

Motor Starters for Use in the Field, High Degree of Protection



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Motor Starters for Use in the Field, High Degree of Protection

Introduction

Overview



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3RK1315

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Flexible and cost-efficient distributed starter solutions

Be it their high degree of protection, compact design or integrated multifunctionality – our motor starters and soft starters for use in the field are ideal for realizing distributed drive solutions. The modular concepts, distributed power distribution and integrated safety technology of our portfolio for a high degree of protection consistently supports current trends in drive technology.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

General data

Overview

ET 200pro motor starters in the ET 200 pro I/O system

SIMATIC ET 200pro is a modular I/O system in the degree of protection IP65/66/67 for near-machine, cabinet-free use. ET 200pro motor starters in the high degree of protection IP65 are an integral part of ET 200pro.



ET 200pro motor starter: Isolator module, Standard starter and High-Feature starter mounted on a wide module rack

ET 200pro motor starters

- Only two versions up to 5.5 kW
- All settings can be parameterized by bus
- Comprehensive diagnostic signals
- Support for PROFlenergy
- 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
- Full support of acyclic services
- Direct-on-line or reversing starters
- Power bus connection can be plugged in using Han Q4/2 plug-in connectors
- Motor feeder with Han Q8/0 connector
- Conductor cross-sections up to 6 x 4 mm²
- 25 A per segment (power looped through using jumper plug)
- In the Standard and High-Feature versions (with 4 DI onBoard)
- Electromechanical switching and electronic switching
- Electronic starter for direct activation or with integrated soft starter function
- Supplied with 400 V AC brake contact as an option
- Provision of the motor current in PROFlenergy format to higher-level systems, motor current shutdown in dead times using PROFlenergy

ET 200pro isolator modules (see page 9/9)

The isolator module with switch disconnecter 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 downstream supplied motor starters).

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

Safety applications

Safety Solution local (see page 9/10)

With the Safety local modules

- Safety local isolator module and

- 400 V disconnecting module
- it is possible to achieve safety level SIL 3 (according to IEC 62061) and PL e (according to ISO 13849-1) with an appropriate connection.

Safety Solution PROFIsafe (see page 9/13)

With the Safety PROFIsafe modules

- F-Switch and
 - 400 V disconnecting module
- it is likewise possible to achieve safety level SIL 3 (according to IEC 62061) and PL e (according to ISO 13849-1).

Functionality

With the ET 200pro motor starters, any AC loads can be protected and switched.

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

The ET 200pro electromechanical starters are offered as direct-on-line (DSe) and reversing starters (RSe) in the versions **Standard** and **High-Feature**. There are device versions with or without control for externally fed brakes with 400 V AC.

Compared to the Standard motor starter, the **High-Feature mechanical motor starter** also has:

- 4 digital inputs
- Advanced parameterization options

The ET 200pro electronic starters are offered as direct-on-line starters (sDSSSte/sDSte) and reversing starters (sRSSSte/sRSte) in the High-Feature version.

Compared to the High-Feature mechanical motor starter, the **High-Feature electronic motor starter** also has:

- With soft starting and smooth ramp-down function
- Deactivated soft start function as an electronic starter for applications with a high switching frequency
- Advanced parameterization options

As a result of the protection concept with electronic overload evaluation and the use of SIRIUS controls, size S00, additional advantages are realized on the Standard and High-Feature motor starters – advantages which soon make themselves positively felt particularly in manufacturing processes with high plant downtime costs:

- Configuration is made easier by the fine modular structure with ET 200pro. When using the ET 200pro motor starters, the parts list per load feeder is reduced to 2 main items: the bus module and the motor starter. This makes the ET 200pro ideal for modular machine concepts or solutions for conveyor systems and in machine-tool construction
- 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.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

General data

Type		Standard motor starters	High-Feature motor starters	
Technology designation ¹⁾		DSe, RSe	DSe, RSe	sDSSSte, sDSte, sRSSSte, sRSte
Device functions (firmware features)				
Parameterizable rated operational current		✓		
Integrated short-circuit protection		✓		
Parameterizable current limit values		--	✓ 2 limit values	
Parameterizable response in case of current limit violation		--	✓	
Zero current monitoring		✓		
Parameterizable response in case of zero current violation		✓		
Parameterizable current unbalance limit	%	-- fixed limit value (30 x I _e)	✓ 30 ... 60 x I _e	
Parameterizable response in case of unbalance limit violation		✓		
Motor blocking monitoring		--	✓	
Parameterizable blocking current limit	%	--	✓ 150 ... 1 000 x I _e	
Parameterizable blocking time limit	s	--	✓ 1 ... 5	
Current value transmission		✓		
Group warning diagnostics		--	✓ Parameterizable	
Group diagnostics		✓ Parameterizable		
Emergency start		✓		
Digital inputs		--	✓ 4 inputs	
• Parameterizable input signal		--	✓ Latching/non-latching	
• Parameterizable input level		--	✓ NC/NO	
• Parameterizable input signal delay	ms	--	✓ 10 ... 80	
• Parameterizable input signal extension	ms	--	✓ 0 ... 200	
• Parameterizable input control actions		--	✓ 12 different actions	
Brake output (400 V AC)		✓ Order option		
Parameterizable brake enabling delay	s	✓ -2.5 ... 2.5		
Parameterizable holding time of the brake during stopping	s	✓ 0 ... 25		
Parameterizable start up type		--		✓
Parameterizable ramp-down time		--		✓
Parameterizable starting voltage		--		✓
Parameterizable stopping voltage		--		✓
Local device interface		✓		
Firmware update		✓ By specialists		
Thermal motor model		✓		
Parameterizable trip class		-- CLASS 10 fixed	✓ CLASS 5, 10, 15, 20	
Parameterizable response in case of overload of thermal motor model		--	✓ 3 possible states	
Advance warning limit for motor heating	%	--	✓ Parameterizable 0 ... 95	
Advance warning limit time-related trip reserve	s	--	✓ Parameterizable 0 ... 500	
Parameterizable recovery time	min	--	✓ 1 ... 30	
Parameterizable protection against voltage failure		-- Permanently integrated	✓	
Reversing start function		✓ Order option		
Parameterizable interlock time for reversing starters		-- 150 ms fixed	✓ 0 ... 60 s	
Integrated logbook functions		✓ 3 device logbooks		
Integrated statistics data memory		✓		
Parameterizable response in case of CPU/master stop		✓		
PROFenergy profile support				
• Disconnection of the motor current during idle times		✓		
• Measured motor current values		✓		
Device indications				
• Group fault		SF LED (red)		
• Switching state		STATE LED (red, yellow, green)		
• Device status		DEVICE LED (red, yellow, green)		
• Digital inputs		--	IN 1 ... IN 4, LED	

✓ Function available

-- Function not available

- ¹⁾ DS Direct-on-line starter
 RS Reversing starter
 DSS .. Direct soft starter
 RSS .. Reversing soft starter
 e electronic motor protection
 te Full motor protection (thermal + electronic)
 s Electronic switching with semiconductor

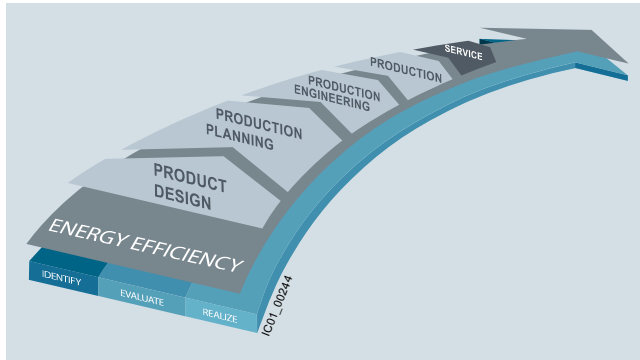
Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

General data

Benefits

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see www.siemens.com/sirius/energysaving).

SIMATIC ET 200pro motor starters contribute to energy efficiency as follows:

- Energy management
Provision of energy data (current) by bus to higher-level systems using PROFlenergy
- Elimination of energy consumption in dead times through disconnection using PROFlenergy
- Current management
With solid-state soft starters, avoidance of current peaks and therefore reduction of the load on the grid and the mechanical system
- Technology-reduced inherent power loss as speed-controlled drive systems
- Solid-state modules equipped with soft start technology with bypass contactor, resulting in lower power losses than with conventional soft starters after start up

Product advantages

ET 200pro motor starters provide the following advantages:

- High flexibility thanks to a modular and compact design
- Little variance among all motor starter versions (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 design thanks to high degree of protection IP65

Application

The SIMATIC ET 200pro motor starters are ideal for the use of several spatially concentrated distributed drive solutions in which several motors, digital or analog sensors and actuators are addressed by a distributed station. They are perfectly suited for protecting and switching any AC loads.

For use of SIMATIC ET 200pro motor starters in conjunction with highly energy-efficient IE3 motors, please observe the information on dimensioning and configuring in the "Configuration Manual for SIRIUS Controls with IE3 motors".

Application areas

The SIMATIC ET 200pro motor starters are suitable for numerous sectors of industry, e.g. machinery and plant engineering or conveying applications.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

General data

Technical specifications

Type		Stand. motor starters Mechanically switching without inputs	High-Feature motor starters Mechanically switching with inputs	Mechanically switching with inputs and soft starter function
Technology designation ¹⁾		DSe, RSe	DSe, RSe	sDSSSte, sDSte, sRSSSte, sRSte
Mechanics and environment				
Motor starters or modules that can be connected to ET 200pro With width of 110 mm		Max. 8		
Mounting dimensions (W x H x D) • Direct-on-line starters and reversing starters	mm	110 x 230 x 150		110 x 230 x 160
Permissible ambient temperature • During operation • During storage	°C °C	-25 ... +55 from +40 with derating -40 ... +70		
Permissible mounting position		Vertical, horizontal		
Vibration resistance acc. to IEC 60068, Part 2-6	g	2		
Shock resistance acc. to IEC 60068 Part 2-27	g/ms	Half-sine 15/11		
Degree of protection		IP65		
Pollution degree		3, IEC 60664 (IEC 61131)		
Electrical specifications				
Power consumption at 24 V DC • From auxiliary circuit L+/M (U1) • From auxiliary circuit A1/A2 (U2)	mA mA	Approx. 40 Approx. 200		
Rated operational current I_g for power bus	A	25		
Rated operational voltage U_g • Approval according to EN 60947-1, Appendix N • Approval according to CSA and UL	V AC V AC V AC	400 (50/60 Hz) Up to 400 (50/60 Hz) Up to 600 (50/60 Hz)		Up to 400 (50/60 Hz) Up to 480 (50/60 Hz)
Approval • DIN VDE 0106, Part 101 • CSA and UL approval	V V	Up to 400 Up to 600		Up to 480 Up to 480
Conductor cross-sections • Incoming power supply	mm ²	Max. 6 x 4		
Touch protection		Finger-safe		
Rated impulse withstand voltage U_{imp}	kV	6		
Rated insulation voltage U_i	V	400		
Rated operational current I_g for starters • AC-1/2/3 at 40 °C - At 400 V - At 500 V • AC-4 at 40 °C - At 400 V	A A A	0.15 ... 2.0/1.5 ... 12.0 0.15 ... 2.0/1.5 ... 9.0 0.15 ... 2.0/1.5 ... 4.0		0.15 ... 2.0/1.5 ... 12.0 ²⁾
Rated short-circuit breaking capacity	kA	100 at 400 V		
Type of coordination acc. to IEC 60947-4-1		1		
Power of three-phase motors at 400 V	kW	Max. 5.5		Max. 5.5/4 ³⁾
Utilization categories		AC-1, AC-2, AC-3, AC-4		AC-53a ⁴⁾ (max. 9 A with deactivated soft start function up to CLASS 10)
Protective separation between main and auxiliary circuits	V	400, acc. to EN 60947-1, Appendix N		
Endurance of contactor • Mechanical • Electrical	Operating cycles Operating cycles	30 million Up to 10 million; depending on the current loading (see manual ⁵⁾ --		-- --
Permissible switching frequency		Depending on the current load, motor starting time, and relative ON period (see manual ⁵⁾)		
Operating times for 0.85 ... 1.1 x U_g • Closing delay • Opening delay	ms ms	11 ... 50 5 ... 45		-- --

1) DS Direct-on-line starter
RS Reversing starter
DSS .. Direct soft starter
RSS .. Reversing soft starter
e Electronic motor protection
te Full motor protection (thermal + electronic)
s Electronic switching with semiconductor.

2) Note:
If the soft starter control function is deactivated, the permissible rated operational current is reduced to 9 A up to CLASS 10.

3) With parameterization as electronic starter max. 4 kW.

4) 8-hour operation.

5) <http://support.automation.siemens.com/WW/view/en/22332388>

More information

Notes on safety

System networking requires suitable protective measures (including network segmentation for IT security) in order to ensure safe plant operation.

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

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

Standard motor starters

Overview

The functionality, device functions, and technical specifications of the Standard motor starter are described in "ET 200pro Motor Starters, General Data" ([see from page 9/3](#)).

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Standard motor starters, mechanical Motor protection: thermal model



DSe Standard

DSe direct-on-line starters¹⁾

- Without brake output
- With brake output 400 V AC

A

3RK1304-5□S40-4AA0

1

1 unit

42D

A

3RK1304-5□S40-4AA3

1

1 unit

42D

RSe reversing starters¹⁾

- Without brake output
- With brake output 400 V AC

A

3RK1304-5□S40-5AA0

1

1 unit

42D

A

3RK1304-5□S40-5AA3

1

1 unit

42D

Setting range
Rated operational current

- 0.15 ... 2.0 A
- 1.5 ... 12.0 A

K
L

Additional price

None
✓

✓ = Additional price

¹⁾ Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately ([see "Accessories for ET 200pro motor starters" on page 9/18](#)).

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

High-Feature motor starters

Overview

The functionality, device functions, and technical specifications of the High-Feature motor starter are described in "ET 200pro Motor Starters, General Data" (see from page 9/3).

The High-Feature motor starter differs from the Standard motor starter in having more parameters and four integrated, freely-parameterizable digital inputs.

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG		
High-Feature motor starters, mechanical Motor protection: thermal model								
 RSe High-Feature	DSe direct-on-line starters ¹⁾							
			• Without brake output and with 4 inputs	A	3RK1304-5□S40-2AA0	1	1 unit	42D
			• With brake output 400 V AC and 4 inputs	C	3RK1304-5□S40-2AA3	1	1 unit	42D
	RSe reversing starters ¹⁾							
			• Without brake output and with 4 inputs	A	3RK1304-5□S40-3AA0	1	1 unit	42D
			• With brake output 400 V AC and 4 inputs	A	3RK1304-5□S40-3AA3	1	1 unit	42D
	Setting range			Additional price				
	Rated operational current							
	• 0.15 ... 2.0 A			None				
	• 1.5 ... 12.0 A			✓				
High-Feature motor starters ²⁾ , electronic Full motor protection, comprising thermal motor protection and thermistor motor protection								
 sRSSe High-Feature	sDSSSte/sDSte direct-on-line starters ¹⁾²⁾							
			• Without brake output and with 4 inputs	A	3RK1304-5□S70-2AA0	1	1 unit	42D
			• With brake output 400 V AC and 4 inputs	C	3RK1304-5□S70-2AA3	1	1 unit	42D
	sRSSSte/sRSte reversing starters ¹⁾²⁾							
			• Without brake output and with 4 inputs	A	3RK1304-5□S70-3AA0	1	1 unit	42D
			• With brake output 400 V AC and 4 inputs	A	3RK1304-5□S70-3AA3	1	1 unit	42D
	Setting range			Additional price				
	Rated operational current							
	• 0.15 ... 2.0 A			None				
	• 1.5 ... 12.0 A			✓				

✓ = Additional price

¹⁾ Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro Motor Starters" on page 9/18).

²⁾ The solid-state motor starters can be used not only as solid-state motors starters with a high level of switching frequency but also as fully fledged soft starters for soft starting and stopping. The changeover from motor starter to soft starter takes place through reparameterization in HW Config. Depending on the setting, this results in the following current ranges:

- Parameterization as solid-state motor starter:
0.15 to 2 A and 1.5 to 9 A (4 kW)
- Parameterization as soft starter: 0.15 to 2 A and 1.5 to 12 A (5.5 kW).

Motor Starters for Use in the Field, High Degree of Protection ET 200pro Motor Starters

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 following properties apply to the isolator module:

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

The isolator module is available in addition in a safety version (see page 9/10 "Safety local Isolator Modules").

Technical specifications

Type	Isolator modules	
General data		
Mounting dimensions (W x H x D) • Direct-on-line starters and reversing starters	mm	110 x 230 x 170
Permissible ambient temperature • During operation • During storage	°C	-25 ... +55 -40 ... +70
Permissible mounting position	Any	
Vibration resistance Acc. to IEC 60068 Part 2-6	g	2
Shock resistance Acc. to IEC 60068 Part 2-27	g/ms	Half-sine 15/11
Power consumption • From auxiliary circuit L+/M (U1) • From auxiliary circuit A1/A2 (U2)	mA	Approx. 20 --
Rated operational current I_{θ} for power bus	A	25
Rated operational voltage U_{θ}	V	400
Approvals according to • DIN VDE 0106, Part 101 • CSA and UL	V	Up to 500 Up to 600
Conductor cross-sections • Incoming power supply	mm ²	Max. 6 x 4

Type	Isolator modules	
Degree of protection		IP65
Touch protection		Finger-safe
Pollution degree		3, IEC 60664 (IEC 61131)
Rated impulse withstand voltage U_{imp}	kV	6
Rated insulation voltage U_i	V	400
Rated operational current I_{θ} for starters		
• AC-1/2/3 at 40 °C		
- At 400 V	A	25
- At 500 V	A	25
Rated short-circuit breaking capacity	kA	50 at 400 V
Type of coordination		2
Acc. to IEC 60947-4-1		
Protective separation between main and auxiliary circuits	V	400, Acc. to DIN VDE 0106 Part 101
Device functions		
• Group diagnostics		Yes, parameterizable
Device indications		
• Group fault		SF LED (red)

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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ET 200pro isolator modules, mechanical

Isolator modules ¹⁾						
	Rated operational current 25 A	A	3RK1304-OHS00-6AA0	1	1 unit	42D

3RK1304-OHS00-6AA0

¹⁾ Only functions when used together with the related 110 mm backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see page 9/18, "Accessories for ET 200pro Motor Starters").

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro motor starters

ET 200 pro safety motor starters Solutions local/PROFIsafe

Safety modules local

Overview

Safety Solution local

With the Safety local modules

- Safety local isolator module and
 - 400 V disconnecting module
- it is possible to achieve safety level SIL 3 (according to IEC 62061) and PL e (according to ISO 13849-1) with an appropriate connection.



ET 200pro motor starters (Safety Solution local): Safety local isolator module, disconnecting module, Standard starter and High-Feature starter mounted on a wide module rack

Safety local isolator module

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

It is used for

- Connection of a 1- or 2-channel EMERGENCY-STOP circuit up to SIL 3/PL e (protective door or EMERGENCY-STOP pushbuttons) and parameterizable start behavior
- For controlling the 400 V disconnecting module by means of a safety rail signal

400 V disconnecting module

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

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

Functionality

Safety local isolator module

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

The Safety local isolator module contains a 3TK2841 module and is equipped with M12 terminals for the connection of external safety components.

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

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

The required safety functions can be set using 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 separates the 400 V circuit up to SIL 3/PL e.

In combination with the 400 V disconnecting module, the Safety local isolator module can be used for safety applications up to SIL 3/PL e.

400 V disconnecting module

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

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

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

The 400 V disconnecting module can be used in conjunction with the Safety local isolator module or with the F-Switch for safety applications up to SIL 3/PL e.

Technical specifications

Type		Safety local isolator module	400 V disconnecting module
General data			
Mounting dimensions (W x H x D) in mm			
• Direct-on-line starters and reversing starters	mm	110 x 230 x 170	110 x 230 x 150
Permissible ambient temperature			
• During operation	°C	-25 ... +55	
• During storage	°C	-40 ... +70	
Permissible mounting position		Any	
Vibration resistance acc. to IEC 60068, Part 2-6		2 g	
Shock resistance acc. to IEC 60068 Part 2-27		Half-wave 15 g/11 ms	
Power consumption			
• From auxiliary circuit L+/M (U1)	mA	Approx. 20	
• From auxiliary circuit A1/A2 (U2)		--	
Rated operational current I_o for power bus	A	25	
Rated operational voltage U_o	V	400 (50/60 Hz)	
Approval to DIN VDE 0106 Part 101	V	Up to 500	
CSA and UL approval	V	Up to 600	
Conductor cross-sections			
Incoming power supply	mm ²	Max. 6 x 4	
Degree of protection		IP65	
Touch protection		Finger-safe	
Pollution degree		3, IEC 60664 (IEC 61131)	
Rated impulse withstand voltage U_{imp}	kV	6	
Rated insulation voltage U_i	V	400	
Rated operational current I_o for starters			
• AC-1/2/3 at 40 °C			
- At 400 V	A	16	25
- At 500 V	A	16	25
Rated short-circuit breaking capacity	kA	50 at 400 V	
Type of coordination acc. to IEC 60947-4-1		2	
Protective separation between main and auxiliary circuits	V	400 Acc. to DIN VDE 0106 Part 101	
Operating times for 0.85 ... 1.1 x U_o			
• Closing delay	ms	--	25 ... 100
• Opening delay	ms	--	7 ... 10
Device functions			
• Group diagnostics		Yes, parameterizable	
Device indications			
• Group fault		SF LED (red)	

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Safety modules local

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Safety modules local						
 3RK1304-0HS00-7AA0		Safety local isolator modules¹⁾²⁾ Rated operational current 16 A	C	3RK1304-0HS00-7AA0	1	1 unit 42D
 3RK1304-0HS00-8AA0		400 V disconnecting modules³⁾⁴⁾ Rated operational current 25 A	A	3RK1304-0HS00-8AA0	1	1 unit 42D

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

²⁾ Only in combination with the special backplane bus module for the Safety local isolator module (see page 9/18, "Accessories for ET 200pro Motor Starters").

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

⁴⁾ The 400 V disconnecting module functions only when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see page 9/18, "Accessories for ET 200pro Motor Starters").

Overview

Safety Solution PROFIsafe

With the Safety PROFIsafe modules

- F-Switch and
 - 400 V disconnecting module
- it is possible to achieve safety level SIL 3 (according to IEC 62061) and PL e (according to ISO 13849-1) with an appropriate connection.

F-Switch PROFIsafe

Fail-safe digital inputs/outputs in degrees of protection IP65 to IP67 for near-machine, cabinet-free use.

Fail-safe digital inputs

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

Fail-safe digital outputs

- 3 fail-safe PP-switching outputs for safe switching of the backplane busbars

The F-Switch is certified up to SIL 3/PL e and has detailed diagnostics.

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

Note:

Safety characteristics see Chapter 16, "Appendix" → "Standards and Approvals" → "Overview".

400 V disconnecting module

See "Safety modules local", Overview page 9/10 and Technical specifications, page 9/11.

Functionality

The PROFIsafe F-Switch is a fail-safe electronic module for PROFIsafe safety applications. It has two fail-safe inputs and outputs for safe switching of the 24 V supply over backplane busbars. In combination with the 400 V disconnecting module, the fail-safe disconnection of ET 200pro motor starters is possible in PROFIsafe applications up to SIL 3/PL e.

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
ET 200pro safety modules						
 3RK1304-0HS00-8AA0	400 V disconnecting modules¹⁾²⁾ Rated operational current 25 A					
	A	3RK1304-0HS00-8AA0		1	1 unit	42D
 6ES7148-1FS00-0AB0	F-Switch PROFIsafe 24 V DC, including bus module Connection module must be ordered separately					
	A	6ES7148-4FS00-0AB0		1	1 unit	241
Connection modules for F-Switch						
24 V DC	A	6ES7194-4DA00-0AA0		1	1 unit	241

¹⁾ The 400 V disconnecting module functions only when used together with the Safety local isolator module or with the F-Switch.
²⁾ The 400 V disconnecting module functions only when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see page 9/18, "Accessories for ET 200pro Motor Starters").

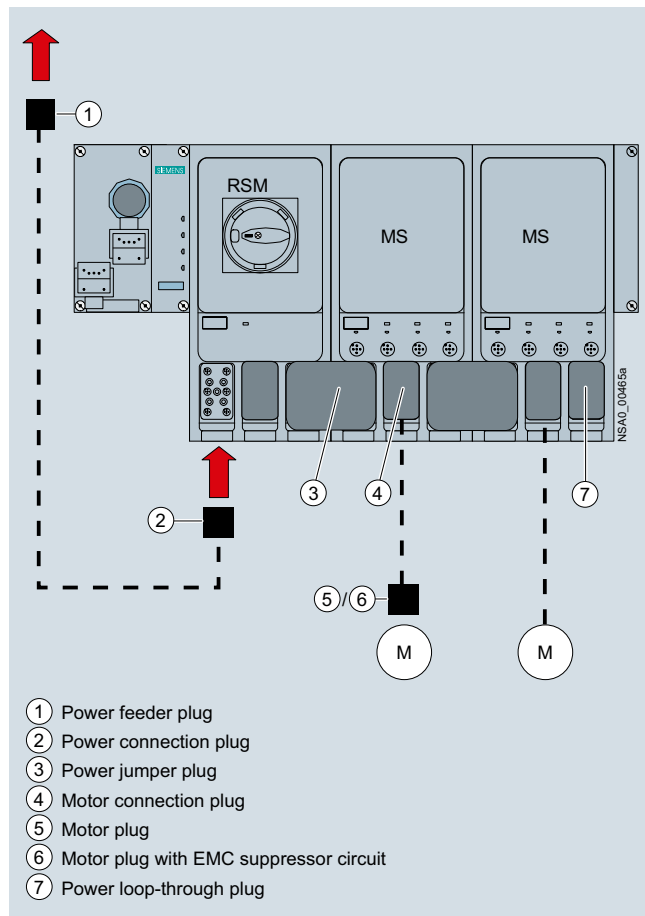
Motor Starters for Use in the Field, High Degree of Protection

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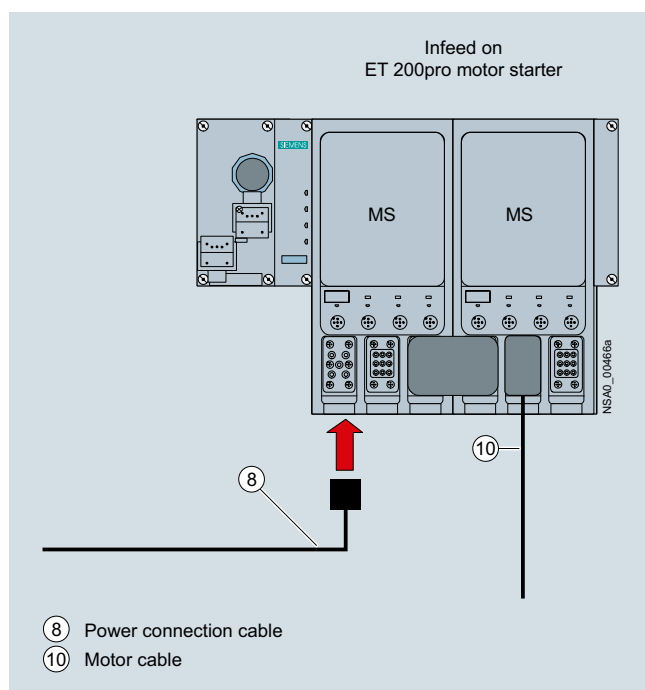
ET 200 pro safety motor starters Solutions local/PROFIsafe

Accessories for ET 200pro motor starters

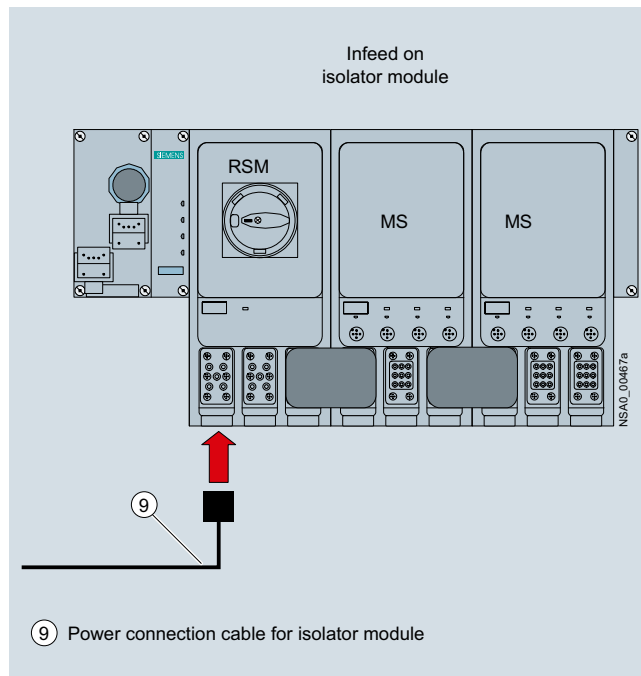
Overview



Basic design of an ET 200pro version with (from the left) connection module for IM, interface module for communication (IM), RSM isolator module, two ET 200pro motor starters (MS), and connections for energy



Infeed on the ET 200pro motor starter



Infeed on the RSM isolator module

Legend:

- ① Power feeder plug (see page 9/16)
- ② Power connection plug (see page 9/16)
- ③ Power jumper plug (see page 9/16)
- ④ Motor connection plug (see page 9/16)
- ⑤ Motor plug (see page 9/16)
- ⑥ Motor plug with EMC suppressor circuit (see page 9/16)
- ⑦ Power loop-through plug (see page 9/16)
- ⑧ Power connection cable (see page 9/16)
- ⑨ Power connection cable for isolator modules (see page 9/16)
- ⑩ Motor cable (see page 9/17)

Accessories for ET 200pro motor starters

Power bus

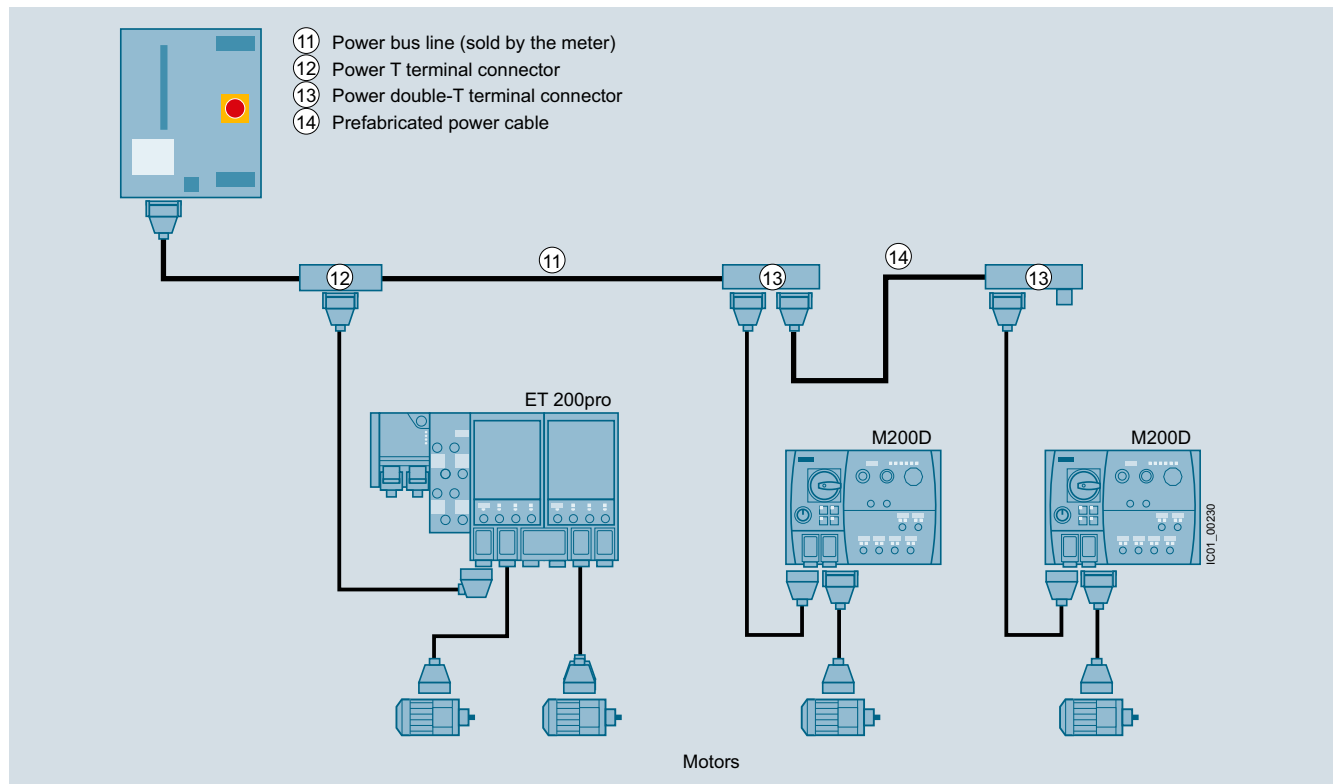
The power supply to the field devices (ET 200pro motor starters, M200D motor starters) is provided via the power bus, in which the power T terminal connectors or power double-T terminal connectors are connected by power bus cables.

Feeders

From the terminal connectors, spur lines with Han Q4/2 plugs lead to the field devices, from which the motors are supplied with power via motor connection cables.

Interruption-free thanks to power terminal connectors

In finger-safe connection technology the power T terminal connectors and power double-T terminal connectors connect the components of a feeder to the power bus. They ensure interruption-free operation, i.e. when the components are plugged in, the power bus is not interrupted.



Power supply to the motors via the power bus with power T and double-T terminal connectors linked by power bus cables, spur lines to the field devices (motor starters), and power loop-through connections to the motors via motor connection cables

Motor control via PROFIBUS

The interface modules (IM) for PROFIBUS can be combined with three different connection modules for connecting PROFIBUS DP and the power supply:

- Direct connection with cable glands
- ECOFAST connection with hybrid fieldbus cables (with two copper cores for data transmission with PROFIBUS DP, and four copper cores for the power supply), and ECOFAST connectors (HanBrid)¹⁾
- M12, 7/8" connection
 - with M12 connecting cable and M12 plugs for data transmission with PROFIBUS DP
 - with 7/8" connecting cable and 7/8" plugs for the power supply²⁾

The connection modules with the relevant accessories can be found among the accessories for the ET 200pro interface modules IM 154-1 and IM 154-2 (see page 9/19).

1) Hybrid fieldbus connections with HanBrid sockets designed as cabinet bushings transmit data and energy from the control cabinet (IP20) to the field (IP65). They are the interface for jointly routing PROFIBUS DP and the auxiliary voltages into the hybrid fieldbus cable (see page 9/65).

2) On the control cabinet bushings with two M12 sockets for the PROFIBUS M12 connecting cables, (see page 9/65) the 24 V supply of the motor starters is implemented via separate 7/8" connecting cables.

Motor control via PROFINET

The connection modules with the relevant accessories can be found among the accessories for the ET 200pro interface module IM 154-4 PN (see page 9/21).

Motor control via Industrial Wireless LAN

As well as wired solutions, communication can also be made via Industrial Wireless LAN (see interface module IM 154-6 PN IWLAN, page 9/23).

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Accessories for ET 200pro motor starters

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Incoming power supply						
① Power feeder plugs Connector set for energy supply, e.g. for connecting to T terminal connectors, comprising a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. gland						
• 5 male contacts 2.5 mm ²	B	3RK1911-2BS60		1	1 unit	42D
• 5 male contacts 4 mm ²	B	3RK1911-2BS20		1	1 unit	42D
• 5 male contacts 6 mm ²	B	3RK1911-2BS40		1	1 unit	42D
② Power connection plugs Connector set for energy supply for connection to ET 200pro motor starters/ET 200pro isolator modules, comprising a cable-end connector hood, angular outgoing feeder, female insert for HAN Q4/2, incl. gland						
• 5 female contacts 2.5 mm ²	B	3RK1911-2BE50		1	1 unit	42D
• 5 female contacts 4 mm ²	B	3RK1911-2BE10		1	1 unit	42D
• 5 female contacts 6 mm ²	B	3RK1911-2BE30		1	1 unit	42D
⑧ Power connection cables, assembled at one end Power connection cable for ET 200pro motor starters, open at one end, for HAN Q4/2, angular, insert turned at isolator module end, 4 x 4 mm ²						
• Length 1.5 m	B	3RK1911-0DB13		1	1 unit	42D
• Length 5.0 m	B	3RK1911-0DB33		1	1 unit	42D
⑨ Power connection cables for isolator module, assembled at one end Power connection cable for ET 200pro isolator modules, open at one end, for HAN Q4/2, angular, insert turned at isolator module end, 4 x 4 mm ²						
• Length 1.5 m	C	3RK1911-0DF13		1	1 unit	42D
• Length 5.0 m	C	3RK1911-0DF33		1	1 unit	42D
Power loop-through on the field device						
③ Power jumper plugs ⑦ Power loop-through plugs Connector set for power loop-through for connection to ET 200pro motor starters/ET 200pro isolator modules, comprising a cable-end connector hood, angular outgoing feeder, pin insert for HAN Q4/2, incl. gland						
• 4 male contacts 2.5 mm ²	B	3RK1911-2BF50		1	1 unit	42D
• 4 male contacts 4 mm ²	B	3RK1911-2BF10		1	1 unit	42D
Motor cables						
④ Motor connection plugs Connector set for motor cable for connection to ET 200pro motor starters, comprising a cable-end connector hood, angular outgoing feeder, pin insert for HAN Q8/0, incl. gland						
• 8 male contacts 1.5 mm ²	B	3RK1902-0CE00		1	1 unit	42D
• 6 male contacts 2.5 mm ²	B	3RK1902-0CC00		1	1 unit	42D
⑤ Motor plugs Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e, incl. star jumper, incl. gland						
• 7 female contacts 1.5 mm ²	C	3RK1911-2BM21		1	1 set	42D
• 7 female contacts 2.5 mm ²	C	3RK1911-2BM22		1	1 set	42D
⑥ Motor plugs with EMC suppressor circuit Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e with EMC suppressor circuit, incl. star jumper, incl. gland						
• 7 female contacts 1.5 mm ²	C	3RK1911-2BL21		1	1 set	42D
• 7 female contacts 2.5 mm ²	C	3RK1911-2BL22		1	1 set	42D

Accessories for ET 200pro motor starters

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor cables (continued)						
⑩ Motor cables, assembled at one end Open at one end, HAN Q8, angular, length 5 m						
• Motor cable for motor without brake, for ET 200pro, 4 x 1.5 mm ²	C	3RK1911-0EB31		1	1 unit	42D
• Motor cable for motor with brake for ET 200pro, 6 x 1.5 mm ²	C	3RK1911-0ED31		1	1 unit	42D
Power bus						
⑫ Power T terminal connectors For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments						
• 2.5 mm ² /4 mm ²	B	3RK1911-2BF01		1	1 unit	42D
• 4 mm ² /6 mm ²	B	3RK1911-2BF02		1	1 unit	42D
⑬ Power double-T terminal connectors For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments, connection of two motor starters possible						
• 4 mm ² /6 mm ²	B	3RK1911-2BG02		1	1 unit	42D
Sealing set (comprising 2 seals) For power T/power double-T terminal connectors						
• For power cables with Ø 10 ... 13 mm	B	3RK1911-5BA00		1	1 unit	42D
• For power cables with Ø 13 ... 16 mm	B	3RK1911-5BA10		1	1 unit	42D
• For power cables with Ø 16 ... 19 mm	B	3RK1911-5BA20		1	1 unit	42D
• For power cables with Ø 19 ... 22 mm	B	3RK1911-5BA30		1	1 unit	42D
• Blanking plugs	B	3RK1911-5BA50		1	1 unit	42D
Further accessories for energy connections						
 Crimping tools for pins/sockets 4 mm² and 6 mm²						
	C	3RK1902-0CW00		1	1 unit	42D
Dismantling tools • For male and female contacts for 9-pole HAN Q4/2 inserts • For male and female contacts for 9-pole HAN Q8 inserts						
	C	3RK1902-0AB00		1	1 unit	42D
	B	3RK1902-0AJ00		1	1 unit	42D
 Sealing caps For 9-pole power socket connectors						
• 1 unit per pack	B	3RK1902-0CK00		1	1 unit	42D
• 10 units per pack	B	3RK1902-0CJ00		1	10 units	42D

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

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Accessories for ET 200pro motor starters

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Module racks, wide¹⁾ • Length 500 mm • Length 1 000 mm • Length 2 000 mm	A	6ES7194-4GB00-0AA0		1	1 unit	250
	A	6ES7194-4GB60-0AA0		1	1 unit	250
	A	6ES7194-4GB20-0AA0		1	1 unit	250
Module racks, wide, compact¹⁾ • Length 500 mm • Length 1 000 mm • Length 2 000 mm	A	6ES7194-4GD00-0AA0		1	1 unit	250
	A	6ES7194-4GD10-0AA0		1	1 unit	250
	A	6ES7194-4GD20-0AA0		1	1 unit	250
Backplane bus modules 110 mm²⁾	A	3RK1922-2BA00		1	1 unit	42D
Backplane bus modules for Safety local isolator modules	A	3RK1922-2BA01		1	1 unit	42D
Handheld devices For ET 200pro motor starters (or for ET 200S High-Feature and M200D motor starters) for local operation. The motor starter-specific serial interface cables must be ordered separately. The RS 232 interface cable 3RK1922-2BP00 is used for the MS ET 200pro.	B	3RK1922-3BA00		1	1 unit	42D
RS 232 interface cable Serial data connection between ET 200pro (or M200D) motor starters and the RS232 interface of a PC/PG/laptop (with the Motor Starter ES software) or the handheld device 3RK1922-3BA00.	B	3RK1922-2BP00		1	1 unit	42D
USB interface cable, 2.5 m Serial data connection between ET 200pro (or M200D) motor starters and the USB interface of a PC/PG/laptop (with the Motor Starter ES software).	B	6SL3555-0PA00-2AA0		1	1 unit	346
M12 sealing caps For sealing unused M12 input or output sockets (one set contains ten sealing caps)	►	3RK1901-1KA00		100	10 units	42C

Motor control with PROFIBUS

[See page 9/19](#)

Motor control with PROFINET

[See page 9/21](#)

Motor control via Industrial Wireless LAN

[See page 9/23](#)

Manual SIMATIC ET 200pro Motor Starters

The manual can be downloaded free of charge in PDF format from the Internet, see <http://support.automation.siemens.com/WW/view/en/22332388>

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

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

Motor Starters for Use in the Field, High Degree of Protection ET 200pro Motor Starters

ET 200pro – interface modules

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-1 and IM 154-2 interface modules						
IM 154-1 interface modules For ET 200pro; for communication between ET 200pro and higher-level masters over PROFIBUS DP	A	6ES7154-1AA01-0AB0		1	1 unit	250
IM 154-2 High-Feature interface modules For ET 200pro; for communication between ET 200pro and higher-level masters over PROFIBUS DP; support of PROFIsafe	A	6ES7154-2AA01-0AB0		1	1 unit	250
Accessories						
CM IM DP ECOFAST connection modules For connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, two ECOFAST Cu connections	A	6ES7194-4AA00-0AA0		1	1 unit	250
CM IM DP Direct connection modules For direct connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, up to six M20 screwed cable glands	A	6ES7194-4AC00-0AA0		1	1 unit	250
CM IM DP M12 7/8" connection module For connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, 2 x M12 and 2 x 7/8"	A	6ES7194-4AD00-0AA0		1	1 unit	250
Accessories for CM IM DP ECOFAST						
PROFIBUS ECOFAST hybrid cables, assembled With 2 ECOFAST connectors, trailing cable With 2 x Cu 0.64 mm ² and 4 x Cu 1.5 mm ²						
• Length 1.5 m	A	6XV1830-7BH15		1	1 unit	5K2
• Length 3.0 m	A	6XV1830-7BH30		1	1 unit	5K2
• Length 5.0 m	A	6XV1830-7BH50		1	1 unit	5K2
• Length 10 m	A	6XV1830-7BN10		1	1 unit	5K2
• Length 15 m	A	6XV1830-7BN15		1	1 unit	5K2
• Length 20 m	A	6XV1830-7BN20		1	1 unit	5K2
• Length 25 m	A	6XV1830-7BN25		1	1 unit	5K2
• Length 30 m	A	6XV1830-7BN30		1	1 unit	5K2
• Length 35 m	A	6XV1830-7BN35		1	1 unit	5K2
• Length 40 m	A	6XV1830-7BN40		1	1 unit	5K2
• Length 45 m	D	6XV1830-7BN45		1	1 unit	5K2
• Length 50 m	D	6XV1830-7BN50		1	1 unit	5K2
PROFIBUS ECOFAST hybrid cables GP, assembled With 2 ECOFAST connectors, trailing cable With 2 x Cu 0.64 mm ² and 4 x Cu 1.5 mm ²						
• Length 1.5 m	A	6XV1860-3PH15		1	1 unit	5K2
• Length 3.0 m	A	6XV1860-3PH30		1	1 unit	5K2
• Length 5.0 m	D	6XV1860-3PH50		1	1 unit	5K2
• Length 10 m	A	6XV1860-3PN10		1	1 unit	5K2
• Length 15 m	A	6XV1860-3PN15		1	1 unit	5K2
• Length 20 m	A	6XV1860-3PN20		1	1 unit	5K2
• Length 25 m	A	6XV1860-3PN25		1	1 unit	5K2
• Length 30 m	A	6XV1860-3PN30		1	1 unit	5K2
• Length 35 m	A	6XV1860-3PN35		1	1 unit	5K2
• Length 40 m	A	6XV1860-3PN40		1	1 unit	5K2
• Length 45 m	A	6XV1860-3PN45		1	1 unit	5K2
• Length 50 m	A	6XV1860-3PN50		1	1 unit	5K2
PROFIBUS ECOFAST hybrid cables, non-assembled Trailing cable with 2 x Cu 0.64 mm ² and 4 x Cu 1.5 mm ²						
• Length 50 m	A	6XV1830-7AN50		1	1 unit	5K2
• Length 100 m	A	6XV1830-7AT10		1	1 unit	5K2
PROFIBUS ECOFAST hybrid cables GP, non-assembled Trailing cable with 2 x Cu 0.64 mm ² and 4 x Cu 1.5 mm ²						
• Length 50 m	B	6XV1860-4PN50		1	1 unit	5K2
• Length 100 m	A	6XV1860-4PT10		1	1 unit	5K2
PROFIBUS ECOFAST hybrid connectors 180 ECOFAST Cu, 2 x Cu, 4 x 1.5 mm ² , HANBRID connectors						
• With pin insert, pack of 5	A	6GK1905-0CA00		1	5 units	5K2
• With female insert, pack of 5	A	6GK1905-0CB00		1	5 units	5K2
PROFIBUS ECOFAST hybrid connectors, angular ECOFAST Cu, 2 x Cu, 4 x 1.5 mm ² , HANBRID connectors						
• With pin insert, pack of 5	A	6GK1905-0CC00		1	5 units	5K2
• With female insert, pack of 5	A	6GK1905-0CD00		1	5 units	5K2

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ET 200pro – interface modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-1 and IM 154-2 interface modules (continued)						
Accessories for CM IM DP Direct						
PROFIBUS trailing cables Max. acceleration 4 m/s ² , at least 3 000 000 bending cycles, bending radius at least 60 mm, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	A	6XV1830-3EH10		1	1 m	5K2
PROFIBUS FC Food bus cables With PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	A	6XV1830-0GH10		1	1 m	5K2
PROFIBUS FC Robust bus cables With PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	A	6XV1830-0JH10		1	1 m	5K2
Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	A	6XV1830-8AH10		1	1 m	5K2
Accessories for CM IM DP M12 7/8"						
PROFIBUS M12 connecting cables Preassembled with two M12 plugs, 5-pole						
• Length 1.5 m	A	6XV1830-3DH15		1	1 unit	5K1
• Length 2.0 m	A	6XV1830-3DH20		1	1 unit	5K1
• Length 3.0 m	A	6XV1830-3DH30		1	1 unit	5K1
• Length 5.0 m	A	6XV1830-3DH50		1	1 unit	5K1
• Length 10 m	A	6XV1830-3DN10		1	1 unit	5K1
• Length 15 m	A	6XV1830-3DN15		1	1 unit	5K1
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs, 5-pole						
• Length 1.5 m	A	6XV1822-5BH15		1	1 unit	5K1
• Length 2.0 m	A	6XV1822-5BH20		1	1 unit	5K1
• Length 3.0 m	A	6XV1822-5BH30		1	1 unit	5K1
• Length 5.0 m	A	6XV1822-5BH50		1	1 unit	5K1
• Length 10 m	A	6XV1822-5BN10		1	1 unit	5K1
• Length 15 m	A	6XV1822-5BN15		1	1 unit	5K1
M12 connectors For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	A	6GK1905-0EA00		1	5 units	5K2
• With female insert, pack of 5	A	6GK1905-0EB00		1	5 units	5K2
PROFIBUS M12 bus termination plugs With pin insert	A	6GK1905-0EC00		1	5 units	5K2
7/8" connectors For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	A	6GK1905-0FA00		1	5 units	5K2
• With female insert, pack of 5	A	6GK1905-0FB00		1	5 units	5K2
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	3RX9802-0AA00		100	10 units	42C
7/8" sealing caps For protection of unused 7/8" terminals on ET 200pro, pack of 10 units per packing unit	A	6ES7194-3JA00-0AA0		1	10 units	250
General accessories						
ET 200pro module racks						
• Narrow, for interface, solid-state and power modules						
- 500 mm	A	6ES7194-4GA00-0AA0		1	1 unit	250
- 1 000 mm	A	6ES7194-4GA60-0AA0		1	1 unit	250
- 2 000 mm, can be cut to size	A	6ES7194-4GA20-0AA0		1	1 unit	250
• Compact, for interface, solid-state and power modules						
- 500 mm	A	6ES7194-4GC70-0AA0		1	1 unit	250
- 1 000 mm	A	6ES7194-4GC60-0AA0		1	1 unit	250
- 2 000 mm, can be cut to size	A	6ES7194-4GC20-0AA0		1	1 unit	250
• Wide, for interface, solid-state, power modules and motor starters						
- 500 mm	A	6ES7194-4GB00-0AA0		1	1 unit	250
- 1 000 mm	A	6ES7194-4GB60-0AA0		1	1 unit	250
- 2 000 mm, can be cut to size	A	6ES7194-4GB20-0AA0		1	1 unit	250
• Wide, for I/O modules and motor starters						
- 500 mm	A	6ES7194-4GD00-0AA0		1	1 unit	250
- 1 000 mm	A	6ES7194-4GD10-0AA0		1	1 unit	250
- 2 000 mm	A	6ES7194-4GD20-0AA0		1	1 unit	250
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	A	6ES7194-4HB00-0AA0		1	10 units	250
PROFIBUS FastConnect bus cables Standard type with special design for fast installation, 2-core, shielded, sold by the meter; delivery unit max. 1 000 m; minimum order quantity 20 m	A	6XV1830-0EH10		1	1 m	5K1

* You can order this quantity or a multiple thereof.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – interface modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-1 and IM 154-2 interface modules (continued)						
General accessories (continued)						
PROFIBUS hybrid standard cables GP Standard PROFIBUS hybrid cable with 2 power cores (1.5 mm ²) for supplying data and power to the ET 200pro	A	6XV1860-2R		1	1 m	5K2
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	B	6ES7998-8XC01-8YE0		1	1 unit	230
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	X	6ES7998-8XC01-8YE2		1	1 unit	230
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 PROFI-safe	A	6ES7154-4AB10-0AB0		1	1 unit	250
Accessories						
CM IM PN M12 connection modules, 7/8" For connection of PROFIBUS PN and 24 V power supply to PROFINET interface modules, 2 x M12 and 2 x 7/8"	A	6ES7194-4AJ00-0AA0		1	1 unit	250
CM IM PN 2xRJ45 connection modules For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x RJ45 and 2 x push-pull power connector	A	6ES7194-4AF00-0AA0		1	1 unit	250
CM IM PN 2xSCRJ FO connection modules For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x SCRJ FO and 2 x push-pull power connector	A	6ES7194-4AG00-0AA0		1	1 unit	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	3RX9802-0AA00		100	10 units	42C
IE M12 connecting cables Preassembled with two M12 plugs, up to max. 85 m						
• Length 0.3 m	A	6XV1870-8AE30		1	1 unit	5K1
• Length 0.5 m	A	6XV1870-8AE50		1	1 unit	5K1
• Length 1.0 m	A	6XV1870-8AH10		1	1 unit	5K1
• Length 1.5 m	A	6XV1870-8AH15		1	1 unit	5K1
• Length 2.0 m	A	6XV1870-8AH20		1	1 unit	5K1
• Length 3.0 m	A	6XV1870-8AH30		1	1 unit	5K1
• Length 5.0 m	A	6XV1870-8AH50		1	1 unit	5K1
• Length 10 m	A	6XV1870-8AN10		1	1 unit	5K1
• Length 15 m	A	6XV1870-8AN15		1	1 unit	5K1
• More special lengths with 90° or 180° cable feeder see http://support.automation.siemens.com/WW/view/en/26999294						
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs, 5-pole, up to max. 50 m						
• Length 1.5 m	A	6XV1822-5BH15		1	1 unit	5K1
• Length 2.0 m	A	6XV1822-5BH20		1	1 unit	5K1
• Length 3.0 m	A	6XV1822-5BH30		1	1 unit	5K1
• Length 5.0 m	A	6XV1822-5BH50		1	1 unit	5K1
• Length 10 m	A	6XV1822-5BN10		1	1 unit	5K1
• Length 15 m	A	6XV1822-5BN15		1	1 unit	5K1
• More special lengths with 90° or 180° cable feeder see http://support.automation.siemens.com/WW/view/en/26999294						
7/8" sealing caps 1 pack = 10 units	A	6ES7194-3JA00-0AA0		1	10 units	250
Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	A	6XV1830-8AH10		1	1 m	5K2
7/8" connectors For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	A	6GK1905-0FA00		1	5 units	5K2
• With female insert, pack of 5	A	6GK1905-0FB00		1	5 units	5K2

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – interface modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-4 PN interface modules (continued)						
Industrial Ethernet FastConnect installation cables						
• IE FC TP standard cables GP 2 x 2 Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	A	6XV1840-2AH10		1	1 m	5K1
• IE FC TP trailing cables 2 x 2 Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	A	6XV1840-3AH10		1	1 m	5K1
• IE FC TP trailing cables GP 2 x 2 Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	A	6XV1870-2D		1	1 m	5K2
• IE TP torsion cables GP 2 x 2 Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	A	6XV1870-2F		1	1 m	5K2
• IE FC TP marine cables 2 x 2 Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	A	6XV1840-4AH10		1	1 m	5K1
IE RJ45 Plug PRO RJ45 plug-in connector for field assembly in degree of protection IP65/IP67, plastic enclosure, insulation displacement method, for SCALANCE X-200IRT PRO and ET 200pro 1 pack = 1 unit	A	6GK1901-1BB10-6AA0		1	1 unit	5K2
IE SC RJ POF Plug PRO SC RJ plug-in connector for field assembly for POF fibers in degree of protection IP65/IP67, plastic enclosure, for SCALANCE X-200IRT PRO and ET 200pro 1 pack = 1 unit	A	6GK1900-0MB00-6AA0		1	1 unit	5K2
IE SC RJ PCF Plug PRO SC RJ plug-in connector for field assembly for PCF fibers in degree of protection IP65/IP67, plastic enclosure, for SCALANCE X-200IRT PRO 1 pack = 1 unit	A	6GK1900-0NB00-6AA0		1	1 unit	5K2
Power Plug PRO 5-pole power plug-in connector for field assembly for 2 x 24 V power supply in degree of protection IP65/IP67, plastic enclosure, for SCALANCE X-200IRT PRO and ET 200 pro 1 pack = 1 unit	A	6GK1907-0AB10-6AA0		1	1 unit	5K2
IE Panel Feedthrough Control cabinet bushing for transition from M12 connection method (D-coded, IP65) to RJ45 connection method (IP20) 1 pack = 5 units	A	6GK1901-0DM20-2AA5		1	5 units	5K2
Push-pull connectors For 1L+/ 2L+, non-assembled	A	6GK1907-0AB10-6AA0		1	1 unit	5K2
Covers for RJ45 push-pull sockets 5 units per pack	A	6ES7194-4JD50-0AA0		1	5 units	250
General accessories						
ET 200pro module racks						
• Narrow, for interface, solid-state and power modules - 500 mm - 1 000 mm - 2 000 mm, can be cut to size	A	6ES7194-4GA00-0AA0		1	1 unit	250
	A	6ES7194-4GA60-0AA0		1	1 unit	250
	A	6ES7194-4GA20-0AA0		1	1 unit	250
• Compact, for interface, solid-state and power modules - 500 mm - 1 000 mm - 2 000 mm, can be cut to size	A	6ES7194-4GC70-0AA0		1	1 unit	250
	A	6ES7194-4GC60-0AA0		1	1 unit	250
	A	6ES7194-4GC20-0AA0		1	1 unit	250
• Wide, for interface, solid-state, power modules and motor starters - 500 mm - 1 000 mm - 2 000 mm, can be cut to size	A	6ES7194-4GB00-0AA0		1	1 unit	250
	A	6ES7194-4GB60-0AA0		1	1 unit	250
	A	6ES7194-4GB20-0AA0		1	1 unit	250
• Wide, for I/O modules and motor starters - 500 mm - 1 000 mm - 2 000 mm	A	6ES7194-4GD00-0AA0		1	1 unit	250
	A	6ES7194-4GD10-0AA0		1	1 unit	250
	A	6ES7194-4GD20-0AA0		1	1 unit	250
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	A	6ES7194-4HB00-0AA0		1	10 units	250
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	B	6ES7998-8XC01-8YE0		1	1 unit	230
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	X	6ES7998-8XC01-8YE2		1	1 unit	230

Motor Starters for Use in the Field, High Degree of Protection ET 200pro Motor Starters

ET 200pro – interface modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-6 PN IWLAN interface modules						
IM 154-6 PN HF IWLAN interface modules						
For communication between ET 200pro and higher-level controllers through industrial wireless LAN (IWLAN) networks; support of PROFIsafe						
• With USA country approval						
	A	6ES7154-6AB50-0AB0		1	1 unit	250
Antennas with omnidirectional characteristic						
Mounting directly on IM 154-6 PN HF IWLAN						
• ANT IM 154-6 IWLAN; 2 units						
	A	6ES7194-4MA00-0AA0		1	2 units	250
For wall or mast mounting						
• ANT 792-6MN; N-Connect Female 2.4 GHz bar antenna; 1 unit						
	A	6GK5792-6MN00-0AA6		1	1 unit	5W3
• ANT 793-6MN; N-Connect Female 5 GHz bar antenna; 1 unit						
	A	6GK5793-6MN00-0AA6		1	1 unit	5W3
For operation with the RCoax antenna system						
• ANT 792-4DN; RCoax N-Connect Female 2.4 GHz; 1 unit						
	A	6GK5792-4DN00-0AA6		1	1 unit	5W3
• ANT 793-4MN; RCoax N-Connect Female 5 GHz; 1 unit						
	A	6GK5793-4MN00-0AA6		1	1 unit	5W3
IWLAN Rcoax antenna cables; N-Connect / R-SMA						
• Length 1 m						
	A	6XV1875-5CH10		1	1 unit	5W3
• Length 2 m						
	A	6XV1875-5CH20		1	1 unit	5W3
• Length 5 m						
	A	6XV1875-5CH50		1	1 unit	5W3
• Length 10 m						
	A	6XV1875-5CN10		1	1 unit	5W3
IWLAN terminating resistor, 50 Ω, for second R-SMA antenna socket, 3 units						
	A	6GK5795-1TR10-0AA6		1	3 units	5W3
Accessories						
7/8" connecting cables for power supply						
5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs						
• Length 1.5 m						
	A	6XV1822-5BH15		1	1 unit	5K1
• Length 2.0 m						
	A	6XV1822-5BH20		1	1 unit	5K1
• Length 3.0 m						
	A	6XV1822-5BH30		1	1 unit	5K1
• Length 5.0 m						
	A	6XV1822-5BH50		1	1 unit	5K1
• Length 10 m						
	A	6XV1822-5BN10		1	1 unit	5K1
• Length 15 m						
	A	6XV1822-5BN15		1	1 unit	5K1
• More special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WW/view/en/26999294						
Power cables						
5-core, 5 x 1.5 mm ² , trailing, sold by the meter						
Minimum order quantity 20 m, maximum order quantity 1 000 m						
	A	6XV1830-8AH10		1	1 m	5K2
7/8" connectors						
For ET 200eco, with axial cable feeder; with female insert, pack of 5						
	A	6GK1905-0FB00		1	5 units	5K2
Twisted pair connecting cables 4x2 with RJ45 connectors						
• Length 0.5 m						
	A	6XV1870-3QE50		1	1 unit	5K1
• Length 1 m						
	A	6XV1870-3QH10		1	1 unit	5K1
• Length 2 m						
	A	6XV1870-3QH20		1	1 unit	5K1
• Length 6 m						
	A	6XV1870-3QH60		1	1 unit	5K1
• Length 10 m						
	A	6XV1870-3QN10		1	1 unit	5K1
Crossed twisted pair connecting cables 4x2 with RJ45 connectors						
• Length 0.5 m						
	A	6XV1870-3RE50		1	1 unit	5K1
• Length 1 m						
	A	6XV1870-3RH10		1	1 unit	5K1
• Length 2 m						
	A	6XV1870-3RH20		1	1 unit	5K1
• Length 6 m						
	A	6XV1870-3RH60		1	1 unit	5K1
• Length 10 m						
	A	6XV1870-3RN10		1	1 unit	5K1
IE FC RJ45 Plug 180						
180° cable feeder; for network components and CPs/CPU's						
With Industrial Ethernet interface						
• 1 pack = 1 unit						
	A	6GK1901-1BB10-2AA0		1	1 unit	5K1
• 1 pack = 10 units						
	A	6GK1901-1BB10-2AB0		1	10 units	5K1
IE FC RJ45 Plug 90						
90° cable feeder; e.g. for ET 200S						
• 1 pack = 1 unit						
	A	6GK1901-1BB20-2AA0		1	1 unit	5K1
• 1 pack = 10 units						
	A	6GK1901-1BB20-2AB0		1	10 units	5K1

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – interface modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-6 PN IWLAN interface modules (continued)						
General accessories						
ET 200pro module racks						
• Narrow, for interface, solid-state and power modules - 500 mm - 1 000 mm - 2 000 mm, can be cut to size	A	6ES7194-4GA00-0AA0		1	1 unit	250
	A	6ES7194-4GA60-0AA0		1	1 unit	250
	A	6ES7194-4GA20-0AA0		1	1 unit	250
• Compact, for interface, solid-state and power modules - 500 mm - 1 000 mm - 2 000 mm, can be cut to size	A	6ES7194-4GC70-0AA0		1	1 unit	250
	A	6ES7194-4GC60-0AA0		1	1 unit	250
	A	6ES7194-4GC20-0AA0		1	1 unit	250
• Wide, for interface, solid-state, power modules and motor starters - 500 mm - 1 000 mm - 2 000 mm, can be cut to size	A	6ES7194-4GB00-0AA0		1	1 unit	250
	A	6ES7194-4GB60-0AA0		1	1 unit	250
	A	6ES7194-4GB20-0AA0		1	1 unit	250
• Wide, for I/O modules and motor starters - 500 mm - 1 000 mm - 2 000 mm	A	6ES7194-4GD00-0AA0		1	1 unit	250
	A	6ES7194-4GD10-0AA0		1	1 unit	250
	A	6ES7194-4GD20-0AA0		1	1 unit	250
Spare fuses, 12.5 A quick For interface and power modules (pack of 10)	A	6ES7194-4HB00-0AA0		1	10 units	250
Labels 20 x 7, pastel turquoise, pack of 340	D	3RT1900-1SB20		100	340 units	41B
SIMATIC micro memory cards						
• 64 Kbyte • 128 Kbyte • 512 Kbyte	A	6ES7953-8LF30-0AA0		1	1 unit	230
	A	6ES7953-8LG30-0AA0		1	1 unit	230
	A	6ES7953-8LJ30-0AA0		1	1 unit	230
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	B	6ES7998-8XC01-8YE0		1	1 unit	230
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	X	6ES7998-8XC01-8YE2		1	1 unit	230
IM 154-8 PN/DP CPU interface modules						
IM 154-8 PN/DP CPU interface modules, V3.2 PROFINET IO controller for operating distributed I/Os on PROFINET, with integrated PLC functionality	A	6ES7154-8AB01-0AB0		1	1 unit	250
Accessories						
MMC 64 Kbyte¹⁾ For program backups	A	6ES7953-8LF30-0AA0		1	1 unit	230
MMC 128 Kbyte¹⁾ For program backups	A	6ES7953-8LG30-0AA0		1	1 unit	230
MMC 512 Kbyte¹⁾ For program backups	A	6ES7953-8LJ30-0AA0		1	1 unit	230
MMC 2 MByte¹⁾ For program backups and/or the firmware update	A	6ES7953-8LL31-0AA0		1	1 unit	230
MMC 4 MByte¹⁾ For program backups	A	6ES7953-8LM31-0AA0		1	1 unit	230
MMC 8 MByte¹⁾ For program backups	A	6ES7953-8LP31-0AA0		1	1 unit	230
Connection modules For CPU IM 154-8 PN/DP, with 4 x M12 and 2 x 7/8", for connection of PROFINET and PROFIBUS DP	A	6ES7194-4AN00-0AA0		1	1 unit	250
SCALANCE X-200 Industrial Ethernet switches With integrated SNMP access, web diagnostics, copper cable diagnostics and PROFINET diagnostics, SCALANCE X208PRO for configuring line, star and ring structures, in degree of protection IP65, with eight 10/100 Mbit/s M12 ports, including eleven M12 dust covers	X	6GK5208-0HA00-2AA6		1	1 unit	5P2
Industrial Ethernet FC RJ45 Plug 180 RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated insulation displacement contacts for connection of Industrial Ethernet FC installation cables; with 180° cable feeder						
• 1 unit • 10 units • 50 units	A	6GK1901-1BB10-2AA0		1	1 unit	5K1
	A	6GK1901-1BB10-2AB0		1	10 units	5K1
	A	6GK1901-1BB10-2AE0		1	50 units	5K1

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

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ET 200pro Motor Starters

ET 200pro – interface modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 PN/DP CPU interface modules (continued)						
Industrial Ethernet FastConnect installation cables						
• FastConnect standard cables	A	6XV1840-2AH10		1	1 m	5K1
• FastConnect trailing cables	A	6XV1840-3AH10		1	1 m	5K1
• FastConnect marine cables	A	6XV1840-4AH10		1	1 m	5K1
• IE FC TP trailing cables GP 2 x 2; sold by the meter, delivery unit max. 1 000 m Minimum order quantity 20 m	A	6XV1870-2D		1	1 m	5K2
• IE TP torsion cables GP 2 x 2; sold by the meter, delivery unit max. 1 000 m Minimum order quantity 20 m	A	6XV1870-2F		1	1 m	5K2
Industrial Ethernet FastConnect Stripping tools	A	6GK1901-1GA00		1	1 unit	5K2
IE connecting cables M12-180/M12-180						
Factory-fitted IE FC TP trailing cables GP 2 x 2 (PROFINET type C) with two 4-pole M12 plugs (4-pole, D-coded), degree of protection IP65/IP67						
• Length 0.3 m	A	6XV1870-8AE30		1	1 unit	5K1
• Length 0.5 m	A	6XV1870-8AE50		1	1 unit	5K1
• Length 1.0 m	A	6XV1870-8AH10		1	1 unit	5K1
• Length 1.5 m	A	6XV1870-8AH15		1	1 unit	5K1
• Length 2.0 m	A	6XV1870-8AH20		1	1 unit	5K1
• Length 3.0 m	A	6XV1870-8AH30		1	1 unit	5K1
• Length 5.0 m	A	6XV1870-8AH50		1	1 unit	5K1
• Length 10 m	A	6XV1870-8AN10		1	1 unit	5K1
• Length 15 m	A	6XV1870-8AN15		1	1 unit	5K1
PROFINET M12 connecting cables, trailing, preassembled at both ends with M12 plugs, angular (pin)						
• Length 3.0 m	C	3RK1902-2NB30		1	1 unit	42D
• Length 5.0 m	C	3RK1902-2NB50		1	1 unit	42D
• Length 10 m	C	3RK1902-2NC10		1	1 unit	42D
PROFINET M12 connecting cables, trailing, preassembled at one end with M12 plugs, angular (one end with pin, one end open)						
• Length 3.0 m	C	3RK1902-2HB30		1	1 unit	42D
• Length 5.0 m	C	3RK1902-2HB50		1	1 unit	42D
• Length 10 m	C	3RK1902-2HC10		1	1 unit	42D
IE FC M12 Plug PRO						
PROFINET M12 plug-in connectors, D-coded with quick-connect technology Axial outgoing feeder						
• 1 unit	A	6GK1901-0DB20-6AA0		1	1 unit	5K1
• 8 units	A	6GK1901-0DB20-6AA8		1	8 units	5K1
PROFINET M12 connectors, D-coded, angular	B	3RK1902-2DA00		1	1 unit	42D
IE Panel Feedthrough						
Control cabinet bushing for transition from M12 connection method (D-coded, IP65/IP67) to RJ45 connection method (IP20), 1 pack = 5 units						
	A	6GK1901-0DM20-2AA5		1	5 units	5K2
7/8" connecting cables for power supply						
5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs (axial outgoing feeder), 5-pole, up to max. 50 m						
• Length 1.5 m	A	6XV1822-5BH15		1	1 unit	5K1
• Length 2.0 m	A	6XV1822-5BH20		1	1 unit	5K1
• Length 3.0 m	A	6XV1822-5BH30		1	1 unit	5K1
• Length 5.0 m	A	6XV1822-5BH50		1	1 unit	5K1
• Length 10 m	A	6XV1822-5BN10		1	1 unit	5K1
• Length 15 m	A	6XV1822-5BN15		1	1 unit	5K1
• More special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WW/view/en/26999294						
Trailing power cables, 5 x 1.5 mm ² , trailing, preassembled at both ends with 7/8" connectors, angular (one end with socket, one end with pin)						
• Length 3.0 m	C	3RK1902-3NB30		1	1 unit	42D
• Length 5.0 m	C	3RK1902-3NB50		1	1 unit	42D
• Length 10 m	C	3RK1902-3NC10		1	1 unit	42D
Trailing power cables, 5 x 1.5 mm ² , preassembled at one end with 7/8" connector with female insert, angular (one end with socket, one end open)						
• Length 3.0 m	C	3RK1902-3GB30		1	1 unit	42D
• Length 5.0 m	C	3RK1902-3GB50		1	1 unit	42D
• Length 10 m	C	3RK1902-3GC10		1	1 unit	42D
Power cables						
5-core, 5 x 1.5 mm ² , trailing, sold by the meter Minimum order quantity 20 m, maximum order quantity 1 000 m						
	A	6XV1830-8AH10		1	1 m	5K2

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – interface modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 PN/DP CPU interface modules (continued)						
7/8" connectors for ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	A	6GK1905-0FA00		1	5 units	5K2
• With female insert, pack of 5	A	6GK1905-0FB00		1	5 units	5K2
• Angular, with female insert, 1 unit	B	3RK1902-3DA00		1	1 unit	42D
• Angular with pin insert, 1 unit	B	3RK1902-3BA00		1	1 unit	42D
7/8" covers, pack of 10	A	6ES7194-3JA00-0AA0		1	10 units	250
Twisted pair connecting cables 4 x 2 with RJ45 connectors						
• Length 0.5 m	A	6XV1870-3QE50		1	1 unit	5K1
• Length 1 m	A	6XV1870-3QH10		1	1 unit	5K1
• Length 2 m	A	6XV1870-3QH20		1	1 unit	5K1
• Length 6 m	A	6XV1870-3QH60		1	1 unit	5K1
• Length 10 m	A	6XV1870-3QN10		1	1 unit	5K1
Crossed twisted pair connecting cables 4 x 2 with RJ45 connectors						
• Length 0.5 m	A	6XV1870-3RE50		1	1 unit	5K1
• Length 1 m	A	6XV1870-3RH10		1	1 unit	5K1
• Length 2 m	A	6XV1870-3RH20		1	1 unit	5K1
• Length 6 m	A	6XV1870-3RH60		1	1 unit	5K1
• Length 10 m	A	6XV1870-3RN10		1	1 unit	5K1
M12 sealing caps						
For protection of unused M12 terminals on ET 200pro	►	3RX9802-0AA00		100	10 units	42C
M12 sealing caps with female thread (5 units)						
	A	6ES7194-4JD60-0AA0		1	5 units	250
PROFIBUS M12 connecting cables						
Preassembled with two 5-pole M12 plugs/sockets, up to max. 100 m						
• Length 1.5 m	A	6XV1830-3DH15		1	1 unit	5K1
• Length 2 m	A	6XV1830-3DH20		1	1 unit	5K1
• Length 3 m	A	6XV1830-3DH30		1	1 unit	5K1
• Length 5 m	A	6XV1830-3DH50		1	1 unit	5K1
• Length 10 m	A	6XV1830-3DN10		1	1 unit	5K1
• Length 15 m	A	6XV1830-3DN15		1	1 unit	5K1
• More special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WW/view/en/26999294						
PROFIBUS M12 bus termination plugs, female inserts	A	6GK1905-0ED00		1	5 units	5K2
PROFIBUS M12 bus termination plugs, pin inserts	A	6GK1905-0EC00		1	5 units	5K2
M12 plug-in connectors, axial outgoing feeder, with pin insert	A	6GK1905-0EA00		1	5 units	5K2
PROFIBUS FC Standard Cable GP						
Standard type with special design for fast installation, 2-core, shielded	A	6XV1830-0EH10		1	1 m	5K1
Sold by the meter: delivery unit max. 1 000 m, minimum order quantity 20 m						
PROFIBUS FC trailing cables 2-core, shielded						
Sold by the meter: delivery unit max. 1 000 m, minimum order quantity 20 m	A	6XV1830-3EH10		1	1 m	5K2
PROFIBUS FC food cables 2-core, shielded						
Sold by the meter: delivery unit max. 1 000 m, minimum order quantity 20 m	A	6XV1830-0GH10		1	1 m	5K2
PROFIBUS FC robust cables 2-core, shielded						
Sold by the meter: delivery unit max. 1 000 m, minimum order quantity 20 m	A	6XV1830-0JH10		1	1 m	5K2
PROFIBUS M12 connectors						
5-pole, B-coded, metal enclosure, female insert, 1 pack = 5 units	A	6GK1905-0EB00		1	5 units	5K2

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ET 200pro – interface modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 F PN/DP CPU interface modules						
IM 154-8 F PN/DP CPU interface modules, V3.2						
Fail-safe PROFINET IO Controller for operating distributed I/Os on PROFINET						
With integrated PLC functionality						
• 512 Kbyte RAM • 1.5 Mbyte RAM						
	A	6ES7154-8FB01-0AB0		1	1 unit	241
	A	6ES7154-8FX00-0AB0		1	1 unit	241
S7 Distributed Safety V5.4 programming tool						
Task: Configuration software for configuring fail-safe user programs for						
SIMATIC S7-300F, S7-400F, WinAC RTX F, ET 200S, ET 200M, ET 200iSP,						
ET 200pro, ET 200eco						
Requirements: STEP 7 V5.3 SP3 and higher						
• Floating license						
	A	6ES7833-1FC02-0YA5		1	1 unit	241
• Floating license for 1 user, license key download						
Without software and documentation ¹⁾						
Email address required for delivery						
	A	6ES7833-1FC02-0YH5		1	1 unit	241
Distributed Safety upgrade						
From V5.x to V5.4; floating license for 1 user						
	C	6ES7833-1FC02-0YE5		1	1 unit	241
STEP 7 Safety Advanced V13						
Task: Engineering tool for configuring fail-safe user programs for						
SIMATIC S7-1500F, S7-300F, S7-400F, WinAC RTX F, ET 200SP, ET 200S,						
ET 200M, ET 200iSP, ET 200pro, ET 200eco						
Requirements: STEP 7 Professional V13 SP1						
• Floating license for 1 user						
	B	6ES7833-1FA13-0YA5		1	1 unit	216
• Floating license for 1 user, license key download						
Without software and documentation ¹⁾						
Email address required for delivery						
	A	6ES7833-1FA13-0YH5		1	1 unit	216
Accessories						
MMC 64 Kbyte²⁾ for program backups	A	6ES7953-8LF30-0AA0		1	1 unit	230
MMC 128 Kbyte²⁾ for program backups	A	6ES7953-8LG30-0AA0		1	1 unit	230
MMC 512 Kbyte²⁾ for program backups	A	6ES7953-8LJ30-0AA0		1	1 unit	230
MMC 2 Mbyte²⁾ for program backups and/or the firmware update	A	6ES7953-8LL31-0AA0		1	1 unit	230
MMC 4 Mbyte²⁾ for program backups	A	6ES7953-8LM31-0AA0		1	1 unit	230
MMC 8 Mbyte²⁾ for program backups	A	6ES7953-8LP31-0AA0		1	1 unit	230
Connection modules						
For CPU IM 154-8 PN/DP, with 4 x M12 and 2 x 7/8"						
For connection of PROFINET and PROFIBUS DP						
	A	6ES7194-4AN00-0AA0		1	1 unit	250
SCALANCE X-200 Industrial Ethernet switches						
With integrated SNMP access, web diagnostics, copper cable diagnostics and						
PROFINET diagnostics, SCALANCE X208PRO for configuring line, star and ring						
structures, in degree of protection IP65, with eight 10/100 Mbit/s M12 ports,						
including eleven M12 dust covers						
	X	6GK5208-0HA00-2AA6		1	1 unit	5P2
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	6GK1901-1BB20-2AA0		1	1 unit	5K1
• 10 units						
	A	6GK1901-1BB20-2AB0		1	10 units	5K1
Industrial Ethernet FC RJ45 Plug 180						
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and						
integrated insulation displacement contacts for connection of Industrial Ethernet						
FC installation cables; with 180° cable feeder						
• 1 unit						
	A	6GK1901-1BB10-2AA0		1	1 unit	5K1
• 10 units						
	A	6GK1901-1BB10-2AB0		1	10 units	5K1
• 50 units						
	A	6GK1901-1BB10-2AE0		1	50 units	5K1

¹⁾ Up-to-date information and availability for download, see <http://www.siemens.com/tia-online-software-delivery>

²⁾ For operation of the CPU, an MMC is essential.

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ET 200pro – interface modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 F PN/DP CPU interface modules (continued)						
Industrial Ethernet FastConnect installation cables						
• FastConnect standard cables	A	6XV1840-2AH10		1	1 m	5K1
• FastConnect trailing cables	A	6XV1840-3AH10		1	1 m	5K1
• FastConnect marine cables	A	6XV1840-4AH10		1	1 m	5K1
• IE FC TP trailing cables GP 2 x 2; sold by the meter, delivery unit max. 1 000 m Minimum order quantity 20 m	A	6XV1870-2D		1	1 m	5K2
• IE TP torsion cables GP 2 x 2; sold by the meter, delivery unit max. 1 000 m Minimum order quantity 20 m	A	6XV1870-2F		1	1 m	5K2
Industrial Ethernet FastConnect	A	6GK1901-1GA00		1	1 unit	5K2
Stripping tools						
IE connecting cables M12-180/M12-180						
Factory-fitted IE FC TP trailing cables GP 2 x 2 (PROFINET type C) with two 4-pole M12 plugs (4-pole, D-coded), degree of protection IP65/IP67						
• Length 0.3 m	A	6XV1870-8AE30		1	1 unit	5K1
• Length 0.5 m	A	6XV1870-8AE50		1	1 unit	5K1
• Length 1.0 m	A	6XV1870-8AH10		1	1 unit	5K1
• Length 1.5 m	A	6XV1870-8AH15		1	1 unit	5K1
• Length 2.0 m	A	6XV1870-8AH20		1	1 unit	5K1
• Length 3.0 m	A	6XV1870-8AH30		1	1 unit	5K1
• Length 5.0 m	A	6XV1870-8AH50		1	1 unit	5K1
• Length 10 m	A	6XV1870-8AN10		1	1 unit	5K1
• Length 15 m	A	6XV1870-8AN15		1	1 unit	5K1
PROFINET M12 connecting cables, trailing, preassembled at both ends with M12 plugs, angular (pin)						
• Length 3.0 m	C	3RK1902-2NB30		1	1 unit	42D
• Length 5.0 m	C	3RK1902-2NB50		1	1 unit	42D
• Length 10 m	C	3RK1902-2NC10		1	1 unit	42D
PROFINET M12 connecting cables, trailing, preassembled at one end with M12 plugs, angular (one end with pin, one end open)						
• Length 3.0 m	C	3RK1902-2HB30		1	1 unit	42D
• Length 5.0 m	C	3RK1902-2HB50		1	1 unit	42D
• Length 10 m	C	3RK1902-2HC10		1	1 unit	42D
IE FC M12 Plug PRO						
PROFINET M12 plug-in connectors, D-coded with quick-connect technology						
Axial outgoing feeder						
• 1 unit	A	6GK1901-0DB20-6AA0		1	1 unit	5K1
• 8 units	A	6GK1901-0DB20-6AA8		1	8 units	5K1
PROFINET M12 connectors, D-coded, angular	B	3RK1902-2DA00		1	1 unit	42D
IE Panel Feedthrough						
Control cabinet bushing for transition from M12 connection method (D-coded, IP65/IP67) to RJ45 connection method (IP20), 1 pack = 5 units						
	A	6GK1901-0DM20-2AA5		1	5 units	5K2
7/8" connecting cables for power supply						
5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs (axial outgoing feeder), 5-pole, up to max. 50 m						
• Length 1.5 m	A	6XV1822-5BH15		1	1 unit	5K1
• Length 2.0 m	A	6XV1822-5BH20		1	1 unit	5K1
• Length 3.0 m	A	6XV1822-5BH30		1	1 unit	5K1
• Length 5.0 m	A	6XV1822-5BH50		1	1 unit	5K1
• Length 10 m	A	6XV1822-5BN10		1	1 unit	5K1
• Length 15 m	A	6XV1822-5BN15		1	1 unit	5K1
• More special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WW/view/en/26999294						
Trailing power cables, 5 x 1.5 mm ² , preassembled at both ends with 7/8" connectors, angular (one end with socket, one end with pin)						
• Length 3.0 m	C	3RK1902-3NB30		1	1 unit	42D
• Length 5.0 m	C	3RK1902-3NB50		1	1 unit	42D
• Length 10 m	C	3RK1902-3NC10		1	1 unit	42D
Trailing power cables, 5 x 1.5 mm ² , preassembled at one end with 7/8" connector With female insert, angular (one end with socket, one end open)						
• Length 3.0 m	C	3RK1902-3GB30		1	1 unit	42D
• Length 5.0 m	C	3RK1902-3GB50		1	1 unit	42D
• Length 10 m	C	3RK1902-3GC10		1	1 unit	42D
Power cables						
5-core, 5 x 1.5 mm ² , trailing, sold by the meter						
Minimum order quantity 20 m, maximum order quantity 1 000 m						
	A	6XV1830-8AH10		1	1 m	5K2
7/8" connectors						
For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	A	6GK1905-0FA00		1	5 units	5K2
• With female insert, pack of 5	A	6GK1905-0FB00		1	5 units	5K2
• Angular, with female insert, 1 unit	B	3RK1902-3DA00		1	1 unit	42D
• Angular with pin insert, 1 unit	B	3RK1902-3BA00		1	1 unit	42D
7/8" covers, pack of 10	A	6ES7194-3JA00-0AA0		1	10 units	250

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ET 200pro – interface modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 F PN/DP CPU interface modules (continued)						
Twisted pair connecting cables 4 x 2 with RJ45 connectors						
• Length 0.5 m	A	6XV1870-3QE50		1	1 unit	5K1
• Length 1 m	A	6XV1870-3QH10		1	1 unit	5K1
• Length 2 m	A	6XV1870-3QH20		1	1 unit	5K1
• Length 6 m	A	6XV1870-3QH60		1	1 unit	5K1
• Length 10 m	A	6XV1870-3QN10		1	1 unit	5K1
Crossed twisted pair connecting cables 4 x 2 with RJ45 connectors						
• Length 0.5 m	A	6XV1870-3RE50		1	1 unit	5K1
• Length 1 m	A	6XV1870-3RH10		1	1 unit	5K1
• Length 2 m	A	6XV1870-3RH20		1	1 unit	5K1
• Length 6 m	A	6XV1870-3RH60		1	1 unit	5K1
• Length 10 m	A	6XV1870-3RN10		1	1 unit	5K1
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	3RX9802-0AA00		100	10 units	42C
M12 sealing caps with female thread 5 units	A	6ES7194-4JD60-0AA0		1	5 units	250
PROFIBUS M12 connecting cables Preassembled with two 5-pole M12 plugs/sockets, up to max. 100 m						
• Length 1.5 m	A	6XV1830-3DH15		1	1 unit	5K1
• Length 2 m	A	6XV1830-3DH20		1	1 unit	5K1
• Length 3 m	A	6XV1830-3DH30		1	1 unit	5K1
• Length 5 m	A	6XV1830-3DH50		1	1 unit	5K1
• Length 10 m	A	6XV1830-3DN10		1	1 unit	5K1
• Length 15 m	A	6XV1830-3DN15		1	1 unit	5K1
• More special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WW/view/en/26999294						
PROFIBUS M12 bus termination plugs, female inserts	A	6GK1905-0ED00		1	5 units	5K2
PROFIBUS M12 bus termination plugs, pin inserts	A	6GK1905-0EC00		1	5 units	5K2
M12 plug-in connectors, axial outgoing feeder, with pin insert	A	6GK1905-0EA00		1	5 units	5K2
PROFIBUS FC Standard Cable GP Standard type with special design for fast installation, 2-core, shielded Sold by the meter: Delivery unit max. 1 000 m, minimum order quantity 20 m	A	6XV1830-0EH10		1	1 m	5K1
PROFIBUS FC Trailing Cable 2-core, shielded Sold by the meter: Delivery unit max. 1 000 m, minimum order quantity 20 m	A	6XV1830-3EH10		1	1 m	5K2
PROFIBUS FC Food Cable 2-core, shielded Sold by the meter: Delivery unit max. 1 000 m, minimum order quantity 20 m	A	6XV1830-0GH10		1	1 m	5K2
PROFIBUS FC Robust Cable 2-core, shielded Sold by the meter: Delivery unit max. 1 000 m, minimum order quantity 20 m	A	6XV1830-0JH10		1	1 m	5K2
PROFIBUS M12 connectors 5-pole, B-coded, metal enclosure, female insert 1 pack = 5 units	A	6GK1905-0EB00		1	5 units	5K2

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ET 200pro Motor Starters

ET 200pro – I/O modules

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Digital expansion modules						
8 DI digital input modules 24 V DC, with module diagnostics, including bus module Connection module must be ordered separately	A	6ES7141-4BF00-0AA0		1	1 unit	250
8 DI High-Feature digital input modules 24 V DC, with channel diagnostics, including bus module Connection module must be ordered separately	A	6ES7141-4BF00-0AB0		1	1 unit	250
16 DI digital input modules 24 V DC, with module diagnostics, including bus module 6ES7194-4CB50-0AA0 connection modules must be ordered separately	A	6ES7141-4BH00-0AA0		1	1 unit	250
4 DO digital output modules 24 V DC, 2 A, with module diagnostics, including bus module Connection module must be ordered separately	A	6ES7142-4BD00-0AA0		1	1 unit	250
4 DO High-Feature digital output modules 24 V DC, 2 A, with channel diagnostics, including bus module Connection module must be ordered separately	A	6ES7142-4BD00-0AB0		1	1 unit	250
8 DO digital output modules 24 V DC, 0.5 A, with module diagnostics, including bus module Connection module must be ordered separately	A	6ES7142-4BF00-0AA0		1	1 unit	250
Digital input and output modules 4 DI/4 DO 24 V DC, 0.5 A, with module diagnostics, including bus module Connection module must be ordered separately	A	6ES7143-4BF50-0AA0		1	1 unit	250
Digital input and output modules 4 DI/4 DO 24 V DC, 0.5 A, with module diagnostics, including bus module Connection module must be ordered separately	A	6ES7143-4BF00-0AA0		1	1 unit	250
Accessories						
CM IO 4 x M12 connection modules 4 M12 sockets for connection of digital or analog sensors of actuators to ET 200pro	A	6ES7194-4CA00-0AA0		1	1 unit	250
CM IO 4 x M12 Invers connection modules 4 M12 sockets for connection of digital actuators to ET 200pro (4 DO and 4 DO HF); 2 x M12 with single assignment, 2 x M12 With double assignment	A	6ES7194-4CA50-0AA0		1	1 unit	250
CM IO 4 x M12 P connection modules 4 M12 sockets for connection of digital sensors or actuators to ET 200pro Plastic version	A	6ES7194-4CA10-0AA0		1	1 unit	250
CM IO 8 x M12 connection modules 8 M12 sockets for connection of digital sensors or actuators to ET 200pro	A	6ES7194-4CB00-0AA0		1	1 unit	250
CM IO 8 x M12 P connection modules 8 M12 sockets for connection of digital sensors or actuators to ET 200pro Plastic version	A	6ES7194-4CB10-0AA0		1	1 unit	250
CM IO 8 x M12D connection modules 8 M12 sockets for connection of digital sensors or actuators to ET 200pro	A	6ES7194-4CB50-0AA0		1	1 unit	250
CM IO 8 x M8 connection modules 8 M8 sockets for connection of digital sensors or actuators to ET 200pro	A	6ES7194-4EB00-0AA0		1	1 unit	250
CM IO 2 x M12 connection modules 2 M12 8-pole sockets; to be used with: EM 8 DI 24 V DC and 8 DO 24 V DC/0.5 A	A	6ES7194-4FB00-0AA0		1	1 unit	250
CM IO 1 x M23 connection modules 1 M23 socket, to be used with: EM 8 DI 24 V DC and 8 DO 24 V DC/0.5 A	A	6ES7194-4FA00-0AA0		1	1 unit	250
Module labeling plates For color coding of CM IOs in the colors white, red, blue and green; pack of 100	A	6ES7194-4HA00-0AA0		1	400 units	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	3RX9802-0AA00		100	10 units	42C
Labels 20 x 7, pastel turquoise, pack of 340	D	3RT1900-1SB20		100	340 units	41B
M12 Y-shaped coupler plugs For double connection of sensors with a single cable, 5-pole Cannot be used for F-DI4/8	A	6ES7194-1KA01-0XA0		1	1 unit	250
M12 Y-cables For double connection of I/Os with a single cable to ET 200, 5-pole	A	6ES7194-6KA00-0XA0		1	1 unit	250
M8 sealing caps For IP67 modules	A	3RK1901-1PN00		100	10 units	42C
Analog expansion modules						
4AI U analog input modules High-Feature, ± 10 V; ± 5 V; 0 ... 10 V; 1 ... 5 V, channel diagnostics Including bus module. Connection module must be ordered separately	A	6ES7144-4FF01-0AB0		1	1 unit	250
4AI I analog input modules High-Feature, ± 20 mA; 0 ... 20 mA; 4 ... 20 mA, channel diagnostics Including bus module. Connection module must be ordered separately	A	6ES7144-4GF01-0AB0		1	1 unit	250

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ET 200pro – I/O modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Analog expansion modules (continued)						
4AI RTD analog input modules High-Feature; resistors: 150, 300, 600 and 3 000 Ω; resistance thermometers: Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni200, Ni500 and Ni1000; channel diagnostics including bus module. Connection module must be ordered separately.	A	6ES7144-4JF00-0AB0		1	1 unit	250
4AI TC analog input modules High-Feature; thermocouples: Type B, E, J, K, L, N, R, S, T; voltage measurement: ±80 mV; channel diagnostics, including bus module Connection module must be ordered separately.	A	6ES7144-4PF00-0AB0		1	1 unit	250
4AO U analog output modules High-Feature, ±10 V; 0 ... 10 V; 1 ... 5 V, channel diagnostics, including bus module Connection module must be ordered separately.	A	6ES7145-4FF00-0AB0		1	1 unit	250
4AO I analog output modules High-Feature, ±20 mA; 0 ... 20 mA; 4 ... 20 mA, channel diagnostics, including bus module. Connection module must be ordered separately.	A	6ES7145-4GF00-0AB0		1	1 unit	250
Accessories						
CM IO 4 x M12 connection modules 4 M12 sockets for connection of digital or analog sensors of actuators to ET 200pro	A	6ES7194-4CA00-0AA0		1	1 unit	250
M12 compensation plugs With integrated Pt100 for reference point compensation when connection thermocouples	A	6ES7194-4AB00-0AA0		1	1 unit	250
Module labeling plates For color coding of CM IOs in the colors white, red, blue and green; pack of 100	A	6ES7194-4HA00-0AA0		1	400 units	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	3RX9802-0AA00		100	10 units	42C
Fail-safe digital expansion modules						
8/16 F-DI PROFIsafe fail-safe digital input modules 24 V DC, including bus module. Connection module must be ordered separately	A	6ES7148-4FA00-0AB0		1	1 unit	241
4/8 F-DI, 4 F-DO 2 A fail-safe digital input/output modules 24 V DC, including bus module. Connection module must be ordered separately	A	6ES7148-4FC00-0AB0		1	1 unit	241
F-Switch PROFIsafe fail-safe solid-state modules Three fail-safe PP-switching outputs for safe switching of the backplane busbars (2L+, F0, F1); two fail-safe digital inputs, 45 mm; usable up to Cat. 4 (EN 954)/SIL 3 (IEC 61508)	A	6ES7148-4FS00-0AB0		1	1 unit	241
Accessories						
Connection modules For F-Switch PROFIsafe fail-safe solid-state modules	A	6ES7194-4DA00-0AA0		1	1 unit	241
Connection modules For the 4/8 F-DI/4 -DO, 24 V DC/2 A fail-safe solid-state module	A	6ES7194-4DC00-0AA0		1	1 unit	241
Connection modules For the 8/16 F-DI, 24 V DC/2 A fail-safe solid-state module	A	6ES7194-4DD00-0AA0		1	1 unit	241
PROFIBUS DP IM 154-2 interface modules Including termination module	A	6ES7154-2AA01-0AB0		1	1 unit	250
PROFINET IM 154-4 PN interface modules Including termination module	A	6ES7154-4AB10-0AB0		1	1 unit	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	►	3RX9802-0AA00		100	10 units	42C
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
Accessories						
CM PM-E ECOFAST connection modules For resupply of 24 V load voltage One ECOFAST Cu terminal	A	6ES7194-4BA00-0AA0		1	1 unit	250
CM PM-E Direct connection modules For resupply of 24 V load voltage Up to two M20 screwed cable glands	A	6ES7194-4BC00-0AA0		1	1 unit	250
CM PM-E 7/8" connection modules For resupply of 24 V load voltage, 1 x 7/8"	A	6ES7194-4BD00-0AA0		1	1 unit	250
CM PM-E PP connection modules For resupply of 24 V load voltage, 2 x push-pull, with spare fuse	A	6ES7194-4BE00-0AA0		1	1 unit	250
Spare fuses 12.5 A quick, for interface and power modules Pack of 10	A	6ES7194-4HB00-0AA0		1	10 units	250

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – I/O modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
PM-E power modules (continued)						
PROFIBUS ECOFAST Hybrid Cable – copper						
Trailing cables (PUR sheath) with two copper conductors, shielded, for PROFIBUS DP and four copper cores with 1.5 mm ²						
Non-assembled						
• Length 50 m	A	6XV1830-7AN50		1	1 unit	5K2
• Length 100 m	A	6XV1830-7AT10		1	1 unit	5K2
Assembled						
With ECOFAST plug and socket						
• Length 1.5 m	A	6XV1830-7BH15		1	1 unit	5K2
• Length 3 m	A	6XV1830-7BH30		1	1 unit	5K2
• Length 5 m	A	6XV1830-7BH50		1	1 unit	5K2
• Length 10 m	A	6XV1830-7BN10		1	1 unit	5K2
• Length 15 m	A	6XV1830-7BN15		1	1 unit	5K2
• Length 20 m	A	6XV1830-7BN20		1	1 unit	5K2
• Length 25 m	A	6XV1830-7BN25		1	1 unit	5K2
• Length 30 m	A	6XV1830-7BN30		1	1 unit	5K2
• Length 35 m	A	6XV1830-7BN35		1	1 unit	5K2
• Length 40 m	A	6XV1830-7BN40		1	1 unit	5K2
• Length 45 m	D	6XV1830-7BN45		1	1 unit	5K2
• Length 50 m	D	6XV1830-7BN50		1	1 unit	5K2
PROFIBUS ECOFAST Hybrid Cable GP						
Trailing cable with 4 x Cu and 2 x Cu, shielded with UL approval						
Non-assembled						
• Length 50 m	B	6XV1860-4PN50		1	1 unit	5K2
• Length 100 m	A	6XV1860-4PT10		1	1 unit	5K2
Assembled						
With ECOFAST plug and socket						
• Length 1.5 m	A	6XV1860-3PH15		1	1 unit	5K2
• Length 3 m	A	6XV1860-3PH30		1	1 unit	5K2
• Length 5 m	D	6XV1860-3PH50		1	1 unit	5K2
• Length 10 m	A	6XV1860-3PN10		1	1 unit	5K2
• Length 15 m	A	6XV1860-3PN15		1	1 unit	5K2
• Length 20 m	A	6XV1860-3PN20		1	1 unit	5K2
• Length 25 m	A	6XV1860-3PN25		1	1 unit	5K2
• Length 30 m	A	6XV1860-3PN30		1	1 unit	5K2
• Length 35 m	A	6XV1860-3PN35		1	1 unit	5K2
• Length 40 m	A	6XV1860-3PN40		1	1 unit	5K2
• Length 45 m	A	6XV1860-3PN45		1	1 unit	5K2
• Length 50 m	A	6XV1860-3PN50		1	1 unit	5K2
ECOFAST plug connectors, can be preassembled						
Sockets; Order unit 5 units						
	A	6GK1905-0CB00		1	5 units	5K2
PROFIBUS ECOFAST hybrid plugs, angular						
With 2 x Cu shielded and 4 x Cu 1.5 mm ²						
5 units; with mounting instructions; female insert						
	A	6GK1905-0CD00		1	5 units	5K2
Push-pull connectors						
For 1L+/ 2L+, non-assembled						
	A	6GK1907-0AB10-6AA0		1	1 unit	5K2
Covers for push-pull sockets						
5 units						
	A	6ES7194-4JA50-0AA0		1	5 units	250

Motor Starters for Use in the Field, High Degree of Protection ET 200pro Motor Starters

ET 200pro – I/O modules

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
PM-E power modules (continued)						
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 1 000 m	A	6XV1830-8AH10		1	1 m	5K2
Accessories for CM PM-E 7/8"						
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm ² , trailing, preassembled With two 7/8" plugs, 5-pole						
• Length 1.5 m	A	6XV1822-5BH15		1	1 unit	5K1
• Length 2.0 m	A	6XV1822-5BH20		1	1 unit	5K1
• Length 3.0 m	A	6XV1822-5BH30		1	1 unit	5K1
• Length 5.0 m	A	6XV1822-5BH50		1	1 unit	5K1
• Length 10 m	A	6XV1822-5BN10		1	1 unit	5K1
• Length 15 m	A	6XV1822-5BN15		1	1 unit	5K1
7/8" connectors With axial cable feeder • With female insert, pack of 5	A	6GK1905-0FB00		1	5 units	5K2
PM-O power module outputs						
PM-O power modules 2 x 24 V DC For tapping the 24 V load voltage 2L+ and the solid-state/ Sensor supply voltage 1L+ within an ET 200pro station	A	6ES7148-4CA60-0AA0		1	1 unit	250
Accessories						
CM PM-O PP connection modules For tapping 24 V load voltage and solid-state/sensor supply voltage 2 x push-pull plug-in connectors	A	6ES7194-4BH00-0AA0		1	1 unit	250
Push-pull connectors For 1L+/ 2L+, non-assembled	A	6GK1907-0AB10-6AA0		1	1 unit	5K2
Covers for push-pull sockets 5 units	A	6ES7194-4JA50-0AA0		1	5 units	250
ET 200pro pneumatic interfaces						
EM 148-P pneumatic interfaces • DO 16 x P/CPV 10 for direct connection of the FESTO valve terminals CPV 10 16 DO x P	A	6ES7148-4EA00-0AA0		1	1 unit	250
• DO 16 x P/CPV 14 for direct connection of the FESTO valve terminals CPV 14 16 DO x P	A	6ES7148-4EB00-0AA0		1	1 unit	250
• FESTO valve terminals CPV 10						
• FESTO valve terminals CPV 14						
		Available from Festo Available from Festo, see Chapter 16 "Appendix" → "External Partners"				
SIMATIC RF170C						
SIMATIC RF170C communication modules For connection of SIMATIC Ident systems to ET 200pro. The readers (SLGs) of all RFID systems and the MV400 code reading systems can be operated on SIMATIC RF170C.	A	6GT2002-0HD00		1	1 unit	572
Accessories						
Connection blocks for SIMATIC RF170C For connecting 2 readers through M12 plug-in connectors	A	6GT2002-1HD00		1	1 unit	572
Reader cables for MOBY U Material PUR, CMG approval, trailing • Length 2 m	A	6GT2091-4FH20		1	1 unit	572
• Length 5 m	A	6GT2091-4FH50		1	1 unit	572
Reader cables for MOBY D Material PUR, CMG approval, trailing, 2 m	A	6GT2691-4FH20		1	1 unit	572
Reader cables for SIMATIC RF200 / RF300 / RF600 / MV400 Or MOBY U / D extension cable and SIMATIC RF200 / RF300 / RF600 / MV400, material PUR, CMG approval, trailing, straight connector • Length 2 m	A	6GT2891-4FH20		1	1 unit	572
• Length 5 m	A	6GT2091-4FH50		1	1 unit	572
• Length 10 m	A	6GT2891-4FN10		1	1 unit	572
• Length 20 m	A	6GT2891-4FN20		1	1 unit	572
• Length 50 m	A	6GT2891-4FN50		1	1 unit	572
• Length 2 m, plug angular at the reader	A	6GT2891-4JH20		1	1 unit	572
M12 sealing caps for unused reader connections Minimum order quantity 10 units, price per 100 units	►	3RX9802-0AA00		100	10 units	42C
DVD "RFID Systems Software & Documentation"	B	6GT2080-2AA20		1	1 unit	572

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro PS (3-phase, 24 V DC/8 A)

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Stabilized power supplies						
SIMATIC ET 200pro PS Stabilized power supply in the construction and design of the distributed I/O system, with the option of looping the power to other modules; with degree of protection IP67 Input: 3 AC 400-480 V Output: 24 V DC/8 A	A	6ES7148-4PC00-0HA0		1	1 unit	589
Accessories						
Power connection plugs For connection to the distributed I/O system • For X1 (6 mm ²) • For X2 (6 mm ²)	B	3RK1911-2BE30		1	1 unit	42D
	B	3RK1911-2BF10		1	1 unit	42D
Sealing caps For 9-pole power socket connectors X2 (pack of 10)	B	3RK1902-0CK00		1	1 unit	42D

Motor Starters for Use in the Field, High Degree of Protection ET 200pro Motor Starters

ET 200pro FC frequency converters

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
ET 200pro FC frequency converters						
380 ... 480 V 3 AC, +10 %/-10 %, 47 ... 63 Hz						
Overload: 150 %, 60 s; 200 %, 3 s						
Rating: 1.1 kW (0 ... 55 °C), 1.5 kW (0 ... 45 °C)						
ET 200pro FC standard frequency converters	C	6SL3235-0TE21-1RB0		1	1 unit	337
ET 200pro FC frequency converters with integrated safety functions	C	6SL3235-0TE21-1SB0		1	1 unit	337
Accessories for ET 200pro FC frequency converters						
Backplane bus modules for accommodating the frequency converter ¹⁾	X	6SL3260-2TA00-0AA0		1	1 unit	337
Connector set for energy supply, HAN Q4/2						
• 2.5 mm ²	B	3RK1911-2BE50		1	1 unit	42D
• 4.0 mm ²	B	3RK1911-2BE10		1	1 unit	42D
• 6.0 mm ²	B	3RK1911-2BE30		1	1 unit	42D
Motor cables preassembled at one end						
for motors with brake and temperature sensor with HAN Q8 connector, shielded						
Cross-section 1.5 mm ²						
• Length 1.5 m		ZKT: 70020501000150 HTG: 61 88 201 0288				
• Length 3 m		ZKT: 70020501000300 HTG: 61 88 201 0289				
• Length 5 m		ZKT: 70020501000500 HTG: 61 88 201 0290				
• Length 10 m		ZKT: 70020501001000 HTG: 61 88 201 0299				
Frequency converter plugs						
For motor cable, shielded, HAN Q8						
Cross-section 1.5 mm ²						
		ZKT:10032001 HTG: 61 83 401 0131 ZKT: Available from KnorrTec, see Chapter 16 "Appendix" → "External Partners" HTG: Available from Harting, see Chapter 16 "Appendix" → "External Partners"				
Further selected accessories are available from Siemens Solution Partners. Select "Distributed Field Installation System" as technology in the "Solution Partner Finder". www.siemens.com/automation/partnerfinder						
Power jumper plugs	A	3RK1922-2BQ00		1	1 unit	42D
For 400 V power loop-through connection to the following 400 V modules						
IOP Handheld	B	6SL3255-0AA00-4HA0		1	1 unit	343
For use with SINAMICS G120, SINAMICS G120C, SINAMICS G120P, SINAMICS G110D, SINAMICS G120D, SINAMICS G110M, SINAMICS S110 or SIMATIC ET 200pro FC						
Included in the scope of supply:						
• IOP						
• Handheld enclosure						
• Batteries (4 × AA)						
• Charger (international)						
• RS 232 connecting cable (length 3 m, only used in combination with SINAMICS G120, SINAMICS G120C, SINAMICS G120P and SINAMICS S110 ²⁾)						
• USB cable (length 1 m)						
RS 232 interface cable	B	3RK1922-2BP00		1	1 unit	42D
With optical interface for connection of the ET 200pro FC frequency converter to the IOP Handheld (length 2.5 m) ¹⁾						
USB interface cable	B	6SL3555-0PA00-2AA0		1	1 unit	346
For communication with a PC (2.5 m long)						
Memory card (MMC)	B	6SL3054-4AG00-0AA0		1	1 unit	771
For the ET 200pro FC parameter settings						
If required there is space on the memory card for the complete parameterization of the frequency converter. For service purposes the system is immediately ready for use after replacement of the frequency converter and acceptance of the memory card.						

¹⁾ Absolutely essential for operation of the converter.

²⁾ For use in combination with SINAMICS G110D, SINAMICS G120D, SINAMICS G110M or SIMATIC ET 200pro FC, the RS 232 connecting cable with optical interface is required (Article No.: 3RK1922-2BP00). The cable must be ordered separately.

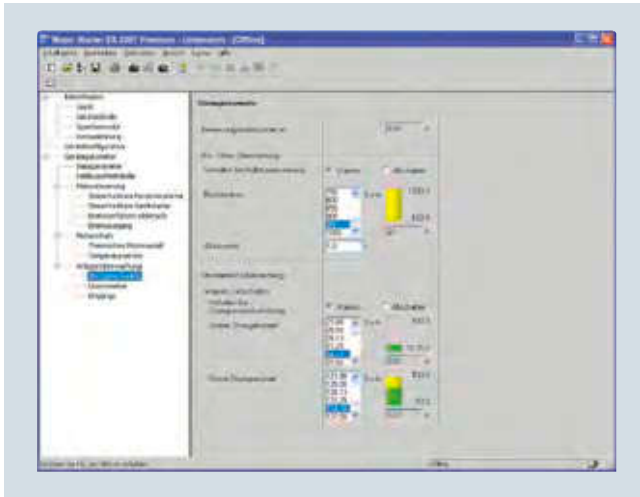
Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro software

Overview

Motor Starter ES

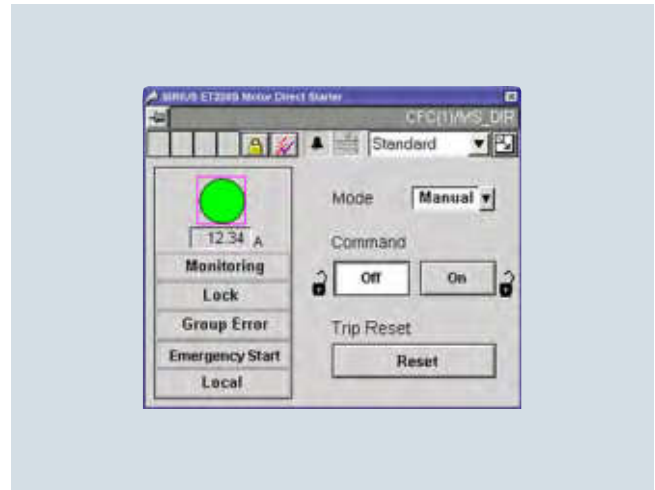


Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

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

Detailed information on the Motor Starter ES software, see [Chapter 14 "Parameterization, Configuration and Visualization with SIRIUS"](#).

SIRIUS motor starter block library for SIMATIC PCS 7



Faceplate of the motor block

With the SIRIUS motor starter PCS 7 block library, SIRIUS ET 200S and ET 200pro motor starters can be easily and simply integrated into the SIMATIC PCS 7 process control system.

The SIRIUS motor starter PCS 7 block library contains the diagnostics and driver blocks corresponding to the SIMATIC PCS 7 diagnostics and driver concept as well as the elements (symbols and faceplates) required for operator control and process monitoring.

Detailed information about the SIRIUS motor starter block library for SIMATIC PCS 7, see [Chapter 14 "Parameterization, Configuration and Visualization with SIRIUS"](#).

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

General data

Overview



SIRIUS M200D AS-i Basic motor starters with manual local operation

The intelligent, highly flexible SIRIUS M200D motor starters for distributed configurations are designed to start, monitor and protect motors and loads up to 5.5 kW.

The M200D motor starters are available in four versions:

M200D AS-i Basic	M200D AS-i Standard	M200D PROFIBUS	M200D PROFINET
Motor control with AS-i communication		PROFIBUS	PROFINET
Mechanical or electronic switching	✓	✓	✓
Electronic switching with soft starter functionality	--	✓	✓

✓ Function available

-- Function not available

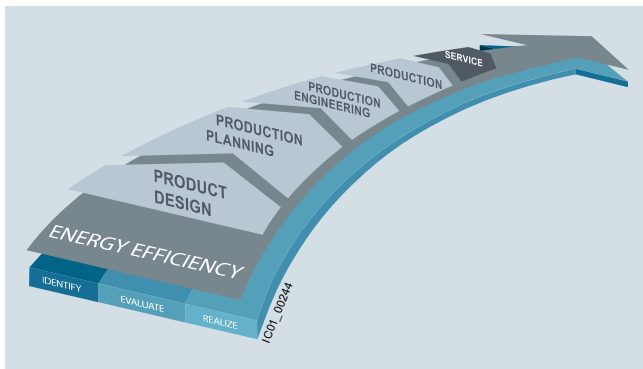
Basic functionality

All M200D motor starter versions have the following functions:

- Available as direct-on-line and reversing starters in a rugged design
- Electromechanical or electronic switching version
- Little variance – only 2 device versions up to 5.5 kW thanks to wide range setting
- All versions have the same enclosure dimensions
- Degree of protection IP65
- Quick and fail-safe wiring of system and motor cables using ISO 23570 plug-in connector technology (Q4/2 and Q8/0)
- Robust and widely used M12 connection method for digital inputs and outputs
- Integrated feeder connector monitoring
- Full motor protection through overload protection and a temperature sensor (PTC, TC)
- Short-circuit and overload protection integrated
- Integrated repair switch lockable with 3 locks (multi-level service)
- Uniform wiring to the SINAMICS G110D, SINAMICS G110M and SINAMICS G120D frequency inverters and to the ET 200pro distributed I/O system
- Extensive diagnostics concept using LEDs
- Optional integrated manual local control with key-operated switch (ordering option)
- Optionally available brake actuation with voltages from 180 V DC (no rectifier needed in motor) or 230/400 V AC (order versions)

Benefits

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency ([see www.siemens.com/sirius/energysaving](https://www.siemens.com/sirius/energysaving)).

M200D motor starters contribute to energy efficiency as follows:

- Energy management
Provision of energy data (current) by bus to higher-level systems using PROFlenergy ([see "PROFINET M200D Motor Starters", page 9/46](#))
- Elimination of energy consumption in dead times through disconnection using PROFlenergy ([see "PROFINET M200D Motor Starters", page 9/46](#))
- Current management
With solid-state soft starters, avoidance of current peaks and therefore reduction of the load on the grid and the mechanical system
- Technology-reduced inherent power loss as speed-controlled drive systems
- Solid-state modules equipped with soft start technology with bypass contactor, resulting in lower power losses than with conventional soft starters after start up

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

General data

Product advantages

M200D motor starters provide the following advantages for customers:

- High plant availability through plug-in capability of the main circuit, communication and IOs – relevant for installing and replacing devices
- Cabinet-free construction and near-motor installation thanks to the high degree of protection IP65
- The motor starters record the actual current flow for the parameterizable electronic motor overload protection. Reliable messages concerning the overshooting or undershooting of setpoint values for comprehensive motor protection. All motor protection functions can be defined by simple parameterization
- Low stock levels and low order costs through a wide setting range for the current or a wide setting range for the electronic motor protection of 1:10 (only 2 device versions up to 5.5 kW)
- The integrated wide range for the current enables a single device to cover numerous standard motors of different sizes
- Comprehensive offering of accessories, including ready-assembled cables
- The M200D motor starters can be installed with a few manual steps. The integrated plug-in technology enables far lower wiring outlay: Preassembled cables can be plugged directly onto the motor starter module
- Easy and user-friendly installation because all versions have the same enclosure dimensions
- Fast and user-friendly commissioning using optional manual local operation
- Increase of process speed through integrated functions such as "Quick Stop" and "Disable Quick Stop", e.g. at points and crossings
- Optional manual local control with momentary-contact and latching operation for easier start up and easier servicing

Application

The high degree of protection IP65 makes the M200D motor starters suitable in particular for use on extensive conveying systems such as are found in mail sorting centers, airports, automotive factories and the packing industry.

For simple drive tasks, particularly in conveyor applications, the new SINAMICS G110D frequency inverter series with a performance range from 0.75 kW to 7.5 kW and degree of protection IP65 is the ideal partner for the M200D motor starters.

The SINAMICS G110D frequency inverters permit continuous speed control of three-phase asynchronous motors and meet the requirements of conveyor applications with frequency control (for more information [see Catalog D 31](#)).

For simple drive tasks in conveyor applications requiring a frequency inverter that is integrated in the motor, the SINAMICS G110M with a performance range from 0.37 kW to 4 kW and degree of protection IP65/66 is the ideal partner. The SINAMICS G110M is available individually as a frequency inverter for self-assembly and pre-mounted on SIMOGEAR geared motors, and with its conveyor-specific functions it satisfies the requirements of conveyor technology applications (further information [see Catalog D 31](#)).

Overview

For motor control using AS-Interface there are the following M200D motor starter versions: SIRIUS M200D AS-i Basic and SIRIUS M200D AS-i Standard (basic functionality [see page 9/37 "SIRIUS M200D Motor Starters" → "General Data" → "Overview"](#)).

SIRIUS M200D AS-i Basic

Functionality

- Easy and fast on-site start up through parameterization of local setting knobs (DIP switches) and rotary coding switches for adjusting the rated operational current. The rotary coding switch has an OFF position for deactivating the overload protection with the help of the thermal motor model when using a temperature sensor

Communications

- AS-i communication with A/B addressing according to Spec V2.1
- The AS-i bus is connected cost-effectively using an M12 connection on the device. Of the 4 digital inputs, 2 are contained in the process image and can therefore be used in the PLC program. The other 2 inputs are locally effective and permanently assigned with functions
- The LEDs can provide comprehensive diagnostics of the device on the spot. In addition to diagnostics using the PAE process image, the device can create up to 15 different diagnostic signals per slave. The message with the highest priority can be read out through the AS-i communication. This is yet another new development which distinguishes the M200D AS-i Basic motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the system

SIRIUS M200D AS-i Standard

The intelligent, highly flexible M200D AS-i Standard motor starters in A/B technology are designed to start and protect motors and loads up to 5.5 kW. They are available in direct-on-line or reversing starter versions, in a mechanical version and also an electronic version (the latter with soft start function).

The M200D AS-i Standard motor starter is the most functional member of the SIRIUS motor starter family in the high degree of protection IP65 for AS-i communication. Consistency with other products of the SIRIUS M200D motor starter range and with the frequency converter and ET 200pro I/O system is assured.

Functionality

- AS-i communication with A/B addressing according to Spec 3.0
- Electronic version also with soft start function
- AS-i slave profile 7AE/7A5 with process image 6E/4A
- Full TIA integration: All digital inputs and outputs exist in the cyclic process image and are visible through AS-i, providing maximum flexibility and best adaptability to the application
- Additionally expanded diagnostics using data record through AS-i bus
- Complete plant monitoring using statistics data record and current value monitoring by means of data records
- Parameterization through AS-i bus with the help of data records or an expanded process image from the user program
- Control of the motor starter using a command data record from the user program
- Flexible assignment of the digital inputs and outputs with all available assignable input actions
- Parameterization using Motor Starter ES at the local interface (ordering option for start up software)
- Diagnostics with the help of Motor Starter ES (ordering option for start up software)

Mounting and installation

The M200D motor starters can be installed with a few manual steps. The integrated plug-in technology enables far lower wiring outlay. Connecting cables can be plugged directly onto the motor starter module. Swapping of the connecting wires and malfunctions within the plant are prevented by preassembled cables. The AS-i bus is connected cost-effectively using an M12 connection on the device. All versions have identical enclosure dimensions for easier system design and conversion.

Parameterization and configuration

The particularly robust M200D AS-i Standard motor starter is characterized by numerous functions which can be flexibly parameterized. It enables highly flexible parameterization through the AS-i bus using data records from the user program as well as user-friendly local parameterization using the Motor Starter ES start up software through the local point-to-point interface.

Functions can be flexibly assigned to the digital inputs and outputs, adapting them to all possible conveyor applications. All motor protection functions, limit values and reactions can be defined by parameterization. The AS-i Standard is unique. In its 6E/4A process image the motor starter sends all 4 digital inputs and the digital output via the process image to the PLC in cyclic mode. System configuration and system documentation are facilitated not least by a number of CAX data.

Operation

The new motor starter generation is characterized by high functionality, maximum flexibility and the highest level of automation.

All digital inputs and outputs exist in the cyclic process image. All limit values for monitoring functions and their reactions are parameterizable and therefore adaptable to the application. The motor starters record the actual current flow. Evaluating the current of the parameterizable solid-state overload protection increases the availability of the drives, as do reliable messages concerning the overshooting or undershooting of setpoint values.

Diagnostics and maintenance

The M200D sets new standards for diagnostics. In addition to diagnostics using the PAE process image and diagnostics by "parameter echo" (up to 15 different diagnostic signals per slave can be read out via AS-i communication), the possibility of reading out diagnostic data records is unique on the market.

The AS-i Standard is recommended in particular for expansive and highly automated system components because the possibility of monitoring devices and systems with data records (statistical data, measured values and device diagnostics) provides an in-depth view of the plant from the control room, guaranteeing the monitoring process and increasing plant availability.

The integrated maintenance timer can be used to implement preventative maintenance and avoid plant downtimes through look-ahead servicing.

Local control of a drive is possible using the ordering option with integrated manual operation. This is yet another new development which distinguishes the M200D AS-i Standard motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the plant.

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface

General data



SIRIUS M200D
AS-i Basic

SIRIUS M200D
AS-i Standard

Device functions (firmware features)

Slave on the bus

Fieldbus	✓ AS-i	
Slave type	✓ A/B acc. to Spec 2.1	✓ A/B acc. to Spec 3.0
Profile	✓ 7.A.E	✓ 7.A.E & 7.A.5
Number of assigned AS-i addresses on the bus	✓ 1	✓ 2
Number of stations per AS-i master	✓ Max. 62 devices	✓ Max. 31 devices
AS-i master profile	✓ M3 and higher	✓ M4 and higher

Parameterization

DIP switches	✓	--
Potentiometer for rated operational current	✓	--
Motor Starter ES	--	✓
Data records through AS-i	--	✓

Diagnostics

Diagnostics through parameter channel	✓	
Acyclic through data records	--	✓
Expanded process image PAE 4 bytes	--	✓

Process image

Process image	✓ 4E/3A	✓ 6E/4A
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Data channels

Local optical interface (manual local)	✓	
AS-i bus	✓	
Motor Starter ES through local interface	--	✓
Motor Starter ES through bus	--	

Data records¹⁾ (acyclic)

Parameterization	--	✓
Diagnostics	--	✓
Measured values	--	✓
Statistics	--	✓
Commands	--	✓

Inputs

Number	✓ 4	
• Of these in the process image	✓ 2 through AS-i	✓ 4 through AS-i
Input action	✓ Permanently assigned functions, see manual ²⁾	✓ Parameterizable: flexible
Quick Stop	✓ Permanent function: latching, edge-triggered	✓ Parameterizable function: latching (edge-triggered), non-latching (level-triggered)

Outputs

Number	✓ 1	
Output action	✓ Permanent function: assigned with group fault	✓ Parameterizable: function, see manual ³⁾

Brake output

180 V DC / 230/400 V AC / none	✓	
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Motor protection

Overload protection	✓ Electronic, wide range 1:10	
Short-circuit protection	✓	
Full motor protection	✓	
Temperature sensor	✓ Parameterizable using DIP switches: PTC or Thermoclick or deactivated	✓ Parameterizable using Motor Starter ES, data record: PTC or Thermoclick or deactivated

✓ Function available

-- Function not available

¹⁾ The data records are a reduced selection compared with PROFIBUS/PROFINET.

²⁾ <http://support.automation.siemens.com/WW/view/en/35016496>

³⁾ <http://support.automation.siemens.com/WW/view/en/38722160>



SIRIUS M200D
AS-i Basic

SIRIUS M200D
AS-i Standard

Device functions (firmware features)

Device functions

Repair switch	✓	
Current limit monitoring bottom	--	✓ Parameterizable
Current limit monitoring top	--	✓ Parameterizable
Zero current detection	✓ Permanent function: disconnection, less than 18.75 % of the rated operational current I_e	✓ Parameterizable
Blocking current	✓ Permanent function: starting up of the motor: tripping limit up to 800 % of the rated operational current I_e for 10 s Active operation: threshold for tripping "blocking current" up to 400 % of the rated operational current I_e	✓ Parameterizable
Unbalance	✓ Permanent function: up to 30 % of the rated operational current I_e (only mechanical MS)	✓ Parameterizable
Load type	✓ Permanent function: 3-phase	✓ Parameterizable: 1 and 3-phase
Shutdown class	✓ Parameterizable using DIP switches: CLASS 10/deactivated	Parameterizable using Motor Starter ES, data record: CLASS 5, 10, 15, 20
Protection against voltage failure	✓	✓ Parameterizable: activated/deactivated
Soft starter control function		
Soft start function	--	✓ Only solid-state version
Bypass function	--	✓ Only solid-state version

- ✓ Function available
 -- Function not available

Application

The M200D AS-i standard is particularly suitable for highly automated applications in conveyor systems, which require that devices and systems be monitored to prevent or limit plant downtime. The option of planning the functions of the motor starter or its interfaces also makes fine-adjustment to the function of the motor starter in the application possible and hence provides for extreme flexibility.

For use of SIRIUS M200D motor starters in conjunction with highly energy-efficient IE3 motors, please observe the information on dimensioning and configuring in the "Configuration Manual for SIRIUS Controls with IE3 motors".

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface

General data

Technical specifications

Type		M200D motor starters			
		AS-i Basic electromechanical switching	AS-i Basic electronic switching	AS-i Standard electromechanical switching	AS-i Standard electronic switching
		DSte / RSte	sDSte / sRSte	DSte / RSte	sDSSSte / sRSSSte
Technology designation ¹⁾					
Mechanics and environment					
Mounting dimensions (W x H x D)	mm	294 x 215 x 159			
Permissible ambient temperature					
• During operation	°C	-25 ... +55			
• During storage	°C	-40 ... +70			
Weight	g	2 880 / 3 130	3 220 / 3 420	2 880 / 3 130	3 220 / 3 420
Permissible mounting position		Vertical, horizontal, lying			
Vibration resistance acc. to IEC 60068 Part 2-6	g	2			
Shock resistance					
• Acc. to IEC 60068 Part 2-27	g/ms	12/11 half-sine			
• Without influencing the contact position	g/ms	9.8/5 or 5.9/10			
Degree of protection acc. to IEC 529		IP65			
Installation altitude					
• Up to 1 000 m		No derating			
• Up to 2 000 m		1 % per 100 m			
Cooling		Convection			
Protection class IEC 536 (VDE 0106-1)		1			
Electrical specifications					
Control circuit					
Operational voltage U_{AS-i}	V DC	26.5 ... 31.6			
Control supply voltage U_{aux}	V DC	20.4 ... 28.8			
Power consumption from AS-i (incl. 200 mA sensor supply)	mA	< 300			
Power consumption from U_{aux} (without digital output)					
• Max.	mA	155	15 (direct-on-line)/ 175 (reversing)	155	15 (direct-on-line)/ 175 (reversing)
• Typ.	mA	75	10 (direct-on-line)/ 75 (reversing)	75	10 (direct-on-line)/ 75 (reversing)
Main circuit					
Maximum power of three-phase motors at 400 V AC	kW	5.5	4	5.5	5.5
Rated operational voltage U_e					
• Approval acc. to EN 60947-1	V AC	400 (50/60 Hz)			
• Approval acc. to UL and CSA	V AC	600 (50/60 Hz)	480 (50/60 Hz)	600 (50/60 Hz)	480 (50/60 Hz)
• Rated operational current range	A	0.15 ... 2 / 1.5 ... 12	--	0.15 ... 2 / 1.5 ... 12	--
• Rated operational current range for soft start	A	--			0.15 ... 2 / 1.5 ... 12
• Rated operational current range for direct start	A	--	0.15 ... 2 / 1.5 ... 9	--	0.15 ... 2 / 1.5 ... 9
Rated operational current for starters I_e at 400 V AC					
• 400 V at AC-1 / 2 / 3	A	12	--	12	--
• 500 V at AC-1 / 2 / 3	A	9	--	9	--
• 400 V at AC-4	A	4	--	4	--
• 400 V at AC-53a	A	--	9	--	12 for soft starting 9 for direct-on-line starting
Mechanical endurance of contactor	Operating cycles	30 million	--	30 million	--
Trip class		CLASS 10		CLASS 5, 10, 15, 20	
Type of coordination acc. to IEC 60947-4-1		1 (2 for device version 2A)	1	1 (2 for device version 2A)	1
Permissible switching frequency		See manual ³⁾⁴⁾			
Rated ultimate short-circuit breaking capacity I_q					
• At 400 V AC	kA	50			
• At 500 V AC	kA	50 ²⁾	20 ²⁾	50	20 ²⁾
Short-circuit protection					
• At $I_{emax} = 2$ A		Integrated, 2 x 13 $I_e = 26$ A			
• At $I_{emax} = 9/12$ A		Integrated, 2 x 13 $I_e = 208$ A			
Brake actuation (option)					
Operational voltage	V	230/400 AC or 180 DC			
Uninterrupted current	A	< 0.5 at 230/400 V AC, < 0.8 at 180 V DC			
Short-circuit protection		Yes, 1 A melting fuse			

¹⁾ DS Direct-on-line starter
 RS Reversing starter
 DSS .. Direct soft starter
 RSS .. Reversing soft starter
 te Full motor protection (thermal + electronic)
 s Electronic switching with semiconductor.

²⁾ Only systems with grounded neutral point permitted.

³⁾ <http://support.automation.siemens.com/WW/view/en/35016496>

⁴⁾ <http://support.automation.siemens.com/WW/view/en/38722160>

Selection and ordering data



M200D AS-i Basic without manual local operation



M200D AS-i Basic with manual local operation

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Electromechanical starters (with integrated contactor)

C **3RK1315-6□S41-□AA□** 1 1 unit 42D

Setting range for rated operational current / A

- 0.15 ... 2
- 1.5 ... 12

Direct-on-line starters/reversing starters

- Direct-on-line starters
- Reversing starters
- Direct-on-line starters with manual local operation
- Reversing starters with manual local operation

Brake actuation

- Without brake actuation
- Brake actuation (230/400 V AC)
- Brake actuation (180 V DC)

	Additional price
K	None
L	✓
0	None
1	✓
2	✓
3	✓
0	None
3	✓
5	✓

Electronic starters (with thyristors)

C **3RK1315-6□S71-□AA□** 1 1 unit 42D

Setting range for rated operational current / A

- 0.15 ... 2
- 1.5 ... 9

Direct-on-line starters/reversing starters

- Direct-on-line starters
- Reversing starters
- Direct-on-line starters with manual local operation
- Reversing starters with manual local operation

Brake actuation

- Without brake actuation
- Brake actuation (230/400 V AC)
- Brake actuation (180 V DC)

	Additional price
K	None
N	✓
0	None
1	✓
2	✓
3	✓
0	None
3	✓
5	✓

✓ = Additional price

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface

M200D Standard motor starters

Selection and ordering data



M200D AS-i Standard without manual local operation



M200D AS-i Standard with manual local operation

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Electromechanical starters (with integrated contactor)						
	C	3RK1325-6□S41-□AA□		1	1 unit	42D
Setting range for rated operational current / A					Additional price	
• 0.15 ... 2		K			None	
• 1.5 ... 12		L			✓	
Direct-on-line starters/reversing starters						
• Direct-on-line starters		0			None	
• Reversing starters		1			✓	
• Direct-on-line starters with manual local operation		2			✓	
• Reversing starters with manual local operation		3			✓	
Brake actuation						
• Without brake actuation		0			None	
• Brake actuation (230/400 V AC)		3			✓	
• Brake actuation (180 V DC)		5			✓	
Electronic starters (with thyristors)						
	C	3RK1325-6□S71-□AA□		1	1 unit	42D
Setting range for rated operational current / A					Additional price	
• 0.15 ... 2		K			None	
• 1.5 ... 12		L			✓	
Direct-on-line starters/reversing starters						
• Direct-on-line starters		0			None	
• Reversing starters		1			✓	
• Direct-on-line starters with manual local operation		2			✓	
• Reversing starters with manual local operation		3			✓	
Brake actuation						
• Without brake actuation		0			None	
• Brake actuation (230/400 V AC)		3			✓	
• Brake actuation (180 V DC)		5			✓	

✓ = Additional price

Overview

The intelligent, highly flexible M200D PROFIBUS/PROFINET motor starters are the most functional motor starters of the SIRIUS motor starter family in the high degree of protection IP65 for PROFIBUS/PROFINET communication.

They start and protect motors and loads up to 5.5 kW. Direct-on-line and reversing starter versions are available, in a mechanical version and also an electronic version (the latter with soft start function).

The particularly robust M200D PROFIBUS/PROFINET motor starters are characterized by numerous functions which can be flexibly parameterized. Their modular design comprises a motor starter module and a communication module.

The M200D PROFINET motor starters enable TIA-integrated parameterization through PROFINET from STEP 7 – in familiar, user-friendly manner with the same look-and-feel as PROFIBUS.

Functionality

- Basic functionality [see page 9/37 "M200D Motor Starters" → "General Data" → "Overview"](#)
- Electronic version also with soft start function
- Robust and widely used M12 connection method for the digital inputs and outputs and the PROFIBUS/PROFINET bus connection
- All four digital inputs and two digital outputs exist in the cyclic process image. This provides complete transparency of the process on the control level
- Full TIA integration: All digital inputs and outputs exist in the cyclic process image and are visible through the bus, providing maximum flexibility and excellent adaptability to the application
- Flexible assignment of the digital inputs and outputs with all available assignable input actions
- Extensive diagnostics concept using LEDs and through the bus with the TIA-compatible mechanisms
- Expanded diagnostics using data records
- Complete plant monitoring using statistics data record and current value monitoring by means of data records
- Parameterization through PROFIBUS/PROFINET bus with the help of data records from the user program
- Control of the motor starter using a command data record from the user program
- Removable modular control unit – quicker device replacement and therefore lower costs when device outages occur – since existing wiring is on the control unit and only one device needs to be replaced
- Parameterization in STEP 7 HW Config using Motor Starter ES (ordering option for start up software)
- Start up and diagnostics with the help of Motor Starter ES (ordering option for start up software)
- Trace function through Motor Starter ES for optimized start up and tracking of process and device values

Only with PROFINET:

- Just one bus system from the MES level to the devices – no routers
- More stations on the bus and possible configuration of flexible bus structures
- Automatic re-parameterization in case of device replacement thanks to proximity detection
- Wireless integration of plant segments in difficult environments using WLAN
- Easier expansion of the system thanks to a higher number of stations on the bus and elimination of terminating resistors



M200D motor starter modules for PROFIBUS/PROFINET (without communication module)



M200D communication module for PROFIBUS



M200D communication module for PROFINET

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for PROFIBUS / PROFINET

General data

Mounting and installation

The M200D PROFIBUS/PROFINET motor starter is comprised of the communication module and the motor starter module. Only the motor starter module has to be replaced therefore when replacing devices. This saves time and money. The communication module remains as an active station on the bus and all other system components continue running. This prevents downtimes.

The integrated plug-in technology enables far lower wiring outlay: Connecting cables can be plugged directly onto the motor starter module. The PROFINET bus is connected cost-effectively using an M12 connection on the device. All versions have identical enclosure dimensions for easier system design and conversion.

Parameterization and configuration

All motor protection functions, limit values and reactions can be defined by parameterization.

The user has several user-friendly options for the parameterization. In addition to parameterization directly from STEP 7, which also permits automatic re-parameterization in case of device replacement, it is possible to use the user-friendly Motor Starter ES start up software. By connecting a programming device directly to PROFIBUS/PROFINET and the Motor Starter ES start up software, the devices can also be conveniently programmed from a central point through the bus. Also, parameters can be changed during operation from the user program using the data record mechanism so that the function of the motor starter is adapted to the process when required. With the help of a PC and the Motor Starter ES software it is also possible to perform the parameterization through the local point-to-point interface on-site.

Functions can be flexibly assigned to the digital inputs and outputs, adapting them to all possible conveyor applications. All digital inputs and outputs exist in the cyclic process image. All limit values for monitoring functions and their reactions are parameterizable and therefore adaptable to the application. Consistency with other products of the SIRIUS M200D motor starter range and with the frequency converter and ET 200pro I/O system is assured.

Only with the M200D PROFINET motor starter

Thanks to the integrated proximity detection, the device name does not need to be issued manually when a device is replaced. The name is issued automatically by the neighboring devices which note the "names" of the devices in their proximity. No additional start up measures are required therefore when replacing a device.

The new motor starter generation is characterized by high functionality, maximum flexibility and the highest level of automation. The PROFINET is recommended in particular for expansive and highly automated system components because the possibility of monitoring devices and systems with data records (statistical data, measured values and device diagnostics) guarantees an in-depth view of the plant from the control room and therefore increases plant availability.

Operation

The motor starters record the actual current flow. Evaluating the current of the parameterizable solid-state overload protection increases the availability of the drives, as do reliable signals concerning the overshooting or undershooting of setpoint values.

Diagnostics and maintenance

Diagnostics is provided through numerous mechanisms – and can be used as the customer prefers.

The motor starter is TIA-diagnostics compatible, which means that when a fault is identified, a diagnostics alarm is distributed, which invokes the diagnostics-OB with a SIMATIC control. The fault can be evaluated as usual in the user program.

The M200D motor starter offers a large variety of diagnostics data through data records. Its functionality is without equal on

the market. There are extensive options for reading out data from the motor starter for monitoring devices, systems or processes.

The motor starter is equipped internally with 3 logbooks for device faults, motor starter trips and events, which are issued with a time stamp. These logbooks can be read out of the motor starter at any time in the form of data records and provide the plant operator with plenty of information about the state of his plant and process which he can use to carry out improvements.

With the slave pointer and statistical data functions it is possible to read out, for example, the maximum internal current values or the number of motor starter connection operations for plant monitoring purposes. This allows deviations in the process to be monitored, but also optimum initial commissioning to take place. The user can draw conclusions about the actual load conditions of the devices in his process and on this basis can optimize his plant maintenance intervals.

The device diagnostics data record contains details of all the states of the motor starter, the device configuration and the communication status as a basis for central device and plant monitoring.

With installation and maintenance functions (I&M), information (I&M) on modules employed is stored in the motor starter on the one hand, and on the other, data (I&M), which can be specified by the user during configuration, such as location designations. I&M functions serve for troubleshooting faults and localizing changes in hardware at a plant or checking the system configuration. Reordering a device is particularly easy as the result.

The integrated maintenance timer can be used to implement preventative maintenance and avoid plant downtimes through look-ahead servicing.

Another new feature is the integrated TRACE function with the Motor Starter ES software. It can be used to record measured values as a function of time following a trigger event. This enables process flows to be recorded and their timing optimized.

Local control of a drive is possible using the ordering option with integrated manual operation. This is yet another new development which distinguishes the M200D PROFIBUS/PROFINET motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the system.

M200D PROFINET motor starters with PROFenergy

Increasing energy prices, far-reaching ecological problems worldwide and the threat of climate change make it necessary for you to be more conscious about your use of energy.

Active and effective energy management is possible with PROFenergy.

PROFenergy is a manufacturer-independent profile on PROFINET, which can be used by all manufacturers, has been standardized by PNO¹⁾ and supports the switching off of electrical devices during dead time and the measurement of energy flow.

¹⁾ In the PNO (PROFIBUS Nutzerorganisation e. V. – PROFIBUS User Organization), manufacturers and users have come together to agree on the standardized communication technologies PROFIBUS and PROFINET.

Switching off during dead times

PROFenergy supports the targeted switching-off of loads during dead time.

These can be planned short breaks of a few minutes (such as lunch breaks), longer periods of dead time (such as nights) or unplanned dead time. Energy is always saved when no power is required.

Measuring and visualizing the energy flow as a basis of energy management

The objective of energy management is to optimize the use of energy in a company – from the purchasing of energy through to the consumption of energy – economically and ecologically.

Analyses of energy consumption over time can be used to control energy flows, avoid energy peaks, improve ratings and thus save costs.

PROFenergy enables consumption data to be read off from the devices in a unified form. This is recorded during operation and can be displayed on a control panel, for example, or on overlying

energy management software packages. This ensures that the measured variables are in a uniform manufacturer-independent form and structure that is available to the user for further processing. These PROFenergy functions thus provide the basis for active load and energy management during operation.

PROFenergy in the M200D PROFINET motor starter

The M200D PROFINET motor starter supports "switching during dead time" and "current measurement values" of the motor current using PROFenergy. These are called commands, because they trigger a reaction in the M200D motor starter.



**SIRIUS M200D
PROFIBUS**

**SIRIUS M200D
PROFINET**

Device functions (firmware features)

Slave on the bus

Fieldbus	✓ PROFIBUS to M12	✓ PROFINET to M12
Adjustable number of stations	✓ 1 ... 125	✓ 1 ... 128 with CPU 315, CPU 317 1 ... 1256 with CPU 319

Parameterization

DIP switches	✓ For address setting and terminating resistor	--
Motor Starter ES	✓ Through bus, optical interface	
PROFIBUS/PROFINET data records	✓	
From STEP 7/HW Config	✓	

Diagnostics

Acyclic through data records	✓
Diagnostic interrupt support	✓

Process image

Process image	✓ 2Byte PAE/2Byte PAA
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Data channels

Local optical interface (manual local)	✓
Motor Starter ES through local interface	✓
Using Motor Starter ES through bus	✓

Data records (acyclic)

Parameterization	✓ Using DS 131 (DS = data record)	
Diagnostics	✓ Device-specific DS 92	
Measured values	✓ Measured values DS 94	
Statistics	✓ Statistical data DS 95	
Commands	✓ Using DS 93	
Slave pointer	✓ Slave pointer DS 96	
Logbook	✓ Using Motor Starter ES and data records: device faults DS 72, tripping operation DS 73, events DS 75	
Device identification	✓ Using DS 100	
I&M data	✓ Using DS 231 ... 234	✓ Using data records 0xAFF0 ... 0xAFF3

Inputs

Number	✓ 4
• Of these in the process image	✓ 4
Input action	✓ Parameterizable: flexibly assignable action, see manual ¹⁾
Quick Stop	✓ Parameterizable: latching, non-latching

✓ Function available

-- Function not available

¹⁾ <http://support.automation.siemens.com/WW/view/en/38823402>

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for PROFIBUS / PROFINET

General data



**SIRIUS M200D
PROFIBUS**

**SIRIUS M200D
PROFINET**

Device functions (firmware features)

Outputs

Number	✓ 2
• Of these in the process image	✓ 2
Output action	✓ Parameterizable: flexibly assignable action, see manual ¹⁾

Brake output

180 V DC / 230/400 V AC / none	✓
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Motor protection

Overload protection	✓ Electronic, wide range 1:10
Short-circuit protection	✓
Full motor protection	✓
Temperature sensor	✓ Parameterizable using Motor Starter ES, data record: PTC or Thermoclick or deactivated

Device functions

Repair switch	✓
Current limit monitoring bottom	✓ Parameterizable
Current limit monitoring top	✓ Parameterizable
Zero current detection	✓ Parameterizable: tripping, warning
Blocking current	✓ Parameterizable
Unbalance	✓ Parameterizable
Load type	✓ Parameterizable: 1 and 3-phase
Shutdown class	✓ Parameterizable using Motor Starter ES, data record: CLASS 5, 10, 15, 20
Protection against voltage failure	✓ Parameterizable: activated/deactivated

Support for PROFinergy profile

Switching during dead times	--	✓
Measured motor current values	--	✓

Soft starter control function

Soft start function	✓
Bypass function	✓ Only solid-state version

✓ Function available

-- Function not available

¹⁾ <http://support.automation.siemens.com/WW/view/en/38823402>

Benefits

M200D PROFINET motor starters with PROFinergy

Both standards and laws are making environmental protection and energy management increasingly important, as is the desire to cut energy costs in production facilities and thus ensure a sustainable competitive advantage.

It is thus an objective within the industry to save energy and actively reduce CO₂ emissions. By the careful use of valuable resources, the manufacturer-independent PROFinergy profile on PROFINET can make an active contribution to environmental protection.

Application

The M200D PROFIBUS/PROFINET motor starters are particularly suitable for fully TIA-integrated, highly automated conveyor applications which meet all needs with regard to the monitoring of devices and systems and preventative maintenance.

Adaptability of the motor starter functions and maximum flexibility of the device enable a broad range of application without any limits. The PROFINET-specific expansions are the best assurance of a future-proof investment.

Technical specifications

Type	M200D motor starter modules for PROFIBUS/PROFINET		
	Electromechanical switching		Electronic switching
Technology designation ¹⁾	DSte / RSte		sDSSSte / sRSSSte
Mechanics and environment			
Mounting dimensions (W x H x D)			
• Without communication module	mm	294 x 215 x 159	
• With communication module	mm	295 x 215 x 163	
Permissible ambient temperature			
• During operation	°C	-25 ... +55	
• During storage	°C	-40 ... +70	
Weight	g	2 820 / 3 080	3 160 / 3 360
Permissible mounting position		Vertical, horizontal, lying	
Vibration resistance acc. to IEC 60068 Part 2-6	g	2	
Shock resistance			
• Acc. to IEC 60068 Part 2-27	g/ms	12/11 half-sine	
• Without influencing the contact position	g/ms	9.8/5 or 5.9/10	
Degree of protection acc. to IEC 529		IP65	
Installation altitude			
• Up to 1 000 m		No derating	
• Up to 2 000 m		1 % per 100 m	
Cooling		Convection	
Protection class IEC 536 (VDE 0106-1)		1	
Electrical specifications			
Main circuit			
Maximum power of three-phase motors at 400 V AC	kW	5.5	
Rated operational voltage U_e			
• Approval acc. to EN 60947-1	V AC	400 (50/60 Hz)	
• Approval acc. to UL and CSA	V AC	600 (50/60 Hz)	480 (50/60 Hz)
• Rated operational current range	A	0.15 ... 2 / 1.5 ... 12	--
• Rated operational current range for soft start	A	--	0.15 ... 2 / 1.5 ... 12
• Rated operational current range for direct start	A	--	0.15 ... 2 / 1.5 ... 9
Rated operational current for starters I_e at 400 V AC			
• 400 V at AC-1 / 2 / 3	A	12	--
• 500 V at AC-1 / 2 / 3	A	9	--
• 400 V at AC-4	A	4	--
• 400 V at AC-53a	A	--	12 for soft starting, 9 for direct-on-line starting
Mechanical endurance of contactor	Operating cycles	30 million	--
Trip class		CLASS 5, 10, 15, 20	
Permissible switching frequency		See manual ³⁾	
Rated ultimate short-circuit breaking capacity I_q			
• At 400 V AC	kA	50	
• At 500 V AC	kA	50	20 ²⁾
Short-circuit protection			
• At $I_{emax} = 2$ A		Integrated, 2 x13 $I_e = 26$ A	
• At $I_{emax} = 9 / 12$ A		Integrated, 2 x13 $I_e = 208$ A	
Brake actuation (option)			
Operational voltage	V	230/400 AC or 180 DC	
Uninterrupted current	A	< 0.5 at 230/400 V AC, < 0.8 at 180 V DC	
Short-circuit protection		Yes, 1 A melting fuse	

¹⁾ DS Direct-on-line starter

RS Reversing starter

DSS .. Direct soft starter

RSS .. Reversing soft starter

te Full motor protection (thermal + electronic)

s Electronic switching with semiconductor.

²⁾ Only systems with grounded neutral point permitted.

³⁾ <http://support.automation.siemens.com/WW/view/en/38823402>

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for PROFIBUS / PROFINET

General data

Type	M200D communication modules	
	For PROFIBUS	For PROFINET
Mechanics and environment		
Mounting dimensions (W x H x D)	mm	174 x 139 x 40
Permissible ambient temperature		
• During operation	°C	-25 ... +55
• During storage	°C	-40 ... +70
Weight	g	300
Permissible mounting position		Vertical, horizontal, lying
Vibration resistance acc. to IEC 60068 Part 2-6	g	2
Shock resistance		
• Acc. to IEC 60068 Part 2-27	g/ms	12/11 half-sine
• Without influencing the contact position	g/ms	9.8/5 or 5.9/10
Degree of protection acc. to IEC 529		IP65
Installation altitude		
• Up to 1 000 m		No derating
• Up to 2 000 m		1 % per 100 m
Cooling		Convection
Protection class IEC 536 (VDE 0106-1)		1
Electrical specifications		
Control circuit		
Operational voltage		
• $U_{DC24V-NS}$	V DC	20.4 ... 28.8
• $U_{DC24V-S}$	V DC	20.4 ... 28.8
Power consumption from		
• $U_{DC24V-NS}$	mA	< 300
• $U_{DC24V-S}$	mA	< 100

Selection and ordering data



M200D motor starter modules
PROFIBUS/PROFINET
(without communication module)



M200D PROFIBUS
motor starters



M200D PROFINET
motor starters

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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M200D communication modules for PROFIBUS

Communication modules for PROFIBUS

M12 connection for communication, 7/8" for 24 V power supply

C

3RK1305-0AS01-0AA0

1

1 unit

42D

M200D communication modules for PROFINET

Communication modules for PROFINET

M12 connection for communication, 7/8" for 24 V power supply

C

3RK1335-0AS01-0AA0

1

1 unit

42D

M200D motor starter modules for PROFIBUS/PROFINET

Electromechanical starters (with integrated contactor)

C

3RK1395-6□S41-□AD□

1

1 unit

42D

Setting range for rated operational current / A

- 0.15 ... 2
- 1.5 ... 12

Direct-on-line starters / reversing starters

- Direct-on-line starters
- Reversing starters
- Direct-on-line starters with manual local operation
- Reversing starters with manual local operation

Brake actuation

- Without brake actuation
- Brake actuation (230/400 V AC)
- Brake actuation (180 V DC)

	Additional price
K	None
L	✓
0	None
1	✓
2	✓
3	✓
0	None
3	✓
5	✓

Electronic starters (with thyristors)

C

3RK1395-6□S71-□AD□

1

1 unit

42D

Setting range for rated operational current / A

- 0.15 ... 2
- 1.5 ... 12

Direct-on-line starters/reversing starters

- Direct-on-line starters
- Reversing starters
- Direct-on-line starters with manual local operation
- Reversing starters with manual local operation

Brake actuation

- Without brake actuation
- Brake actuation (230/400 V AC)
- Brake actuation (180 V DC)

	Additional price
K	None
L	✓
0	None
1	✓
2	✓
3	✓
0	None
3	✓
5	✓

✓ = Additional price

More information

Notes on safety

System networking requires suitable protective measures (including network segmentation for IT security) in order to ensure safe plant operation.

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

Motor Starters for Use in the Field, High Degree of Protection

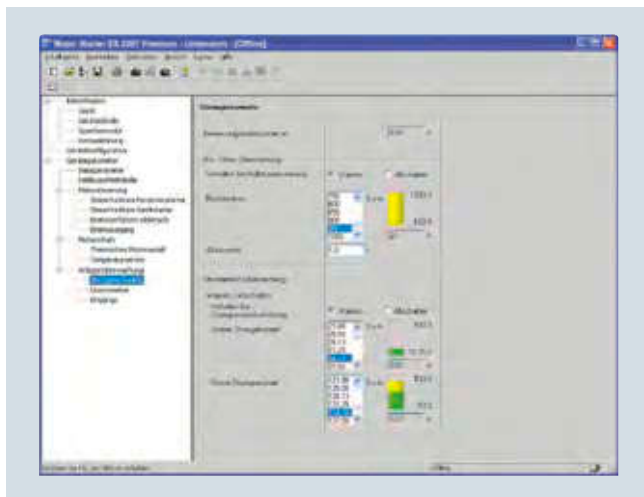
SIRIUS M200D Motor Starters

Software

Motor Starter ES

Overview

Motor Starter ES

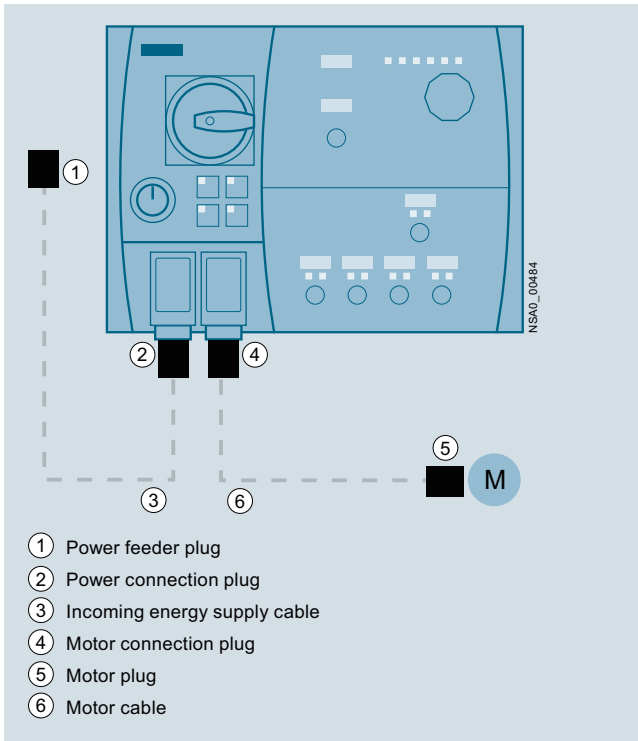


Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

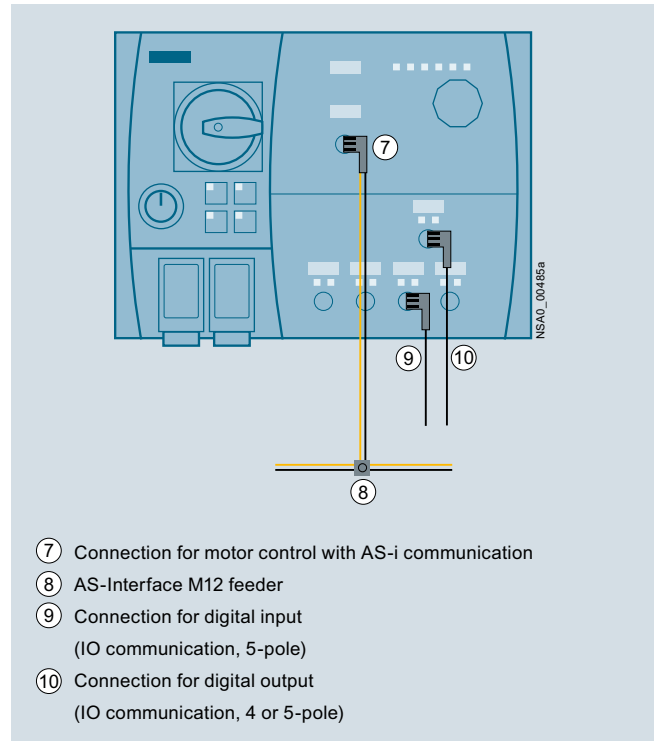
Motor Starter ES is used for start up, parameterization, diagnostics, documentation and the preventative maintenance of the motor starters in the SIMATIC ET 200pro, SIMATIC ET 200S and SIRIUS M200D product families (for versions M200D AS-i Standard, M200D PROFIBUS and M200D PROFINET).

Detailed information on the Motor Starter ES software, [see Chapter 14 "Parameterization, Configuration and Visualization with SIRIUS"](#).

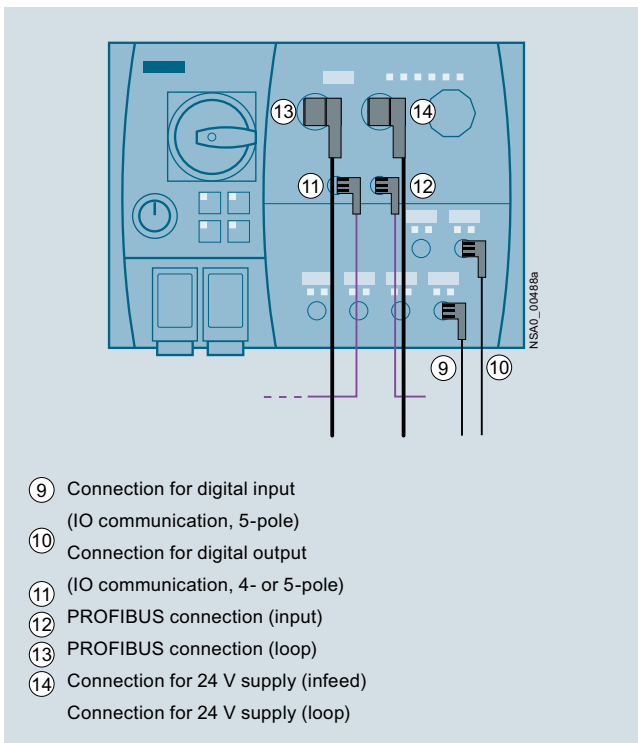
Overview



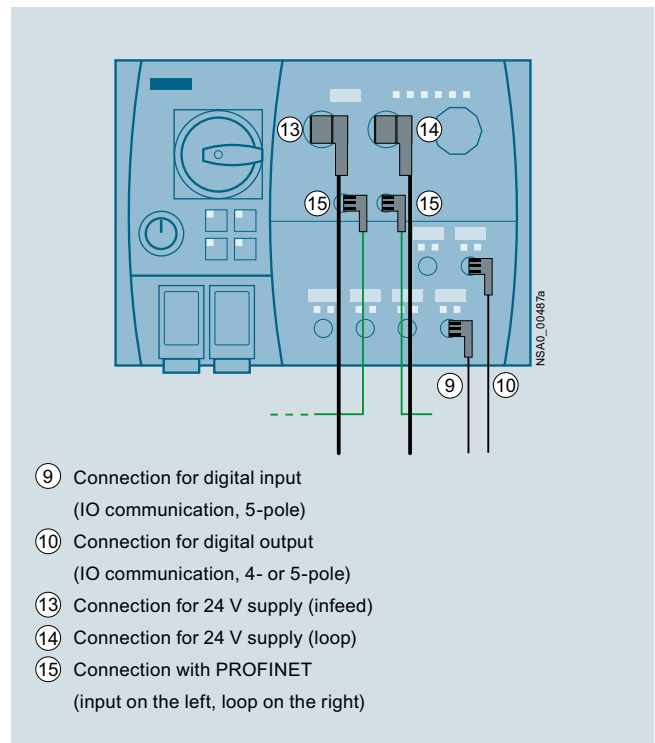
Power and motor connection on the M200D motor starter
 (in this example: M200D for AS-i)



Communication connection using AS-Interface and digital inputs and outputs



Communication connection using PROFIBUS and digital inputs and outputs



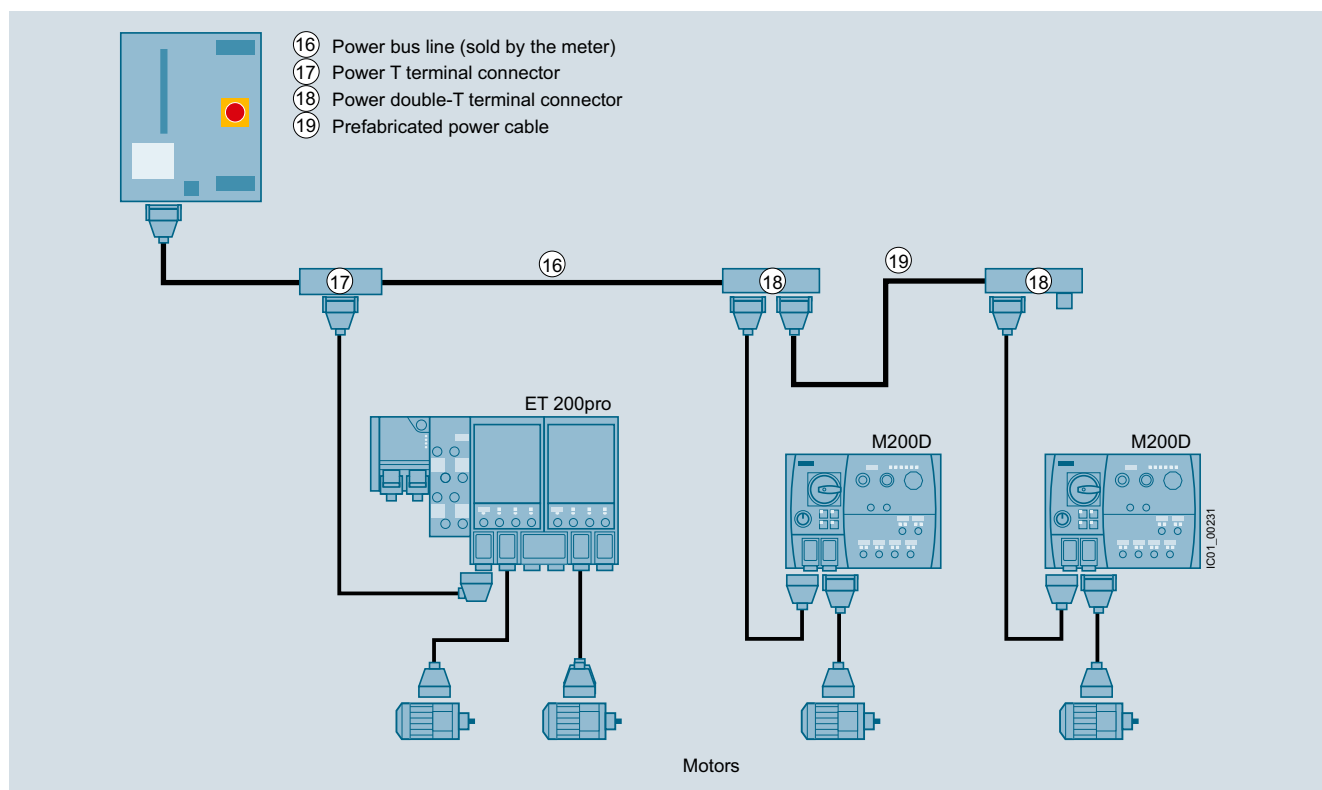
Communication connection using PROFINET and digital inputs and outputs

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

For all M200D motor starters



Power supply to the motors via the power bus with power T and double-T terminal connectors linked by power bus cables, spur lines to the field devices (motor starters), and power loop-through connections to the motors via motor connection cables

Power bus

The power supply to the field devices (ET 200pro motor starters, M200D motor starters) is provided via the power bus, in which the power T terminal connectors or power double-T terminal connectors are connected by power bus cables.

Feeders

From the terminal connectors, spur lines with Han Q4/2 plugs lead to the field devices, from which the motors are supplied with power via motor connection cables.

Interruption-free thanks to power terminal connectors

In finger-safe connection technology the power T terminal connectors and power double-T terminal connectors connect the components of a feeder to the power bus. They ensure interruption-free operation, i.e. when the components are plugged in, the power bus is not interrupted.

Selection and ordering data

The accessories listed below represent a basic selection sorted by:

- Accessories for all M200D motor starters
- Accessories for M200D motor starters for AS-interface
- Accessories for M200D motor starters for PROFIBUS
- Accessories for M200D motor starters for PROFINET

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mountable accessories						
M200D protective brackets	C	3RK1911-3BA00		1	1 unit	42D
Incoming power supply						
① Power feeder plugs						
Connector set for energy supply, e.g. for connecting to T terminal connectors, comprising a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. gland						
• 5 male contacts 2.5 mm ²	B	3RK1911-2BS60		1	1 unit	42D
• 5 male contacts 4 mm ²	B	3RK1911-2BS20		1	1 unit	42D
• 5 male contacts 6 mm ²	B	3RK1911-2BS40		1	1 unit	42D
② Power connection plugs						
Connector set for energy supply for connection to M200D motor starters, comprising a cable-end connector hood, angular outgoing feeder, female insert for HAN Q4/2, incl. gland						
• 5 female contacts 2.5 mm ²	B	3RK1911-2BE50		1	1 unit	42D
• 2 female contacts 0.5 mm ²						
• 5 female contacts 4 mm ²	B	3RK1911-2BE10		1	1 unit	42D
• 2 female contacts 0.5 mm ²						
• 5 female contacts 6 mm ²	B	3RK1911-2BE30		1	1 unit	42D
• 2 female contacts 0.5 mm ²						
② + ③ Power connection cable						
Assembled at one end with "N" and jumper pin 11 and 12 for plug monitoring, with HAN Q4/2, angular; open at one end; 5 x 4 mm ²						
• Length 1.5 m	C	3RK1911-0DC13		1	1 unit	42D
• Length 5.0 m	C	3RK1911-0DC33		1	1 unit	42D
Motor cables						
④ Motor connection plugs						
Connector set for motor cable for connection to M200D motor starters, comprising a cable-end connector hood, angular outgoing feeder, pin insert for HAN Q8/0, incl. gland						
• 8 male contacts 1.5 mm ²	B	3RK1902-0CE00		1	1 unit	42D
• 6 male contacts 2.5 mm ²	B	3RK1902-0CC00		1	1 unit	42D
⑤ Motor plugs						
Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e, incl. star jumper, incl. gland						
• 7 female contacts 1.5 mm ²	C	3RK1911-2BM21		1	1 set	42D
• 7 female contacts 2.5 mm ²	C	3RK1911-2BM22		1	1 set	42D
④ + ⑥ Motor cables, assembled at one end						
For connection to M200D motor starter, HAN Q8/0, angular, length 5 m						
• Motor cables for motor without brake, 4 x 1.5 mm ²	C	3RK1911-0EB31		1	1 unit	42D
• Motor cables for motor without brake with thermistor, 6 x 1.5 mm ²	C	3RK1911-0EF31		1	1 unit	42D
• Motor cable for motor with brake actuation, braking voltage 400 V AC or 180 V DC, 6 x 1.5 mm ²	C	3RK1911-0ED31		1	1 unit	42D
• Motor cable for motor with brake actuation, braking voltage 400 V AC or 180 V DC and thermistor, 8 x 1.5 mm ²	C	3RK1911-0EG31		1	1 unit	42D
• Motor cable for motor with brake actuation, braking voltage 230 V AC, 6 x 1.5 mm ²	C	3RK1911-0EH31		1	1 unit	42D
• Motor cable for motor with brake actuation, braking voltage 230 V AC and thermistor, 8 x 1.5 mm ²	C	3RK1911-0EE31		1	1 unit	42D

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

For all M200D motor starters

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power bus						
⑦ Power T terminal connectors For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments						
• 2.5 mm ² /4 mm ²	B	3RK1911-2BF01		1	1 unit	42D
• 4 mm ² /6 mm ²	B	3RK1911-2BF02		1	1 unit	42D
⑧ Power double-T terminal connector For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments, connection of two motor starters possible						
• 4 mm ² /6 mm ²	B	3RK1911-2BG02		1	1 unit	42D
Sealing set (comprising 2 seals) For power T/power double-T terminal connectors						
• For power cables with Ø 10 ... 13 mm	B	3RK1911-5BA00		1	1 unit	42D
• For power cables with Ø 13 ... 16 mm	B	3RK1911-5BA10		1	1 unit	42D
• For power cables with Ø 16 ... 19 mm	B	3RK1911-5BA20		1	1 unit	42D
• For power cables with Ø 19 ... 22 mm	B	3RK1911-5BA30		1	1 unit	42D
• Blanking plugs	B	3RK1911-5BA50		1	1 unit	42D
Further accessories for energy connections						
 3RK1902-0CW00	Crimping tools for pins/sockets 4 mm² and 6 mm² C 3RK1902-0CW00 1 1 unit 42D					
	Dismantling tools • For male and female contacts for 9-pole HAN Q4/2 inserts C 3RK1902-0AB00 1 1 unit 42D • For male and female contacts for 9-pole HAN Q8 inserts B 3RK1902-0AJ00 1 1 unit 42D					
 3RK1902-0CK00	Sealing caps For 9-pole power socket connectors					
	• 1 unit per pack B 3RK1902-0CK00 1 1 unit 42D • 10 units per pack B 3RK1902-0CJ00 1 10 units 42D					

More connection technology products and accessories (e.g. crimping tools) can be found at our "Siemens Solution Partners Automation" under "Distributed Field Installation System" technology: www.siemens.com/automation/partnerfinder

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor control with I/O communication						
 3RK1902-4BA00-5AA0		M12 plugs, straight Screw fixing, 5-pole screw terminals, max. 0.75 mm ² A-coded, max. 4 A	C	3RK1902-4BA00-5AA0	1	1 unit 42D
 3RK1902-4DA00-5AA0		⑩ M12 plugs, angular Screw fixing, 5-pole screw terminals, max. 0.75 mm ² A-coded, max. 4 A	C	3RK1902-4DA00-5AA0	1	1 unit 42D
 3RK1902-4H...-5AA0		⑨, ⑩ Control cables, assembled at one end M12 plugs, angular, screw fixing, 5-pole, 5 x 0.34 mm ² A-coded, black PUR sheath, max. 4 A				
		• Cable length 1.5 m	C	3RK1902-4HB15-5AA0	1	1 unit 42D
		• Cable length 5 m	C	3RK1902-4HB50-5AA0	1	1 unit 42D
		• Cable length 10 m	C	3RK1902-4HC01-5AA0	1	1 unit 42D
 3RK1902-4PB15-3AA0		Control cables, assembled at both ends Straight M12 plug, straight M12 socket, screw fixing 3-pole, 3 x 0.34 mm ² A-coded, black PUR sheath, max. 4 A				
		• Cable length 1.5 m	C	3RK1902-4PB15-3AA0	1	1 unit 42D
Further accessories						
 3RK1922-3BA00		Handheld devices For M200D motor starters (or for ET 200pro and ET 200S High-Feature motor starters) for local operation. The motor starter-specific serial interface cables must be ordered separately. The RS 232 interface cable 3RK1922-2BP00 is used for the MS M200D.	B	3RK1922-3BA00	1	1 unit 42D
		RS 232 interface cable Serial data connection between M200D (or ET 200pro) motor starters and the RS 232 interface of a PC/PG/laptop (with the Motor Starter ES software) or the handheld device 3RK1922-3BA00	B	3RK1922-2BP00	1	1 unit 42D
		USB interface cable, 2.5 m Serial data connection between M200D (or ET 200pro) motor starters and the USB interface of a PC/PG/laptop (with the Motor Starter ES software)	B	6SL3555-0PA00-2AA0	1	1 unit 346
 3RK1901-1KA00		M12 sealing caps For sealing unused M12 input and output sockets – not for M12 AS-i communications interface for motor control ⑦ (one set contains 10 sealing caps)	►	3RK1901-1KA00	100	10 units 42C

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

For M200D motor starters for AS-Interface

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor control with AS-i communication						
 ⑦ Control cables, assembled at one end M12 socket, angular, screw fixing, 4-pole, 4 x 0.34 mm ² A-coded, black PUR sheath, max. 4 A • Cable length 5 m	C	3RK1902-4GB50-4AA0		1	1 unit	42D
	C	3RK1902-4CA00-4AA0		1	1 unit	42D
 ⑦ M12 socket, angular screw fixing, 4-pole screw terminal, max. 0.75 mm ² A-coded, max. 4 A	C	3RK1902-4CA00-4AA0		1	1 unit	42D
⑧ AS-Interface M12 feeder						
 For flat cable For Cable length Cable end in feeder						
AS-i/U _{aux} M12 socket -- Not available	A	3RK1901-1NR20		1	1 unit	42C
AS-i/U _{aux} M12 cable box 1 m Not available	A	3RK1901-1NR21		1	1 unit	42C
AS-i/U _{aux} M12 cable box 2 m Not available	A	3RK1901-1NR22		1	1 unit	42C
 Cable terminating pieces For sealing of open cable ends (shaped AS-Interface cable) in IP67	►	3RK1901-1MN00		1	10 units	42C

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Motor control with AS-i communication (continued)						
 AS-Interface shaped cables¹⁾	Material		Color	Quantity		
	Rubber	Yellow (AS-Interface)	100 m roll	A	3RX9010-0AA00	1 1 unit 42C
			1 km drum	B	3RX9012-0AA00	1 1 unit 42C
		Black (24 V DC)	100 m roll	A	3RX9020-0AA00	1 1 unit 42C
			1 km drum	B	3RX9022-0AA00	1 1 unit 42C
	TPE	Yellow (AS-Interface)	100 m roll	A	3RX9013-0AA00	1 1 unit 42C
			1 km drum	B	3RX9014-0AA00	1 1 unit 42C
		Black (24 V DC)	100 m roll	A	3RX9023-0AA00	1 1 unit 42C
			1 km drum	B	3RX9024-0AA00	1 1 unit 42C
	TPE special version according to UL Class 2	Yellow (AS-Interface)	100 m roll	B	3RX9017-0AA00	1 1 unit 42C
		Black (24 V DC)	100 m roll	B	3RX9027-0AA00	1 1 unit 42C
	PUR	Yellow (AS-Interface)	100 m roll	A	3RX9015-0AA00	1 1 unit 42C
			1 km drum	B	3RX9016-0AA00	1 1 unit 42C
		Black (24 V DC)	100 m roll	A	3RX9025-0AA00	1 1 unit 42C
			1 km drum	B	3RX9026-0AA00	1 1 unit 42C

¹⁾ See also Chapter 2 "Industrial Communication" → "Transmission media" → "AS-Interface shaped cables".

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Further accessories



3RK1904-2AB02

AS-Interface addressing unit V 3.0

- For AS-Interface modules and sensors and actuators with integrated AS-Interface in accordance with AS-i Specification V3.0
- For setting the AS-i address of standard slaves, and slaves with extended addressing mode (A/B slaves)
- With input/output test function and many other commissioning functions
- Battery operation with 4 batteries type AA (IEC LR6, NEDA 15)
- Scope of supply:
 - Addressing unit with 4 batteries
 - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5m

A

3RK1904-2AB02

1

1 unit

42C



3RK1902-4PB15-3AA0

M12 addressing cables to M12

- Standard M12 cable for addressing slaves with M12 connection, e.g. K60R modules
- When using the current version of the 3RK1904-2AB01 addressing unit
- 1.5 m

C

3RK1902-4PB15-3AA0

1

1 unit

42D

Manuals "SIRIUS M200D Motor Starter"

Manual - SIRIUS M200D Motor Starter AS-Interface Basic

The manual can be downloaded free of charge in PDF format from the Internet, see <http://support.automation.siemens.com/WW/view/en/35016496>

Manual - SIRIUS M200D Motor Starter AS-Interface Standard

The manual can be downloaded free of charge in PDF format from the Internet, see <http://support.automation.siemens.com/WW/view/en/38722160>

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

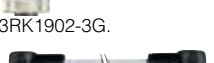
For M200D motor starters for PROFIBUS

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Motor control with PROFIBUS							
		M12 plugs, angular Screw fixing, 5-pole screw terminals, max. 0.75 mm ² , B-coded, no terminating resistor					
	• ⑪ 5 female contacts	B	3RK1902-1DA00	1	1 unit	42D	
		• ⑫ 5 male contacts	B	3RK1902-1BA00	1	1 unit	42D
Control cables, assembled at one end							
		M12, screw fixing, angular, B-coded, no terminating resistor					
	• ⑪ 5 female contacts, 3 m	C	3RK1902-1GB30	1	1 unit	42D	
	• ⑪ 5 female contacts, 5 m	C	3RK1902-1GB50	1	1 unit	42D	
	• ⑪ 5 female contacts, 10 m	C	3RK1902-1GC10	1	1 unit	42D	
⑪ ⑫ Control cables, assembled at both ends							
		M12, screw fixing, angular, pin/socket 5-pole, B-coded, no terminating resistor					
	• 3.0 m	C	3RK1902-1NB30	1	1 unit	42D	
	• 5.0 m	C	3RK1902-1NB50	1	1 unit	42D	
	• 10.0 m	C	3RK1902-1NC10	1	1 unit	42D	
Further accessories							
PROFIBUS trailing cables		A	6XV1830-3EH10	1	1 m	5K2	
Max. acceleration 4 m/s ² , at least 3 000 000 bending cycles, bending radius at least 60 mm, 2-core, shielded Sold by the meter, min. order quantity 20 m, max. order quantity 1 000 m							
PROFIBUS FC Food bus cables		A	6XV1830-0GH10	1	1 m	5K2	
With PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter Min. order quantity 20 m, max. order quantity 1 000 m							
PROFIBUS FC Robust bus cables		A	6XV1830-0JH10	1	1 m	5K2	
With PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core Shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m							
Power cables		A	6XV1830-8AH10	1	1 m	5K2	
5-core, 5 x 1.5 mm ² , trailing, sold by the meter Min. order quantity 20 m, max. order quantity 1 000 m							
Connection for 24 V power supply of the M200D PROFIBUS/PROFINET							
See page 9/61							
Manual "SIRIUS M200D Motor Starter PROFIBUS / PROFINET"							
The manual can be downloaded free of charge in PDF format from the Internet, see http://support.automation.siemens.com/WW/view/en/38823402							

Selection and ordering data

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor control with PROFINET						
 3RK1902-2H.  3RK1902-2N.		Ⓜ M12 plugs, angular Screw fixing, 4-pole screw terminals, max. 0.75 mm ² Angular, D-coded • 4 male contacts				
	B	3RK1902-2DA00		1	1 unit	42D
	C	Ⓜ Control cables, assembled at one end M12 for screw fixing, angular, 4-pole, D-coded • 4 male contacts, 3 m		1	1 unit	42D
	C	3RK1902-2HB30		1	1 unit	42D
	C	3RK1902-2HB50		1	1 unit	42D
	C	3RK1902-2HC10		1	1 unit	42D
		Ⓜ Control cables, assembled at both ends M12 for screw fixing, angular at both ends 4-pole, D-coded, male contacts at both ends • 3 m		1	1 unit	42D
	C	3RK1902-2NB30		1	1 unit	42D
	C	3RK1902-2NB50		1	1 unit	42D
	C	3RK1902-2NC10		1	1 unit	42D
Further accessories						
	A	PROFINET IE FC TP standard cable GP 2 x 2 Sold by the meter		1	1 m	5K1
	A	PROFINET IE FC TP trailing cable 2 x 2 Sold by the meter		1	1 m	5K1
	A	PROFINET IE FC TP trailing cable GP 2 x 2 Sold by the meter		1	1 m	5K2
	A	PROFINET IE FC TP torsion cable 2 x 2 Sold by the meter		1	1 m	5K2
	A	PROFINET IE FC TP marine cable, 4-core Sold by the meter		1	1 m	5K1
	A	Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter Min. order quantity 20 m, max. order quantity 1 000 m		1	1 m	5K2

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Connection for 24 V power supply of the M200D PROFIBUS/PROFINET						
 3RK1902-3DA00	B	Ⓜ Plugs On M200D, 7/8" for screw fixing, angular, screw terminal, 1.5 mm ² • 5 female contacts		1	1 unit	42D
	B	3RK1902-3BA00		1	1 unit	42D
 3RK1902-3BA00	B	• 5 male contacts		1	1 unit	42D
	B	3RK1902-3BA00		1	1 unit	42D
 3RK1902-3G.	C	Ⓜ Supply lines, assembled at one end 7/8" for screw fixing, angular, 1.5 mm ² • 5 female contacts, 3 m		1	1 unit	42D
	C	3RK1902-3GB30		1	1 unit	42D
	C	3RK1902-3GB50		1	1 unit	42D
 3RK1902-3G.	C	• 5 female contacts, 5 m		1	1 unit	42D
	C	3RK1902-3GC10		1	1 unit	42D
	C	3RK1902-3GC10		1	1 unit	42D
 3RK1902-3N.	C	Ⓜ Supply lines, assembled at both ends 7/8" for screw fixing, angular at both ends 5-pole pin/socket, 1.5 mm ² • 3 m		1	1 unit	42D
	C	3RK1902-3NB30		1	1 unit	42D
	C	3RK1902-3NB50		1	1 unit	42D
 6ES7194-3JA00-0AA0	C	3RK1902-3NC10		1	1 unit	42D
	A	7/8" sealing caps 1 pack = 10 units		1	10 units	250

Manual "SIRIUS M200D Motor Starter PROFIBUS / PROFINET"

See page 9/60

Motor Starters for Use in the Field, High Degree of Protection

Motor starters for AS-Interface, 24 V DC

Overview



AS-Interface 3RK1400-1MQ01-0AA4 double direct-on-line starter 24 V DC

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



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

Three different versions are available:

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

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

Quick stop function

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

Brake

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

Start-up using integrated buttons

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

Note concerning double and reversing starters:

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

Note concerning single direct-on-line starters:

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

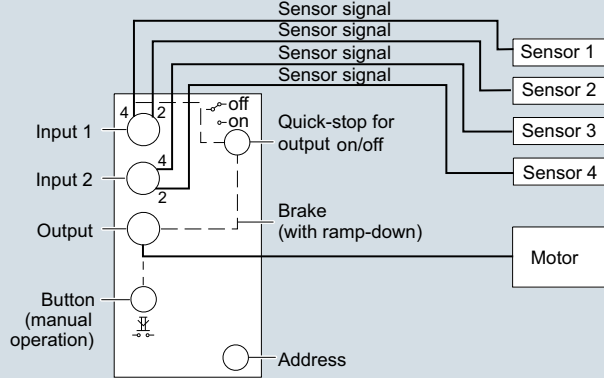
Motor Starters for Use in the Field, High Degree of Protection

Motor starters for AS-Interface, 24 V DC

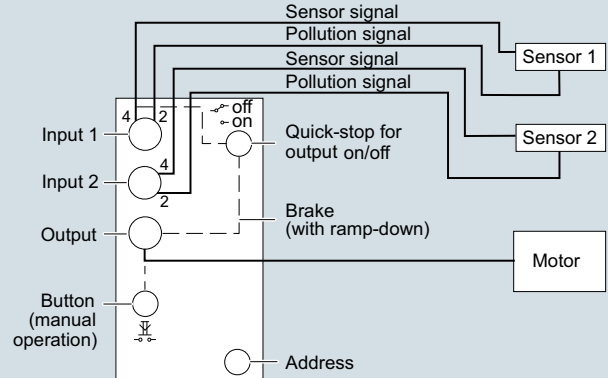
Applications

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

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

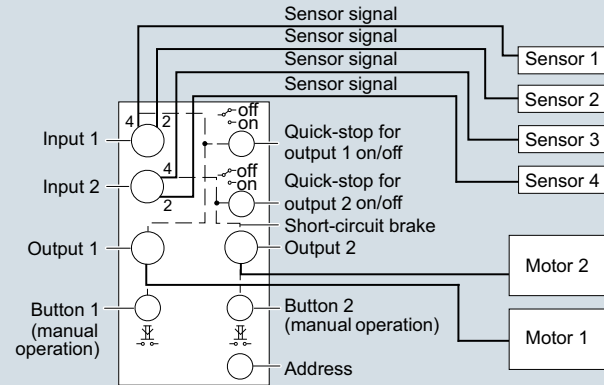


2nd possibility: Connection to a maximum of two sensors with pollution indication

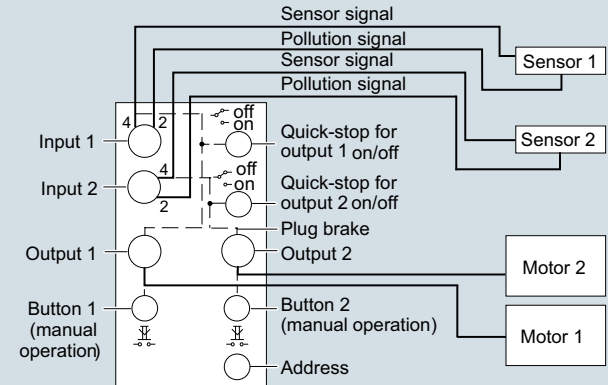


Double direct-on-line starter with brake (with adjustable quick-stop function)

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

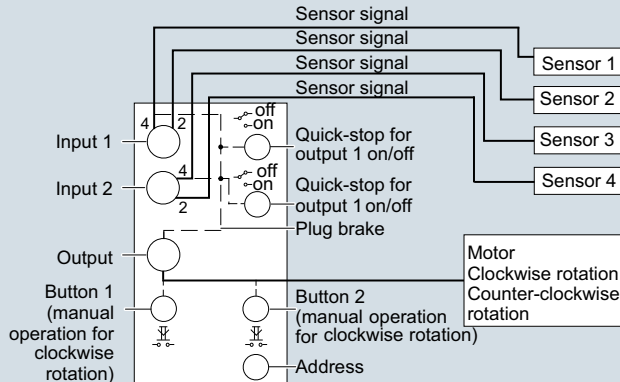


2nd possibility: Connection to a maximum of two sensors with pollution indication

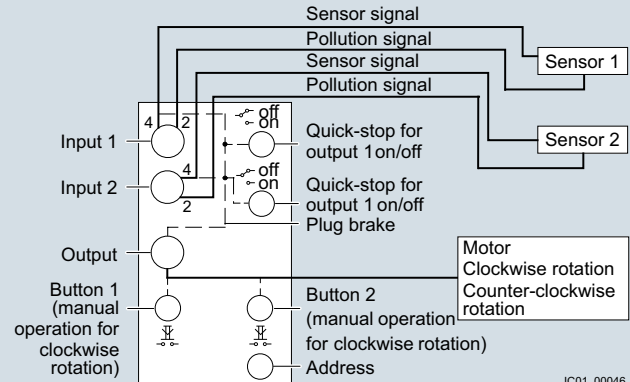


Single reversing starter with brake (with adjustable quick-stop function)

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



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



IC01_00046

Motor Starters for Use in the Field, High Degree of Protection

Motor starters for AS-Interface, 24 V DC

Selection and ordering data

Version	Inputs/out-puts	Current carrying capacity of outputs	Slave type	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A									

Motor starters (width 60 mm)



3RK1400-1MQ01-0AA4

Single direct-on-line starters¹⁾	4 inputs / 1 output	2	Standard	C	3RK1400-1NQ01-0AA4		1	1 unit	42C
Double direct-on-line starters¹⁾	4 inputs / 2 outputs	1 x 3 or 2 x 2	Standard	C	3RK1400-1MQ01-0AA4		1	1 unit	42C
Single reversing starters¹⁾	4 inputs / 1 output	2.5	Standard	C	3RK1400-1MQ03-0AA4		1	1 unit	42C

¹⁾ Modules supplied without mounting plate.

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



3RK1901-0CA00

K60 mounting plates

Suitable for all K60 compact modules

- Wall mounting
- Standard rail mounting



3RK1901-0CA00	1	1 unit	42C
3RK1901-0CB01	1	1 unit	42C



3RK1901-1KA00

AS-Interface sealing caps M12

For free M12 sockets



3RK1901-1KA00	100	10 units	42C
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3RK1901-1KA01

AS-Interface sealing caps M12, tamper-proof

For free M12 sockets



3RK1901-1KA01	100	10 units	42C
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3RK1902-0AR00

- Sealing sets**
- For K60 mounting plate and standard distributor
 - Cannot be used for K45 mounting plate
 - Set contains one straight and one shaped seal



3RK1902-0AR00	100	5 units	42D
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Overview



Hybrid fieldbus connection with two HanBrid sockets



Control cabinet bushing with two M12 sockets

Hybrid fieldbus connections with HanBrid sockets designed as cabinet bushings transmit data and energy from the control cabinet (IP20) to the field (IP65). They are the interface for jointly routing PROFIBUS DP and the auxiliary voltages into the hybrid fieldbus cable.

On the cabinet bushings with two M12 sockets for the PROFIBUS M12 connecting cables, the 24 V supply of the motor starters is implemented via separate 7/8" connecting cables.

Passive and active hybrid fieldbus connections

The hybrid fieldbus connections are available in two versions which differ in their functionality. They are:

- The passive version
- The active version with signal refresher function to considerably increase the maximum PROFIBUS cable length

Connection methods

The field side is connected using HanBrid or M12 plug-in connectors.

In the case of HanBrid, the following versions are available:

- Socket/socket for infeeding into the field
- Pin/socket for looping in the field

The M12 version is generally configured with socket/socket.

Following connections are available at the rear (cabinet side) in the case of the passive glands:

- Direct connection
- FastConnect connection

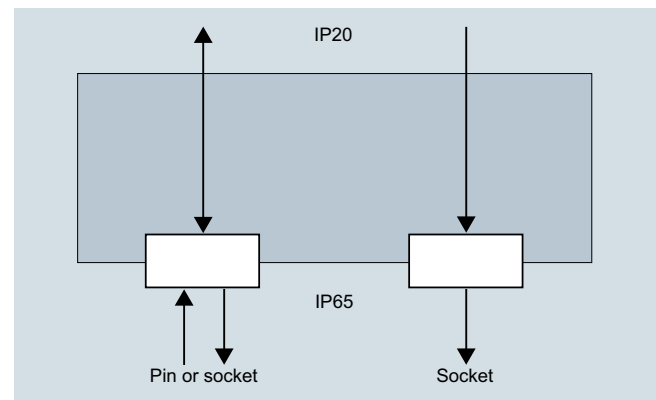
The active gland with refresher function has 9-pole Sub-D sockets for the rear connection.

Auxiliary power infeed

The HanBrid plug-in design offers the possibility of infeeding or looping through not only the Profibus signal but also 2 separate auxiliary voltages of 24 V DC (switched/unswitched) into the field. The terminal block with spring-type terminals at the rear (cabinet side) of the hybrid fieldbus connection provides a variety of interconnecting operations for these auxiliary voltages.

Passive hybrid fieldbus connections

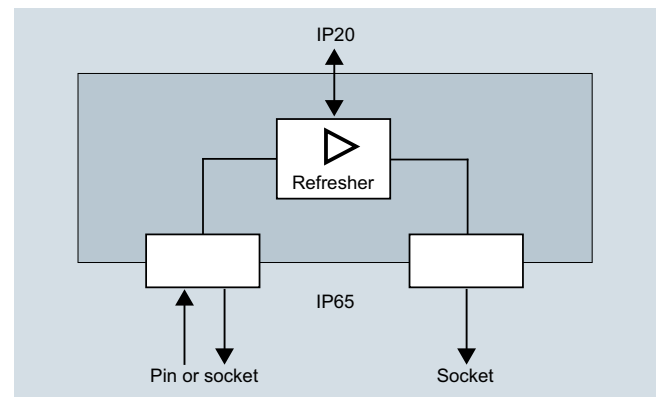
- Gland from the control cabinet (IP20) into the field (IP65)
- HanBrid plug-in design socket/socket or pin/socket
- Direct connection or FastConnect connection for PROFIBUS at the rear
- Terminal block with spring-type terminals (0.25 ... 2.5 mm²) for infeeding or looping through the auxiliary voltages



Hybrid fieldbus connection as passive cabinet bushing

Active hybrid fieldbus connections with refresher function

- Gland from the control cabinet (IP20) into the field (IP65)
- 3 independent, electrically separated PROFIBUS segments
- Signal refresher function from and to all segments
- Automatic continuous baud rate detection
- Status/diagnostics displays with LEDs
- Cascading depth of a maximum 9 hybrid fieldbus connections
- HanBrid plug-in design socket/socket and pin/socket
- M12 plug-in design socket/socket
- 9-pole Sub D socket connection for PROFIBUS at the rear
- Terminal block with spring-type terminals (0.25 ... 2.5 mm²) for infeeding or looping through the auxiliary voltages



Hybrid fieldbus connection as active control cabinet bushing with refresher function

Motor Starters for Use in the Field, High Degree of Protection

Hybrid fieldbus connections

Technical specifications

Type		Passive hybrid fieldbus connections	Active hybrid fieldbus connections
Mechanics and environment			
Dimensions (W x H x D)	mm	93 x 103 x 65	
Cutout (W x H)	mm	80 x 90	
Temperature range	°C	-25 ... +60	
Degree of protection		IP20 internal / IP65 on field side	
Material/enclosure	mm	Plastic (black PC), flame retardant	
Electrical specifications			
Rated operational voltage			
• 24 V DC not switched (NS)	V DC	24, ±25 %	
• 24 V DC switched (S)	V DC	24, ±25 %	
Max. rated current	A	10	
Power supply		--	From 24 V DC not switched (NS)
Max. power consumption	mA	--	130
Mains buffering	ms	--	> 20
Baud rate detection		--	Automatic
Maximum cascading depth		--	9 hybrid fieldbus connections
Baud rates	kbit/s	9.6 / 19.2 / 45.45 / 93.75 / 187.5 / 500/1 500 / 3 000 / 6 000 /12 000	
Electrical separation	V DC	500	

Selection and ordering data



Hybrid fieldbus connection on the field side:
With socket/socket (HanBrid)



With pin/socket (HanBrid)



Control cabinet bushing on the field side
With socket/socket (M12)

Link type / function	Connection IP65	Connection IP20 (PROFIBUS)	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Hybrid fieldbus connections

Passive

• Cu/Cu, for feeding into the field	Socket/socket (2 x HanBrid)	Direct connection	B	3RK1911-1AA22		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	Direct connection	B	3RK1911-1AA32		1	1 unit	42D
• Cu/Cu, for feeding into the field	Socket/socket (2 x HanBrid)	PROFIBUS FastConnect bus connector	B	3RK1911-1AF22		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	PROFIBUS FastConnect bus connector	B	3RK1911-1AF32		1	1 unit	42D

Active (refresher)

• Cu/Cu, for feeding into the field	Socket/socket (2 x HanBrid)	9-pole Sub D socket	B	3RK1911-1AJ22		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	9-pole Sub D socket	B	3RK1911-1AJ32		1	1 unit	42D
• Cu/Cu, for feeding into the field	Socket/socket (2 x M12)	9-pole Sub D socket	B	3RK1911-1AK22		1	1 unit	42D

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



6ES7194-1JB10-0XA0

Sealing caps for HanBrid
Protective cover for bus and power supply connection (pack of 10)

A	6ES7194-1JB10-0XA0	1	10 units	250
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