Load Feeders, Motor Starters and Soft Starters

6

Introduction

Overview


3RW30


3RW40


3RW44


3RA11


3RA12


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 - Ventilators - Compressors and coolers		
3RW30, 3RW31	• SIRIUS 3RW30/31 soft starters for soft starting and smooth ramp-down of three-phase asynchronous motors • Rating 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 • Rating range from 75 to 250 kW (at 400 V)	3RW40	6/12
For High Feature applications	• Application areas - Pumps - Compressors - Industrial refrigerating systems - Conveying systems - Machine tools - Ventilators - 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 • Rating range - up to 710 kW (at 400 V) in inline circuit and - up to 1200 kW (at 400 V) in inside-delta circuit	3RW44	6/15
3RA 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 sets (link modules, wiring sets 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 units for self-assembly		
3RA11 combination starters, direct-on-line			
For snapping onto standard mounting rails or for screw mounting	• Rated control supply voltage 50 Hz 230 V AC and 24 V DC for 35 mm standard mounting rail or screw mounting	3RA11	6/24
For busbar systems	• Rated control supply voltage 50 Hz 230 V AC and 24 V DC for 40 mm and 60 mm busbar systems	3RA11	6/28
3RA12 reversing starters			
For snapping onto standard mounting rails or for screw mounting	• Rated control supply voltage 230 V AC, 50 Hz and 24 V DC for 35 mm standard mounting rail or screw mounting	3RA12	6/32
For busbar systems	• Rated control supply voltage 50 Hz 230 V AC and 24 V DC for 40 mm and 60 mm busbar systems	3RA12	6/36
Infeed system			
3RV19 infeed system	• Convenient means of power supply and distribution	3RV19	6/46
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	6/51
Fused load feeders	• Safe load feeders for direct start • Actuating voltage 230 V AC, 50/60 Hz • Actuating voltage 24 V DC	3RA71	6/55


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	6/56
AS-Interface motor starters, IP67 (24 V DC)	• For the lowest power range up to 70 W, 24 V DC motors and the associated sensor systems 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	6/59
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 distance of 40 mm and 60 mm • Completely factory-wired and adaptable to busbar systems		
Combination starters for busbar systems, direct-on-line	• For direct start, a load can be switched on and off with the load feeder	3RA51	6/63
Reversing starters for busbar systems	• The feeder for reversing duty is designed for two directions of rotating of induction motors	3RA52	6/65
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	6/67
Power modules for ET 200S motor starters	• For supplying and monitoring the auxiliary voltages for motor starters	3RK1 903-0BA00	6/73
Terminal modules for ET 200S motor starters	• Mechanical modules in which motor starters and expansion modules are inserted	3RK1 903	6/74
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	6/77
ET 200S Safety motor starters Solutions local/PROFIsafe			
ET 200S Failsafe motor starters	• High Feature direct-on-line and reversing starters	3RK1 301	6/89
Safety modules local	• For safety catgeory 4 according to EN 954-1	3RK1 903	6/91
Safety modules PROFIsafe	• Sensor and actuator assignment are freely configurable (distributed safety concept)	3RK1 903	6/95
ET 200pro motor starters			
ET 200pro motor starters	• Standard and High Feature	3RK1 304	6/98
ET 200pro isolator modules	• With switch disconnector function for safe disconnection	3RK1 304	6/100
Safety local modules	• Isolator module and 400 V disconnecting module	3RK1 304	6/101
Accessories for ET 200pro motor starters	• Interface, expansion and power modules	6ES7 1	6/102
ET 200X motor starters			
ET 200X motor starters	• For switching and protection of any three-phase loads • Direct-on-line or reversing starters, electromechanical or solid-state	3RK1 300	6/109
Basic and expansion modules	• Intelligent basic modules, ECOFAST basic modules, PM 148 power module, digital/analog expansion modules, PM 148-P pneumatic module, PM 148-P pneumatic interface	6ES7 14	6/113
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	6/120
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 combination starters, direct-on-line	• Molded-plastic enclosure, degree of protection IP65, including contactor	3RE10	6/122
3RE13 reversing starters	• Molded-plastic enclosure, deg. of protection IP65, including cont. assembly	3RE13	6/123
Accessories	• Molded-plastic enclos., deg. of prot. IP65, for direct-on-line and reversing starters	3RE19	6/124

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	SIRIUS 3RW44 High Feature applications
Rated current up to 40 °C	A	3 ... 100	134 ... 432	29 ... 1214
Rated operational voltage	V	200 ... 575	200 ... 600	200 ... 690
Motor rating at 400 V				
• Inline circuit	kW	1.1 ... 55	75 ... 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		--	--	✔
Adjustable current limiting		--	✔	✔
Inside-delta circuit		--	--	✔
Breakaway pulse		--	--	✔
Creep speed in both directions		--	--	✔
Pump ramp-down		--	--	✔[7)]
DC braking		--	--	✔[3)7)]
Combined braking		--	--	✔[3)7)]
Motor heating		--	--	✔[4)]
Communication		--	--	with PROFIBUS DP[4)] (option)
External display and operator module		--	--	(option[4)])
Operating measured value display		--	--	✔
Error logbook		--	--	✔[4)]
Event list		--	--	✔[4)]
Slave pointer function		--	--	✔[4)]
Trace function		--	--	✔[5)]
Programmable control inputs and outputs		--	--	✔
Number of parameter sets		1 (2 with 3RW31)	1	3
Parameterization software (Soft Starter ES)		--	--	✔[4)]
Power semiconductors (thyristors)		2 controlled phases	2 controlled phases	3 controlled phases
Spring-loaded terminals		✔ (only 3RW30 03)	✔	✔
Screw terminals		✔	✔	✔
UL/CSA		✔[6)]	✔	✔
CE marking		✔	✔	✔
Soft starting under heavy starting conditions		--	--	✔[7)]
Configuring support		Win-Soft Starter, the electronic selection slider ruler, Technical Assistance ++49 911 895 5900		

✔ Function is available
-- Function not available.

1) Only soft starting available for 3RW31.
2) Not available for 3RW30 03.
3) Not possible in inside-delta circuit.
4) Start of delivery 2006.
5) Trace function with Soft Starter ES software.
6) For 3RW30 03 up to 230 V.
7) Calculate soft starter and motor with size allowance where required.

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

Overview

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

- Standard version for fixed frequency three-phase motors, sizes S00, S0, S2 and S3
- Version for fixed-speed three-phase motors in a 22.5 mm enclosure
- Special-purpose 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 edge 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
- Ventilators
- Assembly lines
- Compressors and coolers
- Operating mechanisms

3RW30, 3RW31
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 output of three-phase induction motors for rated operational voltage U_e				Rated operational current I_e	Rated output of three-phase 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 operating 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 methods

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 output of three-phase induction motors for rated operational voltage U_e				Rated operational current I_e	Rated output of three-phase 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	--	10	10	25	--	**S2**	▶	**3RW30 35-1AB□4**		1	1 unit	131	0.779
45	--	15	22	--	38	--	10	15	30	--	**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	25	50	--	**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	20	**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	--	--	--	25	30	**S2**	A	**3RW30 35-1AB□5**		1	1 unit	131	0.793
45	--	--	--	30	38	--	--	--	30	40	**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	--	--	--	50	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**

Selection of the soft starter depends on the motor's rated 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 output of three-phase induction motors for rated operational voltage U_e				Rated operational current I_e	Rated output of three-phase 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 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	--	--	--	11	14	--	--	--	10	10	**S0**	B	**3RW31 25-1CB15**		1	1 unit	131	0.476
25	--	--	--	15	21	--	--	--	15	20	**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.

Selection of the soft starter depends on the motor's rated 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.
See LV 1 T for information about rated currents for ambient temperatures >40 °C.

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

3RW30, 3RW31
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.	**S0**	To increase switching frequency	▶	**3RW39 26-8A**		1	1 unit	131	0.008
 3RW39 36-8A	3RW30 3. and 3RW30 4.	**S2** **S3**	and for device mounting in positions different from the normal position. The fan is snapped into the enclosure from below. During operation, (control signal input "IN" at potential A1), the fan is running. After a stop, the fan continues to run for about another 60 minutes.	▶	**3RW39 36-8A**		1	1 unit	131	0.030
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	0.016 0.023
	Terminal covers for cable lugs and bar connections									
 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	0.037

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
Covering caps and plug-in lugs (only for 3RW30 03)										
	**Sealable caps**	For securing against unauthorized adjustment of setting knobs	For devices with 1 or 2 CO contacts	▶	**3RP1 902**		1	5 units	101	0.004
	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

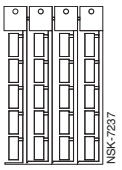
3RA19 31-1A

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-packs									
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 connection modules listed here are also used for load feeders (3RV motor starter protector + 3RT contactor). For further technical specifications see Controls –> Contactors and Contactor Assemblies.

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

Blank labeling plates



Device labeling plates
1 frame = 20 labeling plates

Designation	Labeling area Color W x H mm x mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Device labeling plates for "SIRIUS"[1]	20 x 7 mm, pastel turquoise	C	**3RT19 00-1SB20**		100	340 units	101	0.220
Labels for sticking for "SIRIUS"	19 x 6, pastel turquoise	D	**3RT19 00-1SB60**		100	3060 units	101	0.153
	19 x 6 zinc yellow	C	**3RT19 00-1SD60**		100	3060 units	101	0.120

1) Computer labeling system for individual labeling of device labeling plates available from:
murrplastik Systemtechnik GmbH

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

3RW30, 3RW31 for standard applications

For soft starters Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
AS-Interface load feeder modules								
 3RK14 00-1KG01-0AA1 3RK14 00-1MG01-0AA1	**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 power 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]	▶	**3RK1 400-1KG01-0AA1**		1	1 unit	121	0.097
	4 inputs / 2 outputs, 24 V DC[1]	A	**3RK1 400-1MG01-0AA1**		1	1 unit	121	0.100
	2 inputs / 1 relay output, 120/230 V AC[2]	C	**3RK1 402-3KG02-0AA1**		1	1 unit	121	0.124
	3 inputs / 2 relay outputs, 120/230 V AC[2]	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
 Support with mounted power connector coupling	**Power connector sets**							
	5-pole, 2.5 mm² (1 package = 5 connectors and 5 couplings)	C	**3RK1 901-0EA00**		1	5 sets	121	0.111
	AS-Interface connectors for data and auxiliary supply cables							
	Color							
 3RK19 01-0NA00 3RK19 01-0PA00	With insulation displacement terminals for 2 x (0.5 to 0.75 mm²) flexible lead, Yellow	C	**3RK1 901-0NA00**		1	5 units	121	0.015
	With insulation displacement terminals for 2 x (0.5 to 0.75 mm²) flexible lead, 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 control								
 3TX7 462-3.	**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	0.081

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 Switchgear, Distribution Systems and Cabinets –> 8US Busbar Systems.

* You can order this quantity or a multiple thereof.

More information

Configuration

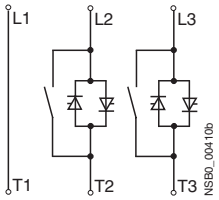
The 3RW solid-state motor controllers are designed for easy starting conditions. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. For accurate dimensioning, use the Win-Soft Starter selection and simulation program.

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.

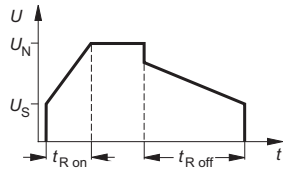
All elements of the main circuit (such as fuses, controls and overload relays) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, switching devices and overload relays must be ordered separately. Please observe the maximum switching frequencies specified in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

Power electronics circuit diagram[1)]

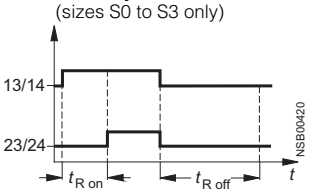


Status graphs

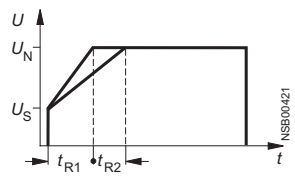
3RW30 – 3-ph. mot.



Auxiliary contacts
(sizes S0 to S3 only)



3RW31



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

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/sanftstarter

3RW40
for standard applications

Overview

SIRIUS 3RW40 soft starters have all the same advantages as the 3RW30/31 soft starters. At the same time they come with additional functions, e.g. solid-state motor overload and intrinsic device protection and adjustable current limiting, as well as a two-phase control method (Polarity Balancing) that is unique in this rating range.

SIRIUS 3RW40 soft starters are part of the SIRIUS modular system. This results in advantages such as identical sizes and a uniform connection system. 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 installing 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.

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
- Ventilators
- Assembly lines
- Compressors and coolers
- Operating mechanisms

Selection and ordering data

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 operating current I_e	Rated output of three-phase induction motors for rated operational voltage U_e			Rated operational current I_e	Rated output of three-phase 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 circuits, rated operational voltage 200 ... 460 V[1]																
134	37	**75**	--	117	30	40	**75**	--	S6	B	**3RW40 55-□BB□4**		1	1 unit	131	5.700
162	45	**90**	--	145	40	50	**100**	--		B	**3RW40 56-□BB□4**		1	1 unit	131	5.700
230	75	**132**	--	205	60	75	**150**	--	S12	B	**3RW40 73-□BB□4**		1	1 unit	131	7.000
280	90	**160**	--	248	75	100	**200**	--		B	**3RW40 74-□BB□4**		1	1 unit	131	7.000
356	110	**200**	--	315	100	125	**250**	--		B	**3RW40 75-□BB□4**		1	1 unit	131	7.000
432	132	**250**	--	385	125	150	**300**	--		B	**3RW40 76-□BB□4**		1	1 unit	131	7.000
Inline circuits, rated operational voltage 400 ... 600 V[2]																
134	--	75	**90**	117	--	--	75	**100**	S6	B	**3RW40 55-□BB□5**		1	1 unit	131	5.700
162	--	90	**110**	145	--	--	100	**150**		B	**3RW40 56-□BB□5**		1	1 unit	131	5.700
230	--	132	**160**	205	--	--	150	**200**	S12	B	**3RW40 73-□BB□5**		1	1 unit	131	7.000
280	--	160	**200**	248	--	--	200	**250**		B	**3RW40 74-□BB□5**		1	1 unit	131	7.000
356	--	200	**250**	315	--	--	250	**300**		B	**3RW40 75-□BB□5**		1	1 unit	131	7.000
432	--	250	**315**	385	--	--	300	**400**		B	**3RW40 76-□BB□5**		1	1 unit	131	7.000

Order No. supplement for connection methods

- With spring-loaded terminals **2 6**
- With screw terminals **3 4**

Order No. supplement for the rated control supply voltage U_s[3]

- 115 V AC
- 230 V AC

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.

Selection of the soft starter depends on the motor's rated 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. See Technical Specifications for information about rated currents for ambient temperatures >40 °C.

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

Accessories

	For soft starters Type	Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Box terminal blocks for soft starters										
	**For round and ribbon cables**									
	3RW40 5.	S6	• up to 70 mm²	▶	**3RT19 55-4G**		1	1 unit	101	0.237
			• up to 120 mm²	▶	**3RT19 56-4G**		1	1 unit	101	0.270
	3RW40 7.	S12	• up to 240 mm²	▶	**3RT19 66-4G**		1	1 unit	101	0.676
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 5.	S6		▶	**3RT19 56-4EA2**		1	1 unit	101	0.028
	3RW40 7.	S12		▶	**3RT19 66-4EA2**		1	1 unit	101	0.038
	Terminal covers for cable lugs and busbar connections									
	3RW40 5.	S6		▶	**3RT19 56-4EA1**		1	1 unit	101	0.067
	3RW40 7.	S12		▶	**3RT19 66-4EA1**		1	1 unit	101	0.124
	**Sealing covers**									
	3RW40 5. and 3RW40 7.	S6, S12		▶	**3RW49 00-0PB00**		1	1 unit	131	0.010
Modules for RESET										
	**Modules for remote RESET, electrical**									
	Operating range 0.85 ... 1.1 x U_s, power consumption 80 VA AC, 70 W DC, ON period 0.2 s ... 4 s, operating 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 set	101	0.038
			• Suitable pushbutton IP65, Ø 22 mm, 12 mm stroke	B	**3SB30 00-0EA11**		1	1 unit	102	0.021
			• Extension plunger	A	**3SX13 35**		1	1 unit	102	0.004
	**Cable releases with holders 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

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

Configuration

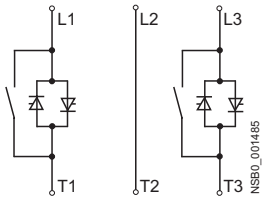
The 3RW solid-state soft starters are designed for easy starting conditions. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. For accurate dimensioning, use the Win-Soft Starter selection and simulation program (Version 2.0 upwards).

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.

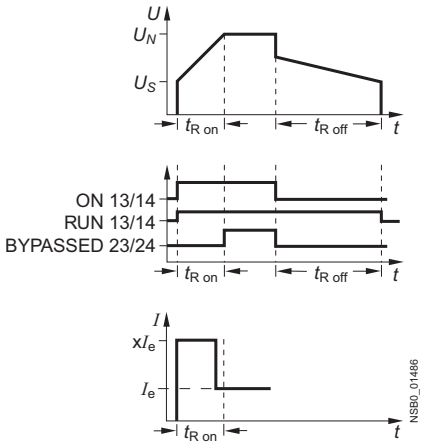
In the motor feeder between the SIRIUS 3RW soft starter and the motor, no capacitive elements are permitted (e.g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during 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, controls and overload relays must be ordered separately. Please observe the maximum switching frequencies specified in the technical specifications.

Power electronics circuit diagram



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.

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

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 rating 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.

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

3RW44
for High Feature applications

Selection and ordering data

3RW44 27-1BC44

3RW44 36-6BC44

3RW44 47-6BC44

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 operating current I_e	Rated output of three-phase induction motors for rated operational voltage U_e					Rated operating current I_e	Rated output of three-phase induction motors for rated operational voltage U_e										
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V							
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp							kg
Inline circuits, rated operational voltage 200 ... 460 V[1]																	
29	5.5	**15**	–	–	–	26	7.5	7.5	**15**	–	▶	**3RW44 22-□BC□4**		1	1 unit	131	4.900
36	7.5	**18.5**	–	–	–	32	10	10	**20**	–	▶	**3RW44 23-□BC□4**		1	1 unit	131	4.900
47	11	**22**	–	–	–	42	10	15	**25**	–	▶	**3RW44 24-□BC□4**		1	1 unit	131	4.900
57	15	**30**	–	–	–	51	15	15	**30**	–	▶	**3RW44 25-□BC□4**		1	1 unit	131	4.900
77	18.5	**37**	–	–	–	68	20	20	**50**	–	▶	**3RW44 26-□BC□4**		1	1 unit	131	4.900
93	22	**45**	–	–	–	82	25	25	**60**	–	▶	**3RW44 27-□BC□4**		1	1 unit	131	4.900
Order No. supplement for connection methods																	
• 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	10.300
250	75	**132**	–	–	–	215	60	75	**150**	–	B	**3RW44 44-□BC□4**		1	1 unit	131	10.300
313	90	**160**	–	–	–	280	75	100	**200**	–	B	**3RW44 45-□BC□4**		1	1 unit	131	10.300
356	110	**200**	–	–	–	315	100	125	**250**	–	B	**3RW44 46-□BC□4**		1	1 unit	131	10.300
432	132	**250**	–	–	–	385	125	150	**300**	–	B	**3RW44 47-□BC□4**		1	1 unit	131	10.300
Order No. supplement for connection methods																	
• With spring-loaded terminals												**2**					
• With screw terminals												**6**					
Inline circuits, rated operational voltage 400 ... 600 V[2]																	
29	–	15	**18.5**	–	–	26	–	–	15	**20**	A	**3RW44 22-□BC□5**		1	1 unit	131	4.900
36	–	18.5	**22**	–	–	32	–	–	20	**25**	A	**3RW44 23-□BC□5**		1	1 unit	131	4.900
47	–	22	**30**	–	–	42	–	–	25	**30**	A	**3RW44 24-□BC□5**		1	1 unit	131	4.900
57	–	30	**37**	–	–	51	–	–	30	**40**	A	**3RW44 25-□BC□5**		1	1 unit	131	4.900
77	–	37	**45**	–	–	68	–	–	50	**50**	A	**3RW44 26-□BC□5**		1	1 unit	131	4.900
93	–	45	**55**	–	–	82	–	–	60	**75**	A	**3RW44 27-□BC□5**		1	1 unit	131	4.900
Order No. supplement for connection methods																	
• 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	10.300
250	–	132	**160**	–	–	215	–	–	150	**200**	B	**3RW44 44-□BC□5**		1	1 unit	131	10.300
313	–	160	**200**	–	–	280	–	–	200	**250**	B	**3RW44 45-□BC□5**		1	1 unit	131	10.300
356	–	200	**250**	–	–	315	–	–	250	**300**	B	**3RW44 46-□BC□5**		1	1 unit	131	10.300
432	–	250	**315**	–	–	385	–	–	300	**400**	B	**3RW44 47-□BC□5**		1	1 unit	131	10.300
Order No. supplement for connection methods																	
• 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.

Soft starter selection depends on the motor's rated 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 or 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 operating 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 operating current I_e	Rated output of three-phase induction motors for rated operational voltage U_e					Rated operating current I_e	Rated output of three-phase induction motors for rated operational voltage U_e										
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V							
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp							kg
Inline circuits, rated operational voltage 400 ... 690 V																	
29	–	15	18.5	**30**	–	26	–	–	15	**20**	B	**3RW44 22-□BC□6**		1	1 unit	131	4.900
36	–	18.5	22	**37**	–	32	–	–	20	**25**	B	**3RW44 23-□BC□6**		1	1 unit	131	4.900
47	–	22	30	**45**	–	42	–	–	25	**30**	B	**3RW44 24-□BC□6**		1	1 unit	131	4.900
57	–	30	37	**55**	–	51	–	–	30	**40**	B	**3RW44 25-□BC□6**		1	1 unit	131	4.900
77	–	37	45	**75**	–	68	–	–	50	**50**	B	**3RW44 26-□BC□6**		1	1 unit	131	4.900
93	–	45	55	**90**	–	82	–	–	60	**75**	B	**3RW44 27-□BC□6**		1	1 unit	131	4.900
Order No. supplement for connection methods																	
• 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	10.300
250	–	132	160	**250**	–	215	–	–	150	**200**	B	**3RW44 44-□BC□6**		1	1 unit	131	10.300
313	–	160	200	**315**	–	280	–	–	200	**250**	B	**3RW44 45-□BC□6**		1	1 unit	131	10.300
356	–	200	250	**355**	–	315	–	–	250	**300**	B	**3RW44 46-□BC□6**		1	1 unit	131	10.300
432	–	250	315	**400**	–	385	–	–	300	**400**	B	**3RW44 47-□BC□6**		1	1 unit	131	10.300
Order No. supplement for connection methods																	
• 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.

Soft starter selection depends on the motor's rated 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 or 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 operating frequency.

6

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

3RW44
for High Feature applications

3RW44 27-1BC44

3RW44 36-6BC44

3RW44 47-6BC44

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 output of three-phase induction motors for rated operational voltage U_e					Rated operating current I_e	Rated output of three-phase induction motors for rated operational voltage U_e										
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V							
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp							kg
Inside-delta circuits, rated operational voltage 200 ... 400 V [2]																	
50	15	**22**	–	–	–	45	10	**15**	–	–	B	**3RW44 22-□BC□4**		1	1 unit	131	4.900
62	18.5	**30**	–	–	–	55	15	**20**	–	–	B	**3RW44 23-□BC□4**		1	1 unit	131	4.900
81	22	**45**	–	–	–	73	20	**25**	–	–	B	**3RW44 24-□BC□4**		1	1 unit	131	4.900
99	30	**55**	–	–	–	88	25	**30**	–	–	B	**3RW44 25-□BC□4**		1	1 unit	131	4.900
133	37	**75**	–	–	–	118	30	**40**	–	–	B	**3RW44 26-□BC□4**		1	1 unit	131	4.900
161	45	**90**	–	–	–	142	40	**50**	–	–	B	**3RW44 27-□BC□4**		1	1 unit	131	4.900
Order No. supplement for connection methods																	
• With spring-loaded terminals												**3**					
• With screw terminals												**1**					
196	55	**110**	–	–	–	173	50	**60**	–	–	B	**3RW44 34-□BC□4**		1	1 unit	131	7.900
232	75	**132**	–	–	–	203	60	**75**	–	–	B	**3RW44 35-□BC□4**		1	1 unit	131	7.900
281	90	**160**	–	–	–	251	75	**100**	–	–	B	**3RW44 36-□BC□4**		1	1 unit	131	7.900
352	110	**200**	–	–	–	312	100	**125**	–	–	B	**3RW44 43-□BC□4**		1	1 unit	131	10.300
433	132	**250**	–	–	–	372	125	**150**	–	–	B	**3RW44 44-□BC□4**		1	1 unit	131	10.300
542	160	**315**	–	–	–	485	150	**200**	–	–	B	**3RW44 45-□BC□4**		1	1 unit	131	10.300
617	200	**355**	–	–	–	546	150	**200**	–	–	B	**3RW44 46-□BC□4**		1	1 unit	131	10.300
748	250	**400**	–	–	–	667	200	**250**	–	–	B	**3RW44 47-□BC□4**		1	1 unit	131	10.300
Order No. supplement for connection methods																	
• With spring-loaded terminals												**2**					
• With screw terminals												**6**					
Inside-delta circuits, rated operational voltage 400 ... 600 V [3]																	
50	–	22	**30**	–	–	45	–	–	30	**40**	B	**3RW44 22-□BC□5**		1	1 unit	131	4.900
62	–	30	**37**	–	–	55	–	–	40	**50**	B	**3RW44 23-□BC□5**		1	1 unit	131	4.900
81	–	45	**45**	–	–	73	–	–	50	**60**	B	**3RW44 24-□BC□5**		1	1 unit	131	4.900
99	–	55	**55**	–	–	88	–	–	60	**75**	B	**3RW44 25-□BC□5**		1	1 unit	131	4.900
133	–	75	**90**	–	–	118	–	–	75	**100**	B	**3RW44 26-□BC□5**		1	1 unit	131	4.900
161	–	90	**110**	–	–	142	–	–	100	**125**	B	**3RW44 27-□BC□5**		1	1 unit	131	4.900
Order No. supplement for connection methods																	
• 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	10.300
433	–	250	**315**	–	–	372	–	–	300	**350**	B	**3RW44 44-□BC□5**		1	1 unit	131	10.300
542	–	315	**355**	–	–	485	–	–	400	**500**	B	**3RW44 45-□BC□5**		1	1 unit	131	10.300
617	–	355	**450**	–	–	546	–	–	450	**600**	B	**3RW44 46-□BC□5**		1	1 unit	131	10.300
748	–	400	**500**	–	–	667	–	–	600	**750**	B	**3RW44 47-□BC□5**		1	1 unit	131	10.300
Order No. supplement for connection methods																	
• With spring-loaded terminals												**2**					
• With screw terminals												**6**					
Order No. supplement for the rated control supply voltage U_s [4]																	
• 115 V AC												**3**					
• 230 V AC												**4**					

1) In the selection table, the rated operational current I_e refers to the three-phase 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: delivery time class ▶ (preferred type).

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

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

Soft starter selection depends on the motor's rated 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 or 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 operating frequency.

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

Accessories

	For soft starters	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type								kg
Box terminal blocks for soft starters									
	**Box terminal blocks**								
	3RW44 2.	Included in delivery							
	3RW44 3.	• up to 70 mm²	▶	**3RT19 55-4G**		1	1 unit	101	0.237
		• up to 120 mm²	▶	**3RT19 56-4G**		1	1 unit	101	0.270
	3RW44 3.	• up to 240 mm²	▶	**3RT19 66-4G**		1	1 unit	101	0.676
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	0.028
	3RW44 4.		▶	**3RT19 66-4EA2**		1	1 unit	101	0.038
	Terminal covers for cable lugs and busbar connections								
	3RW44 2. and 3RW44 3.		▶	**3RT19 56-4EA1**		1	1 unit	101	0.067
	3RW44 4.		▶	**3RT19 66-4EA1**		1	1 unit	101	0.124

Spare parts

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

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* 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

Applications		Conveyor belt	Roller conveyor	Compressor	Small ventilator	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

Applications		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

Applications		Large ventilator	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

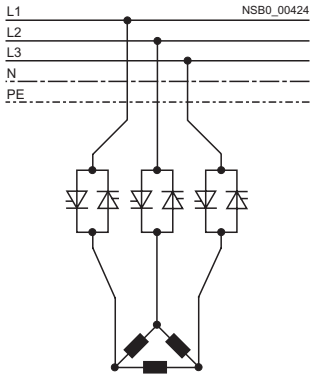
Note:
These tables present sample setting values and device sizes. They are intended only for the purposes of information and are not binding. The setting values depend on the application in question and must be optimized during commissioning.
The soft starter dimensions should be checked where necessary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

Circuit concept

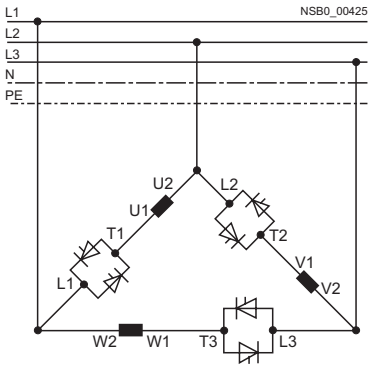
The SIRIUS 3RW44 soft starters can be operated in two different types of circuit.

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

Comparison of the types of circuit



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



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

Which circuit?

Using the inline circuit involves the lowest wiring complexity. If the soft starter to motor connections are long, this contact sequence 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 possibility of switching between the inline circuit and inside-delta circuit, the most favorable solution can always be chosen.

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.

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

RS 232 serial PC interface and Soft Starter ES parameterizing and operating software

The solid-state 3RW44 soft starters have a PC interface for communicating with the Soft Starter ES smart software and an operating and monitoring module.

Manual for SIRIUS 3RW44

Besides containing all important information on planning, commissioning and servicing, the manual also contains suggested 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/sanftstarter

SIRIUS soft starter training course (SD-SIRIUSO)

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

Please direct enquiries and applications to:

Training Center
I&S IS E&C TC
Werner-von-Siemens-Str. 65
D-91052 Erlangen
Telephone: +49 (0)9131 729262
Telefax: +49 (0)9131 728172
sibrain@erl9.siemens.de
http://www.siemens.com/sibrain

Notes

Overview

3RA 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 sets of components (link modules, wiring sets and standard mounting rail or busbar adapters).

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

Pre-assembled link modules are available as accessories for the power spectrum up to 45 kW. The desired fuseless load feeder can thus be assembled quickly and economically by the customer. A time saving is also achieved in connection with controlgear 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 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 detailed 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 starting 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 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 equipment 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 relay 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 trip or to any other components after a short-circuit has been cleared. The 3RA1 fuseless load feeder can resume operation without needing to be renewed. At most, it is permissible to weld the contactor contacts if they can be disconnected easily without any significant deformation.

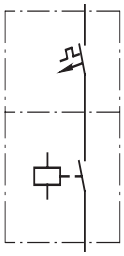
3RA11 Combination Starters, Direct-On-Line

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ Contactor	+ Link module + Standard mounting rail adapter		Order No.	Price per PU				
	P	*I*											
	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 +	A	**3RA11 30-4DB34-0AP0**		1	1 unit	101	2.070
	15	29	22 ... 32	31-4EA10			A	**3RA11 30-4EB34-0AP0**		1	1 unit	101	2.083
	18.5	35	28 ... 40	31-4FA10	35-1AP00	32-1AA00	A	**3RA11 30-4FB35-0AP0**		1	1 unit	101	2.126
	22	41	36 ... 45	31-4GA10	36-1AP00		A	**3RA11 30-4GB36-0AP0**		1	1 unit	101	2.130
	22	41	40 ... 50	31-4HA10			A	**3RA11 30-4HB36-0AP0**		1	1 unit	101	2.091
S3	30	55	45 ... 63	41-4JA10	44-1AP00	41-1AA00		Size S3 is only available for self-assembly					
	37	66	57 ... 75	41-4KA10	45-1AP00	+							
	45	80	70 ... 90	41-4LA10	46-1AP00	42-1AA00							
	45	80	80 ... 100	41-4MA10									

1) Size S00 also suitable for 60 Hz.

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

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ Contactor	+ Link module + Standard mounting rail adapter		Order No.	Price per PU				
	P	*I*											kg
	kW	A	A										
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.					
				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.					
	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.

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

6

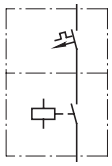
*** You can order this quantity or a multiple thereof.**

3RA11 Combination Starters, Direct-On-Line

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ Contactor	+ Link module + Standard mounting rail adapter		Order No.	Price per PU				
	P	*I*											
	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	41-1AB00		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.

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ Contactor	+ Link module + Standard mounting rail adapter		Order No.	Price per PU				
	P	*I*											kg
	kW	A	A										
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.					
				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.					
	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.

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

6

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

3RA11 Combination Starters, Direct-On-Line

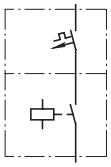
For busbar systems

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Order No.	Price per PU				
	P	*I*											
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA at 400 V (compatible with type of coordination "1")													
				3RV10	**3RT10**								
S00	0.06	0.2	0.14 … 0.2	11-0BA10	15-1AP01	3RA19 11-1AA00	A	**3RA11 10-0B□15-1AP0**		1	1 unit	101	0.790
	0.06	0.2	0.18 … 0.25	11-0CA10		+	A	**3RA11 10-0C□15-1AP0**		1	1 unit	101	0.702
	0.09	0.3	0.22 … 0.32	11-0DA10		40 mm	A	**3RA11 10-0D□15-1AP0**		1	1 unit	101	0.675
	0.09	0.3	0.28 … 0.4	11-0EA10		8US10 51-5DM07	A	**3RA11 10-0E□15-1AP0**		1	1 unit	101	0.670
	0.12	0.4	0.35 … 0.5	11-0FA10		or 60 mm	A	**3RA11 10-0F□15-1AP0**		1	1 unit	101	0.680
	0.18	0.6	0.45 … 0.63	11-0GA10		8US12 51-5DM07	A	**3RA11 10-0G□15-1AP0**		1	1 unit	101	0.670
	0.18	0.6	0.55 … 0.8	11-0HA10			A	**3RA11 10-0H□15-1AP0**		1	1 unit	101	0.670
	0.25	0.85	0.7 … 1	11-0JA10			A	**3RA11 10-0J□15-1AP0**		1	1 unit	101	0.667
	0.37	1.1	0.9 … 1.25	11-0KA10			A	**3RA11 10-0K□15-1AP0**		1	1 unit	101	0.715
	0.55	1.5	1.1 … 1.6	11-1AA10			A	**3RA11 10-1A□15-1AP0**		1	1 unit	101	0.715
	0.75	1.9	1.4 … 2	11-1BA10			A	**3RA11 10-1B□15-1AP0**		1	1 unit	101	0.715
S0	0.75	1.9	1.8 … 2.5	21-1CA10	24-1AP00	3RA19 21-1AA00	A	**3RA11 20-1C□24-0AP0**		1	1 unit	101	0.939
	1.1	2.7	2.2 … 3.2	21-1DA10		+	A	**3RA11 20-1D□24-0AP0**		1	1 unit	101	0.940
	1.5	3.6	2.8 … 4	21-1EA10		40 mm	A	**3RA11 20-1E□24-0AP0**		1	1 unit	101	0.940
	1.5	3.6	3.5 … 5	21-1FA10		8US10 51-5DM07	A	**3RA11 20-1F□24-0AP0**		1	1 unit	101	0.927
	2.2	4.9	4.5 … 6.3	21-1GA10		or 60 mm	A	**3RA11 20-1G□24-0AP0**		1	1 unit	101	0.927
	3	6.5	5.5 … 8	21-1HA10		8US12 51-5DM07	A	**3RA11 20-1H□24-0AP0**		1	1 unit	101	0.931
	4	8.5	7 … 10	21-1JA10	26-1AP00		A	**3RA11 20-1J□26-0AP0**		1	1 unit	101	0.935
	5.5	11.5	9 … 12.5	21-1KA10			A	**3RA11 20-1K□26-0AP0**		1	1 unit	101	0.936
	7.5	15.5	11 … 16	21-4AA10			A	**3RA11 20-4A□26-0AP0**		1	1 unit	101	0.940
	7.5	15.5	14 … 20	21-4BA10			A	**3RA11 20-4B□26-0AP0**		1	1 unit	101	0.943
S2	11	22	18 ... 25	31-4DA10	34-1AP00	3RA19 31-1AA00		Size S2 is only available for self-assembly.					
	15	29	22 ... 32	31-4EA10		+							
	18.5	35	28 ... 40	31-4FA10	35-1AP00	40 mm							
	22	41	36 ... 45	31-4GA10	36-1AP00	8US10 61-5FP08							
	22	41	40 ... 50	31-4HA10		or 60 mm							
						8US12 61-5FP08							
S3	30	55	45 ... 63	41-4JA10	44-1AP00	3RA19 41-1AA00		For size S3, a busbar adapter is not necessary.					
	37	66	57 ... 75	41-4KA10	45-1AP00	+							
	45	80	70 ... 90	41-4LA10	46-1AP00	not available							
	45	80	80 ... 100	41-4MA10									

Order No. supplement for busbar center-line spacing

40 mm
60 mm

C
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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Order No.	Price per PU				
	P	*I*											
	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.					
				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.					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

Order No. supplement for busbar center-line spacing

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

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

6

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

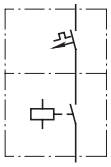
3RA11 Combination Starters, Direct-On-Line

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Order No.	Price per PU				
	P	*I*											
	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-line spacing

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Order No.	Price per PU				
	P	*I*											
	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.					
				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.					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

Order No. supplement for busbar center-line spacing

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

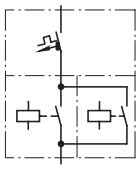
For snapping onto standard mounting rails or for screw mounting

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RH[2][5]		Order No.	Price per PU				
	P	*I*											
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA/100 kA at 400 V (compatible with type of coordination "1")[6]													
				3RV10	**3RT10**	**3RA19**							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP02	11-1AA00	A	**3RA12 10-0BA15-0AP0**		1	1 unit	101	0.717
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	**3RA12 10-0CA15-0AP0**		1	1 unit	101	0.700
	0.09	0.3	0.22 ... 0.32	11-0DA10		13-2A[7]	A	**3RA12 10-0DA15-0AP0**		1	1 unit	101	0.700
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	**3RA12 10-0EA15-0AP0**		1	1 unit	101	0.720
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	**3RA12 10-0FA15-0AP0**		1	1 unit	101	0.708
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	**3RA12 10-0GA15-0AP0**		1	1 unit	101	0.717
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA12 10-0HA15-0AP0**		1	1 unit	101	0.710
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA12 10-0JA15-0AP0**		1	1 unit	101	0.710
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA12 10-0KA15-0AP0**		1	1 unit	101	0.755
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA12 10-1AA15-0AP0**		1	1 unit	101	0.765
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA12 10-1BA15-0AP0**		1	1 unit	101	0.765
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1AP00	21-1AA00	A	**3RA12 20-1CB24-0AP0**		1	1 unit	101	1.400
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	**3RA12 20-1DB24-0AP0**		1	1 unit	101	1.394
	1.5	3.6	2.8 ... 4	21-1EA10		23-1B[8]	A	**3RA12 20-1EB24-0AP0**		1	1 unit	101	1.385
	1.5	3.6	3.5 ... 5	21-1FA10			A	**3RA12 20-1FB24-0AP0**		1	1 unit	101	1.387
	2.2	4.9	4.5 ... 6.3	21-1GA10			A	**3RA12 20-1GB24-0AP0**		1	1 unit	101	1.390
	3	6.5	5.5 ... 8	21-1HA10			A	**3RA12 20-1HB24-0AP0**		1	1 unit	101	1.389
	4	8.5	7 ... 10	21-1JA10	26-1AP00		A	**3RA12 20-1JB26-0AP0**		1	1 unit	101	1.389
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA12 20-1KB26-0AP0**		1	1 unit	101	1.386
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA12 20-4AB26-0AP0**		1	1 unit	101	1.408
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA12 20-4BB26-0AP0**		1	1 unit	101	1.400
S2	11	22	18 ... 25	31-4DA10	34-1AP00	31-1AA00		Size S2 is only available for self-assembly.					
	15	29	22 ... 32	31-4EA10		+							
	18.5	35	28 ... 40	31-4FA10	35-1AP00	33-1B[8]							
	22	41	36 ... 45	31-4GA10	36-1AP00								
	22	41	40 ... 50	31-4HA10									
S3	30	55	45 ... 63	41-4JA10	44-1AP00	41-1AA00		Size S3 is only available for self-assembly.					
	37	66	57 ... 75	41-4KA10	45-1AP00	+							
	45	80	70 ... 90	41-4LA10	46-1AP00	43-1B[8]							
	45	80	80 ... 100	41-4MA10									

1) Size S00 also suitable for 60 Hz.
2) Assembly kit for standard mounting rail adapter also suitable for screw 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.
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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Stan-dard output	Motor current (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RH[2)3)]		Order No.	Price per PU				
	P	*I*	⊏										
	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.					
				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.					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

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

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

3) RH = Reversing duty for standard rail mounting.

4) See Load Feeders with $I_q \geq 100$ kA.

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.

6

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

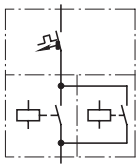
3RA12 Reversing Starters

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RH[4]		Order No.	Price per PU				
	P	*I*											
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA/100 kA at 400 V (compatible with type of coordination "1")[5]													
				3RV10	**3RT10**	**3RA19**							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	11-1AA00	A	**3RA12 10-0BA15-0BB4**		1	1 unit	101	0.832
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	**3RA12 10-0CA15-0BB4**		1	1 unit	101	0.830
	0.09	0.3	0.22 ... 0.32	11-0DA10		13-2A[6]	A	**3RA12 10-0DA15-0BB4**		1	1 unit	101	0.826
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	**3RA12 10-0EA15-0BB4**		1	1 unit	101	0.833
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	**3RA12 10-0FA15-0BB4**		1	1 unit	101	0.824
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	**3RA12 10-0GA15-0BB4**		1	1 unit	101	0.835
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA12 10-0HA15-0BB4**		1	1 unit	101	0.830
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA12 10-0JA15-0BB4**		1	1 unit	101	0.830
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA12 10-0KA15-0BB4**		1	1 unit	101	0.878
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA12 10-1AA15-0BB4**		1	1 unit	101	0.880
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA12 10-1BA15-0BB4**		1	1 unit	101	0.875
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1BB40	21-1BA00	A	**3RA12 20-1CB24-0BB4**		1	1 unit	101	1.847
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	**3RA12 20-1DB24-0BB4**		1	1 unit	101	1.855
	1.5	3.6	2.8 ... 4	21-1EA10		23-1B[7]	A	**3RA12 20-1EB24-0BB4**		1	1 unit	101	1.852
	1.5	3.6	3.5 ... 5	21-1FA10			A	**3RA12 20-1FB24-0BB4**		1	1 unit	101	1.856
	2.2	4.9	4.5 ... 6.3	21-1GA10			A	**3RA12 20-1GB24-0BB4**		1	1 unit	101	1.848
	3	6.5	5.5 ... 8	21-1HA10			A	**3RA12 20-1HB24-0BB4**		1	1 unit	101	1.851
	4	8.5	7 ... 10	21-1JA10	26-1BB40		A	**3RA12 20-1JB26-0BB4**		1	1 unit	101	1.854
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA12 20-1KB26-0BB4**		1	1 unit	101	1.858
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA12 20-4AB26-0BB4**		1	1 unit	101	1.863
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA12 20-4BB26-0BB4**		1	1 unit	101	1.852
S2	11	22	18 ... 25	31-4DA10	34-1BB40	31-1BA00		Size S2 is only available for self-assembly.					
	15	29	22 ... 32	31-4EA10		+							
	18.5	35	28 ... 40	31-4FA10	35-1BB40	33-1B[7]							
	22	41	36 ... 45	31-4GA10	36-1BB40								
	22	41	40 ... 50	31-4HA10									
S3	30	55	45 ... 63	41-4JA10	44-1BB40	41-1BA00		Size S3 is only available for self-assembly.					
	37	66	57 ... 75	41-4KA10	45-1BB40	+							
	45	80	70 ... 90	41-4LA10	46-1BB40	43-1B[7]							
	45	80	80 ...100	41-4MA10									

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

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Stan-dard output	Motor current (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RH[2)3)]		Order No.	Price per PU				
	P	*I*	⊏										
	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.					
				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.					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

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

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

3) RH = Reversing duty for standard rail mounting.

4) See Load Feeders with $I_q \geq 100$ kA.

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.

6

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

3RA12 Reversing Starters

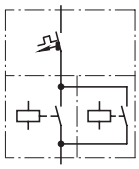
For busbar systems

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS[4]		Order No.	Price per PU				
	P	I											
	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	1.080
	0.09	0.3	0.22 ... 0.32	11-0DA10		40 mm	A	**3RA12 10-0D□15-0AP0**		1	1 unit	101	1.100
	0.09	0.3	0.28 ... 0.4	11-0EA10		13-1C	A	**3RA12 10-0E□15-0AP0**		1	1 unit	101	1.123
	0.12	0.4	0.35 ... 0.5	11-0FA10		or 60 mm	A	**3RA12 10-0F□15-0AP0**		1	1 unit	101	1.050
	0.18	0.6	0.45 ... 0.63	11-0GA10		13-1D	A	**3RA12 10-0G□15-0AP0**		1	1 unit	101	1.070
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA12 10-0H□15-0AP0**		1	1 unit	101	1.075
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA12 10-0J□15-0AP0**		1	1 unit	101	1.058
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA12 10-0K□15-0AP0**		1	1 unit	101	1.103
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA12 10-1A□15-0AP0**		1	1 unit	101	1.104
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA12 10-1B□15-0AP0**		1	1 unit	101	1.111
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1AP00	21-1AA00	A	**3RA12 20-1C□24-0AP0**		1	1 unit	101	1.512
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	**3RA12 20-1D□24-0AP0**		1	1 unit	101	1.548
	1.5	3.6	2.8 ... 4	21-1EA10		40 mm	A	**3RA12 20-1E□24-0AP0**		1	1 unit	101	1.532
	1.5	3.6	3.5 ... 5	21-1FA10		23-1C[5]	A	**3RA12 20-1F□24-0AP0**		1	1 unit	101	1.550
	2.2	4.9	4.5 ... 6.3	21-1GA10		or 60 mm	A	**3RA12 20-1G□24-0AP0**		1	1 unit	101	1.558
	3	6.5	5.5 ... 8	21-1HA10		23-1D[5]	A	**3RA12 20-1H□24-0AP0**		1	1 unit	101	1.545
	4	8.5	7 ... 10	21-1JA10	26-1AP00		A	**3RA12 20-1J□26-0AP0**		1	1 unit	101	1.557
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA12 20-1K□26-0AP0**		1	1 unit	101	1.575
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA12 20-4A□26-0AP0**		1	1 unit	101	1.549
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA12 20-4B□26-0AP0**		1	1 unit	101	1.544
S2	11	22	18 ... 25	31-4DA10	34-1AP00	31-1AA00		Size S2 is only available for self-assembly.					
	15	29	22 ... 32	31-4EA10		+							
	18.5	35	28 ... 40	31-4FA10	35-1AP00	40 mm							
	22	41	36 ... 45	31-4GA10	36-1AP00	33-1C[5]							
	22	41	40 ... 50	31-4HA10		or 60 mm							
						33-1D[5]							
S3	30	55	45 ... 63	41-4JA10	44-1AP00	41-1AA00		For size S3, a busbar adapter is not necessary.					
	37	66	57 ... 75	41-4KA10	45-1AP00	+							
	45	80	70 ... 90	41-4LA10	46-1AP00	not available							
	45	80	80 ... 100	41-4MA10									

Order No. supplement for busbar center-line spacing

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS[2]		Order No.	Price per PU				
	P	*I*											
	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.					
				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.					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

Order No. supplement for busbar center-line spacing

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.**

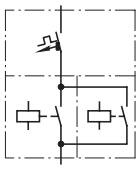
3RA12 Reversing Starters

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS[3]		Order No.	Price per PU				
	P	*I*	⊏										
	kW	A	A										kg
Type of coordination "2" at I_q = 50 kA at 400 V (compatible with type of coordination "1")													
				3RV10	**3RT10**	**3RA19**							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	11-1AA00	A	**3RA12 10-0B□15-0BB4**		1	1 unit	101	1.195
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	**3RA12 10-0C□15-0BB4**		1	1 unit	101	1.234
	0.09	0.3	0.22 ... 0.32	11-0DA10		40 mm	A	**3RA12 10-0D□15-0BB4**		1	1 unit	101	1.223
	0.09	0.3	0.28 ... 0.4	11-0EA10		13-1C	A	**3RA12 10-0E□15-0BB4**		1	1 unit	101	1.185
	0.12	0.4	0.35 ... 0.5	11-0FA10		or 60 mm	A	**3RA12 10-0F□15-0BB4**		1	1 unit	101	1.190
	0.18	0.6	0.45 ... 0.63	11-0GA10		13-1D	A	**3RA12 10-0G□15-0BB4**		1	1 unit	101	1.195
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	**3RA12 10-0H□15-0BB4**		1	1 unit	101	1.190
	0.25	0.85	0.7 ... 1	11-0JA10			A	**3RA12 10-0J□15-0BB4**		1	1 unit	101	1.197
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	**3RA12 10-0K□15-0BB4**		1	1 unit	101	1.160
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	**3RA12 10-1A□15-0BB4**		1	1 unit	101	1.246
	0.75	1.9	1.4 ... 2	11-1BA10			A	**3RA12 10-1B□15-0BB4**		1	1 unit	101	1.233
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1BB40	21-1BA00	A	**3RA12 20-1C□24-0BB4**		1	1 unit	101	1.985
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	**3RA12 20-1D□24-0BB4**		1	1 unit	101	2.017
	1.5	3.6	2.8 ... 4	21-1EA10		40 mm	A	**3RA12 20-1E□24-0BB4**		1	1 unit	101	1.998
	1.5	3.6	3.5 ... 5	21-1FA10		23-1C[4]	A	**3RA12 20-1F□24-0BB4**		1	1 unit	101	2.013
	2.2	4.9	4.5 ... 6.3	21-1GA10		or 60 mm	A	**3RA12 20-1G□24-0BB4**		1	1 unit	101	2.018
	3	6.5	5.5 ... 8	21-1HA10		23-1D[4]	A	**3RA12 20-1H□24-0BB4**		1	1 unit	101	2.003
	4	8.5	7 ... 10	21-1JA10	26-1BB40		A	**3RA12 20-1J□26-0BB4**		1	1 unit	101	2.013
	5.5	11.5	9 ... 12.5	21-1KA10			A	**3RA12 20-1K□26-0BB4**		1	1 unit	101	2.017
	7.5	15.5	11 ... 16	21-4AA10			A	**3RA12 20-4A□26-0BB4**		1	1 unit	101	2.010
	7.5	15.5	14 ... 20	21-4BA10			A	**3RA12 20-4B□26-0BB4**		1	1 unit	101	2.002
S2	11	22	18 ... 25	31-4DA10	34-1BB40	31-1BA00		Size S2 is only available for self-assembly.					
	15	29	22 ... 32	31-4EA10		+							
	18.5	35	28 ... 40	31-4FA10	35-1BB40	40 mm							
	22	41	36 ... 45	31-4GA10	36-1BB40	33-1C[4]							
	22	41	40 ... 50	31-4HA10		or 60 mm							
						33-1D[4]							
S3	30	55	45 ... 63	41-4JA10	44-1BB40	41-1BA00		For size S3, a busbar adapter is not necessary.					
	37	66	57 ... 75	41-4KA10	45-1BB40	+							
	45	80	70 ... 90	41-4LA10	46-1BB40	not available							
	45	80	80 ... 100	41-4MA10									

Order No. supplement for busbar center-line spacing

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 individual devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output	Motor current (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS[2]		Order No.	Price per PU				
	P	*I*	⊏										
	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.					
				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.					
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

Order No. supplement for busbar center-line spacing

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 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]											
			Auxiliary switches								
 3RV19 01-1E	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** 50 Hz 230 V AC		▶	**3RV19 02-1AP0**		1	1 unit	101	0.131
	S00 ... S3	--	**Shunt releases** 50 Hz 230 V AC		▶	**3RV19 02-1DP0**		1	1 unit	101	0.130
Contactors[2]											
			Snap-on auxiliary contact 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	0.016
	--	S00	2-pole	1 NO + 1 NC	▶	**3RH19 11-1MA11**		1	1 unit	101	0.052
				2 NO	▶	**3RH19 11-1MA20**		1	1 unit	101	0.053
	--	S0 ... S3		1 NO + 1 NC	▶	**3RH19 21-1MA11**		1	1 unit	101	0.074
				2 NO	▶	**3RH19 21-1MA20**		1	1 unit	101	0.076
				2 NC	▶	**3RH19 21-1MA02**		1	1 unit	101	0.073
			Connection from 2 sides								
 3RH19 11-1F ...	--	S00	4-pole	2 NO +2 NC	▶	**3RH19 11-1FA22**		1	1 unit	101	0.052
	--	S0 ... S3	1-pole	1 NO	▶	**3RH19 21-1CA10**		1	1 unit	101	0.020
				1 NC	▶	**3RH19 21-1CA01**		1	1 unit	101	0.019
	--	S0 ... S3	4-pole	2 NO +2 NC	▶	**3RH19 21-1FA22**		1	1 unit	101	0.073

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 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	0.008
		127 ... 240 V AC 150 ... 250 V DC	A	**3RT19 16-1BD00**		1	1 unit	101	0.008
3RT1.	**RC elements**	24 ... 48 V AC 24 ... 70 V DC	▶	**3RT19 16-1CB00**		1	1 unit	101	0.009
		127 ... 240 V AC 150 ... 250 V DC	▶	**3RT19 16-1CD00**		1	1 unit	101	0.009
3RT1.	**Noise suppression diodes**	12 ... 250 V DC	▶	**3RT19 16-1DG00**		1	1 unit	101	0.007
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	0.008
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	0.023
		127 ... 240 V AC 150 ... 250 V DC	▶	**3RT19 26-1BD00**		1	1 unit	101	0.024
3RT10 2	**RC elements**	24 ... 48 V AC 24 ... 70 V DC	▶	**3RT19 26-1CB00**		1	1 unit	101	0.023
		127 ... 240 V AC 150 ... 250 V DC	▶	**3RT19 26-1CD00**		1	1 unit	101	0.023
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	0.024
		30 ... 250 V DC	A	**3RT19 26-1TS00**		1	1 unit	101	0.023
Sizes S2 and S3									
	For fitting onto the coil terminals at top or bottom								
3RT10 3, 3RT10 4	**Varistors**	24 V ... 48 V AC 24 ... 70 V DC	▶	**3RT19 26-1BB00**		1	1 unit	101	0.023
		127 ... 240 V AC 150 ... 250 V DC	▶	**3RT19 26-1BD00**		1	1 unit	101	0.024
3RT10 3, 3RT10 4	**RC elements**	24 ... 48 V AC 24 ... 70 V DC	▶	**3RT19 36-1CB00**		1	1 unit	101	0.039
		127 ... 240 V AC 150 ... 250 V DC	▶	**3RT19 36-1CD00**		1	1 unit	101	0.039
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	0.024
		30 ... 250 V DC	B	**3RT19 36-1TS00**		1	1 unit	101	0.024


3RT19 16-1DG00


3RT19 26-1B.00


3RT19 36-1C.00

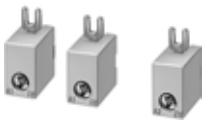
1) Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

2) For packings 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 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
S0	S0	AC	▶	**3RA19 21-1AA00**		1	1 unit	101	0.037
S2	S2		▶	**3RA19 31-1AA00**		1	1 unit	101	0.042
S3	S3		▶	**3RA19 41-1AA00**		1	1 unit	101	0.090
S0	S0	DC	▶	**3RA19 21-1BA00**		1	1 unit	101	0.039
S2	S2		▶	**3RA19 31-1BA00**		1	1 unit	101	0.043
S3	S3		▶	**3RA19 41-1BA00**		1	1 unit	101	0.089
 3RA19 21-1A									
Multi-unit packaging		Actuating voltage of contactor							
S00	S00	AC and DC	▶	**3RA19 11-1A**		1	10 units	101	0.019
S0	S00		▶	**3RA19 21-1D**		1	10 units	101	0.021
S0	S0	AC	▶	**3RA19 21-1A**		1	10 units	101	0.028
S2	S2		▶	**3RA19 31-1A**		1	5 units	101	0.033
S3	S3		▶	**3RA19 41-1A**		1	5 units	101	0.072
S0	S0	DC	▶	**3RA19 21-1B**		1	10 units	101	0.030
S2	S2		▶	**3RA19 31-1B**		1	5 units	101	0.034
S3	S3		▶	**3RA19 41-1B**		1	5 units	101	0.073
 3RA19 31-1A									
Hybrid link modules									
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
 3RA19 21-2FA00									
Wiring kits									
 3RA19 13-2A		**Reversing duty**							
--	S00	Electrical and mechanical link for reversing contactors. Combinable with link module. For size S00: optionally with integrated electrical and mechanical locking. For sizes S0 to S3: mechanical locking device must be ordered separately.	▶	**3RA19 13-2A**		1	1 set	101	0.041
	S0		▶	**3RA19 23-2A**		1	1 set	101	0.052
	S2		▶	**3RA19 33-2A**		1	1 set	101	0.122
	S3		▶	**3RA19 43-2A**		1	1 set	101	0.294
		Wye-delta starting							
--	S00	Electrical and mechanical link for three contactors of same size	▶	**3RA19 13-2B**		1	1 set	101	0.048
	S0		▶	**3RA19 23-2B**		1	1 set	101	0.061
	S2		▶	**3RA19 33-2B**		1	1 set	101	0.072
	S3		▶	**3RA19 43-2B**		1	1 set	101	0.165
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
 3RA19 24-2B									
Terminals for contactor coils									
--	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 set	101	0.082
 3RA19 23-3B									

* You can order this quantity or a multiple thereof.

For 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
Standard mounting rail adapters									
Single unit packaging									
S00, S0	S00, S0	For mechanical fixing of motor starter protector and contactor; for snapping onto standard mounting rail or for screw mounting	▶	**3RA19 22-1AA00**		1	1 unit	101	0.104
S2	S2		▶	**3RA19 32-1AA00**		1	1 unit	101	0.202
S3	S3		▶	**3RA19 42-1AA00**		1	1 unit	101	0.264
Multi-unit packaging									
S00, S0	S00, S0		▶	**3RA19 22-1A**		1	5 units	101	0.095
S2	S2		▶	**3RA19 32-1A**		1	5 units	101	0.187
S3	S3		▶	**3RA19 42-1A**		1	5 units	101	0.238


3RA19 32


3RA19 22

Lateral 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


3RA19 02

Assembly kits (RH) for reversing duty for standard mounting rails									
S0	S0	Also suitable for screw mounting. Consiting of: Wiring kit, standard mounting rail adapters, side modules. Link modules to be ordered separately. Mechanical locking device also to be ordered separately.	A	**3RA19 23-1B**		1	1 set	101	0.288
S2	S2		A	**3RA19 33-1B**		1	1 set	101	0.557
S3	S3		A	**3RA19 43-1B**		1	1 set	101	0.818


3RA19 33-1B

* You can order this quantity or a multiple thereof.

Accessories

For 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 connection										
 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 connection** 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 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	103	0.193
		--		▶	**8US12 51-5CM47**		1	1 unit	103	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	103	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)	▶	**3RB19 00-0B**		100	10 units	101	0.100
Busbar adapters				Busbar center-line spacing mm						
 8US12 51-5DM07	S00, S0	S00, S0	45 mm wide, 182 mm long for busbars	40	**8US10 51-5DM07**		1	1 unit	103	0.184
				60	**8US12 51-5DM07**		1	1 unit	103	0.183
	S2	S2	55 mm wide, 242 mm long including screw and spacer	40	**8US10 61-5FP08**		1	1 unit	103	0.308
				60	**8US12 61-5FP08**		1	1 unit	103	0.292
Switching 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	103	0.182
				60	**8US12 50-5AM00**		1	1 unit	103	0.158
	S0	S0	55 mm wide, 182 mm long	40	**8US10 60-5AM00**		1	1 unit	103	0.197
				60	**8US12 60-5AM00**		1	4 units	103	0.202
	S2	S2	55 mm wide, 242 mm long including screw and spacer	40	**8US10 60-5AP00**		1	1 unit	103	0.244
				60	**8US12 60-5AP00**		1	1 unit	103	0.243

* You can order this quantity or a multiple thereof.

For direct-on-line and reversing starters

	For motor starter protector Size	For contactor Size	Version	Busbar center-line spacing mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Lateral modules											
 8US19 98-2BM00	--	--	Including connecting wedges for widening busbar adapters or switching device holders, 13.5 mm wide, 182 mm long		A	**8US19 98-2BM00**		1	4 units	103	0.036
Assembly kits (RS) for reversing duty for 40 mm and 60 mm busbar systems											
	S00, S0	S00	Consisting of wiring kit, busbar adapter, switching device holder and lateral module. Link modules and mechanical locking devices to be ordered separately. Only for size S00 is mechanical locking always incuded.	40	A	**3RA19 13-1C**		1	1 set	101	0.433
	S0	S0			A	**3RA19 23-1C**		1	1 set	101	0.472
	S2	S2			A	**3RA19 33-1C**		1	1 set	101	0.738
	S00, S0	S00		60	A	**3RA19 13-1D**		1	1 set	101	0.431
	S0	S0			A	**3RA19 23-1D**		1	1 set	101	0.475
	S2	S2			A	**3RA19 33-1D**		1	1 set	101	0.743
Link wedges											
 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	103	0.100
Load-side terminal strips, separable											
 8US12 51-5DM07 with 8US19 98-8AM07	S00, S0	S00, S0	Light gray with carrier for mounting onto busbar adapter 45 mm wide, 91 mm long 3 x 2.5 mm² plug-in terminals, 400 V 4 x 1.5 mm² plug -in terminals, 250 V		A	**8US19 98-8AM07**		1	1 unit	103	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	103	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	103	0.100

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

3RV19 infeed system

Overview

The 3RV19 infeed system is a convenient means of power supply and distribution for a group of several motor starter protectors or complete load feeders with a screw-type or spring-loaded connection system up to size S0.

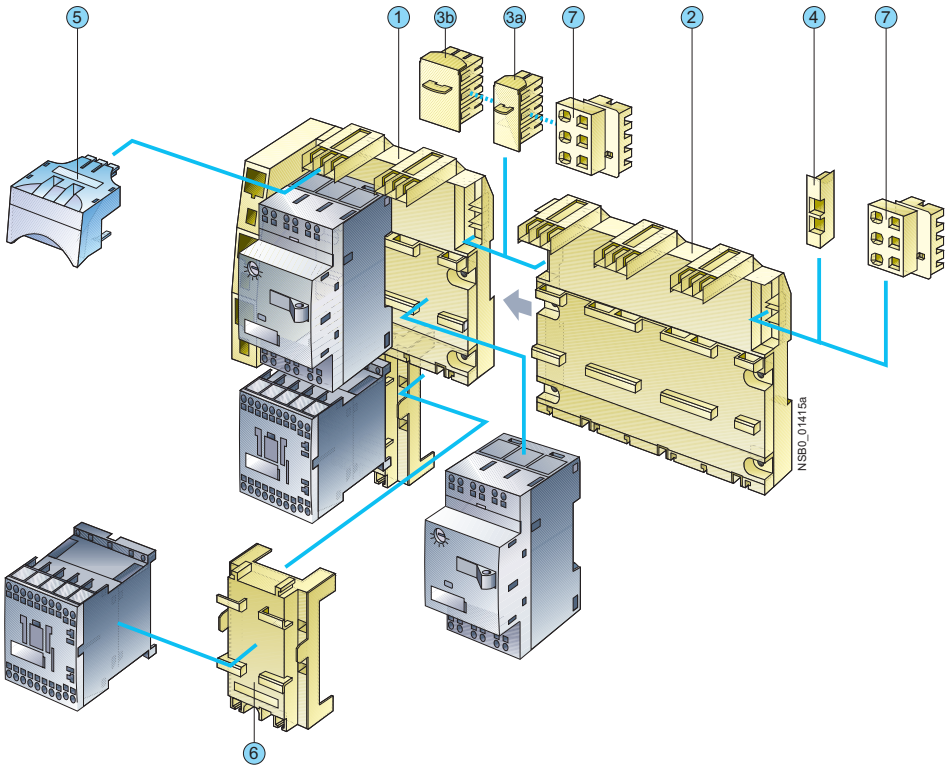
The devices with spring-loaded connections are available in the SIRIUS modular system up to 5.5 kW at 400 V AC. The motor starter protectors and load feeders with screw connections for sizes S00 and S0 can also be integrated in the system at the same time.

The system is based on a basic module complete with a lateral incoming unit (3-phase busbar with infeed). This incoming unit with spring-loaded terminals is mounted on the right or left depending on the design 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.

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 35 mm standard mounting rail according to EN 50022 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-loaded 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 designs with infeed on the left or right is available. The incoming supply is connected using spring-loaded terminals. The Cage Clamp springs permit conductor cross-sections of up to 25 mm^2 with end sleeves. An end cover is supplied with each module.

② *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 80 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 clearance of 10 mm between the connected 3-phase busbars. This clearance can be used to lay the auxiliary current and control current wiring ("wiring duct"). As the result, 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 connections
- One version for 3RV motor starter protectors size S0 with screw connections
- 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 load feeders for direct-on-line starters of size S00. Motor starter protector and contactor assemblies can then be directly snapped into 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 motor starter protector 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 protcors 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 protcors 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 protcors	S00 (Cage Clamp)[1], S00, S0 (screw)	A	**3RV19 17-4A**		1	1 unit	101	0.261
		For 3 motor starter protcors	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)	D	**3RV19 17-5CA00**		1	1 unit	101	0.040
		Multi-unit packaging	S00 (screw)	D	**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									
	**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									
	**45 mm standard mounting rails** For mounting onto 3-phase busbar	Single unit packaging	A	**3RV19 17-7B**		1	1 unit	101	0.261
Extra-wide expansion plugs									
	**Extra-wide expansion plugs** As accessory	Single unit packaging	D	**3RV19 17-5E**		1	1 unit	101	0.050
Expansion plugs									
	**Expansion plugs**[1] As spare part	Single unit packaging	A	**3RV19 17-5BA00**		1	1 unit	101	0.035
End covers									
	**End covers**[2] as spare part	Multi-unit packaging	A	**3RV19 17-6A**		100	10 units	101	0.500
Tools									
	**For opening the springs of the 3RV19 17-1. infeed terminal**	Length: approx. 175 mm, Blade dimensions: 5.5 x 0.8 mm	A	**8WA2 806**	**7.01**	1	1 unit	041	0.063

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.**

General data

Application

The 3RA71 safety load feeders are offered for direct start. They are available with operating 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.

Similarly the product range of safety load feeders 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 equipment by a short-circuit.

- Type of coordination 2

There must be no damage to the overload trip 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, it is permissible to weld the contactor contacts if they can be disconnected easily without any significant deformation. Classification of a machine in categories according to EN 954-1.

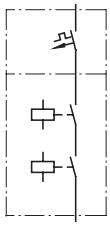
Selection and ordering data

Rated control supply voltage 50/60 Hz 230 V AC
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	102	0.820
	0.06	0.2	0.14 … 0.2	B	**3RA71 01-0BA17-0AL2**		1	1 unit	102	1.440
	0.06	0.2	0.18 … 0.25	B	**3RA71 01-0CA17-0AL2**		1	1 unit	102	0.820
	0.09	0.3	0.22 … 0.32	B	**3RA71 01-0DA17-0AL2**		1	1 unit	102	1.438
	0.09	0.3	0.28 … 0.4	B	**3RA71 01-0EA17-0AL2**		1	1 unit	102	0.820
	0.12	0.4	0.35 … 0.5	B	**3RA71 01-0FA17-0AL2**		1	1 unit	102	0.820
	0.18	0.6	0.45 … 0.63	B	**3RA71 01-0GA17-0AL2**		1	1 unit	102	0.820
	0.25	0.8	0.55 … 0.8	B	**3RA71 01-0HA17-0AL2**		1	1 unit	102	0.820
	0.25	0.8	0.7 … 1	B	**3RA71 01-0JA17-0AL2**		1	1 unit	102	0.820
	0.37	1.1	0.9 … 1.25	B	**3RA71 01-0KA17-0AL2**		1	1 unit	102	1.480
	0.55	1.5	1.1 … 1.6	B	**3RA71 01-1AA17-0AL2**		1	1 unit	102	1.465
	0.75	1.9	1.4 … 2	B	**3RA71 01-1BA17-0AL2**		1	1 unit	102	1.475
S0	0.75	1.9	1.8 … 2.5	B	**3RA71 02-1CA26-0AL2**		1	1 unit	102	1.869
	1.1	2.7	2.2 … 3.2	B	**3RA71 02-1DA26-0AL2**		1	1 unit	102	1.869
	1.5	3.6	2.8 … 4	B	**3RA71 02-1EA26-0AL2**		1	1 unit	102	1.854
	1.5	3.6	3.5 … 5	B	**3RA71 02-1FA26-0AL2**		1	1 unit	102	1.861
	2.2	5.2	4.5 … 6.3	B	**3RA71 02-1GA26-0AL2**		1	1 unit	102	1.917
	3	6.8	5.5 … 8	B	**3RA71 02-1HA26-0AL2**		1	1 unit	102	1.925
	4	9	7 … 10	B	**3RA71 02-1JA26-0AL2**		1	1 unit	102	1.200
	5.5	11.5	9 … 12.5	B	**3RA71 02-1KA26-0AL2**		1	1 unit	102	1.200
	7.5	15.5	11 … 16	B	**3RA71 02-4AA26-0AL2**		1	1 unit	102	1.200
	7.5	15.5	14 … 20	B	**3RA71 02-4BA26-0AL2**		1	1 unit	102	1.200
	7.5	15.5	17 … 22	B	**3RA71 02-4CA26-0AL2**		1	1 unit	102	1.924

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

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

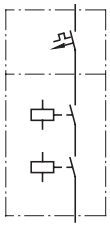
Fuseless load feeders

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	102	1.507
	0.06	0.2	0.14 … 0.2	B	**3RA71 01-0BA17-0AB4**		1	1 unit	102	0.820
	0.06	0.2	0.18 … 0.25	B	**3RA71 01-0CA17-0AB4**		1	1 unit	102	0.820
	0.09	0.3	0.22 … 0.32	A	**3RA71 01-0DA17-0AB4**		1	1 unit	102	0.100
	0.09	0.3	0.28 … 0.4	A	**3RA71 01-0EA17-0AB4**		1	1 unit	102	0.100
	0.12	0.4	0.35 … 0.5	A	**3RA71 01-0FA17-0AB4**		1	1 unit	102	0.100
	0.18	0.6	0.45 … 0.63	B	**3RA71 01-0GA17-0AB4**		1	1 unit	102	0.820
	0.25	0.8	0.55 … 0.8	B	**3RA71 01-0HA17-0AB4**		1	1 unit	102	0.820
	0.25	0.8	0.7 … 1	B	**3RA71 01-0JA17-0AB4**		1	1 unit	102	0.820
	0.37	1.1	0.9 … 1.25	B	**3RA71 01-0KA17-0AB4**		1	1 unit	102	0.820
	0.55	1.5	1.1 … 1.6	B	**3RA71 01-1AA17-0AB4**		1	1 unit	102	1.551
	0.75	1.9	1.4 … 2	B	**3RA71 01-1BA17-0AB4**		1	1 unit	102	2.266
S0	0.75	2.7	1.8 … 2.5	B	**3RA71 02-1CA26-0AB4**		1	1 unit	102	2.255
	1.1	2.7	2.2 … 3.2	B	**3RA71 02-1DA26-0AB4**		1	1 unit	102	2.254
	1.5	3.6	2.8 … 4	B	**3RA71 02-1EA26-0AB4**		1	1 unit	102	1.200
	1.5	3.6	3.5 … 5	A	**3RA71 02-1FA26-0AB4**		1	1 unit	102	0.100
	2.2	5.2	4.5 … 6.3	B	**3RA71 02-1GA26-0AB4**		1	1 unit	102	2.298
	3	6.8	5.5 … 8	A	**3RA71 02-1HA26-0AB4**		1	1 unit	102	0.100
	4	9	7 … 10	A	**3RA71 02-1JA26-0AB4**		1	1 unit	102	0.100
	5.5	11.5	9 … 12.5	A	**3RA71 02-1KA26-0AB4**		1	1 unit	102	0.100
	7.5	15.5	11 … 16	B	**3RA71 02-4AA26-0AB4**		1	1 unit	102	0.100
	7.5	15.5	14 … 20	B	**3RA71 02-4BA26-0AB4**		1	1 unit	102	2.245
	7.5	15.5	17 … 22	B	**3RA71 02-4CA26-0AB4**		1	1 unit	102	2.275

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 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	102	1.377
	0.06	0.2	0.18 ... 0.25	B	**3RA71 11-0CA17-0AB4**		1	1 unit	102	0.820
	0.09	0.3	0.22 ... 0.32	B	**3RA71 11-0DA17-0AB4**		1	1 unit	102	0.820
	0.09	0.3	0.28 ... 0.4	B	**3RA71 11-0EA17-0AB4**		1	1 unit	102	0.820
	0.12	0.4	0.35 ... 0.5	B	**3RA71 11-0FA17-0AB4**		1	1 unit	102	0.820
	0.18	0.6	0.45 ... 0.63	B	**3RA71 11-0GA17-0AB4**		1	1 unit	102	0.820
	0.25	0.8	0.55 ... 0.8	B	**3RA71 11-0HA17-0AB4**		1	1 unit	102	0.820
	0.25	0.8	0.7 ... 1	B	**3RA71 11-0JA17-0AB4**		1	1 unit	102	0.820
	0.37	1.1	0.9 ... 1.25	B	**3RA71 11-0KA17-0AB4**		1	1 unit	102	0.820
	0.55	1.5	1.1 ... 1.6	B	**3RA71 11-1AA17-0AB4**		1	1 unit	102	0.820
	0.75	1.9	1.4 ... 2	B	**3RA71 11-1BA17-0AB4**		1	1 unit	102	0.820
S0	0.75	2.7	1.8 ... 2.5	B	**3RA71 12-1CA26-0AB4**		1	1 unit	102	1.830
	1.1	2.7	2.2 ... 3.2	B	**3RA71 12-1DA26-0AB4**		1	1 unit	102	1.860
	1.5	3.6	2.8 ... 4	B	**3RA71 12-1EA26-0AB4**		1	1 unit	102	1.200
	1.5	3.6	3.5 ... 5	B	**3RA71 12-1FA26-0AB4**		1	1 unit	102	1.200
	2.2	5.2	4.5 ... 6.3	B	**3RA71 12-1GA26-0AB4**		1	1 unit	102	1.807
	3	6.8	5.5 ... 8	B	**3RA71 12-1HA26-0AB4**		1	1 unit	102	1.815
	4	9	7 ... 10	B	**3RA71 12-1JA26-0AB4**		1	1 unit	102	1.830
	5.5	11.5	9 ... 12.5	B	**3RA71 12-1KA26-0AB4**		1	1 unit	102	1.850
	7.5	15.5	11 ... 16	B	**3RA71 12-4AA26-0AB4**		1	1 unit	102	1.200
	7.5	15.5	14 ... 20	B	**3RA71 12-4BA26-0AB4**		1	1 unit	102	1.200
	7.5	15.5	17 ... 22	B	**3RA71 12-4CA26-0AB4**		1	1 unit	102	1.810

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 devices, 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	102	1.383
	0.06	0.2	0.14 ... 0.2	B	**3RA71 21-0BA17-0AB4**		1	1 unit	102	0.820
	0.06	0.2	0.18 ... 0.25	B	**3RA71 21-0CA17-0AB4**		1	1 unit	102	0.820
	0.09	0.3	0.22 ... 0.32	B	**3RA71 21-0DA17-0AB4**		1	1 unit	102	0.820
	0.09	0.3	0.28 ... 0.4	B	**3RA71 21-0EA17-0AB4**		1	1 unit	102	0.820
	0.12	0.4	0.35 ... 0.5	B	**3RA71 21-0FA17-0AB4**		1	1 unit	102	0.820
	0.18	0.6	0.45 ... 0.63	B	**3RA71 21-0GA17-0AB4**		1	1 unit	102	0.820
	0.25	0.8	0.55 ... 0.8	B	**3RA71 21-0HA17-0AB4**		1	1 unit	102	0.820
	0.25	0.8	0.7 ... 1	B	**3RA71 21-0JA17-0AB4**		1	1 unit	102	0.820
	0.37	1.1	0.9 ... 1.25	B	**3RA71 21-0KA17-0AB4**		1	1 unit	102	0.820
	0.55	1.5	1.1 ... 1.6	B	**3RA71 21-1AA17-0AB4**		1	1 unit	102	0.820
	0.75	1.9	1.4 ... 2	B	**3RA71 21-1BA17-0AB4**		1	1 unit	102	0.820
S0	0.75	2.7	1.8 ... 2.5	B	**3RA71 22-1CA26-0AB4**		1	1 unit	102	1.830
	1.1	2.7	2.2 ... 3.2	B	**3RA71 22-1DA26-0AB4**		1	1 unit	102	1.200
	1.5	3.6	2.8 ... 4	B	**3RA71 22-1EA26-0AB4**		1	1 unit	102	1.200
	1.5	3.6	3.5 ... 5	B	**3RA71 22-1FA26-0AB4**		1	1 unit	102	1.200
	2.2	5.2	4.5 ... 6.3	B	**3RA71 22-1GA26-0AB4**		1	1 unit	102	1.200
	3	6.8	5.5 ... 8	B	**3RA71 22-1HA26-0AB4**		1	1 unit	102	1.836
	4	9	7 ... 10	B	**3RA71 22-1JA26-0AB4**		1	1 unit	102	1.200
	5.5	11.5	9 ... 12.5	B	**3RA71 22-1KA26-0AB4**		1	1 unit	102	1.200
	7.5	15.5	11 ... 16	B	**3RA71 22-4AA26-0AB4**		1	1 unit	102	1.200
	7.5	15.5	14 ... 20	B	**3RA71 22-4BA26-0AB4**		1	1 unit	102	1.200
	7.5	15.5	17 ... 22	B	**3RA71 22-4CA26-0AB4**		1	1 unit	102	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	Expansion units, time-delayed 0.05 ... 3 s 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 31-0AA17-0AB4**		1	1 unit	102	0.820
	0.06	0.2	0.14 ... 0.2	B	**3RA71 31-0BA17-0AB4**		1	1 unit	102	0.820
	0.06	0.2	0.18 ... 0.25	B	**3RA71 31-0CA17-0AB4**		1	1 unit	102	0.820
	0.09	0.3	0.22 ... 0.32	B	**3RA71 31-0DA17-0AB4**		1	1 unit	102	1.383
	0.09	0.3	0.28 ... 0.4	B	**3RA71 31-0EA17-0AB4**		1	1 unit	102	0.820
	0.12	0.4	0.35 ... 0.5	B	**3RA71 31-0FA17-0AB4**		1	1 unit	102	0.820
	0.18	0.6	0.45 ... 0.63	B	**3RA71 31-0GA17-0AB4**		1	1 unit	102	0.820
	0.25	0.8	0.55 ... 0.8	B	**3RA71 31-0HA17-0AB4**		1	1 unit	102	0.820
	0.25	0.8	0.7 ... 1	B	**3RA71 31-0JA17-0AB4**		1	1 unit	102	0.820
	0.37	1.1	0.9 ... 1.25	B	**3RA71 31-0KA17-0AB4**		1	1 unit	102	0.820
	0.55	1.5	1.1 ... 1.6	B	**3RA71 31-1AA17-0AB4**		1	1 unit	102	0.820
	0.75	1.9	1.4 ... 2	B	**3RA71 31-1BA17-0AB4**		1	1 unit	102	0.820
S0	0.75	2.7	1.8 ... 2.5	B	**3RA71 32-1CA26-0AB4**		1	1 unit	102	1.200
	1.1	2.7	2.2 ... 3.2	B	**3RA71 32-1DA26-0AB4**		1	1 unit	102	1.200
	1.5	3.6	2.8 ... 4	B	**3RA71 32-1EA26-0AB4**		1	1 unit	102	1.200
	1.5	3.6	3.5 ... 5	B	**3RA71 32-1FA26-0AB4**		1	1 unit	102	1.200
	2.2	5.2	4.5 ... 6.3	B	**3RA71 32-1GA26-0AB4**		1	1 unit	102	1.200
	3	6.8	5.5 ... 8	B	**3RA71 32-1HA26-0AB4**		1	1 unit	102	1.200
	4	9	7 ... 10	B	**3RA71 32-1JA26-0AB4**		1	1 unit	102	1.200
	5.5	11.5	9 ... 12.5	B	**3RA71 32-1KA26-0AB4**		1	1 unit	102	1.200
	7.5	15.5	11 ... 16	B	**3RA71 32-4AA26-0AB4**		1	1 unit	102	1.200
	7.5	15.5	14 ... 20	B	**3RA71 32-4BA26-0AB4**		1	1 unit	102	1.200
	7.5	15.5	17 ... 22	B	**3RA71 32-4CA26-0AB4**		1	1 unit	102	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, time-delayed 0.5 ... 30 s 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 41-0AA17-0AB4**		1	1 unit	102	0.820
	0.06	0.2	0.14 ... 0.2	B	**3RA71 41-0BA17-0AB4**		1	1 unit	102	0.820
	0.06	0.2	0.18 ... 0.25	B	**3RA71 41-0CA17-0AB4**		1	1 unit	102	0.820
	0.09	0.3	0.22 ... 0.32	B	**3RA71 41-0DA17-0AB4**		1	1 unit	102	0.820
	0.09	0.3	0.28 ... 0.4	B	**3RA71 41-0EA17-0AB4**		1	1 unit	102	0.820
	0.12	0.4	0.35 ... 0.5	B	**3RA71 41-0FA17-0AB4**		1	1 unit	102	0.820
	0.18	0.6	0.45 ... 0.63	B	**3RA71 41-0GA17-0AB4**		1	1 unit	102	0.820
	0.25	0.8	0.55 ... 0.8	B	**3RA71 41-0HA17-0AB4**		1	1 unit	102	0.820
	0.25	0.8	0.7 ... 1	B	**3RA71 41-0JA17-0AB4**		1	1 unit	102	0.820
	0.37	1.1	0.9 ... 1.25	B	**3RA71 41-0KA17-0AB4**		1	1 unit	102	0.820
	0.55	1.5	1.1 ... 1.6	B	**3RA71 41-1AA17-0AB4**		1	1 unit	102	0.820
	0.75	1.9	1.4 ... 2	B	**3RA71 41-1BA17-0AB4**		1	1 unit	102	0.820
S0	0.75	2.7	1.8 ... 2.5	B	**3RA71 42-1CA26-0AB4**		1	1 unit	102	1.832
	1.1	2.7	2.2 ... 3.2	B	**3RA71 42-1DA26-0AB4**		1	1 unit	102	1.830
	1.5	3.6	2.8 ... 4	B	**3RA71 42-1EA26-0AB4**		1	1 unit	102	1.200
	1.5	3.6	3.5 ... 5	B	**3RA71 42-1FA26-0AB4**		1	1 unit	102	1.200
	2.2	5.2	4.5 ... 6.3	B	**3RA71 42-1GA26-0AB4**		1	1 unit	102	1.200
	3	6.8	5.5 ... 8	B	**3RA71 42-1HA26-0AB4**		1	1 unit	102	1.200
	4	9	7 ... 10	B	**3RA71 42-1JA26-0AB4**		1	1 unit	102	1.200
	5.5	11.5	9 ... 12.5	B	**3RA71 42-1KA26-0AB4**		1	1 unit	102	1.200
	7.5	15.5	11 ... 16	B	**3RA71 42-4AA26-0AB4**		1	1 unit	102	1.200
	7.5	15.5	14 ... 20	B	**3RA71 42-4BA26-0AB4**		1	1 unit	102	1.200
	7.5	15.5	17 ... 22	B	**3RA71 42-4CA26-0AB4**		1	1 unit	102	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.

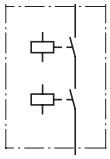
Selection and ordering data

Rated control supply voltage 50/60 Hz 230 V AC 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	102	1.129

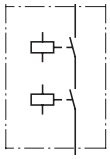
1) Selection depends on the correct startup and rated data of the protected motor.

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	102	1.516
	4	11	22.5	Basic unit	B	**3RA71 10-5AA26-0AB4**		1	1 unit	102	1.040
	As basic unit			Expansion unit	B	**3RA71 20-5AA26-0AB4**		1	1 unit	102	1.054
	As basic unit			Expansion unit, time-delayed 0.05-3 s	B	**3RA71 30-5AA26-0AB4**		1	1 unit	102	1.056
	As basic unit			Expansion unit, time-delayed 0.5 ... 30 s	B	**3RA71 40-5AA26-0AB4**		1	1 unit	102	0.620

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

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

AS-Interface compact starters (400 V AC)

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 relay 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 diagnostic 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 control elements are activated through the integrated outputs. The status of the device is scanned through the inputs, e.g. checkbacks from the auxiliary contacts of the motor starter protector and contactor(s). A further input is used to detect the operating state 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 lines 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 power range up to 2.2 kW at 400/500 V AC is covered with just 2 variants), the fact that the solid-state contact elements in the power section are non-wearing, current detection (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 planning 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 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.

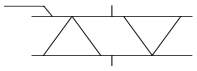
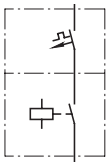
Spare inputs

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 "fouling" 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.

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	**EDS compact starters** Solid-state direct-on-line starter with two spare digital inputs	B	**3RK1 322-□□S12-0AA□**		1	1 unit	131	1.690
	ERS compact starters Solid-state reversing starter with two spare digital inputs	B	**3RK1 322-□□S12-1AA□**		1	1 unit	131	1.766
 NSA0_00098	**Order No. supplement for** *Induction motor 4-pole at 400 V AC Standard output P* / *Setting range of the overcurrent release* *kW* / *A*							
	0.18 ... 0.8 / 0.6 ... 2.18		**0A**					
	0.75 ... 2.2 / 2.0 ... 5.95		**0B**					
	**DS compact starters** Electromechanical direct-on-line starter, with two spare digital inputs	B	**3RK1 322-□□S02-0AA□**		1	1 unit	131	1.860
	RS compact starters Electromechanical reversing starter, with two spare digital inputs	B	**3RK1 322-□□S02-1AA□**		1	1 unit	131	2.140
	**Order No. supplement for** *Induction motor 4-pole at 400 V AC Standard output P* / *Setting range of the overcurrent release* *kW* / *A*							
	<0.06 / 0.14 ... 0.20		**0B**					
	0.06 / 0.18 ... 0.25		**0C**					
	0.09 / 0.22 ... 0.32		**0D**					
	0.10 / 0.28 ... 0.40		**0E**					
	0.12 / 0.35 ... 0.50		**0F**					
	0.18 / 0.45 ... 0.63		**0G**					
	0.21 / 0.55 ... 0.80		**0H**					
	0.25 / 0.70 ... 1.0		**0J**					
	0.37 / 0.9 ... 1.25		**0K**					
	0.55 / 1.1 ... 1.6		**1A**					
	0.75 / 1.4 ... 2.0		**1B**					
	0.90 / 1.8 ... 2.5		**1C**					
	1.1 / 2.2 ... 3.2		**1D**					
	1.5 / 2.8 ... 4.0		**1E**					
	1.9 / 3.5 ... 5.0		**1F**					
	2.2 / 4.5 ... 6.3		**1G**					
	3.0 / 5.5 ... 8.0		**1H**					
	4.0 / 7.0 ... 10		**1J**					
	5.5 / 9.0 ... 12		**1K**					
	Additional price							
	Standard version			**0**				
	Version with brake contact for 24 V DC/3 A externally-fed brakes			**1**				
	Version with brake contact for 400 V AC/0.5 A infeed for brake rectifier			**3**				
	Version with brake contact for DC-side switching of the brakes with 500 V DC/0.2 A			**4**				

Accessories for 24 V DC, M12 plugs

 6ES7 194-1KA01-0XA0	**M12 coupler plugs** For connecting actuators or sensors 5-pole	A	**3RX1 667**		1	1 unit	574	0.026
	M12 angular coupler plugs For connecting actuators or sensors 5-pole	A	**3RX1 668**		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	250	0.046
	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

* You can order this quantity or a multiple thereof.

AS-Interface compact starters (400 V AC)

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							
Plug sets for power infeed, 9-pole							
Comprising							
1 plug case with Pg16 heavy-duty threaded joint							
Female insert, 9-pole							
6 female contacts							
• Suitable for cable 4 × 2.5 mm², 6 × 2.5 mm²	B	**3RK1 902-0CA00**		1	1 set	121	0.057
• Suitable for cable 4 × 4 mm²/6 × 4 mm²	B	**3RK1 902-0CB00**		1	1 set	121	0.055
 3RK1 902-0CC00							
Plug sets for power loop-through, 9-pole							
Comprising							
1 plug case with Pg16 heavy-duty threaded joint							
1 male insert, 9-pole							
6 male contacts							
• Suitable for cable 4 × 2.5 mm²/6 × 2.5 mm²	B	**3RK1 902-0CC00**		1	1 set	121	0.059
• Suitable for cable 4 × 4 mm²/6 × 4 mm²	B	**3RK1 902-0CD00**		1	1 set	121	0.055
Plug sets for motor connections, 1.5 mm², 9-pole	B	**3RK1 902-0CE00**		1	1 set	121	0.064
Comprising							
1 plug case with Pg16 heavy-duty threaded joint							
1 male insert, 9-pole							
8 male contacts 1.5 mm²							
 3RK1 902-0AH00							
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
Disassembly tools	B	**3RK1 902-0AJ00**		1	1 unit	121	0.047
For disassembling male and female contacts in 9-pole inserts							
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	B	**3RK1 902-0AP00**		1	1 unit	121	0.119
For accommodating the trapezoidal-section cable for AS-Interface line and auxiliary supply							
Gasket sets for mounting plates	B	**3RK1 902-0AR00**		100	5 sets	121	0.100
For sealing the enclosure at the end of a drop cable (1 set = 5 straight gaskets, 5 shaped gaskets)							
Hand-held devices for start-up	B	**3RK1 902-0AM00**		1	1 unit	121	0.217
With 0.5 m connection cable and plug							
 3RK1 902-0AM00							

* You can order this quantity or a multiple thereof.

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 connectors. 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 shut down 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.*

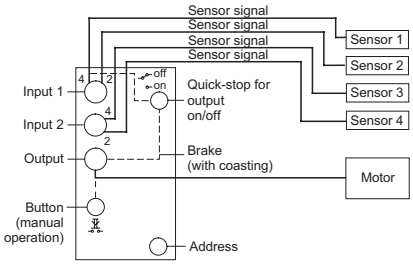
Note concerning single direct-on-line starters: *If an input with the quick-stop function receives a "High" signal, the corresponding output (e.g. quick-stop input 1 → output 1) is switched off within the device (the motor runs down without being braked) The manual key function (Key 1) for local operation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

AS-Interface motor starters (24 V DC)

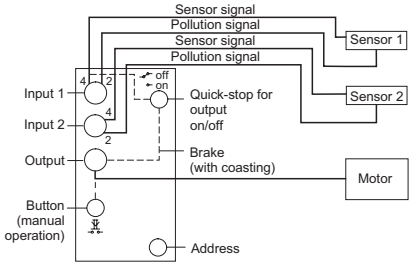
Applications

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

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

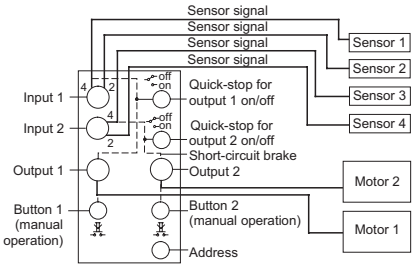


2nd possibility: Connection to a maximum of two sensors with pollution indication

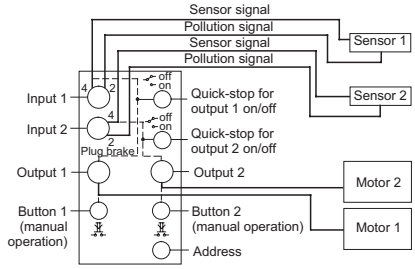


Double direct starter with brake
(with adjustable quick-stop function)

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

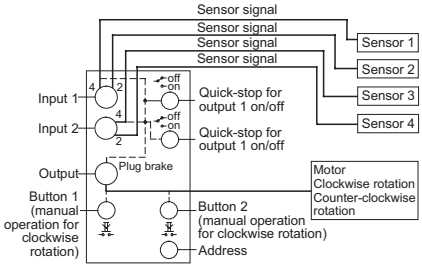


2nd possibility: Connection to a maximum of two sensors with pollution indication

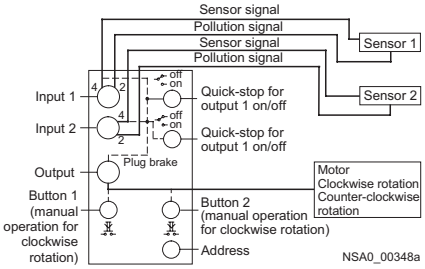


Single reversing starter with brake
(with adjustable quick-stop function)

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.

* You can order this quantity or a multiple thereof.

Overview

The AS-Interface load feeder module adds an input/output module to the conventional busbar and standard mounting rail adapters. With this module the control current circuit of a load feeder is available completely factory-wired. The series has been optimized for use 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 flexible lead 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 method.

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 checkbacks 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, comprised of the AS-Interface load 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 switching devices 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.

AS-Interface load feeder modules

Selection and ordering data

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

AS-Interface load feeder modules
For standard rail mounting
For contactors size S00 and S0
For mounting onto 40 mm or 60 mm busbar systems and SIRIUS standard mounting rail adapters the matching support is required (see Accessories)
The AS-Interface connectors for the data and auxiliary power cable (yellow and black) must be ordered separately (see Accessories)

Type	*Supply in V*	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
• 2 inputs / 1 output	24 DC[1]	▶	**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]	C	**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

1) Without plug connector for data and auxiliary power.

2) With one plug connector each for data and auxiliary power.

* You can order this quantity or a multiple thereof.

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 signalled using the 3RK14 load feeder module on the AS-Interface.

- For direct start, a load can be switched on and off with the load feeder.
- 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 switchgear cabinets. They are used in highly automated installations that place high demands on availability.

More information

Types of coordination

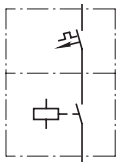
The response of the unit to short-circuits is described by the type of coordination according to EN 60947-4-1 (VDE 0660 Part 102), IEC 60947-4-1.
The 3RA5 fuseless load feeders with AS-Interface achieve the type 1 coordination at I_q = 50 kA. This ensures that short-circuits of 50 kA will be deactivated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

Combination starters for busbar systems, direct-on-line

Selection and ordering data

For 5 or 4-pole busbar systems,
can also be used for 3-pole busbar systems.
24 V DC auxiliary power.
Power and communication connectors included.

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 systems, 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 systems, 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.

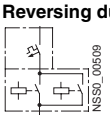
2) For I_q = 50 kA at 400 V.

* You can order this quantity or a multiple thereof.

Selection and ordering data

For 5 or 4-pole busbar systems,
can also be used for 3-pole busbar systems.
24 V DC auxiliary power.
Power and communication connectors included.

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)

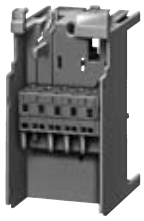
3RA52 10
(with 3RK1 400-1MG01-0AA1, 4I/2O, 24 V DC)

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

2) For I_q = 50 kA at 400 V.

* You can order this quantity or a multiple thereof.

Reversing starters for busbar systems



Carrier with mounted 3RK1 901-3.A00 power connector coupling

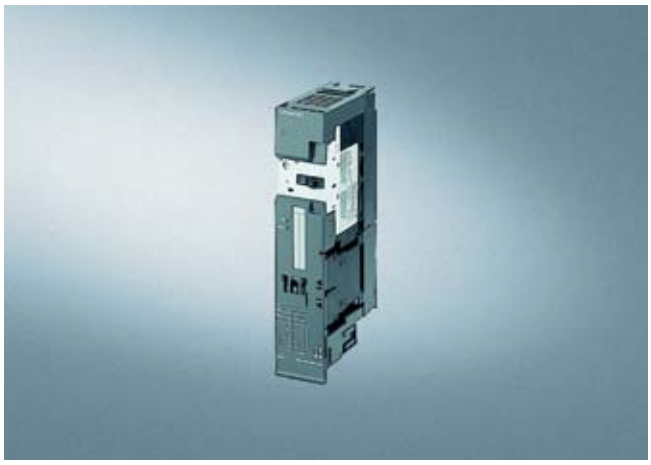
3RK1 901-0EA00

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

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
Carriers for AS-Interface load feeder modules							
• With PE/ground and N conductor connection, for mounting on busbar adapter with 40 mm center-line spacing 3RK1 901-0EA00 power connector set is required							
- 45 mm width	B	**3RK1 901-3AA00**		1	1 unit	121	0.073
- 54 mm width	B	**3RK1 901-3BA00**		1	1 unit	121	0.082
• With PE/ground and N conductor connection, for mounting on busbar adapter with 60 mm center-line spacing 3RK1 901-0EA00 power connector set is required							
- 45 mm width	B	**3RK1 901-3CA00**		1	1 unit	121	0.069
- 54 mm width	B	**3RK1 901-3DA00**		1	1 unit	121	0.080
• With PE/ground and N conductor connection, for mounting on busbar adapter with 40 mm or 60 mm center-line spacing							
- 45 mm width	B	**3RK1 901-3EA00**		1	1 unit	121	0.064
- 54 mm width	B	**3RK1 901-3FA00**		1	1 unit	121	0.073
• For mounting onto 3RA19 22-1A SIRIUS standard mounting rail adapter - 45 mm width	B	**3RK1 901-3GA00**		1	1 unit	121	0.048
Power connector sets 5-pole, 2.5 mm^2 (1 set contains 5 connectors and 5 couplings)	C	**3RK1 901-0EA00**		1	5 sets	121	0.111
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 (one set contains five plug connectors)							
• Yellow	C	**3RK1 901-0NA00**		1	5 units	121	0.015
• Black	C	**3RK1 901-0PA00**		1	5 units	121	0.015

* You can order this quantity or a multiple thereof.

Overview

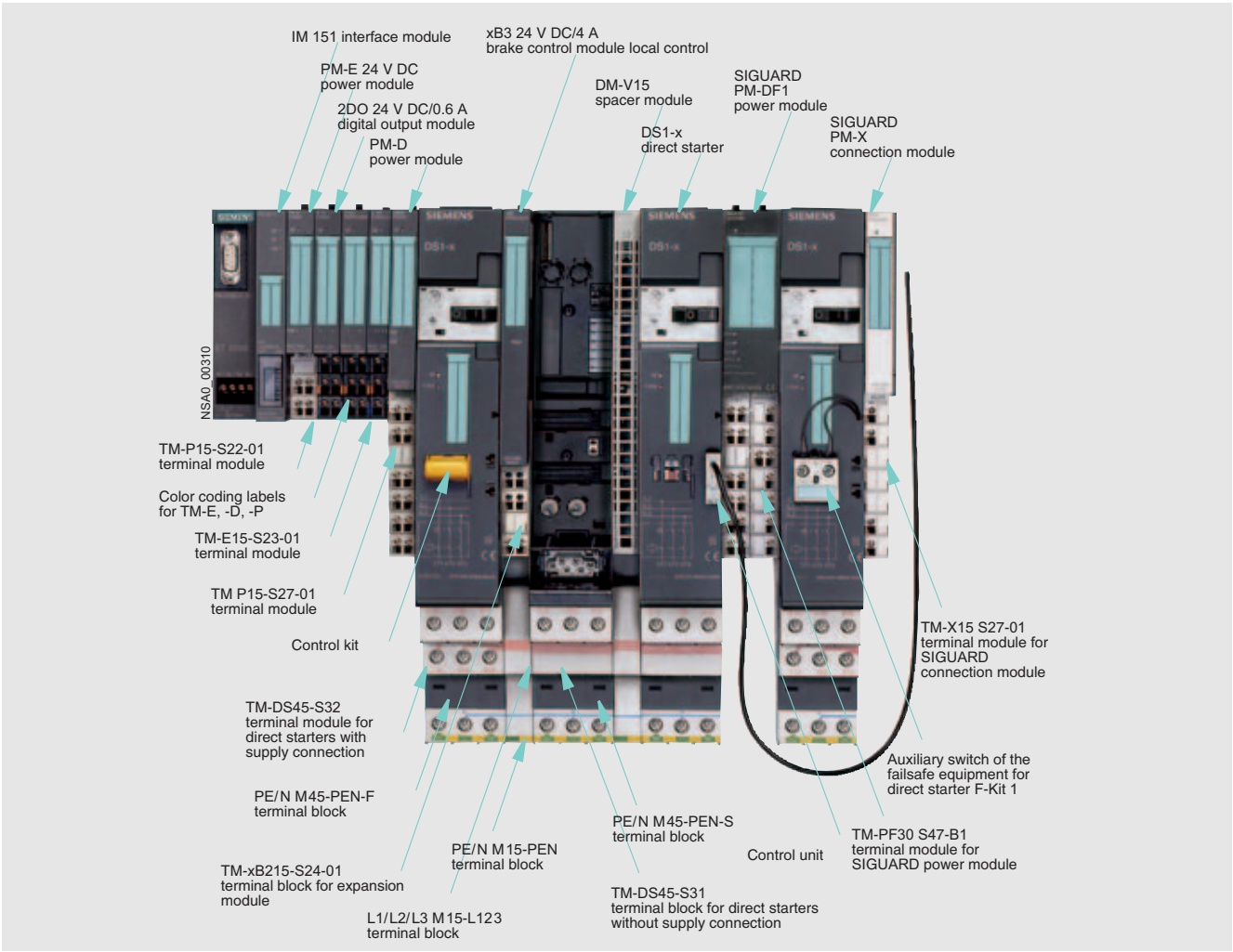


Motor starters, Standard, DS1-x direct-on-line starter

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 systems (see ET 200S Safety motor starters Solutions local/PROFIsafe) for use in safety-related subsystems (EN 954-1)

ET 200S motor starters



Interplay of ET 200S motor starter components

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, with diagnostics, electromechanical, fuseless, expandable with brake control module							
DS1-x direct-on-line starters							
Motor rating of standard induction motor kW / *Setting range of the overcurrent release* 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
0.35 / 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
0.35 / 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

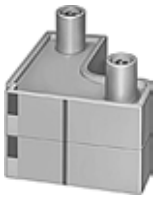
RS1-x

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

ET 200S motor starters

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Motor starters, High Feature, 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 overcurrent release in A							
	0.3 ... 3	A	**3RK1 301-0AB10-0AA3**		1	1 unit	121	1.340
	2.4 ... 8	A	**3RK1 301-0BB10-0AA3**		1	1 unit	121	1.327
	2.4 ... 16	A	**3RK1 301-0CB10-0AA3**		1	1 unit	121	1.330
	RS1e-x reversing starters							
	Setting range of the overcurrent release in A							
	0.3 ... 3	A	**3RK1 301-0AB10-1AA3**		1	1 unit	121	1.950
	2.4 ... 8	A	**3RK1 301-0BB10-1AA3**		1	1 unit	121	1.940
	2.4 ... 16	A	**3RK1 301-0CB10-1AA3**		1	1 unit	121	1.943
	DSS1e-x soft starters							
	Setting range of the overcurrent release in A							
	0.3 ... 3	A	**3RK1 301-0AB20-0AA3**		1	1 unit	121	1.168
	2.4 ... 8	B	**3RK1 301-0BB20-0AA3**		1	1 unit	121	1.195
	2.4 ... 16	A	**3RK1 301-0CB20-0AA3**		1	1 unit	121	1.198
Accessories for Standard motor starters								
 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 load currents** 15 mm wide	A	**3RK1 903-0CD00**		1	1 unit	121	0.128
Accessories for High Feature motor starters								
 3RK1 903-0CH20	**2DI control modules 24 V DC COM** Digital input module with two 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 proof, floating contact with serial interface for connecting to 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 Switch ES interface to a PC	A	**6ED1 057-1AA00-0BA0**		1	1 unit	200	0.159

* 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 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	►	**6SL3 203-0BE22-5AA0**		1	1 unit	337	2.700
	• Rated current 50 A	►	**6SL3 203-0BE25-0AA0**		1	1 unit	337	3.000

*** 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
	MMC parameter memory for frequency converters Suitable for MMC slot of ICU24 / ICU24F control module; other memory cards are not accepted	►	**6SL3 254-0AM00-0AA0**		1	1 unit	335	0.050
	RS 232/zero modem cables (5m) 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
- Deactivation of a complete group of motor starters is possible without any additional outlay (safety category 1 according to EN 954-1)
- For plugging into TM-P15 terminal module
- For supplying and monitoring the voltage supply for the ET 200S FC frequency converter

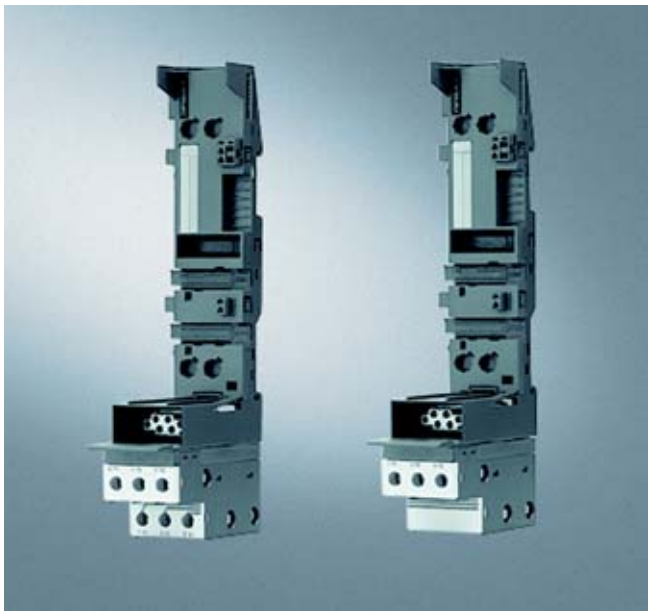
Selection and ordering data

	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 work 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 module
  - TM-IPM for the power section
- Terminal modules for connection modules (TM-xB)

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

The TM-DS and TM-RS terminal modules are available in various versions for the Standard motor starters and the High Feature motor starters. The terminal modules with the suffix "-S32" have connection terminals for feeding into the integrated 40A/50A 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 delivered 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 lines 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 delivered 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 connection modules (TM-xB)

The TM-xB terminal modules are used to accommodate the xB1, xB2, xB3 and xB4 brake control modules. The TM-terminal module must always follow directly after a terminal module for Standard motor starters, High Feature motor starters or frequency converters as control of the solid-state braking switch is provided through an output of the motor starter / frequency converter. The xB215 terminal modules for the brake control modules have not only the terminals for connecting the line for the motor braking unit 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 motor connection cables 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 PU 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 delivered with two caps for closing the PU/N bus contacts on the final terminal module of a segment. The modules for the Standard motor starters have a width of 45 mm and the modules for the High Feature motors starters / frequency converters have a width of 65 mm.

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Components for Standard motor starters								
	Terminal modules							
 3RK1 903-0AB00	• **TM-DS45-S32** **for DS1-x direct-on-line starters** With incoming energy bus connection including three caps for terminating the energy 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 energy 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 energy bus connection including three caps for terminating the energy bus	A	**3RK1 903-0AC00**		1	1 unit	121	0.498
	• **TM-RS90-S31** **for RS1-x reversing starters** Without incoming energy bus connection	A	**3RK1 903-0AC10**		1	1 unit	121	0.618
 3RK1 903-2AA00	**PU/N M45-PEN-F terminal blocks** 45 mm wide including two caps in combination with TM-DS45-S32 / TM-RS90-S32	A	**3RK1 903-2AA00**		1	1 unit	121	0.077

* You can order this quantity or a multiple thereof.

Terminal modules for ET 200S motor starters

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 3RK1 903-2AA10	**PU/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								
	Terminal modules							
 3RK1 903-0AK00	• **TM-DS65-S32** **for DS1e-x and DSS1e-x direct-on-line starters** With incoming energy bus connection including three caps for terminating the energy 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 energy bus connection	A	**3RK1 903-0AK10**		1	1 unit	121	0.472
	• **TM-RS130-S32** **for RS1e-x reversing starters** With incoming energy bus connection including three caps for terminating the energy bus	A	**3RK1 903-0AL00**		1	1 unit	121	0.787
	• **TM-RS130-S31** **for RS1e-x reversing starters** Without incoming energy 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
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 energy bus connection (TM-IPM65-S32)	A	**3RK1 903-3EC00**		1	1 unit	121	0.020
	• Without incoming energy 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 energy bus connection (TM-IPM130-S32)	A	**3RK1 903-3ED00**		1	1 unit	121	0.020
	• Without incoming energy 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
IM151-1 BASIC interface modules							
IM 151-1 BASIC interface modules For ET 200S; data transfer rates up to 12 Mbit/s; up to 12 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	**6ES7 151-1CA00-0AB0**		1	1 unit	250	0.184
IM 151-1 COMPACT interface modules 32DI 24 V DC For ET 200S; data transfer 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	0.200
IM 151-1 COMPACT interface modules 16DI 24 V DC / 16DO 24 V / 0.5A For ET 200S; data transfer 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	0.200
IM 151-1 Standard interface modules For ET 200S; data transfer rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	**6ES7 151-1AA04-0AB0**		1	1 unit	250	0.186
IM 151-1 FO Standard interface modules For ET 200S; data transfer 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 through integrated fiber-optic cable including bus termination module	A	**6ES7 151-1AB02-0AB0**		1	1 unit	250	0.194
IM 151-1 High Feature interface modules For ET 200S; data transfer rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 modules can be connected; connection of PROFIsafe modules, isochrone mode (clocked operation); connection to bus through 9-pole Sub-D including bus termination module	A	**6ES7 151-1BA01-0AB0**		1	1 unit	250	0.181
Accessories							
TM-C120S terminal modules Terminal module for ET 200S COMPACT, screw terminals	A	**6ES7 193-4DL10-0AA0**		1	1 unit	250	0.072
TM-C120C terminal modules Terminal module for ET 200S COMPACT, spring-loaded terminals	A	**6ES7 193-4DL00-0AA0**		1	1 unit	250	0.072
TE-U120S4x10 terminal modules Additional terminal for TM-C120x terminal modules of ET 200S COMPACT; screw terminals for 3-wire connection; please order two for 4-wire 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	0.162
TE-U120C4x10 terminal modules Additional terminal for TM-C120x terminal modules of ET 200S COMPACT; spring-loaded terminals for 3-wire connection; please order two for 4-wire 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	0.162
ET 200S manuals In German, English, French, Spanish and Italian Can be downloaded as a PDF file from the Internet: http://www.siemens.com/automation/support							
SIMATIC Manual Collection Manuals on CD-ROM, multi-lingual: 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 delivery: The current CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400
100 Simplex connectors For plastic fiber-optic cable including 5 polishing sets	A	**6GK1 901-0FB00-0AA0**		1	1 unit	550	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, perforated Order unit is 1 set of 10 sheets of 60 strips that can be used for solid-state modules, power modules and motor starters + 20 strips that can be used for IM 151							
• 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	0.200

*** 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
IM151-1 BASIC interface modules (continued)							
Termination modules 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	229	0.440
• 530 mm long for 600 mm cabinets	A	**6ES5 710-8MA21**		1	1 unit	229	0.466
• 830 mm long for 900 mm cabinets	A	**6ES5 710-8MA31**		1	1 unit	229	0.820
• Length 2 m	A	**6ES5 710-8MA41**		1	1 unit	229	1.930
IM 151-3PN interface modules							
IM 151-3 PN interface modules For ET 200S; data transfer 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 151-3AA10-0AB0**		1	1 unit	250	0.188
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	543	0.030
10 units	A	**6GK1 901-1BB20-2AB0**		1	1 unit	543	0.300
50 units	A	**6GK1 901-1BB20-2AE0**		1	1 unit	543	1.500
Industrial Ethernet Fast Connect installation cables							
Fast Connect standard cable	A	**6XV1 840-2AH10**		1	1 unit	550	0.055
Fast Connect trailing cable	A	**6XV1 840-3AH10**		1	1 unit	550	0.055
Fast Connect marine cable	A	**6XV1 840-4AH10**		1	1 unit	550	0.055
Industrial Ethernet Fast Connect stripping tools	A	**6GK1 901-1GA00**		1	1 unit	543	0.100
MMC 64 Kbyte[1)] For storing the unit's name	A	**6ES7 953-8LF11-0AA0**		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 953-8LJ11-0AA0**		1	1 unit	230	0.014
MMC 2 Mbyte[1)] For storing the unit's name and/or the firmware update	A	**6ES7 953-8LL11-0AA0**		1	1 unit	230	0.014
MMC 4 Mbyte[1)] For storing the unit's name and/or the firmware update	A	**6ES7 953-8LM11-0AA0**		1	1 unit	230	0.014
MMC 8 Mbyte[1)] For storing the unit's name and/or the firmware update	A	**6ES7 953-8LP11-0AA0**		1	1 unit	230	0.014
ET 200S manuals In German, English, French, Spanish and Italian Can be downloaded as a PDF file from the Internet: http://www.siemens.com/automation/support							
SIMATIC Manual Collection Manuals on CD-ROM, multi-lingual: 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 delivery: The current CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400
Inscription sheets in A4 format, perforated Order unit is 1 set of 10 sheets of 60 strips that can be used for solid-state modules, power modules and motor starters + 20 strips that can be used for IM 151							
• 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	0.200
Termination modules 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	229	0.440
• 530 mm long for 600 mm cabinets	A	**6ES5 710-8MA21**		1	1 unit	229	0.466
• 830 mm long for 900 mm cabinets	A	**6ES5 710-8MA31**		1	1 unit	229	0.820
• Length 2 m	A	**6ES5 710-8MA41**		1	1 unit	229	1.930

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* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 151-7 CPU interface modules							
IM 151/CPU interface modules (48 K) Including termination module	A	**6ES7 151-7AA11-0AB0**		1	1 unit	250	0.246
IM 151/CPU FO interface modules (48 K) Including termination module	A	**6ES7 151-7AB00-0AB0**		1	1 unit	250	0.257
Accessories							
MMC 64 Kbyte[1)] For storing the program backup	A	**6ES7 953-8LF11-0AA0**		1	1 unit	230	0.014
MMC 128 Kbyte[1)] For storing the program backup	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.014
MMC 512 Kbyte[1)] For storing the program backup	A	**6ES7 953-8LJ11-0AA0**		1	1 unit	230	0.014
MMC 2 Mbyte[1)] For storing the program backup and/or the firmware update	A	**6ES7 953-8LL11-0AA0**		1	1 unit	230	0.014
MMC 4 Mbyte[1)] For storing the program backup	A	**6ES7 953-8LM11-0AA0**		1	1 unit	230	0.014
MMC 8 Mbyte[1)] For storing the program backup	A	**6ES7 953-8LP11-0AA0**		1	1 unit	230	0.014
MMC adapters For PG memory card slot	C	**6ES7 798-0BA00-0XA0**		1	1 unit	2Z3	0.041
External prommers 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							
• 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	0.200
ET 200S Manuals							
• German	D	**6ES7 151-1AB00-8AA0**		1	1 unit	250	1.000
• English	D	**6ES7 151-1AB00-8BA0**		1	1 unit	250	0.503
Termination modules 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	229	0.440
• 530 mm long for 600 mm cabinets	A	**6ES5 710-8MA21**		1	1 unit	229	0.466
• 830 mm long for 900 mm cabinets	A	**6ES5 710-8MA31**		1	1 unit	229	0.820
• Length 2 m	A	**6ES5 710-8MA41**		1	1 unit	229	1.930
Master interface for IM151-7 CPU interface modules							
Master interface modules for IM151-7 CPU interface modules	A	**6ES7 138-4HA00-0AB0**		1	1 unit	250	0.124
Accessories							
Inscription sheets in A4 format							
• 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	0.200
ET 200S Manuals							
• German	D	**6ES7 151-1AB00-8AA0**		1	1 unit	250	1.000
• English	D	**6ES7 151-1AB00-8BA0**		1	1 unit	250	0.503

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

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

Interface/solid-state modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM151-7 F-CPU interface modules							
IM151-7 F-CPU interface modules For constructing a failsafe automation system	A	**6ES7 151-7FA01-0AB0**		1	1 unit	241	0.247
Accessories							
Distributed Safety V5.4 programming tools *Task:* Configuration software for configuring failsafe application 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	2Z3	0.300
Distributed Safety upgrades From V5.x to V5.3; floating license for 1 user		**6ES7 833-1FC02-0YE5**					
MMC 64 Kbyte[1] For storing the program backup	A	**6ES7 953-8LF11-0AA0**		1	1 unit	230	0.014
MMC 128 Kbyte[1] For storing the program backup	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.014
MMC 512 Kbyte[1] For storing the program backup	A	**6ES7 953-8LJ11-0AA0**		1	1 unit	230	0.014
MMC 2 Mbyte[1] For storing the program backup and/or the firmware update	A	**6ES7 953-8LL11-0AA0**		1	1 unit	230	0.014
MMC 4 Mbyte[1] For storing the program backup	A	**6ES7 953-8LM11-0AA0**		1	1 unit	230	0.014
MMC adapters For PG memory card slot	C	**6ES7 798-0BA00-0XA0**		1	1 unit	2Z3	0.041
External prommers For e.g. MMC with USB interface	A	**6ES7 792-0AA00-0XA0**		1	1 unit	260	1.282
Termination modules 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	229	0.440
• 530 mm long for 600 mm cabinets	A	**6ES5 710-8MA21**		1	1 unit	229	0.466
• 830 mm long for 900 mm cabinets	A	**6ES5 710-8MA31**		1	1 unit	229	0.820
• Length 2 m	A	**6ES5 710-8MA41**		1	1 unit	229	1.930
PM-E power modules for solid-state modules							
PM-E power modules 24 V DC[2] For solid-state modules; with diagnostics	A	**6ES7 138-4CA01-0AA0**		1	1 unit	250	0.040
PM-E power modules 24 ... 48 V DC For solid-state modules, with diagnostics	A	**6ES7 138-4CA50-0AB0**		1	1 unit	250	0.041
PM-E power modules 24 ... 48 V DC, 42 ... 230 V AC For solid-state modules; with diagnostics and fuse	A	**6ES7 138-4CB10-0AB0**		1	1 unit	250	0.045
Accessories							
Inscription sheets in A4 format							
• 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	0.200
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

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

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

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

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Digital solid-state modules							
Digital input modules							
• 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
• 2DI 120 V AC	A	**6ES7 131-4EB00-0AB0**		1	1 unit	2Z3	0.200
• 2 DI 230 V AC	A	**6ES7 131-4FB00-0AB0**		1	1 unit	2Z3	0.200
• 4 DI 24 ... 48 V UC	A	**6ES7 131-4CD00-0AB0**		1	1 unit	2Z3	0.200
• 4 DI 24 V DC SOURCE INPUT	A	**6ES7 131-4BD51-0AA0**		1	1 unit	250	0.180
• 4 DI 24 V DC NAMUR	A	**6ES7 131-4RD00-0AB0**		1	1 unit	2Z3	0.042
Digital output modules							
• 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/2 A Standard	A	**6ES7 132-4BD31-0AA0**		1	1 unit	250	0.189
• 2 DO 24 V ... 230 V AC/1 A	A	**6ES7 132-4FB00-0AB0**		1	1 unit	2Z3	0.215
• 2 DO 24 V DC ... 230 V AC/5 A relay, NO	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
Accessories							
Inscription sheets in A4 format							
• 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	0.200
Analog solid-state modules							
Analog input modules							
• 2 AI U Standard	A	**6ES7 134-4FB01-0AB0**		1	1 unit	250	0.045
• 2 AI U High Speed	A	**6ES7 134-4FB51-0AB0**		1	1 unit	250	0.060
• 2 AI U High Feature	A	**6ES7 134-4LB00-0AB0**		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 134-4GB51-0AB0**		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 Speed 4-wire	A	**6ES7 134-4GB61-0AB0**		1	1 unit	250	0.033
• 2 AI I High Feature 2/4-wire (15 bits + sign)	A	**6ES7 134-4MB00-0AB0**		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							
• 2 AO U Standard	A	**6ES7 135-4FB01-0AB0**		1	1 unit	250	0.045
• 2 AO U High Feature	A	**6ES7 135-4LB01-0AB0**		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 135-4MB01-0AB0**		1	1 unit	250	0.046
Accessories for inscription							
Inscription sheets in A4 format							
• 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	0.200
Accessories for system-integrated shield connections							
Shield attachments For plugging into TM-E and TM-P	A	**6ES7 193-4GA00-0AA0**		1	1 unit	250	0.050
Shield terminals For busbars 3 × 10 mm	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.050
Ground connection terminals For conductor cross-sections up to 25 mm^2	A	**8WA2 868**		1	50 units	041	0.014
Busbars 3 × 10 mm	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 power module 24 V DC For the safe switch-off of digital output modules	B	**6ES7 138-4CF02-0AB0**		1	1 unit	241	0.100
PM-E F pp PROFIsafe power module 24 V DC For the safe switch-off of digital output modules	B	**6ES7 138-4CF41-0AB0**		1	1 unit	241	0.100
Accessories							
Terminal modules for power modules		see F terminal modules					
Distributed Safety V5.4 programming tool *Task*: Configuration software for configuring failsafe application 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	2Z3	0.300
Distributed Safety upgrade From V5.x to V5.3; floating license for 1 user	B	**6ES7 833-1FC02-0YE5**		1	1 unit	241	0.300
SIMATIC Manual Collection Manuals on CD-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	0.400
F solid-state modules							
Solid-state modules 4/8 F-DI PROFIsafe 24 V DC 30 mm width, up to category 4 (EN 954-1)	B	**6ES7 138-4FA02-0AB0**		1	1 unit	241	0.100
Solid-state modules 4 F-DO PROFIsafe 24 V DC/2A 30 mm width, up to category 4 (EN 954-1)	B	**6ES7 138-4FB02-0AB0**		1	1 unit	241	0.100
Accessories							
Terminal modules for solid-state modules		see F terminal modules					
Distributed Safety V5.4 programming tool *Task*: Configuration software for configuring failsafe application 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	2Z3	0.300
Distributed Safety upgrade From V5.x to V5.3; floating license for 1 user	B	**6ES7 833-1FC02-0YE5**		1	1 unit	241	0.300
F terminal modules							
F terminal modules for power modules							
TM-P15S23-A1 2 × 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CC20-0AA0**		1	1 unit	250	0.072
TM-P15C23-A1 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-P15S23-A0 2 × 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw-type terminals	A	**6ES7 193-4CD20-0AA0**		1	1 unit	250	0.077
TM-P15C23-A0 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
TM-P15S22-01 2 × 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CE00-0AA0**		1	1 unit	250	0.060
TM-P15C22-01 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-P30S44-A0 7 × 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw-type terminals for PM-E F PROFIsafe	A	**6ES7 193-4CK20-0AA0**		1	1 unit	241	0.140
TM-P30C44-A0 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

* 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)							
F terminal modules for solid-state modules							
TM-E30S44-01 4 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CG20-0AA0**		1	1 unit	250	0.140
TM-E30C44-01 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 4 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CF40-0AA0**		1	1 unit	250	0.184
TM-E30C46-A1 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
Accessories							
Color coding plates 1200 units in 60 strips of 20 plates							
• 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
Distributed Safety V5.2 programming tool *Task:* Configuration software for configuring failsafe application programs for SIMATIC S7-300F *Precondition:* STEP 7 V5.1 SP6 and higher	A	**6ES7 833-1FC00-0YX0**		1	1 unit	2Z3	0.280
Documentation for S7-300F System description Configuration and Programming, PROFIsafe Failsafe Modules							
• German		**6ES7 988-8FB10-8AA0**					
• English		**6ES7 988-8FB10-8BA0**					
• French		**6ES7 988-8FB10-8CA0**					
Ground connection terminals For conductor cross-sections up to 25 mm^2	A	**8WA2 868**		1	50 units	041	0.014
Busbars 3 × 10 mm	A	**8WA2 842**		1	1 unit	041	0.267
Labeling plates, with inscription							
• For slot numbering (1 ... 20) 10 ×	A	**8WA8 861-0AB**		100	200 units	041	0.016
• For slot numbering (1 ... 40) 5 ×	A	**8WA8 861-0AC**		100	200 units	041	0.016
• For slot numbering (1 ... 64) 1 ×, (1 ... 68) 2 ×	A	**8WA8 861-0DA**		100	200 units	041	0.016
Labeling plates, without inscription For slot numbering	A	**8WA8 848-2AY**		100	100 units	041	0.050
4 IQ-Sense sensor modules							
4 IQ-Sense sensor modules	A	**6ES7 138-4GA00-0AB0**		1	1 unit	250	0.010
8 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	▶	**3SF7 240-3JQ00**		1	1 unit	575	0.093
• Diffuse sensor, type K80 IQ-Sense	▶	**3SF7 210-3JQ00**		1	1 unit	575	0.123
• Retroflective sensor, type C40 IQ-Sense	▶	**3SF7 241-3JQ00**		1	1 unit	575	0.094
• Retroflective sensor, type K80 IQ-Sense	▶	**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 ... 30 cm	C	**3SF6 232-3JA00**		1	1 unit	575	0.084
• M18 IQ-Sense ultrasonic sensors Detection range 15 ... 100 cm	C	**3SF6 233-3JA00**		1	1 unit	575	0.084
IQ-Sense photoelectric sensors							
Photoelectric sensors for connecting to IQ-Sense							
• Design: C40 IQ-Sense							
- Operating mode: diffuse sensor	▶	**3SF7 240-3JQ00**		1	1 unit	575	0.093
- Operating mode: diffuse light barrier	▶	**3SF7 241-3JQ00**		1	1 unit	575	0.094
• Design: K80 IQ-Sense							
- Operating mode: diffuse sensor	▶	**3SF7 210-3JQ00**		1	1 unit	575	0.123
- Operating mode: diffuse sensor with background suppression	A	**3SF7 214-3JQ00**		1	1 unit	575	0.126
- Operating mode: diffuse light barrier	▶	**3SF7 211-3JQ00**		1	1 unit	575	0.118
IQ-Sense ultrasonic sensors							
Ultrasonic sensors for connecting to the 4 IQ-Sense sensor modules							
• Design: M18 IQ-Sense							
- Detection range 5 ... 30 cm	C	**3SF62 32–3JA00**		1	1 unit	575	0.084
- Detection range 15 ... 100 cm	C	**3SF62 33–3JA00**		1	1 unit	575	0.084

*** 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
SSI modules							
SSI modules For the connection of absolute encoders with SSI interface	A	**6ES7 138-4DB02-0AB0**		1	1 unit	250	0.044
Accessories							
Inscription sheets in A4 format							
• 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	0.200
2 PULSE pulse generators							
2 PULSE 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							
• 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	0.200
1 STEP step modules							
1 STEP step modules For simple positioning tasks with stepper motor axes	A	**6ES7 138-4DC00-0AB0**		1	1 unit	250	0.048
Accessories							
Inscription sheets in A4 format							
• 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	0.200
SIMOSTEP stepper motors		see ST 70 Catalog					
Power section for stepper motors FM STEPDRIVE		see ST 70 Catalog					
1 POS U positioning modules							
1 POS U positioning modules Single-channel positioning module for ET 200S for positioning of adjusting and operating axes	A	**6ES7 138-4DL00-0AB0**		1	1 unit	250	0.079
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							
• 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	0.200
Shield attachments For TM-P und TM-E terminal modules, as support for busbar 3 x 10 mm	A	**6ES7 193-4GA00-0AA0**		1	1 unit	250	0.050
Shield terminals For connection of braided shields to busbars	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.050
SIMODRIVE sensor incremental encoders		**6FX2 001-4...**					
Signal cables Assembled, for HTL and TTL sensors, without Sub-D connector, UL/DESINA	C	**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							
• 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	0.200
Shield attachments For TM-P und TM-E terminal modules, as support for busbar 3 x 10 mm	A	**6ES7 193-4GA00-0AA0**		1	1 unit	250	0.050
Shield terminals For connection of braided shields to busbars	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.050
SIMODRIVE incremental encoders		**6FX2 001-2...**					
Signal cables Assembled, for HTL and TTL sensors, without Sub-D connector, UL/DESINA	C	**6FX5 002-2CA12-....**		1	1 unit	701	0.110

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
1 SI interface modules							
1 SI 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-E15S26-A1 terminal modules	A	**6ES7 193-4CA40-0AA0**		1	1 unit	250	0.480
TM-E15C26-A1 terminal modules	A	**6ES7 193-4CA50-0AA0**		1	1 unit	250	0.440
TM-E15N24-A1 terminal modules	A	**6ES7 193-4CA70-0AA0**		1	1 unit	250	0.435
TM-E15S24-01 terminal modules	A	**6ES7 193-4CB20-0AA0**		1	1 unit	250	0.007
TM-E15C24-01 terminal modules	A	**6ES7 193-4CB30-0AA0**		1	1 unit	250	0.060
TM-E15N24-01 terminal modules	A	**6ES7 193-4CB70-0AA0**		1	1 unit	250	0.443
Terminal modules for power and solid-state modules							
TM-P terminal modules for PM-E power modules							
TM-P15S23-A1 2 × 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CC20-0AA0**		1	1 unit	250	0.072
TM-P15C23-A1 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 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 2 × 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw-type terminals	A	**6ES7 193-4CD20-0AA0**		1	1 unit	250	0.077
TM-P15C23-A0 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
TM-P15N23-A0 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 2 × 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CE00-0AA0**		1	1 unit	250	0.060
TM-P15C22-01 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 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 7 × 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw-type terminals for PM-E F PROFIsafe	A	**6ES7 193-4CK20-0AA0**		1	1 unit	241	0.140
TM-P30C44-A0 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

*** 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]							
TM-E15S24-A1 2 × 4 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CA20-0AA0**		1	1 unit	250	0.372
TM-E15C24-A1 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 2 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CB20-0AA0**		1	1 unit	250	0.007
TM-E15C24-01 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 2 × 3 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CB00-0AA0**		1	1 unit	250	0.020
TM-E15C23-01 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 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 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 2 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CA40-0AA0**		1	1 unit	250	0.480
TM-E15C26-A1 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-P15N24-A1 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-P15N26-A1 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
TM-E30S44-01 4 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CG20-0AA0**		1	1 unit	250	0.140
TM-E30C44-01 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 4 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw-type terminals	A	**6ES7 193-4CF40-0AA0**		1	1 unit	250	0.184
TM-E30C46-A1 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 For internal temperature compensation for 2 AI TC High Feature, screw-type terminals	A	**6ES7 193-4CL20-0AA0**		1	1 unit	250	0.076
TM-E15C24-AT For internal temperature compensation for 2 AI TC High Feature, screw-type terminals	A	**6ES7 193-4CL30-0AA0**		1	1 unit	250	0.064

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

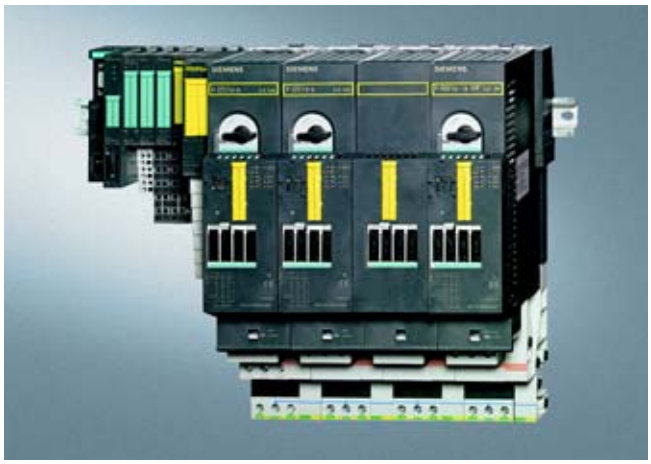
* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal modules for power and solid-state modules (continued)							
Accessories for shield attachment							
Shield attachments For plugging into TM-E and TM-P	A	**6ES7 193-4GA00-0AA0**		1	1 unit	250	0.050
Shield terminals For busbars 3 × 10 mm	A	**6ES7 193-4GB00-0AA0**		1	1 unit	250	0.050
Ground connection terminals For conductor cross-sections up to 25 mm^2	A	**8WA2 868**		1	50 units	041	0.014
Busbars 3 × 10 mm	A	**8WA2 842**		1	1 unit	041	0.267
Accessories for inscription							
Inscriptions sheets in A4 format, perforated 10 sheets of 60 strips that can be used for solid-state modules, power modules and motor starters + 20 strips that can be used for IM 151							
• 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	0.200
Accessories for coding							
Color coding plates For TM-P, TM-E							
• 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
Labeling plates, with inscription							
For slot numbering (1 ... 20) 10 ×	A	**8WA8 861-0AB**		100	200 units	041	0.016
For slot numbering (1 ... 40) 5 ×	A	**8WA8 861-0AC**		100	200 units	041	0.016
For slot numbering (1 ... 64) 1 ×, (1 ... 68) 2 ×	A	**8WA8 861-0DA**		100	200 units	041	0.016
Labeling plates, without inscription For slot numbering	A	**8WA8 848-2AY**		100	100 units	041	0.050

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

General data

Overview



The ET 200S Safety motor starter Solutions comprise:

- Safety modules
- Standard motor starters
- 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 compared to the conventional safety systems. The ET 200S Safety motor starter Solutions are designed for category 4 according to EN 954- 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 Standard motor starters or High Feature motor starters without safety functions or the SIMATIC ET 200S FC frequency converter up to max. 4 kW up to category 3 according to EN 954-1 or SIL 2 according to IEC 61508.

Standard and High Feature ET 200S motor starters can be found on page 6/67 onwards.

The ET 200S configurator software can be found in catalog CA 01 on CD or DVD (Motor Starter Selection Aid). You can also download the ET 200S configurator software from the Internet:

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

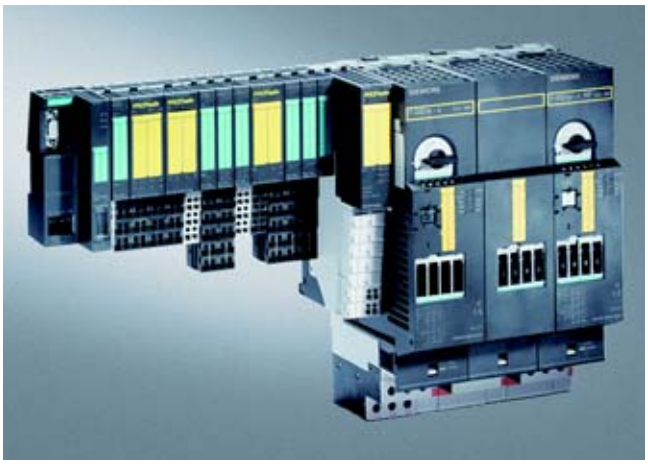
http://www.siemens.com/ET200S

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 engineering 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.

Overview



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

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

All functions of the High Feature starter are already integrated

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

Benefits

Advantages over conventional safety systems

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

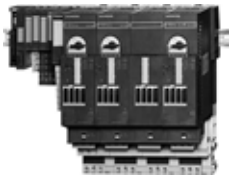
Application

Use

The Failsafe motor starter is predestined for use in combination with PROFIsafe (see figure *Failsafe motor starter with ET 200S PROFIsafe*). Another field of application is in combination with AS-i Safety at Work or safety relays (see example 2 on page 6/92 *Failsafe motor starters with AS-i Safety at Work and 3TK28*).

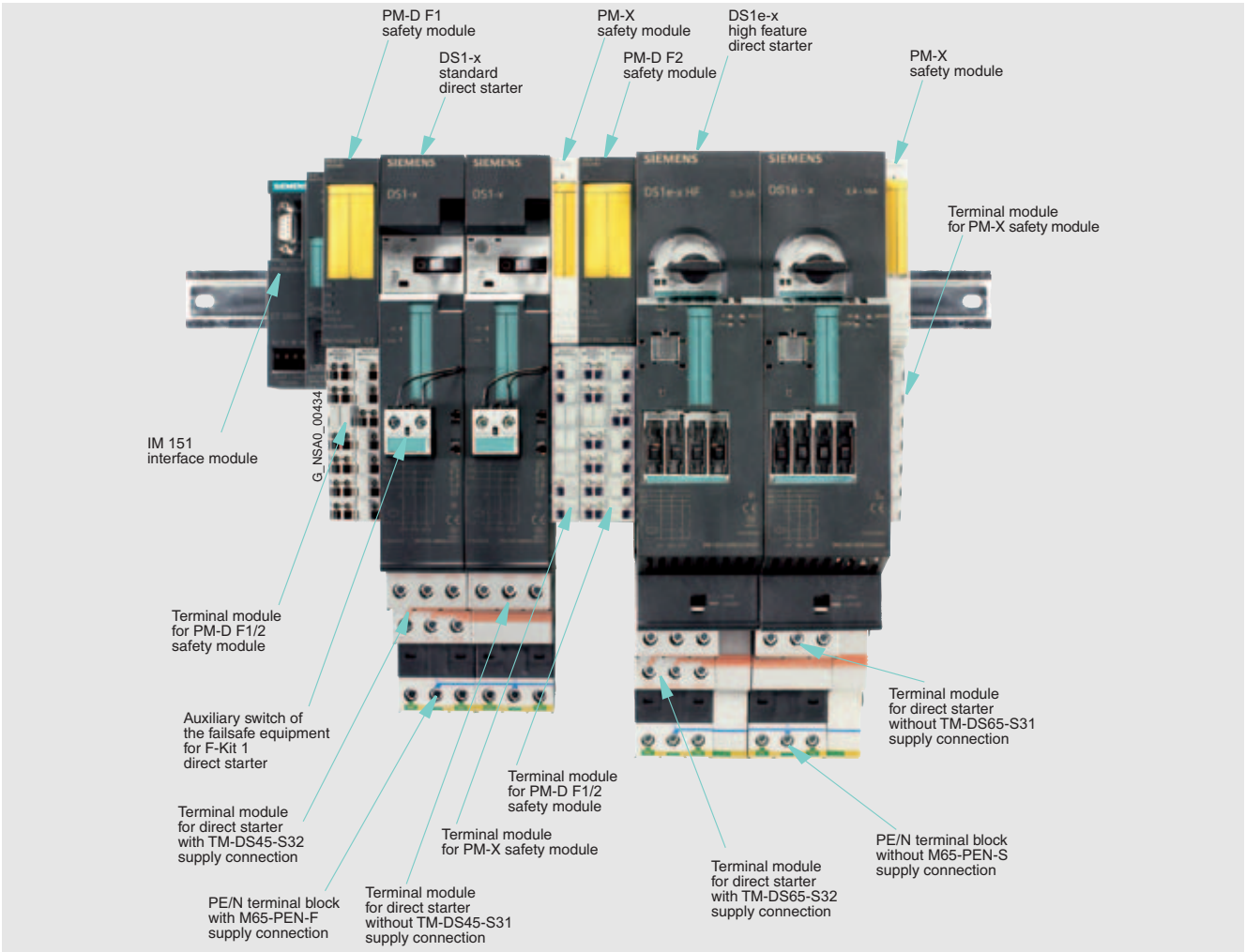
ET 200S Failsafe motor starters

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 Mechanically switching Solid-state UE protection							
	• 0.3 ... 3 A	A	**3RK1 301-0AB13-0AA2**		1	1 unit	121	1.700
	• 2.4 ... 8 A	B	**3RK1 301-0BB13-0AA2**		1	1 unit	121	1.700
	• 2.4 ... 16 A	A	**3RK1 301-0CB13-0AA2**		1	1 unit	121	1.700
	F-RS1e-x reversing starters Failsafe reversing starters up to 7.5 kW Mechanically switching Solid-state UE protection, fuseless							
	• 0.3 ... 3 A	A	**3RK1 301-0AB13-1AA2**		1	1 unit	121	2.600
	• 2.4 ... 8 A	B	**3RK1 301-0BB13-1AA2**		1	1 unit	121	2.600
	• 2.4 ... 16 A	B	**3RK1 301-0CB13-1AA2**		1	1 unit	121	2.600
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
	PU/N terminal blocks M65-PEN-F 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.

Overview



Interplay of ET 200S Safety motor starter 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 systems
- 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.

Safety modules local

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 evaluation of protective doors with the function "automatic start".
  - PM-D F3
    Expansion to PM-D F1/F2 for time-delayed shutdown.
  - 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 mulitpliers)
- 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 leads

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

Examples

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

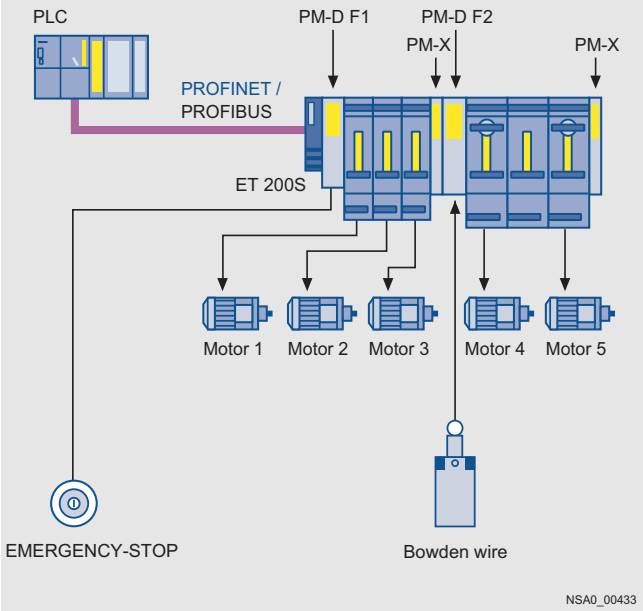
Safety functional examples for easy, quick and low-cost implementations of applications with Safety motor starters Solutions local are available on the Internet:

You can find more information on the Internet at:

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

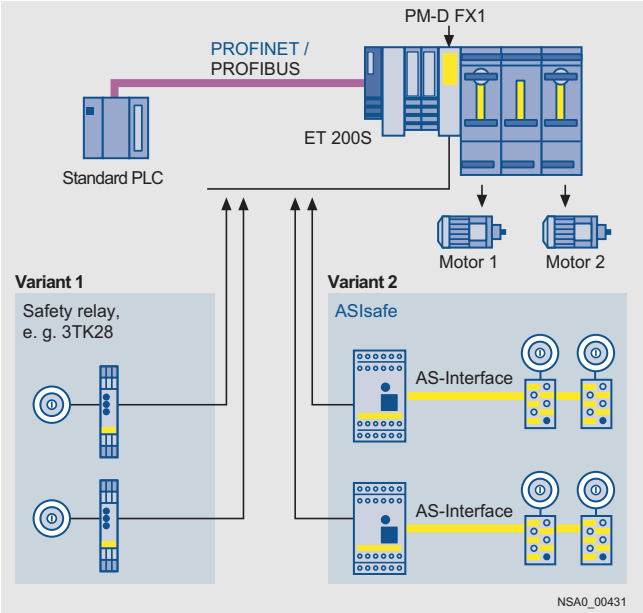
http://www.siemens.com/ET200S

Example 1:



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

Example 2:



ET 200S Safety motor starter Solutions local with 2 external safety assemblies (= safety relays or ASIsafe monitors) and with failsafe motor starters (PM-DFX-1 application).
2 of the 6 available safe shutdown groups are used.

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

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 shutdowns. 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 shutdown 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.

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

Terminal modules for safety module (TM-PF30)

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 button) 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 shutdown.

Terminal modules for safety module (TM-X)

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 door safety 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
	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
 3RK1 903-3DA00	**PM-D F5** With diagnostics Safety module for expanding PM-D F1 ... 4 with four floating enabling circuits Contact multiplier	A	**3RK1 903-1BE00**		1	1 unit	121	0.222
	PM-D FX1 With diagnostics Infeed terminal module for supply of 1 to 6 shutdown 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

* You can order this quantity or a multiple thereof.

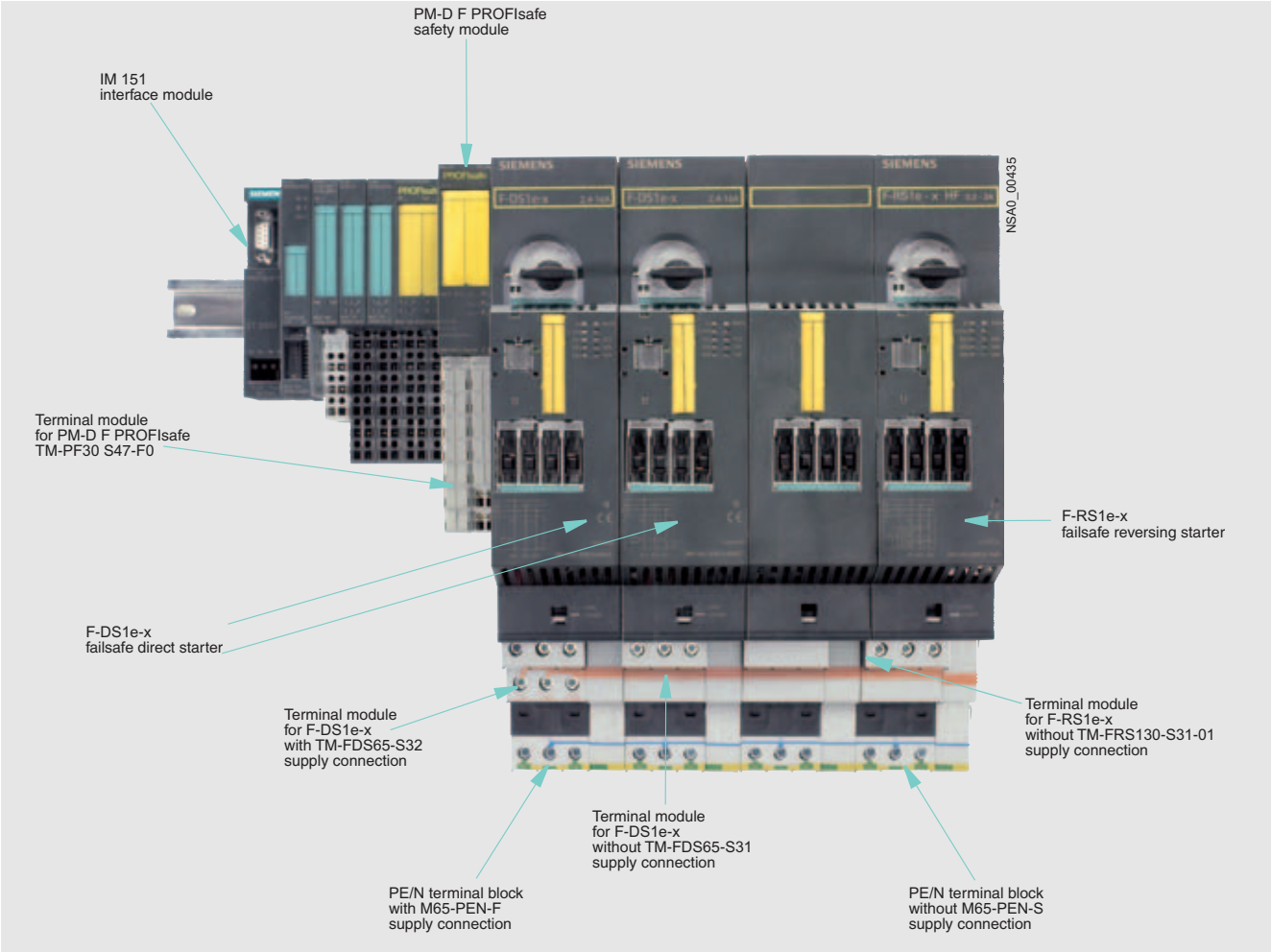
Safety modules local

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Accessories								
 3RK1 903-1CA00	**PM-X safety modules** With diagnostics Module for connecting a safety group and for connecting an external infeed contactor or for connecting to an external safety circuit	A	**3RK1 903-1CB00**		1	1 unit	121	0.068
	F-Kit 1 Failsafe equipment for DS1-x[1] standard motor starters	A	**3RK1 903-1CA00**		1	1 unit	121	0.030
 3RK1 903-1CA01	**F-Kit 2** Failsafe equipment for RS1-x[1] standard motor starters	A	**3RK1 903-1CA01**		1	1 unit	121	0.056
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 actuation 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



Interplay of ET 200S Safety motor starter Solutions PROFIsafe components

Safety motor starter Solutions PROFIsafe

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 system 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 systems, e.g. no infeed contactors even in the highest safety category
- Can also be used in combination with external safety relays
- Can also be used to activate external safety systems
- 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

Safety motor starter Solutions PROFIsafe

High degree of flexibility with safety engineering

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 sensors. The interface between PROFIsafe and installations that use conventional safety systems is implemented through the F-CM Failsafe contact multiplier with four floating contacts.

Example:

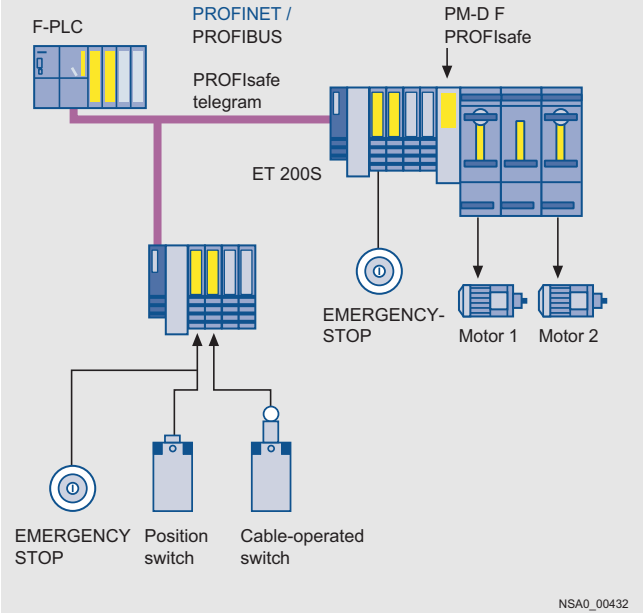
The diverse possible uses of the Safety motor starter Solutions PROFIsafe are presented in the manual SIMATIC ET 200S Motor Starters in the context of typical sample applications.

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

You can find more information on the Internet at:

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

http://www.siemens.com/ET200S



ET 200S Safety motor starter Solutions PROFIsafe with Failsafe motor starters and fully selective shutdown (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 shutdown of a group of Standard, High Feature or Failsafe 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 Solutions PROFIsafe Safety motor starters 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 shutdown groups for Failsafe motor starters/frequency converters.

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 shutdown 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 module	A	**3RK1 903-3AA00**		1	1 unit	121	0.360
	TM-FCM30 S47-F01 terminal modules For F-CM contact multiplier	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 energy bus connection (TM-IPM65-S32)	A	**3RK1 903-3EC00**		1	1 unit	121	0.020
	• Without incoming energy 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 energy bus connection (TM-IPM130-S32)	A	**3RK1 903-3ED00**		1	1 unit	121	0.020
	• Without incoming energy bus connection (TM-IPM130-S31)	A	**3RK1 903-3ED10**		1	1 unit	121	0.020
	PU/N terminal blocks M65-PEN-F 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)
- 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 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 with an appropriate circuit.

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/Sil3 (protective door or EMERGENCY-STOP buttons) and parameterizable start behavior
- Control of the 400 V disconnecting module by means of a safety rail signal

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 use in modular, distributed peripherals without control cabinets or control enclosures.

As the result of the protection concept with solid-state overload evaluation and the use of SIRIUS contols 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 items: the bus module and the motor starter. This makes the ET 200pro ideal for modular machine concepts or solutions for conveying systems and in machine-tool building.
- 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)2)] direct-on-line starters**							
	• Without brake output	C	**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)2)] reversing starters							
	• Without brake output	C	**3RK1 304-5□S40-5AA0**		1	1 unit	121	1.728
	• With brake output 400 V AC	C	**3RK1 304-5□S40-5AA3**		1	1 unit	121	1.728
	Motor starters, High Feature							
	Mechanical							
	Motor protection: thermal model							
 RSe High Feature	**DSe[1)2)] direct-on-line starters**							
	• Without brake output	C	**3RK1 304-5□S40-2AA0**		1	1 unit	121	1.728
	• With brake output 400 V AC	C	**3RK1 304-5□S40-2AA3**		1	1 unit	121	1.728
	RSe[1)2)] reversing starters							
	• Without brake output	C	**3RK1 304-5□S40-3AA0**		1	1 unit	121	1.728
	• With brake output 400 V AC	C	**3RK1 304-5□S40-3AA3**		1	1 unit	121	1.728
	Additional price			Additional price				
	Setting range of rated operational current							
	• 0.15 ... 2.0 A							
	• 1.5 ... 12.0 A							

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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 starter).

2) Available from end of 2005.

6

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

ET 200pro isolator modules

Overview

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

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

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

Benefits

The following properties apply to the isolator module:

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

Selection and ordering data

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

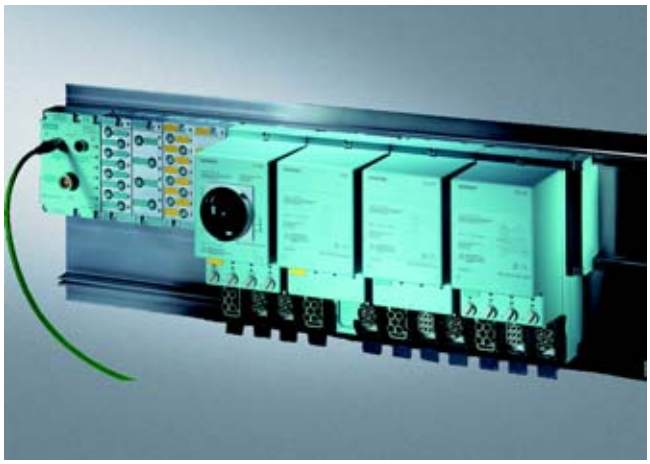
1) Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see Accessories for ET 200pro motor starter).

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

3) Available from end of 2005.

* 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/Sil3 (protective door or EMERGENCY-STOP buttons) 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/Sil3. It only functions in combination with the Safety local isolator module.

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.

In combination with the 400 V disconnecting module, the Safety local isolator module can be used for safety applications up to category 4 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. It contains two contactors connected in series for safety-oriented tripping of the main circuit. The auxiliary circuit supply of the device is over a safety power rail in the backplane bus module.

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

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 local isolator modules, mechanical								
	**Safety local isolator modules**[1)2)4)] Rated operational current 25 A	B	**3RK1 304-0HS00-7AA0**		1	1 unit	121	1.728
	**400 V disconnecting modules**[1)3)4)] Rated operational current 16 A	B	**3RK1 304-0HS00-8AA0**		1	1 unit	121	1.728

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 starter).

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

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

4) Available from end of 2005.

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

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							
Wide module racks[1]							
• Length 500 mm	►	**6ES7 194-4GB00-0AA0**		1	1 unit	250	4.000
• Length 1000 mm	►	**6ES7 194-4GB10-0AA0**		1	1 unit	250	8.000
• Length 2000 mm	►	**6ES7 194-4GB20-0AA0**		1	1 unit	250	16.000
Backplane bus modules 110 mm[2]	B	**3RK1 922-2BA00**		1	1 unit	121	0.330
RS 232 interface cables	B	**3RK1 922-2BQ00**		1	1 unit	121	0.330
Power jumper plugs	B	**3RK1 922-2BP00**		1	1 unit	121	0.330
Plug sets for incoming energy supply (HAN Q4/2)							
• 2.5 mm^2	C	**3RK1 911-2BE50**		1	1 unit	121	2.000
• 4.0 mm^2	B	**3RK1 911-2BE10**		1	1 unit	121	2.000
• 6.0 mm^2	B	**3RK1 911-2BE30**		1	1 unit	121	2.000
Plug sets for motor connections (HAN Q8/0)							
• 1.5 mm^2	B	**3RK1 902-0CE00**		1	1 set	121	0.064
• 2.5 mm^2	B	**3RK1 902-0CC00**		1	1 set	121	0.059
Sealing caps (for power supply)	B	**3RK1 902-0CJ00**		1	10 units	121	0.093
Plug set for cable-end connector hoods with pin inserts 4 mm^2	C	**3RK1 911-2BF10**		1	1 unit	121	On req.
Dismantling tools for HAN Q4/2	C	**3RK1 902-0AB00**		1	1 unit	121	On req.
Crimping tools for pins/sockets 4 and 6 mm^2	C	**3RK1 902-0CW00**		1	1 unit	121	On req.
Crimping tools for contact pins and sockets up to 4.0 mm^2 (HAN Q8/0)	B	**3RK1 902-0CT00**		1	1 unit	121	0.644
Dismantling tools for contact pins and sockets (HAN Q8/0)	B	**3RK1 902-0AJ00**		1	1 unit	121	0.047
M12 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 modules (isolator module, Safety local isolator module and 400 V disconnecting module).

*** 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 154-1 and IM 154-2 interface modules							
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	0.320
• Length 3.0 m	A	**6XV1 860-3PH30**		1	1 unit	550	0.585
• Length 5.0 m	A	**6XV1 860-3PH50**		1	1 unit	550	0.912
• Length 10 m	A	**6XV1 860-3PN10**		1	1 unit	550	1.760
• Length 15 m	A	**6XV1 860-3PN15**		1	1 unit	550	2.530
• Length 20 m	A	**6XV1 860-3PN20**		1	1 unit	550	3.380
• Length 25 m	A	**6XV1 860-3PN25**		1	1 unit	550	4.230
• Length 30 m	A	**6XV1 860-3PN30**		1	1 unit	550	5.080
• Length 35 m	A	**6XV1 860-3PN35**		1	1 unit	550	5.930
• Length 40 m	A	**6XV1 860-3PN40**		1	1 unit	550	6.780
• Length 45 m	A	**6XV1 860-3PN45**		1	1 unit	550	7.630
• Length 50 m	A	**6XV1 860-3PN50**		1	1 unit	550	8.480
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 male insert, pack of 5	A	**6GK1 905-0CA00**		1	1 unit	543	0.212
• With female insert, pack of 5	A	**6GK1 905-0CB00**		1	1 unit	543	0.215
PROFIBUS ECOFAST hybrid connectors angled ECOFAST Cu, 2 x Cu, 4 x 1.5 mm^2, HANBRID connectors							
• With male insert, pack of 5	A	**6GK1 905-0CC00**		1	1 unit	543	0.247
• With female insert, pack of 5	A	**6GK1 905-0CD00**		1	1 unit	543	0.247
ECOFAST caps For protection of unused bus terminals on ET 200pro; pack of 10 units per packing unit	A	**6ES7 194-1JB10-0XA0**		1	1 unit	250	0.051

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

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
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 use in the food and drinks 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	550	0.069
PROFIBUS FC Robust bus cables With PUR outer sheath for use 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	550	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 connectors, 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 830-5DH50**		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" connectors, 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	6.000
• Length 15 m	A	**6XV1 822-5BN15**		1	1 unit	550	2.540
M12 connectors For ET 200eco, with axial cable feeder							
• With male insert, pack of 5	A	**6GK1 905-0EA00**		1	1 unit	543	0.250
• With female insert, pack of 5	A	**6GK1 905-0EB00**		1	1 unit	543	0.265
7/8" connectors For ET 200eco, with axial cable feeder							
• With male insert, pack of 5	A	**6GK1 905-0FA00**		1	1 unit	543	0.265
• With female insert, pack of 5	A	**6GK1 905-0FB00**		1	1 unit	543	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

* 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
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	1.337
- 1000 mm	A	**6ES7 194-4GA10-0AA0**		1	1 unit	250	2.881
- 2000 mm, can be cut to size	A	**6ES7 194-4GA20-0AA0**		1	1 unit	250	5.348
• Compact, for interface, solid-state and power modules							
- 500 mm	A	**6ES7 194-4GC00-0AA0**		1	1 unit	250	1.300
- 1000 mm	A	**6ES7 194-4GC10-0AA0**		1	1 unit	250	2.600
- 2000 mm, can be cut to size	A	**6ES7 194-4GC20-0AA0**		1	1 unit	250	5.200
• Wide, for interface, solid-state, power modules and motor starters							
- 500 mm	►	**6ES7 194-4GB00-0AA0**		1	1 unit	250	4.000
- 1000 mm	►	**6ES7 194-4GB10-0AA0**		1	1 unit	250	8.000
- 2000 mm, can be cut to size	►	**6ES7 194-4GB20-0AA0**		1	1 unit	250	16.000
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
Technical product specifications For CAX applications, one-off license	A	**6ES7 991-0CC00-0YX0**		1	1 unit	266	0.234
Technical product specifications For CAX applications, one-off license, update service	X	**6ES7 991-0CC00-0YX2**		1	1 unit	266	0.100
SIMATIC Manual Collection Manuals on CD, 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 delivery: The current CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400

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

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 154-4 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 154-4AB00-0AB0**		1	1 unit	250	0.200
Accessories							
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	**3RX9 802-0AA00**		100	10 units	121	0.100
Micro memory cards, 3.3 V, NFLASH							
• 64 Kbyte	A	**6ES7 953-8LF11-0AA0**		1	1 unit	230	0.014
• 128 Kbyte	A	**6ES7 953-8LG11-0AA0**		1	1 unit	230	0.014
• 512 Kbyte	A	**6ES7 953-8LJ11-0AA0**		1	1 unit	230	0.014
• 2 Mbyte	A	**6ES7 953-8LL11-0AA0**		1	1 unit	230	0.014
• 4 Mbyte	A	**6ES7 953-8LM11-0AA0**		1	1 unit	230	0.014
• 8 Mbyte	A	**6ES7 953-8LP11-0AA0**		1	1 unit	230	0.014
M12-180/M12-180 IE connecting cables Preassembled IE FC TP trailing cable GP 2 x 2 (PROFINET Type C) with two M12 connectors (4-pole, D-coded), degree of protection IP65							
• Length 0.3 m	A	**6XV1 870-8AE30**		1	1 unit	550	0.180
• Length 0.5 m	A	**6XV1 870-8AE50**		1	1 unit	550	0.200
• Length 1.0 m	A	**6XV1 870-8AH10**		1	1 unit	550	0.610
• Length 1.5 m	A	**6XV1 870-8AH15**		1	1 unit	550	0.700
• Length 2.0 m	A	**6XV1 870-8AH20**		1	1 unit	550	0.780
• Length 3.0 m	A	**6XV1 870-8AH30**		1	1 unit	550	0.570
• Length 5.0 m	A	**6XV1 870-8AH50**		1	1 unit	550	3.000
• Length 10 m	A	**6XV1 870-8AN10**		1	1 unit	550	6.000
• Length 15 m	A	**6XV1 870-8AN15**		1	1 unit	550	2.540
7/8" connecting cables For power supply; preassembled with two 7/8" connectors/sockets, 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	6.000
• Length 15 m	A	**6XV1 822-5BN15**		1	1 unit	550	2.540
IE cables Trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	**6XV1 870-2D**		1	1 unit	550	0.100
Power cables (5 x 1.5 mm^2) Trailing power cable with 5 copper cores (1.5 mm^2) for connection to 7/8" plug-in connector, 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 5-pole, plastic enclosure							
• With male insert, pack of 5	A	**6GK1 905-0FA00**		1	1 unit	543	0.265
• With female insert, pack of 5	A	**6GK1 905-0FB00**		1	1 unit	543	0.250
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 Manuals on CD, 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 delivery: The current CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400

* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
EM 141 and EM 142 digital expansion modules							
8 DI digital input modules 24 V DC, with module diagnostics, including bus module. Connection module to be ordered separately	A	**6ES7 141-4BF00-0AA0**		1	1 unit	250	0.141
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
Accessories							
CM IO 4 x M12 connection modules Four 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 Eight M12 sockets for connection of digital or analog sensors of actuators to ET 200pro	A	**6ES7 194-4CB00-0AA0**		1	1 unit	250	0.305
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
Inscription plates 20 x 7, pastel turquoise, pack of 340	C	**3RT1 900-1SB20**		100	340 units	101	22.000
M12 connectors, for field assembly 5-pole, for connecting digital sensors and actuators, 1 unit	A	**3RX1 667**		1	1 unit	574	0.026
M12 connecting cables With PUR sheath, for connecting digital sensors and actuators, preassembled, with box and connector at both ends							
• 3 x 0.34 mm^2, fixed lengths, 1 unit							
- 0.6 m	C	**3RX1 633**		1	1 unit	574	0.045
- 1 m	C	**3RX1 634**		1	1 unit	574	0.056
- 1.5 m	C	**3RX1 635**		1	1 unit	574	0.069
• 4 x 0.34 mm^2, fixed lengths, 1 unit							
- 0.6 m	C	**3RX1 640**		1	1 unit	574	0.060
- 1 m	A	**3RX1 641**		1	1 unit	574	0.042
- 1.5 m	A	**3RX1 642**		1	1 unit	574	0.078
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
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 Four 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

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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							
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	X	**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	X	**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"	X	**6ES7 194-4BD00-0AA0**		1	1 unit	250	0.100
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
Accessories for CM PM-E ECOFAST							
PROFIBUS ECOFAST hybrid connectors 180 ECOFAST Cu, 2 x Cu, 4 x 1.5 mm^2, HANBRID connectors							
• With male insert, pack of 5	A	**6GK1 905-0CA00**		1	1 unit	543	0.212
• With female insert, pack of 5	A	**6GK1 905-0CB00**		1	1 unit	543	0.215
PROFIBUS ECOFAST hybrid connectors angled ECOFAST Cu, 2 x Cu, 4 x 1.5 mm^2, HANBRID connectors							
• With male insert, pack of 5	A	**6GK1 905-0CC00**		1	1 unit	543	0.247
• With female insert, pack of 5	A	**6GK1 905-0CD00**		1	1 unit	543	0.247
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 supplies 5-core, 5 x 1.5 mm^2, trailing, preassembled with two 7/8" connectors, 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	6.000
• Length 15 m	A	**6XV1 822-5BN15**		1	1 unit	550	2.540
7/8" connectors With axial cable feeder							
• With male insert, pack of 5	A	**6GK1 905-0FA00**		1	1 unit	543	0.265
• With female insert, pack of 5	A	**6GK1 905-0FB00**		1	1 unit	543	0.250
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	1.337
- 1000 mm	A	**6ES7 194-4GA10-0AA0**		1	1 unit	250	2.881
- 2000 mm, can be cut to size	A	**6ES7 194-4GA20-0AA0**		1	1 unit	250	5.348
• Compact, for interface, solid-state and power modules							
- 500 mm	A	**6ES7 194-4GC00-0AA0**		1	1 unit	250	1.300
- 1000 mm	A	**6ES7 194-4GC10-0AA0**		1	1 unit	250	2.600
- 2000 mm, can be cut to size	A	**6ES7 194-4GC20-0AA0**		1	1 unit	250	5.200
• Wide, for interface, solid-state, power modules and motor starters							
- 500 mm	►	**6ES7 194-4GB00-0AA0**		1	1 unit	250	4.000
- 1000 mm	►	**6ES7 194-4GB10-0AA0**		1	1 unit	250	8.000
- 2000 mm, can be cut to size	►	**6ES7 194-4GB20-0AA0**		1	1 unit	250	16.000
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 Manuals on CD, 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 delivery: The current CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400

* You can order this quantity or a multiple thereof.

Overview

- For switching and protection of any three-phase loads
- Direct-on-line or reversing starters
- Electromechanical or solid-state
- Power bus can be plugged in using the new HAN Q8 plug-in connectors
- Conductor cross-sections up to 4 mm^2
- 35 A per segment
- Supplied with different brake contacts as an option

Application

With the ET 200X motor starters, any three-phase loads, e.g. induction motors, can be protected and switched.

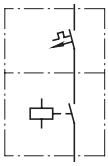
Motor starters are available in two variants:

- *Electromechanical motor starters*
  for electrical isolation of loads from the supply system
- *Solid-state motor starters*
  - Suitable for high starting frequency
  - Behavior in case of overload can be selectively configured, e.g. emergency mode in the event of overloading, remote reset by bus after an overload tripping operation

Motor starters can be operated with a hand-held device, making start-ups easier.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Expansion modules for electromechanical motor starters							
 **EM 300 DS expansion modules** Electromechanical direct-on-line starter	B	**3RK1 300-□□S01-0AA□**		1	1 unit	121	1.900
EM 300 RS expansion modules Electromechanical reversing starter	B	**3RK1 300-□□S01-1AA□**		1	1 unit	121	2.200

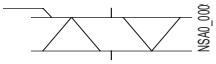


Induction motor 4-pole at 400 V AC Standard output P in kW	*Setting range of the overcurrent release in A*	
< 0.06	0.14 ... 0.20	**0B**
0.06	0.18 ... 0.25	**0C**
0.09	0.22 ... 0.32	**0D**
0.10	0.28 ... 0.40	**0E**
0.12	0.35 ... 0.50	**0F**
0.18	0.45 ... 0.63	**0G**
0.21	0.55 ... 0.80	**0H**
0.25	0.70 ... 1.00	**0J**
0.37	0.90 ... 1.25	**0K**
0.55	1.1 ... 1.6	**1 A**
0.75	1.4 ... 2.0	**1B**
0.90	1.8 ... 2.5	**1C**
1.1	2.2 ... 3.2	**1D**
1.5	2.8 ... 4.0	**1E**
1.9	3.5 ... 5.0	**1F**
2.2	4.5 ... 6.3	**1G**
3.0	5.5 ... 8.0	**1H**
4.0	7 ... 10	**1J**
5.5	9 ... 12	**1K**

Additional price	
• Standard version	**0**
• Version with brake contact for 24 V DC/3 A externally-fed brakes	**1**
• Version with brake contact for 400 V AC/0.5 A infeed for brake rectifier	**3**
• Version with brake contact for DC-side switching of the brakes with 500 V DC/0.2 A	**4**

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

ET 200X motor starters

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Expansion modules for solid-state motor starters							
 **EM 300 EDS expansion modules** Electromechanical direct-on-line starter	B	**3RK1 300-□□S10-0AA□**		1	1 unit	121	1.800
EM 300 ERS expansion modules Electromechanical reversing starter	B	**3RK1 300-□□S10-1AA□**		1	1 unit	121	1.800
Induction motor 4-pole at 400 V AC Standard output P in kW / *Setting range of the overcurrent release in A*							
0.18 ... 0.80 / 0.60 ... 2.18		**0A**					
0.75 ... 2.20 / 2.00 ... 5.95		**0B**					
 *Additional price*							
• Standard version			**0**				
• Version with brake contact for 24 V DC/3 A externally-fed brakes			**1**				
• Version with brake contact for 400 V AC/0.5 A infeed for brake rectifier			**3**				
• Version with brake contact for DC-side switching of the brakes with 500 V DC/0.2 A			**4**				
Accessories for 24 V DC							
Manuals							
• German	D	**6ES7 198-8FA01-8AA0**		1	1 unit	250	1.956
• English	C	**6ES7 198-8FA01-8BA0**		1	1 unit	250	1.925
• French	A	**6ES7 198-8FA01-8CA0**		1	1 unit	250	1.676
 6ES7 194-1AA00-0XA0 **Connectors** for PROFIBUS DP, control and auxiliary voltage (including two Pg glands)	A	**6ES7 194-1AA00-0XA0**		1	1 unit	2Z3	0.086
Cables For bus and control voltage 5-core Without assembly Any length[1])							
• PVC	C	**6ES7 194-1LY00-0AA0**		1	1 m	250	0.100
• PUR Trailing permitted Oil-resistant Conditionally resistant to electromagnetic fields	C	**6ES7 194-1LY10-0AA0**		1	1 m	250	0.111
 6ES7 194-1KA01-0XA0 **M12 coupler plugs**							
• 5-pole for connecting actuators and sensors	A	**3RX1 667**		1	1 unit	574	0.026
• 4-pole Shielded For connecting analog expansion modules		Available from: Franz Binder GmbH & Co (see Appendix –> External Partners)					
M12 angular coupler plugs							
• 5-pole for connecting actuators and sensors	A	**3RX1 668**		1	1 unit	574	0.027
• 4-pole Shielded For connecting analog expansion modules		Available from: Franz Binder GmbH & Co (see Appendix –> External Partners)					
M12 Y-shaped coupler plugs 5-pole For double connection of sensors using single cable	A	**6ES7 194-1KA01-0XA0**		1	1 unit	250	0.046
M12 sealing caps For sealing unused input and output sockets (one set contains ten sealing caps)	▶	**3RK1 901-1KA00**		100	10 units	121	0.100

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* You can order this quantity or a multiple thereof.

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Accessories for EM 300 motor starters, 9-pole connectors (Han Q8/0)								
 3RK1 902-0CA00	**Connector sets for power infeed** 9-pole Comprising One connector enclosure with Pg16 cable gland One female insert, 9-pole Six female contacts, suitable for cable							
	• 4 x 2.5 mm^2, 6 x 2.5 mm^2	B	**3RK1 902-0CA00**		1	1 set	121	0.057
	• 4 x 4 mm^2, 6 x 4 mm^2	B	**3RK1 902-0CB00**		1	1 set	121	0.055
 3RK1 902-0CC00	**Connector sets for power loop-through connections** 9-pole Comprising One connector enclosure with Pg16 cable gland One male insert, 9-pole Six contact pins, suitable for cable							
	• 6 x 2.5 mm^2	B	**3RK1 902-0CC00**		1	1 set	121	0.059
	• 4 x 4 mm^2, 6 x 4 mm^2	B	**3RK1 902-0CD00**		1	1 set	121	0.055
 3RK1 902-0CH00	**Connector sets for motor connections** 1.5 mm^2 9-pole Comprising One connector enclosure with Pg16 cable gland One male insert, 9-pole Eight contact pins 1.5 mm^2	B	**3RK1 902-0CE00**		1	1 set	121	0.064
	Sealing caps For 9-pole power socket (-X3)							
	• One set comprises ten sealing caps	B	**3RK1 902-0CJ00**		1	10 units	121	0.093
	• One set comprises one sealing cap	B	**3RK1 902-0CK00**		1	1 unit	121	0.012
	Power connection cables 0.12 m long							
	• From motor starter to frequency converter, DESINA							
	- 5 x 4 mm^2 , without brake lead	B	**3RK1 902-0CF00**		1	1 unit	121	0.202
	• From motor starter to motor starter							
	- 4 x 4 mm^2	B	**3RK1 902-0CG00**		1	1 unit	121	0.165
	- 6 x 4 mm^2	B	**3RK1 902-0CH00**		1	1 unit	121	0.206
	Motor connection cables, 4 x 1.5 mm^2 With power connector 9-pole							
	• 1.5 m	B	**3RK1 902-0CL00**		1	1 unit	121	0.218
	• 3 m	B	**3RK1 902-0CM00**		1	1 unit	121	0.432
	• 5 m	B	**3RK1 902-0CP00**		1	1 unit	121	0.620
	• 10m	B	**3RK1 902-0CQ00**		1	1 unit	121	1.278
	Motor connection cables, 6 x 1.5 mm^2 With power connector 9-pole							
	• 3 m	B	**3RK1 902-0CN00**		1	1 unit	121	0.696
	• 5 m	B	**3RK1 902-0CR00**		1	1 unit	121	1.110
	• 10m	B	**3RK1 902-0CS00**		1	1 unit	121	1.840

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

ET 200X motor starters

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Mounting accessories								
 3RK1 194-1GA.0-0XA0	**Single mounting rails for SIMATIC ET 200X (narrow)**							
	• 400 mm long for basic module + three expansion modules (60 mm)	A	**6ES7 194-1GA00-0XA0**		1	1 unit	250	0.773
	• 640 mm long for basic module + seven expansion modules (60 mm)	A	**6ES7 194-1GA10-0XA0**		1	1 unit	250	1.235
	• 2000 mm long for customer-specific lengths	A	**6ES7 194-1GA20-0XA0**		1	1 unit	250	3.900
 3RK1 902-0AH00	**Double mounting rails for SIMATIC ET 200X (wide)**							
	• 520 mm long for basic module + one expansion module (60 mm) + two motor starters/frequency converters	A	**6ES7 194-1GB00-0XA0**		1	1 unit	250	3.120
	• 1000 mm long for basic module + one expansion module (60 mm) + six motor starters/frequency converters	A	**6ES7 194-1GB10-0XA0**		1	1 unit	250	6.000
	Fixing screws M5 x 20 One set contains 100 fixing screws	A	**6ES7 194-1KC00-0XA0**		1	1 unit	250	0.512
	Crimping tools For male and female contacts of							
	• 1.5 to 2.5 mm^2	B	**3RK1 902-0AH00**		1	1 unit	121	0.576
	• 1.5 to 4 mm^2	B	**3RK1 902-0CT00**		1	1 unit	121	0.644
	Disassembly tools For disassembling male and female contacts in 9-pole inserts	B	**3RK1 902-0AJ00**		1	1 unit	121	0.047
Miscellaneous accessories								
 3RK1 902-0AM00	**Hand-held devices for start-up** with 0.5 m connection cable and plug	B	**3RK1 902-0AM00**		1	1 unit	121	0.217
 6ES7 194-1BA00-0XA0	**Labeling plates** For labeling inputs and outputs as well as item codes One set contains 20 frames with 40 labels each, 8 x 10 mm, petrol colored	A	**6ES7 194-1BA00-0XA0**		1	1 unit	250	0.050

1) The suffix "-Z" must be appended to the order number and the length must be specified in plain text. Example for a cable with a PVC sheath and a length of 35 m:
6ES7 194-1LY00-0AA0-Z
Y01 35 m

* 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	Total weight per PU approx. kg
BM 147/CPU intelligent basic modules							
BM 147-1 CPU basic modules	A	**6ES7 147-1AA11-0XB0**		1	1 unit	250	0.822
With integrated PLC functionality, with 64 Kbyte RAM							
BM 147-2 CPU basic modules							
With integrated PLC functionality and additional PROFIBUS master interface							
• With 64 Kbyte RAM	A	**6ES7 147-2AA01-0XB0**		1	1 unit	250	0.853
• With 128 Kbyte RAM	A	**6ES7 147-2AB01-0XB0**		1	1 unit	250	0.853
Accessories							
Manuals for ET 200X distributed I/O station							
• German	D	**6ES7 198-8FA01-8AA0**		1	1 unit	250	1.956
• English	C	**6ES7 198-8FA01-8BA0**		1	1 unit	250	1.925
• French	A	**6ES7 198-8FA01-8CA0**		1	1 unit	250	1.676
Cover plates for ET 200X basic modules	A	**6ES7 194-1JB00-0XA0**		1	1 unit	250	0.189
Protective cover for bus terminals and power supply terminals (pack of 10)							
Single mounting rails for SIMATIC ET 200X (narrow)							
• 400 mm long for basic module + three expansion modules (60 mm)	A	**6ES7 194-1GA00-0XA0**		1	1 unit	250	0.773
• 640 mm long for basic module + seven expansion modules (60 mm)	A	**6ES7 194-1GA10-0XA0**		1	1 unit	250	1.235
• 2000 mm long for customer-specific lengths	A	**6ES7 194-1GA20-0XA0**		1	1 unit	250	3.900
Double mounting rails for SIMATIC ET 200X (wide)							
• 520 mm long for basic module + one expansion module (60 mm) + two motor starters/frequency converters/ pneumatic interfaces	A	**6ES7 194-1GB00-0XA0**		1	1 unit	250	3.120
• 1000 mm long for basic module + one expansion module (60 mm) + six motor starters/frequency converters	A	**6ES7 194-1GB10-0XA0**		1	1 unit	250	6.000
Fixing screws	A	**6ES7 194-1KC00-0XA0**		1	1 unit	250	0.512
M5 x 20, 1 pack. = 100 units							
Connecting cables for PROFIBUS	A	**6ES7 901-4BD00-0XA0**		1	1 unit	250	0.315
12 Mbaud, for PG connection to PROFIBUS DP, assembled with 2 x 9-pole Sub-D connector, 3.0 m							
ECOFAST hybrid cables							
Assembled with ECOFAST plug connectors							
• 1.5	A	**6XV1 830-7BH15**		1	1 unit	550	0.400
• 3.0	A	**6XV1 830-7BH30**		1	1 unit	550	0.535
• 5.0	A	**6XV1 830-7BH50**		1	1 unit	550	0.880
• 10.0	A	**6XV1 830-7BN10**		1	1 unit	550	1.600
• 15.0	A	**6XV1 830-7BN15**		1	1 unit	550	2.155
ECOFAST termination resistors							
• Order unit 1 unit	A	**6GK1 905-0DA10**		1	1 unit	543	0.036
• Order unit 5 units	A	**6GK1 905-0DA00**		1	1 unit	543	0.180
ECOFAST plug connectors, can be preassembled	A	**6GK1 905-0CA00**		1	1 unit	543	0.212
Male contacts; Order unit 5 units							
ECOFAST plug connectors, can be preassembled	A	**6GK1 905-0CB00**		1	1 unit	543	0.215
Female contacts; Order unit 5 units							
MMC memory cards up to 8 MB (as for S7-314)							

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

Basic and expansion modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Total weight per PU approx. kg
BM 141 and BM 142 basic modules							
BM 141 basic modules DI 8 × DC 24 V	A	**6ES7 141-1BF12-0XB0**		1	1 unit	250	0.560
BM 142 basic modules DO 4 × DC 24 V/2 A	A	**6ES7 142-1BD22-0XB0**		1	1 unit	250	0.560
Accessories							
Manuals for ET 200X distributed I/O station							
• German	D	**6ES7 198-8FA01-8AA0**		1	1 unit	250	1.956
• English	C	**6ES7 198-8FA01-8BA0**		1	1 unit	250	1.925
• French	A	**6ES7 198-8FA01-8CA0**		1	1 unit	250	1.676
Cover plates for ET 200X basic modules Protective cover for bus terminals and power supply terminals (pack of 10)							
Single mounting rails for SIMATIC ET 200X (narrow)							
• 400 mm long for basic module + three expansion modules (60 mm)	A	**6ES7 194-1GA00-0XA0**		1	1 unit	250	0.773
• 640 mm long for basic module + seven expansion modules (60 mm)	A	**6ES7 194-1GA10-0XA0**		1	1 unit	250	1.235
• 2000 mm long for customer-specific lengths	A	**6ES7 194-1GA20-0XA0**		1	1 unit	250	3.900
Double mounting rails for SIMATIC ET 200X (wide)							
• 520 mm long for basic module + one expansion module (60 mm) + two motor starters/frequency converters/ pneumatic interfaces	A	**6ES7 194-1GB00-0XA0**		1	1 unit	250	3.120
• 1000 mm long for basic module + one expansion module (60 mm) + six motor starters/frequency converters	A	**6ES7 194-1GB10-0XA0**		1	1 unit	250	6.000
Fixing screws M5 x 20, 1 pack. = 100 units	A	**6ES7 194-1KC00-0XA0**		1	1 unit	250	0.512
Connector plates for BM 141, BM 142 T functionality for PROFIBUS DP (spare part)	A	**6ES7 194-1FC00-0XA0**		1	1 unit	250	0.049
Plug connectors for PROFIBUS DP Control voltage and auxiliary voltage (including 2 PG glands and 1 blanking plug); 3 connectors required for each basic module	A	**6ES7 194-1AA01-0XA0**		1	1 unit	250	0.081
Cables 5-core, for bus signals, power supply, sold by the meter, minimum order quantity: 10 m							
• PVC sheath (standard) Specify length in m (minimum order quantity 10 m)	C	**6ES7 194-1LY00-0AA0**		1	1 m	250	0.100
• PVC sheath (trailing permitted, oil-resistant, conditionally resistant to electromagnetic fields) Specify length in m (minimum order quantity 10 m)	C	**6ES7 194-1LY10-0AA0**		1	1 m	250	0.111
Cover plates To protect the bus terminals and power supply terminals on BM 141, BM 142 and BM 147 (pack of 10)	A	**6ES7 194-1JB00-0XA0**		1	1 unit	250	0.189
M12 coupler plugs 5-pole, for connecting actuators and sensors	A	**3RX1 667**		1	1 unit	574	0.026
M12 angular coupler plugs 5-pole, for connecting actuators and sensors	A	**3RX1 668**		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	250	0.046
Preassembled Y cables For actuators and sensors		Available from: Franz Binder GmbH & Co (see Appendix –> External Partners)					
M12 sealing caps For closing unused input or output sockets	►	**3RX9 802-0AA00**		100	10 units	121	0.100
S7 Manual Collection Manuals on CD, 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
S7 Manual Collection update service for 1 year Scope of delivery: The current CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400

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Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Total weight per PU approx. kg
ECOFAST basic modules							
BM 141/ECOFAST basic modules 8 DI, 24 V DC, 5-pole, M12 with single-channel connection hybrid field bus port (copper), identification plug, IP67	A	**6ES7 141-1BF01-0AB0**		1	1 unit	250	0.827
BM 141/ECOFAST RS 485 basic modules 8 DI, 24 V DC, 5-pole, M12 channel diagnostics, short-circuit and wire-break, process interrupts, input delay time: 0.5 ms/3 ms/15 ms/20 ms	A	**6ES7 141-1BF40-0AB0**		1	1 unit	250	0.841
BM 143/DESINA basic modules 8 DI/DO, parameterizable, additional diagnostics inputs, hybrid fieldbus port (copper), identification plug, IP67	A	**6ES7 143-1BF00-0AB0**		1	1 unit	250	0.835
BM 143/DESINA basic modules 8 DI/DO, parameterizable, additional diagnostics inputs, hybrid fieldbus port (fiber-optic), identification plug, IP67	A	**6ES7 143-1BF00-0XB0**		1	1 unit	250	0.817
Accessories							
Manuals for ET 200X distributed I/O station							
• German	D	**6ES7 198-8FA01-8AA0**		1	1 unit	250	1.956
• English	C	**6ES7 198-8FA01-8BA0**		1	1 unit	250	1.925
• French	A	**6ES7 198-8FA01-8CA0**		1	1 unit	250	1.676
Cover plates for ET 200X basic modules Protective cover for bus terminals and power supply terminals (pack of 10)							
Single mounting rails for SIMATIC ET 200X (narrow)							
• 400 mm long for basic module + three expansion modules (60 mm)	A	**6ES7 194-1GA00-0XA0**		1	1 unit	250	0.773
• 640 mm long for basic module + seven expansion modules (60 mm)	A	**6ES7 194-1GA10-0XA0**		1	1 unit	250	1.235
• 2000 mm long for customer-specific lengths	A	**6ES7 194-1GA20-0XA0**		1	1 unit	250	3.900
Double mounting rails for SIMATIC ET 200X (wide)							
• 520 mm long for basic module + one expansion module (60 mm) + two motor starters/frequency converters/ pneumatic interfaces	A	**6ES7 194-1GB00-0XA0**		1	1 unit	250	3.120
• 1000 mm long for basic module + one expansion module (60 mm) + six motor starters/frequency converters	A	**6ES7 194-1GB10-0XA0**		1	1 unit	250	6.000
Fixing screws M5 x 20, 1 pack. = 100 units	A	**6ES7 194-1KC00-0XA0**		1	1 unit	250	0.512
PROFIBUS ECOFAST hybrid cables – copper Trailing cable with 4 copper cores, 1.5 mm^2 and 2 copper cores, shielded		see IK PI Catalog					
PROFIBUS ECOFAST hybrid cables – fiber-optic Trailing cable with two plastic FO conductors for PROFIBUS DP and four copper cores with 1.5 mm^2 only for use in DESINA-compatible devices		see IK PI Catalog					
Identification plugs For setting the PROFIBUS station address (included in scope of supply of BM 143/DESINA)	A	**6ES7 194-1KB00-0XA0**		1	1 unit	250	0.030
M12 coupler plugs 5-pole, for connecting actuators and sensors	A	**3RX1 667**		1	1 unit	574	0.026
M12 angular coupler plugs 5-pole, for connecting actuators and sensors	A	**3RX1 668**		1	1 unit	574	0.027
Preassembled Y cables For actuators and sensors		Available from: Franz Binder GmbH & Co (see Appendix –> External Partners)					
M12 sealing caps For closing unused input or output sockets	▶	**3RX9 802-0AA00**		100	10 units	121	0.100
Crimping tools For male and female contacts							
• 1.5 to 2.5 mm^2	B	**3RK1 902-0AH00**		1	1 unit	121	0.576
• 1.5 to 4 mm^2	B	**3RK1 902-0CT00**		1	1 unit	121	0.644
Disassembly tools For male and female contacts for 9-pole inserts/Cu	B	**3RK1 902-0AJ00**		1	1 unit	121	0.047

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

Basic and expansion modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Total weight per PU approx. kg
S7 Manual Collection Manuals on CD, 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
S7 Manual Collection update service for 1 year Scope of delivery: The current CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400
EM 141 and EM 142 digital expansion modules							
EM 141 expansion modules							
• DI 8 × 24 V DC, double assignment	A	**6ES7 141-1BF31-0XA0**		1	1 unit	250	0.288
• DI 8 × 24 V DC, double assignment with single-channel diagnostics	A	**6ES7 141-1BF30-0XB0**		1	1 unit	250	0.300
• DI 4 × 24 V DC	A	**6ES7 141-1BD31-0XA0**		1	1 unit	250	0.287
• DI 8 × 24 V DC, single assignment	A	**6ES7 141-1BF41-0XA0**		1	1 unit	250	0.374
• DI 8 × 24 V DC, single assignment with single-channel diagnostics	A	**6ES7 141-1BF40-0XB0**		1	1 unit	250	0.383
EM 142 expansion modules							
• DO 4 × 24 V DC, 2 A without diagnostics	A	**6ES7 142-1BD40-0XA0**		1	1 unit	250	0.296
• DO 4 × 24 V DC, 2 A with diagnostics	A	**6ES7 142-1BD40-0XB0**		1	1 unit	250	0.303
• DO 4 × 24 V DC; 0.5 A	A	**6ES7 142-1BD30-0XA0**		1	1 unit	250	0.288
• DO 8 × 24 V DC/1.2 A single assignment	A	**6ES7 142-1BF30-0XA0**		1	1 unit	250	0.371
Accessories							
Manuals for ET 200X distributed I/O station							
• German	D	**6ES7 198-8FA01-8AA0**		1	1 unit	250	1.956
• English	C	**6ES7 198-8FA01-8BA0**		1	1 unit	250	1.925
• French	A	**6ES7 198-8FA01-8CA0**		1	1 unit	250	1.676
M12 coupler plugs 5-pole, for connecting actuators and sensors	A	**3RX1 667**		1	1 unit	574	0.026
M12 angular coupler plugs 5-pole, for connecting actuators and sensors	A	**3RX1 668**		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	250	0.046
Preassembled Y cables For actuators and sensors		Available from: Franz Binder GmbH & Co					
M12 sealing caps For closing unused input or output sockets	►	**3RX9 802-0AA00**		100	10 units	121	0.100
S7 Manual Collection Manuals on CD, 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
S7 Manual Collection update service for 1 year Scope of delivery: The current CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400

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Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Total weight per PU approx. kg
PM 148 power modules							
PM 148 power modules DO 4 x 24 V DC, 2 A with diagnostics and infeed for auxiliary voltage (load)	A	**6ES7 148-1CA00-0XB0**		1	1 unit	250	0.360
Accessories							
Manuals for ET 200X distributed I/O station							
• German	D	**6ES7 198-8FA01-8AA0**		1	1 unit	250	1.956
• English	C	**6ES7 198-8FA01-8BA0**		1	1 unit	250	1.925
• French	A	**6ES7 198-8FA01-8CA0**		1	1 unit	250	1.676
M12 coupler plugs 5-pole, for connecting actuators and sensors	A	**3RX1 667**		1	1 unit	574	0.026
M12 angular coupler plugs 5-pole, for connecting actuators and sensors	A	**3RX1 668**		1	1 unit	574	0.027
Preassembled Y cables For actuators and sensors		Available from: Franz Binder GmbH & Co					
M12 sealing caps For closing unused input or output sockets	►	**3RX9 802-0AA00**		100	10 units	121	0.100
Plug connectors for PROFIBUS DP Control voltage and auxiliary voltage (including 2 PG glands and 1 blanking plug); 3 connectors required for each basic module	A	**6ES7 194-1AA01-0XA0**		1	1 unit	250	0.081
S7 Manual Collection Manuals on CD, 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
S7 Manual Collection update service for 1 year Scope of delivery: The current CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400
EM 143/DESINA digital expansion modules							
EM 143/DESINA expansion modules 8 I/O DESINA	A	**6ES7 143-1BF30-0XB0**		1	1 unit	250	0.377
Accessories							
Manuals for ET 200X distributed I/O station							
• German	D	**6ES7 198-8FA01-8AA0**		1	1 unit	250	1.956
• English	C	**6ES7 198-8FA01-8BA0**		1	1 unit	250	1.925
• French	A	**6ES7 198-8FA01-8CA0**		1	1 unit	250	1.676
M12 coupler plugs 5-pole, for connecting actuators and sensors	A	**3RX1 667**		1	1 unit	574	0.026
M12 angular coupler plugs 5-pole, for connecting actuators and sensors	A	**3RX1 668**		1	1 unit	574	0.027
Preassembled Y cables For actuators and sensors		Available from: Franz Binder GmbH & Co					
M12 sealing caps For closing unused input or output sockets	►	**3RX9 802-0AA00**		100	10 units	121	0.100
S7 Manual Collection Manuals on CD, 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
S7 Manual Collection update service for 1 year Scope of delivery: The current CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400

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

Basic and expansion modules

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Total weight per PU approx. kg
EM 144 and EM 145 analog expansion modules							
EM 144 expansion modules							
With diagnostics/limit values							
• AI 2 × ±10 V	A	**6ES7 144-1FB31-0XB0**		1	1 unit	250	0.291
• AI 2 × ±20 mA, 4DMU	A	**6ES7 144-1GB31-0XB0**		1	1 unit	250	0.291
• AI 2 × 4 to 20 mA, 2DMU	A	**6ES7 144-1GB41-0XB0**		1	1 unit	250	0.289
• AI 2 × RTD (Pt100)10 V	A	**6ES7 144-1JB31-0XB0**		1	1 unit	250	0.292
EM 145 expansion modules							
With diagnostics/substitute values							
• AO 2 × ±10 V	A	**6ES7 145-1FB31-0XB0**		1	1 unit	250	0.294
• AO 2 × ± 20 mA, 4 to 20 mA	A	**6ES7 145-1GB31-0XB0**		1	1 unit	250	0.306
Accessories							
Manuals for ET 200X distributed I/O station							
• German	D	**6ES7 198-8FA01-8AA0**		1	1 unit	250	1.956
• English	C	**6ES7 198-8FA01-8BA0**		1	1 unit	250	1.925
• French	A	**6ES7 198-8FA01-8CA0**		1	1 unit	250	1.676
S7 Manual Collection	A	**6ES7 998-8XC01-8YE0**		1	1 unit	230	0.227
Manuals on CD, 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)							
S7 Manual Collection update service for 1 year	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400
Scope of delivery: The current CD S7 Manual Collection as well as the three subsequent updates							
ASM 473							
MOBY ASM 473 interface modules	C	**6GT2 002-0HA10**		1	1 unit	572	0.275
ET 200X expansion module for BM 141/142/143/147, one SLG can be connected per ASM 473							
Accessories							
MOBY connectors for ASM 450/452/473	C	**6GT2 090-0BC00**		1	1 unit	572	0.041
Without cable							
MOBY E, I, U connecting cables							
Assembled, between ASM 450/452/473 and SLG, angular connector, in the following lengths:							
• 2 m (preferred length)	C	**6GT2 091-1CH20**		1	1 unit	572	0.185
• 5 m	D	**6GT2 091-1CH50**		1	1 unit	572	0.350
• 10 m	D	**6GT2 091-1CN10**		1	1 unit	572	0.625
• 20 m	D	**6GT2 091-1CN20**		1	1 unit	572	1.175
• 50 m	D	**6GT2 091-1CN50**		1	1 unit	572	2.825
Assembled, between ASM 450/452/473 and SLG, straight connector, in the following lengths:							
2 m	B	**6GT2 091-2CH20**		1	1 unit	572	1.200
MOBY D/F connecting cables							
Assembled, between ASM 450/452/473 and SLG 8x, IP65, angular connector, in the following lengths:							
• 2 m (preferred length)	C	**6GT2 491-1CH20**		1	1 unit	572	0.185
• 5 m	B	**6GT2 491-1CH50**		1	1 unit	572	0.350
• 20 m	D	**6GT2 491-1CN20**		1	1 unit	572	1.181
MOBY software packages	C	**6GT2 080-2AA10**		1	1 unit	572	0.208
On CD-ROM, FB/FC for SIMATIC, MOBY Demo for PC							
CP 142-2							
CP 142-2 communications processors	A	**6GK7 142-2AH00-0XA0**		1	1 unit	541	0.322
For connection of SIMATIC ET 200X to AS-Interface							
Manual for CP 142-2	X	**6GK7 142-2AH00-8AA0**		1	1 unit	540	0.500
• German							
Electronic manuals	B	**6GK1 975-1AA00-3AA0**		1	1 unit	540	0.017
Communication systems, protocols, products on CD-ROM German/English							

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* You can order this quantity or a multiple thereof.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Total weight per PU approx. kg
EM 148-P pneumatic modules							
EM 148-P pneumatic modules DI 4 x 24 V DC/DO 2 x P With 2 integrated 4/2-way valves	A	**6ES7 148-1DA00-0XA0**		1	1 unit	250	0.570
Accessories							
Silencers for pneumatic modules	A	**6ES7 194-1EA00-0XA0**		1	1 unit	250	0.005
Sealing caps for pneumatic modules For using the 4/2-way valve as a 3/2-way valve, to protect the connections	A	**6ES7 194-1JA00-0XA0**		1	1 unit	250	0.001
EM 148-P pneumatic interfaces							
EM 148-P pneumatic interfaces							
• DO 16 ×P/CPV 10 for direct connection of the FESTO valve terminal CPV 10 16 DO × P	A	**6ES7 148-1EH01-0XA0**		1	1 unit	250	0.521
• DO 16 ×P/CPV 14 for direct connection of the FESTO valve terminal CPV 14 16 DO × P	A	**6ES7 148-1EH11-0XA0**		1	1 unit	250	0.534
FESTO valve terminals CPV 10		Can be ordered from FESTO AG & Co					
FESTO valve terminals CPV 14		Can be ordered from FESTO AG & Co					
EM 148-FC frequency converters							
EM 148-FC frequency converters For controlling 3-phase induction motors 380–500 V AC up to 1.5 kW, with integrated line filter	A	**6ES7 148-1FA10-0XB0**		1	1 unit	250	4.103
Accessories							
Connectors for motor outgoing feeders HAN Q8 shielded, assignments according to DESINA specification	A	**6ES7 194-1AB01-0XA0**		1	1 unit	250	0.235
Connector sets HAN Q8							
For power infeed							
• 2.5 mm^2, 9-pole	B	**3RK1 902-0CA00**		1	1 set	121	0.057
• 4 mm^2, 9-pole	B	**3RK1 902-0CB00**		1	1 set	121	0.055
For power loop-through connection							
• 2.5 mm^2, 9-pole	B	**3RK1 902-0CC00**		1	1 set	121	0.059
• 4 mm^2, 9-pole	B	**3RK1 902-0CD00**		1	1 set	121	0.055
Motor cables							
Pre-assembled, shielded, HAN Q8 open end							
• 1.5 m	A	**6ES7 194-1LA01-0AA0**		1	1 unit	250	0.731
• 3 m	A	**6ES7 194-1LB01-0AA0**		1	1 unit	250	1.267
• 5 m	A	**6ES7 194-1LC01-0AA0**		1	1 unit	250	1.737
• 10 m	A	**6ES7 194-1LD01-0AA0**		1	1 unit	250	3.415
Sealing caps For 9-pole power socket, 1 pack. = 10 units	B	**3RK1 902-0CJ00**		1	10 units	121	0.093
Disassembly tools For disassembling male and female contacts in 6-pole inserts	B	**3RK1 902-0AJ00**		1	1 unit	121	0.047
Hand-held devices With 0.5 m connection cable and plug	B	**3RK1 902-0AM00**		1	1 unit	121	0.217
Labeling plates For labeling of inputs and outputs as well as item codes; 20 frames with 40 labels each, 8 x 10 mm, petrol colored	A	**6ES7 194-1BA00-0XA0**		1	1 unit	250	0.050
Manuals for ET 200X distributed I/O station							
• German	D	**6ES7 198-8FA01-8AA0**		1	1 unit	250	1.956
• English	C	**6ES7 198-8FA01-8BA0**		1	1 unit	250	1.925
• French	A	**6ES7 198-8FA01-8CA0**		1	1 unit	250	1.676
S7 Manual Collection Manuals on CD, 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
S7 Manual Collection update service for 1 year Scope of delivery: The current CD S7 Manual Collection as well as the three subsequent updates	X	**6ES7 998-8XC01-8YE2**		1	1 unit	230	0.400

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

3RK1 3 ECOFAST motor starters and soft starters

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 units for geographically distributed motors and
- Isolated solutions (ET 200X) for drives 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 contacts enable sensors to be scanned locally.

All starters are equipped throughout with standardized interfaces for data and power in accordance with the ECOFAST specification:
- HanBrid for PROFIBUS DP and insulation piercing method for AS-Interface
- Han Q4 for the power supply
- Han 10e for motor connection

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

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, multi-speed, 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, multi-speed, 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 to 9 A is fixed and cannot be set or modified manually.

* You can order this quantity or a multiple thereof.

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.

3RE10 combination starters, direct-on-line

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 connections**		PU (UNIT, SET, M)		PS*	PG	Weight per PU approx.
	Operational current I_e at 400 V	Output of induction motors at 400 V/50 Hz				Order No.	Price per PU					
	A	kW	V	at Hz								kg
Direct-on-line starters including contactor												
S00	12	5.5	230 AC	50 / 60	B	**3RE10 10-8XC17-0AP0**		1	1 unit	101		0.510
			400 AC	50 / 60	B	**3RE10 10-8XC17-0AV0**		1	1 unit	101		0.510
S0	17	7.5	230 AC	50	B	**3RE10 20-8XC25-0AP0**		1	1 unit	101		0.830
			400 AC	50	B	**3RE10 20-8XC25-0AV0**		1	1 unit	101		0.810
	25	11	230 AC	50	B	**3RE10 20-8XC26-0AP0**		1	1 unit	101		0.830
			400 AC	50	B	**3RE10 20-8XC26-0AV0**		1	1 unit	101		0.810

3RE10 10

* You can order this quantity or a multiple thereof.

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 connections		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I_e at 400 V	Output of induction motors at 400 V/50 Hz				Order No.	Price per PU				
	A	kW	V	at Hz							kg
Reversing starters including contactor assembly											
S00	12	5.5	230 AC	50 / 60	B	**3RE13 10-8XC17-0AP0**		1	1 unit	101	1.000
			400 AC	50 / 60	B	**3RE13 10-8XC17-0AV0**		1	1 unit	101	2.460

3RE13 10

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

Accessories

Selection and ordering data

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

3RE19 23-1CB2

3RE19 23-2CB3

* You can order this quantity or a multiple thereof.