

Motor starters for use in the field, high degree of protection



Price groups

PG 241, 250, 368, 41J, 42C, 42D, 5K1, 5K2

9/2

Introduction

ET 200pro motor starters

General data

9/3

Standard motor starters

9/8

High Feature motor starters

9/9

ET 200pro isolator modules

9/10

ET 200pro Safety motor starters
Solution PROFIsafe

9/11

- Safety modules PROFIsafe

9/13

Accessories for ET 200pro motor starters

Software

9/18

Motor Starter ES

SIRIUS M200D motor starters

9/19

General data

M200D motor starters for AS-Interface

9/21

General data

9/25

M200D Basic motor starters

9/26

M200D Standard motor starters

M200D motor starters for
PROFIBUS/PROFINET

9/27

General data

9/33

Communications modules,
motor starter modules

Software

9/34

Motor Starter ES

Accessories

9/35

For all M200D motor starters

9/40

For M200D motor starters for AS-Interface

9/42

For M200D motor starters for PROFIBUS

9/43

For M200D motor starters for PROFINET

9/44

Hybrid fieldbus connections

Motor starters for use in the field, high degree of protection

Introduction

Overview

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 supply and integrated safety technology of our portfolio for a high degree of protection consistently supports current trends in drive technology.



3RK1304



3RK1315

		Type	Page
ET 200pro motor starters			
Motor starters in the SIMATIC ET 200pro I/O system up to 5.5 kW			
Standard motor starters		3RK1304	9/8
High Feature motor starters		3RK1304	9/9
ET 200pro isolator modules	• With switch disconnecter function for safe disconnection	3RK1304	9/10
Safety modules PROFIsafe	• F-Switch PROFIsafe	6ES7148	9/11
	• 400 V disconnecting module	3RK1304	9/11
Accessories for ET 200pro motor starters	• Incoming power supply, power loop-through connection on the field device, motor cable, power bus with power terminal connectors	3RK19	9/13
ET 200pro – interface modules	• For communication with PROFIBUS, PROFINET and IWLAN	6ES71	ST 70
ET 200pro – CPUs	• Standard CPUs, fail-safe CPUs	6ES71	ST 70
ET 200pro – I/O modules	• Digital/analog expansion modules, fail-safe expansion modules, power modules, ET 200pro pneumatic interfaces	6ES71	ST 70
ET 200pro PS	• Stabilized power supplies	6ES7148	ST 70
ET 200pro FC-2 frequency converters		6SL35	D 31.2
ET 200pro add-on products	• Modules for EtherNet/IP	ZNX:EIP	ST 70
SIRIUS M200D motor starters			
Distributed motor starters up to 5.5 kW			
M200D AS-i Basic motor starters		3RK1315	9/25
M200D AS-i Standard motor starters		3RK1325	9/26
M200D communications modules for PROFIBUS		3RK1305	9/33
M200D communications modules for PROFINET		3RK1335	9/33
M200D motor starter modules		3RK1395	9/33
Accessories	• Incoming power supply, motor cable, power bus with power terminal connectors	3RK1911	9/37
	• Motor control with I/O communication	3RK1902	9/39
	• Motor control with AS-i communication	3RK1902	9/40
	• Motor control with PROFIBUS	3RK1902	9/42
	• Motor control with PROFINET	3RK1902	9/43
Hybrid fieldbus connections			
	• Passive and active	3RK1911	9/45

Motor starters for use in the field, high degree of protection

ET 200pro motor starters

General data

Overview

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

SIMATIC ET 200pro is the modular I/O system with high degree of protection IP65/66/67 for local, cabinet-free use. The ET 200pro motor starters with 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 (see pages 9/8 and 9/9)

- Only two variants up to 5.5 kW
- All settings can be parameterized by bus
- Comprehensive diagnostic messages
- Support for PROFlenergy
- Overload can be acknowledged by Remote RESET
- Current asymmetry monitoring
- Stall protection
- EMERGENCY START function on 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 connectors
- Motor feeder with Han Q8/0 plug
- Conductor cross-section 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 on-board)
- 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
- Temperature sensor can be connected (Thermoclick or PTC type A)
- Provision of the motor current in PROFlenergy format to higher-level systems, motor current shutdown in dead times using PROFlenergy

More information

Homepage, see www.siemens.com/ET200pro

Industry Mall, see www.siemens.com/product?ET200pro

Further components in the ET 200pro distributed I/O system:

- Interface modules, central processing units, I/O modules, ET 200pro PS, see [Catalog ST 70](#)
- ET 200pro FC-2 frequency converters, see [Catalog D 31.2](#)

ET 200pro isolator modules (see page 9/10)

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 subsequently supplied motor starters).

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

Safety applications

Safety Solution PROFIsafe (see page 9/11)

With the Safety modules PROFIsafe

- F-Switch and
 - 400 V disconnecting module
- with an appropriate connection, safety levels SIL 3 (according to IEC 62061) or PL e (according to ISO 13849-1) can also be reached.

Functionality

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

The ET 200pro motor starters are available with mechanical and also electronic contacts.

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

Compared with the Standard motor starters, the **High Feature, mechanical** motor starter also has:

- Four digital inputs
- Advanced parameterization options

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

Compared with the High Feature mechanical motor starters, the **High Feature electronic** motor starter also has:

- 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

Motor starters for use in the field, high degree of protection

ET 200pro motor starters

General data

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

- Configuration is made easier and flexibility is increased by the fine modular structure with ET 200pro. When using ET 200pro motor starters, the parts list per load feeder is reduced to two main items: the bus module and the motor starter. This makes the ET 200pro ideal for modular machine concepts or solutions for conveying systems and in machine-tool building.
- Expansions are easily possible through the subsequent adding of modules. The innovative plug-in technology also does away with the wiring needed up to now. Through the hot swapping function (disconnection and connection during operation) a motor starter can be replaced within seconds if necessary, without having to shut down the ET 200pro station and with it the process in the plant. The motor starters are therefore recommendable in particular for applications with special demands on availability. Storage costs are also optimized by the low level of variance (two units up to 5.5 kW).
- With four locally acting inputs available on the High Feature motor starter it is possible to realize autonomous special functions that 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.

Article No. scheme

Product versions		Article number					
Motor starters		3RK1304	– 5	☐ S	☐ 0	☐ A	☐ A
Setting range	0.15 ... 2.0 A 1.5 ... 12 A	K L					
Product function	Direct-on-line starters DSe		4		4		Standard
	Reversing starters RSe		4		5		Standard
	Direct-on-line starters DSe		4		2		High Feature
	Reversing starters RSe		4		3		High Feature
	Direct-on-line starters sDSSSte/sDSte		7		2		High Feature
	Reversing starters sDSSSte/sDSte		7		3		High Feature
Inputs/outputs	Without brake output					0	
	With brake output					3	400 V AC, with High Feature + 4 inputs
Example		3RK1304	– 5	K	S	4	0 – 4 A A 0

Product versions		Article number					
Modules		3RK1304	– 0	H	S	0	☐ A A 0
Product function	Isolator modules					6	
	400 V disconnecting modules					8	Safety modules PROFIsafe
Example		3RK1304	– 0	H	S	0	6 A A 0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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 asymmetry limit	%	-- Fixed limit value (30 x I _e)	✓ 30 ... 60 x I _e
Parameterizable response in case of asymmetry 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 contacts
• 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 startup 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 dead 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 starters
 RS Reversing starters
 DSS .. Direct-on-line soft starters
 RSS .. Reversing soft starters
 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

ET 200pro motor starters provide the following advantages:

- High flexibility thanks to a modular and compact design
- Little variance among all motor starter versions (two 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 on-site 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, or digital or analog sensors and actuators are addressed from a distributed station. They are perfectly suited for protecting and switching any AC loads.

Application areas

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

Use of ET 200pro motor starters in conjunction with IE3/IE4 motors

Note:

For the use of ET 200pro motor starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring; [see Application Manual](#).

For more information, [see page 1/8](#).

Motor starters for use in the field, high degree of protection

ET 200pro motor starters

General data

Technical specifications

More information			
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/22332388		Notes on security: System networking requires suitable protective measures (including network segmentation for IT security) in order to ensure safe plant operation. For more information on the subject of Industrial Security, see www.siemens.com/industrialsecurity .	
Type		Standard motor starters	High Feature motor starters
		Mechanical switching without inputs	Mechanical switching with inputs
Technology designation ¹⁾		DSe, RSe	DSe, RSe
			Electronic switching with inputs and soft starter function 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
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_e for power bus		A	25
Rated operational voltage U_e • 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)
Approval • DIN VDE 0106, Part 101 • CSA and UL approval		V V	Up to 400 Up to 600
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_e 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
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
Utilization categories			AC-1, AC-2, AC-3, AC-4
Protective separation between main and auxiliary circuits		V	400, acc. to EN 60947-1, Appendix N
Endurance of contactor • Mechanical		Operating cycles	30 million
• Electrical		Operating cycles	Up to 10 million; depending on the current loading (see manual)
Permissible switching frequency			Depending on the current loading, motor starting time, and relative ON period (see manual)
Operating times for 0.85 ... 1.1 x U_e • Closing delay • Opening delay		ms ms	11 ... 50 5 ... 45

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

²⁾ 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.

Motor starters for use in the field, high degree of protection

ET 200pro motor starters

Standard motor starters **IE3/IE4 ready**

Overview

The functionality, device functions, and technical specifications of the Standard motor starter are described in "ET 200pro motor starters, General data" (see page 9/3 onwards).

Selection and ordering data

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

Standard motor starters, mechanical Motor protection: thermal model



DSe Standard

Direct-on-line starters DSe¹⁾

- Without brake output
- With brake output 400 V AC

2

2

3RK1304-5□S40-4AA0

3RK1304-5□S40-4AA3

1

1

1 unit

1 unit

42D

42D

Reversing starters RSe¹⁾

- Without brake output
- With brake output 400 V AC

2

2

3RK1304-5□S40-5AA0

3RK1304-5□S40-5AA3

1

1

1 unit

1 unit

42D

42D

Setting range

Rated operational current

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

Add. price

None

✓

K
L

✓ = 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", page 9/17).

Motor starters for use in the field, high degree of protection

ET 200pro motor starters

IE3/IE4 ready **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 page 9/3 onwards).

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	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

High Feature motor starters, mechanical Motor protection: thermal model



RSe High Feature

Direct-on-line starters DSe¹⁾

- Without brake output and with 4 inputs
- With brake output 400 V AC and 4 inputs

2
5
3RK1304-5□S40-2AA0
3RK1304-5□S40-2AA3
1
11 unit
1 unit42D
42D

Reversing starters RSe¹⁾

- Without brake output and with 4 inputs
- With brake output 400 V AC and 4 inputs

2
2
3RK1304-5□S40-3AA0
3RK1304-5□S40-3AA3
1
11 unit
1 unit42D
42D
 Setting range
 Rated operational current

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

Add. price

None
✓K
L

High Feature motor starters²⁾, electronic Full motor protection, consisting of thermal motor protection and thermistor motor protection



sRSSe High Feature

Direct-on-line starters sDSSe/sDSte¹⁾²⁾

- Without brake output and with 4 inputs
- With brake output 400 V AC and 4 inputs

2
5
3RK1304-5□S70-2AA0
3RK1304-5□S70-2AA3
1
11 unit
1 unit42D
42D

Reversing starters sRSSe/sRSte¹⁾²⁾

- Without brake output and with 4 inputs
- With brake output 400 V AC and 4 inputs

2
2
3RK1304-5□S70-3AA0
3RK1304-5□S70-3AA3
1
11 unit
1 unit42D
42D
 Setting range
 Rated operational current

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

Add. price

None
✓K
L

✓ = 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", page 9/17).

²⁾ The electronic motor starters can be used not only as electronic motor 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 electronic 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 **IE3/IE4 ready**

Overview

The isolator module with integrated group fusing function (i.e. additional group short-circuit protection for all subsequently supplied motor starters) and switch disconnecter 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

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 °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_e for power bus	A	25
Rated operational voltage U_e	V	400
Approvals according to • DIN VDE 0106, Part 101 • CSA and UL	V 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_e 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 acc. to IEC 60947-4-1	2	
Protective separation between main and auxiliary circuits	V	400, according to DIN VDE 0106, Part 101
Device functions		
• Group diagnostics	Yes, parameterizable	
Device indications		
• Group fault	SF LED (red)	

Selection and ordering data

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

ET 200pro isolator modules, mechanical



3RK1304-OHS00-6AA0

Isolator modules¹⁾

Rated operational current 25 A

2

3RK1304-OHS00-6AA0

1

1 unit

42D

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 9/17).

Motor starters for use in the field, high degree of protection

ET 200pro motor starters

ET 200pro Safety motor starters Solution PROFIsafe > Safety modules PROFIsafe

Overview

Safety Solution PROFIsafe

With the Safety modules PROFIsafe

- F-Switch and
 - 400 V disconnecting module
- with an appropriate connection, safety levels SIL 3 (according to IEC 62061) or PL e (according to ISO 13849-1) can be reached.

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

- Three 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 page 16/7](#).

Functionality

The PROFIsafe F-Switch is a fail-safe solid-state 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, fail-safe disconnection of ET 200pro motor starters is possible in PROFIsafe applications up to SIL 3/PL e.

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 PROFIsafe application it functions only in combination with the F-Switch.

Functionality

The 400 V disconnecting module can be used 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 F-Switch for safety applications up to SIL 3/PL e.

Technical specifications

Type	400 V disconnecting module	
General data		
Mounting dimensions (W x H x D) • Direct-on-line starters and reversing starters	mm	110 x 230 x 150
Permissible ambient temperature • During operation • During storage	°C °C	-25 ... +55 -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-sine 15 g/11 ms	
Power consumption • From auxiliary circuit L+/M (U1) • From auxiliary circuit A1/A2 (U2)	mA	Approx. 20 --
Rated operational current I_e for power bus	A	25
Rated operational voltage U_e	V	400 (50/60 Hz)
Approval 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_e for starters • AC-1/2/3 at 40 °C - At 400 V - At 500 V	A A	25 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, according to DIN VDE 0106, Part 101
Operating times for 0.85 ... 1.1 x U_e • Closing delay • Opening delay	ms ms	25 ... 100 7 ... 10
Device functions • Group diagnostics	Yes, parameterizable	
Device indications • Group fault	SF LED (red)	

Motor starters for use in the field, high degree of protection

ET 200pro motor starters

ET 200pro Safety motor starters Solution PROFIsafe > Safety modules PROFIsafe

IE3/IE4 ready

Selection and ordering data

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

¹⁾ The 400 V disconnecting module functions only when used together with the F-Switch PROFIsafe.

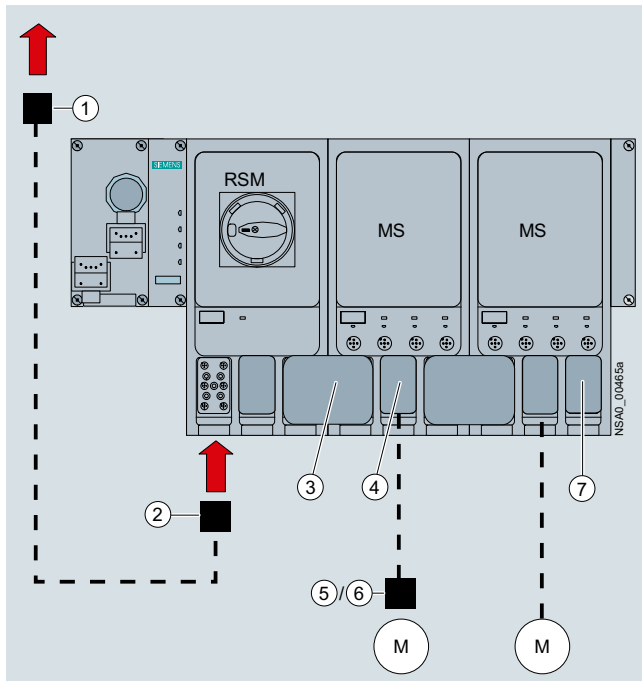
²⁾ The 400 V disconnecting module functions only when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters", page 9/17).

Motor starters for use in the field, high degree of protection

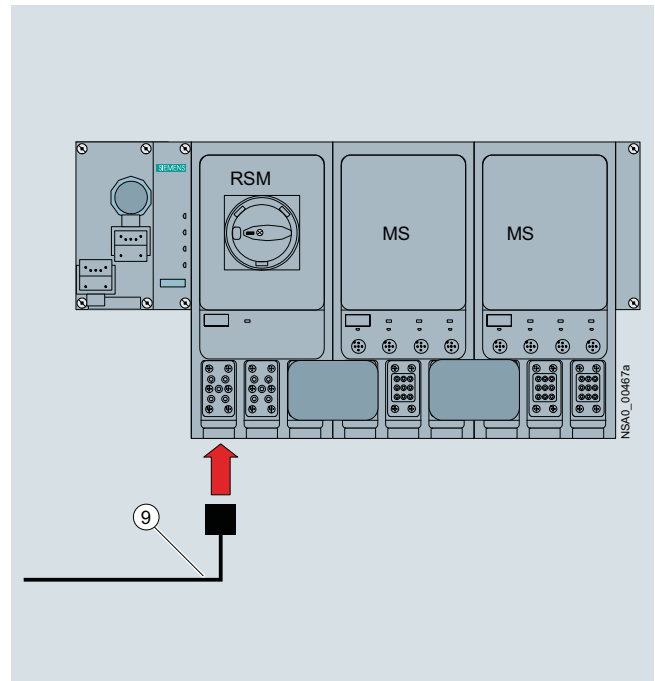
ET 200pro motor starters

Accessories for ET 200pro motor starters

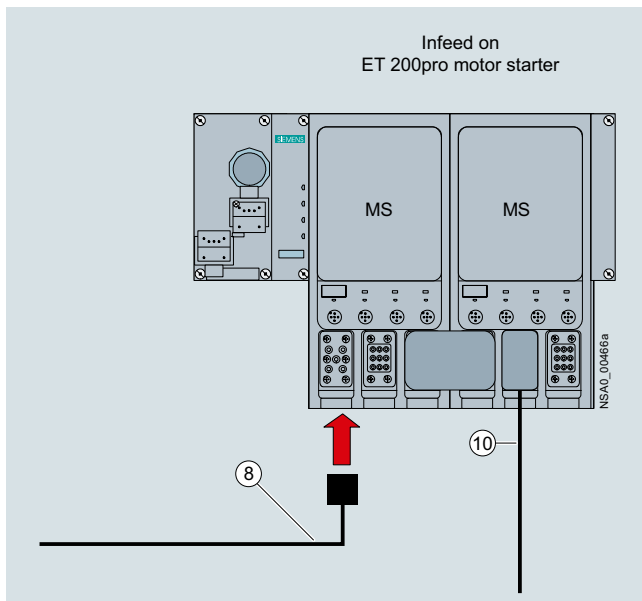
Overview



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 RSM isolator module



Infeed on the ET 200pro motor starter

Legend:

- ① Power feeder plug ([see page 9/15](#))
- ② Power connection plug ([see page 9/15](#))
- ③ Power jumper plug ([see page 9/15](#))
- ④ Motor connection plug ([see page 9/15](#))
- ⑤ Motor plug ([see page 9/15](#))
- ⑥ Motor plug with EMC suppressor circuit ([see page 9/15](#))
- ⑦ Power loop-through plug ([see page 9/15](#))
- ⑧ Power connection cable ([see page 9/15](#))
- ⑨ Power connection cable for isolator module ([see page 9/15](#))
- ⑩ Motor cable ([see page 9/16](#))

Motor starters for use in the field, high degree of protection

ET 200pro motor starters

Accessories for ET 200pro motor starters

Power bus

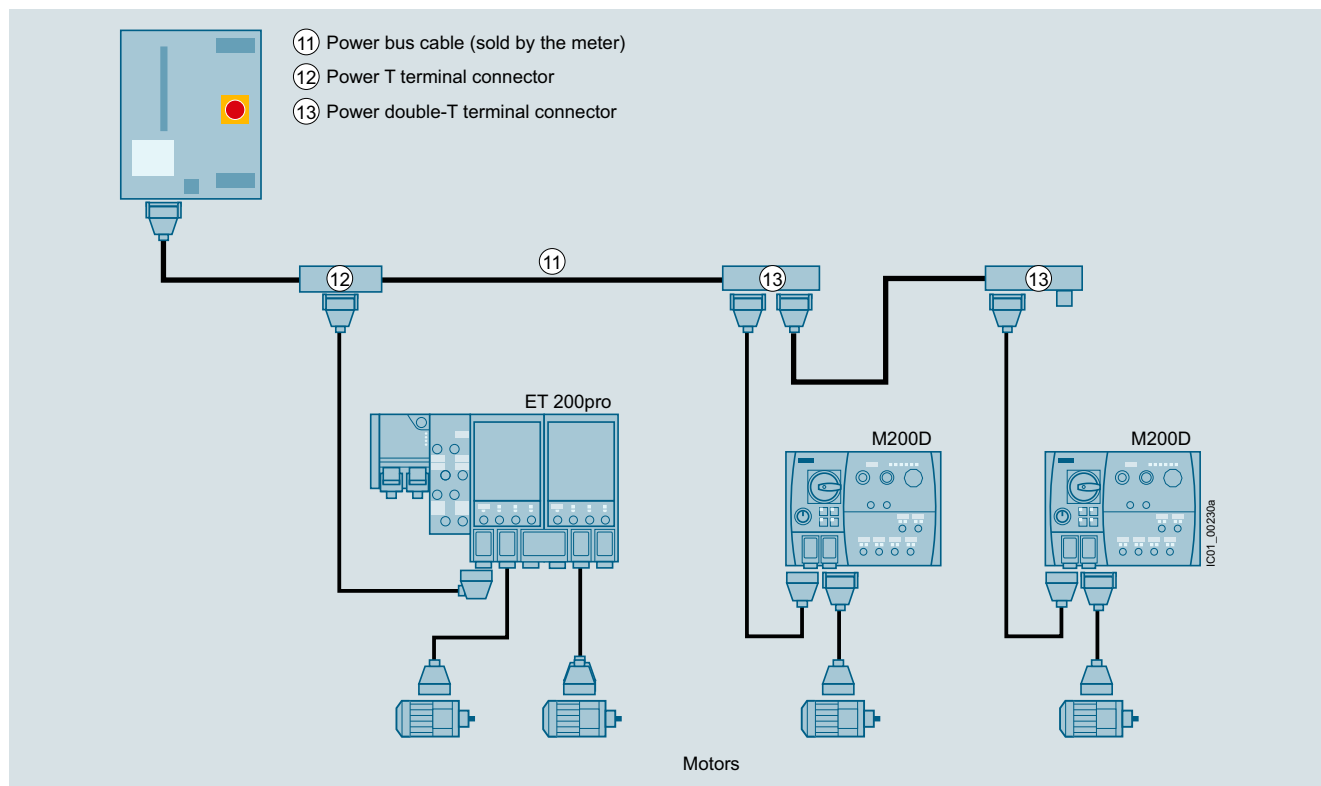
The power supply to the field devices (ET 200pro motor starters, M200D motor starters) is provided via the power bus, in which the power T terminal connectors or power double-T terminal connectors are connected by power bus cables.

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. the power bus is not interrupted when the components are unplugged.



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 gland
- 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 plugs (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⁾

For connection modules with the relevant accessories, see "Accessories for ET 200pro interface modules" in Catalog ST 70 or the Industry Mall.

Motor control via PROFINET

For connection modules with the relevant accessories, see "Accessories for ET 200pro interface modules" in Catalog ST 70 or the Industry Mall.

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 9/44).

²⁾ On the control cabinet bushings with two M12 sockets for the PROFIBUS M12 connecting cables, (see page 9/44), the 24 V supply of the motor starters is implemented via separate 7/8" connecting cables.

Motor starters for use in the field, high degree of protection

ET 200pro motor starters

Accessories for ET 200pro motor starters

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Incoming power supply						
① Power feeder plugs						
Connector set for incoming power supply, e.g. for connecting to T terminal connectors, consisting of a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. gland						
• 5 male contacts, 2.5 mm ²	2	3RK1911-2BS60		1	1 unit	42D
• 5 male contacts, 4 mm ²	5	3RK1911-2BS20		1	1 unit	42D
• 5 male contacts, 6 mm ²	5	3RK1911-2BS40		1	1 unit	42D
② Power connection plugs						
Connector set for incoming power supply for connection to ET 200pro motor starters/ET 200pro isolator modules, consisting of a cable-end connector hood, angled outgoing feeder, female insert for HAN Q4/2, incl. gland						
• 5 female contacts, 2.5 mm ²	2	3RK1911-2BE50		1	1 unit	42D
• 5 female contacts, 4 mm ²	2	3RK1911-2BE10		1	1 unit	42D
• 5 female contacts, 6 mm ²	2	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, angled, 4 x 4 mm ²						
• Length 1.5 m	5	3RK1911-0DB13		1	1 unit	42D
• Length 5.0 m	2	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, angled, insert turned at isolator module end, 4 x 4 mm ²						
• Length 1.5 m	30	3RK1911-0DF13		1	1 unit	42D
• Length 5.0 m	30	3RK1911-0DF33		1	1 unit	42D
Power loop-through on the field device						
③ Power jumper plugs						
	2	3RK1922-2BQ00		1	1 unit	42D
⑦ Power loop-through plugs						
Connector set for power loop-through for connection to ET 200pro motor starters/ET 200pro isolator modules, consisting of a cable-end connector hood, angled outgoing feeder, pin insert for HAN Q4/2, incl. gland						
• 4 male contacts, 2.5 mm ²	2	3RK1911-2BF50		1	1 unit	42D
• 4 male contacts, 4 mm ²	2	3RK1911-2BF10		1	1 unit	42D
Motor cables						
④ Motor connection plugs						
Connector set for motor cable for connection to ET 200pro motor starters, consisting of a cable-end connector hood, angled outgoing feeder, pin insert for HAN Q8/0, incl. gland						
• 8 male contacts, 1.5 mm ²	2	3RK1902-0CE00		1	1 unit	42D
• 6 male contacts, 2.5 mm ²	2	3RK1902-0CC00		1	1 unit	42D
⑤ Motor plugs						
Connector set for motor cable for connection to motors, consisting of 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	30	3RK1911-2BM21		1	1 set	42D
• 7 female contacts, 2.5 mm ²	30	3RK1911-2BM22		1	1 set	42D
⑥ Motor plugs with EMC suppressor circuit						
Connector set for motor cable for connection to motors, consisting of 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	30	3RK1911-2BL21		1	1 set	42D
• 7 female contacts, 2.5 mm ²	X	3RK1911-2BL22		1	1 set	42D

Motor starters for use in the field, high degree of protection

ET 200pro motor starters

Accessories for ET 200pro motor starters

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
Motor cables (continued)						
⑩ Motor cables, assembled at one end Open at one end, HAN Q8, angled, length 5 m						
• For motor without brake, for ET 200pro, 4 x 1.5 mm ²	2	3RK1911-0EB31		1	1 unit	42D
• For motor with brake for ET 200pro, 6 x 1.5 mm ²	30	3RK1911-0ED31		1	1 unit	42D
• For motor without brake, with thermistor, for ET 200pro, 6 x 1.5 mm ²	30	3RK1911-0EF31		1	1 unit	42D
• For motor with brake and thermistor for ET 200pro, 8 x 1.5 mm ²	30	3RK1911-0EG31		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	5	3RK1911-2BF01		1	1 unit	42D
• 4 mm ² /6 mm ²	5	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	5	3RK1911-2BG02		1	1 unit	42D
Sealing set (consisting of 2 seals) For power T/power double-T terminal connectors						
• For power cables with Ø 10 ... 13 mm	5	3RK1911-5BA00		1	1 unit	42D
• For power cables with Ø 13 ... 16 mm	5	3RK1911-5BA10		1	1 unit	42D
• For power cables with Ø 16 ... 19 mm	5	3RK1911-5BA20		1	1 unit	42D
• For power cables with Ø 19 ... 22 mm	X	3RK1911-5BA30		1	1 unit	42D
• Blanking plugs	5	3RK1911-5BA50		1	1 unit	42D
Further accessories for power connections						
 3RK1902-0CW00	Crimping tool for pins/sockets, 4 mm ² and 6 mm ²		15	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		15 5	3RK1902-0AB00 3RK1902-0AJ00	1 1	1 unit 42D 1 unit 42D
 3RK1902-0CK00	Sealing caps For 9-pole power sockets					
	• 1 unit per pack • 10 units per pack		2 2	3RK1902-0CK00 3RK1902-0CJ00	1 1	1 unit 42D 10 units 42D

Motor starters for use in the field, high degree of protection

ET 200pro motor starters

Accessories for ET 200pro motor starters

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

Further accessories

Module racks, wide¹⁾

- Length 500 mm
- Length 1 000 mm
- Length 2 000 mm

1

6ES7194-4GB00-0AA0

1

1 unit

250

1

6ES7194-4GB60-0AA0

1

1 unit

250

1

6ES7194-4GB20-0AA0

1

1 unit

250

Module racks, wide, compact¹⁾

- Length 500 mm
- Length 1 000 mm
- Length 2 000 mm

1

6ES7194-4GD00-0AA0

1

1 unit

250

1

6ES7194-4GD10-0AA0

1

1 unit

250

1

6ES7194-4GD20-0AA0

1

1 unit

250

Backplane bus modules 110 mm²⁾

2

3RK1922-2BA00

1

1 unit

42D

Handheld devices

For ET 200pro motor starters (or for ET 200S High Feature and M200D motor starters) for local operation.

Notes:

- 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.

5

3RK1922-3BA00

1

1 unit

42D

RS 232 interface cable

Serial data connection between ET 200pro (or M200D) motor starters and the RS 232 interface of a PC/PG/laptop (with the Motor Starter ES software) or the handheld device 3RK1922-3BA00.

2

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).

3

6SL3555-0PA00-2AA0

1

1 unit

368

M12 sealing caps

For sealing unused M12 input or output sockets (one set contains ten sealing caps)

▶

3RK1901-1KA00

100

10 units

42C

Motor suppression module

RC element for installation in motor terminal box

- Angled design

15

3RK1911-6EA00

1

1 unit

42D

- Round design

15

3RK1911-6EB00

1

1 unit

42D



3RK1922-3BA00



3RK1901-1KA00



3RK1911-6EA00



3RK1911-6EB00

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

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

For more connection technology products, see <https://support.industry.siemens.com/cs/ww/en/view/65355810>.

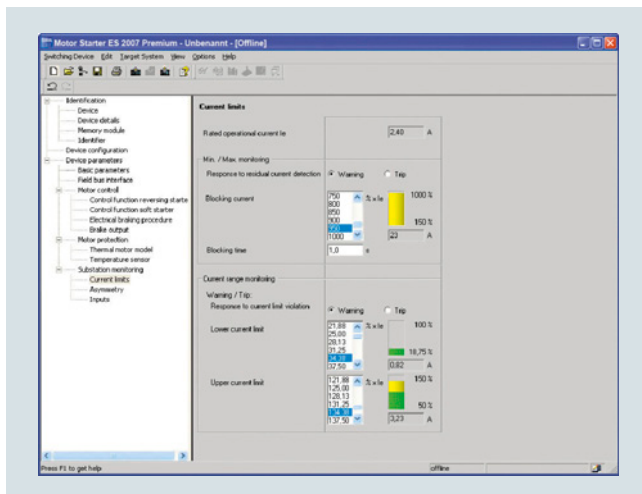
Motor starters for use in the field, high degree of protection

ET 200pro motor starters

Software

Motor Starter ES

Overview



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

More information

Industry Mall, see www.siemens.com/product?3ZS1

Technical specifications and system requirements, see <https://support.industry.siemens.com/cs/ww/en/ps/16713/td>

Motor Starter ES is used for the startup, parameterization, diagnostics, documentation and preventive maintenance of SIMATIC ET 200S, ET 200pro, ECOFAST and M200D motor starters.

The software program is available in three versions which differ in their user-friendliness, scope of functions and price.

For detailed information on the Motor Starter ES software, see page 14/10.

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

General data

Overview



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

The intelligent and highly flexible SIRIUS M200D motor starters for distributed installation 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

More information

Homepage, see www.siemens.com/sirius-motor-starter-m200d

Industry Mall, see www.siemens.com/product?M200D

TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=MS_M200D

Basic functionality

The versions of the M200D motor starter are equipped with the following properties and functions:

- Available as direct-on-line and reversing starters in a rugged design
- Electromechanical or electronic switching version
- Low variance – only two device versions up to 5.5 kW thanks to wide range setting
- All versions have the same enclosure size.
- 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 three locks (multi-level service)
- Uniform wiring to the SINAMICS G110D, SINAMICS G110M and SINAMICS G120D frequency converters 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 (ordering options)

Article No. scheme

Product versions		Article number													
Motor starters		3RK13		5	–	6		S		1	–		A		
Type	AS-i Basic	1											A		
	AS-i Standard	2											A		
	PROFIBUS/PROFINET	9											D		
Setting range for rated operational current I_A	0.15 ... 2 A							K							
	1.5 ... 9 A							N							
	1.5 ... 12 A							L							
Starter version	Electromechanical starters								4						with integrated contactor
	Electronic starters								7						with thyristors
Product function	Direct-on-line starters											0			
	Reversing starters											1			
	Direct-on-line starters											2			with manual local operation
	Reversing starters											3			with manual local operation
Brake actuation	None													0	
	230/400 V AC													3	
	180 V DC													5	
Example		3RK13	1	5	–	6	K	S	4	1	–	3	A	A	0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

General data

Benefits

M200D motor starters provide the following advantages for customers:

- High plant availability through plug-in capability of the main circuit, communication and I/Os – 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 ensure comprehensive motor protection. All motor protection functions can be defined by simple parameterization
- Low stock levels and low order costs thanks to a wide setting range for the electronic motor protection of 1:10 (only two 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 startup 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 converter 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.

SINAMICS G110D converters allow for continuous speed control of three-phase asynchronous motors and comply with the requirements of conveyor technology applications with frequency control (for more information, [see Catalog D 31.2](#)).

For simple drive tasks in conveyor applications in which a frequency converter integrated into the motor is required, the SINAMICS G110M frequency converter 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 converter for self-assembly and pre-mounted on SIMOGEAR geared motors, and with its conveyor-specific functions it satisfies the requirements of conveyor technology applications (for more information, [see Catalog D 31.2](#)).

Use of SIRIUS M200D motor starters in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS M200D motor starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, [see Application Manual](#).

For more information, [see page 1/8](#).

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

M200D motor starters for AS-Interface

General data

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 9/19 "SIRIUS M200D motor starters" → "General data" → "Overview"](#)).

SIRIUS M200D AS-i Basic

Functionality

- Easy and fast on-site startup 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 four digital inputs, two are contained in the process image and can therefore be used in the PLC program. The other two 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 messages 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 and highly flexible M200D AS-i Standard motor starter in A/B technology starts and protects motors and loads up to 5.5 kW. It is 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 startup software)
- Diagnostics with the help of Motor Starter ES (ordering option for startup 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. Connection 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 startup 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 four 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 generation of motor starters is characterized by its advanced functionality, maximum flexibility and extremely high degree 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 messages 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.

Preventive maintenance can be carried out with the integrated maintenance timer and plant downtimes prevented as a result in advance.

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

Parameter assignment

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
---------------	---------	---------

Data channels

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

Data records¹⁾ (acyclic)

Parameter assignment	--	✓
Diagnostics	--	✓
Measured values	--	✓
Statistics	--	✓
Commands	--	✓

Inputs

Number	✓ 4	
• Of these in the process image	✓ 2 through AS-i	✓ 4 through AS-i
Input action	✓ For permanently assigned functions, see manual	✓ 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: For function, see manual

Brake output

180 V DC / 230/400 V AC / none	✓	
--------------------------------	---	--

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 via 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.

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) (continued)**Device function**

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
Asymmetry	✓ Permanent function: up to 30% of the rated operational current I_e (only mechanical MS)	✓ Parameterizable
Load type	✓ Permanent function: 3-phase	✓ Parameterizable: 1-phase and 3-phase
Shutdown class	✓ Parameterizable using DIP switches: CLASS 10/deactivated	Parameterizable via 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 requiring devices and systems to be monitored to prevent or limit plant downtime. The option of parameterizing the functions of the motor starter or its interfaces also creates the prerequisite for fine-adjustment to the function of the motor starter in the application and hence provides for extreme flexibility.

Use of M200D motor starters in conjunction with IE3/IE4 motorsNote:

For the use of SIRIUS M200D motor starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, [see Application Manual](#).

For more information, [see page 1/8](#).

Technical specifications**More information**

Manuals for SIRIUS M200D:

- AS-i Basic, [see https://support.industry.siemens.com/cs/ww/en/view/35016496](https://support.industry.siemens.com/cs/ww/en/view/35016496)
 - AS-i Standard, [see https://support.industry.siemens.com/cs/ww/en/view/38722160](https://support.industry.siemens.com/cs/ww/en/view/38722160)
- FAQs, [see https://support.industry.siemens.com/cs/ww/en/ps/16324/faq](https://support.industry.siemens.com/cs/ww/en/ps/16324/faq)

Notes on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information on the subject of Industrial Security, [see www.siemens.com/industrialsecurity](https://www.siemens.com/industrialsecurity).

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

M200D motor starters for AS-Interface

General data

Type		M200D motor starters			
		AS-i Basic electromechanical switching DSte/RSSte	AS-i Basic electronic switching sDSte/sRSSte	AS-i Standard electromechanical switching DSte/RSSte	AS-i Standard electronic switching sDSSSte/sRSSte
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					
Operating voltage U_{As-i}	V DC	26.5 ... 31.6			
Supply voltage U_{aux}	V DC	20.4 ... 28.8			
Power consumption from AS-i (incl. 200 mA sensor supply)	mA	< 300			
Current 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)			
• Rated operational current range	A	0.15 ... 2/1.5 ... 12	--	0.15 ... 2/1.5 ... 12	--
• Rated operational current range for soft starting	A	--	0.15 ... 2/1.5 ... 9	--	0.15 ... 2/1.5 ... 12
• Rated operational current range for direct-on-line starting	A	--	--	--	0.15 ... 2/1.5 ... 9
Rated operational current I_e for starters 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 service life 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		see manual	
Rated ultimate short-circuit breaking capacity I_q					
• At 400 V AC	kA	50	20 ²⁾	50	20 ²⁾
• At 500 V AC	kA	50 ²⁾	20 ²⁾	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 starters
 RS Reversing starters
 DSS .. Direct-on-line soft starters
 RSS .. Reversing soft starters
 te Full motor protection (thermal + electronic)
 s Electronic switching with semiconductor.

²⁾ Only systems with grounded neutral point permitted.

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

M200D motor starters for AS-Interface

IE3/IE4 ready**M200D Basic motor starters****Selection and ordering data**

M200D AS-i Basic without manual local operation



M200D AS-i Basic with manual local operation

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

Electromechanical starters (with integrated contactor)

	15	3RK1315-6□S41-□AA□		1	1 unit	42D
Rated operational current setting range/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)						

Electronic starters (with thyristors)

	15	3RK1315-6□S71-□AA□		1	1 unit	42D
Rated operational current setting range/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

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 **IE3/IE4 ready**

Selection and ordering data



M200D AS-i Standard without manual local operation



M200D AS-i Standard with manual local operation

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Electromechanical starters (with integrated contactor)						
	15	3RK1325-6□S41-□AA□		1	1 unit	42D
Rated operational current setting range/A					Add. 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)						
	15	3RK1325-6□S71-□AA□		1	1 unit	42D
Rated operational current setting range/A					Add. 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

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

M200D motor starters for PROFIBUS/PROFINET

General data

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 communications module.

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

Functionality

- For basic functionality, see page 9/19 "SIRIUS 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 via Motor Starter ES (ordering option for startup software)
- Startup and diagnostics with the help of Motor Starter ES (ordering option for startup software)
- Trace function through Motor Starter ES for optimized startup 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 module for PROFIBUS/PROFINET (without communications module)



M200D communications module for PROFIBUS



M200D communications 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 communications 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 communications 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: Connection 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 startup software. By connecting a programming device directly to PROFIBUS/PROFINET and the Motor Starter ES startup 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 M200D PROFINET motor starters

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 startup 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. PROFINET is especially recommended for large-scale and highly automated system components, since the possibility of monitoring the devices or systems with data records (statistical data, measured values and device diagnostics) ensures a broader insight into the plant by the control room, and hence increases the availability of the plant sustainably.

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 in the case of 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 three logbooks for device faults, motor starter trips and events that 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 monitoring of devices and systems.

With installation and maintenance functions (I&M), information on modules employed and data specified by the user during configuration, such as location designations, are stored in the motor starter. I&M functions are used for troubleshooting faults and localizing changes in hardware in 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 preventive maintenance and avoid plant downtimes through look-ahead servicing.

Another new addition is the TRACE integrated into 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 PROFlenergy

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 PROFlenergy.

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

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

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

M200D motor starters for PROFIBUS/PROFINET

General data

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 dead times (such as nights) or unplanned dead times. 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 sent to 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 the "switching during dead times" and "current measurement values" functions 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

Parameter assignment

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	✓ 2 bytes PAE/2 bytes 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)

Parameter assignment	✓ 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: For flexibly assignable action, see manual
Quick stop	✓ Parameterizable: latching, non-latching

✓ Function available

-- Function not available

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) (continued)

Outputs

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

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 via Motor Starter ES, data record: PTC or Thermoclick or deactivated

Device function

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

Support for PROFlenergy profile

Switching during dead times	--	3
Measured motor current values	--	3

Soft starter control function

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

✓ Function available

-- Function not available

Benefits

M200D PROFINET motor starters with PROFlenergy

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 PROFlenergy profile on PROFINET can make an active contribution to environmental protection.

Application

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

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

M200D motor starters for PROFIBUS/PROFINET

General data

Technical specifications

More information			
Equipment Manual for M200D PROFIBUS/PROFINET, see https://support.industry.siemens.com/cs/ww/en/view/38823402 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16325/faq		<u>Notes on security:</u> In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept. For more information on the subject of Industrial Security, see www.siemens.com/industrialsecurity .	
Type	M200D PROFIBUS/PROFINET motor starter modules		
Technology designation ¹⁾		Electromechanical switching DSte/RSte	Electronic switching sDSSSte/sRSSSte
Mechanics and environment			
Mounting dimensions (W x H x D)			
• Without communications module	mm	294 x 215 x 159	
• With communications 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	<i>g</i>	2	
Shock resistance			
• Acc. to IEC 60068 Part 2-27	<i>g/ms</i>	12/11 half-sine	
• Without influencing the contact position	<i>g/ms</i>	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 starting	A	--	0.15 ... 2/1.5 ... 12
• Rated operational current range for direct-on-line starting	A	--	0.15 ... 2/1.5 ... 9
Rated operational current I_e for starters 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 service life of contactor	Oper- ating cycles	30 million	--
Trip class		CLASS 5, 10, 15, 20	
Permissible switching frequency		see manual	
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_{amax} = 9/12 A		Integrated, 2 x13 I_e = 208 A	

- ¹⁾ DS Direct-on-line starters
 RS Reversing starters
 DSS .. Direct-on-line soft starters
 RSS .. Reversing soft starters
 te Full motor protection (thermal + electronic)
 s Electronic switching with semiconductor.
- ²⁾ Only systems with grounded neutral point permitted.

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

M200D motor starters for PROFIBUS/PROFINET

General data

		Line voltage				
		380 V AC	400 V AC	440 V AC	480 V AC	500 V AC
Brake voltage with brake actuation 180 V DC ¹⁾						
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				
Rectified brake voltage	V DC	171	180	198	216	225
Recommended brake coil voltage for Siemens motors	V DC	170 ... 200	170 ... 200	184 ... 218	184 ... 218	--

¹⁾ Integrated brake actuation supplies DC power supply for the brake.

Type	M200D communications 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	<i>g</i>	2
Shock resistance		
• Acc. to IEC 60068 Part 2-27	<i>g</i> /ms	12/11 half-sine
• Without influencing the contact position	<i>g</i> /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

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

M200D motor starters for PROFIBUS/PROFINET

Communications modules, motor starter modules

Selection and ordering data

M200D motor starter module
PROFIBUS/PROFINET
(without communications module)



M200D motor starter
PROFIBUS



M200D motor starter
PROFINET

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
M200D communications modules for PROFIBUS						
Communications module for PROFIBUS M12 connection for communication, 7/8" for 24 V power supply	15	3RK1305-0AS01-0AA0		1	1 unit	42D
M200D communications modules for PROFINET						
Communications module for PROFINET M12 connection for communication, 7/8" for 24 V power supply	15	3RK1335-0AS01-0AA0		1	1 unit	42D
M200D PROFIBUS/PROFINET motor starter modules						
Electromechanical starters (with integrated contactor)						
	15	3RK1395-6□S41-□AD□		1	1 unit	42D

Rated operational current setting range/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)

K			Add. price
L			None
	0		None
	1		✓
	2		✓
	3		✓
		0	None
		3	✓
		5	✓

Electronic starters (with thyristors)**Rated operational current setting range/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)

15	3RK1395-6□S71-□AD□		1	1 unit	42D
	K L		Add. price		
			None		
			✓		
		0	None		
		1	✓		
		2	✓		
		3	✓		
		0	None		
		3	✓		
		5	✓		

✓ = Additional price

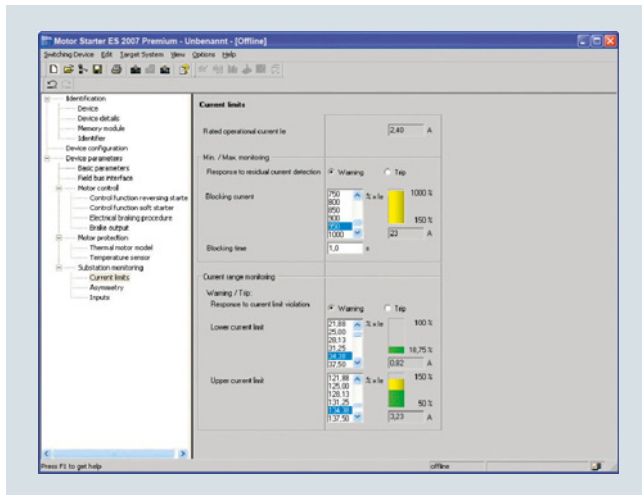
Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

Software

Motor Starter ES

Overview



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

More information

Industry Mall, see www.siemens.com/product?3ZS1

Technical specifications and system requirements, see <https://support.industry.siemens.com/cs/ww/en/ps/16713/td>

Motor Starter ES is used for the startup, parameterization, diagnostics, documentation and preventive maintenance of SIMATIC ET 200S, ET 200pro, ECOFAST and M200D motor starters.

The software program is available in three versions which differ in their user-friendliness, scope of functions and price.

For detailed information on the Motor Starter ES software, see page 14/10.

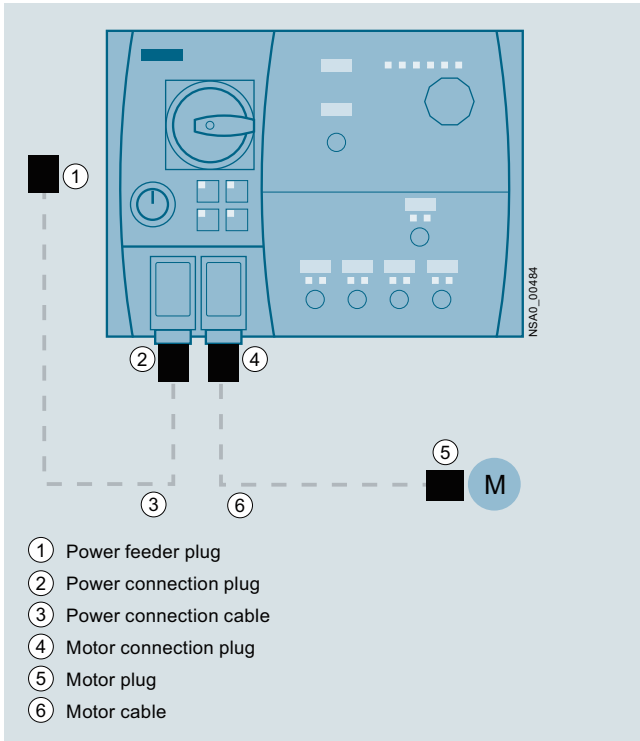
Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

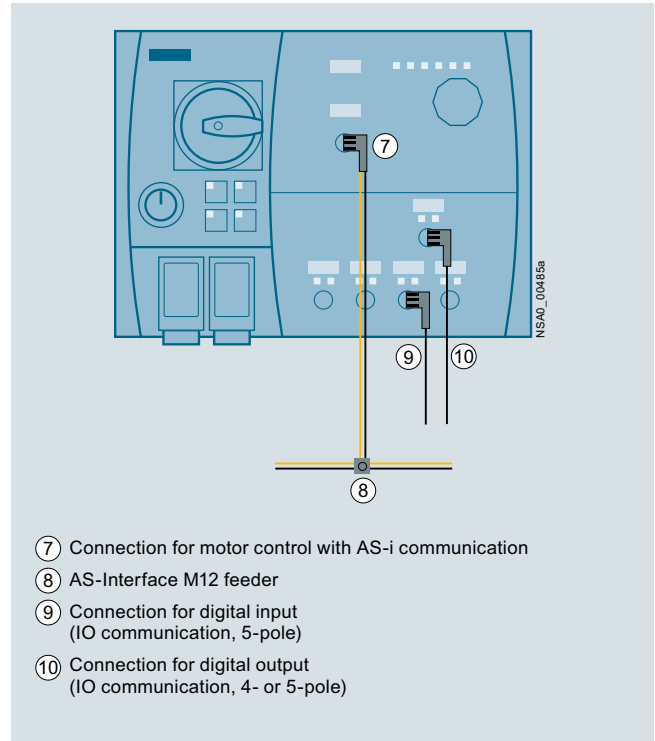
Accessories

For all M200D motor starters

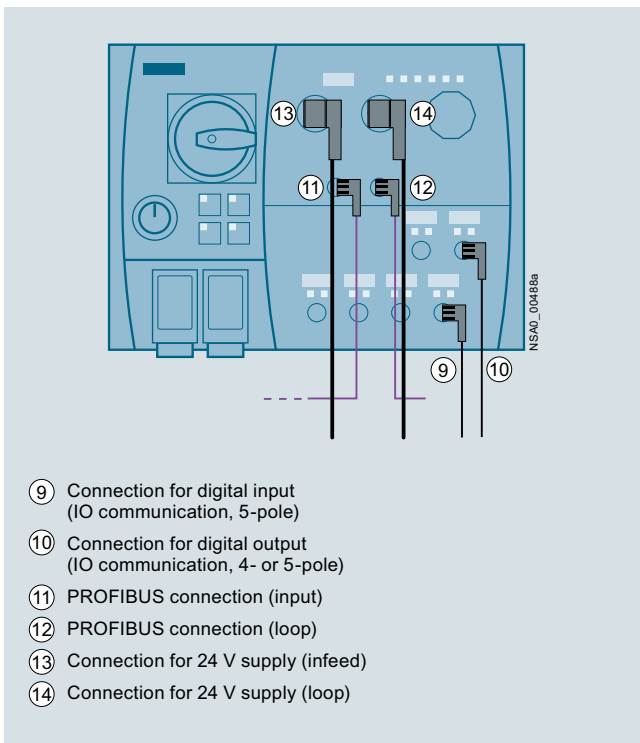
Overview



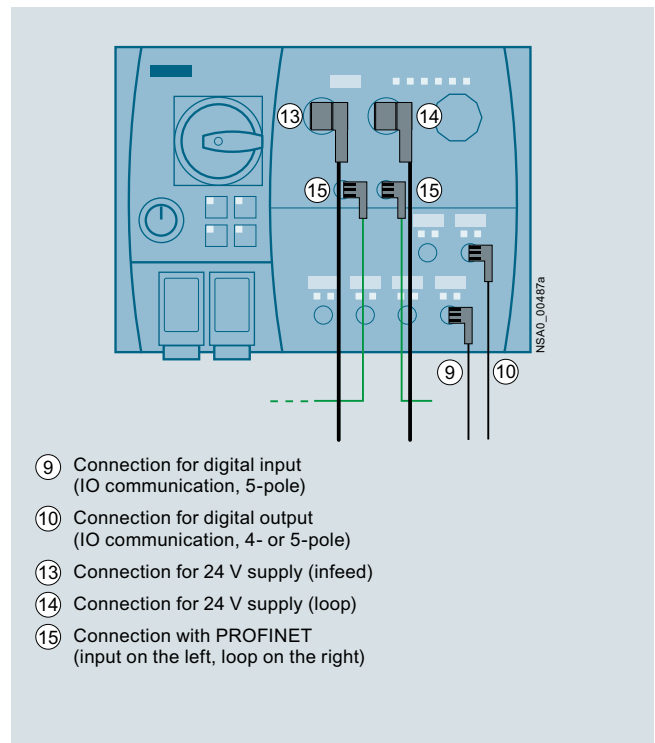
Power and motor connection on the M200D motor starter (in this example: M200D for AS-i)



Communication connection using AS-Interface and digital inputs and outputs



Communication connection using PROFIBUS and digital inputs and outputs



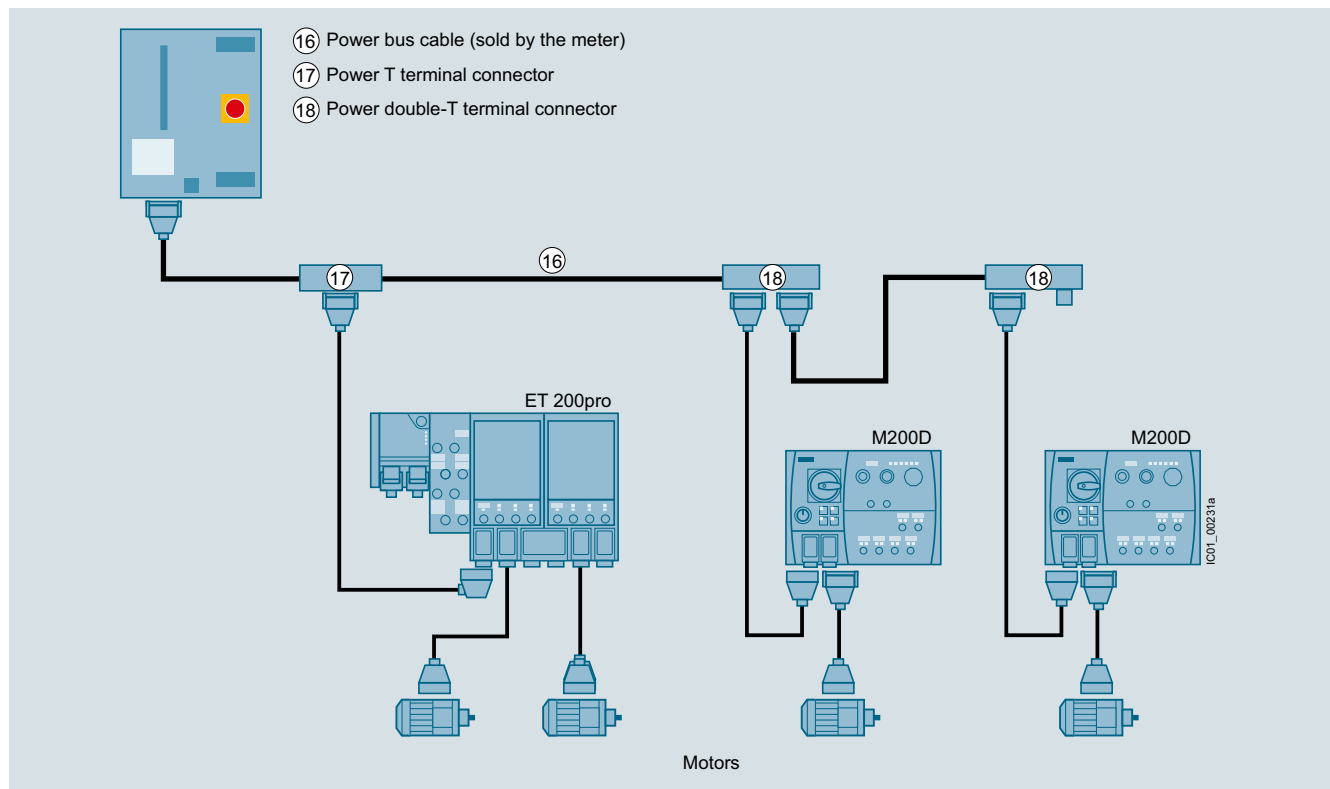
Communication connection using PROFINET and digital inputs and outputs

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. the power bus is not interrupted when the components are unplugged.

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

Accessories

For all M200D motor starters

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	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Mountable accessories						
M200D protective brackets	2	3RK1911-3BA00		1	1 unit	42D
Incoming power supply						
① Power feeder plugs						
Connector set for incoming power supply, e.g. for connecting to T terminal connectors, consisting of a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. gland						
• 5 male contacts, 2.5 mm ²	2	3RK1911-2BS60		1	1 unit	42D
• 5 male contacts, 4 mm ²	5	3RK1911-2BS20		1	1 unit	42D
• 5 male contacts, 6 mm ²	5	3RK1911-2BS40		1	1 unit	42D
② Power connection plugs						
Connector set for incoming power supply for connection to M200D motor starters, consisting of a cable-end connector hood, angled outgoing feeder, female insert for HAN Q4/2, incl. gland						
• 5 female contacts, 2.5 mm ² , 2 female contacts, 0.5 mm ²	2	3RK1911-2BE50		1	1 unit	42D
• 5 female contacts, 4 mm ² , 2 female contacts, 0.5 mm ²	2	3RK1911-2BE10		1	1 unit	42D
• 5 female contacts, 6 mm ² , 2 female contacts, 0.5 mm ²	2	3RK1911-2BE30		1	1 unit	42D
② + ③ Power connection cables						
Assembled at one end with "N" and jumper pin 11 and 12 for plug monitoring, with HAN Q4/2, angled; open at one end; 5 x 4 mm ²						
• Length 1.5 m	10	3RK1911-ODC13		1	1 unit	42D
• Length 5.0 m	10	3RK1911-ODC33		1	1 unit	42D
Motor cables						
④ Motor connection plugs						
Connector set for motor cable for connection to M200D motor starters, consisting of a cable-end connector hood, angled outgoing feeder, pin insert for HAN Q8/0, incl. gland						
• 8 male contacts, 1.5 mm ²	2	3RK1902-OCE00		1	1 unit	42D
• 6 male contacts, 2.5 mm ²	2	3RK1902-OCC00		1	1 unit	42D
⑤ Motor plugs						
Connector set for motor cable for connection to motors, consisting of 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	30	3RK1911-2BM21		1	1 set	42D
• 7 female contacts, 2.5 mm ²	30	3RK1911-2BM22		1	1 set	42D
④ + ⑥ Motor cables, assembled at one end						
For connection to M200D motor starters, HAN Q8/0, angled, length 5 m						
• Motor cables for motor without brake, 4 x 1.5 mm ²	2	3RK1911-0EB31		1	1 unit	42D
• Motor cables for motor without brake with thermistor, 6 x 1.5 mm ²	30	3RK1911-0EF31		1	1 unit	42D
• Motor cables for motor with brake actuation, braking voltage 400 V AC or 180 V DC, 6 x 1.5 mm ²	30	3RK1911-0ED31		1	1 unit	42D
• Motor cables for motor with brake actuation, braking voltage 400 V AC or 180 V DC and thermistor, 8 x 1.5 mm ²	30	3RK1911-0EG31		1	1 unit	42D
• Motor cables for motor with brake actuation, braking voltage 230 V AC, 6 x 1.5 mm ²	X	3RK1911-0EH31		1	1 unit	42D
• Motor cables for motor with brake actuation, braking voltage 230 V AC and thermistor, 8 x 1.5 mm ²	30	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	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
Power bus						
Ⓣ 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	5	3RK1911-2BF01		1	1 unit	42D
• 4 mm ² /6 mm ²	5	3RK1911-2BF02		1	1 unit	42D
Ⓡ 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	5	3RK1911-2BG02		1	1 unit	42D
Sealing set (consisting of 2 seals) For power T/power double-T terminal connectors						
• For power cables with						
- Ø 10 ... 13 mm	5	3RK1911-5BA00		1	1 unit	42D
- Ø 13 ... 16 mm	5	3RK1911-5BA10		1	1 unit	42D
- Ø 16 ... 19 mm	5	3RK1911-5BA20		1	1 unit	42D
- Ø 19 ... 22 mm	X	3RK1911-5BA30		1	1 unit	42D
• Blanking plugs	5	3RK1911-5BA50		1	1 unit	42D
Further accessories for power connections						
 Crimping tools for pins/sockets 4 mm² and 6 mm²						
	15	3RK1902-0CW00		1	1 unit	42D
Dismantling tools • For male and female contacts for 9-pole HAN Q4/2 inserts						
	15	3RK1902-0AB00		1	1 unit	42D
• For male and female contacts for 9-pole HAN Q8 inserts	5	3RK1902-0AJ00		1	1 unit	42D
Sealing caps For 9-pole power sockets						
• 1 unit per pack	2	3RK1902-0CK00		1	1 unit	42D
• 10 units per pack	2	3RK1902-0CJ00		1	10 units	42D
 3RK1902-0CK00						

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

Accessories

For all M200D motor starters

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
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	2	3RK1902-4BA00-5AA0	1	1 unit	42D
 3RK1902-4DA00-5AA0	⑩ M12 plugs, angled Screw fixing, 5-pole screw terminals, max. 0.75 mm ² , A-coded, max. 4 A	2	3RK1902-4DA00-5AA0	1	1 unit	42D
 3RK1902-4H...-5AA0	⑨, ⑩ Control cables, assembled at one end M12 plug, angled, screw fixing, 5-pole, 5 x 0.34 mm ² , A-coded, black PUR sheath, max. 4 A • Cable length 1.5 m • Cable length 5 m • Cable length 10 m	2 2 2	3RK1902-4HB15-5AA0 3RK1902-4HB50-5AA0 3RK1902-4HC01-5AA0	1 1 1	1 unit 1 unit 1 unit	42D 42D 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	2	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.	5	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	2	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).	3	6SL3555-0PA00-2AA0	1	1 unit	368
 3RK1901-1KA00	M12 sealing caps For sealing unused M12 input or output sockets and M12 sockets for PROFIBUS and PROFINET communications modules (one set contains ten sealing caps)	►	3RK1901-1KA00	100	10 units	42C
 3SU1950-0FB80-0AA0	RONIS SB30 keys Spare key for M200D for "manual local control" ordering option	►	3SU1950-0FB80-0AA0	1	1 unit	41J

For more connection technology products, [see https://support.industry.siemens.com/cs/ww/en/view/65355810](https://support.industry.siemens.com/cs/ww/en/view/65355810).

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	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Motor control with AS-i communication



3RK1902-4GB50-4AA0

⑦ Control cables, assembled at one end

M12 socket, angled, screw fixing, 4-pole, 4 x 0.34 mm², A-coded, black PUR sheath, max. 4 A

- Cable length 5 m

2

3RK1902-4GB50-4AA0

1

1 unit

42D



3RK1902-4CA00-4AA0

⑦ M12 sockets, angled

For screw fixing, 4-pole screw terminals, max. 0.75 mm², A-coded, max. 4 A

2

3RK1902-4CA00-4AA0

1

1 unit

42D



3RK1901-2NR21

⑧ AS-Interface M12 feeders

For flat cable	For	Cable length	Cable end in feeder					
AS-I/U _{aux}	M12 socket	--	not available	2	3RK1901-2NR20	1	1 unit	42C
	M12 cable box	1 m	not available	2	3RK1901-2NR21	1	1 unit	42C
		2 m	not available	2	3RK1901-2NR22	1	1 unit	42C

Cable terminating pieces

For sealing of open cable ends (AS-Interface shaped cable) in IP67

▶

3RK1901-1MN00

1

10 units

42C



3RK1901-1MN00

AS-Interface shaped cables, see also page 2/76

Material	Color	Quantity					
Rubber	Yellow (AS-Interface)	100 m roll	2	3RX9010-0AA00	1	1 unit	42C
		1 km drum	2	3RX9012-0AA00	1	1 unit	42C
	Black (24 V DC)	100 m roll	2	3RX9020-0AA00	1	1 unit	42C
		1 km drum	2	3RX9022-0AA00	1	1 unit	42C
TPE	Yellow (AS-Interface)	100 m roll	2	3RX9013-0AA00	1	1 unit	42C
		1 km drum	5	3RX9014-0AA00	1	1 unit	42C
	Black (24 V DC)	100 m roll	2	3RX9023-0AA00	1	1 unit	42C
		1 km drum	5	3RX9024-0AA00	1	1 unit	42C
TPE special version according to UL Class 2	Yellow (AS-Interface)	100 m roll	2	3RX9017-0AA00	1	1 unit	42C
	Black (24 V DC)	100 m roll	2	3RX9027-0AA00	1	1 unit	42C
PUR	Yellow (AS-Interface)	100 m roll	2	3RX9015-0AA00	1	1 unit	42C
		1 km drum	5	3RX9016-0AA00	1	1 unit	42C
	Black (24 V DC)	100 m roll	2	3RX9025-0AA00	1	1 unit	42C
		1 km drum	5	3RX9026-0AA00	1	1 unit	42C



3RX90...-0AA00

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

Accessories

For M200D motor starters for AS-Interface

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

Further accessories



3RK1904-2AB02

AS-Interface addressing unit V3.0

- For AS-Interface modules and sensors and actuators with integrated AS-Interface according to 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 four type AA batteries (IEC LR6, NEDA 15)
- Scope of supply:
 - Addressing unit with four batteries
 - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5 m

2

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

2

3RK1902-4PB15-3AA0

1

1 unit

42D

Equipment Manuals

M200D AS-Interface Basic Motor Starter, see
<https://support.industry.siemens.com/cs/ww/en/view/35016496>

M200D AS-Interface Standard Motor Starter, see
<https://support.industry.siemens.com/cs/ww/en/view/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	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
Motor control with PROFIBUS						
 3RK1902-1DA00		M12 plugs, angled For screw fixing, 5-pole screw terminal, max. 0.75 mm ² , B-coded, no terminating resistor				
		• ⑩ 5 female contacts				
 3RK1902-1BA00						
 3RK1902-1G.						
 3RK1902-1N.						
Further accessories						
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						
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						
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						
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						
Connection for 24 V power supply of the M200D PROFIBUS/PROFINET						
See page 9/43						
Equipment Manual						
M200D PROFIBUS/PROFINET motor starters, see https://support.industry.siemens.com/cs/ww/en/view/38823402						

Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters

Accessories

For M200D motor starters for PROFINET

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Motor control with PROFINET						
 3RK1902-2H.		⑤ M12 plugs, angled For screw fixing, 4-pole screw terminal, max. 0.75 mm ² , angled, D-coded • 4 male contacts				
	2	3RK1902-2DA00		1	1 unit	42D
	2	⑤ Control cables, assembled at one end M12 for screw fixing, angled, 4-pole, D-coded, • 4 male contacts, 3 m		1	1 unit	42D
	2	3RK1902-2HB30		1	1 unit	42D
 3RK1902-2N.	2	• 4 male contacts, 5 m		1	1 unit	42D
	2	• 4 male contacts, 10 m		1	1 unit	42D
	15	⑤ Control cables, assembled at both ends M12 for screw fixing, angled at both ends, 4-pole, D-coded, male contacts at both ends • 3 m		1	1 unit	42D
	2	• 5 m		1	1 unit	42D
	2	• 10 m		1	1 unit	42D

Further accessories

PROFINET IE FC TP standard cable GP 2 x 2 Sold by the meter	3	6XV1840-2AH10		1	1 M	5K1
PROFINET IE FC TP trailing cable 2 x 2 Sold by the meter	3	6XV1840-3AH10		1	1 M	5K1
PROFINET IE FC TP trailing cable GP 2 x 2 Sold by the meter	3	6XV1870-2D		1	1 M	5K2
PROFINET IE FC TP torsion cable 2 x 2 Sold by the meter	3	6XV1870-2F		1	1 M	5K2
PROFINET IE FC TP marine cable, 4-core Sold by the meter	3	6XV1840-4AH10		1	1 M	5K1
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	3	6XV1830-8AH10		1	1 M	5K2

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

Connection for 24 V power supply of the M200D PROFIBUS/PROFINET

 3RK1902-3DA00	2	Plugs On M200D, 7/8" for screw fixing, angled, screw terminal, 1.5 mm ² • ⑩ 5 female contacts		1	1 unit	42D
	2	• ⑭ 5 male contacts		1	1 unit	42D
 3RK1902-3BA00						
 3RK1902-3G.	2	⑧ Supply lines, assembled at one end 7/8" for screw fixing, angled, 1.5 mm ² • 5 female contacts, 3 m		1	1 unit	42D
	2	• 5 female contacts, 5 m		1	1 unit	42D
	2	• 5 female contacts, 10 m		1	1 unit	42D
 3RK1902-3N.	15	⑧ ⑭ Supply lines, assembled at both ends 7/8", for screw fixing, angled at both ends, 5-pole pin/socket, 1.5 mm ² • 3 m		1	1 unit	42D
	15	• 5 m		1	1 unit	42D
	15	• 10 m		1	1 unit	42D
 6ES7194-3JA00-0AA0	1	7/8" sealing caps 1 pack = 10 units		1	10 units	250

Equipment Manual

M200D PROFIBUS/PROFINET motor starters, see
<https://support.industry.siemens.com/cs/ww/en/view/38823402>

Motor starters for use in the field, high degree of protection

Hybrid fieldbus connections

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:

- Passive version
- 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 connections.

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

- Socket/socket for feeding into the field
- Pin/socket for looping through 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 bushings:

- Direct connection
- FastConnect connection

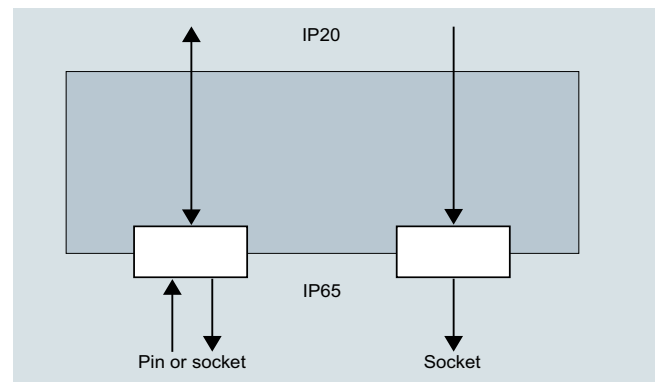
The active bushing with refresher function has 9-pole Sub D sockets for the rear connection.

Auxiliary power infeed

HanBrid plug-in connection technology offers the option of feeding in or looping through two separate auxiliary voltages of 24 V DC (switched/unswitched) into the field in addition to the PROFIBUS signal. The terminal block with spring-loaded terminals on the rear (cabinet side) of the hybrid fieldbus connection provides a variety of interconnecting options for these auxiliary voltages.

Passive hybrid fieldbus connections

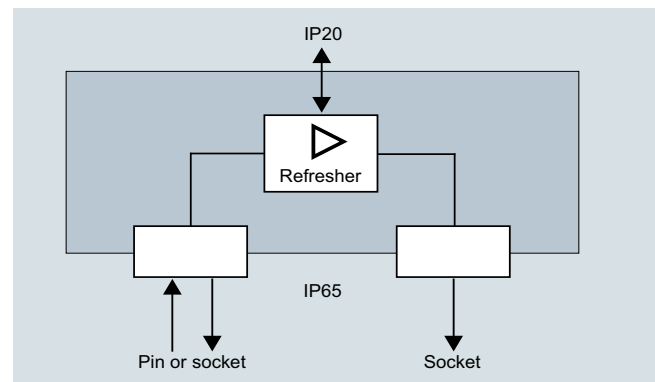
- Bushing from the control cabinet (IP20) into the field (IP65)
- HanBrid plug-in design socket/socket or pin/socket
- Direct connection or FastConnect connection for PROFIBUS at the rear
- Terminal block with spring-loaded terminals (0.25 to 2.5 mm²) for infeeding or forwarding the auxiliary voltages



Hybrid fieldbus connection as passive cabinet bushing

Active hybrid fieldbus connections with refresher function

- Bushing from the control cabinet (IP20) into the field (IP65)
- Three 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 nine 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-loaded terminals (0.25 to 2.5 mm²) for infeeding or forwarding 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) • 24 V DC switched (S)	V DC V DC	24, ± 25% 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	kbps	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)	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Hybrid fieldbus connections								
Passive								
• Cu/Cu, for feeding into the field	Socket/socket (2 x HanBrid)	Direct connection	5	3RK1911-1AA22		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	Direct connection	5	3RK1911-1AA32		1	1 unit	42D
• Cu/Cu, for feeding into the field	Socket/socket (2 x HanBrid)	PROFIBUS FastConnect bus connector	5	3RK1911-1AF22		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	PROFIBUS FastConnect bus connector	5	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	2	3RK1911-1AJ22		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	9-pole Sub D socket	5	3RK1911-1AJ32		1	1 unit	42D
• Cu/Cu, for feeding into the field	Socket/socket (2 x M12)	9-pole Sub D socket	5	3RK1911-1AK22		1	1 unit	42D
	Version		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					

Accessories



6ES7194-1JB10-0XA0

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

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

PROFIBUS ECOFAST hybrid cables, see [Catalog ST 70 or Industry Mall](#).

Motor starters for use in the field, high degree of protection

Notes