Load Feeders, Motor Starters and Soft Starters

6

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

Introduction

Overview


3RW30


3RW40


3RW44


3RA11


3RA12


3RV19


3RA71

		Order No.	Page
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, 3RW31	• SIRIUS 3RW30/31 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, 3RW31**	6/5
3RW40	• 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**	6/12
For High-Feature applications	• Application areas - pumps - compressors - industrial refrigerating systems - conveying systems - machine tools - fans - cooling systems - water transport - hydraulics - mills		
3RW44	• 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**	6/20
3RA1 fuseless 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 installation 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 mounting	• Rated control supply voltage AC 50 Hz 230 V and 24 V DC for 35 mm standard mounting rail or screw mounting	**3RA11**	6/32
For busbar systems	• Rated control supply voltage AC 50 Hz 230 V and 24 V DC for 40 mm and 60 mm busbar systems	**3RA11**	6/36
3RA12 reversing starters			
For snapping onto standard mounting rails or for screw mounting	• Rated control supply voltage AC 50 Hz 230 V and 24 V DC for 35 mm standard mounting rail or screw mounting	**3RA12**	6/40
For busbar systems	• Rated control supply voltage AC 50 Hz 230 V and 24 V DC for 40 mm and 60 mm busbar systems	**3RA12**	6/44
Infeed system			
3RV19 infeed system	• Convenient means of energy supply and distribution	**3RV19**	6/54
3RA71 load feeders with safety integrated			
Fuseless load feeders	• Safe load feeders for direct start • Actuating voltage 230 V AC, 50/60 Hz • Actuating voltage 24 V DC	**3RA71**	6/59
Fused load feeders	• Safe load feeders for direct start • Actuating voltage 230 V AC, 50/60 Hz • Actuating voltage 24 V DC	**3RA71**	6/62


3RK1 322


3RA51


3RA52


3RK1 301


3RK1 304


3RE10

		Order No.	Page
AS-Interface motor starters and soft starters			
IP65/67 motor starters and load feeders			
AS-Interface compact starters, IP65 (400 V AC)	• Completely factory-wired load feeders with degree of protection IP65, designed for switching and protecting any type of three-phase loads, in particular standard induction motors in direct-on-line or reversing duty	**3RK1 322**	6/63
AS-Interface motor starters, IP67 (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 starter - double direct-on-line starter - reversing starter	**3RK1 400-1**	6/66
IP20 motor starters and load feeders			
	• Quick and cost-effective connection of motor starters to higher-level automation systems • For busbar systems with a busbar center-to-center clearance of 40 mm and 60 mm • Completely factory-wired and adaptable to busbar systems		
Direct-on-line starters for busbar systems	• For direct start, a load can be switched on and off with the load feeder	**3RA51**	6/70
Reversing starters for busbar systems	• The feeder for reversing duty is designed for two directions of rotation of induction motors	**3RA52**	6/72
ET 200S motor starters			
ET 200S motor starters	• Completely factory-wired motor starters for switching and protecting any three-phase loads, optionally as direct-on-line, reversing or soft starters	**3RK1 301**	6/75
Power modules for ET 200S motor starters	• For supplying and monitoring the auxiliary voltages for motor starters	**3RK1 903-0BA00**	6/82
Terminal modules for ET 200S motor starters	• Mechanical modules in which the motor starter and expansion modules are inserted	**3RK1 903**	6/83
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**	6/87
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 modules local	• For safety category 4 according to EN 954-1	**3RK1 903**	6/106
Safety modules PROFIsafe	• Sensor and actuator assignment are freely configurable (distributed safety concept)	**3RK1 903**	6/111
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
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**	6/129
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**	6/131
3RE13 reversing starters	• Molded-plastic enclosure, degree of protection IP65, including contactor assembly	**3RE13**	6/132
Accessories	• Molded-plastic enclosure, degree of protection IP65, for direct-on-line and reversing starters	**3RE19**	6/133

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 3RW30/31 Standard applications	SIRIUS 3RW40 Standard applications	SIRIUS 3RW44 High-Feature applications
Rated current up to 40 °C	A	3 ... 100	12.5 ... 432	29 ... 1214
Rated operational voltage	V	200 ... 575	200 ... 600	200 ... 690
Motor rating at 400 V				
• Inline circuit	kW	1.1 ... 55	5.5 ... 250	15 ... 710
• Inside-delta circuit	kW	--	--	22 ... 1200
Temperature range	°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		✔[2)]	✔	✔
Intrinsic device protection		--	✔	✔
Motor overload protection		--	✔	✔
Thermistor motor protection		--	✔[3)]	✔
Integrated remote RESET		--	✔[4)]	✔
Adjustable current limiting		--	✔	✔
Inside-delta circuit		--	--	✔
Breakaway pulse		--	--	✔
Creep speed in both directions		--	--	✔
Pump ramp-down		--	--	✔[5)]
DC braking		--	--	✔[5) 6)]
Combined braking		--	--	✔[5) 6)]
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		--	--	✔[7)]
Programmable control inputs and outputs		--	--	✔
Number of parameter sets		1 (2 with 3RW31)	1	3
Parameterization software (Soft Starter ES)		--	--	✔
Power semiconductors (thyristors)		2 controlled phases	2 controlled phases	3 controlled phases
Spring-loaded terminals		✔ (only 3RW30 03)	✔	✔
Screw terminals		✔	✔	✔
UL/CSA		✔[8)]	✔	✔
CE marking		✔	✔	✔
Soft starting under heavy starting conditions		--	--	✔[5)]
Configuring support		Win-Soft Starter, electronic selection slider ruler, Technical Assistance ++49 911 895 5900		

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

1) Only soft starting available for 3RW30 ..-1AA12 and 3RW31.
2) Not available for 3RW30 03.
3) Optional up to size S3 (device variant).
4) Available for 3RW40 2. to 3RW40 4.; optional for 3RW40 5. and 3RW40 7..
5) Calculate soft starter and motor with size allowance where required.
6) Not possible in inside-delta circuit.
7) Trace function with Soft Starter ES software.
8) For 3RW30 03 up to 230 V.

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

Overview

Various versions of the SIRUS 3RW30/31 soft starters are available:

- Standard version for fixed speed three-phase motors, sizes S00, S0, S2 and S3
- Version for fixed-speed three-phase motors in a 22.5 mm enclosure
- Special version 3RW31 for Dahlander motors only in size S0
- Version for soft starting single-phase motors of sizes S0, S2 and S3.

SIRIUS 3RW30/31 for three-phase motors

Soft starters rated up to 55 kW (at 400 V) for standard applications in three-phase networks. Extremely small sizes, low power losses and simple commissioning are just a few of the many advantages of this soft starter. The special feature of the 3RW31 series is that it allows independent definition of two separate acceleration ramps (Dahlander motors).

SIRIUS 3RW30 for single-phase motors

The additional version for standard applications in single-phase networks. Its voltage ramp function reduces the motor's inrush current and effectively lowers the torque at the point of starting up. The load and the supplying network are thus protected.

Application

The SIRIUS 3RW30/31 solid-state soft starters are suitable for soft starting and stopping of three-phase asynchronous machines.

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

- Fans
- Pumps
- Building/construction machines
- Presses
- Escalators
- Transport systems
- Air conditioning systems
- Fans
- Assembly lines
- Compressors and coolers
- Operating mechanisms

3RW30
for standard applications

Selection and ordering data

3RW30 03-2CB54

3RW30 25-1AB14

3RW30 35-1AB14

3RW30 35-1AA12

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	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												
	115 V	230 V	400 V	500 V		115 V	200 V	230 V	460 V	575 V								
A	kW	kW	kW	W	A	hp	hp	hp	hp	hp								kg
Soft starters for easy starting conditions and high switching frequency, rated operational voltage U_e 200 ... 400 V																		
3	--	0.55	**1.1**	--	2.6	--	0.5	**0.5**	--	--	22.5 mm	▶	**3RW30 03-□CB54**		1	1 unit	131	0.207

Order No. supplement for connection types

With screw terminals	**1**
With spring-loaded terminals	**2**

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	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												
	115 V	230 V	400 V	500 V		115 V	200 V	230 V	460 V	575 V								
A	kW	kW	kW	kW	A	hp	hp	hp	hp	hp								kg
Soft starters for three-phase asynchronous motors, rated operational voltage U_e 200 ... 460 V																		
6	--	1.5	**3**	--	4.8	--	1	1	**3**	--	**S00**	▶	**3RW30 14-1CB□4**		1	1 unit	131	0.314
9	--	2.2	**4**	--	7.8	--	2	2	**5**	--	**S00**	▶	**3RW30 16-1CB□4**		1	1 unit	131	0.314
12.5	--	3	**5.5**	--	11	--	3	3	**7.5**	--	**S0**	▶	**3RW30 24-1AB□4**		1	1 unit	131	0.490
16	--	4	**7.5**	--	14	--	3	3	**10**	--	**S0**	▶	**3RW30 25-1AB□4**		1	1 unit	131	0.493
25	--	5.5	**11**	--	21	--	5	5	**15**	--	**S0**	▶	**3RW30 26-1AB□4**		1	1 unit	131	0.489
32	--	7.5	**15**	--	27	--	7.5	7.5	**20**	--	**S2**	▶	**3RW30 34-1AB□4**		1	1 unit	131	0.794
38	--	11	**18.5**	--	32	--	7.5	10	**20**	--	**S2**	▶	**3RW30 35-1AB□4**		1	1 unit	131	0.779
45	--	11	**22**	--	38	--	10	10	**25**	--	**S2**	▶	**3RW30 36-1AB□4**		1	1 unit	131	0.791
63	--	18.5	**30**	--	54	--	15	20	**40**	--	**S3**	▶	**3RW30 44-1AB□4**		1	1 unit	131	1.667
75	--	22	**37**	--	64	--	20	20	**40**	--	**S3**	▶	**3RW30 45-1AB□4**		1	1 unit	131	1.806
100	--	30	**55**	--	85	--	25	30	**60**	--	**S3**	▶	**3RW30 46-1AB□4**		1	1 unit	131	1.813
Soft starters for three-phase asynchronous motors, rated operational voltage U_e 460 ... 575 V																		
12.5	--	--	--	**7.5**	11	--	--	--	7.5	**10**	**S0**	A	**3RW30 24-1AB□5**		1	1 unit	131	0.490
16	--	--	--	**11**	14	--	--	--	10	**10**	**S0**	A	**3RW30 25-1AB□5**		1	1 unit	131	0.489
25	--	--	--	**15**	21	--	--	--	15	**15**	**S0**	A	**3RW30 26-1AB□5**		1	1 unit	131	0.489
32	--	--	--	**18.5**	27	--	--	--	20	**25**	**S2**	A	**3RW30 34-1AB□5**		1	1 unit	131	0.791
38	--	--	--	**22**	32	--	--	--	20	**30**	**S2**	A	**3RW30 35-1AB□5**		1	1 unit	131	0.793
45	--	--	--	**30**	38	--	--	--	25	**30**	**S2**	A	**3RW30 36-1AB□5**		1	1 unit	131	0.792
63	--	--	--	**37**	54	--	--	--	40	**50**	**S3**	A	**3RW30 44-1AB□5**		1	1 unit	131	1.669
75	--	--	--	**55**	64	--	--	--	40	**60**	**S3**	A	**3RW30 45-1AB□5**		1	1 unit	131	1.811
100	--	--	--	**70**	85	--	--	--	60	**75**	**S3**	A	**3RW30 46-1AB□5**		1	1 unit	131	1.806

Order No. supplement for rated control supply voltage U_s

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

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

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

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	Rated power of induction motors for rated operational voltage U_e 115 V	230 V	400 V	500 V	Rated operational current I_e	115 V	200 V	230 V	460 V	575 V								
A	kW	kW	kW	kW	A	hp	hp	hp	hp	hp								kg
Soft starters with two-ramp control for three-phase induction motors with two speeds (double pole-reversing), rated operational voltage U_e 200 ... 460 V[1)]																		
12.5	--	3	**5.5**	--	11	--	3	3	**7.5**	--	**S0**	B	**3RW31 24-1CB14**		1	1 unit	131	0.468
16	--	4	**7.5**	--	14	--	3	3	**10**	--	**S0**	B	**3RW31 25-1CB14**		1	1 unit	131	0.475
25	--	5.5	**11**	--	21	--	5	5	**15**	--	**S0**	B	**3RW31 26-1CB14**		1	1 unit	131	0.464
Soft starters with two-ramp control for three-phase induction motors with two speeds (double pole-reversing), rated operational voltage U_e 460 ... 575 V[1)]																		
12.5	--	--	--	**7.5**	11	--	--	--	7.5	**10**	**S0**	B	**3RW31 24-1CB15**		1	1 unit	131	0.467
16	--	--	--	**7.5**	14	--	--	--	10	**10**	**S0**	B	**3RW31 25-1CB15**		1	1 unit	131	0.476
25	--	--	--	**15**	21	--	--	--	15	**15**	**S0**	B	**3RW31 26-1CB15**		1	1 unit	131	0.475
Soft starters for single-phase motors, rated operational voltage U_e 115 ... 240 V[1)]																		
25	2.2	**4**	--	--	21	1.5	3	**3**	--	--	**S0**	A	**3RW30 26-1AA12**		1	1 unit	131	0.439
38	3	**5.5**	--	--	32	2	5	**5**	--	--	**S2**	B	**3RW30 35-1AA12**		1	1 unit	131	0.689
75	5.5	**11**	--	--	64	5	10	**10**	--	--	**S3**	B	**3RW30 45-1AA12**		1	1 unit	131	1.393

[1)] Rated control supply voltage U_s 110 ... 230 V AC/DC.

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

The SIRIUS 3RW3 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 Information LV 1 T.

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

3RW30
for standard applications

Accessories

	For soft starters Type	Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Fans[1]										
 3RW39 26-8A	3RW3. 2. 3RW30 3. and 3RW30 4.	**S0** **S2** **S3**	To increase switching frequency and for device mounting in positions different from the normal position. The fan is snapped into the enclosure from below. During operation, (control input "IN" at potential A1), the fan is running. After a stop, the fan continues to run for about another 60 minutes.	▶ ▶	**3RW39 26-8A** **3RW39 36-8A**		1 1	1 unit 1 unit	131 131	0.008 0.030
 3RW39 36-8A										
Covers										
	Terminal covers for box terminals									
 3RT19 36-4EA2	3RW30 3. 3RW30 4.	**S2** **S3**	Additional touch protection to be fitted at the box terminals (2 units required per device)	▶ ▶	**3RT19 36-4EA2** **3RT19 46-4EA2**		1 1	1 unit 1 unit	101 101	0.020 0.025
	Terminal covers for cable lugs and busbar connection									
 3RT19 46-4EA1	3RW30 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

[1] With internal soft starter power supply.

	Version	Functionality Functions	Use	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)										
 3RP1 902	**Sealable covers**	For securing against unauthorized adjustment of setting knobs	For devices with 1 or 2 CO contacts	▶	**3RP1 902**		1	5 units	101	0.004
 3RP1 903	**Push-in lugs** for screw mounting		For devices with 1 or 2 CO contacts	▶	**3RP1 903**		1	10 units	101	0.002

* You can order this quantity or a multiple thereof.

Link modules

3RA19 11-1A

3RA19 21-1A

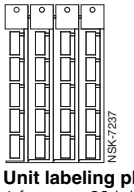
3RA19 31-1A

For soft starters Type	Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
		Electrical and mechanical link between motor starter protector and soft starter.							
Single-unit packaging									
3RW30 1..	**S00**		▶	**3RA19 11-1AA00**		1	1 unit	101	0.027
3RW30 2..	**S0**		▶	**3RA19 21-1AA00**		1	1 unit	101	0.037
3RW30 3..	**S2**		▶	**3RA19 31-1AA00**		1	1 unit	101	0.042
3RW30 4..	**S3**		▶	**3RA19 41-1AA00**		1	1 unit	101	0.090
Multi-unit packaging									
3RW30 1..	**S00**		▶	**3RA19 11-1A**		1	10 units	101	0.019
3RW30 2..	**S0**		▶	**3RA19 21-1A**		1	10 units	101	0.028
3RW30 3..	**S2**		▶	**3RA19 31-1A**		1	5 units	101	0.033
3RW30 4..	**S3**		▶	**3RA19 41-1A**		1	5 units	101	0.072

Note:
The covers and link modules listed here are also used for load feeders (3RV motor starter protector + 3RT contactor). For more technical specifications see Technical Information LV 1 T –> "Controls" –> "Contactors and Contactor Assemblies".

For fuseless load feeders with size S00 soft starter, the link module has an integrated cable routing.

Labeling plates



Unit labeling plates
1 frame = 20 labeling plates

Designation	Labeling area Color WxH mm x mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Unit labeling plates for "SIRIUS"[1)]	20 x 7 mm, pastel turquoise	C	**3RT19 00-1SB20**		100	340 units	101	22.000
Labels for sticking for "SIRIUS"	19 x 6, pastel turquoise	D	**3RT19 00-1SB60**		100	3060 units	101	15.000
	19 x 6 zinc yellow	C	**3RT19 00-1SD60**		100	3060 units	101	12.000

1) Computer labeling system for individual inscription of unit labeling plates available from:
murrplastik Systemtechnik GmbH (http://www.murrplastik.de).

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

3RW30
for standard applications

	For soft starters	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type								kg
AS-Interface load feeder modules									
 3RK1 400-1.G01-0AA1		**AS-Interface load feeder modules** For standard rail mounting sizes 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 3RK1 901-3GA00); the AS-Interface connectors for the data and auxiliary supply cable (yellow and black) must be ordered separately (see 3RK1 901-0.A00)							
		Rated operational voltage U_e							
	2 inputs / 1 output	24 V 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 / 1 relay output	120/230 V 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
		Manuals for AS-Interface load feeder modules							
	German, English		►	**3RK1 701-2GB00-0AA0**		1	1 unit	192	0.197
	French, Italian		A	**3RK1 701-2HB00-0AA0**		1	1 unit	192	0.196
		Supports for AS-Interface load feeder modules							
		Width							
	For mounting onto 3RA19 22-1A SIRIUS standard mounting rail adapter	45 mm	B	**3RK1 901-3GA00**		1	1 unit	121	0.048
 Supports with mounted power connector coupling		**Power connector sets**							
	5-pole, 2.5 mm² (1 pack = 5 plugs and 5 couplings)		C	**3RK1 901-0EA00**		1	5 units	121	0.111
		AS-Interface connectors for data and auxiliary supply cables							
 3RK1 901-0NA00 3RK1 901-0PA00		Color							
	With insulation displacement terminals for 2 x (0.5 to 0.75 mm²) 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
Standard mounting rail adapters									
 3RA19 22	3RW30 1.	Standard mounting rail adapter for mechanical mounting of motor starter protector and contactor; can be snapped onto standard mounting rail or for screw mounting, suitable for size S00	►	**3RA19 22-1A**		1	5 units	101	0.095
Surge suppressors · RC elements for PLC									
 3TX7 462-3T		**RC elements**							
		Rated operational voltage U_e							
	For lateral snapping onto auxiliary switch or 35 mm standard mounting rail	127 ... 240 V AC	A	**3TX7 462-3T**		1	1 unit	101	0.090

1) Without connectors for data and auxiliary power (yellow and black).
2) With one connector each for data and auxiliary power (yellow and red).

For busbar accessories, see SIVACON Power Distribution Boards, Busway and Cubicle Systems –> 8US Busbar Systems.

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

More information

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.

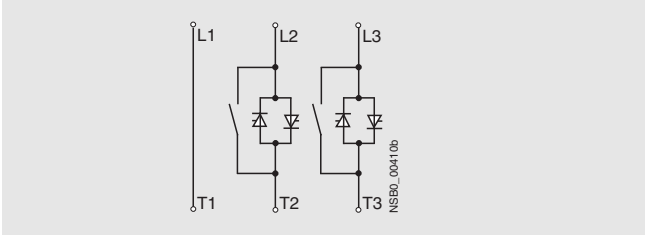
If necessary, an overload relay for heavy starting must be selected where long starting times are involved. PTC sensors are recommended. This also applies for the smooth ramp-down because during the ramp-down time an additional current loading applies in contrast to free ramp-down.

In the 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, switching devices and overload relays must be ordered separately. Please observe the maximum switching frequencies specified in the technical specifications.

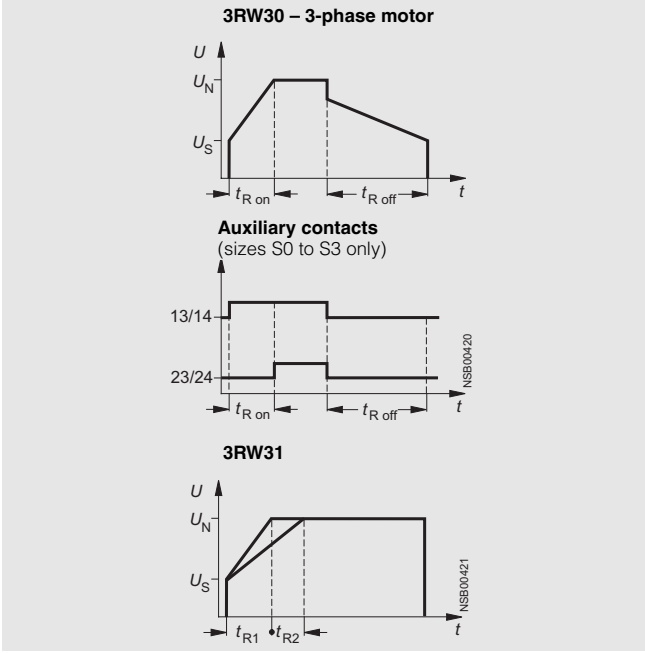
Note:
When induction motors are switched on, voltage drops occur as a rule on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the 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 circuit diagram[1)]



1) Schematic circuit diagram applies to sizes S0 and S2;
for size S00, phase L3 is bridged;
for size S3, phase L2 is bridged.

Status graphs



Control with a PLC

When a 3RW30 is operated with a triac output or thyristor output, the leakage current at the PLC output should be < 1 mA because otherwise the 3RW30 will interpret the resultant voltage drop at the input as an "On command". As a corrective measure for PLC outputs with a higher leakage current, an RC element with > 100 nF and 220 W can be connected in series between "IN1" and terminal "A2" of the 3RW30 (Order No.: 3TX7 462-3T, see Selection and Ordering Data).

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.

You can order the CD-ROM under the following order number:
Order No.: E20001-D1020-P302-V2-7400.

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

3RW40
for standard applications

Overview

SIRIUS 3RW40 soft starters offer all the same advantages as the 3RW30 soft starters. This also applies to the integrated bypass contact system. At the same time they come with additional functions, e.g. solid-state motor overload and intrinsic device protection and adjustable current limiting, optional thermistor motor protection (up to size S3), integrated remote RESET (up to size S3), as well as a two-phase control method (Polarity Balancing) that is unique in this performance range.

SIRIUS 3RW40 soft starters are part of the SIRIUS modular system. This results in advantages such as identical sizes and a uniform connection method. Thanks to their particularly compact design, SIRIUS 3RW40 soft starters are only half as big as comparable wye-delta starters. Hence, they can be mounted in minimum space in the control cabinet. Configuring and mounting are carried out quickly and easily thanks to the 3-wire connection.

SIRIUS 3RW40 for three-phase motors

Soft starters rated up to 250 kW (at 400 V) for standard applications in three-phase networks. Extremely small sizes, low power losses and simple commissioning 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 starters size S6, S10 and S12 are suitable for starting explosion-proof motors with "increased safety" type of protection EEx e;
see "Appendix" –> "Standards and approvals" –> "Type overview of approved devices for explosion-protected 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

- Fans
- Pumps
- Building/construction machines
- Presses
- Escalators
- Transport systems
- Air conditioning systems
- Fans
- Assembly lines
- Compressors and coolers
- Operating mechanisms

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	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		200 V	230 V	460 V	575 V								
A	kW	kW	kW	A	hp	hp	hp	hp								kg
Inline circuit, rated operational voltage 200 ... 480 V[1]																
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S0[2]**	B	**3RW40 24-□BB□4**		1	1 unit	131	0.770
25	5.5	**11**	--	23	5	5	**15**	--		B	**3RW40 26-□BB□4**		1	1 unit	131	0.770
32	7.5	**15**	--	29	7.5	7.5	**20**	--		B	**3RW40 27-□BB□4**		1	1 unit	131	0.770
38	11	**18.5**	--	34	10	10	**25**	--		B	**3RW40 28-□BB□4**		1	1 unit	131	0.770
45	11	**22**	--	42	10	15	**30**	--	**S2**	B	**3RW40 36-□BB□4**		1	1 unit	131	1.350
63	18.5	**30**	--	58	15	20	**40**	--		B	**3RW40 37-□BB□4**		1	1 unit	131	1.350
72	22	**37**	--	62	20	20	**40**	--		B	**3RW40 38-□BB□4**		1	1 unit	131	1.350
80	22	**45**	--	73	20	25	**50**	--	**S3**	B	**3RW40 46-□BB□4**		1	1 unit	131	1.900
106	30	**55**	--	98	30	30	**75**	--		B	**3RW40 47-□BB□4**		1	1 unit	131	1.900
Inline circuit, rated operational voltage 400 ... 600 V																
12.5	--	5.5	**7.5**	11	--	--	7.5	**10**	**S0[2]**	B	**3RW40 24-□BB□5**		1	1 unit	131	0.770
25	--	11	**15**	23	--	--	15	**20**		B	**3RW40 26-□BB□5**		1	1 unit	131	0.770
32	--	15	**18.5**	29	--	--	20	**25**		B	**3RW40 27-□BB□5**		1	1 unit	131	0.770
38	--	18.5	**22**	34	--	--	25	**30**		B	**3RW40 28-□BB□5**		1	1 unit	131	0.770
45	--	22	**30**	42	--	--	30	**40**	**S2**	B	**3RW40 36-□BB□5**		1	1 unit	131	1.350
63	--	30	**37**	58	--	--	40	**50**		B	**3RW40 37-□BB□5**		1	1 unit	131	1.350
72	--	37	**45**	62	--	--	40	**60**		B	**3RW40 38-□BB□5**		1	1 unit	131	1.350
80	--	45	**55**	73	--	--	50	**60**	**S3**	B	**3RW40 46-□BB□5**		1	1 unit	131	1.900
106	--	55	**75**	98	--	--	75	**75**		B	**3RW40 47-□BB□5**		1	1 unit	131	1.900

Order No. supplement for connection types

- With spring-loaded terminals[2] **2 1**
- With screw terminals

Order No. supplement for rated control supply voltage U_s

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

[1] Soft starter with screw terminals: Delivery time class ▶ (preferred type). Except delivery time class A for rated operational current 12.5 A at 40 °C.

[2] Soft starters in size S0 with spring-loaded terminals: Price on request.

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 (see Technical Information LV 1 T).

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

3RW40
for standard applications

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	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		200 V	230 V	460 V	575 V								
A	kW	kW	kW	A	hp	hp	hp	hp								kg
Inline circuit, rated operational voltage 200 ... 480 V[1], with thermistor motor protection, rated control supply voltage 24 V AC/DC																
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S0[2]**	B	**3RW40 24-☐TB04**		1	1 unit	131	0.770
25	5.5	**11**	--	23	5	5	**15**	--		B	**3RW40 26-☐TB04**		1	1 unit	131	0.770
32	7.5	**15**	--	29	7.5	7.5	**20**	--		B	**3RW40 27-☐TB04**		1	1 unit	131	0.770
38	11	**18.5**	--	34	10	10	**25**	--		B	**3RW40 28-☐TB04**		1	1 unit	131	0.770
45	11	**22**	--	42	10	15	**30**	--	**S2**	B	**3RW40 36-☐TB04**		1	1 unit	131	1.350
63	18.5	**30**	--	58	15	20	**40**	--		B	**3RW40 37-☐TB04**		1	1 unit	131	1.350
72	22	**37**	--	62	20	20	**40**	--		B	**3RW40 38-☐TB04**		1	1 unit	131	1.350
80	22	**45**	--	73	20	25	**50**	--	**S3**	B	**3RW40 46-☐TB04**		1	1 unit	131	1.900
106	30	**55**	--	98	30	30	**75**	--		B	**3RW40 47-☐TB04**		1	1 unit	131	1.900
Inline circuit, rated operational voltage 400 ... 600 V, with thermistor motor protection, rated control supply voltage 24 V AC/DC																
12.5	--	5.5	**7.5**	11	--	--	7.5	**10**	**S0[2]**	B	**3RW40 24-☐TB05**		1	1 unit	131	0.770
25	--	11	**15**	23	--	--	15	**20**		B	**3RW40 26-☐TB05**		1	1 unit	131	0.770
32	--	15	**18.5**	29	--	--	20	**25**		B	**3RW40 27-☐TB05**		1	1 unit	131	0.770
38	--	18.5	**22**	34	--	--	25	**30**		B	**3RW40 28-☐TB05**		1	1 unit	131	0.770
45	--	22	**30**	42	--	--	30	**40**	**S2**	B	**3RW40 36-☐TB05**		1	1 unit	131	1.350
63	--	30	**37**	58	--	--	40	**50**		B	**3RW40 37-☐TB05**		1	1 unit	131	1.350
72	--	37	**45**	62	--	--	40	**60**		B	**3RW40 38-☐TB05**		1	1 unit	131	1.350
80	--	45	**55**	73	--	--	50	**60**	**S3**	B	**3RW40 46-☐TB05**		1	1 unit	131	1.900
106	--	55	**75**	98	--	--	75	**75**		B	**3RW40 47-☐TB05**		1	1 unit	131	1.900

Order No. supplement for connection types

• With spring-loaded terminals[2]	**2**
• With screw terminals	**1**

1) Soft starter with screw terminals: delivery time class ► (preferred type).

2) Soft starter in size S0 with spring-loaded terminals: Price on request.

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 (see Technical Information LV 1 T).

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

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	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		200 V	230 V	460 V	575 V								
A	kW	kW	kW	A	hp	hp	hp	hp								kg
Inline circuit, rated operational voltage 200 ... 460 V[1]																
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
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
Inline circuit, rated operational voltage 400 ... 600 V[2]																
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
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

- With spring-loaded 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) Soft starter with screw terminals: delivery time class ► (preferred type).

2) Soft starter with screw terminals: delivery time class A.

3) 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 (see Technical Information LV 1 T).

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

3RW40
for standard applications

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 connection**									
	3RW30 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 AC 80 VA, DC 70 W, ON period 0.2 s ... 4 s, switching frequency 60/h									
	3RW40 5. and 3RW40 7.	**S6, S12**	• 24 V ... 30 V AC/DC	▶	**3RU19 00-2AB71**		1	1 unit	101	0.066
			• 110 V ... 127 V AC/DC	▶	**3RU19 00-2AF71**		1	1 unit	101	0.067
			• 220 V ... 250 V AC/DC	▶	**3RU19 00-2AM71**		1	1 unit	101	0.066
	**Mechanical RESET comprising**									
	3RW40 5. and 3RW40 7.	**S6, S12**	• Resetting plunger, holder and former	▶	**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.

For soft starters Type	Size	Motor starter protector Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Link modules for motor starter protectors									
 3RW40 24, 3RW40 26	**S0**	**S0**	►	**3RA19 21-1A**		1	10 units	101	0.028
3RW40 27, 3RW40 28		**S2**	D	**3RA19 31-1D**		1	5 units	101	0.041
3RW40 36	**S2**	**S2**	►	**3RA19 31-1A**		1	5 units	101	0.033
3RW40 37, 3RW40 38		**S3**	D	**3RA19 41-1D**		1	5 units	101	0.042
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. 3RW40 3. 3RW40 4.	**S0** **S2** **S3**			**3ZX10 12-0RW40-1AA1**					on req.
3RW40 5. 3RW40 7.	**S6** **S12**			**3ZX10 12-0RW40-2DA1**					on req.

[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.**

3RW40
for standard applications

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 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 commissioning. 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 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.

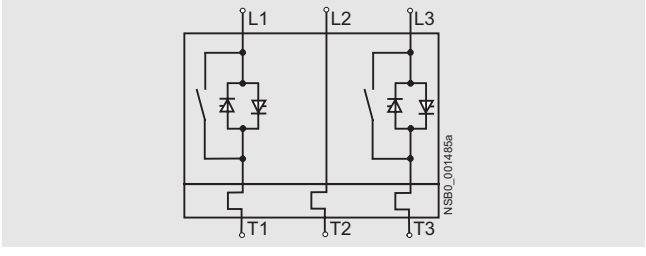
Where long starting times are involved, the integrated solid-state overload relay for heavy starting should not be disconnected. PTC sensors are recommended. This also applies for the smooth ramp-down because during the ramp-down time an additional current loading applies in contrast to free ramp-down.

In the 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.

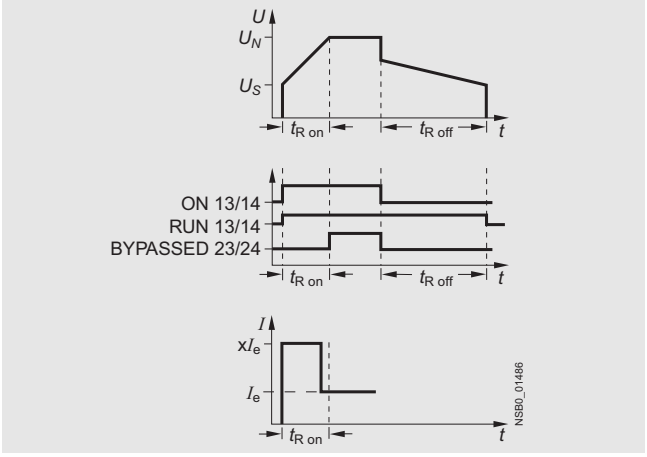
Note:
When induction motors are switched on, voltage drops occur as a rule on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the 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.

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.

You can order the CD-ROM under the following order number:
Order No.: E20001-D1020-P302-V2-7400.

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

3RW44
for High-Feature applications

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. Operating and commissioning can be performed by means of the user-friendly keypad and a menu-prompted, multi-line graphic display with background lighting. The optimized motor ramp-up and ramp-down can be effected 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

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

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 circuit, rated operational voltage 200 ... 460 V[1]																	
29	5.5	**15**	--	--	--	26	7.5	7.5	**15**	--	B	**3RW44 22-□BC□4**		1	1 unit	131	6.500
36	7.5	**18.5**	--	--	--	32	10	10	**20**	--	B	**3RW44 23-□BC□4**		1	1 unit	131	6.500
47	11	**22**	--	--	--	42	10	15	**25**	--	B	**3RW44 24-□BC□4**		1	1 unit	131	6.500
57	15	**30**	--	--	--	51	15	15	**30**	--	B	**3RW44 25-□BC□4**		1	1 unit	131	6.500
77	18.5	**37**	--	--	--	68	20	20	**50**	--	B	**3RW44 26-□BC□4**		1	1 unit	131	6.500
93	22	**45**	--	--	--	82	25	25	**60**	--	B	**3RW44 27-□BC□4**		1	1 unit	131	6.500
Order No. supplement for connection types																	
• With spring-loaded 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-loaded 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 time class ▶ (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 $J_{Load} < 10 \times J_{Motor}$; 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 circuit, rated operational voltage 400 ... 600 V[1]																	
29	--	15	**18.5**	--	--	26	--	--	15	**20**	B	**3RW44 22-□BC□5**		1	1 unit	131	6.500
36	--	18.5	**22**	--	--	32	--	--	20	**25**	B	**3RW44 23-□BC□5**		1	1 unit	131	6.500
47	--	22	**30**	--	--	42	--	--	25	**30**	B	**3RW44 24-□BC□5**		1	1 unit	131	6.500
57	--	30	**37**	--	--	51	--	--	30	**40**	B	**3RW44 25-□BC□5**		1	1 unit	131	6.500
77	--	37	**45**	--	--	68	--	--	50	**50**	B	**3RW44 26-□BC□5**		1	1 unit	131	6.500
93	--	45	**55**	--	--	82	--	--	60	**75**	B	**3RW44 27-□BC□5**		1	1 unit	131	6.500
Order No. supplement for connection types																	
• With spring-loaded 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-loaded 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 class A,
3RW44 5. ... 3RW44 6. Delivery time class 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 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 circuit, 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-loaded 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-loaded 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
for High-Feature applications

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 circuit, rated operational voltage 200 ... 460 V [2]																	
50	15	**22**	--	--	--	45	10	15	**30**	--	B	**3RW44 22-□BC□4**		1	1 unit	131	6.500
62	18.5	**30**	--	--	--	55	15	20	**40**	--	B	**3RW44 23-□BC□4**		1	1 unit	131	6.500
81	22	**45**	--	--	--	73	20	25	**50**	--	B	**3RW44 24-□BC□4**		1	1 unit	131	6.500
99	30	**55**	--	--	--	88	25	30	**60**	--	B	**3RW44 25-□BC□4**		1	1 unit	131	6.500
133	37	**75**	--	--	--	118	30	40	**75**	--	B	**3RW44 26-□BC□4**		1	1 unit	131	6.500
161	45	**90**	--	--	--	142	40	50	**100**	--	B	**3RW44 27-□BC□4**		1	1 unit	131	6.500
Order No. supplement for connection types																	
• With spring-loaded 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-loaded 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 time class ► (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 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 [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 circuit, rated operational voltage 400 ... 600 V [2]																	
50	--	22	**30**	--	--	45	--	--	30	**40**	B	**3RW44 22-□BC□5**		1	1 unit	131	6.500
62	--	30	**37**	--	--	55	--	--	40	**50**	B	**3RW44 23-□BC□5**		1	1 unit	131	6.500
81	--	45	**45**	--	--	73	--	--	50	**60**	B	**3RW44 24-□BC□5**		1	1 unit	131	6.500
99	--	55	**55**	--	--	88	--	--	60	**75**	B	**3RW44 25-□BC□5**		1	1 unit	131	6.500
133	--	75	**90**	--	--	118	--	--	75	**100**	B	**3RW44 26-□BC□5**		1	1 unit	131	6.500
161	--	90	**110**	--	--	142	--	--	100	**125**	B	**3RW44 27-□BC□5**		1	1 unit	131	6.500
Order No. supplement for connection types																	
• With spring-loaded 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-loaded 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 class A
3RW44 5. ... 3RW44 6. Delivery time class 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 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
for High-Feature applications

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 2006 PC communication programs									
 3ZS13 13-1CC10-0YA0	**Soft Starter ES 2006 Smart**	Parameterization and service software for SIRIUS 3RW44 soft starters for parameterizing through the system interface on the device Runs on PC/PG under Windows 2000/XP Without PC cable Type of delivery: CD, single license	►	**3ZS13 13-1CC10-0YA0**		1	1 unit	131	0.230
	Soft Starter ES 2006 Professional	Parameterization and service software for SIRIUS 3RW44 soft starters for parameterizing through the system interface on the device and PROFIBUS DP interface (optional PROFIBUS communications module required) Runs on PC/PG under Windows 2000/XP Without PC cable Type of delivery: CD, single license	►	**3ZS13 13-2CC10-0YA0**		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	B	**3UF7 940-0AA00-0**		1	1 unit	131	0.150
PROFIBUS communications 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 (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		B	**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.

	For soft starters Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. 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.

Spare parts

	For soft starters Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. 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.**

3RW44
for High-Feature applications

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

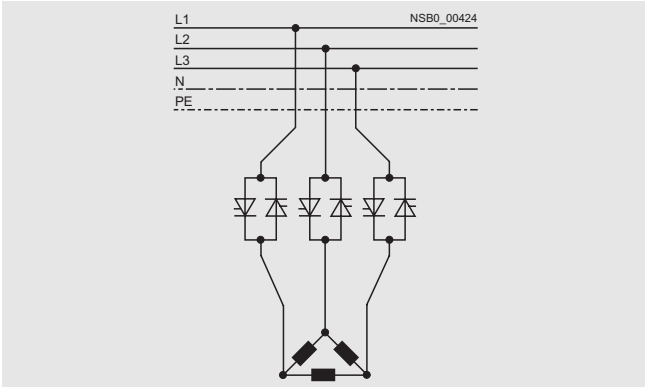
Note:
These tables present sample set values and device sizes. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during commissioning. The soft starter dimensions should be checked where necessary with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

Circuit concept

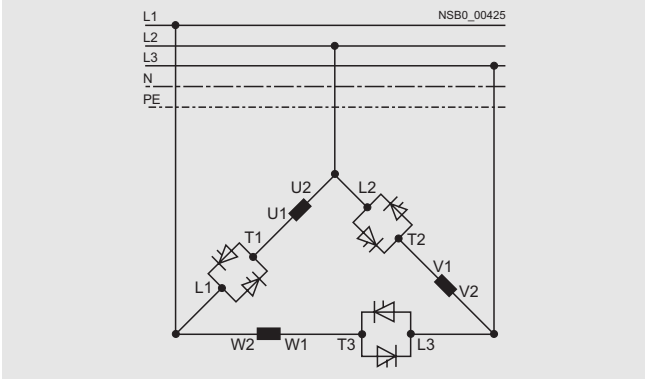
The SIRIUS 3RW44 soft starters can be operated in two different types of circuits.

- 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 circuits.



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 thermistor detector 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 occur as a rule 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 2006 Smart software or for connecting the external display and operator module. If the optional PROFIBUS communications module is used, the 3RW44 soft starter can be integrated in the PROFIBUS network and communicate using the GSD file or Soft Starter ES 2006 Professional 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.

You can order the CD-ROM under the following order number:
Order No.: E20001-D1020-P302-V2-7400.

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

3RW44
for High-Feature applications

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 maintenance issues.

Please direct enquiries and applications to:

Siemens AG
A&D Information and Training Center
Gleiwitzer Strasse 555
D-90475 Nürnberg
Telephone: ++49 911 895 3202
Telefax: ++49 911 895 3275
E-mail: ingeborg.hoier@siemens.com
http://www.siemens.com/sitrain-cd

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 installation kits (link modules, wiring kits and standard mounting rails 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 installation 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 superfluous 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 explained in the technical specifications, must be observed. The selection tables for assemblies up to 250 kW for self-assembly of 400 V, 500 V and 690 V voltages under different start-up conditions (Class 10, 20) can be found in the Technical Information LV 1 T.

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 (VDE 0660 Part 102) 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.

- 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 "2" coordination.

- Type of coordination "2"

There must be no damage to the overload release or to any other components after a short-circuit has been cleared. The 3RA1 fuseless load feeder can resume operation without needing to be renewed. At most, welding of the contactor contacts is permissible if they can be disconnected easily without any significant deformation.

3RA11 Direct-On-Line Starters

For snapping onto standard mounting rails or for screw mounting

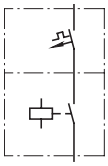
Selection and ordering data

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 mounting

- Motor starter protector and contactor are linked electrically and mechanically by means of a link module
- As from size S2 with standard mounting rail 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		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 +[6]	A	**3RA11 10-0BA15-1AP0**		1	1 unit	101	0.454
	0.06	0.2	0.18 ... 0.25	11-0CA10			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 +[6]	A	**3RA11 20-1CA24-0AP0**		1	1 unit	101	0.720
	1.1	2.7	2.2 ... 3.2	21-1DA10			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 + 32-1AA00	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		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 + 42-1AA00		Size S3 is only available for self-assembly.					
	37	66	57 ... 75	41-4KA10	45-1AP00								
	45	80	70 ... 90	41-4LA10	46-1AP00								
	45	80	80 ... 100	41-4MA10									

[1] Size S00 also suitable for 60 Hz.

[2] Standard mounting rail adapter is also suitable for screw mounting.

[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 mounting 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.**

For snapping onto standard mounting rails or for screw mounting

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

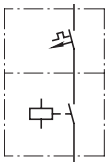
*** You can order this quantity or a multiple thereof.**

3RA11 Direct-On-Line Starters

For snapping onto standard mounting rails or for screw mounting

3RA11 10 3RA11 20 3RA11 30

Direct start



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

- Motor starter protector and contactor are linked electrically and mechanically by means of a link module
- As from size S2 with standard mounting rail 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**		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 mounting.

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 mounting 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.**

For snapping onto standard mounting rails or for screw mounting

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

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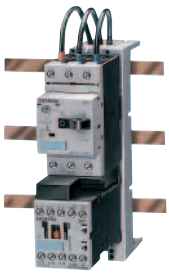
*** You can order this quantity or a multiple thereof.**

3RA11 Direct-On-Line Starters

For busbar systems

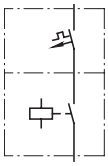
Selection and ordering data



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, no busbar adapter available.					
	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.**

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		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

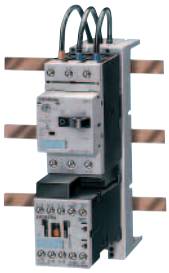
40 mm **C**
60 mm **D**

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

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

3RA11 Direct-On-Line Starters

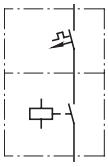
For busbar systems



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		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.**

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		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.

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

3RA12 Reversing Starters

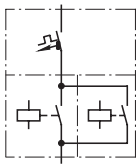
For snapping onto standard mounting rails or for screw mounting

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 mounting

- 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		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) Installation kit for standard mounting rail adapter also suitable for screw mounting.

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 LV 1 T Technical Information.

7) Wiring kit necessary: for screw mounting 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.**

For snapping onto standard mounting rails or for screw mounting

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		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) Installation kit for standard mounting rail adapter also suitable for screw mounting.

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 mounting 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.**

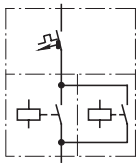
3RA12 Reversing Starters

For snapping onto standard mounting rails or for screw mounting

3RA12 10

3RA12 20

Reversing duty



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

- 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 contact.	+ 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) Installation kit for standard mounting rail adapter also suitable for screw mounting.

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 mounting 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.**

For snapping onto standard mounting rails or for screw mounting

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		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ 2 contact.	+ 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) Installation kit for standard mounting rail adapter also suitable for screw mounting.

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 mounting 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").

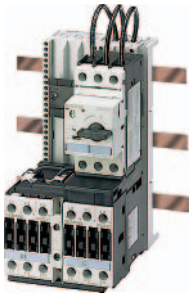
*** You can order this quantity or a multiple thereof.**

3RA12 Reversing Starters

For busbar systems

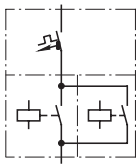
Selection and ordering data

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		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, no busbar adapter available					
	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.**

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		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.

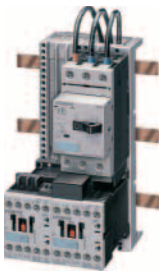
2) RS = Reversing duty for busbar systems.

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

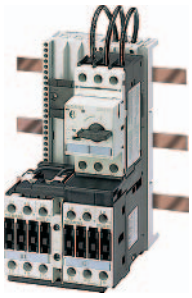
*** You can order this quantity or a multiple thereof.**

3RA12 Reversing Starters

For busbar systems

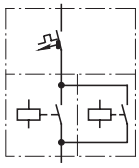


3RA12 10



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		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, no 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.**

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		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output *P*	Motor current *I* (guide value)		Motor starter protector	+ 2 contact.	+ 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").

6

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

Accessories

For 3RA1 direct-on-line and reversing starters

Selection and ordering data

	For motor starter protector Size	For contactor Size	Version		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Motor starter protectors[1]											
 3RV19 01-1E			**Auxiliary switches**								
	S00 ... S3	--	Transverse	1 CO contact	▶	**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 releases** 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".

* You can order this quantity or a multiple thereof.

For 3RA1 direct-on-line and reversing starters

For contactor Type	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. kg
Surge suppressors without LED									
Size S00									
	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									
	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 ... 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 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


3RT19 16-1DG00


3RT19 26-1B.00


3RT19 36-1C.00

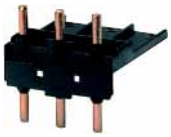
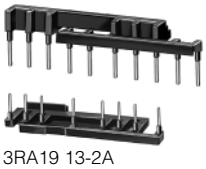
[1] Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

[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.**

Accessories

For 3RA1 direct-on-line and reversing starters

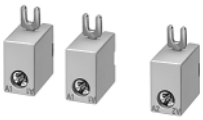
	For motor starter protector Size	For contactor Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Link modules										
 3RA19 11-1A			Electrical and mechanical link between motor starter protector and contactor.							
			Single-unit packaging							
			Actuating 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
 3RA19 21-1A	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
			Multi-unit packaging							
			Actuating voltage of contactor							
 3RA19 31-1A	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	▶	**3RA19 13-2A**		1	1 unit	101	0.040
		S0	reversing contactors.	▶	**3RA19 23-2A**		1	1 unit	101	0.060
		S2	Can be combined with link module.	▶	**3RA19 33-2A**		1	1 unit	101	0.120
		S3	For size S00:	▶	**3RA19 43-2A**		1	1 unit	101	0.300
			Optionally with integrated electrical and mechanical locking. For sizes S0 to S3: Mechanical locking device must be ordered separately.							
			Wye-delta starting							
	--	S00	Electrical and mechanical link for	▶	**3RA19 13-2B**		1	1 unit	101	0.050
		S0	three contactors of same size	▶	**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.

For 3RA1 direct-on-line and reversing starters

For motor starter protector Size	For contactor Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Mechanical interlocks									
--	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									
--	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									
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 mounting	▶	**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 mounting	▶	**3RA19 42-1A**		1	5 units	101	0.238
Side modules									
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									
S0	S0	Also suitable for screw mounting.	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

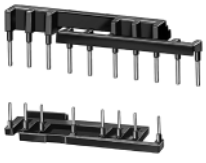

3RA19 24-2B


3RA19 23-3B


3RA19 32 3RA19 22


3RA19 02


3RA19 33-1B



* You can order this quantity or a multiple thereof.

Accessories

For 3RA1 direct-on-line and reversing starters

	For motor starter protector Size	For contactor Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. 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
		--	**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.	▶	**8US10 51-5CM47**		1	1 unit	143	0.193
		--		▶	**8US12 51-5CM47**		1	1 unit	143	0.190
 3RA19 11-2E		--	**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 mounting										
  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)	C	**3RB19 00-0B**		100	10 units	101	0.100
Busbar adapters										
 8US12 51-5DM07				Busbar center-to-center clearance mm						
	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 ilcluding screw and spacer	60	**8US12 60-5AP00**		1	1 unit	143	0.243

* You can order this quantity or a multiple thereof.

For 3RA1 direct-on-line and reversing starters

	For motor starter protector Size	For contactor Size	Version		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. 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											
				Busbar center-to-center clearance mm							
	S00, S0	S00	Consisting of wiring kit,	40	A	**3RA19 13-1C**		1	1 unit	101	0.433
	S0	S0	busbar adapter,		A	**3RA19 23-1C**		1	1 unit	101	0.472
	S2	S2	device holder, and		A	**3RA19 33-1C**		1	1 unit	101	0.738
	S00, S0	S00	side module.	60	A	**3RA19 13-1D**		1	1 unit	101	0.431
	S0	S0	Link modules and		A	**3RA19 23-1D**		1	1 unit	101	0.475
	S2	S2	mechanical locking devices to be ordered separately. Only for size S00 is mechanical locking always included.		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-interminals, 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 units	143	0.100

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

Infeed System

3RV19 infeed system

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 system up to size S0.

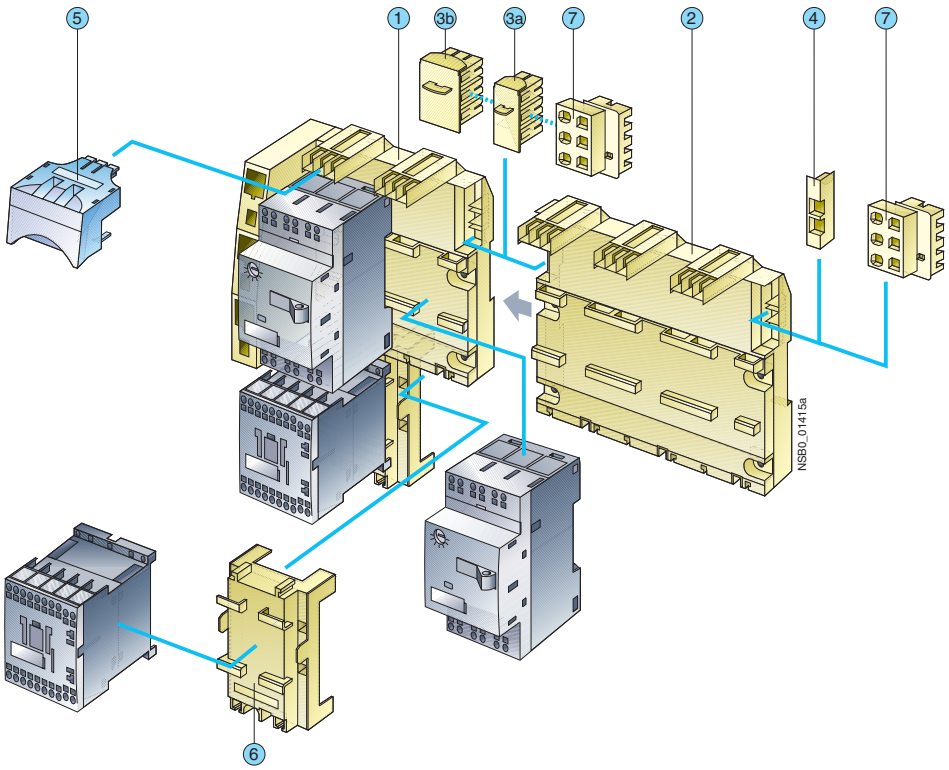
The devices with spring-type connections are available in the SIRIUS modular system up to 5.5 kW at 400 V AC. The motor starter protectors and load feeders with screw terminals for sizes S00 and S0 can also be integrated in the system at the same time.

The system is based on a basic module complete with a lateral incoming unit (3-phase busbar with infeed). This infeed with spring-loaded 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 3-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 according 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 loop-through 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, 2-phase and 3-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

① *3-phase busbars with infeed*

A 3-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 connection. 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 *3-phase busbars for system expansion*

The 3-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 3-phase busbars. The current carrying capacity of this plug equals 63 A. One expansion plug is supplied with each 3-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 3-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 3-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 3-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 3-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 3-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-loaded 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-loaded terminals and are simply snapped onto the 3-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 3-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, 2-phase and 3-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, 2-phase and 3-phase components onto the infeed system.

3RV19 infeed system

Selection and ordering data

	Type	Version	For circuit breakers Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
3-phase busbars with infeed										
 3RV19 17-1A	**3-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
3-phase busbars for system expansion										
 3RV19 17-4B	**3-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 contactor 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 system

	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, 2-phase and 3-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 3-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. 3-phase busbars for system expansion.

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

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

Fuseless load feeders

Application

The 3RA71 safety load feeders are offered for direct start. They are available with actuating voltages of 230 V 50/60 Hz (Category 3) and 24 V DC (Categories 3 and 4). Depending on the external circuit, choice of actuator and its position on the machine, Categories 3 or 4 according to EN 954-1 or SIL 2 or 3 (Safety Integrity Level) according to IEC 61508 can be achieved.

The product range of safety load feeders also contains expansion units with and without time delays. These expansion units can only be used in combination with a basic unit. Load feeders can be configured in Stop Category 1 thanks to expansion units with time delays from 0.05 to 3 s, or 0.5 to 30 s.

Types of coordination

EN 60947-4-1 (VDE 0660 Part 102) 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.

- Type of coordination "2"

  There must be no damage to the overload release or to any other component after a short-circuit has been cleared. The 3RA71 fuseless load feeder can resume operation without needing to be renewed. At most, welding of the contactor contacts is permissible if they can be disconnected easily without any significant deformation. Classification of a machine in categories according to EN 954-1.

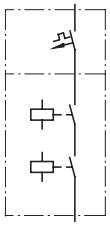
Selection and ordering data

Rated control supply voltage 230 V AC, 50/60 Hz for mounting onto 35 mm standard mounting rail

- Motor starter protectors, contactors and safety electronics pre-wired and certified up to Category 3 according to EN 954-1.
- Auxiliary switches on the motor starter protector and the contactor can be easily fitted thanks to the SIRIUS modular system.

3RA71 02

Direct start



Size	Standard induction motor[1] 4-pole at 400 V AC		Setting range for thermal overload release	DT	Basic units, category 3		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Rated power *P*	Motor current *I*			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")										
S00	0.04	0.16	0.11 … 0.16	B	**3RA71 01-0AA17-0AL2**		1	1 unit	101	1.200
	0.06	0.2	0.14 … 0.2	B	**3RA71 01-0BA17-0AL2**		1	1 unit	101	1.200
	0.06	0.2	0.18 … 0.25	B	**3RA71 01-0CA17-0AL2**		1	1 unit	101	1.200
	0.09	0.3	0.22 … 0.32	B	**3RA71 01-0DA17-0AL2**		1	1 unit	101	1.200
	0.09	0.3	0.28 … 0.4	B	**3RA71 01-0EA17-0AL2**		1	1 unit	101	1.200
	0.12	0.4	0.35 … 0.5	B	**3RA71 01-0FA17-0AL2**		1	1 unit	101	1.200
	0.18	0.6	0.45 … 0.63	B	**3RA71 01-0GA17-0AL2**		1	1 unit	101	1.200
	0.25	0.8	0.55 … 0.8	B	**3RA71 01-0HA17-0AL2**		1	1 unit	101	1.200
	0.25	0.8	0.7 … 1	B	**3RA71 01-0JA17-0AL2**		1	1 unit	101	1.200
	0.37	1.1	0.9 … 1.25	B	**3RA71 01-0KA17-0AL2**		1	1 unit	101	1.200
	0.55	1.5	1.1 … 1.6	B	**3RA71 01-1AA17-0AL2**		1	1 unit	101	1.200
	0.75	1.9	1.4 … 2	B	**3RA71 01-1BA17-0AL2**		1	1 unit	101	1.200
S0	0.75	1.9	1.8 … 2.5	B	**3RA71 02-1CA26-0AL2**		1	1 unit	101	1.200
	1.1	2.7	2.2 … 3.2	B	**3RA71 02-1DA26-0AL2**		1	1 unit	101	1.200
	1.5	3.6	2.8 … 4	B	**3RA71 02-1EA26-0AL2**		1	1 unit	101	1.200
	1.5	3.6	3.5 … 5	B	**3RA71 02-1FA26-0AL2**		1	1 unit	101	1.200
	2.2	5.2	4.5 … 6.3	B	**3RA71 02-1GA26-0AL2**		1	1 unit	101	1.200
	3	6.8	5.5 … 8	B	**3RA71 02-1HA26-0AL2**		1	1 unit	101	1.200
	4	9	7 … 10	B	**3RA71 02-1JA26-0AL2**		1	1 unit	101	1.200
	5.5	11.5	9 … 12.5	B	**3RA71 02-1KA26-0AL2**		1	1 unit	101	1.200
	7.5	15.5	11 … 16	B	**3RA71 02-4AA26-0AL2**		1	1 unit	101	1.200
	7.5	15.5	14 … 20	B	**3RA71 02-4BA26-0AL2**		1	1 unit	101	1.200
	7.5	15.5	17 … 22	B	**3RA71 02-4CA26-0AL2**		1	1 unit	101	1.200

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

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

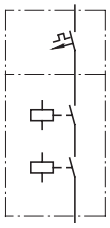
Fuseless load feeders

Rated control supply voltage 24 V DC
for mounting onto 35 mm standard mounting rail

- Motor starter protectors, contactors and safety electronics pre-wired and certified up to Category 3 according to EN 954-1.
- Auxiliary switches on the motor starter protector and the contactor can be easily fitted thanks to the SIRIUS modular system.
- Expansion units for multiple load feeders in one safety circuit.

3RA71 02

Direct start



Size	Standard induction motor[1] 4-pole at 400 V AC		Setting range for thermal overload release	DT	Basic units, category 3		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Rated power *P*	Motor current *I*			Order No.	Price per PU				
	kW	A	A							kg
Type of coordination "2" at I_q = 50 kA at 400 V										
S00	0.06	0.2	0.11 … 0.16	B	**3RA71 01-0AA17-0AB4**		1	1 unit	101	0.820
	0.06	0.2	0.14 … 0.2	B	**3RA71 01-0BA17-0AB4**		1	1 unit	101	0.820
	0.06	0.2	0.18 … 0.25	B	**3RA71 01-0CA17-0AB4**		1	1 unit	101	0.820
	0.09	0.3	0.22 … 0.32	A	**3RA71 01-0DA17-0AB4**		1	1 unit	101	0.820
	0.09	0.3	0.28 … 0.4	A	**3RA71 01-0EA17-0AB4**		1	1 unit	101	0.820
	0.12	0.4	0.35 … 0.5	A	**3RA71 01-0FA17-0AB4**		1	1 unit	101	0.820
	0.18	0.6	0.45 … 0.63	B	**3RA71 01-0GA17-0AB4**		1	1 unit	101	0.820
	0.25	0.8	0.55 … 0.8	B	**3RA71 01-0HA17-0AB4**		1	1 unit	101	0.820
	0.25	0.8	0.7 … 1	B	**3RA71 01-0JA17-0AB4**		1	1 unit	101	0.820
	0.37	1.1	0.9 … 1.25	B	**3RA71 01-0KA17-0AB4**		1	1 unit	101	0.820
	0.55	1.5	1.1 … 1.6	B	**3RA71 01-1AA17-0AB4**		1	1 unit	101	0.820
	0.75	1.9	1.4 … 2	B	**3RA71 01-1BA17-0AB4**		1	1 unit	101	0.820
S0	0.75	2.7	1.8 … 2.5	B	**3RA71 02-1CA26-0AB4**		1	1 unit	101	1.200
	1.1	2.7	2.2 … 3.2	B	**3RA71 02-1DA26-0AB4**		1	1 unit	101	1.200
	1.5	3.6	2.8 … 4	B	**3RA71 02-1EA26-0AB4**		1	1 unit	101	1.200
	1.5	3.6	3.5 … 5	A	**3RA71 02-1FA26-0AB4**		1	1 unit	101	1.200
	2.2	5.2	4.5 … 6.3	B	**3RA71 02-1GA26-0AB4**		1	1 unit	101	1.200
	3	6.8	5.5 … 8	A	**3RA71 02-1HA26-0AB4**		1	1 unit	101	1.200
	4	9	7 … 10	A	**3RA71 02-1JA26-0AB4**		1	1 unit	101	1.200
	5.5	11.5	9 … 12.5	A	**3RA71 02-1KA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	11 … 16	B	**3RA71 02-4AA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	14 … 20	B	**3RA71 02-4BA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	17 … 22	B	**3RA71 02-4CA26-0AB4**		1	1 unit	101	1.200

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

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

Fuseless load feeders

Size	Standard induction motor[1] 4-pole at 400 V AC Rated power P	Motor current I	Setting range for thermal overload release	DT	**Basic units, category 4** Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	kW	A	A							kg
Type of coordination "2" at I_q = 50 kA at 400 V										
S00	0.06	0.2	0.11 ... 0.16	B	**3RA71 11-0AA17-0AB4**		1	1 unit	101	0.820
	0.06	0.2	0.18 ... 0.25	B	**3RA71 11-0CA17-0AB4**		1	1 unit	101	0.820
	0.09	0.3	0.22 ... 0.32	B	**3RA71 11-0DA17-0AB4**		1	1 unit	101	0.820
	0.09	0.3	0.28 ... 0.4	B	**3RA71 11-0EA17-0AB4**		1	1 unit	101	0.820
	0.12	0.4	0.35 ... 0.5	B	**3RA71 11-0FA17-0AB4**		1	1 unit	101	0.820
	0.18	0.6	0.45 ... 0.63	B	**3RA71 11-0GA17-0AB4**		1	1 unit	101	0.820
	0.25	0.8	0.55 ... 0.8	B	**3RA71 11-0HA17-0AB4**		1	1 unit	101	0.820
	0.25	0.8	0.7 ... 1	B	**3RA71 11-0JA17-0AB4**		1	1 unit	101	0.820
	0.37	1.1	0.9 ... 1.25	B	**3RA71 11-0KA17-0AB4**		1	1 unit	101	0.820
	0.55	1.5	1.1 ... 1.6	B	**3RA71 11-1AA17-0AB4**		1	1 unit	101	0.820
	0.75	1.9	1.4 ... 2	B	**3RA71 11-1BA17-0AB4**		1	1 unit	101	0.820
S0	0.75	2.7	1.8 ... 2.5	B	**3RA71 12-1CA26-0AB4**		1	1 unit	101	1.200
	1.1	2.7	2.2 ... 3.2	B	**3RA71 12-1DA26-0AB4**		1	1 unit	101	1.200
	1.5	3.6	2.8 ... 4	B	**3RA71 12-1EA26-0AB4**		1	1 unit	101	1.200
	1.5	3.6	3.5 ... 5	B	**3RA71 12-1FA26-0AB4**		1	1 unit	101	1.200
	2.2	5.2	4.5 ... 6.3	B	**3RA71 12-1GA26-0AB4**		1	1 unit	101	1.200
	3	6.8	5.5 ... 8	B	**3RA71 12-1HA26-0AB4**		1	1 unit	101	1.200
	4	9	7 ... 10	B	**3RA71 12-1JA26-0AB4**		1	1 unit	101	1.200
	5.5	11.5	9 ... 12.5	B	**3RA71 12-1KA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	11 ... 16	B	**3RA71 12-4AA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	14 ... 20	B	**3RA71 12-4BA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	17 ... 22	B	**3RA71 12-4CA26-0AB4**		1	1 unit	101	1.200

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

Size	Standard induction motor[1] 4-pole at 400 V AC Rated power P	Motor current I	Setting range for thermal overload release	DT	**Expansion units, category as for basic unit** Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	kW	A	A							kg
Type of coordination "2" at I_q = 50 kA at 400 V										
S00	0.06	0.2	0.11 ... 0.16	B	**3RA71 21-0AA17-0AB4**		1	1 unit	101	1.200
	0.06	0.2	0.14 ... 0.2	B	**3RA71 21-0BA17-0AB4**		1	1 unit	101	1.200
	0.06	0.2	0.18 ... 0.25	B	**3RA71 21-0CA17-0AB4**		1	1 unit	101	1.200
	0.09	0.3	0.22 ... 0.32	B	**3RA71 21-0DA17-0AB4**		1	1 unit	101	1.200
	0.09	0.3	0.28 ... 0.4	B	**3RA71 21-0EA17-0AB4**		1	1 unit	101	1.200
	0.12	0.4	0.35 ... 0.5	B	**3RA71 21-0FA17-0AB4**		1	1 unit	101	1.200
	0.18	0.6	0.45 ... 0.63	B	**3RA71 21-0GA17-0AB4**		1	1 unit	101	1.200
	0.25	0.8	0.55 ... 0.8	B	**3RA71 21-0HA17-0AB4**		1	1 unit	101	1.200
	0.25	0.8	0.7 ... 1	B	**3RA71 21-0JA17-0AB4**		1	1 unit	101	1.200
	0.37	1.1	0.9 ... 1.25	B	**3RA71 21-0KA17-0AB4**		1	1 unit	101	1.200
	0.55	1.5	1.1 ... 1.6	B	**3RA71 21-1AA17-0AB4**		1	1 unit	101	1.200
	0.75	1.9	1.4 ... 2	B	**3RA71 21-1BA17-0AB4**		1	1 unit	101	1.200
S0	0.75	2.7	1.8 ... 2.5	B	**3RA71 22-1CA26-0AB4**		1	1 unit	101	1.200
	1.1	2.7	2.2 ... 3.2	B	**3RA71 22-1DA26-0AB4**		1	1 unit	101	1.200
	1.5	3.6	2.8 ... 4	B	**3RA71 22-1EA26-0AB4**		1	1 unit	101	1.200
	1.5	3.6	3.5 ... 5	B	**3RA71 22-1FA26-0AB4**		1	1 unit	101	1.200
	2.2	5.2	4.5 ... 6.3	B	**3RA71 22-1GA26-0AB4**		1	1 unit	101	1.200
	3	6.8	5.5 ... 8	B	**3RA71 22-1HA26-0AB4**		1	1 unit	101	1.200
	4	9	7 ... 10	B	**3RA71 22-1JA26-0AB4**		1	1 unit	101	1.200
	5.5	11.5	9 ... 12.5	B	**3RA71 22-1KA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	11 ... 16	B	**3RA71 22-4AA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	14 ... 20	B	**3RA71 22-4BA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	17 ... 22	B	**3RA71 22-4CA26-0AB4**		1	1 unit	101	1.200

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

* You can order this quantity or a multiple thereof.

Size	Standard induction motor[1] 4-pole at 400 V AC		Setting range for thermal overload release	DT	Expansion units, time-delayed 0.05 ... 3 s		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Rated power P	Motor current I			Order No.	Price per PU				
	kW	A	A							kg
Type of coordination "2" at I_q = 50 kA at 400 V										
S00	0.06	0.2	0.11 ... 0.16	B	**3RA71 31-0AA17-0AB4**		1	1 unit	101	0.820
	0.06	0.2	0.14 ... 0.2	B	**3RA71 31-0BA17-0AB4**		1	1 unit	101	0.820
	0.06	0.2	0.18 ... 0.25	B	**3RA71 31-0CA17-0AB4**		1	1 unit	101	0.820
	0.09	0.3	0.22 ... 0.32	B	**3RA71 31-0DA17-0AB4**		1	1 unit	101	0.820
	0.09	0.3	0.28 ... 0.4	B	**3RA71 31-0EA17-0AB4**		1	1 unit	101	0.820
	0.12	0.4	0.35 ... 0.5	B	**3RA71 31-0FA17-0AB4**		1	1 unit	101	0.820
	0.18	0.6	0.45 ... 0.63	B	**3RA71 31-0GA17-0AB4**		1	1 unit	101	0.820
	0.25	0.8	0.55 ... 0.8	B	**3RA71 31-0HA17-0AB4**		1	1 unit	101	0.820
	0.25	0.8	0.7 ... 1	B	**3RA71 31-0JA17-0AB4**		1	1 unit	101	0.820
	0.37	1.1	0.9 ... 1.25	B	**3RA71 31-0KA17-0AB4**		1	1 unit	101	0.820
	0.55	1.5	1.1 ... 1.6	B	**3RA71 31-1AA17-0AB4**		1	1 unit	101	0.820
	0.75	1.9	1.4 ... 2	B	**3RA71 31-1BA17-0AB4**		1	1 unit	101	0.820
S0	0.75	2.7	1.8 ... 2.5	B	**3RA71 32-1CA26-0AB4**		1	1 unit	101	1.200
	1.1	2.7	2.2 ... 3.2	B	**3RA71 32-1DA26-0AB4**		1	1 unit	101	1.200
	1.5	3.6	2.8 ... 4	B	**3RA71 32-1EA26-0AB4**		1	1 unit	101	1.200
	1.5	3.6	3.5 ... 5	B	**3RA71 32-1FA26-0AB4**		1	1 unit	101	1.200
	2.2	5.2	4.5 ... 6.3	B	**3RA71 32-1GA26-0AB4**		1	1 unit	101	1.200
	3	6.8	5.5 ... 8	B	**3RA71 32-1HA26-0AB4**		1	1 unit	101	1.200
	4	9	7 ... 10	B	**3RA71 32-1JA26-0AB4**		1	1 unit	101	1.200
	5.5	11.5	9 ... 12.5	B	**3RA71 32-1KA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	11 ... 16	B	**3RA71 32-4AA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	14 ... 20	B	**3RA71 32-4BA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	17 ... 22	B	**3RA71 32-4CA26-0AB4**		1	1 unit	101	1.200

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

Size	Standard induction motor[1] 4-pole at 400 V AC		Setting range for thermal overload release	DT	Expansion units, time-delayed 0.5 ... 30 s		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Rated power P	Motor current I			Order No.	Price per PU				
	kW	A	A							kg
Type of coordination "2" at I_q = 50 kA at 400 V										
S00	0.06	0.2	0.11 ... 0.16	B	**3RA71 41-0AA17-0AB4**		1	1 unit	101	0.820
	0.06	0.2	0.14 ... 0.2	B	**3RA71 41-0BA17-0AB4**		1	1 unit	101	0.820
	0.06	0.2	0.18 ... 0.25	B	**3RA71 41-0CA17-0AB4**		1	1 unit	101	0.820
	0.09	0.3	0.22 ... 0.32	B	**3RA71 41-0DA17-0AB4**		1	1 unit	101	0.820
	0.09	0.3	0.28 ... 0.4	B	**3RA71 41-0EA17-0AB4**		1	1 unit	101	0.820
	0.12	0.4	0.35 ... 0.5	B	**3RA71 41-0FA17-0AB4**		1	1 unit	101	0.820
	0.18	0.6	0.45 ... 0.63	B	**3RA71 41-0GA17-0AB4**		1	1 unit	101	0.820
	0.25	0.8	0.55 ... 0.8	B	**3RA71 41-0HA17-0AB4**		1	1 unit	101	0.820
	0.25	0.8	0.7 ... 1	B	**3RA71 41-0JA17-0AB4**		1	1 unit	101	0.820
	0.37	1.1	0.9 ... 1.25	B	**3RA71 41-0KA17-0AB4**		1	1 unit	101	0.820
	0.55	1.5	1.1 ... 1.6	B	**3RA71 41-1AA17-0AB4**		1	1 unit	101	0.820
	0.75	1.9	1.4 ... 2	B	**3RA71 41-1BA17-0AB4**		1	1 unit	101	0.820
S0	0.75	2.7	1.8 ... 2.5	B	**3RA71 42-1CA26-0AB4**		1	1 unit	101	1.200
	1.1	2.7	2.2 ... 3.2	B	**3RA71 42-1DA26-0AB4**		1	1 unit	101	1.200
	1.5	3.6	2.8 ... 4	B	**3RA71 42-1EA26-0AB4**		1	1 unit	101	1.200
	1.5	3.6	3.5 ... 5	B	**3RA71 42-1FA26-0AB4**		1	1 unit	101	1.200
	2.2	5.2	4.5 ... 6.3	B	**3RA71 42-1GA26-0AB4**		1	1 unit	101	1.200
	3	6.8	5.5 ... 8	B	**3RA71 42-1HA26-0AB4**		1	1 unit	101	1.200
	4	9	7 ... 10	B	**3RA71 42-1JA26-0AB4**		1	1 unit	101	1.200
	5.5	11.5	9 ... 12.5	B	**3RA71 42-1KA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	11 ... 16	B	**3RA71 42-4AA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	14 ... 20	B	**3RA71 42-4BA26-0AB4**		1	1 unit	101	1.200
	7.5	15.5	17 ... 22	B	**3RA71 42-4CA26-0AB4**		1	1 unit	101	1.200

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

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

Fused load feeders

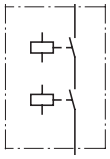
Selection and ordering data

Rated control supply voltage 230 V AC, 50/60 Hz
for mounting onto 35 mm standard mounting rail

- For the separate mounting of contactors with fuses.
- Contactors and safety electronics pre-assembled, pre-wired and certified up to category 3 according to EN 954-1.
- Auxiliary switches on the contactor can be easily fitted thanks to the SIRIUS modular system.

3RA71 00

Direct start



Size	Category according to EN 954-1	Standard induction motor[1] 4-pole at 400 V AC		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Rated power *P*	Motor current *I*							
		kW	A							kg
S0	**3**	11	22.5	B	**3RA71 00-5AA26-0AL2**		1	1 unit	101	1.200

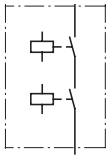
[1] Selection depends on the correct startup and rated data of the protected motor.

Rated control supply voltage 24 V DC
for mounting onto 35 mm standard mounting rail

- For the separate mounting of contactors with fuses.
- Contactors and safety electronics pre-assembled, pre-wired and certified up to category 4 according to EN 954-1.
- Auxiliary switches on the contactor can be easily fitted thanks to the SIRIUS modular system.
- Expansion units for multiple load feeders in one safety circuit.

3RA71 00

Direct start



Size	Category according to EN 954-1	Standard induction motor[1] 4-pole at 400 V AC		Device type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Rated power *P*	Motor current *I*								
		kW	A								kg
S0	**3**	11	22.5	Basic unit	B	**3RA71 00-5AA26-0AB4**		1	1 unit	101	1.200
	4	11	22.5	Basic unit	B	**3RA71 10-5AA26-0AB4**		1	1 unit	101	1.200
	As basic unit			Expansion unit	B	**3RA71 20-5AA26-0AB4**		1	1 unit	101	1.200
	As basic unit			Expansion unit, time-delayed 0.05 ... 3 s	B	**3RA71 30-5AA26-0AB4**		1	1 unit	101	1.200
	As basic unit			Expansion unit, time-delayed 0.5 ... 30 s	B	**3RA71 40-5AA26-0AB4**		1	1 unit	101	1.200

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

* You can order this quantity or a multiple thereof.

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 three-phase 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 motor starter protector 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 total 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 relay and a solid-state motor starter protector 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 variants), the fact that the motor starter protector 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 programmable 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

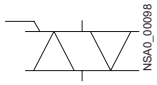
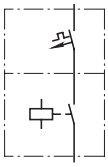
The compact starters are also equipped with two spare inputs.

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-i addresses, reduce the space requirement and to build up logical groupings.

Compact starters (400 V AC)

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	1.766
	ERS compact starters Solid-state reversing starter with two spare digital inputs	B	**3RK1 322-□□S12-1AA□**		1	1 unit	121	1.797
	Order No. supplement for			Additional price				
	Induction motor 4-pole at 400 V AC Standard output P / *Setting range of the electronic trip unit*							
	kW / *A*							
	0.18 ... 0.8 / 0.6 ... 2.18		**0A**	**x**				
	0.75 ... 2.2 / 2.0 ... 5.95		**0B**	**x**				
 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 / *Setting range of the electronic trip unit*							
	kW / *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	0.026
	M12 angular coupler plugs For connecting actuators or sensors 5-pole	A	**3RX8 000-0CE55**		1	1 unit	574	0.027
	M12 Y-shaped coupler plugs For connecting two sensors with a single cable 5-pole	A	**6ES7 194-1KA01-0XA0**		1	1 unit	2F0	0.046
	M12 sealing caps For closing unused input or output sockets	►	**3RX9 802-0AA00**		100	10 units	121	0.100

1) x = additional price on request

* You can order this quantity or a multiple thereof.

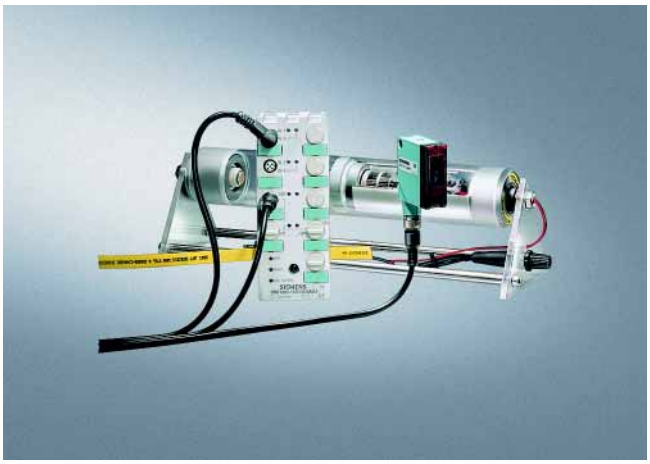
	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Accessories for AS-Interface compact starters (Han Q 8/0)							
 3RK1 902-0CA00	**Connector sets for energy supply, 9-pole** Comprising 1 connector enclosure with Pg16 gland Female insert, 9-pole 6 female contacts							
	• Suitable for cable 4 × 2.5 mm², 6 × 2.5 mm²	B	**3RK1 902-0CA00**		1	1 unit	121	0.057
	• Suitable for cable 4 × 4 mm²/6 × 4 mm²	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 mm²/6 × 2.5 mm²	B	**3RK1 902-0CC00**		1	1 unit	121	0.059
	• Suitable for cable 4 × 4 mm²/6 × 4 mm²	B	**3RK1 902-0CD00**		1	1 unit	121	0.055
 3RK1 902-0AH00	**Connector sets for motor connections, 1.5 mm², 9-pole** Comprising 1 connector enclosure with Pg16 gland 1 pin insert, 9-pole 8 male contacts 1.5 mm²	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 mm², 0.12 m long	B	**3RK1 902-0CH00**		1	1 unit	121	0.206
	• 4 × 4 mm², 0.12 m long	B	**3RK1 902-0CG00**		1	1 unit	121	0.165
	Motor connection cables, 4 x 1.5 mm² 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 mm² 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 mm²	B	**3RK1 902-0AH00**		1	1 unit	121	0.576
	• For male and female contacts 1.5 ... 4 mm²	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
	Miscellaneous accessories							
 3RK1 902-0AP00	**Manuals for AS-Interface compact starters** German, English	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	B	**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	B	**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

6

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

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 now 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.

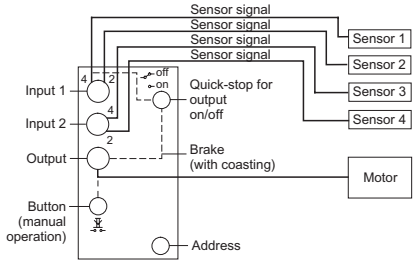
Note:
Concerning double and reversing starters: *If an input with the quick-stop function receives a "High" signal, the corresponding output (e.g. quick-stop input 1 –> output 1) is switched off within the device (the motor is braked). The manual key function (Key 1/2) for local operation is only permitted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

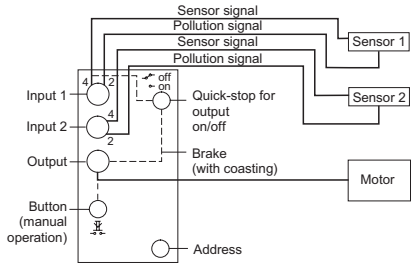
Applications

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

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

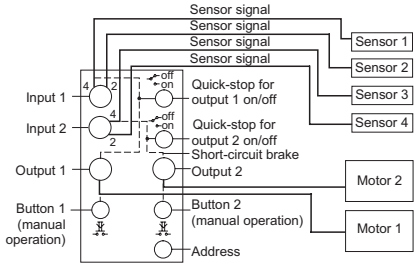


2nd possibility: Connection to a maximum of two sensors with pollution indication

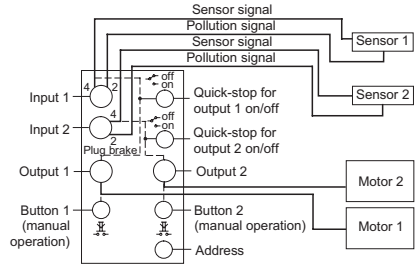


Double direct starter with brake
(with adjustable quick-stop function)

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

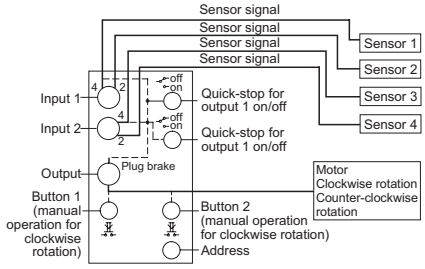


2nd possibility: Connection to a maximum of two sensors with pollution indication

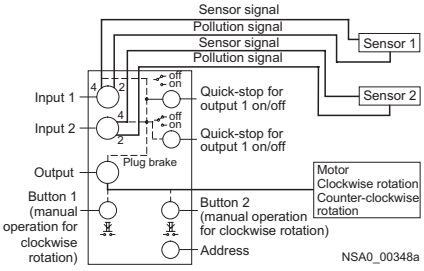


Single reversing starter with brake
(with adjustable quick-stop function)

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.

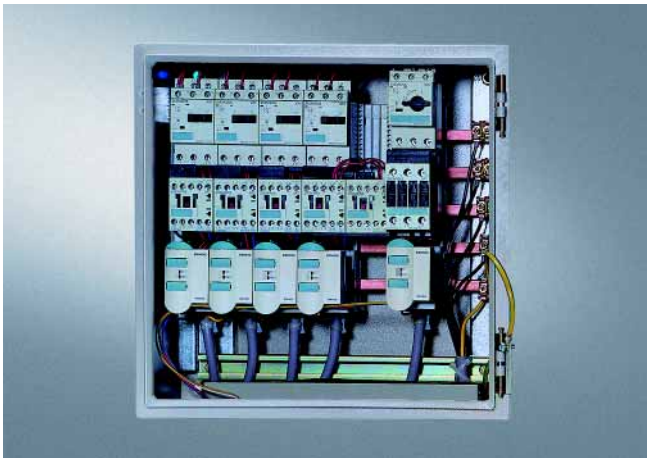
Accessories

 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	B	**3RK1 902-0AR00**		100	5 units	121	0.100

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

AS-Interface load feeder modules

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 V 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-loaded terminals, each connected to a common potential.

3RA5 fuseless load feeder with connection to AS-Interface

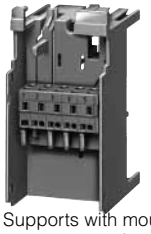
The 3RA5 fuseless load feeder, comprising the AS-Interface load feeder module, motor starter protector, contactor and all necessary connectors (AS-Interface, auxiliary power and 5-pole power connector), is delivered completely assembled, factory-wired and tested. The user can thus save valuable time when mounting, wiring and servicing. Direct-on-line starters as well as reversing starters are available with SIRIUS switchgear size S00 up to 10 A and size S0 – on account of the power connector – up to 16 A. The complete feeders are available with AS-Interface load feeder modules with solid-state outputs for 24 V DC auxiliary voltage.

Load feeders with this type of configuration are used to control standard induction motors for example. The load feeders can be installed in central control cabinets as well as in local control boxes. They are particularly suitable for highly automated machines and plants that place high demands on availability.

Selection and ordering data

Version		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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 / 1 relay 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								
• German, English		▶	**3RK1 701-2GB00-0AA0**		1	1 unit	192	0.197
• Italian, French		A	**3RK1 701-2HB00-0AA0**		1	1 unit	192	0.196
Supports for AS-Interface load feeder modules								
• With PE and N conductor connection, for mounting on busbar adapter with 40 mm center-to-center clearance. 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 clearance. 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 and N conductor connection, for mounting on busbar adapter with 40 mm or 60 mm center-to-center clearance								
- 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
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
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

3RK1 400-1KG01-0AA1
3RK1 400-1MG01-0AA1



Supports with mounted power connector coupling

3RK1 901-0EA00

3RK1 901-0NA00
3RK1 901-0PA00

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 Catalog LV 1, "SIVACON Power Distribution Boards, Busway and Cubicle Systems".

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

Direct-on-line starters for busbar systems

Overview

The 3RA5 fuseless load feeders with AS-Interface offer the possibility of linking motor starters swiftly and at low cost to higher-level automation systems. The integrated 3RV1 motor starter protector for motor protection protects the motor against overloads and provides short-circuit protection for the cables. The 3RT1 contactor is used for operational switching.
The switching state is triggered and signaled using the 3RK1 4 load feeder module on the AS-Interface.

- For direct start, a load can be switched on and off with the load feeder.

Application

The 3RA5 load feeders control central loads both in local switch-boxes and also in control cabinets. They are used in highly automated installations that place high demands on availability.

More information

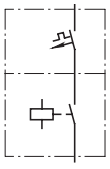
Types of coordination

The response of the device to short-circuits is described by the type of coordination according to EN 60947-4-1 (VDE 0660 Part 102), IEC 60947-4-1.
The 3RA5 fuseless load feeders with AS-Interface achieve the type of coordination "1" at I_q = 50 kA. This ensures that short-circuits of 50 kA will be deactivated without posing a hazard to persons and systems. The contactor may be damaged at such high short-circuit currents.

Selection and ordering data

- For 5- or 4-pole busbar systems, can also be used for 3-pole busbar systems
- Auxiliary power supply 24 V DC
- Energy and communication connectors included in the scope of supply

Direct start



Size	Standard induction motor 4-pole at 400 V AC[1]		Setting range for thermal overload release	DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)			Order No.	Price per PU				
	P	*I*								
	kW	A	A							kg
Type of coordination "1"[2]					**For 40 mm busbar system, 5-pole**					
S00	0.06	0.2	0.14 ... 0.2	C	**3RA51 10-0BC15-0BB4**		1	1 unit	101	1.320
	0.06	0.2	0.18 ... 0.25	C	**3RA51 10-0CC15-0BB4**		1	1 unit	101	0.810
	0.09	0.3	0.22 ... 0.32	C	**3RA51 10-0DC15-0BB4**		1	1 unit	101	1.395
	0.09	0.3	0.28 ... 0.4	C	**3RA51 10-0EC15-0BB4**		1	1 unit	101	1.360
	0.12	0.4	0.35 ... 0.5	C	**3RA51 10-0FC15-0BB4**		1	1 unit	101	0.810
	0.18	0.6	0.45 ... 0.63	C	**3RA51 10-0GC15-0BB4**		1	1 unit	101	1.330
	0.25	0.8	0.55 ... 0.8	C	**3RA51 10-0HC15-0BB4**		1	1 unit	101	1.440
	0.25	0.8	0.7 ... 1	C	**3RA51 10-0JC15-0BB4**		1	1 unit	101	0.810
	0.37	1.1	0.9 ... 1.25	C	**3RA51 10-0KC15-0BB4**		1	1 unit	101	1.395
	0.55	1.5	1.1 ... 1.6	C	**3RA51 10-1AC15-0BB4**		1	1 unit	101	1.381
	0.75	1.9	1.4 ... 2	C	**3RA51 10-1BC15-0BB4**		1	1 unit	101	1.355
	0.75	1.9	1.8 ... 2.5	C	**3RA51 10-1CC15-0BB4**		1	1 unit	101	1.450
	1.1	2.7	2.2 ... 3.2	C	**3RA51 10-1DC15-0BB4**		1	1 unit	101	1.393
	1.5	3.6	2.8 ... 4	C	**3RA51 10-1EC15-0BB4**		1	1 unit	101	1.410
	1.5	3.6	3.5 ... 5	C	**3RA51 10-1FC15-0BB4**		1	1 unit	101	1.400
	2.2	5.2	4.5 ... 6.3	C	**3RA51 10-1GC15-0BB4**		1	1 unit	101	1.372
	3	6.8	5.5 ... 8	C	**3RA51 10-1HC15-0BB4**		1	1 unit	101	1.443
	4	9	7 ... 10	C	**3RA51 10-1JC16-0BB4**		1	1 unit	101	1.380
	5.5	11.5	9 ... 12	C	**3RA51 10-1KC17-0BB4**		1	1 unit	101	1.410
Type of coordination "1"[2]					**For 60 mm busbar system, 4-pole**					
S00	0.06	0.2	0.14 ... 0.2	C	**3RA51 10-0BD15-0BB4**		1	1 unit	101	1.450
	0.06	0.2	0.18 ... 0.25	C	**3RA51 10-0CD15-0BB4**		1	1 unit	101	1.340
	0.09	0.3	0.22 ... 0.32	C	**3RA51 10-0DD15-0BB4**		1	1 unit	101	0.810
	0.09	0.3	0.28 ... 0.4	C	**3RA51 10-0ED15-0BB4**		1	1 unit	101	1.360
	0.12	0.4	0.35 ... 0.5	C	**3RA51 10-0FD15-0BB4**		1	1 unit	101	1.360
	0.18	0.6	0.45 ... 0.63	C	**3RA51 10-0GD15-0BB4**		1	1 unit	101	1.490
	0.25	0.8	0.55 ... 0.8	C	**3RA51 10-0HD15-0BB4**		1	1 unit	101	1.490
	0.25	0.8	0.7 ... 1	C	**3RA51 10-0JD15-0BB4**		1	1 unit	101	1.403
	0.37	1.1	0.9 ... 1.25	C	**3RA51 10-0KD15-0BB4**		1	1 unit	101	1.530
	0.55	1.5	1.1 ... 1.6	C	**3RA51 10-1AD15-0BB4**		1	1 unit	101	1.515
	0.75	1.9	1.4 ... 2	C	**3RA51 10-1BD15-0BB4**		1	1 unit	101	1.480
	0.75	1.9	1.8 ... 2.5	C	**3RA51 10-1CD15-0BB4**		1	1 unit	101	1.480
	1.1	2.7	2.2 ... 3.2	C	**3RA51 10-1DD15-0BB4**		1	1 unit	101	1.520
	1.5	3.6	2.8 ... 4	C	**3RA51 10-1ED15-0BB4**		1	1 unit	101	1.560
	1.5	3.6	3.5 ... 5	C	**3RA51 10-1FD15-0BB4**		1	1 unit	101	1.540
	2.2	5.2	4.5 ... 6.3	C	**3RA51 10-1GD15-0BB4**		1	1 unit	101	1.540
	3	6.8	5.5 ... 8	C	**3RA51 10-1HD15-0BB4**		1	1 unit	101	1.550
	4	9	7 ... 10	C	**3RA51 10-1JD16-0BB4**		1	1 unit	101	1.465
	5.5	11.5	9 ... 12	C	**3RA51 10-1KD17-0BB4**		1	1 unit	101	1.540
S0	7.5	15.5	11 ... 16	C	**3RA51 20-4AD25-0BB4**		1	1 unit	101	1.940

3RA51 10
(with 3RK1 400-1KG01-0AA1, 2I/1O, 24 V DC)

3RA51 20
(with 3RK1 400-1KG01-0AA1, 2I/1O, 24 V DC)

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

2) At I_q = 50 kA at 400 V.

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

Reversing starters for busbar systems

Overview

The 3RA5 fuseless load feeders with AS-Interface offer the possibility of linking motor starters swiftly and at low cost to higher-level automation systems. The integrated 3RV1 motor starter protector for motor protection protects the motor against overloads and provides short-circuit protection for the cables. The 3RT1 contactor is used for operational switching. The switching state is triggered and signaled using the 3RK1 4 load feeder module on the AS-Interface.

- The feeder for reversing duty is designed for two directions of rotation of induction motors. On these units, there is no electrical interlock between the two contactors. Exception: Size S00 features a mechanical interlock.

Application

The 3RA5 load feeders control central loads both in local switch-boxes and also in control cabinets. They are used in highly automated installations that place high demands on availability.

More information

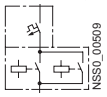
Types of coordination

The response of the device to short-circuits is described by the type of coordination according to EN 60947-4-1 (VDE 0660 Part 102), IEC 60947-4-1.
The 3RA5 fuseless load feeders with AS-Interface achieve the type of coordination "1" at I_q = 50 kA. This ensures that short-circuits of 50 kA will be deactivated without posing a hazard to persons and systems. The contactor may be damaged at such high short-circuit currents.

Selection and ordering data

- For 5- or 4-pole busbar systems, can also be used for 3-pole busbar systems
- Auxiliary power supply 24 V DC
- Energy and communication connectors included in the scope of supply.

Reversing duty



Size	Standard induction motor 4-pole at 400 V AC [1]		Setting range for thermal overload release	DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)			Order No.	Price per PU				
	P	*I*								
	kW	A	A							kg
Type of coordination "1" [2]					**For 40 mm busbar systems, 5-pole**					
S00	0.06	0.2	0.14 ... 0.2	C	**3RA52 10-0BC15-0BB4**		1	1 unit	101	1.750
	0.06	0.2	0.18 ... 0.25	C	**3RA52 10-0CC15-0BB4**		1	1 unit	101	0.810
	0.09	0.3	0.22 ... 0.32	C	**3RA52 10-0DC15-0BB4**		1	1 unit	101	0.810
	0.09	0.4	0.28 ... 0.4	C	**3RA52 10-0EC15-0BB4**		1	1 unit	101	0.810
	0.12	0.4	0.35 ... 0.5	C	**3RA52 10-0FC15-0BB4**		1	1 unit	101	1.700
	0.18	0.6	0.45 ... 0.63	C	**3RA52 10-0GC15-0BB4**		1	1 unit	101	1.742
	0.25	0.8	0.55 ... 0.8	C	**3RA52 10-0HC15-0BB4**		1	1 unit	101	0.810
	0.25	0.8	0.7 ... 1.0	C	**3RA52 10-0JC15-0BB4**		1	1 unit	101	0.810
	0.37	1.1	0.9 ... 1.25	C	**3RA52 10-0KC15-0BB4**		1	1 unit	101	1.790
	0.55	1.5	1.1 ... 1.6	C	**3RA52 10-1AC15-0BB4**		1	1 unit	101	1.910
	0.75	1.9	1.4 ... 2.0	C	**3RA52 10-1BC15-0BB4**		1	1 unit	101	1.820
	0.75	1.9	1.8 ... 2.5	C	**3RA52 10-1CC15-0BB4**		1	1 unit	101	1.759
	1.1	2.7	2.2 ... 3.2	C	**3RA52 10-1DC15-0BB4**		1	1 unit	101	1.835
	1.5	3.6	2.8 ... 4.0	C	**3RA52 10-1EC15-0BB4**		1	1 unit	101	1.760
	1.5	3.6	3.5 ... 5.0	C	**3RA52 10-1FC15-0BB4**		1	1 unit	101	1.777
	2.2	5.2	4.5 ... 6.3	C	**3RA52 10-1GC15-0BB4**		1	1 unit	101	1.835
	3	6.8	5.5 ... 8.0	C	**3RA52 10-1HC15-0BB4**		1	1 unit	101	1.761
	4	9	7.0 ... 10	C	**3RA52 10-1JC16-0BB4**		1	1 unit	101	1.765
	5.5	11.5	9.0 ... 12	C	**3RA52 10-1KC17-0BB4**		1	1 unit	101	0.810
Type of coordination "1" [2]					**For 60 mm busbar systems, 4-pole**					
S00	0.06	0.2	0.14 ... 0.2	C	**3RA52 10-0BD15-0BB4**		1	1 unit	101	0.810
	0.06	0.2	0.18 ... 0.25	C	**3RA52 10-0CD15-0BB4**		1	1 unit	101	1.830
	0.09	0.3	0.22 ... 0.32	C	**3RA52 10-0DD15-0BB4**		1	1 unit	101	0.810
	0.09	0.4	0.28 ... 0.4	C	**3RA52 10-0ED15-0BB4**		1	1 unit	101	1.753
	0.12	0.4	0.35 ... 0.5	C	**3RA52 10-0FD15-0BB4**		1	1 unit	101	1.758
	0.18	0.6	0.45 ... 0.63	C	**3RA52 10-0GD15-0BB4**		1	1 unit	101	1.869
	0.25	0.8	0.55 ... 0.8	C	**3RA52 10-0HD15-0BB4**		1	1 unit	101	1.765
	0.25	0.8	0.7 ... 1.0	C	**3RA52 10-0JD15-0BB4**		1	1 unit	101	0.810
	0.37	1.1	0.9 ... 1.25	C	**3RA52 10-0KD15-0BB4**		1	1 unit	101	1.818
	0.55	1.5	1.1 ... 1.6	C	**3RA52 10-1AD15-0BB4**		1	1 unit	101	1.935
	0.75	1.9	1.4 ... 2.0	C	**3RA52 10-1BD15-0BB4**		1	1 unit	101	1.935
	0.75	1.9	1.8 ... 2.5	C	**3RA52 10-1CD15-0BB4**		1	1 unit	101	1.940
	1.1	2.7	2.2 ... 3.2	C	**3RA52 10-1DD15-0BB4**		1	1 unit	101	1.950
	1.5	3.6	2.8 ... 4.0	C	**3RA52 10-1ED15-0BB4**		1	1 unit	101	1.850
	1.5	3.6	3.5 ... 5.0	C	**3RA52 10-1FD15-0BB4**		1	1 unit	101	1.870
	2.2	5.2	4.5 ... 6.3	C	**3RA52 10-1GD15-0BB4**		1	1 unit	101	1.930
	3	6.8	5.5 ... 8.0	C	**3RA52 10-1HD15-0BB4**		1	1 unit	101	1.830
	4	9	7.0 ... 10	C	**3RA52 10-1JD16-0BB4**		1	1 unit	101	1.949
	5.5	11.5	9.0 ... 12	C	**3RA52 10-1KD17-0BB4**		1	1 unit	101	1.850
S0	7.5	15.5	11 ... 16	C	**3RA52 20-4AD25-0BB4**		1	1 unit	101	2.564

3RA52 10
(with 3RK1 400-1MG01-0AA1, 4I/2O, 24 V DC)

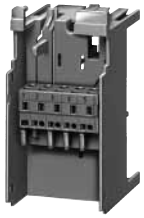
3RA52 10
(with 3RK1 400-1MG01-0AA1, 4I/2O, 24 V DC)

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

2) At I_q = 50 kA at 400 V.

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

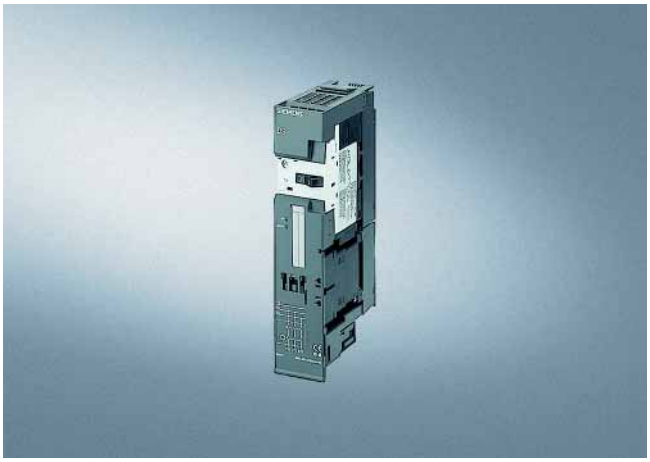
Reversing starters for busbar systems

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Manuals for AS-Interface load feeder modules							
	• German, English	▶	**3RK1 701-2GB00-0AA0**		1	1 unit	192	0.197
	• Italian, French	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 rail center-to-center clearance 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 clearance 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
	• With PE and N conductor connection, for mounting on busbar adapter with 40 mm or 60 mm center-to-center clearance							
	- 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 ... 0.75 mm^2) Standard litz wires							
	• Yellow	C	**3RK1 901-0NA00**		1	5 units	121	0.015
	• Black	C	**3RK1 901-0PA00**		1	5 units	121	0.015

6

* You can order this quantity or a multiple thereof.

Overview

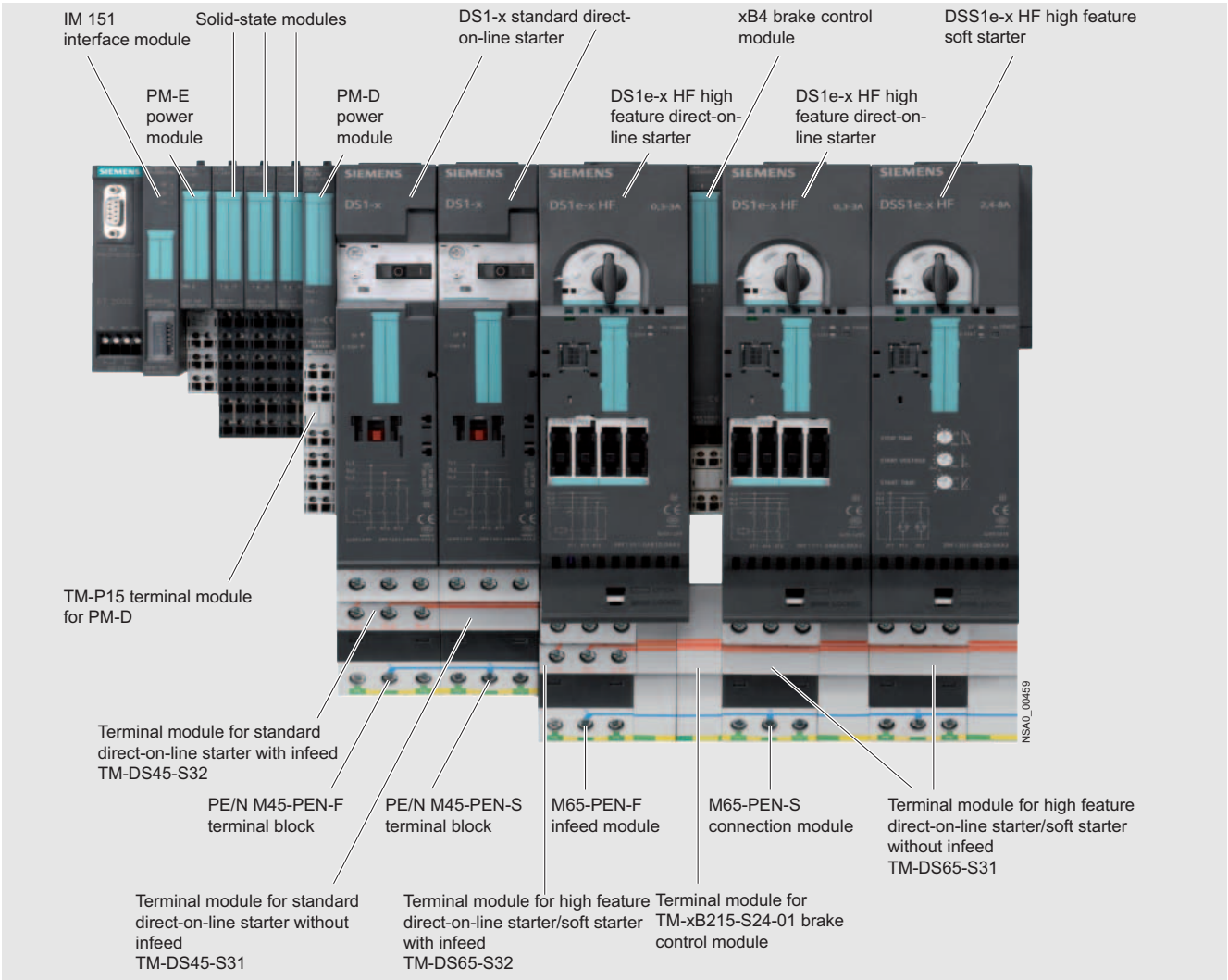


Motor starters, Standard, DS1-x direct-on-line starter

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

- Completely factory-wired motor starters for switching and protecting any three-phase 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 circuit breaker, 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).

ET 200S motor starters



Interplay of ET 200S motor starter components

Application

With the ET 200S motor starters, any three-phase 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 mm^2) the latter also do away with the distribution wiring otherwise required. Through the permanent wiring and the hot swapping function (disconnection and connection during operation) a motor starter can be replaced within seconds if necessary. The motor starters are therefore recommendable in particular for applications with special demands on availability.

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

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

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

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

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 motor starters, standard. It can be used to the right and left of a DS1-x direct-on-line starter or to the right of an xB1-4 brake module in order to improve heat removal to the side. The distance module is a completely passive module and does not need to be taken into account with regard to the control system during configuration. Details of the distance module can be found in the manual "SIMATIC ET 200S". If you have any queries concerning the use of the distance module, contact Technical Support for Siemens Low-Voltage Controls (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 a new. 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.

ET 200S motor starters

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Standard motor startes, with diagnostics, electromechanical, fuseless, expandable with brake control module							
DS1-x direct-on-line starters							
Motor rating of 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	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 reversing starters							
kW	A						
< 0.06	0.14 ... 0.20	B	**3RK1 301-0BB00-1AA2**	1	1 unit	121	1.342
0.06	0.18 ... 0.25	B	**3RK1 301-0CB00-1AA2**	1	1 unit	121	1.360
0.09	0.22 ... 0.32	B	**3RK1 301-0DB00-1AA2**	1	1 unit	121	1.365
0.10	0.28 ... 0.40	B	**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	B	**3RK1 301-1JB00-1AA2**	1	1 unit	121	1.370
5.5	9 ... 12	B	**3RK1 301-1KB00-1AA2**	1	1 unit	121	1.390

DS1-x

RS1-x

* 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
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	B	**3RK1 301-0BB20-0AA4**		1	1 unit	121	1.195
	2.4 ... 16	A	**3RK1 301-0CB20-0AA4**		1	1 unit	121	1.198
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 24 V DC 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	0.159
 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

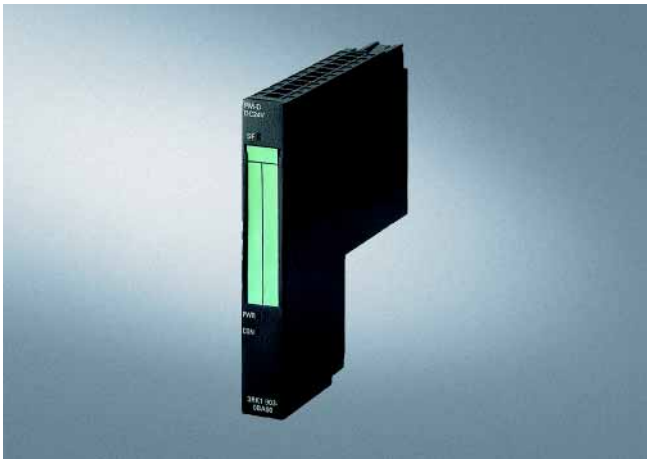
* You can order this quantity or a multiple thereof.

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	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
- 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
- For supplying and monitoring the power supply for the ET 200S FC frequency converter

Application

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

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

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

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 6 x 200 color coding plates for terminal modules One set contains 10 strips of 20 color coding plates per color							
	• White	A	**6ES7 193-4LA10-0AA0**		1	1 unit	250	0.005
	• Yellow	A	**6ES7 193-4LB10-0AA0**		1	1 unit	250	0.005
	• Yellow and green	A	**6ES7 193-4LC10-0AA0**		1	1 unit	250	0.043
	• Red	A	**6ES7 193-4LD10-0AA0**		1	1 unit	250	0.005
	• Blue	A	**6ES7 193-4LF10-0AA0**		1	1 unit	250	0.005
	• Brown	A	**6ES7 193-4LG10-0AA0**		1	1 unit	250	0.005
	• Petrol	A	**6ES7 193-4LH10-0AA0**		1	1 unit	250	0.005

*** 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 shield attachments for receiving the busbar 3 x 10 mm

Terminal modules for power modules

- 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 variants:

- 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 motor starters, standard 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 variants of the ICU24 / ICU24F control module. 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 a shield attachment for accommodating a shield bar. Hence shielded motor cables can be grounded using shield terminals.
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 motor starters, standard, 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 / frequency converters before the latter is mounted on the standard mounting rail. With two PE - terminals and one N - terminal, the "-F" variant is connected to the "-S32" terminal modules for motor starters / frequency converters. The "-S" variant 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 module of a segment. The modules for the motor starters, standard, have a width of 45 mm and the modules for the High-Feature motor starters / frequency converters have a width of 65 mm.

There is no electrical connection between the terminals of the PE/N terminal block and the internal shielding of the frequency converter.

The PE/N terminal block must not be used for the shielding of the motor cable. For EMC-compatible wiring of the frequency converter the shield of the motor cable must be connected through a shield bar to the integrated shield attachment in the terminal module of the converter. In addition the shield bar must be connected by the shorted possible route to the enclosure of the EMC filter.

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Components for motor starter, standard								
	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

* 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 903-2AA00	**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
 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 infeed modules 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 connection modules 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 infeed modules	A	**3RK1 903-2AC00**		1	1 unit	121	0.093
	M65-PEN-S connection modules	A	**3RK1 903-2AC10**		1	1 unit	121	0.099

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

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	**6ES7151-1CA00-0AB0**		1	1 unit	250	0.184
IM 151-1 COMPACT 32 DI 24 V DC interface modules For ET 200S; transmission rates up to 12 Mbit/s; 32 digital inputs, up to 12 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	**6ES7151-1CA00-1BL0**		1	1 unit	250	0.207
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	**6ES7151-1CA00-3BL0**		1	1 unit	250	0.207
IM 151-1 STANDARD interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	**6ES7151-1AA04-0AB0**		1	1 unit	250	0.186
IM 151-1 FO STANDARD interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 128 bytes each for inputs and outputs; up to 63 power, solid-state and motor starter modules can be connected; connection to bus using integrated fiber-optic cable including bus termination module	A	**6ES7151-1AB02-0AB0**		1	1 unit	250	0.194
IM 151-1 HIGH FEATURE interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 modules can be connected; connection of PROFIsafe modules, isochrone mode (clocked operation); connection to bus through 9-pole Sub-D including bus termination module	A	**6ES7151-1BA02-0AB0**		1	1 unit	250	0.001
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-loaded terminals	A	**6ES7 193-4DL00-0AA0**		1	1 unit	250	0.140
TE-U120S4x10 terminal modules 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	0.140
TE-U120C4x10 terminal modules Additional terminal for TM-C120x terminal modules of ET 200S COMPACT; spring-loaded 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	0.140
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
100 Simplex connectors For plastic fiber-optic cable including 5 polishing sets	A	**6GK1 901-0FB00-0AA0**		1	1 unit	552	0.200
50 plug-in adapters Each for 2 Simplex connectors	A	**6ES7 195-1BE00-0XA0**		1	1 unit	250	0.117
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002

*** 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 151-1 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	0.230
• Yellow	A	**6ES7 193-4BB10-0AA0**		1	1 unit	250	0.200
• Red	A	**6ES7 193-4BD10-0AA0**		1	1 unit	250	0.200
• Petrol	A	**6ES7 193-4BH10-0AA0**		1	1 unit	250	0.200
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							
TM-C120S terminal modules Terminal modules for ET 200S COMPACT, screw terminals	A	**6ES7 193-4DL10-0AA0**		1	1 unit	250	0.140
TM-C120C terminal modules Terminal modules for ET 200S COMPACT, spring-loaded terminals	A	**6ES7 193-4DL00-0AA0**		1	1 unit	250	0.140
TE-U120S4x10 terminal modules 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	0.140
TE-U120C4x10 terminal modules Additional terminal for TM-C120x terminal modules of ET 200S COMPACT; spring-loaded 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	0.140
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 CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.300
100 Simplex connectors For plastic fiber-optic cable including 5 polishing sets	A	**6GK1 901-0FB00-0AA0**		1	1 unit	552	0.200
50 plug-in adapters Each for 2 Simplex connectors	A	**6ES7 195-1BE00-0XA0**		1	1 unit	250	0.117
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002

* 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
SIPLUS IM 151-1 interface modules (extended temperature range) (continued)							
Inscription sheets in A4 format (10 units) Can be used for ET 200S COMPACT.; each sheet contains 10 labeling strips							
• Beige	A	**6ES7 193-4BH10-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BD10-0AA0**		1	1 unit	250	0.200
• Red	A	**6ES7 193-4BB10-0AA0**		1	1 unit	250	0.200
• Petrol	A	**6ES7 193-4BA10-0AA0**		1	1 unit	250	0.230
Termination modules As spare part for ET 200S							
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 151-3 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 151-3AA22-0AB0**		1	1 unit	250	0.200
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 151-3BA22-0AB0**		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	0.200
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 unit	527	0.055
• Fast Connect trailing cables	A	**6XV1 840-3AH10**		1	1 unit	527	0.055
• Fast Connect marine cables	A	**6XV1 840-4AH10**		1	1 unit	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
MMC 64 Kbyte[1)] For storing the unit's name	A	**6ES7 953-8LF20-0AA0**		1	1 unit	230	0.014
MMC 128 Kbyte[1)] For storing the unit's name	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.014
MMC 512 Kbyte[1)] For storing the unit's name	A	**6ES7 953-8LJ20-0AA0**		1	1 unit	230	0.014
MMC 2 MByte[1)] For storing the unit's name and/or the firmware update	A	**6ES7 953-8LL20-0AA0**		1	1 unit	230	0.014
MMC 4 MByte[1)] For storing the unit's name and/or the firmware update	A	**6ES7 953-8LM20-0AA0**		1	1 unit	230	0.014
MMC 8 MByte[1)] For storing the unit's name and/or the firmware update	A	**6ES7 953-8LP20-0AA0**		1	1 unit	230	0.001
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 IM 151-3, 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 151-3 PN interface 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
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
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
Industrial Ethernet switches							
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	0.257
IM 151-7 CPU (96 K) interface modules Including termination module	A	**6ES7 151-7AA20-0AB0**		1	1 unit	250	0.241
Accessories							
MMC 64 Kbyte[1)] For program backups	A	**6ES7 953-8LF20-0AA0**		1	1 unit	230	0.014
MMC 128 Kbyte[1)] For program backups	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.014
MMC 512 Kbyte[1)] For program backups	A	**6ES7 953-8LJ20-0AA0**		1	1 unit	230	0.014
MMC 2 MByte[1)] For program backups and/or the firmware update	A	**6ES7 953-8LL20-0AA0**		1	1 unit	230	0.014
MMC 4 MByte[1)] For program backups	A	**6ES7 953-8LM20-0AA0**		1	1 unit	230	0.014
MMC 8 MByte[1)] For program backups	A	**6ES7 953-8LP20-0AA0**		1	1 unit	230	0.001
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 request**					
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
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

[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
Master interface modules for IM 151-7 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	0.124
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
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	0.247
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	B	**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	0.014
MMC 128 Kbyte For program backups	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.014
MMC 512 Kbyte For program backups	A	**6ES7 953-8LJ20-0AA0**		1	1 unit	230	0.014
MMC 2 MByte For program backups and/or the firmware update	A	**6ES7 953-8LL20-0AA0**		1	1 unit	230	0.014
MMC 4 MByte For program backups	A	**6ES7 953-8LM20-0AA0**		1	1 unit	230	0.014
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
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	0.040
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002

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.**

Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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, 42 to 230 V AC For solid-state modules, with diagnostics and fuse	C	**6AG1 138-4CB11-2AB0**		1	1 unit	471	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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
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	0.045
Potential distributor modules							
Potential distributor modules for ET 200S For supplying the load voltage to additional terminals, 15 mm wide, 1 unit	A	**6ES7138-4FD00-0AA0**		1	1 unit	250	0.035
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
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	0.007
• 4 DI 24 V DC Standard	A	**6ES7 131-4BD01-0AA0**		1	1 unit	250	0.180
• 4 DI 24 V DC High Feature	A	**6ES7 131-4BD01-0AB0**		1	1 unit	250	0.185
• 2 DI 120 V AC	A	**6ES7 131-4EB00-0AB0**		1	1 unit	250	0.200
• 2 DI 230 V AC	A	**6ES7 131-4FB00-0AB0**		1	1 unit	250	0.200
• 4 DI 24 ... 48 V UC	A	**6ES7 131-4CD00-0AB0**		1	1 unit	250	0.200
• 4 DI 24 V DC SOURCE INPUT	A	**6ES7 131-4BD51-0AA0**		1	1 unit	250	0.180
Order unit: 1 unit							
• 4 DI 24 V DC NAMUR	A	**6ES7 131-4RD00-0AB0**		1	1 unit	250	0.042
• 8 DI 24 V DC Standard	A	**6ES7 131-4BF00-0AA0**		1	1 unit	250	0.001
• 8 DI 24 V DC Standard SOURCE INPUT	A	**6ES7 131-4BF50-0AA0**		1	1 unit	250	0.005
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	0.180
• 2 DO 24 V DC/0.5 A High Feature	A	**6ES7 132-4BB01-0AB0**		1	1 unit	250	0.187
• 2 DO 24 V DC/2 A Standard	A	**6ES7 132-4BB31-0AA0**		1	1 unit	250	0.185
• 2 DO 24 V DC/2 A High Feature	A	**6ES7 132-4BB31-0AB0**		1	1 unit	250	0.204
• 4 DO 24 V DC/0.5 A Standard	A	**6ES7 132-4BD01-0AA0**		1	1 unit	250	0.187
• 4 DO 24 V DC/0.5 A Standard SOURCE OUTPUT	A	**6ES7 132-4BD50-0AA0**		1	1 unit	250	0.187
• 4 DO 24 V DC/2 A Standard	A	**6ES7 132-4BD32-0AA0**		1	1 unit	250	0.189
• 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	0.218
• 2 DO 24...48 V DC to 230 V AC/5 A relay, CO	A	**6ES7 132-4HB10-0AB0**		1	1 unit	250	0.200
Order unit: 1 unit							
• 8 DO 24 V DC/0.5 A Standard	A	**6ES7 132-4BF00-0AA0**		1	1 unit	250	0.001
• 8 DO 24 V DC/0.5 A Standard SOURCE OUTPUT	A	**6ES7 132-4BF50-0AA0**		1	1 unit	250	0.050

[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 (continued)							
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
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
SIPLUS digital output modules (extended temperature range and medial load) Order unit: 5 units							
• 4 DO 24 V DC/0.5 A High Feature	D	**6AG1 132-4BB01-2AB0**		1	1 unit	471	0.187
• 4 DO 24 V DC/0.5 A Standard	C	**6AG1 132-4BD01-2AA0**		1	1 unit	473	0.187
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
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 Feature	A	**6ES7 134-4LB02-0AB0**		1	1 unit	250	0.047
• 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	0.032
• 2 AI I Standard 4-wire	A	**6ES7 134-4GB11-0AB0**		1	1 unit	250	0.045
• 2 AI I High Feature 2/4-wire (15 bits + sign)	A	**6ES7 134-4MB02-0AB0**		1	1 unit	250	0.050
• 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	0.045
• 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 Feature	A	**6ES7 135-4MB02-0AB0**		1	1 unit	250	0.063
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
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	0.050
Shield terminals Order unit: 5 units For busbars 3 × 10 mm	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.050
Ground connection terminals Order unit: 1 unit For conductor cross-sections up to 25 mm^2	A	**8WA2 868**		1	50 units	041	0.014
Busbars 3 × 10 mm Order unit: 1 unit	A	**8WA2 842**		1	1 unit	041	0.267

* 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 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	0.100
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	0.100
Accessories							
IM 151-1 HIGH FEATURE interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 modules can be connected; connection of PROFIsafe modules, isochrone mode (clocked operation); connection to bus through 9-pole Sub-D including bus termination module	A	**6ES7151-1BA02-0AB0**		1	1 unit	250	0.001
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 151-3BA22-0AB0**		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	A	**6ES7151-1BB22-0AB0**		1	1 unit	250	0.200
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	0.140
TM-P30C44-A0 Order unit: 1 unit 7 × 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-loaded terminals for PM-E F PROFIsafe	A	**6ES7 193-4CK30-0AA0**		1	1 unit	241	0.127
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 • Software Update Service	A B	**6ES7 833-1FC02-0YA5** **6ES7 833-1FC00-0YX2**		1 1	1 unit 1 unit	241 241	0.300 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	0.001
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 solid-state modules / 3 F-DO PROFIsafe 24 V DC/2 A 30 mm width, up to Category 3 (EN 954-1) / SIL 2 (IEC 62061)	A	**6ES7 138-4FC00-0AB0**		1	1 unit	241	0.001
Accessories							
Terminal modules for solid-state modules		See F terminal modules					
IM151-1 High-Feature interface modules For ET 200S; 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	0.001
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 151-3BA22-0AB0**		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	0.200
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 • Software Update Service	A B	**6ES7 833-1FC02-0YA5** **6ES7 833-1FC00-0YX2**		1 1	1 unit 1 unit	241 241	0.300 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.**

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
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	0.001
Accessories							
Terminal modules for solid-state modules		See F terminal modules					
IM151-1 High-Feature interface modules For ET 200S; transmission rates up to 12 Mbit/s; up to 63 modules can be connected; with isynchronous mode connection to bus through 9-pole Sub-D, including termination module	A	**6ES7 151-1BA02-0AB0**		1	1 unit	250	0.001
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 151-3BA22-0AB0**		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	0.200
Distributed Safety V5.4 programming tools							
• Floating license	A	**6ES7 833-1FC02-0YA5**		1	1 unit	241	0.300
• Software Update Service	B	**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
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)	X	**6AG1 138-4FA02-2AB0**		1	1 unit	471	0.100
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							
Terminal modules for solid-state modules		See F terminal modules					
IM151-1 High-Feature interface modules For ET 200S; transmission rates up to 12 Mbit/s; up to 63 modules can be connected; with isynchronous mode connection to bus through 9-pole Sub-D, including termination module	A	**6ES7 151-1BA02-0AB0**		1	1 unit	250	0.001
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	B	**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

*** 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 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	0.072
TM-P15C23-A1 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded terminals	A	**6ES7 193-4CC30-0AA0**		1	1 unit	250	0.071
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	0.077
TM-P15C23-A0 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-loaded terminals	A	**6ES7 193-4CD30-0AA0**		1	1 unit	250	0.069
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	0.060
TM-P15C22-01 Order unit: 1 unit 2 x 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded terminals	A	**6ES7 193-4CE10-0AA0**		1	1 unit	250	0.064
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	0.140
TM-P30C44-A0 Order unit: 1 unit 7 x 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-loaded terminals for PM-E F PROFIsafe	A	**6ES7 193-4CK30-0AA0**		1	1 unit	241	0.127
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	0.140
TM-E30C44-01 Order unit: 1 unit 4 x 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded terminals	A	**6ES7 193-4CG30-0AA0**		1	1 unit	250	0.120
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	0.184
TM-E30C46-A1 Order unit: 1 unit 4 x 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded terminals	A	**6ES7 193-4CF50-0AA0**		1	1 unit	250	0.160
Accessories							
Color coding plates Order unit: 200 units for TM-P, TM-E							
• White	A	**6ES7 193-4LA20-0AA0**		1	1 unit	250	0.001
• Yellow	A	**6ES7 193-4LB20-0AA0**		1	1 unit	250	0.001
• Yellow and green	A	**6ES7 193-4LC20-0AA0**		1	1 unit	250	0.001
• Red	A	**6ES7 193-4LD20-0AA0**		1	1 unit	250	0.001
• Blue	A	**6ES7 193-4LF20-0AA0**		1	1 unit	250	0.001
• Brown	A	**6ES7 193-4LG20-0AA0**		1	1 unit	250	0.001
• Turquoise	A	**6ES7 193-4LH20-0AA0**		1	1 unit	250	0.001
Order unit: 1200 units, for SIMATIC ET 200S terminal modules; contains 60 strips of 20							
• Yellow	A	**6ES7 193-4LB10-0AA0**		1	1 unit	250	0.005
• Yellow and green	A	**6ES7 193-4LC10-0AA0**		1	1 unit	250	0.043
Ground connection terminals Order unit: 1 unit For conductor cross-sections up to 25 mm^2	A	**8WA2 868**		1	50 units	041	0.014
Busbars 3 × 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 ×	B	**8WA8 861-0DA**		100	200 units	041	0.080

*** 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)							
Inscription labels, blank 200 units for slot numbering	A	**8WA8 848-2AY**		100	100 units	041	0.080
4 IQ-Sense and 8 IQ-Sense sensor modules							
4 IQ-Sense sensor modules	A	**6ES7 138-4GA00-0AB0**		1	1 unit	250	0.010
8 x IQ-Sense sensor modules	A	**6ES7 338-7XF00-0AB0**		1	1 unit	230	0.240
Sensors For connecting to the 4 IQ-Sense sensor module							
• Diffuse sensor, type C40 IQ-Sense	A	**3SF7 240-3JQ00**		1	1 unit	575	0.093
• Diffuse sensor, type K80 IQ-Sense	A	**3SF7 210-3JQ00**		1	1 unit	575	0.123
• Retroflective sensor, type C40 IQ-Sense	A	**3SF7 241-3JQ00**		1	1 unit	575	0.094
• Retroflective sensor, type K80 IQ-Sense	A	**3SF7 211-3JQ00**		1	1 unit	575	0.118
• Diffuse sensor with background suppression, type K80 IQ-Sense	A	**3SF7 214-3JQ00**		1	1 unit	575	0.126
• M18 IQ-Sense ultrasonic sensors Detection range 5 to 30 cm	C	**3SF6 232-3JA00**		1	1 unit	575	0.084
• M18 IQ-Sense ultrasonic sensors Detection range 15 to 100 cm	C	**3SF6 233-3JA00**		1	1 unit	575	0.084
SSI modules							
SSI modules For the connection of absolute encoders with SSI interface	A	**6ES7 138-4DB03-0AB0**		1	1 unit	250	0.044
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
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							
2PULSE pulse generators and timer modules For ET 200S	A	**6ES7 138-4DD00-0AB0**		1	1 unit	250	0.049
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
1STEP step modules							
1STEP 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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
SIMOSTEP stepper motors		see ST 70 Catalog					
Power sections for stepper motors FM STEPDRIVE		see ST 70 Catalog					
1POS U positioning modules							
1POS U positioning modules Single-channel positioning module for ET 200S for positioning of adjusting and operating axes	A	**6ES7 138-4DL00-0AB0**		1	1 unit	250	0.079

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Interface/solid-state modules

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	0.054
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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
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	0.050
Shield terminals For connection of braided shields to busbars, 5 units	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.050
SIMODRIVE sensor incremental encoders Mountable sensor, optically incremental with HTL level, operational voltage 10 – 30 V		**6FX2 001-4....**			on req.	on req.	on req.
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 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	0.200
• Red	A	**6ES7 193-4BD00-0AA0**		1	1 unit	250	0.200
• Yellow	A	**6ES7 193-4BB00-0AA0**		1	1 unit	250	0.200
• Light beige	A	**6ES7 193-4BA00-0AA0**		1	1 unit	250	0.002
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	0.050
Shield terminals For connection of braided shields to busbars, 5 units	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.050
SIMODRIVE incremental encoders With RS 422 (TTL), operational voltage 10 – 30 V		**6FX2 001-2....**			on req.	on req.	on req.
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							
1SI interface modules							
• ASCII and 3964(R) protocol	A	**6ES7 138-4DF01-0AB0**		1	1 unit	250	0.045
• 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	0.480
TM-E15C26-A1 terminal modules Order unit: 5 units	A	**6ES7 193-4CA50-0AA0**		1	1 unit	250	0.440
TM-E15N24-A1 terminal modules Order unit: 5 units	A	**6ES7 193-4CA80-0AA0**		1	1 unit	250	0.558
TM-E15S24-01 terminal modules Order unit: 5 units	A	**6ES7 193-4CB20-0AA0**		1	1 unit	250	0.007
TM-E15C24-01 terminal modules Order unit: 5 units	A	**6ES7 193-4CB30-0AA0**		1	1 unit	250	0.060
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.

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	**6ES7193-4CG20-0AA0** or compatible		1	1 unit	250	0.140
Shield attachments Contents 5 units, sufficient for 5 cables	A	**6ES7193-4GA00-0AA0**		1	1 unit	250	0.050
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	**6ES7193-4GB00-0AA0**		1	1 unit	250	0.050
Neutral busbars, galvanized 3 x 10 mm, 1.5 m long	A	**8WA2 842**		1	1 unit	041	0.267
Feeder terminals for neutral busbar	A	**8WA2868**		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* *D-66565 Eppelborn* *Tel.: 06806/980-0* *Fax: 06806/980-999* *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	1.500
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 manual	X	**C71000-T5974-C29**		1	1 unit	815	0.100
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.**

Interface/solid-state modules

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 unit	815	0.160
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 unit	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 unit	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	**6ES7193-4CG20-0AA0** or compatible		1	1 unit	250	0.140
Shield attachments Contents 5 units, sufficient for 5 cables	A	**6ES7193-4GA00-0AA0**		1	1 unit	250	0.050
Shield connection terminals Contents: 5 units, sufficient for 5 cables One shield connection terminal is required for each sensor cable	A	**6ES7193-4GB00-0AA0**		1	1 unit	250	0.050
Neutral busbars, galvanized 3 x 10 mm, 1.5 m long	A	**8WA2 842**		1	1 unit	041	0.267
Feeder terminals for neutral busbar	A	**8WA2868**		1	50 units	041	0.014
Accessories							
SIWAREX EB extension boxes For extending sensor cables	C	**7MH4710-2AA**		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 unit	815	0.160
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	0.072
TM-P15C23-A1 Order unit: 1 unit 2 × 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded terminals	A	**6ES7 193-4CC30-0AA0**		1	1 unit	250	0.071
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	0.082
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	0.077
TM-P15C23-A0 Order unit: 1 unit 2 × 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-loaded terminals	A	**6ES7 193-4CD30-0AA0**		1	1 unit	250	0.069

*** 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-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	0.082
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	0.060
TM-P15C22-01 Order unit: 1 unit 2 × 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded terminals	A	**6ES7 193-4CE10-0AA0**		1	1 unit	250	0.064
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	0.053
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	0.140
TM-P30C44-A0 Order unit: 1 unit 7 × 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-loaded terminals for PM-E F PROFIsafe	A	**6ES7 193-4CK30-0AA0**		1	1 unit	241	0.127
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	0.372
TM-E15C24-A1 Order unit: 5 units 2 × 4 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded terminals	A	**6ES7 193-4CA30-0AA0**		1	1 unit	250	0.060
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	0.007
TM-E15C24-01 Order unit: 5 units 2 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded terminals	A	**6ES7 193-4CB30-0AA0**		1	1 unit	250	0.060
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	0.020
TM-E15C23-01 Order unit: 5 units 2 × 3 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded 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	0.387
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	0.480
TM-E15C26-A1 Order unit: 5 units 2 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded terminals	A	**6ES7 193-4CA50-0AA0**		1	1 unit	250	0.440
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	0.435
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	0.558

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

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

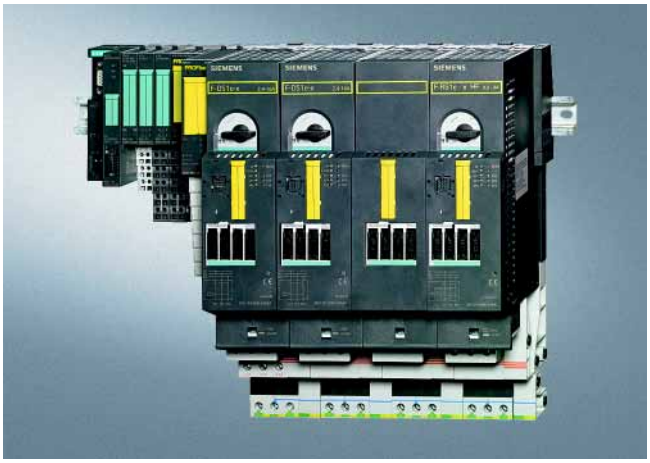
Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal modules for power and solid-state modules (continued)							
TM-E terminal modules for solid-state modules[1] *(continued)*							
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	0.140
TM-E30C44-01 Order unit: 1 unit 4 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded terminals	A	**6ES7 193-4CG30-0AA0**		1	1 unit	250	0.120
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	0.184
TM-E30C46-A1 Order unit: 1 unit 4 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-loaded terminals	A	**6ES7 193-4CF50-0AA0**		1	1 unit	250	0.160
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	0.076
TM-E15C24-AT Order unit: 1 unit For internal temperature compensation for 2 AI TC High Feature, spring-loaded terminals	A	**6ES7 193-4CL30-0AA0**		1	1 unit	250	0.064
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	0.050
Shield terminals Order unit: 5 units, for busbars 3 × 10 mm	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.050
Ground connection terminals Order unit: 1 unit, for conductor cross-sections up to 25 mm^2	A	**8WA2 868**		1	50 units	041	0.014
Busbars 3 × 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	0.001
• Yellow	A	**6ES7 193-4LB20-0AA0**		1	1 unit	250	0.001
• Yellow and green	A	**6ES7 193-4LC20-0AA0**		1	1 unit	250	0.001
• Red	A	**6ES7 193-4LD20-0AA0**		1	1 unit	250	0.001
• Blue	A	**6ES7 193-4LF20-0AA0**		1	1 unit	250	0.001
• Brown	A	**6ES7 193-4LG20-0AA0**		1	1 unit	250	0.001
• Turquoise	A	**6ES7 193-4LH20-0AA0**		1	1 unit	250	0.001
Order unit: 1200 units, for ET 200S terminal modules; contains 60 strips of 20 labels							
• White	A	**6ES7 193-4LA10-0AA0**		1	1 unit	250	0.005
• Yellow	A	**6ES7 193-4LB10-0AA0**		1	1 unit	250	0.005
• Yellow and green	A	**6ES7 193-4LC10-0AA0**		1	1 unit	250	0.043
• Red	A	**6ES7 193-4LD10-0AA0**		1	1 unit	250	0.005
• Blue	A	**6ES7 193-4LF10-0AA0**		1	1 unit	250	0.005
• Brown	A	**6ES7 193-4LG10-0AA0**		1	1 unit	250	0.005
• Turquoise	A	**6ES7 193-4LH10-0AA0**		1	1 unit	250	0.005
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 ×	B	**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.

Overview



The ET 200S Safety motor starter Solutions comprise:

- Safety modules
- motor starters, standard
- High-Feature motor starters
- Failsafe motor starters

With the ET 200S Safety motor starter 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 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 enables optimum imaging of machine or plant applications.

Within an ET 200S station the Safety motor starter Solutions can also be combined with motor starters, standard 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 6/75 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

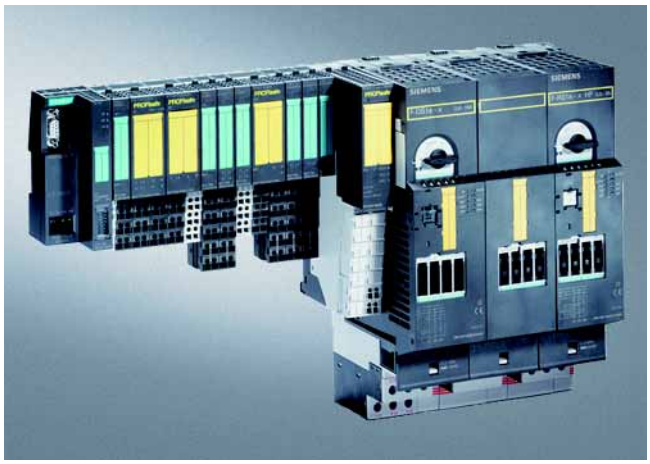
Application

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 mounting 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

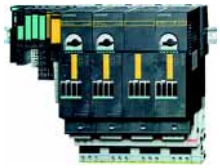
- Significant savings in components (less hardware)
- Less mounting and installation work
- Motor starters are failsafe and offer high availability

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	B	**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	B	**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 energy bus connection (TM-FDS65-S32-01)	A	**3RK1 903-3AC00**		1	1 unit	121	0.471
	• Without incoming energy 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 energy bus connection (TM-FRS130-S32-01)	A	**3RK1 903-3AD00**		1	1 unit	121	0.807
	• Without incoming energy bus connection (TM-FRS130-S31-01)	A	**3RK1 903-3AD10**		1	1 unit	121	0.848
	M65-PEN-F terminal blocks PE/N With incoming energy connection, with caps	A	**3RK1 903-2AC00**		1	1 unit	121	0.093
	M65-PEN-S terminal blocks without incoming energy connection	A	**3RK1 903-2AC10**		1	1 unit	121	0.099

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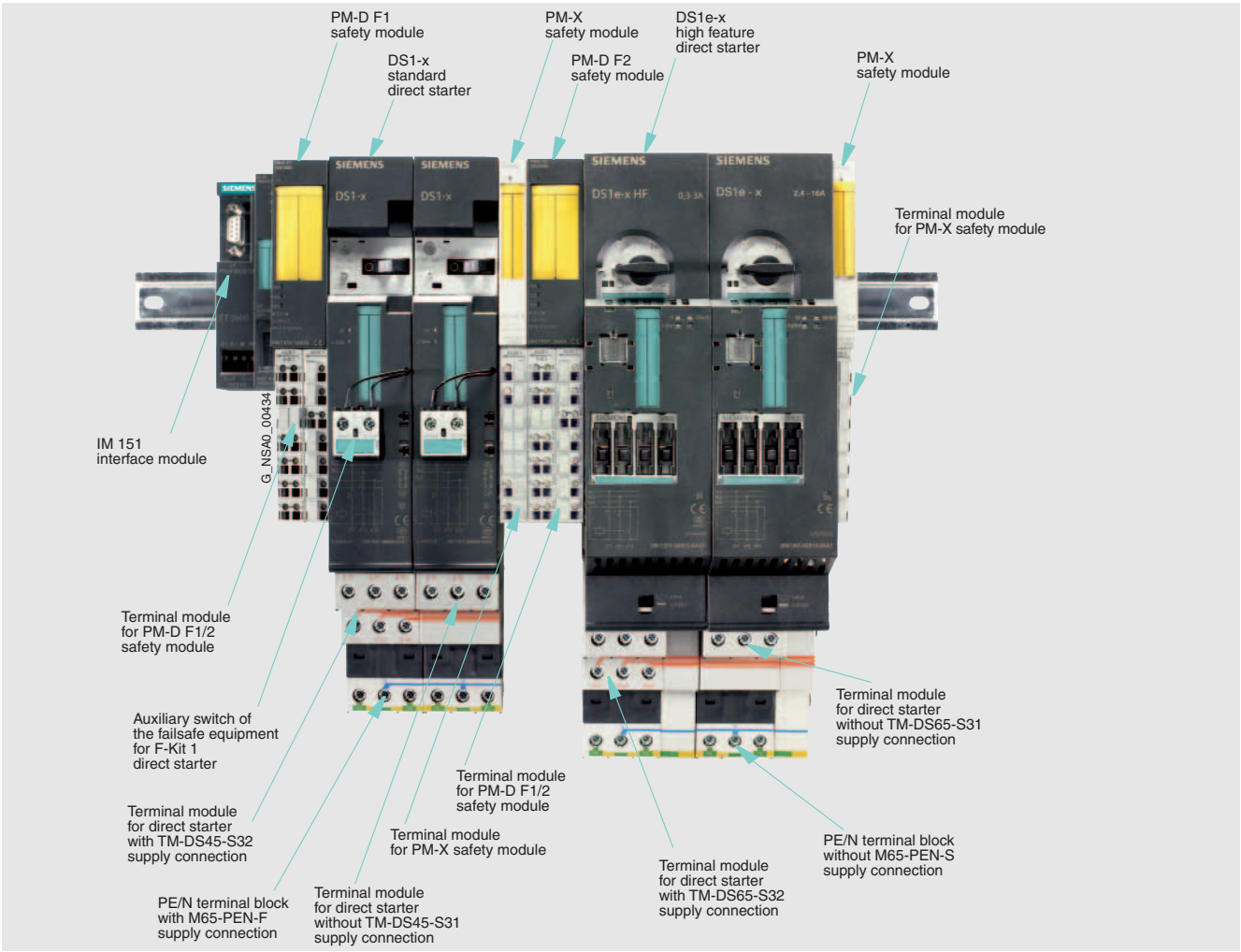
* You can order this quantity or a multiple thereof.

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 multipliers)
- The PM-D F1 and PM-D F2 modules can be combined with the PM-D F3 or PM-D F4 modules.
- A PM-D F5 can be positioned at any point between a PM-D F1 ... 4 and a PM-X.
- Safety modules monitor the U1 and U2 auxiliary voltages. A voltage failure is relayed as a diagnostics 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.

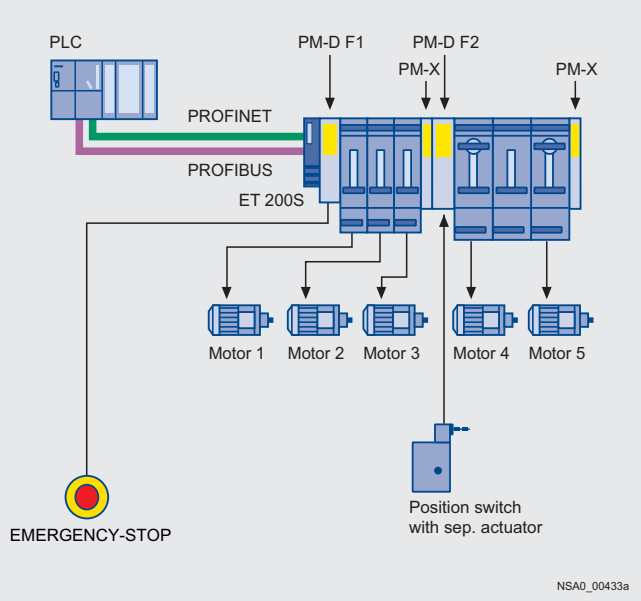
Safety functional examples for easy, quick and low-cost implementations of applications with Safety motor starters Solutions local are available on the Internet:

Further information is available on the Internet at:

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

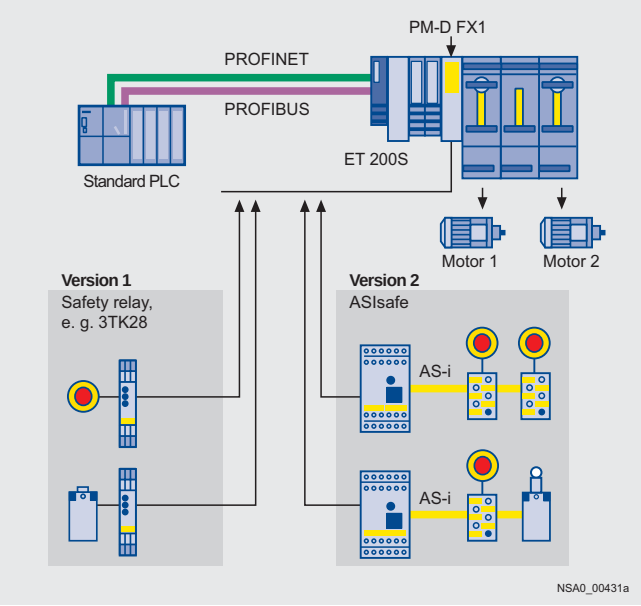
http://www.siemens.com/ET200S

Example 1:



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

Example 2:



ET 200S Safety motor starter Solutions local with 2 external safety combinations (= safety relays or ASIsafe monitors) and with Failsafe motor starters (PM-DFX-1 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 diagnostics signals, e.g. in the event of crossover in the EMERGENCY-STOP circuit.

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

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

Use of the PM-DFX1 safety module: The PM-DFX1 safety module is used for feeding in 1 to 6 switch-off groups. The infeed voltage can be switched using 1 to 6 external safety shutdown devices (either ASIsafe monitors or 3TK28 safety relays). This safety module is used in applications with external safety shutdown devices where there is a need for the fully selective safety shutdown of failsafe motor starters/frequency converters (see example 2, page 6/107).

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] motor starters, standard	A	**3RK1 903-1CA00**		1	1 unit	121	0.030
 3RK1 903-1CA01	**F-Kit 2** Failsafe equipment for RS1-x[1] motor starters, standard	A	**3RK1 903-1CA01**		1	1 unit	121	0.056

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* You can order this quantity or a multiple thereof.

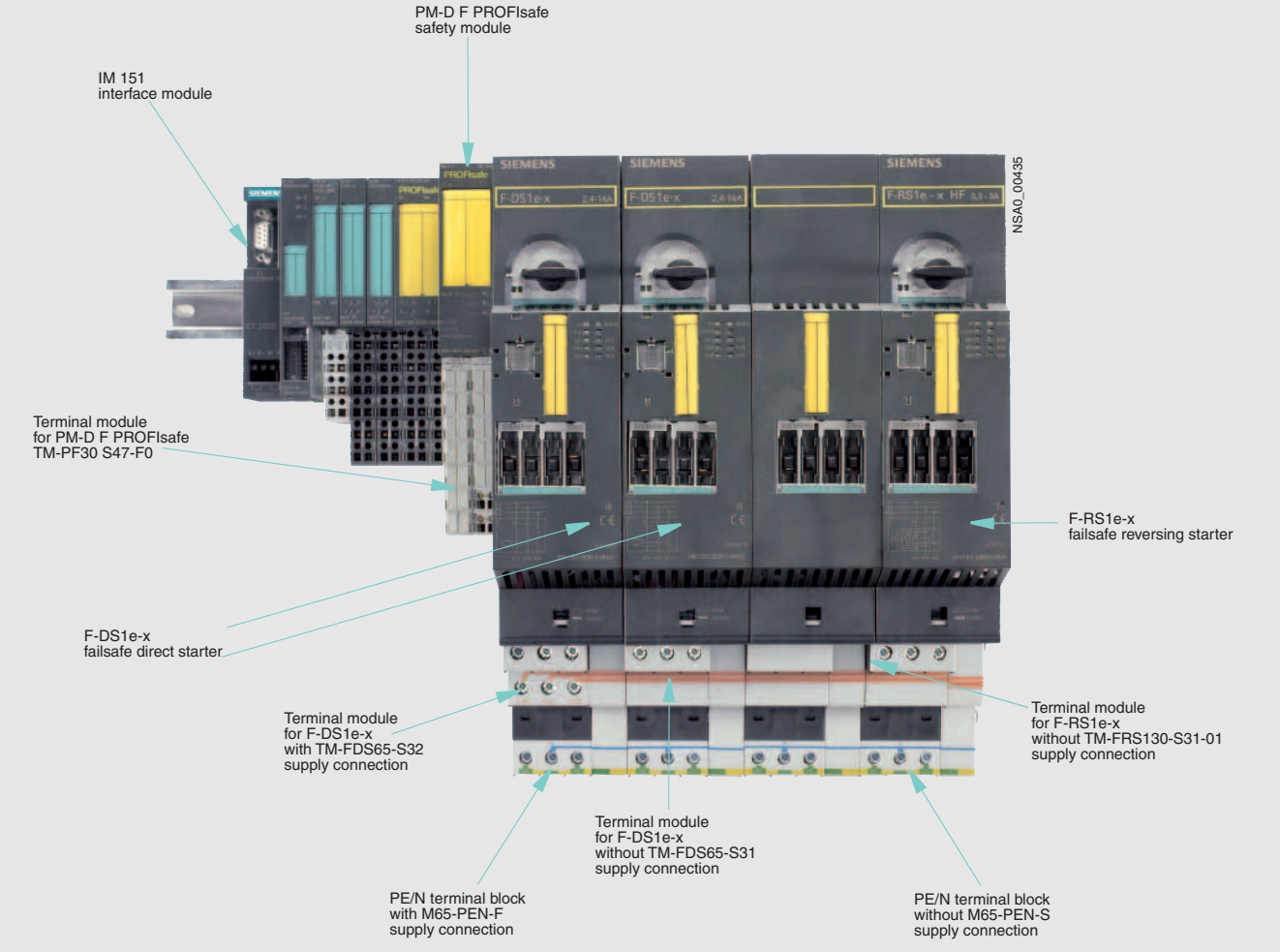
Safety modules local

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Components for safety modules								
	Terminal modules							
 3RK1 903-1AA00	**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 multiplier	A	**3RK1 903-3AB10**		1	1 unit	121	0.410

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

* You can order this quantity or a multiple thereof.

Overview



Interaction of ET 200S Safety motor starter Solutions PROFIsafe components

Safety motor starters Solutions PROFIsafe

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

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

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

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

- For the use of Failsafe motor starters in plants with safety category 2 to 4 according to EN 954-1 and SIL 2 and 3 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 technology is implemented through the F-CM Failsafe contact multiplier with four floating contacts.

Example:

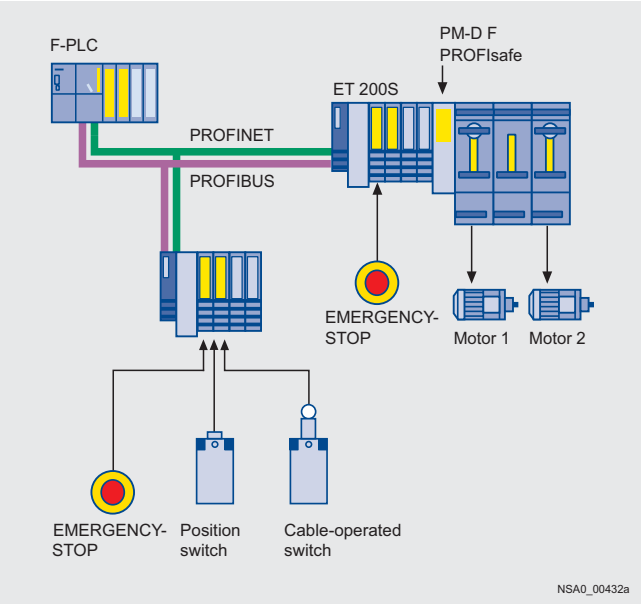
The diverse possible uses of the Safety motor starter Solutions PROFIsafe are presented in the manual SIMATIC ET 200S motor starters in the context of typical sample applications.

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

Further information is available 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 wide-spread 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
	M65-PEN-F terminal blocks PE/N With incoming energy connection, With caps	A	**3RK1 903-2AC00**		1	1 unit	121	0.093
	M65-PEN-S terminal blocks Without incoming energy connection	A	**3RK1 903-2AC10**		1	1 unit	121	0.099

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

Standard and High Feature

Overview

Motor starters

- Only two variants up to 5.5 kW
- All settings can be parameterized by bus
- Comprehensive diagnostics 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 module

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

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 three-phase 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.

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Motor starters, standard, 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	C[2]	**3RK1 304-5□S40-5AA0**		1	1 unit	121	1.728
	• With brake output 400 V AC	C[2]	**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	C[2]	**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	C[2]	**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 class 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 by means of the 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

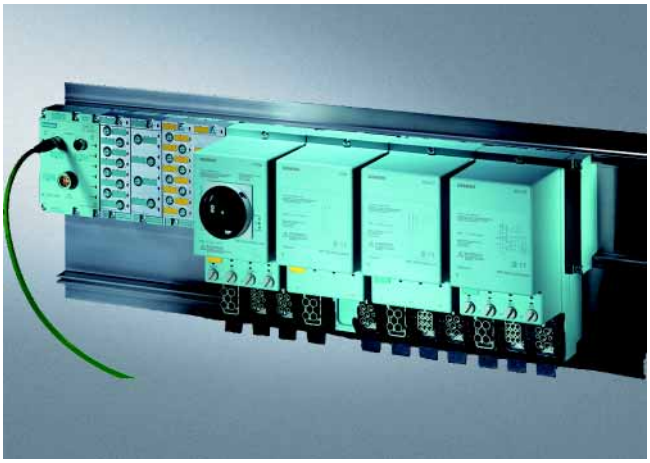
1) Only functions when used together with the corresponding backplane bus module 110 mm and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters").

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 maintenance 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 module

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

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

Failsafe 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

Failsafe 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.

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/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/SIL 3 according to EN 954-1.

400 V disconnecting module

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

It contains two contactors connected in series for safety-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/SIL 3 according to EN 954-1.

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/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	0.319
	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.

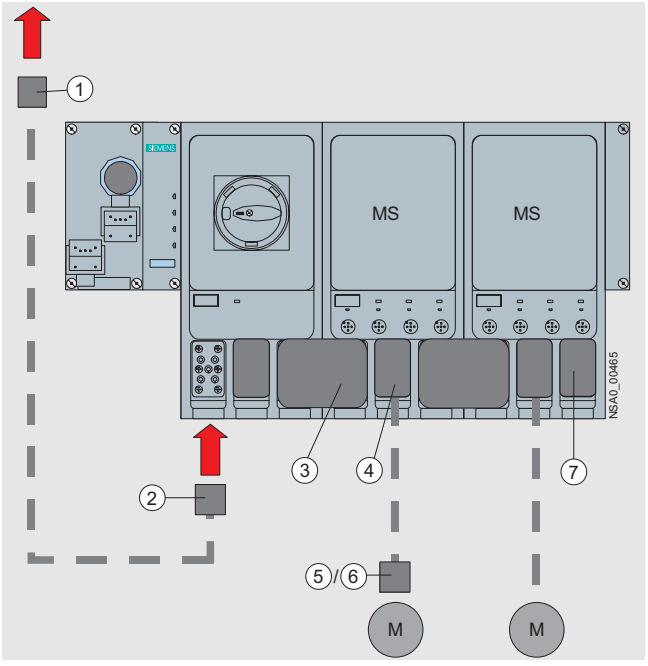
2) Only in combination with the special backplane bus module for the Safety local isolator module (see "Accessories for ET 200pro motor starters").

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

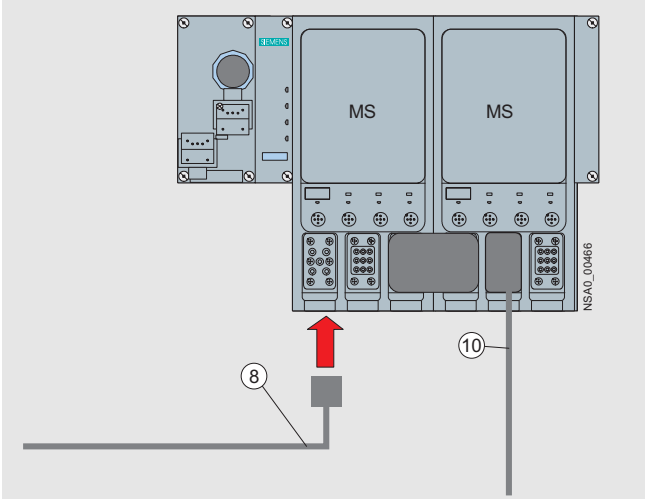
4) Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters").

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

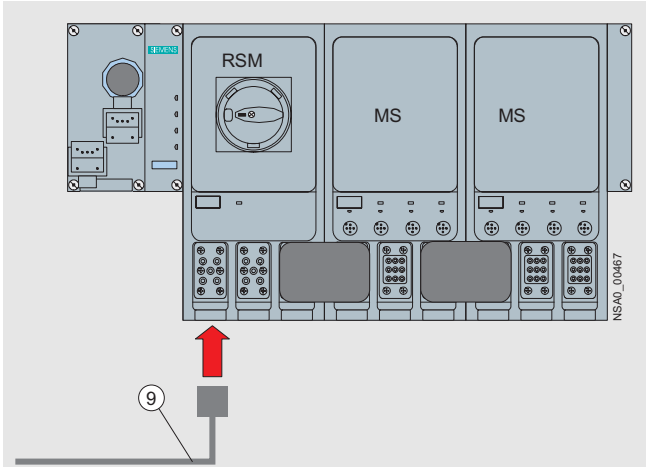
Overview



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 plugs (see page 6/120)
② Power connection plugs (see page 6/120)
③ Power jumper plugs (see page 6/120)
④ Motor connection plugs (see page 6/120)
⑤ Motor plugs (see page 6/120)
⑤ Motor plugs with EMC suppressor circuit (see page 6/120)
⑦ Power loop-through plugs (see page 6/120)
⑧ Power connection cables (see page 6/120)
⑨ Power connection cables for isolator modules (see page 6/120)
⑩ Motor cables (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
	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	0.001
	• Length 2000 mm	A	**6ES7 194-4GB20-0AA0**		1	1 unit	250	16.000
	Module racks, wide, compact[1)]							
	• Length 500 mm	A	**6ES7 194-4GD00-0AA0**		1	1 unit	250	0.001
	• Length 1000 mm	A	**6ES7 194-4GD10-0AA0**		1	1 unit	250	0.001
	• Length 2000 mm	A	**6ES7 194-4GD20-0AA0**		1	1 unit	250	0.001
	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	0.395
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	0.410
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	0.100
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	0.292
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	0.150
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 unit	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 unit	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 unit	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 unit	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	0.400
• Length 2.0 m	A	**6XV1 830-3DH20**		1	1 unit	550	0.480
• Length 3.0 m	A	**6XV1 830-3DH30**		1	1 unit	550	0.800
• Length 5.0 m	A	**6XV1 830-3DH50**		1	1 unit	550	1.200
• Length 10 m	A	**6XV1 830-3DN10**		1	1 unit	550	2.400
• Length 15 m	A	**6XV1 830-3DN15**		1	1 unit	550	1.240
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	0.700
• Length 2.0 m	A	**6XV1 822-5BH20**		1	1 unit	550	0.780
• 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	3.000
• Length 10 m	A	**6XV1 822-5BN10**		1	1 unit	550	1.650
• 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	0.250
• With female insert, pack of 5	A	**6GK1 905-0EB00**		1	1 unit	552	0.265
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	1.580
- 1000 mm	A	**6ES7 194-4GA60-0AA0**		1	1 unit	250	0.001
- 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	0.001
- 1000 mm	A	**6ES7 194-4GC60-0AA0**		1	1 unit	250	0.001
- 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	0.001
- 2000 mm, can be cut to size	A	**6ES7 194-4GB20-0AA0**		1	1 unit	250	16.000
• Wide, compact, for I/O modules and motor starters							
- 500 mm	A	**6ES7 194-4GD00-0AA0**		1	1 unit	250	0.001
- 1000 mm	A	**6ES7 194-4GD10-0AA0**		1	1 unit	250	0.001
- 2000 mm	A	**6ES7 194-4GD20-0AA0**		1	1 unit	250	0.001
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	A	**6ES7 194-4HB00-0AA0**		1	1 unit	250	0.050

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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	0.200
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	0.150
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	0.150
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	0.150
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 plug							
• 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	0.130
• Length 1.0 m	A	**6XV1 870-8AH10**		1	1 unit	527	0.140
• 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
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	0.700
• Length 2.0 m	A	**6XV1 822-5BH20**		1	1 unit	550	0.780
• 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	3.000
• Length 10 m	A	**6XV1 822-5BN10**		1	1 unit	550	1.650
• Length 15 m	A	**6XV1 822-5BN15**		1	1 unit	550	2.540
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 unit	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

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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)							
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	1.580
- 1000 mm	A	**6ES7 194-4GA60-0AA0**		1	1 unit	250	0.001
- 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	0.001
- 1000 mm	A	**6ES7 194-4GC60-0AA0**		1	1 unit	250	0.001
- 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	0.001
- 2000 mm, can be cut to size	A	**6ES7 194-4GB20-0AA0**		1	1 unit	250	16.000
• Wide, for I/O modules and motor starters							
- 500 mm	A	**6ES7 194-4GD00-0AA0**		1	1 unit	250	0.001
- 1000 mm	A	**6ES7 194-4GD10-0AA0**		1	1 unit	250	0.001
- 2000 mm	A	**6ES7 194-4GD20-0AA0**		1	1 unit	250	0.001
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	A	**6ES7 194-4HB00-0AA0**		1	1 unit	250	0.050
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 154-8 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	0.001
Accessories							
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 unit	527	0.055
• Fast Connect trailing cables	A	**6XV1 840-3AH10**		1	1 unit	527	0.055
• Fast Connect marine cables	A	**6XV1 840-4AH10**		1	1 unit	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	0.130
• 1.0 m	A	**6XV1 870-8AH10**		1	1 unit	527	0.140
• 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

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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 (continued)							
Accessories (continued)							
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
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	0.141
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	0.100
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	0.141
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	0.100
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	0.001
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	0.300
CM IO 8 x M12 connection modules 8 M12 sockets for connection of digital sensors or actuators to ET 200pro	A	**6ES7 194-4CB00-0AA0**		1	1 unit	250	0.305
Connection modules for digital solid-state modules							
• ET 200PRO, 8 X M8	A	**6ES7 194-4EB00-0AA0**		1	1 unit	250	0.357
• 2 x M12, 8-pole; 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
• 1 x M23, 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	0.201
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	0.300
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	22.000
M12 plugs, for field assembly 5-pole, for connecting digital sensors and actuators, 1 unit		**on request**					
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 request**					
- 1 m		**on request**					
- 1.5 m		**on request**					
• 4 x 0.34 mm^2, fixed lengths, 1 unit							
- 0.6 m		**on request**					
- 1 m		**on request**					
- 1.5 m		**on request**					

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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							
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	0.149
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	0.149
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	0.100
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	0.100
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	0.300
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	0.300
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	0.100
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	0.100
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	0.100
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	0.100
IM154-2 High-Feature interface modules For the ET 200pro, including termination module	A	**6ES7 154-2AA00-0AB0**		1	1 unit	250	0.410
PROFINET IM154-4 PN interface modules Including termination module	A	**6ES7 154-4AB00-0AB0**		1	1 unit	250	0.200
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	0.026
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							
- 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	0.060
- 1 m	A	**3RX8 000-0CC44-1AF0**		1	1 unit	574	0.217
- 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	0.100
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	0.100
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	0.100
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	0.100

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Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
PM-E power modules (continued)							
Accessories (continued)							
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	A	**6ES7 194-4HB00-0AA0**		1	1 unit	250	0.050
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 unit	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 unit	551	0.075
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 unit	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 unit	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	0.700
• Length 2.0 m	A	**6XV1 822-5BH20**		1	1 unit	550	0.780
• 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	3.000
• Length 10 m	A	**6XV1 822-5BN10**		1	1 unit	550	1.650
• 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	0.100
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	0.100
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	0.001
• 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					
• FESTO valve terminals CPV 14		Obtainable from: Festo					
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	▶	**6SL3235-0TE21-1RB0**		1	1 unit	337	2.500
• ET 200pro FC frequency converters with integrated safety functions	▶	**6SL3235-0TE21-1SB0**		1	1 unit	337	2.500
Accessories							
Backplane bus modules for accommodating the frequency converter	▶	**6SL3260-2TA00-0AA0**		1	1 unit	337	0.450

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* You can order this quantity or a multiple thereof.

Overview

Distributed motor starters are used for switching and protecting loads locally. Variants 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 200X) for operating mechanisms installed close together.

The functionality in the ECOFAST system ranges from direct-on-line 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 6/79).

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

Selection and ordering data

Version					DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Fieldbus interface	Switching function	Motor protection	Setting range/ performance range	Brake output							
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
	Electronic, soft, multispeed, R2SS	Full motor protection	0.6 ... 4 A/1.5 kW	400 V AC	B	**3RK1 303-6ES84-3AA3**		1	1 unit	121	3.083
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
	Electronic, soft, multispeed, R2SS	Full motor protection	0.6 ... 4 A/1.5 kW	400 V AC	B	**3RK1 323-6ES84-3AA3**		1	1 unit	121	3.038

[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 variants:
  - 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 variants:
  - 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 variants:
  - 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 variants:
  - 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 variants:
  - 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	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

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* You can order this quantity or a multiple thereof.

3RE13 reversing 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	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

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* You can order this quantity or a multiple thereof.

Selection and ordering data

Version	For contactor 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.**