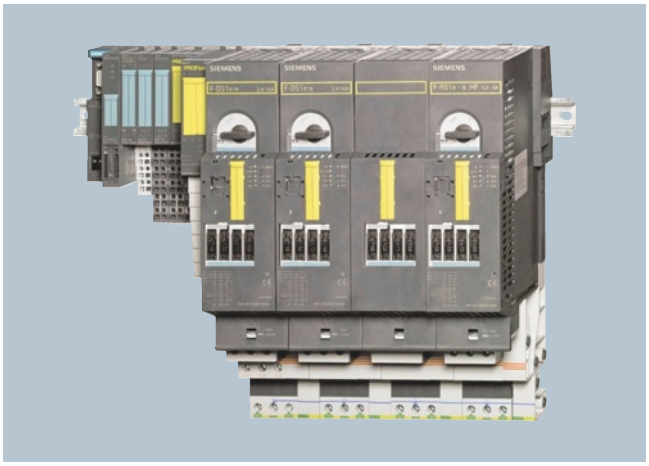
* You can order this quantity or a multiple thereof.

Overview



The ET 200S Safety motor starters Solutions comprise:

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

With the ET 200S Safety motor starters Solutions there is no complicated and hence cost-intensive configuring and wiring outlay compared to the conventional safety technology. The ET 200S Safety motor starter Solutions are designed for Category 4 according to EN 954-1 or SIL 3 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 Safety motor starter Solutions can also be combined with Standard motor starters or High-Feature motor starters without safety functions or the SIMATIC ET 200S FC frequency converter up to max. 4 kW up to Category 3 according to EN 954-1 or SIL 2 according to IEC 61508.

Standard and High-Feature ET 200S motor starters can be found on page 6/72 onwards.

The "SIMATIC ET 200 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:

http://www.siemens.com/sirius-starting

http://www.siemens.com/ET200S

Note:
For safety characteristics for motor starters, see "Appendix" --> "Standards and approvals" --> "Overview".

Motor Starter ES software

The Motor Starter ES software is used the for parameterization, monitoring, diagnostics and testing of motor starters.
See Chapter 12 "Planning and Configuration with SIRIUS".

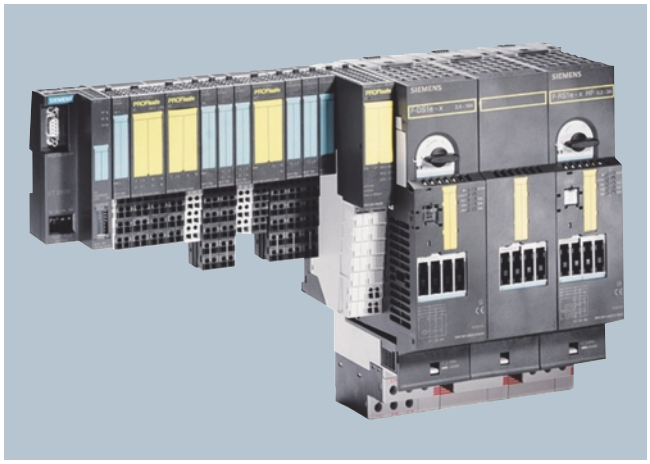
Application

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.
- **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.

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 trip unit 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

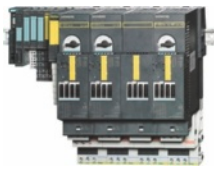
- Significant savings in components (less hardware)
- Less mounting and installation work
- Motor starters are failsafe and offer high availability

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 6/112). Another field of application is in combination with ASIsafe or safety relays (see example 2 on page 6/107 *Failsafe Motor Starters with ASIsafe and 3TK28*).

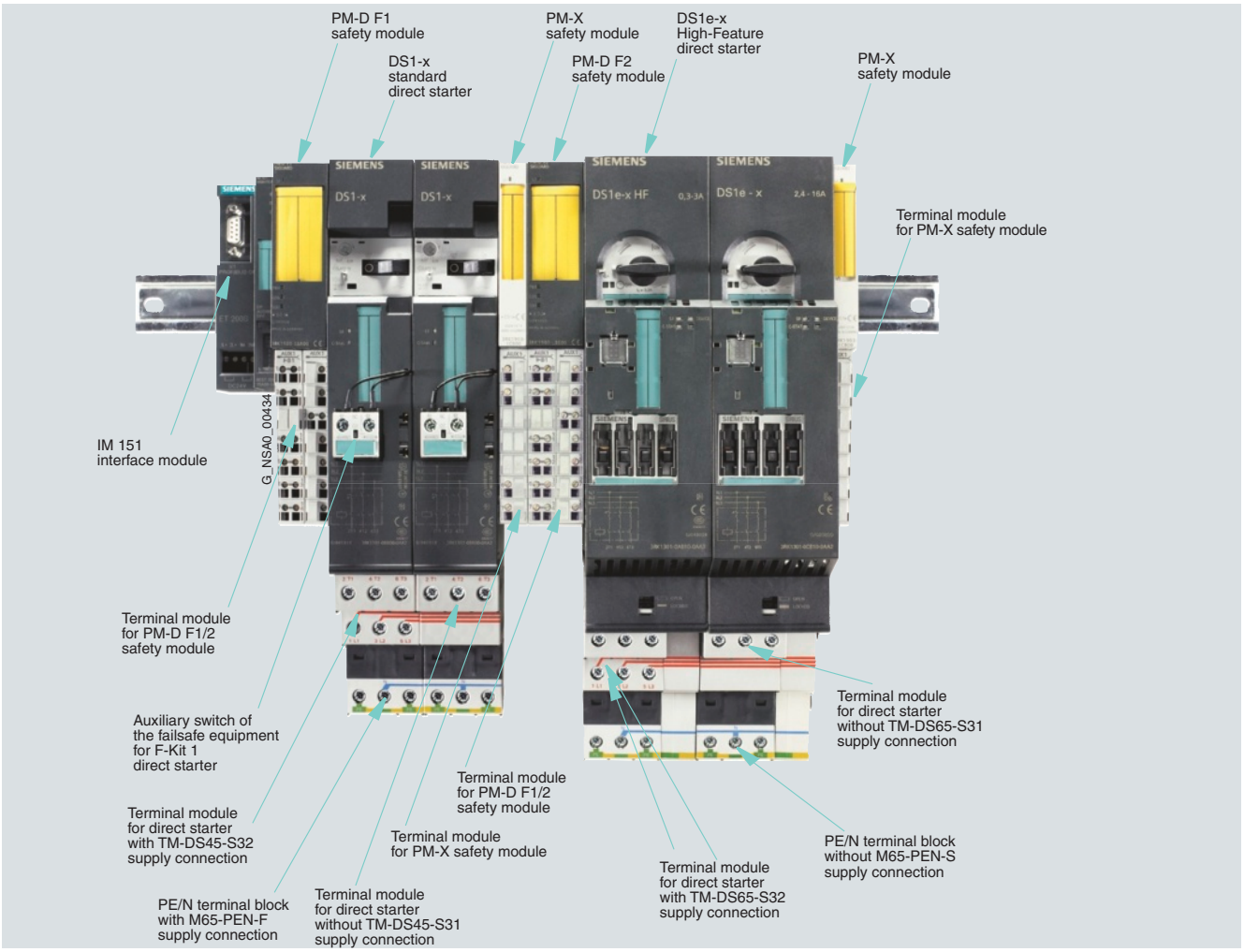
Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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	1.693
• 2.4 ... 8 A	A	**3RK1 301-0BB13-0AA4**		1	1 unit	121	1.717
• 2.4 ... 16 A	A	**3RK1 301-0CB13-0AA4**		1	1 unit	121	1.673
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	2.517
• 2.4 ... 8 A	A	**3RK1 301-0BB13-1AA4**		1	1 unit	121	2.576
• 2.4 ... 16 A	A	**3RK1 301-0CB13-1AA4**		1	1 unit	121	2.513
Components 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	0.471
• Without incoming power bus connection (TM-FDS65-S31-01)	A	**3RK1 903-3AC10**		1	1 unit	121	0.473
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	0.807
• Without incoming power bus connection (TM-FRS130-S31-01)	A	**3RK1 903-3AD10**		1	1 unit	121	0.848
PE/N M65-PEN-F terminal blocks With incoming connection, with caps	A	**3RK1 903-2AC00**		1	1 unit	121	0.093
M65-PEN-S terminal blocks Without incoming connection	A	**3RK1 903-2AC10**		1	1 unit	121	0.099

* You can order this quantity or a multiple thereof.

Safety modules local

Overview



Interplay of ET 200S Safety motor starters Solutions local components

PM-D F1 safety module

Safety motor starters Solutions local

- For use of Standard, High-Feature or Failsafe motor starters in systems with safety categories 2 to 4 (according to EN 954-1)
- 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 multiplier).
- 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.

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.

Examples

The diverse possible uses of the Safety motor starters Solutions local are presented in the manual SIMATIC ET 200S motor starters in the context of typical sample applications.

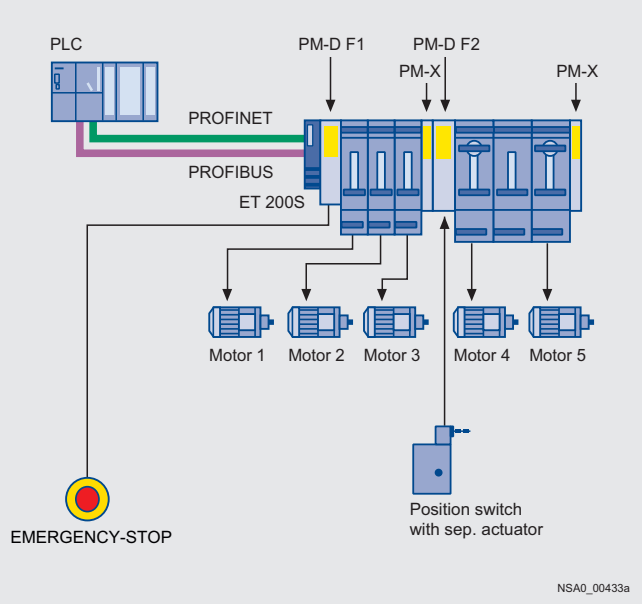
Safety functional examples for easy, quick and low-cost implementations of applications with Safety motor starters Solutions local are available on the Internet:

You can find more information on the Internet at:

http://www.siemens.com/sirius-starting

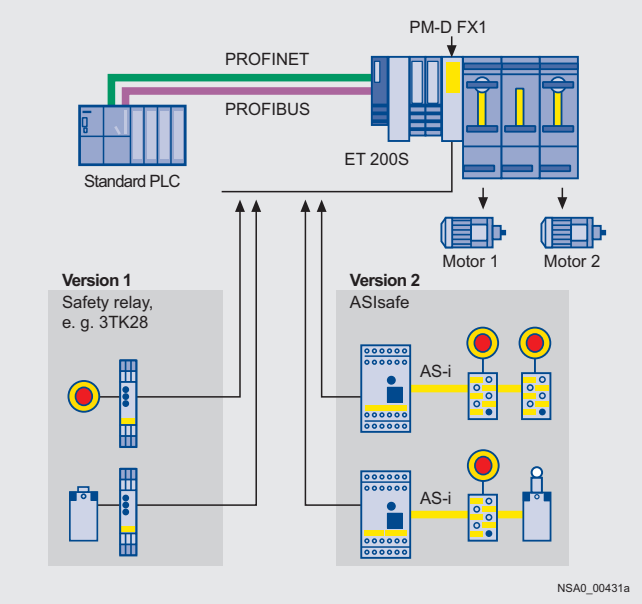
http://www.siemens.com/ET200S

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 starters Solutions local with 2 external safety combinations (= 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.

Safety modules local

Application

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 and SIL 3 to EN 61508 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 6/107).

With the Safety motor starters Solutions local, up to 80 % of wiring is saved compared to conventional safety technology with local safety applications.

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.

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Safety modules								
 3RK1 903-1BA00	**PM-D F1** With diagnostics Safety module for EMERGENCY-STOP application Monitored start	A	**3RK1 903-1BA00**		1	1 unit	121	0.216
	PM-D F2 With diagnostics Safety module for protective door monitoring Automatic start	A	**3RK1 903-1BB00**		1	1 unit	121	0.218
	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	0.209
 3RK1 903-3DA00	**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	0.225
	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	0.222
	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	0,123
	FC-M contact multipliers With 4 safe floating contacts	A	**3RK1 903-3CA00**		1	1 unit	121	0.223
Accessories								
 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	0.068
	F-Kit 1 Failsafe equipment for DS1-x[1] Standard motor starters	A	**3RK1 903-1CA00**		1	1 unit	121	0.030
 3RK1 903-1CA01	**F-Kit 2** Failsafe equipment for RS1-x[1] Standard motor starters	A	**3RK1 903-1CA01**		1	1 unit	121	0.056

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

* You can order this quantity or a multiple thereof.

Safety modules local

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Components for safety modules							
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	0.408
TM-PF30 S47-B0 For PM-D F1/2 Safety Modules With sensor connection	A	**3RK1 903-1AA10**		1	1 unit	121	0.393
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	0.399
TM-PF30 S47-C0 For PM-D F3/4 Safety Modules With infeed U2	A	**3RK1 903-1AC10**		1	1 unit	121	0.378
TM-PF30 S47-D0 For PM-D F5 Safety Modules	A	**3RK1 903-1AD10**		1	1 unit	121	0.400
TM-X15 S27-01 For PM-X Safety Module	A	**3RK1 903-1AB00**		1	1 unit	121	0.201
TM-P15-S27-01 terminal modules For PM-D power module	A	**3RK1 903-0AA00**		1	1 unit	121	0.224
TM-PFX30 S47-G0/G1 terminal modules For PM-D F X1 Safety Module (infeed terminal module)							
• Infeed left (TM-PFX30 S47-G0)	A	**3RK1 903-3AE10**		1	1 unit	121	0.408
• Infeed center (TM-PFX30 S47-G1)	A	**3RK1 903-3AE00**		1	1 unit	121	0.405
TM-FCM30 S47-F01 terminal modules For F-CM contact multipliers	A	**3RK1 903-3AB10**		1	1 unit	121	0.410


3RK1 903-1AA00

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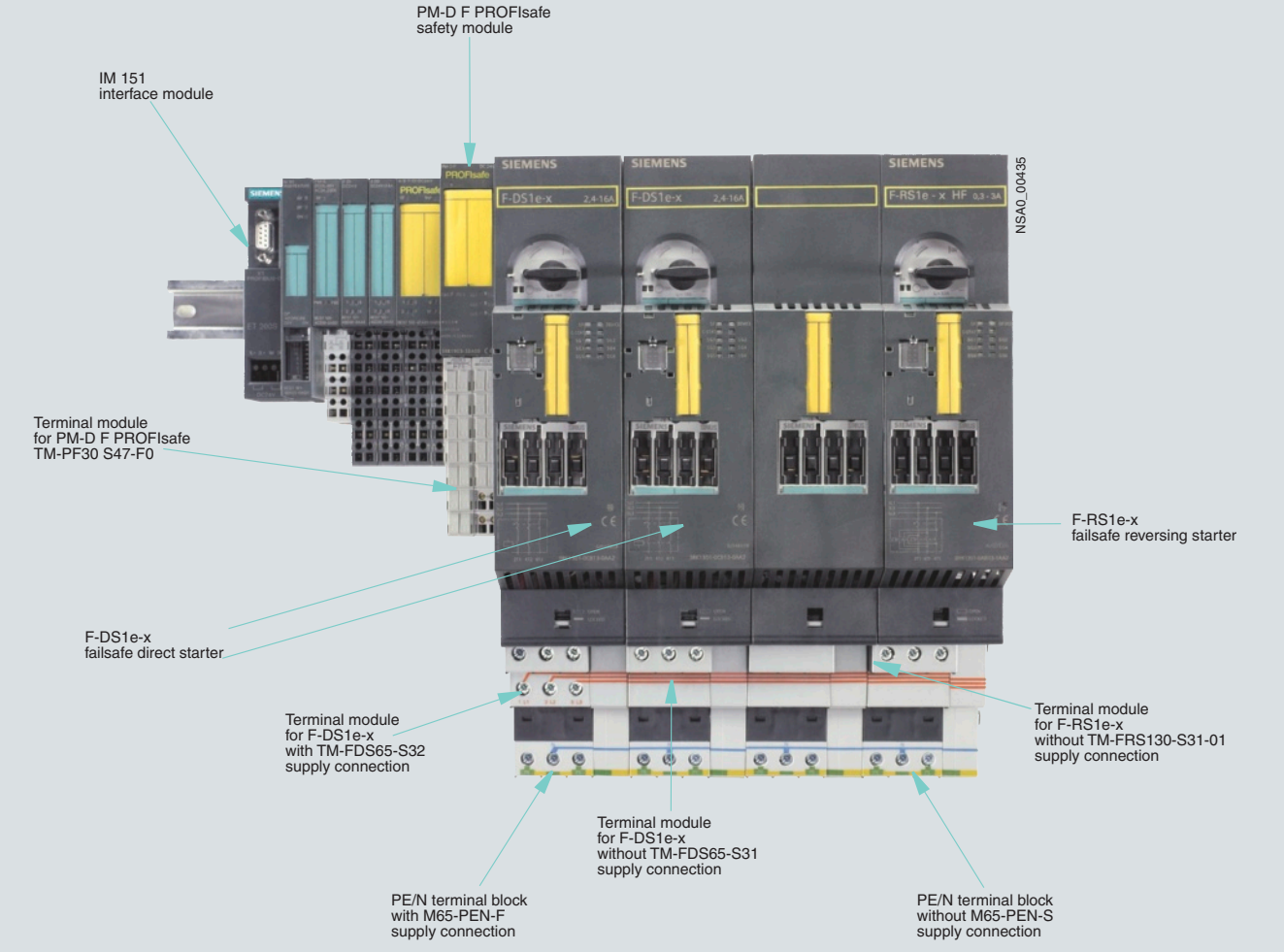
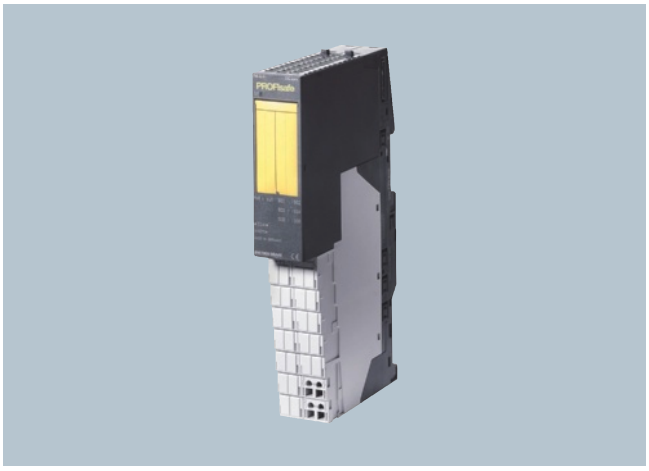
* You can order this quantity or a multiple thereof.

Overview



Interplay of ET 200S Safety motor starter Solutions PROFIsafe components

Safety motor starter 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 according 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 technology, e. g. no infeed 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

Safety modules 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:

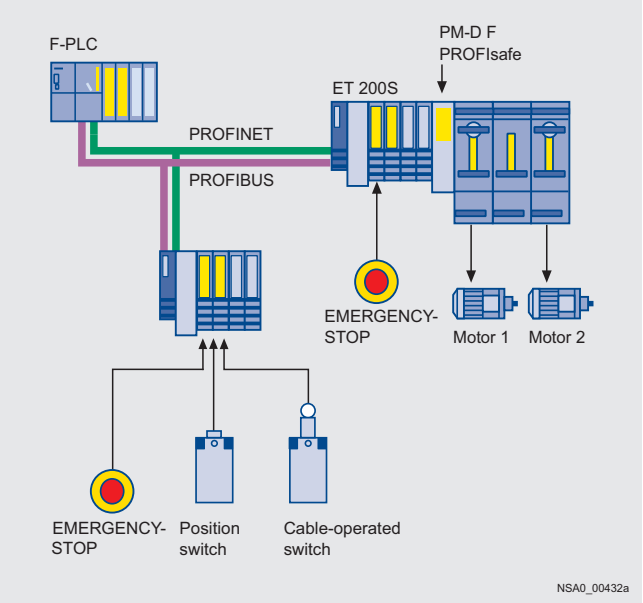
The diverse possible uses of the Safety motor starter Solutions PROFIsafe are presented in the manual SIMATIC ET 200S Motor Starters in the context of typical sample applications.

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:

http://www.siemens.com/sirius-starting

http://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.

Application

Safety motor starter Solutions PROFIsafe

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 widespread plants or with a sporadic demand for changes in the assignment of safety segments.

The Safety motor starter Solutions PROFIsafe are ideally suited for safety concepts with category 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.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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	0,139
F-CM contact multipliers With 4 safe floating contacts	A	**3RK1 903-3CA00**		1	1 unit	121	0.223
Components 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	0.360
TM-FCM30 S47-F01 terminal modules For F-CM contact multipliers	A	**3RK1 903-3AB10**		1	1 unit	121	0.410
Components for frequency converters and Failsafe frequency converters							
TM-ICU15 terminal modules For ICU24 / ICU24F control module of the frequency converter	A	**3RK1 903-3EA10**		1	1 unit	121	0.097
TM-IPM65 terminal modules For IPM25 power section, 0.75 kW of frequency converter							
• With incoming power bus connection (TM-IPM65-S32)	A	**3RK1 903-3EC00**		1	1 unit	121	0.020
• Without incoming power bus connection (TM-IPM65-S31)	A	**3RK1 903-3EC10**		1	1 unit	121	0.020
TM-IPM130 terminal modules For IPM25 power section, 2.2 kW and 4.0 kW of frequency converter							
• With incoming power bus connection (TM-IPM130-S32)	A	**3RK1 903-3ED00**		1	1 unit	121	0.020
• Without incoming power bus connection (TM-IPM130-S31)	A	**3RK1 903-3ED10**		1	1 unit	121	0.020
PE/N M65-PEN-F terminal blocks With incoming connection, with caps	A	**3RK1 903-2AC00**		1	1 unit	121	0.093
M65-PEN-S terminal blocks Without incoming connection	A	**3RK1 903-2AC10**		1	1 unit	121	0.099

* You can order this quantity or a multiple thereof.

ET 200pro Motor Starters

Standard and High-Feature

Overview

Motor starters

- Only two versions up to 5.5 kW
- All settings can be parameterized by bus
- Comprehensive diagnostic 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
- Direct-on-line or reversing starters
- Power bus can be plugged in using the new HAN Q4/2 plug-in connectors
- Conductor cross-sections up to 6 x 4 mm^2
- 25 A per segment (power looped through using jumper plug)
- In the Standard and High Feature versions (with 4 DI onBoard)
- Electromechanical switching and electronic switching
- Electronic starter for direct activation or with integrated smooth-starter function
- Supplied with 400 V AC brake contact as an option

Isolator module

The isolator module with switch disconnector function is used for safe disconnection of the 400 V operational voltage during repair work in the plant and provides an integrated group fusing function (i. e. additional group short-circuit protection for all subsequently supplied motor starters).

Depending on the power distribution concept, all stations can be equipped with an isolator module as an option.

Safety applications

Safety local isolator module

With the Safety local modules
- Safety local isolator module and
- 400 V disconnecting module

it is possible to achieve safety category 4/SIL 3 with an appropriate connection.

Safety Solution PROFIsafe

With the Safety PROFIsafe modules
- F-Switch and
- 400 V disconnecting modules

it is also possible to achieve safety category 4/SIL 3 with an appropriate connection.

Motor Starter ES software

The Motor Starter ES software is used the for parameterization, monitoring, diagnostics and testing of motor starters.
See Chapter 12 "Planning and Configuration with SIRIUS".

Benefits

ET 200pro motor starters provide the following advantages:
- High flexibility thanks to a modular and compact design
- Little variance among all motor starter versions (2 units up to 5.5 kW)
- Extensive parameterization using STEP 7 HW-Config
- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Extensive diagnostics and information for preventive maintenance
- Parameterizable inputs for local control functions (High Feature)
- Cabinet-free construction thanks to high degree of protection IP65

Application

With the ET 200pro motor starters, any AC loads can be protected and switched. They are an integral part of ET 200pro and have the high degree of protection IP65. This makes them ideal for operation in modular, distributed peripherals without control cabinets or control enclosures.

The ET 200pro motor starters are available both with mechanical as well as electronic contacts.

The ET 200pro electromechanical starters are offered as direct (DSe/DSe) and reversing starters (RSe/RSe) in the High Feature version with the following equipment:
- 4 digital inputs
- Device versions with or without control for externally fed brakes with 400 V AC
- With expanded parameterization capabilities.

The ET 200pro electronic starters are offered as direct (DSe/DSe) and reversing starters (RSe/RSe) in the High Feature version with the following equipment:
- 4 digital inputs
- With soft-start and smooth ramp-down function
- With the deactivated smooth start function as an electronic starter for applications with a high level of switching frequency
- Device versions with or without control for externally fed brakes with 400 V AC
- With expanded parameterization capabilities.

As the result of the protection concept with solid-state overload evaluation and the use of SIRIUS controls size S00, additional advantages are realized on the standard and High Feature motor starters - advantages which soon make themselves positively felt particularly in manufacturing processes with high plant stoppage costs:
- Configuration is made easier by the fine modular structure. When using the ET 200pro motor starters, the list of parts per load feeder is reduced to two main units: the bus module and the motor starter. This makes the ET 200pro ideal for modular machine concepts or solutions for conveying systems and in machine-tool building.
- Expansions are easily possible through the subsequent adding of modules. The innovative plug-in technology also does away with the wiring needed up to now. Through the hot swapping function (disconnection and connection during operation) a motor starter can be replaced within seconds if necessary, without having to shut down the ET 200pro station and with it the process in the plant. The motor starters are therefore recommendable in particular for applications with special demands on availability. Storage costs are optimized in addition by the low level of variance (2 units up to 5.5 kW).

The ordering option for motor starters with a 400 V AC brake output provides the possibility of controlling motors with 400 V AC brakes. With four locally acting inputs available on 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 or limit position disconnectors. In parallel with this, the states of these inputs are signaled to the control system.

When using the optional isolator module with switch disconnector and group fusing function for the ET 200pro, the 400 V supply of the motor starters can be switched on and off directly in the field, i. e. locally.

The Motor Starter ES software is available for the parameterization and diagnostics.
See Chapter 12 "Planning and Configuration with SIRIUS".

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Standard motor starters, mechanical							
Motor protection: thermal model							
 DSe standard							
DSe[1] direct-on-line starters							
• Without brake output	A	**3RK1 304-5□S40-4AA0**		1	1 unit	121	1.728
• With brake output 400 V AC	C	**3RK1 304-5□S40-4AA3**		1	1 unit	121	1.728
RSe[1] reversing starters							
• Without brake output	A	**3RK1 304-5□S40-5AA0**		1	1 unit	121	1.728
• With brake output 400 V AC	A	**3RK1 304-5□S40-5AA3**		1	1 unit	121	1.728
High-Feature motor starters, mechanical							
Motor protection: thermal model							
 RSe High-Feature							
DSe[1] direct-on-line starters							
• Without brake output and with 4 inputs	C	**3RK1 304-5□S40-2AA0**		1	1 unit	121	1.728
• With brake output 400 V AC and 4 inputs	A	**3RK1 304-5□S40-2AA3**		1	1 unit	121	1.728
RSe[1] reversing starters							
• Without brake output and with 4 inputs	C	**3RK1 304-5□S40-3AA0**		1	1 unit	121	1.728
• With brake output 400 V AC and 4 inputs	A	**3RK1 304-5□S40-3AA3**		1	1 unit	121	1.728
Additional price			Additional price per PU				
Setting range of rated operational current							
• 0.15 ... 2.0 A		**K**	Without				
• 1.5 ... 12.0 A		**L**	x				
High-Feature motor starters[3], solid-state							
Full motor protection, comprising thermal motor protection and thermistor motor protection							
 sRSSte High Feature							
sDSSte/sDSte direct-on-line starters[1)3)]							
• Without brake output and with 4 inputs	A	**3RK1 304-5□S70-2AA0**		1	1 unit	121	1.700
• With brake output 400 V AC and 4 inputs	A	**3RK1 304-5□S70-2AA3**		1	1 unit	121	1.700
sRSSte/sRSte reversing starters[1)3)]							
• Without brake output and with 4 inputs	A	**3RK1 304-5□S70-3AA0**		1	1 unit	121	1.875
• With brake output 400 V AC and 4 inputs	A	**3RK1 304-5□S70-3AA3**		1	1 unit	121	1.875
Additional price			Additional price per PU				
Setting range of rated operational current							
• 0.15 ... 2.0 A		**K**	Without				
• 1.5 ... 12.0 A		**L**	x				

x = Additional price

1) Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters").

2) Delivery time A for Setting range of rated operational current 0.15 ... 2.0 A.

3) The solid-state motor starters can be used not only as solid-state motors starters with a high level of switching frequency but also as fully fledged soft starters for soft starting and smooth ramp-down. The changeover from motor starter to soft starter takes place through reparameterization in HW Config.
Depending on the settings, this results in the following current ranges:
- Parameterization as solid-state starter: 0.15 ... 2 A and 1.5 ... 9 A (4 kW)
- Parameterization as soft starter: 0.15 ... 2 A and 1.5 ... 12 A (5.5 kW).

*** You can order this quantity or a multiple thereof.**

ET 200pro isolator modules

Overview

The isolator module with integrated group fusing function (i. e. additional group short-circuit protection for all subsequently supplied motor starters) and switch disconnector function is used for safe disconnection of the 400 V operational voltage in the plant.

Depending on the power distribution concept, all stations can be equipped with an isolator module as an option.

The isolator module is available in addition in a safety version. See Safety local Isolator Modules.

Benefits

The following properties apply to the isolator module:

- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Cabinet-free construction thanks to high degree of protection IP65

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
ET 200pro isolator modules, mechanical								
 3RK1 304-0HS00-6AA0	**Isolator modules**[1] Rated operational current 25 A	A	**3RK1 304-0HS00-6AA0**		1	1 unit	121	1.728
 3RK1 304-0HS00-7AA0	**Safety local isolator modules**[2)3)] Rated operational current 16 A	C	**3RK1 304-0HS00-7AA0**		1	1 unit	121	1.728

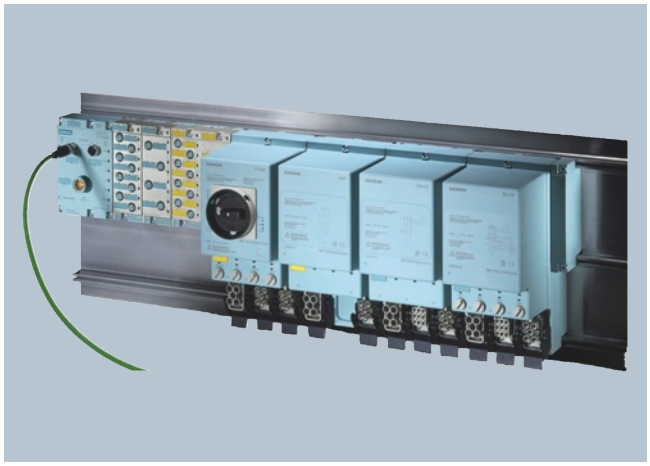
1) Only functions when used together with the corresponding backplane bus module 110 mm and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters").

2) The Safety local isolator module only functions when used together with the 400 V disconnecting module.

3) Only in combination with the special backplane bus module for the Safety local isolator module (see "Accessories for ET 200pro motor starters").

* You can order this quantity or a multiple thereof.

Overview



Safety local isolator module

The Safety local isolator module is a repair switch with integrated safety evaluation functions that can be parameterized using DIP switches.

It is used for:
- Connection of a 1 or 2-channel EMERGENCY-STOP circuit up to category 3-4/SIL 3 (protective door or EMERGENCY-STOP pushbuttons) and parameterizable start behavior
- Control of the 400 V disconnecting module by means of a safety rail signal

400 V disconnecting modules

The 400 V disconnecting module enables the safe disconnection of the operational voltage of 400 V up to Category 3-4/SIL 3. For operation in a Safety Solution local application it functions only in combination with the Safety local isolator module.

For operation in a Safety PROFIsafe application it functions only in combination with the F-Switch.

F-Switch

Fail-safe digital inputs/outputs in degree of protection IP65/66/67 for near-machine, cabinet-free use.

Fail-safe digital inputs

- For the failsafe reading in of sensor information (1-/2-channel)
- Including integrated evaluation for 2v2 signals
- Internal sensor supplies (incl. testing) available

Fail-safe digital outputs

- 3 failsafe PP-switching outputs for safe switching of the backplane bus bars

The F-Switch is certified up to Cat. 4 (EN 954-1) and up to SIL 3 (IEC 61508) and has detailed diagnostics.

It supports PROFIsafe in PROFIBUS configurations as well as in PROFINET configurations.

Note:
For safety characteristics for motor starters, see "Appendix" --> "Standards and approvals" --> "Overview".

Application

Safety local isolator module

The Safety local isolator module features the same functions as a standard isolator module with an additional local safety function.

The Safety local isolator module contains a 3TK28 41 module and is equipped with M12 terminals for the connection of external safety components.

Terminals 1 and 2 can be used to connect either 1-channel or 2-channel EMERGENCY-STOP circuits or protective door circuits (IN 1, IN 2).

For monitored starts, an external START switch can be connected to terminal 3.

The required safety functions can be set using 2 slide switches located under the left M12 opening.

In the event of an EMERGENCY-STOP, the Safety local isolator module trips the downstream 400 V disconnecting module. This safely isolates the 400 V circuit up to Cat. 4 according to EN 954-1 or SIL 3.

In combination with the 400 V disconnecting module, the Safety local isolator module can be used for safety applications up to Cat. 4 according to EN 954-1 or SIL 3.

400 V disconnecting modules

The 400 V disconnecting module can be used together with the Safety local isolator module for local safety applications and together with the F-Switch for PROFIsafe safety applications.

It contains two contactors connected in series for safety-oriented disconnection of the main circuit.

The auxiliary circuit supply of the device is over a safety power rail in the backplane bus module.

The 400 V disconnecting module can be used together with the Safety local isolator module or with the F-Switch for safety applications up to Cat. 4 according to EN 954-1 or SIL 3.

F-Switch

The F-Switch is a failsafe solid-state module for PROFIsafe safety applications. It has two failsafe inputs and outputs for safe switching of the 24
V supply over backplane bus bars. In combination with the 400 V disconnecting module it can be used in PROFIsafe applications for the failsafe disconnection of ET 200pro motor starters up to Cat. 4 according to EN 954-1 or SIL 3.

Safety modules

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
ET 200pro safety modules								
 3RK1 304-0HS00-7AA0	**Safety local isolator modules**[1)2)] Rated operational current 16 A	C	**3RK1 304-0HS00-7AA0**		1	1 unit	121	1.728
 3RK1 304-0HS00-8AA0	**400 V disconnecting modules**[3)4)] Rated operational current 25 A	C	**3RK1 304-0HS00-8AA0**		1	1 unit	121	1.728
 6ES7 148-1FS00-0AB0	**F-Switch PROFIsafe** 24 V DC, including bus module Connection module to be ordered separately	A	**6ES7 148-4FS00-0AB0**		1	1 unit	241	0.199
	Connection modules for F-Switch 24 V DC	A	**6ES7 194-4DA00-0AA0**		1	1 unit	241	0.351

1) The Safety local isolator module only functions when used together with the 400 V disconnecting module.

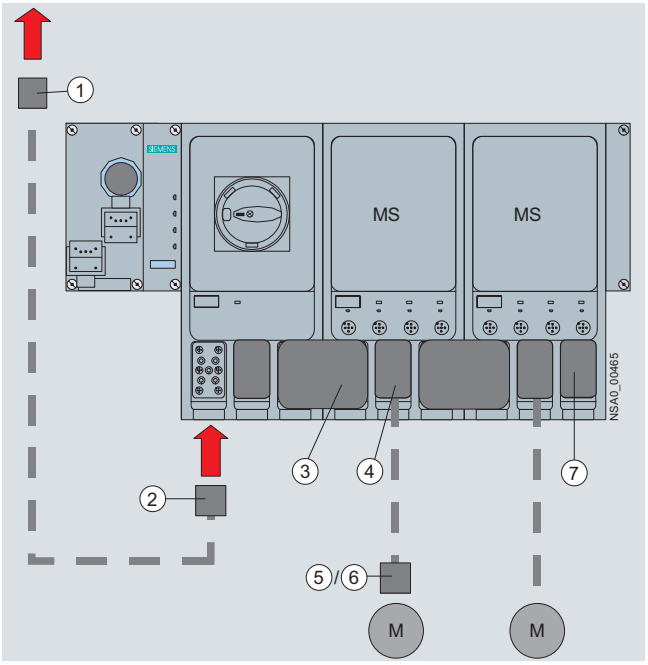
2) Only in combination with the special backplane bus module for the Safety local isolator module (see "Accessories for ET 200pro motor starters").

3) The 400 V disconnecting module only functions when used together with the Safety local isolator module or with the F-Switch.

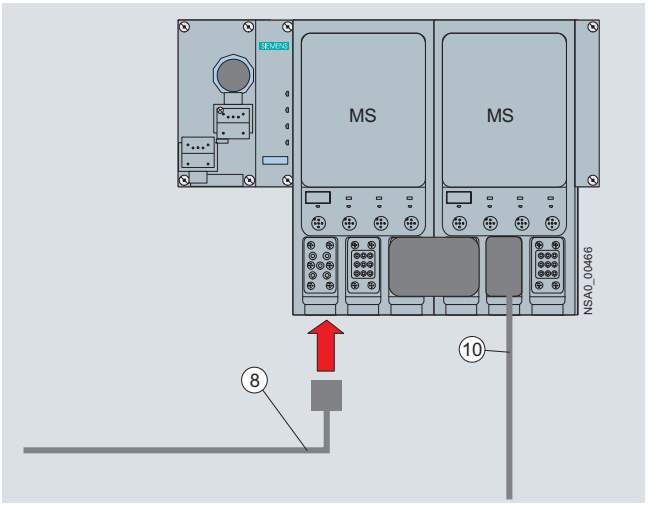
4) Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters").

* You can order this quantity or a multiple thereof.

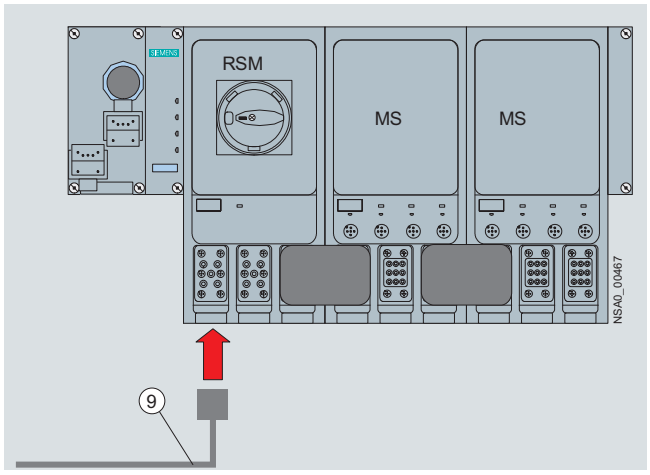
Overview



Basic design of an ET 200pro motor starter



Infeed on the ET 200pro motor starter



Infeed on the RSM isolator module

Legend:

① Power feeder plug (see page 6/120)
② Power connection plug (see page 6/120)
③ Power jumper plug (see page 6/120)
④ Motor connection plug (see page 6/120)
⑤ Motor plug (see page 6/120)
⑤ Motor plug with EMC suppressor circuit (see page 6/120)
⑦ Power loop-through plug (see page 6/120)
⑧ Power connection cable (see page 6/120)
⑨ Power connection cable for isolator modules (see page 6/120)
⑩ Motor cable (see page 6/121)

Accessories for ET 200pro motor starters

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Approx. weight per PU in kg
ET 200pro accessories							
① **Power feeder plugs** Connector set for energy supply, e. g. for connecting to T terminal connectors, comprising a coupling enclosure, straight outgoing unit (with bracket), pin insert for HAN Q4/2, incl. gland							
• 5 male contacts 2.5 mm^2	B	**3RK1 911-2BS60**		1	1 unit	121	0.100
• 5 male contacts 4 mm^2	B	**3RK1 911-2BS20**		1	1 unit	121	0.100
• 5 male contacts 6 mm^2	B	**3RK1 911-2BS40**		1	1 unit	121	0.100
② **Power connection plugs** Connector set for energy supply for connection to ET 200pro motor starters/ET 200pro isolator modules, comprising a cable-end connector hood, angled outgoing unit, female insert for HAN Q4/2, incl. gland							
• 5 female contacts 2.5 mm^2	C	**3RK1 911-2BE50**		1	1 unit	121	2.000
• 5 female contacts 4 mm^2	B	**3RK1 911-2BE10**		1	1 unit	121	2.000
• 5 female contacts 6 mm^2	B	**3RK1 911-2BE30**		1	1 unit	121	2.000
③ **Power jumper plugs**	B	**3RK1 922-2BQ00**		1	1 unit	121	0.330
④ **Motor connection plugs** Connector set for motor cable for connection to ET 200pro motor starters, comprising a cable-end connector hood, angled outgoing unit, pin insert for HAN Q8/0, incl. gland							
• 8 male contacts 1.5 mm^2	B	**3RK1 902-0CE00**		1	1 unit	121	0.064
• 6 male contacts 2.5 mm^2	B	**3RK1 902-0CC00**		1	1 unit	121	0.059
⑤ **Motor plugs** Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing unit, female insert for HAN 10e, incl. star jumper, incl. gland							
• 7 female contacts 1.5 mm^2	B	**3RK1 911-2BM21**		1	1 set	121	0.240
• 7 female contacts 2.5 mm^2	B	**3RK1 911-2BM22**		1	1 set	121	0.240
⑥ **Motor plugs with EMC suppressor circuit** Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing unit, female insert for HAN 10e with EMC suppressor circuit, incl. star jumper, incl. gland							
• 7 female contacts 1.5 mm^2	B	**3RK1 911-2BL21**		1	1 set	121	0.270
• 7 female contacts 2.5 mm^2	B	**3RK1 911-2BL22**		1	1 set	121	0.270
⑦ **Power loop-through plugs** Connector set for power loop-through for connection to ET 200pro motor starters/ET 200pro isolator modules, comprising a cable-end connector hood, angled outgoing unit, pin insert for HAN Q4/2, incl. gland							
• 4 male contacts 2.5 mm^2	B	**3RK1 911-2BF50**		1	1 unit	121	0.110
• 4 male contacts 4 mm^2	B	**3RK1 911-2BF10**		1	1 unit	121	0.300
⑧ **Power connection cables, assembled at one end** Power connection cable for ET 200pro motor starters, ECOFAST, open at one end, for HAN Q4/2, angled, insert turned at isolator module end, 4 x 4 mm^2							
• Length 1.5 m	B	**3RK1 911-0DB13**		1	1 set	121	0.590
• Length 5.0 m	B	**3RK1 911-0DB33**		1	1 set	121	1.800
⑨ **Power connection cables for isolator modules, assembled at one end** Power connection cable for ET 200pro motor starters,open at one end, for HAN Q4/2, angled, insert turned at isolator module end, 4 x 4 mm^2							
• Length 1.5 m	B	**3RK1 911-0DF13**		1	1 set	121	0.590
• Length 5.0 m	B	**3RK1 911-0DF33**		1	1 set	121	1.800

* You can order this quantity or a multiple thereof.

Accessories for ET 200pro motor starters

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Approx. weight per PU in kg
⑩ **Motor cables, assembled at one end** Open at one end, HAN Q8, angled, length 5 m							
• Motor cable for motor without brake, for ET 200pro, ET 200X, AS-i Compact, 4 x 1.5 mm^2	B	**3RK1 911-0EB31**		1	1 set	121	0.800
• Motor cable for motor with brake, for ET 200pro, 6 x 1.5 mm^2	B	**3RK1 911-0ED31**		1	1 set	121	1.150

Solution Partner
Automation
SIEMENS

More connection technology products can be found at our "Siemens Solution Partners"
http://www.siemens.com/automation/partnerfinder
under the technology heading
"Distributed Field Installation System"

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Approx. weight per PU in kg
Module racks, wide[1]							
• Length 500 mm	A	**6ES7 194-4GB00-0AA0**		1	1 unit	250	2.400
• Length 1000 mm	A	**6ES7 194-4GB60-0AA0**		1	1 unit	250	4.800
• Length 2000 mm	A	**6ES7 194-4GB20-0AA0**		1	1 unit	250	9.700
Module racks, wide, compact[1]							
• Length 500 mm	A	**6ES7 194-4GD00-0AA0**		1	1 unit	250	2.536
• Length 1000 mm	A	**6ES7 194-4GD10-0AA0**		1	1 unit	250	5.040
• Length 2000 mm	A	**6ES7 194-4GD20-0AA0**		1	1 unit	250	10.040
Backplane bus modules 110 mm[2]	B	**3RK1 922-2BA00**		1	1 unit	121	0.330
Backplane bus modules for Safety local isolator modules	B	**3RK1 922-2BA01**		1	1 unit	121	0.330
RS 232 interface cables	B	**3RK1 922-2BP00**		1	1 unit	121	0.330
 3RK1 922-3BA00							
Hand-held devices For ET 200pro motor starter, (also for ET 200S High Feature and ECOFAST), for local operation. A serial interface cable must be ordered separately.	B	**3RK1 922-3BA00**		1	1 unit	121	0.130
Sealing caps (for power supply) (1 pack contains 10 units)	B	**3RK1 902-0CJ00**		1	10 units	121	0.093
Dismantling tools for HAN Q4/2	C	**3RK1 902-0AB00**		1	1 unit	121	0.024
Crimping tools for pins/sockets 4 mm^2 and 6 mm^2	C	**3RK1 902-0CW00**		1	1 unit	121	0.620
Crimping tools for male contacts and sockets up to 4.0 mm^2 (HAN Q8/0)	B	**3RK1 902-0CT00**		1	1 unit	121	0.644
Dismantling tools for male contacts and sockets (HAN Q8/0)	B	**3RK1 902-0AJ00**		1	1 unit	121	0.047
M12 sealing caps For sealing unused input and output sockets (one set contains ten sealing caps)	►	**3RX9 802-0AA00**		100	10 units	121	0.100

1) The wide module rack can accommodate all ET 200pro motor starters and any optional modules (isolator module, Safety local isolator module and 400 V disconnecting module).

2) The backplane bus module is a prerequisite for operation of the ET 200pro motor starter and the optional module.

* You can order this quantity or a multiple thereof.

Components for ET 200pro

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Interface modules IM 154-1 and IM 154-2							
IM154-1 interface modules For ET 200pro; for communication between ET 200pro and higher-level masters over PROFIBUS DP	A	**6ES7 154-1AA00-0AB0**		1	1 unit	250	0.413
IM154-2 High-Feature interface modules For ET 200pro; for communication between ET 200pro and higher-level masters over PROFIBUS DP; support of PROFIsafe	A	**6ES7 154-2AA00-0AB0**		1	1 unit	250	0.411
Accessories							
CM IM DP ECOFAST connection modules For connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, two ECOFAST Cu connections	A	**6ES7 194-4AA00-0AA0**		1	1 unit	250	0.226
CM IM DP Direct connection modules For direct connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, up to six M20 screwed cable glands	A	**6ES7 194-4AC00-0AA0**		1	1 unit	250	0.337
CM IM DP M12 7/8" connection modules For connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, 2 x M12 and 2 x 7/8"	A	**6ES7 194-4AD00-0AA0**		1	1 unit	250	0.457
Accessories for CM IM DP ECOFAST							
PROFIBUS ECOFAST hybrid cables, assembled With 2 ECOFAST connectors, trailing cable with 2 x Cu 0.64 mm^2 and 4 x Cu 1.5 mm^2							
• Length 1.5 m	A	**6XV1 830-7BH15**		1	1 unit	550	0.400
• Length 3.0 m	A	**6XV1 830-7BH30**		1	1 unit	550	0.535
• Length 5.0 m	A	**6XV1 830-7BH50**		1	1 unit	550	0.880
• Length 10 m	A	**6XV1 830-7BN10**		1	1 unit	550	1.600
• Length 15 m	A	**6XV1 830-7BN15**		1	1 unit	550	2.155
• Length 20 m	A	**6XV1 830-7BN20**		1	1 unit	550	2.870
• Length 25 m	A	**6XV1 830-7BN25**		1	1 unit	550	3.640
• Length 30 m	A	**6XV1 830-7BN30**		1	1 unit	550	4.410
• Length 35 m	A	**6XV1 830-7BN35**		1	1 unit	550	5.180
• Length 40 m	A	**6XV1 830-7BN40**		1	1 unit	550	5.950
• Length 45 m	A	**6XV1 830-7BN45**		1	1 unit	550	6.720
• Length 50 m	A	**6XV1 830-7BN50**		1	1 unit	550	7.490
PROFIBUS ECOFAST GP hybrid cables, assembled With 2 ECOFAST connectors, trailing cable with 2 x Cu 0.64 mm^2 and 4 x Cu 1.5 mm^2							
• Length 1.5 m	A	**6XV1 860-3PH15**		1	1 unit	550	0.400
• Length 3.0 m	A	**6XV1 860-3PH30**		1	1 unit	550	0.750
• Length 5.0 m	A	**6XV1 860-3PH50**		1	1 unit	550	0.870
• Length 10 m	A	**6XV1 860-3PN10**		1	1 unit	550	1.640
• Length 15 m	A	**6XV1 860-3PN15**		1	1 unit	550	2.410
• Length 20 m	A	**6XV1 860-3PN20**		1	1 unit	550	3.180
• Length 25 m	A	**6XV1 860-3PN25**		1	1 unit	550	3.950
• Length 30 m	A	**6XV1 860-3PN30**		1	1 unit	550	4.720
• Length 35 m	A	**6XV1 860-3PN35**		1	1 unit	550	5.490
• Length 40 m	A	**6XV1 860-3PN40**		1	1 unit	550	6.160
• Length 45 m	A	**6XV1 860-3PN45**		1	1 unit	550	6.930
• Length 50 m	A	**6XV1 860-3PN50**		1	1 unit	550	7.700
PROFIBUS ECOFAST hybrid cables, non-assembled Trailing cable with 2 x Cu 0.64 mm^2 and 4 x Cu 1.5 mm^2							
• Length 50 m	A	**6XV1 830-7AN50**		1	1 unit	550	7.700
• Length 100 m	A	**6XV1 830-7AT10**		1	1 unit	550	15.400
PROFIBUS ECOFAST GP hybrid cables, non-assembled Trailing cable with 2 x Cu 0.64 mm^2 and 4 x Cu 1.5 mm^2							
• Length 50 m	B	**6XV1 860-4PN50**		1	1 unit	550	7.700
• Length 100 m	A	**6XV1 860-4PT10**		1	1 unit	550	15.400
PROFIBUS ECOFAST hybrid connectors 180 ECOFAST Cu, 2 x Cu, 4 x 1.5 mm^2, HANBRID connectors							
• With pin insert, pack of 5	A	**6GK1 905-0CA00**		1	1 unit	552	0.212
• With female insert, pack of 5	A	**6GK1 905-0CB00**		1	1 unit	552	0.215
PROFIBUS ECOFAST hybrid connectors, angled ECOFAST Cu, 2 x Cu, 4 x 1.5 mm^2, HANBRID connectors							
• With pin insert, pack of 5	A	**6GK1 905-0CC00**		1	1 unit	552	0.247
• With female insert, pack of 5	A	**6GK1 905-0CD00**		1	1 unit	552	0.247
ECOFAST covers For protection of unused bus connections on ET 200pro; pack of 10 units per packing unit	A	**6ES7 194-1JB10-0XA0**		1	1 unit	2F0	0.051

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 154-1 and IM 154-2 interface modules (continued)							
Accessories for CM IM DP Direct							
PROFIBUS trailing cables Max. acceleration 4 m/s^2, at least 3000000 bending cycles, bending radius at least 60 mm, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	**6XV1 830-3EH10**		1	1 M	550	0.072
PROFIBUS FC Food bus cables With PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	**6XV1 830-0GH10**		1	1 M	551	0.069
PROFIBUS FC Robust bus cables With PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	**6XV1 830-0JH10**		1	1 M	551	0.075
Power cables 5-core, 5 x 1.5 mm^2, trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	**6XV1 830-8AH10**		1	1 M	550	0.149
Accessories for CM IM DP M12 7/8“							
PROFIBUS M12 connecting cables Preassembled with two M12 plugs, 5-pole							
• Length 1.5 m	A	**6XV1 830-3DH15**		1	1 unit	550	0.150
• Length 2.0 m	A	**6XV1 830-3DH20**		1	1 unit	550	0.195
• Length 3.0 m	A	**6XV1 830-3DH30**		1	1 unit	550	0.294
• Length 5.0 m	A	**6XV1 830-3DH50**		1	1 unit	550	0.434
• Length 10 m	A	**6XV1 830-3DN10**		1	1 unit	550	0.837
• Length 15 m	A	**6XV1 830-3DN15**		1	1 unit	550	1.245
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm^2, trailing, preassembled with two 7/8" plugs, 5-pole							
• Length 1.5 m	A	**6XV1 822-5BH15**		1	1 unit	550	0.328
• Length 2.0 m	A	**6XV1 822-5BH20**		1	1 unit	550	0.408
• Length 3.0 m	A	**6XV1 822-5BH30**		1	1 unit	550	0.570
• Length 5.0 m	A	**6XV1 822-5BH50**		1	1 unit	550	0.923
• Length 10 m	A	**6XV1 822-5BN10**		1	1 unit	550	1.769
• Length 15 m	A	**6XV1 822-5BN15**		1	1 unit	550	2.540
M12 connectors For ET 200eco, with axial cable feeder							
• With pin insert, pack of 5	A	**6GK1 905-0EA00**		1	1 unit	552	0.251
• With female insert, pack of 5	A	**6GK1 905-0EB00**		1	1 unit	552	0.268
7/8" connectors For ET 200eco, with axial cable feeder							
• With pin insert, pack of 5	A	**6GK1 905-0FA00**		1	1 unit	552	0.265
• With female insert, pack of 5	A	**6GK1 905-0FB00**		1	1 unit	552	0.250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9 802-0AA00**		100	10 units	121	0.100
7/8" sealing caps For protection of unused 7/8" terminals on ET 200pro; pack of 10 units per packing unit	A	**6ES7 194-3JA00-0AA0**		1	1 unit	250	0.040
General accessories							
ET 200pro module carriers							
• Narrow, for interface, solid-state and power modules							
- 500 mm	A	**6ES7 194-4GA00-0AA0**		1	1 unit	250	1.602
- 1000 mm	A	**6ES7 194-4GA60-0AA0**		1	1 unit	250	3.160
- 2000 mm, can be cut to size	A	**6ES7 194-4GA20-0AA0**		1	1 unit	250	6.369
• Compact, for interface, solid-state and power modules							
- 500 mm	A	**6ES7 194-4GC70-0AA0**		1	1 unit	250	1.600
- 1000 mm	A	**6ES7 194-4GC60-0AA0**		1	1 unit	250	3.220
- 2000 mm, can be cut to size	A	**6ES7 194-4GC20-0AA0**		1	1 unit	250	6.580
• Wide, for interface, solid-state, power modules and motor starters							
- 500 mm	A	**6ES7 194-4GB00-0AA0**		1	1 unit	250	2.400
- 1000 mm	A	**6ES7 194-4GB60-0AA0**		1	1 unit	250	4.800
- 2000 mm, can be cut to size	A	**6ES7 194-4GB20-0AA0**		1	1 unit	250	9.700
• Wide, compact, for I/O modules and motor starters							
- 500 mm	A	**6ES7 194-4GD00-0AA0**		1	1 unit	250	2.536
- 1000 mm	A	**6ES7 194-4GD10-0AA0**		1	1 unit	250	5.040
- 2000 mm	A	**6ES7 194-4GD20-0AA0**		1	1 unit	250	10.040
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	A	**6ES7 194-4HB00-0AA0**		1	1 unit	250	0.012

* You can order this quantity or a multiple thereof.

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 154-1 and IM 154-2 interface modules (continued)							
General accessories *(continued)*							
Technical product specifications For CAX applications, one off license	A	**6ES7 991-0CD01-0YX0**		1	1 unit	266	0.200
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	0.227
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.300
IM 154-4 PN interface modules							
IM 154-4 PN High-Feature interface modules For communication between ET 200pro and higher-level controller over PROFINET IO; support of PROFIsafe	A	**6ES7 154-4AB10-0AB0**		1	1 unit	250	0.541
Accessories							
CM IM PN M12 connection modules, 7/8" For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x M12 and 2 x 7/8"	A	**6ES7 194-4AJ00-0AA0**		1	1 unit	250	0.619
CM IM PN 2xRJ45 connection modules For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x RJ45 and 2 x push-pull power connectors	A	**6ES7 194-4AF00-0AA0**		1	1 unit	250	0.374
CM IM PN 2xSCRJ FO connection modules For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x SCRJ FO and 2 x push-pull power connectors	A	**6ES7 194-4AG00-0AA0**		1	1 unit	250	0.380
M12 sealing caps for protection of unused M12 terminals on ET 200pro	►	**3RX9 802-0AA00**		100	10 units	121	0.100
IE M12 connecting cables Preassembled with two M12 plugs, up to max. 85 m							
• Length 0.3 m	A	**6XV1 870-8AE30**		1	1 unit	527	0.120
• Length 0.5 m	A	**6XV1 870-8AE50**		1	1 unit	527	0.648
• Length 1.0 m	A	**6XV1 870-8AH10**		1	1 unit	527	0.101
• Length 1.5 m	A	**6XV1 870-8AH15**		1	1 unit	527	0.150
• Length 2.0 m	A	**6XV1 870-8AH20**		1	1 unit	527	0.180
• Length 3.0 m	A	**6XV1 870-8AH30**		1	1 unit	527	0.250
• Length 5.0 m	A	**6XV1 870-8AH50**		1	1 unit	527	0.390
• Length 10 m	A	**6XV1 870-8AN10**		1	1 unit	527	0.740
• Length 15 m	A	**6XV1 870-8AN15**		1	1 unit	527	1.100
• For more special lengths with 90° or 180° cable feeder http://support.automation.siemens.com/WW/view/en/26999294							
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm^2, trailing, preassembled with two 7/8" plugs, 5-pole							
• Length 1.5 m	A	**6XV1 822-5BH15**		1	1 unit	550	0.328
• Length 2.0 m	A	**6XV1 822-5BH20**		1	1 unit	550	0.408
• Length 3.0 m	A	**6XV1 822-5BH30**		1	1 unit	550	0.570
• Length 5.0 m	A	**6XV1 822-5BH50**		1	1 unit	550	0.923
• Length 10 m	A	**6XV1 822-5BN10**		1	1 unit	550	1.769
• Length 15 m	A	**6XV1 822-5BN15**		1	1 unit	550	2.540
• For more special lengths with 90° or 180° cable feeder http://support.automation.siemens.com/WW/view/en/26999294							
Power cables 5-core, 5 x 1.5 mm^2, trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	**6XV1 830-8AH10**		1	1 M	550	0.149
7/8" connectors For ET 200eco, with axial cable feeder							
• With pin insert, pack of 5	A	**6GK1 905-0FA00**		1	1 unit	552	0.265
• With female insert, pack of 5	A	**6GK1 905-0FB00**		1	1 unit	552	0.250
7/8" Power T-Tap Power T piece with two 7/8" female inserts and one 7/8" pin insert, pack of 5	A	**6GK1 905-0FC00**		1	1 unit	552	0.600

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 154-4 PN interface modules (continued)							
Industrial Ethernet Fast Connect installation cables							
• **IE FC TP Standard Cable GP 2 x 2**; sold by the meter, delivery unit max. 1000 m, minimum order quantity 20 m	A	**6XV1 840-2AH10**		1	1 M	527	0.068
• **IE FC TP Trailing Cable 2 x 2**; sold by the meter, delivery unit max. 1000 m, minimum order quantity 20 m	A	**6XV1 840-3AH10**		1	1 M	527	0.055
• **IE FC TP Standard Cable GP 2 x 2**; sold by the meter, delivery unit max. 1000 m, minimum order quantity 20 m	A	**6XV1 870-2D**		1	1 M	528	0.068
• **IE TP Torsion Cable GP 2 x 2**; sold by the meter, delivery unit max. 1000 m, minimum order quantity 20 m	A	**6XV1 870-2F**		1	1 M	528	0.060
• **IE FC TP Marine Cable 2 x 2**; sold by the meter, delivery unit max. 1000 m, minimum order quantity 20 m	A	**6XV1 840-4AH10**		1	1 M	527	0.055
IE RJ45 Plug PRO RJ45 plug-in connector for field assembly in degree of protection IP65/67, plastic enclosure, insulation displacement method, for SCALANCE X-200IRT PRO and ET200pro: 1 pack = 1 unit	A	**6GK1 901-1BB10-6AA0**		1	1 unit	552	0.037
IE SC RJ POF Plug PRO SC RJ- plug-in connector for field assembly for POF fibers in degree of protection IP65/67, plastic enclosure, for SCALANCE X-200IRT PRO and ET200pro 1 pack = 1 unit	A	**6GK1 900-0MB00-6AA0**		1	1 unit	552	0.020
IE SC RJ PCF Plug PRO SC RJ- plug-in connector for field assembly for PCF fibers in degree of protection IP65/67, plastic enclosure, for SCALANCE X-200IRT PRO 1 pack = 1 unit	A	**6GK1 900-0NB00-6AA0**		1	1 unit	552	0.020
Power Plug PRO 5-pole power plug-in connector for field assembly for 2 x 24 V power supply in degree of protection IP65/67, plastic enclosure, for SCALANCE X-200IRT PRO and ET200 pro 1 pack = 1 unit	A	**6GK1 907-0AB10-6AA0**		1	1 unit	552	0.420
IE M12 Plug PRO M12 plug-in connector (D-coded) for field assembly, metal enclosure, fast connection method, for SCALANCE X208PRO and IM 154-4 PN							
• 1 unit	A	**6GK1 901-0DB10-6AA0**		1	1 unit	530	0.030
• 8 units	A	**6GK1 901-0DB10-6AA8**		1	1 unit	530	0.300
IE Panel Feedthrough Control cabinet gland for transition from M12 connection method (D-coded, IP65) to RJ45 connection method (IP20) 1 pack = 5 units	A	**6GK1 901-0DM20-2AA5**		1	1 unit	530	0.030
General accessories							
ET 200pro module carriers							
• Narrow, for interface, solid-state and power modules							
- 500 mm	A	**6ES7 194-4GA00-0AA0**		1	1 unit	250	1.602
- 1000 mm	A	**6ES7 194-4GA60-0AA0**		1	1 unit	250	3.160
- 2000 mm, can be cut to size	A	**6ES7 194-4GA20-0AA0**		1	1 unit	250	6.369
• Compact, for interface, solid-state and power modules							
- 500 mm	A	**6ES7 194-4GC70-0AA0**		1	1 unit	250	1.600
- 1000 mm	A	**6ES7 194-4GC60-0AA0**		1	1 unit	250	3.220
- 2000 mm, can be cut to size	A	**6ES7 194-4GC20-0AA0**		1	1 unit	250	6.580
• Wide, for interface, solid-state, power modules and motor starters							
- 500 mm	A	**6ES7 194-4GB00-0AA0**		1	1 unit	250	2.400
- 1000 mm	A	**6ES7 194-4GB60-0AA0**		1	1 unit	250	4.800
- 2000 mm, can be cut to size	A	**6ES7 194-4GB20-0AA0**		1	1 unit	250	9.700
• Wide, for I/O modules and motor starters							
- 500 mm	A	**6ES7 194-4GD00-0AA0**		1	1 unit	250	2.536
- 1000 mm	A	**6ES7 194-4GD10-0AA0**		1	1 unit	250	5.040
- 2000 mm	A	**6ES7 194-4GD20-0AA0**		1	1 unit	250	10.040
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	A	**6ES7 194-4HB00-0AA0**		1	1 unit	250	0.012
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	0.227
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.300

* You can order this quantity or a multiple thereof.

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 154-8 PN/DP CPU interface modules							
IM 154-8 PN/DP CPU interface modules PROFINET IO Controller for operating distributed I/Os on PROFINET, with integrated PLC functionality	A	**6ES7 154-8AB00-0AB0**		1	1 unit	250	0.602
Accessories							
MMC 64 Kbyte[1] For program backups	A	**6ES7 953-8LF20-0AA0**		1	1 unit	230	0.012
MMC 128 Kbyte[1] For program backups	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.013
MMC 512 Kbyte[1] For program backups	A	**6ES7 953-8LJ20-0AA0**		1	1 unit	230	0.013
MMC 2 MByte[1] For program backups and/or the firmware update	A	**6ES7 953-8LL20-0AA0**		1	1 unit	230	0.016
MMC 4 MByte[1] For program backups	A	**6ES7 953-8LM20-0AA0**		1	1 unit	230	0.013
MMC 8 MByte[1] For program backups	A	**6ES7 953-8LP20-0AA0**		1	1 unit	230	1.414
Connection modules For CPU IM154-8 PN/DP, with 4 x M12 and 2 x 7/8", for connection of PROFINET and PROFIBUS DP	A	**6ES7 194-4AN00-0AA0**		1	1 unit	250	0.609
SCALANCE X-200 Industrial Ethernet switches With integrated SNMP access, web diagnostics, copper cable diagnostics and PROFINET diagostics, SCALANCE X208PRO for configuring line, star and ring structures, in degree of protection IP65, with eight 10/100 Mbit/s M12 ports, including eleven M12 dust covers	A	**6GK5 208-0HA00-2AA6**		1	1 unit	524	1.000
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	530	0.030
• 10 units	A	**6GK1 901-1BB10-2AB0**		1	1 unit	530	0.300
• 50 units	A	**6GK1 901-1BB20-2AE0**		1	1 unit	530	1.500
Industrial Ethernet Fast Connect installation cables							
• Fast Connect standard cables	A	**6XV1 840-2AH10**		1	1 M	527	0.068
• Fast Connect trailing cables	A	**6XV1 840-3AH10**		1	1 M	527	0.055
• Fast Connect marine cables	A	**6XV1 840-4AH10**		1	1 M	527	0.055
Industrial Ethernet Fast Connect Stripping tools	A	**6GK1 901-1GA00**		1	1 unit	530	0.100
IE connecting cables M12-180/M12-180 Factory-fitted IE FC TP trailing cables GP 2 x 2 (PROFINET type C) with two 4-pole M12 plugs (4-pole, D-coded), degree of protection IP65/IP67, length:							
• 0.3 m	A	**6XV1 870-8AE30**		1	1 unit	527	0.120
• 0.5 m	A	**6XV1 870-8AE50**		1	1 unit	527	0.648
• 1.0 m	A	**6XV1 870-8AH10**		1	1 unit	527	0.101
• 1.5 m	A	**6XV1 870-8AH15**		1	1 unit	527	0.150
• 2.0 m	A	**6XV1 870-8AH20**		1	1 unit	527	0.180
• 3.0 m	A	**6XV1 870-8AH30**		1	1 unit	527	0.250
• 5.0 m	A	**6XV1 870-8AH50**		1	1 unit	527	0.390
• 10 m	A	**6XV1 870-8AN10**		1	1 unit	527	0.740
• 15 m	A	**6XV1 870-8AN15**		1	1 unit	527	1.100
IE M12 Plug PRO M12 plug-in connector (D-coded) for field assembly, metal enclosure, fast connection method, for SCALANCE X208PRO and IM 154-4 PN							
• 1 unit	A	**6GK1 901-0DB10-6AA0**		1	1 unit	530	0.030
• 8 units	A	**6GK1 901-0DB10-6AA8**		1	1 unit	530	0.300
IE Panel Feedthrough							
Control cabinet gland for transition from M12 connection method (D-coded, IP65/IP67) to RJ45 connection method (IP20), 1 pack = 5 units	A	**6GK1 901-0DM20-2AA5**		1	1 unit	530	0.030

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

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
EM 141 and EM 142 digital expansion modules							
8 DI digital input modules 24 V DC, with module diagnostics, including bus module Connection module to be ordered separately	A	**6ES7 141-4BF00-0AA0**		1	1 unit	250	0.175
8 DI High-Feature digital input modules 24 V DC, with channel diagnostics, including bus module Connection module to be ordered separately	A	**6ES7 141-4BF00-0AB0**		1	1 unit	250	0.185
4 DO digital output modules 24 V DC, 2 A, with module diagnostics, including bus module Connection module to be ordered separately	A	**6ES7 142-4BD00-0AA0**		1	1 unit	250	0.177
4 DO High-Feature digital output modules 24 V DC, 2 A, with channel diagnostics, including bus module Connection module to be ordered separately	A	**6ES7 142-4BD00-0AB0**		1	1 unit	250	0.186
8 DO digital output modules 24 V DC, 0.5 A, with module diagnostics, including bus module Connection module to be ordered separately	A	**6ES7 142-4BF00-0AA0**		1	1 unit	250	0.181
Accessories							
CM IO 4 x M12 connection modules 4 M12 sockets for connection of digital or analog sensors of actuators to ET 200pro	A	**6ES7 194-4CA00-0AA0**		1	1 unit	250	0.346
CM IO 4 x M12 Invers connection modules 4 M12 sockets for connection of digital actuators to ET 200pro (4 DO and 4 DO HF); 2 x M12 with single assignment, 2 x M12 with double assignment	A	**6ES7 194-4CA50-0AA0**		1	1 unit	250	0.345
CM IO 8 x M12 connection modules 8 M12 sockets for conn. of digital sensors or actuators to ET 200pro	A	**6ES7 194-4CB00-0AA0**		1	1 unit	250	0.351
CM IO 8 x M8 connection modules 8 M8 sockets for connection of digital sensors or actuators to ET 200pro	A	**6ES7 194-4EB00-0AA0**		1	1 unit	250	0.357
CM IO 2 x M12 connection modules 2 M12 8-pole sockets; to be used with: EM 8DI 24 V DC and 8 DO 24 V DC/0.5 A	A	**6ES7 194-4FB00-0AA0**		1	1 unit	250	0.156
CM IO 1 x M23 connection modules 1 M23 socket, to be used with: EM 8 DI 24 V DC and 8 DO 24 V DC/0.5 A	A	**6ES7 194-4FA00-0AA0**		1	1 unit	250	0.198
Module labeling plates For color coding of CM IOs in the colors white, red, blue and green; pack of 100	A	**6ES7 194-4HA00-0AA0**		1	1 unit	250	0.088
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9 802-0AA00**		100	10 units	121	0.100
Labels 20 x 7, pastel turquoise, pack of 340	C	**3RT1 900-1SB20**		100	340 units	101	0.200
M12 plugs, for field assembly 5-pole, for connecting digital sensors and actuators, 1 unit		**On req.**					
M12 connecting cables With PUR sheath, for connecting digital sensors and actuators, preassembled, with box and plug at both ends							
• 3 x 0.34 mm^2, fixed lengths, 1 unit							
- 0.6 m		**On req.**					
- 1 m		**On req.**					
- 1.5 m		**On req.**					
• 4 x 0.34 mm^2, fixed lengths, 1 unit							
- 0.6 m		**On req.**					
- 1 m		**On req.**					
- 1.5 m		**On req.**					
EM 144 and EM 145 analog expansion modules							
4AI U analog input modules High-Feature, ±10 V; ±5 V; 0 to 10 V; 1 to 5 V, channel diagnostics, including bus module. Connection module to be ordered separately	A	**6ES7 144-4FF00-0AB0**		1	1 unit	250	0.182
4AI I analog input modules High-Feature, ±20 mA; 0 to 20 mA; 4 to 20 mA, channel diagnostics, including bus module. Connection module to be ordered separately	A	**6ES7 144-4GF00-0AB0**		1	1 unit	250	0.185
4AI RTD analog input modules High-Feature; resistors: 150, 300, 600 and 3000 Ohm; resistance thermometers: Pt100, 200, 500, 1000, Ni100, 120, 200, 500 and 1000; channel diagnostics, including bus module. Connection module to be ordered separately	A	**6ES7 144-4JF00-0AB0**		1	1 unit	250	0.181
4AO U analog output modules High-Feature, ±10 V; 0 to 10 V; 1 to 5 V, channel diagnostics, including bus module. Connection module to be ordered separately	A	**6ES7 145-4FF00-0AB0**		1	1 unit	250	0.188
4AO I analog output modules High-Feature, ±20 mA; 0 to 20 mA; 4 to 20 mA, channel diagnostics, including bus module. Connection module to be ordered separately	A	**6ES7 145-4GF00-0AB0**		1	1 unit	250	0.188

* You can order this quantity or a multiple thereof.

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
EM 144 and EM 145 analog expansion modules (continued)							
Accessories							
CM IO 4 x M12 connection modules 4 M12 sockets for connection of digital or analog sensors of actuators to ET 200pro	A	**6ES7 194-4CA00-0AA0**		1	1 unit	250	0.346
Module labeling plates For color coding of CM IOs in the colors white, red, blue and green; pack of 100	A	**6ES7 194-4HA00-0AA0**		1	1 unit	250	0.088
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9 802-0AA00**		100	10 units	121	0.100
Failsafe digital expansion modules							
8/16 F-DI PROFIsafe failsafe digital input modules 24 V DC, including bus module. Connection module to be ordered separately.	A	**6ES7 148-4FA00-0AB0**		1	1 unit	241	0.311
4/8 F-DI, 4 F-DO 2 A failsafe digital input/output modules 24 V DC, including bus module. Connection module to be ordered separately.	A	**6ES7 148-4FC00-0AB0**		1	1 unit	241	0.319
F-Switch PROFIsafe Three failsafe PP-switching outputs for safe switching of the back-plane bus bars (2L+, D0, F1); two fail-safe digital inputs, 45 mm; usable up to Cat. 4 (EN 954)/SIL3 (IEC 61508)	A	**6ES7 148-4FS00-0AB0**		1	1 unit	241	0.199
Accessories							
Connection modules For the 4/8 F-DI/4 -DO, 24 V DC/2 A failsafe solid-state module	A	**6ES7 194-4DC00-0AA0**		1	1 unit	241	0.597
Connection modules For the 8/16 F-DI, 24 V DC/2 A failsafe solid-state module	A	**6ES7 194-4DD00-0AA0**		1	1 unit	241	0.578
IM154-2 High-Feature interface modules For the ET 200pro, including termination module	A	**6ES7 154-2AA00-0AB0**		1	1 unit	250	0.411
PROFINET IM154-4 PN interface modules Including termination module	A	**6ES7 154-4AB00-0AB0**		1	1 unit	250	0.590
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9 802-0AA00**		100	10 units	121	0.100
M12 plugs, for field assembly 5-pole, for connecting digital sensors and actuators, 1 unit	A	**3RX8 000-0CD55**		1	1 unit	574	0.023
M12 connecting cables With PUR sheath, for connecting digital sensors and actuators, preassembled, with box and plug at both ends							
• 3 x 0.34 mm^2, fixed lengths, 1 unit							
- 0.6 m	C	**3RX1 633**			1 unit	574	0.045
- 1 m	C	**3RX1 634**		1	1 unit	574	0.056
- 1.5 m	A	**3RX8 000-0GF32-1AB5**		1	1 unit	574	0.069
• 4 x 0.34 mm^2, fixed lengths, 1 unit							
- 0.6 m	A	**3RX8 000-0GF42-1AB0**		1	1 unit	574	0.057
- 1 m	A	**3RX8 000-0CC44-1AF0**		1	1 unit	574	0.169
- 1.5 m	A	**3RX8 000-0GF42-1AB5**		1	1 unit	574	0.078
PM-E power modules							
PM-E power modules 24 V DC For resupply and group formation of the 24 V DC load voltage for solid-state modules within an ET 200pro station.	A	**6ES7148-4CA00-0AA0**		1	1 unit	250	0.172
Accessories							
CM PM-E ECOFAST connection modules For resupply of 24 V load voltage, one ECOFAST Cu terminal	A	**6ES7 194-4BA00-0AA0**		1	1 unit	250	0.153
CM PM-E Direct connection modules For resupply of 24 V load voltage, up to two M20 screwed cable glands	A	**6ES7 194-4BC00-0AA0**		1	1 unit	250	0.200
CM PM-E 7/8" connection modules For resupply of 24 V load voltage, 1 x 7/8"	A	**6ES7 194-4BD00-0AA0**		1	1 unit	250	0.160
CM PM-E PP connection modules For resupply of 24 V load voltage, 2 x push-pull, with spare fuse	A	**6ES7 194-4BE00-0AA0**		1	1 unit	250	0.162
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	A	**6ES7 194-4HB00-0AA0**		1	1 unit	250	0.012
PROFIBUS FC Food bus cables With PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter, minimum order quantity 20 m, length of cable 1000 m	A	**6XV1 830-0GH10**		1	1 M	551	0.069
PROFIBUS FC Robust bus cables With PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core, shielded, sold by the meter, minimum order quantity 20 m, length of cable 1000 m	A	**6XV1 830-0JH10**		1	1 M	551	0.075

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
PM-E power modules (continued)							
PROFIBUS FC trailing cables Minimum bending radius approx. 60 mm, 2-core, shielded, sold by the meter, minimum order quantity 20 m, length of cable 1000 m	A	**6XV1 830-3EH10**		1	1 M	550	0.072
Accessories for CM PM-E Direct							
Power cables 5-core, 5 x 1.5 mm^2, trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	**6XV1 830-8AH10**		1	1 M	550	0.149
Accessories for CM PM-E 7/8"							
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm^2, trailing, preassembled with two 7/8" plugs, 5-pole							
• Length 1.5 m	A	**6XV1 822-5BH15**		1	1 unit	550	0.328
• Length 2.0 m	A	**6XV1 822-5BH20**		1	1 unit	550	0.408
• Length 3.0 m	A	**6XV1 822-5BH30**		1	1 unit	550	0.570
• Length 5.0 m	A	**6XV1 822-5BH50**		1	1 unit	550	0.923
• Length 10 m	A	**6XV1 822-5BN10**		1	1 unit	550	1.769
• Length 15 m	A	**6XV1 822-5BN15**		1	1 unit	550	2.540
7/8" connectors With axial cable feeder							
• With pin insert, pack of 5	A	**6GK1 905-0FA00**		1	1 unit	552	0.265
• With female insert, pack of 5	A	**6GK1 905-0FB00**		1	1 unit	552	0.250
PM-O power modules							
PM-O DC 2 x 24 V power modules For tapping the 24 V load voltage 2L+ and the solid-state/sensor supply voltage 1L+ within an ET 200pro station.	A	**6ES7 148-4CA60-0AA0**		1	1 unit	250	0.183
Accessories							
CM PM-O PP connection modules For tapping 24 V load voltage and solid-state/sensor supply voltage, 2 x push-pull plug-in connectors	A	**6ES7 194-4BH00-0AA0**		1	1 unit	250	0.148
ET 200pro pneumatic interfaces							
EM 148-P pneumatic interfaces							
• DO 16 x P/CPV 10 for direct connection of the FESTO valve terminals CPV 10 16 DO x P	A	**6ES7 148-4EA00-0AA0**		1	1 unit	250	0.479
• DO 16 x P/CPV 14 for direct connection of the FESTO valve terminals CPV 14 16 DO x P	A	**6ES7 148-4EB00-0AA0**		1	1 unit	250	0.642
• FESTO valve terminals CPV 10		Obtainable from: Festo (see Appendix –> External Partners)					
• FESTO valve terminals CPV 14		Obtainable from: Festo (see Appendix –> External Partners)					
ET 200pro FC frequency converters							
ET 200pro FC frequency converters 3 AC 380 ... 480 V, +10/-10 % 47 ... 63 Hz Overload: 150 %, 60 s, 200 %, 3 s Rating: 1.1 kW (0 °C ... 55 °C) 1.5 kW (0 °C ... 45 °C)							
• ET 200pro FC Standard frequency converters	A	**6SL3235-0TE21-1RB0**		1	1 unit	337	4.000
• ET 200pro FC frequency converters with integrated safety functions	A	**6SL3235-0TE21-1SB0**		1	1 unit	337	4.000
Accessories							
Backplane bus modules for accommodating the frequency converter	A	**6SL3260-2TA00-0AA0**		1	1 unit	337	0.450

* You can order this quantity or a multiple thereof.

General data

Overview

The AS-Interface compact starter is a load feeder with degree of protection IP65, which is fully prewired inside, for switching and protecting any AC loads up to 5.5 kW at 400/500 V AC (electromechanical compact starter) or up to 2.2 kW (solid-state compact starter) – mostly standard induction motors in direct start and reversing duty. It consists either of an electromechanical controlgear combination or a solid-state overload protection and a switching unit. The overload or short-circuit protection is located below a sealable, transparent cover and is therefore available for diagnostics. Two LEDs are provided to the left of the cover for diagnostics purposes for the AS-Interface and the auxiliary power.

It is not possible for live parts to be touched even when the cover is open. The contacts are activated through the integrated outputs. The status of the device is scanned through the inputs, e. g. feedbacks from the auxiliary contacts of the motor starter protector and contactor(s). A further input is used to detect the operating mode of the optional hand-held device. The three power connectors are used to feed and loop through to the load supply voltage (power bus) and to connect to the load itself. Prefabricated power supply cables can be used to connect compact starters which are directly adjacent to each other. Prefabricated power supply lines can be used to connect compact starters which are directly adjacent to each other. The maximum number of starters that can be supplied with one power supply cable is limited by the maximum permissible summation current (up to max. 4 mm^2 corresponds to ~ 35 A).

DS/RS compact starters (electromechanical)

The electromechanical compact starters consist of a conventional controlgear combination with a SIRIUS motor starter protector for protection against short-circuits and overloading and SIRIUS contactor(s) for normal switching. The advantages of the electromechanical starters are the reliable isolation during disconnection and tripping, the integrated fuseless protection against short-circuits and the favorable price. What is more, direct currents can also be switched with the electromechanical starters.

Configuring note:
In the case of temperature-critical applications, we recommend operation in the lower setting range of the motor starter protector.

EDS/ERS compact starters (solid-state)

The solid-state compact starters EDS (direct-on-line starter) and ERS (reversing starter) consist of a solid-state overload protection and a solid-state switching unit.

The advantages of these solid-state compact starters are the broad limits within which the overload protection can be adjusted (the performance range up to 2.2 kW at 400/500 V AC is covered with just 2 versions), the fact that the switching units are non-wearing, current measurement (used for monitoring the energy connector), emergency operation in the event of an overload as well as remote resetting via the AS-Interface after overload tripping.

The ERS compact starter is designed for direct start in reversing duty. The solid-state overload protection and the shutdown response in the event of overload can be adjusted directly at the device.

Version with brake contact

All compact starters are available optionally with a separately activated brake contact for electrically operated motor brakes. For externally fed motor brakes, 24 V DC is supplied jointly with the load voltage through the power connector on -X1. It is looped through via -X3 for supplying the next compact starter on -X1. The 24 V DC supply for the brakes is only linked in those devices equipped with a brake contact. At the project configuration stage, it is important to ensure that these starters are located alongside each other.

All compact starters with a brake contact for 500 V DC can be equipped with an 400 V AC brake contact.

Hand-held device

The hand-held device enables the compact starter to be operated locally and autonomously, providing that the auxiliary voltage supply is connected. Thus, assuming that the automation level is functioning correctly, local switching operations can be carried out in addition to normal manual operations in the event of a programable controller / bus system failure (emergency mode) or during test runs before commissioning, e. g. for testing the direction of rotation of the motor. The hand-held device can be connected to the compact starter by means of a connecting cable through a socket underneath the transparent cover.

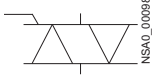
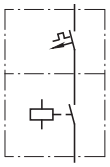
Spare inputs

The compact starters are also equipped with two spare inputs.

The M12 socket is a "Y" connector. The signal inputs are applied to PIN 2 and 4. In this manner, it is possible, for example, to connect an optical proximity switch that supplies a signal and the "contamination" alarm.

A "T" adapter can be used to split the signal inputs onto two M12 sockets. Compact starters modified in this way offer additional advantages. At no extra cost, it is possible to save AS-Interface addresses, reduce the space requirement and to build up logical groupings.

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 3RK1 322 	**EDS compact starters** Solid-state direct-on-line starter with two spare digital inputs	B	**3RK1 322-□□S12-0AA□**		1	1 unit	121	1.690
	ERS compact starters Solid-state reversing starter with two spare digital inputs	B	**3RK1 322-□□S12-1AA□**		1	1 unit	121	1.840
	Order No. supplement for			Additional price				
	Induction motor 4-pole at 400 V AC Standard output P / *kW*	*Setting range of the electronic trip unit* / *A*						
	0.18 ... 0.8	0.6 ... 2.18	**0A**	Without				
	0.75 ... 2.2	2.0 ... 5.95	**0B**	Without				
 3RK1 322 	**DS compact starters** Electromechanical direct-on-line starter, with two spare digital inputs	B	**3RK1 322-□□S02-0AA□**		1	1 unit	121	1.807
	RS compact starters Electromechanical reversing starter, with two spare digital inputs	B	**3RK1 322-□□S02-1AA□**		1	1 unit	121	2.067
	Order No. supplement for			Additional price				
	Induction motor 4-pole at 400 V AC Standard output P / *kW*	*Setting range of the electronic trip unit* / *A*						
	<0.06	0.14 ... 0.20	**0B**	Without				
	0.06	0.18 ... 0.25	**0C**	Without				
	0.09	0.22 ... 0.32	**0D**	Without				
	0.10	0.28 ... 0.40	**0E**	Without				
	0.12	0.35 ... 0.50	**0F**	Without				
	0.18	0.45 ... 0.63	**0G**	Without				
	0.21	0.55 ... 0.80	**0H**	Without				
	0.25	0.70 ... 1.0	**0J**	Without				
	0.37	0.9 ... 1.25	**0K**	Without				
	0.55	1.1 ... 1.6	**1A**	Without				
	0.75	1.4 ... 2.0	**1B**	Without				
	0.90	1.8 ... 2.5	**1C**	Without				
	1.1	2.2 ... 3.2	**1D**	Without				
	1.5	2.8 ... 4.0	**1E**	Without				
	1.9	3.5 ... 5.0	**1F**	Without				
	2.2	4.5 ... 6.3	**1G**	Without				
	3.0	5.5 ... 8.0	**1H**	Without				
	4.0	7.0 ... 10	**1J**	Without				
	5.5	9.0 ... 12	**1K**	Without				
	Additional price							
	Standard version		**0**	Without				
	Version with brake contact for 24 V DC/3 A externally-fed brakes		**1**	x				
	Version with brake contact for 400 V AC/0.5 A infeed for brake rectifier		**3**	x				
	Version with brake contact for DC-side switching of the brakes with 500 V DC/0.2 A		**4**	x				
Accessories for 24 V DC, M12 plugs								
 6ES7 194-1KA01-0XA0	**M12 coupler plugs** For connecting actuators or sensors 5-pole	A	**3RX8 000-0CD55**		1	1 unit	574	0.023
	M12 angular coupler plugs For connecting actuators or sensors 5-pole	A	**3RX8 000-0CE55**		1	1 unit	574	0.023
	M12 Y-shaped coupler plugs For connecting two sensors with a single cable 5-pole	A	**6ES7 194-1KA01-0XA0**		1	1 unit	250	0.046
	M12 sealing caps For closing unused input or output sockets	►	**3RX9 802-0AA00**		100	10 units	121	0.100

x = Additional Price

* You can order this quantity or a multiple thereof.

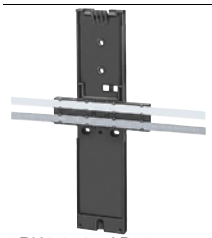
AS-Interface Compact Starters, 400 V AC

General data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Accessories for AS-Interface compact starters (Han Q 8/0)							
 3RK1 902-0CA00	**Connector sets for energy supply, 9-pole** Comprising 1 connector enclosure with Pg16 gland Female insert, 9-pole 6 female contacts							
	• Suitable for cable 4 × 2.5 mm^2, 6 × 2.5 mm^2	B	**3RK1 902-0CA00**		1	1 unit	121	0.057
	• Suitable for cable 4 × 4 mm^2/6 × 4 mm^2	B	**3RK1 902-0CB00**		1	1 unit	121	0.055
 3RK1 902-0CC00	**Connector sets for power loop-through connection, 9-pole** Comprising 1 connector enclosure with Pg16 gland 1 pin insert, 9-pole 6 male contacts							
	• Suitable for cable 4 × 2.5 mm^2/6 × 2.5 mm^2	B	**3RK1 902-0CC00**		1	1 unit	121	0.059
	• Suitable for cable 4 × 4 mm^2/6 × 4 mm^2	B	**3RK1 902-0CD00**		1	1 unit	121	0.055
 3RK1 902-0AH00	**Connector sets for motor connections, 1.5 mm^2, 9-pole** Comprising 1 connector enclosure with Pg16 gland 1 pin insert, 9-pole 8 male contacts 1.5 mm^2	B	**3RK1 902-0CE00**		1	1 unit	121	0.064
	Sealing caps For 9-pole power socket (-X3)							
	• One set contains one unit	B	**3RK1 902-0CK00**		1	1 unit	121	0.012
	• One set contains ten units	B	**3RK1 902-0CJ00**		1	10 units	121	0.093
	Power supply cables 9-pole							
	• 6 × 4 mm^2, 0.12 m long	B	**3RK1 902-0CH00**		1	1 unit	121	0.206
	• 4 × 4 mm^2, 0.12 m long	B	**3RK1 902-0CG00**		1	1 unit	121	0.165
	Motor connection cables, 4 x 1.5 mm^2 With power connector, 9-pole							
	• Length: 3 m	B	**3RK1 902-0CM00**		1	1 unit	121	0.432
	• Length: 5 m	B	**3RK1 902-0CP00**		1	1 unit	121	0.620
	• Length: 10 m	B	**3RK1 902-0CQ00**		1	1 unit	121	1.278
	Motor connection cables, 6 x 1.5 mm^2 With power connector, 9-pole							
	• Length: 3 m	B	**3RK1 902-0CN00**		1	1 unit	121	0.696
	• Length: 5 m	B	**3RK1 902-0CR00**		1	1 unit	121	1.110
	• Length: 10 m	B	**3RK1 902-0CS00**		1	1 unit	121	1.840
	Crimping tools							
	• For male and female contacts 1.5 ... 2.5 mm^2	B	**3RK1 902-0AH00**		1	1 unit	121	0.576
	• For male and female contacts 1.5 ... 4 mm^2	B	**3RK1 902-0CT00**		1	1 unit	121	0.644
	Dismantling tools For disassembling male and female contacts in 9-pole inserts	B	**3RK1 902-0AJ00**		1	1 unit	121	0.047

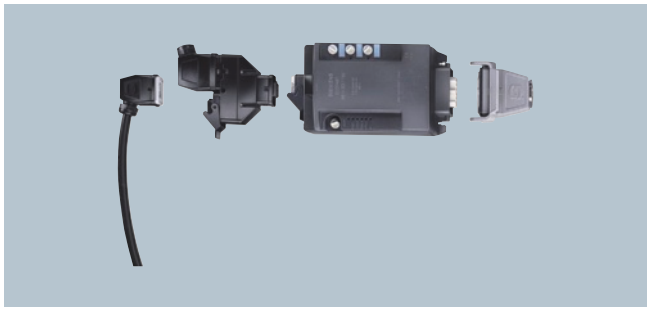
Solution Partner
Automation
SIEMENS

More connection technology products can be found at our "Siemens Solution Partners" http://www.siemens.com/automation/partnerfinder under the technology heading *"Distributed Field Installation System"*

	Miscellaneous accessories							
 3RK1 902-0AP00	**Manuals for AS-Interface compact starters** English, German	A	**3RK1 702-2GB10-2AA0**		1	1 unit	192	0.439
	Mounting plates for compact starters For accommodating the shaped cable for AS-Interface line and auxiliary supply	A	**3RK1 902-0AP00**		1	1 unit	121	0.119
	Sealing sets for mounting plates For sealing the enclosure at the end of a spur line	A	**3RK1 902-0AR00**		100	5 units	121	0.100
 3RK1 902-0AM00	**Hand-held devices for start-up** With 0.5 m connecting cable and plug	B	**3RK1 902-0AM00**		1	1 unit	121	0.217

* You can order this quantity or a multiple thereof.

Overview



Distributed motor starters are used for switching and protecting loads locally. Versions with graded functional scope and with different installation possibilities ensure that both the functional requirements of the process and the constructional boundary conditions of the machine or installation are taken into account. Distributed motor starters are available for PROFIBUS DP and AS-Interface.

The starters can be installed close to the motor or mounted on the motor.

The following are available
- Single devices for geographically distributed motors and
- Isolated solutions (ET 200pro) for operating mechanisms installed close together.

The functionality in the ECOFAST system ranges from direct-online starters, to reversing starters and soft starters through to frequency converters.

Brake contacts are available as an option for the starters. Two or four integrated digital inputs enable sensors to be scanned locally.

All starters are equipped throughout with standardized interfaces for data and energy according to the ECOFAST specification:
- HanBrid for PROFIBUS DP and insulation piercing method for AS-Interface
- Han Q4/2 for the power supply
- Han 10 E for motor connection

The starters can be connected using T pieces for data and T terminal connectors for power to prevent interruption.

The 3RK1 922-3BA00 hand-held device is also available for local operation (see page 6/76).

Detailed technical specifications of the ECOFAST motor starters and soft starters can be found in the manual "ECOFAST Motor Starters".

Technical specifications can be found in Technical Information LV 1 T.

Motor Starter ES software

The Motor Starter ES software is used the for parameterization, monitoring, diagnostics and testing of motor starters.
See Chapter 12 "Planning and Configuration with SIRIUS".

Selection and ordering data

Fieldbus interface	Switching function	Motor protection	Setting range/ performance range	Brake output	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
											kg
PROFIBUS DP	Mechanical	Thermistor	0.3 ... 9 A/4 kW[1])	No	B	**3RK1 303-2AS54-1AA0**		1	1 unit	121	1.592
				400 V AC	B	**3RK1 303-2AS54-1AA3**		1	1 unit	121	1.580
		Thermal motor model	0.3 ... 3 A/1.1 kW	No	B	**3RK1 303-5BS44-3AA0**		1	1 unit	121	1.635
				400 V AC	B	**3RK1 303-5BS44-3AA3**		1	1 unit	121	1.645
			2.4 ... 9 A/4 kW	No	B	**3RK1 303-5CS44-3AA0**		1	1 unit	121	1.625
				400 V AC	B	**3RK1 303-5CS44-3AA3**		1	1 unit	121	1.647
	Electronic, soft	Full motor protection	0.3 ... 3 A/1.1 kW	No	B	**3RK1 303-6BS74-3AA0**		1	1 unit	121	2.170
				400 V AC	B	**3RK1 303-6BS74-3AA3**		1	1 unit	121	2.225
			2.4 ... 12 A/5.5 kW	No	B	**3RK1 303-6DS74-3AA0**		1	1 unit	121	2.245
				400 V AC	B	**3RK1 303-6DS74-3AA3**		1	1 unit	121	2.138
AS-Interface	Mechanical	Thermistor	0.3 ... 9 A/4 kW[1])	No	B	**3RK1 323-2AS54-1AA0**		1	1 unit	121	1.538
				400 V AC	B	**3RK1 323-2AS54-1AA3**		1	1 unit	121	1.560
		Thermal motor model	0.3 ... 3 A/1.1 kW	No	B	**3RK1 323-5BS44-3AA0**		1	1 unit	121	1.603
				400 V AC	B	**3RK1 323-5BS44-3AA3**		1	1 unit	121	1.633
			2.4 ... 9 A/4 kW	No	B	**3RK1 323-5CS44-3AA0**		1	1 unit	121	1.607
				400 V AC	B	**3RK1 323-5CS44-3AA3**		1	1 unit	121	1.637
	Electronic, soft	Full motor protection	0.3 ... 3 A/1.1 kW	No	B	**3RK1 323-6BS74-3AA0**		1	1 unit	121	2.120
				400 V AC	B	**3RK1 323-6BS74-3AA3**		1	1 unit	121	2.185
			2.4 ... 12 A/5.5 kW	No	B	**3RK1 323-6DS74-3AA0**		1	1 unit	121	2.119
				400 V AC	B	**3RK1 323-6DS74-3AA3**		1	1 unit	121	2.220

[1]) The range from 0.3 ... 9 A is fixed and cannot be set or modified manually.

* You can order this quantity or a multiple thereof.

General data

Overview

The 3RE1 encapsulated starters are available as direct-on-line starters and as reversing starters.

Direct-on-line starters

The direct-on-line starters are available in three sizes:

- Size **S00** is suitable for induction motors up to 5.5 kW with 400 V AC and a maximum rated motor current of 12 A. The starters are available in the following two versions:
  - Molded-plastic enclosure for direct-on-line starters including contactor – in this case the overload relay must be selected and ordered according to the rated motor current.
  - Molded-plastic enclosure for direct-on-line starters (without contactor) – in this case the contactor and overload relay must be selected and ordered separately.
- Size **S0** is suitable for induction motors up to 11 kW with 400 V AC and a maximum rated motor current of 25 A. The starters are available in the following two versions:
  - Molded-plastic enclosure for direct-on-line starters including contactor – in this case the overload relay must be selected and ordered according to the rated motor current.
  - Molded-plastic enclosure for direct-on-line starters (without contactor) – in this case the contactor, auxiliary switch and overload relay must be selected and ordered separately.
- Size **S2** is suitable for induction motors up to 22 kW with 400 V AC and a maximum rated motor current of 50 A. The starters are available in the following versions:
  - Molded-plastic enclosure for direct-on-line starters (without contactor) – in this case the contactor, auxiliary switch and overload relay must be selected and ordered separately.

Reversing starters

The reversing starters are available in two sizes:

- Size **S00** is suitable for induction motors up to 5.5 kW with 400 V AC and a maximum rated motor current of 12 A. The starters are available in the following two versions:
  - Molded-plastic enclosure for reversing starters including contactor assembly – in this case the overload relay must be selected and ordered according to the rated motor current.
  - Molded-plastic enclosure for reversing starters (without contactor assembly) – in this case the contactor assembly, auxiliary switch and overload relay must be selected and ordered separately.
- Size **S0** is suitable for induction motors up to 11 kW with 400 V AC and a maximum rated motor current of 25 A. The starters are available in the following versions:
  - Molded-plastic enclosure for direct-on-line starters (without contactor assembly) – in this case the contactor assembly, auxiliary switch and overload relay must be selected and ordered separately.

Benefits

The 3RE1 encapsulated starters are enclosed with a high degree of protection (IP65) and are used for the switching and inverse-time delayed protection of loads. They are ideally suited for implementation directly at the machine.

Application

The 3RE1 encapsulated starters are used for switching and for the inverse-time delayed protection of load feeders up to 22 kW at 400 V AC.

The starters are available as direct-on-line starters for motors with a single direction of rotation and as reversing starters for motors with two directions of rotation.

Selection and ordering data

Size	Rated data Utilization category AC-2/AC-3 T_u: up to + 35 °C		Rated control supply voltage U_s		DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I_e at 400 V	Output of induction motors at 400 V/50 Hz				Order No.	Price per PU				
	A	kW	V	At Hz							kg
Direct-on-line starters including contactor											
S00	12	5.5	230 AC	50 / 60	B	**3RE10 10-8XC17-0AP0**		1	1 unit	101	0.510
			400 AC	50 / 60	B	**3RE10 10-8XC17-0AV0**		1	1 unit	101	0.510
S0	17	7.5	230 AC	50	B	**3RE10 20-8XC25-0AP0**		1	1 unit	101	0.830
			400 AC	50	B	**3RE10 20-8XC25-0AV0**		1	1 unit	101	0.810
	25	11	230 AC	50	B	**3RE10 20-8XC26-0AP0**		1	1 unit	101	0.830
			400 AC	50	B	**3RE10 20-8XC26-0AV0**		1	1 unit	101	0.810

3RE10 10

* You can order this quantity or a multiple thereof.

Reversing starters: 3RE13 encapsulated starters

Selection and ordering data

Size	Rated data Utilization category AC-2/AC-3 T_u: up to + 35 °C		Rated control supply voltage U_s		DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I_e at 400 V	Output of induction motors at 400 V/50 Hz				Order No.	Price per PU				
	A	kW	V	At Hz							kg
Reversing starters including contactor assembly											
S00	12	5.5	230 AC	50 / 60	B	**3RE13 10-8XC17-0AP0**		1	1 unit	101	1.000
			400 AC	50 / 60	B	**3RE13 10-8XC17-0AV0**		1	1 unit	101	2.460

3RE13 10

* You can order this quantity or a multiple thereof.

Selection and ordering data

Version	For contactors Overload relay Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Enclosures for direct-on-line starters								
 3RE19 23-1CB2								
Molded-plastic enclosures for surface mounting								
Degree of protection IP65, with actuators, with metric cable gland								
• With PE-terminal	S00	B	**3RE19 13-1CB1**		1	1 unit	101	0.320
• With N and PE-terminals	S0	B	**3RE19 23-1CB2**		1	1 unit	101	0.450
• With N and PE-terminals	S2	B	**3RE19 33-1CB3**		1	1 unit	101	1.000
Enclosures for reversing starters								
 3RE19 23-2CB3								
Molded-plastic enclosures for surface mounting								
Degree of protection IP65, with actuators, with metric cable gland								
• With N and PE-terminals	S00/S0	B	**3RE19 13-2CB3**		1	1 unit	101	1.020

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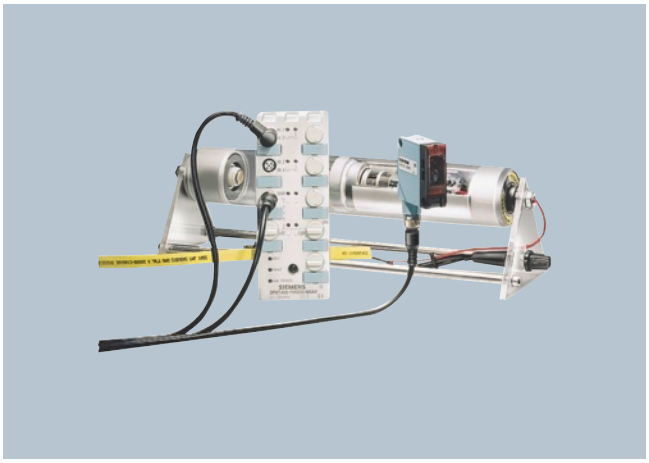
* You can order this quantity or a multiple thereof.

3RK motor starters, 24 V DC

Overview



Connection of a drive roller with integrated DC motor to an AS-Interface 24 V DC motor starter

With the K60 AS-Interface 24 V DC motor starters for the low-end performance range up to 70 W, it is possible to connect 24 V DC motors and the associated sensors directly to the AS-Interface quickly and easily.

Three different versions are available:

- Single direct-on-line starters (without brake and reversible quick-stop function)
- Double direct-on-line starters (with brake and reversible quick-stop function)
- Reversing starters (with brake and reversible quick-stop function)

DC motors are connected to the module using M12 plug-in connections. The sensors and the module electronics can be supplied from the yellow AS-Interface cable. An auxiliary voltage (24 V DC) is only required for supplying the outputs, which can be provided via the black AS-Interface cable.

Quick-stop function

All AS-Interface 24 V DC motor starters feature a quick-stop function which can be switched on and off as required using a switch integrated into the module. The quick-stop function allows a connected motor to be disconnected immediately using an applied sensor signal (High). The switch for the quick-stop function is located alongside the input sockets and is protected by an M12 sealing cap.

Brake

The double direct-on-line starter and the single reversing starter versions feature an integrated permanently set brake function, i. e. as soon as the output signal is set to "0", the motor is braked.

Start-up using integrated buttons

Buttons integrated into the module (below the output sockets) can be used to set the motor used. The buttons are protected by an M12 sealing cap.

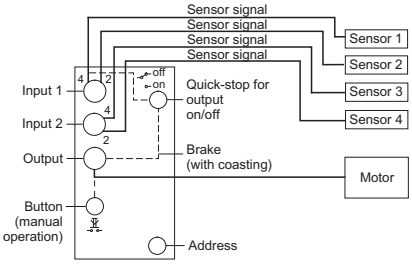
Note:
Concerning double and reversing starters: If an input with the quick-stop function receives a "High" signal, the corresponding output (e. g. quick-stop input 1 –> output 1) is switched off within the device (the motor is braked). The manual key function (Key 1/2) for local operation is only permitted to be used during "CPU Stop" in the higher-level PLC.

Note:
Concerning single direct-on-line starters: If an input with the quick-stop function receives a "High" signal, the corresponding output (e. g. quick-stop input 1 –> output 1) is switched off within the device (the motor runs down without being braked). The manual key function (Key 1) for local operation is only permitted to be used during "CPU Stop" in the higher-level PLC.

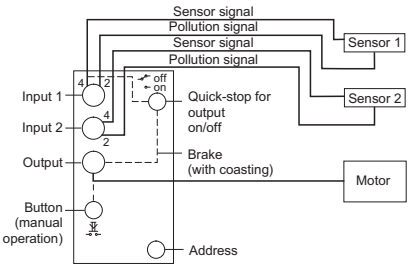
Applications

Single direct starter without brake
(with adjustable quick-stop function)

1st possibility: Connection to a maximum of four sensors without pollution indication

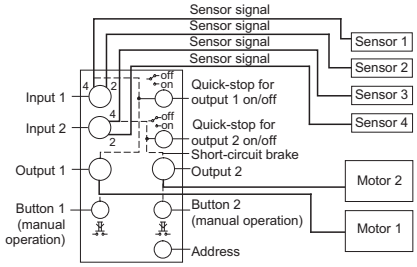


2nd possibility: Connection to a maximum of two sensors with pollution indication

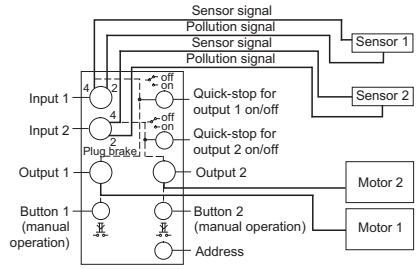


Double direct starter with brake
(with adjustable quick-stop function)

1st possibility: Connection to a maximum of four sensors without pollution indication

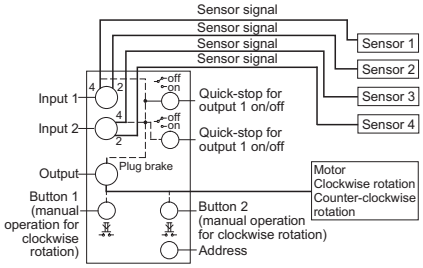


2nd possibility: Connection to a maximum of two sensors with pollution indication

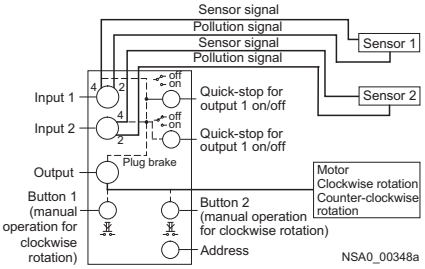


Single reversing starter with brake
(with adjustable quick-stop function)

1st possibility: Connection to a maximum of four sensors without pollution indication



2nd possibility: Connection to a maximum of two sensors with pollution indication



Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 3RK1 400-1MQ01-0AA4	**Single direct-on-line starters**[1)] 4 inputs 1 output Quick-stop function	C	**3RK1 400-1NQ01-0AA4**		1	1 unit	121	0.205
	Double direct-on-line starters[1)] 4 inputs 2 outputs Quick-stop function	B	**3RK1 400-1MQ01-0AA4**		1	1 unit	121	0.208
	Single reversing starters[1)] 4 inputs 1 output Quick-stop function	C	**3RK1 400-1MQ03-0AA4**		1	1 unit	121	0.218

[1)] Modules supplied without mounting plate.

Accessories

 3RK1 901-0CA00	**K60 mounting plates** Suitable for all K60 compact modules						
	• Wall mounting	►	**3RK1 901-0CA00**		1	1 unit	121	0.065
	• Standard rail mounting	►	**3RK1 901-0CB01**		1	1 unit	121	0.095
 3RK1 901-1KA00	**AS-Interface sealing caps M12** For free M12 sockets	►	**3RK1 901-1KA00**		100	10 units	121	0.100
 3RK1 901-1KA01	**AS-Interface sealing caps M12, tamper-proof** For free M12 sockets	A	**3RK1 901-1KA01**		100	10 units	121	0.100
 3RK1 902-0AR00	**Sealing sets** • For K60 mounting plate and standard distributor • Cannot be used for K45 mounting plate • Set contains one straight and one shaped seal	A	**3RK1 902-0AR00**		100	5 units	121	0.100

* You can order this quantity or a multiple thereof.

Notes