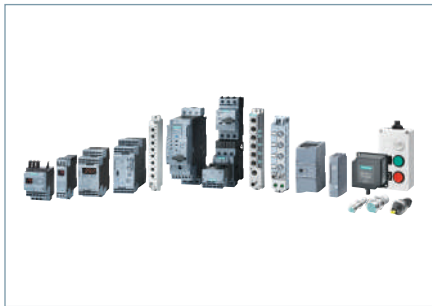




**AS-Interface**



**IO-Link**



**ET 200SP**



**M200D**

## contents

<b>AS-Interface</b>	14/2
Siemens complete AS-Interface offering is found on our website <a href="http://www.siemens.ca/industrialcontrols">www.siemens.ca/industrialcontrols</a>	
<b>IO-Link</b>	14/12
Siemens complete IO-Link offering is found on our website <a href="http://www.siemens.ca/industrialcontrols">www.siemens.ca/industrialcontrols</a>	
<b>ET 200SP Motor Starters</b>	14/17
Siemens complete ET 200SP Motor Starters offering is found on our website <a href="http://www.siemens.ca/industrialcontrols">www.siemens.ca/industrialcontrols</a>	
<b>M200D Motor Starters</b>	14/18
Siemens complete M200D Motor Starters offering is found on our website <a href="http://www.siemens.ca/industrialcontrols">www.siemens.ca/industrialcontrols</a>	

### Overview

#### More information

Siemens complete AS-Interface offering is found on our website [www.siemens.ca/industrialcontrols](http://www.siemens.ca/industrialcontrols)



AS-Interface

#### **AS-Interface – the smart communication standard for universal connection of the field level to the control system**

The AS-Interface (AS-i) – the Actuator-Sensor-Interface, to be more precise – is a smart bus system for the field level that connects all the sensors and actuators in the field to the higher-level control system more simply, flexibly and efficiently than any other.

The structure of a complex automation system is not always clear at first glance. The field level in particular, with its large numbers of devices with real-time requirements, needs a clear structure.


That is exactly what the AS-i fieldbus delivers: Via a simple two-wire cable – the yellow AS-i cable – in an AS-i network up to 62 bus nodes can be connected to the AS-i master and simultaneously supplied with power. The standard here is robust data transmission in a rugged environment with a high degree of protection for the AS-Interface.








AS-i = simple!	AS-i = flexible!	AS-i = efficient!
<ul style="list-style-type: none"> <li>• Only one cable for data and energy</li> <li>• Time-saving assembly/installation</li> <li>• Engineering in the TIA Portal</li> <li>• User-friendly maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible topologies</li> <li>• Open standard</li> <li>• Expandability</li> <li>• Safety engineering</li> </ul>	<ul style="list-style-type: none"> <li>• User-friendly addressing</li> <li>• Fast device replacement</li> <li>• Ruggedness and stability</li> <li>• Device and network diagnostics</li> </ul>

IC01\_00210

#### AS-i from Siemens has everything in its favor

- Complete AS-i product range for bus-based standard and safety technology from a single source
- System-wide integration of the AS-i devices into SIMATIC, SINUMERIK and the TIA Portal engineering framework
- Integration of ASIsafe applications into SIMATIC F controller safety programming
- Central configuration of standard and safety technology in the TIA Portal and in STEP7 Classic – just one engineering framework for controller, AS-i Master and safety
- Quick diagnostics of master and slave components via web browser, HMI or TIA Portal
- Planning, calculation and verification of the whole safety chain based on AS-i Safety in the Safety Evaluation Tool (TUV-approved)
- Integration of lower-level AS-i networks into the PCS 7 process control system
- Global spare parts logistics, consulting and service

		Article No.
<b>ASIsafe</b>	<p>ASIsafe enables integration of safety-related components in an AS-Interface network, for example:</p> <ul style="list-style-type: none"> <li>• EMERGENCY-STOP pushbuttons</li> <li>• Protective door switches</li> <li>• Safety light arrays</li> </ul> <p>Your advantage: The simple wiring of AS-Interface is maintained.</p>	
 <p>AS-i Master and AS-i Safety module</p>	<p><b>AS-i Master and AS-i Safety module for ET 200SP</b></p> <p>The CM AS-i Master ST and F-CM AS-i Safety ST modules are plugged into an ET 200SP configuration and connect an AS-i network, including safety-related inputs and outputs, with the controller.</p> <ul style="list-style-type: none"> <li>• Single, double and multiple masters possible</li> <li>• Per CM AS-i Master ST up to 496 DI/496 DQ/124 AI/124 AQ possible</li> <li>• Per F-CM AS-i Safety module ST up to 31 safe input signals (2-channel)/16 safe output channels possible</li> <li>• Configuration from STEP 7 V5.5 or from V13 (TIA Portal) and higher</li> <li>• Plant-wide safety programming of the F-CPU via SIMATIC Distributed Safety/ Safety Advanced</li> <li>• Integrated diagnostics</li> <li>• No other programming tools required</li> </ul> <p>Your advantage: Modular connection of fail-safe AS-i networks with system-wide programming in SIMATIC and SINUMERIK controllers.</p>	<b>6ES7</b>

		Article No.
<b>ASIsafe (continued)</b>		
 <p>3RK3 Modular Safety System</p>	<p><b>Modular Safety System (MSS)</b></p> <p>Supplementing the service-proven concept of safety monitors, the 3RK3 Modular Safety System offers, for example, the following functions for ASIsafe:</p> <ul style="list-style-type: none"> <li>• Up to 50 enabling circuits including muting function</li> <li>• Expandable fail-safe and non-fail-safe inputs/outputs</li> <li>• Control of up to 12 ASIsafe outputs or 12 fail-safe independent switch-off groups</li> <li>• Memory module for parameters, e.g. for device replacement</li> <li>• Optional PROFIBUS interface for diagnostics and parameterization</li> <li>• SIRIUS Safety ES, the intuitive graphic parameterization and diagnostics software</li> <li>• AS-i Power24V capability</li> </ul> <p>Your advantage: Easy to configure safety functions up to Category 4, PL e, SIL 3.</p>	<b>3RK3</b>
 <p>Safety monitor</p>	<p><b>AS-Interface safety monitors</b></p> <ul style="list-style-type: none"> <li>• For monitoring safe stations and for linking AS-Interface inputs and outputs</li> <li>• Ensures safe disconnection</li> <li>• Available with one or two release circuits with two-channel configuration</li> <li>• All versions with removable screw terminals or spring-type terminals</li> <li>• All safety monitors in revised Version 3 with additional options</li> <li>• Filtering out of brief single-channel interruptions in the sensor circuit with the expanded safety monitor Version 3</li> <li>• Expanded safety monitor with integrated safe slave for controlling a distributed safe AS-i output or for safe coupling a safe signal from one AS-i network to another AS-i network</li> <li>• ASIMON V3 Configuration software with graphic function diagram presentation</li> </ul> <p>Your advantage: Easy to configure safety functions up to Category 4, PL e, SIL 3.</p>	<b>3RK1</b>
 <p>K45F</p>	<p><b>AS-Interface safety modules</b></p> <ul style="list-style-type: none"> <li>• Complete portfolio of ASIsafe modules</li> <li>• For connection of safety switches with contacts (e.g. position switches) as well as solid-state safety sensors (ESPE)</li> <li>• Degree of protection IP65/IP67 or IP20</li> <li>• Especially compact dimensions, with widths from 17.5 mm</li> <li>• Up to four safe inputs per module</li> <li>• Up to one safe output per module</li> <li>• Standard outputs are available on the module in addition</li> <li>• Up to Category 4, PL e, SIL 3</li> </ul> <p>Your advantage: Easy integration of safe signals both in the switching cabinet and in the field.</p>	<b>3RK1</b>
 <p>SC17.5F</p>		
 <p>S45F SlimLine module, safe AS-i output</p>		
 <p>Safety switch</p>	<p><b>SIRIUS 3SF1 mechanical safety switches for AS-Interface</b></p> <ul style="list-style-type: none"> <li>• Plastic with degree of protection IP65 and metal with degree of protection IP66/IP67</li> <li>• ASIsafe electronics integrated into the enclosure</li> <li>• Available with separate actuator, with or without tumbler</li> </ul> <p>Your advantage: Conventional wiring of safety functions no longer required.</p>	<b>3SF1</b>
 <p>EMERGENCY-STOP mushroom pushbutton in enclosure</p>	<p><b>SIRIUS ACT EMERGENCY-STOP mushroom pushbuttons for AS-Interface</b></p> <ul style="list-style-type: none"> <li>• Degree of protection IP66/IP67/IP69K</li> <li>• Metal or plastic version</li> <li>• Connection of an EMERGENCY-STOP device according to EN ISO 13850 to AS-Interface</li> <li>• Safety-related AS-Interface module is snapped onto the commanding device from behind</li> <li>• Can be used up to PL e, SIL 3</li> </ul> <p>Your advantage: Easy direct connection of control elements to ASIsafe.</p>	<b>3SU14 modules 3SU18 enclosure</b>

### Masters

Article No.

The AS-Interface master connects SIMATIC control systems to AS-Interface. It automatically organizes the data traffic on the AS-Interface cable and handles not only signal processing, but also parameter setting, monitoring and diagnostics functions.

#### Masters for SIMATIC S7

AS-Interface master connections:

- CM 1243-2 for SIMATIC S7-1200
- CP 343-2P, CP 343-2 for SIMATIC S7-300 and ET 200M

Features:

- Connection of up to 62 AS-Interface slaves
  - Connection of up to 496 inputs and 496 outputs per master or AS-Interface network
  - Integrated analog value transmission
  - Simple configuration by adopting the actual configuration on the AS-Interface network
  - Easy operation in the input/output address area of the SIMATIC S7 comparable to standard I/O modules
  - Monitoring of the control supply voltage on the AS-Interface shaped cable
- Your advantage: Easy connection to SIMATIC controllers.

**3RK7  
6GK7**



CM 1243-2 for SIMATIC S7-1200



CP 343-2, CP 343-2P for SIMATIC S7-300

#### Masters for SIMATIC ET 200

CM AS-i Master ST for SIMATIC ET 200SP

- Connection of up to 62 AS-Interface slaves per master
  - Connection of up to 496 inputs and 496 outputs per AS-Interface network
  - Integrated analog value transmission
  - Simple configuration by adopting the ACTUAL configuration on the AS-Interface network
  - Easy operation in the input/output address range of the SIMATIC (or other controller) comparable to standard I/O modules
  - Monitoring of the control supply voltage on the AS-Interface shaped cable
  - Integrated ground-fault monitoring
- Your advantage: Easy connection of AS-i networks to distributed I/Os.

**3RK7**



CM AS-i Master ST for SIMATIC ET 200SP








F-CM AS-i Safety ST for SIMATIC ET 200SP

- Monitoring of up to
    - 31 fail-safe AS-i input slaves per F-CM
    - 16 fail-safe AS-i outputs per F-CM
  - Transmission via PROFI-safe into the F-CPU for safety-related applications up to SIL 3 (IEC 61508/EN 62061)/PL e (EN ISO 13849-1)
  - As a result, these sensors become part of the "unlimited programming and data archiving" options of SIMATIC and of Safety Integrated.
- Your advantage: Easy connection of fail-safe AS-i networks to the distributed I/Os.

**3RK7**



F-CM AS-i Safety ST for SIMATIC ET 200SP

		Article No.
<b>Routers</b>		
 <p>DP/AS-i Link Advanced</p>  <p>DP/AS-Interface Link 20E</p>  <p>IE/AS-i Link PN IO</p>	<ul style="list-style-type: none"> <li>• Degree of protection IP20</li> <li>• PROFIBUS slave or PROFINET IO device and AS-Interface master (single or double master in case of DP/AS-i Link Advanced and IE/AS-i Link PN IO)</li> <li>• Connection of up to 62 AS-Interface slaves per AS-Interface network</li> <li>• Connection of up to 496 digital inputs and 496 outputs per AS-i network, with doubling of the project data volume for double master versions</li> <li>• Integrated ground-fault monitoring (in case of DP/AS-i Link Advanced and IE/AS-i Link PN IO)</li> <li>• User-friendly local diagnostics and local startup by means of a full graphic display and control keys or through a web interface with a standard browser (in case of DP/AS-i Link Advanced and IE/AS-i Link PN IO)</li> <li>• Integrated analog value transmission</li> <li>• Configuring and uploading of AS-Interface configuration in STEP 7 possible</li> <li>• User-friendly selection of AS-Interface slaves</li> </ul> <p>Your advantage: Compact transition to PROFIBUS or PROFINET. As an alternative to the IE/AS-i Link PN IO, a high-performance router can be set up between PROFINET and AS-Interface by combining the CM AS-i Master ST and F-CM AS-i Safety ST modules in an ET 200SP station (for safety-related applications), <a href="#">see pages 2/36 and 2/40</a>.</p>	<b>3RK3, 6GK1</b>
<b>Slaves</b>		
<p>Slaves contain the AS-Interface electronics and connection options for sensors and actuators in the field and in the control cabinet. A total of up to 62 slaves can be connected to one bus. The slaves then exchange their data in cyclic mode with a control module (master).</p>		
<b>I/O modules for use in the field, high degree of protection</b>		
<u>Digital I/O modules IP67 – K60, K60R, K45 and K20</u>		
 <p>K20 digital module</p>  <p>K45 digital module</p>  <p>K60 digital module</p>	<ul style="list-style-type: none"> <li>• Degree of protection IP65/IP67 or IP68/IP69K</li> <li>• Modules available with up to degree of protection IP68/IP69K</li> <li>• ATEX-certified modules available for Ex Zone 22</li> <li>• Connection sockets in M8/M12</li> <li>• Up to eight inputs and four outputs</li> <li>• A/B technology available</li> <li>• Contacting protected against polarity reversal</li> <li>• Standard rail mounting and wall mounting possible</li> <li>• Mounting of the module on the base plate using just one screw</li> <li>• Diagnostics LEDs</li> </ul> <p>Your advantage: Reduction of mounting and startup times by up to 40 %.</p>	<b>3RK1, 3RK2</b>
 <p>K60 analog module</p>	<p><u>Analog I/O modules, IP67 – K60</u></p> <ul style="list-style-type: none"> <li>• Degree of protection IP65/IP67</li> <li>• Detects or transmits analog signals locally</li> <li>• 2-/4-channel</li> <li>• Input modules for up to four sensors with current signal, with voltage signal or with thermal resistor</li> <li>• Output modules for current or voltage</li> <li>• Fast analog modules available for higher access speeds</li> </ul> <p>Your advantage: Easy integration of analog values.</p>	<b>3RK1</b>

Slaves (continued)		Article No.
 <p>SlimLine Compact SC17.5      SlimLine Compact SC22.5</p>	<p><b>I/O modules for use in the control cabinet</b></p> <ul style="list-style-type: none"> <li>• Degree of protection IP20</li> <li>• No M12 plugs required for connection</li> <li>• Especially narrow design for SlimLine Compact modules with widths of 17.5 mm and 22.5 mm</li> <li>• Analog modules are also available</li> <li>• Removable, finger-safe terminal blocks that cannot be mixed up with the SlimLine Compact modules</li> <li>• Flat design of the flat modules for small control cabinets and confined conditions</li> <li>• Connection with screw terminals or spring-type terminals</li> <li>• Standard rail mounting and wall mounting possible</li> <li>• Diagnostics LEDs</li> </ul> <p>Your advantage: Modules enable space-saving use in control cabinets and small local control boxes.</p>	<p><b>3RG9, 3RK1, 3RK2</b></p>
 <p>F90 module</p>		
 <p>Flat module</p>		
 <p>Counter module</p>	<p><b>Modules with special functions</b></p> <p><u>Counter modules</u></p> <ul style="list-style-type: none"> <li>• Degree of protection IP20</li> <li>• For evaluation of pulses</li> <li>• Connection with screw terminals or spring-type terminals</li> </ul> <p>Your advantage: Evaluation of pulses which exceed even the clock frequency of AS-Interface.</p>	<p><b>3RK1</b></p>
 <p>Ground-fault detection module</p>	<p><u>Ground-fault detection modules</u></p> <ul style="list-style-type: none"> <li>• Degree of protection IP20</li> <li>• Display using LEDs</li> <li>• Two signaling outputs</li> </ul> <p>Your advantage: Automatic diagnostics of ground faults on AS-Interface</p>	<p><b>3RK1</b></p>
 <p>Overvoltage protection module</p>	<p><u>Overvoltage protection module</u></p> <ul style="list-style-type: none"> <li>• Degree of protection IP67</li> <li>• Discharge through ground cable with oil-proof outer sheath</li> <li>• Protection at transition of lightning protection zones</li> </ul> <p>Your advantage: The AS-Interface overvoltage protection module protects downstream AS-Interface devices or individual sections in AS-Interface networks from conducted overvoltages.</p>	<p><b>3RK1</b></p>

Slaves (continued)		Article No.
	<p><b>Contactor and contactor assemblies</b></p> <p>SIRIUS 3RT contactors, 3-pole up to 250 kW                      SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW                      SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW</p> <ul style="list-style-type: none"> <li>• Notable reduction of wiring in the control circuit</li> <li>• Integrated mechanical interlocking</li> <li>• Prevention of wiring errors in the main circuit</li> </ul>	<p>3RT20                      3RA23                      3RA24</p>
	<p><u>SIRIUS 3RA27 function modules for AS-Interface</u></p> <ul style="list-style-type: none"> <li>• Connection of 3RT20 power contactors with communication capability, 3RA23 reversing contactor assemblies, and 3RA24 contactor assemblies for star-delta (wye-delta) starting to AS-Interface</li> <li>• Reduction of control current wiring through plug-in design and integrated monitoring of circuit breaker/motor starter protector and contactor</li> <li>• Reduced space requirement in the control cabinet through fewer digital inputs and outputs in the control system</li> <li>• Easy configuration through operation of feeders instead of individual contactors</li> <li>• Enhanced operational reliability and quick wiring thanks to spring-type connections</li> <li>• Small number of variants through use of identical modules for size S00 to S3 contactors</li> </ul> <p>Your advantage: Shortening of mounting and startup times.</p>	<p>3RA2712</p>
	<p><b>Motor starters for operation in the control cabinet</b></p> <p><u>SIRIUS 3RA6 compact starters</u></p> <p>3RA61 direct-on-line starters, 3RA62 reversing starters</p> <ul style="list-style-type: none"> <li>• Degree of protection IP20</li> <li>• Very compact load feeders with the integrated functionality of an electronic overload relay</li> <li>• As direct-on line or reversing starters for motors up to 15 kW/400 V</li> <li>• Easy expansion into a communication-capable load feeder using AS-i add-on modules</li> <li>• On-site safe disconnection also possible using AS-i add-on modules</li> <li>• Standardized integration of the loads in higher-level control systems using AS-i</li> </ul> <p>Your advantage: Compact solution with minimum wiring outlay for actuating direct-on-line and reversing starters in the control cabinet.</p>	<p>3RA61                      3RA62</p>
	<p><b>Motor starters for use in the field, high degree of protection</b></p> <p><u>SIRIUS M200D motor starters for AS-Interface</u></p> <ul style="list-style-type: none"> <li>• High degree of protection IP65 for cabinet-free design</li> <li>• As direct-on-line or reversing starters for motors up to 5.5 kW/400 V</li> <li>• Mechanical or electronic switching for high switching frequencies</li> <li>• Optional with manual operation and brake control</li> <li>• Expanded diagnostics and parameterization possible through AS-Interface</li> <li>• Easy and consistent integration in STEP 7 through AS-Interface</li> </ul> <p>Your advantage: The correct solution for all simple applications in conveyor systems with spatially distributed drives.</p>	<p>3RK1</p>



**Slaves (continued)**



SINAMICS G110M frequency inverters

**SINAMICS G110M distributed inverters**  
**Wide power range from 0.37 to 4 kW**

- Preconfigured with SIMOGEAR
- Rugged, with IP65/IP66 degree of protection, up to 55 °C ambient temperature
- Local commissioning via DIP switch, standard USB interface and potentiometer or Intelligent Operator Panel (IOP)
- Integrated safety functions (STO locally via F-DI or via PROFIsafe)
- Integrated, specific software functionality for conveyor systems
  - Quick stop function for fast reaction times to sensors
  - Limit switch functionality, e.g. for rotary table, corner transfer unit

Your advantage: The simple solution for compact drives with safety requirements in conveyor technology

**Article No.**

**6SL3517 power modules, 6SL3544 control units**



SINAMICS G110D frequency inverters

**SINAMICS G110D distributed inverters**  
**High degree of protection IP65 for cabinet-free installation**

- Wide power range from 0.75 to 7.5 kW
- Easy commissioning and maintenance thanks to standardized plug-in connections for bus, energy and I/Os
- Expanded diagnostics and parameterization through AS-Interface
- Optional maintenance switch
- Optional manual local operation
- Same connectors used as for the M200D motor starter

Your advantage: Easy, consistent implementation of distributed system concepts thanks to scaling of SINAMICS G110D, SINAMICS G120D and SIRIUS M200D products.

**6SL3511**

**Commanding and signaling devices**

SIRIUS ACT pushbuttons and indicator lights for AS-Interface

- Modular configuration based on individual specifications, or as enclosure with standard components
- AS-Interface modules for base mounting or mounting in enclosure
- Up to six command points for standard signals or EMERGENCY-STOP
- Degree of protection IP66/IP67/IP69K
- Metal or plastic version
- Indicator lights with integrated LED
- Any change of equipment possible even after installation

Your advantage: Complete operating system with simple AS-Interface connection for your plant.

SIRIUS 8WD4 signaling columns

- Many optical and acoustic elements can be combined
- Up to three signaling elements can be connected using an adapter element
- With LEDs or incandescent lamps

Your advantage: Signaling columns for monitoring production sequences and for visual or acoustic warnings in emergency situations, with easy AS-Interface connection.

**3SU14 modules 3SU18 enclosure**

**8WD4**







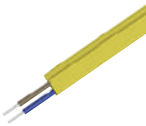


AS-Interface module



Signaling column



		Article No.
<b>Power supply units and data decoupling modules</b>		
<p>AS-Interface power supply units generate a controlled direct voltage of 30 V DC with high stability and low residual ripple in conjunction with data decoupling. They are an integral component of the AS-Interface network and enable the simultaneous transmission of data and energy on one cable.</p> <p>In conjunction with data decoupling modules, AS-Interface can also be operated with standard power supply units.</p>		
 <p>IP20, 3 A</p>	<p><b>AS-Interface power supply units</b></p> <ul style="list-style-type: none"> <li>• With wide performance spectrum from 2.6 to 8 A</li> <li>• Degree of protection IP20</li> <li>• Separation of data and energy by means of the integrated data decoupling</li> <li>• UL/CSA approval means the power supplies can be used worldwide, 2.6 A version with output power restricted to max. 100 W (for Class 2 circuits in accordance with NEC)</li> <li>• Certified for global use</li> <li>• Integrated ground-fault and overload detection save the need for additional components and make applications reliable</li> <li>• Diagnostics memory, remote signaling and remote RESET allow fast detection of faults in the system</li> <li>• Ultra-wide input range enables single- and two-phase applications (8 A version)</li> </ul> <p>Your advantage: Optimum performance for each application.</p>	<b>3RX9</b>
 <p>IP20, 8 A</p>		
 <p>PSN130S 30 V DC, 8 A</p>	<p><b>30 V power supply units</b></p> <p><u>Standard 30 V power supply units without data decoupling</u></p> <ul style="list-style-type: none"> <li>• Power spectrum 3 A, 4 A and 8 A</li> <li>• Overload and short-circuit proof in every performance class</li> <li>• Diagnostics: With output voltage &gt; 26.5 V DC LED and signaling contact for output voltage 30 V O.K.</li> <li>• Primary-side connection to 120/230 V AC (1-phase) with automatic range selection</li> </ul> <p>Your advantage: Economical alternatives in conjunction with data decoupling modules while making full use of the maximum AS-Interface cable length.</p>	<b>3RX9</b>
 <p>SITOP PSU100M, 24 V DC, 20 A</p>	<p><b>24 V power supply units</b></p> <p><u>Standard 24 V power supply units (SITOP), without data decoupling</u></p> <ul style="list-style-type: none"> <li>• Power spectrum 2.5 to 40 A</li> <li>• Overload and short-circuit proof in every performance class</li> <li>• Add-on modules for signaling, redundancy, buffering and UPS</li> <li>• Single-phase, two-phase and three-phase versions</li> </ul> <p>Your advantage: Economical alternatives in conjunction with data decoupling modules.</p>	<b>6EP</b>
 <p>S22.5 data decoupling module</p>	<p><b>S22.5 data decoupling modules</b></p> <ul style="list-style-type: none"> <li>• Degree of protection IP20, narrow design 22.5 mm</li> <li>• Supply of several AS-i networks with a single power supply unit</li> <li>• Single and double data decoupling</li> <li>• Operation with 24 V DC or 30 V DC</li> </ul> <p>Your advantage: Cost-effective installation of AS-i networks in conjunction with standard power supply units.</p>	<b>3RK1</b>
 <p>DCM 1271 data decoupling module</p>	<p><b>DCM 1271 data decoupling module for SIMATIC S7-1200</b></p> <ul style="list-style-type: none"> <li>• Simple data decoupling in IP20 design</li> <li>• Supply of several AS-i networks with a single power supply unit</li> <li>• Operation with 24 V DC or 30 V DC</li> </ul> <p>Your advantage: Cost-effective installation of AS-i networks in conjunction with standard power supply units in the design of a SIMATIC S7-1200 module.</p>	<b>3RK7</b>
<b>Transmission media</b>		
<p>AS-Interface shaped cable for connection of network stations</p>		
 <p>Shaped cable</p>	<p><b>AS-Interface shaped cable</b></p> <ul style="list-style-type: none"> <li>• No polarity reversal thanks to trapezoidal shape</li> <li>• Cables made of optimized material for different operating conditions</li> <li>• Special version according to UL CLASS 2 available</li> </ul> <p>Your advantage: Fast replacement and connection to AS-Interface by piercing method.</p>	<b>3RX9</b>

### System components and accessories

Article No.

Accessories comprise tools for mounting, installation and operating as well as individual components.



Repeater

#### Repeaters and extension plugs

- Repeaters for extending the AS-Interface cable by 100 m per repeater
- Extension plug for extending the AS-Interface segment to max. 200 m
- Parallel switching of several repeaters possible (star configuration option)
- Maximum size increases (when combined) to more than 600 m
- Easy mounting
- IP67 module enclosure

Your advantage: Lower infrastructure costs, more possibilities of use and greater freedom for plant planning.

6GK1 repeater  
3RK1 extension plug



Compact extension plug

#### Addressing units

- Reading out and adjusting the slave address 0 to 31 or 1A to 31A, 1B to 31B, with automatic addressing aid and prevention of double addresses
- Reading out the slave profile (IO, ID, ID2) and reading out and setting the ID1 code
- Input/output test when commissioning the slaves, on all digital and analog slaves according to AS-Interface Specification V3.0, including safe input slaves and complex CTT2 slaves
- Display of the operational current in case of direct connection of an AS-i slave (measuring range from 0 to 150 mA)
- Storage of complete network configurations (profiles of all slaves) to simplify the addressing

Your advantage: Easiest way to address and test the slaves.

3RK1



Addressing unit for AS-Interface V 3.0

#### AS-Interface analyzer

- Diagnostics units for completely checking the quality and function of an AS-Interface installation
- Transmission of collected data through an RS 232 interface to a PC, evaluation by software
- Easy and user-friendly operation
- Automatically generated test logs
- Advanced trigger functions enable exact analysis
- Process data can be monitored online
- In addition to digital I/O data it is possible to view analog values and safety slaves in data mode.

Your advantage: Preventative testing of an AS-Interface network is possible, recorded logs facilitate remote diagnostics.

3RK1



Analyzer

#### Miscellaneous accessories

Individual components such as sealing caps, cable adapters, distributors, M12 plugs and cables, AS-Interface system manual, etc.


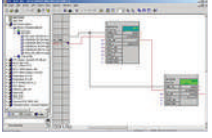
3RK1, 3RT1, 3RX9, 6ES7






M12 sealing cap



Cable terminating piece

Diagnostics	Article No.
 <p>The following diagnostics block with visualization via HMI or web browser for AS-Interface can be downloaded free of charge in the Industry Online Support Portal:</p> <p>Diagnostics blocks</p> <ul style="list-style-type: none"> <li>• For CM AS-i Master ST and F-CM AS-i Safety ST in ET 200SP, see <a href="https://support.industry.siemens.com/cs/ww/en/view/109479103">https://support.industry.siemens.com/cs/ww/en/view/109479103</a></li> <li>• For other Siemens AS-i master and links, see <a href="https://support.industry.siemens.com/cs/ww/en/view/50897766">https://support.industry.siemens.com/cs/ww/en/view/50897766</a></li> </ul> <p>Your advantage: Detailed diagnostic display for fast fault analysis and short downtimes - for easy integration into STEP 7 projects.</p> <p>Diagnostics for AS-Interface via HMI panels</p>	<p>--</p>
Software	3ZS1635
 <p><b>AS-Interface block library for SIMATIC PCS 7</b></p> <ul style="list-style-type: none"> <li>• Engineering and runtime software</li> <li>• Easy connection of AS-Interface to PCS 7</li> <li>• Engineering work reduced to positioning and connecting the function blocks in the CFC</li> <li>• No additional configuring steps required for connection to the PCS 7 Maintenance Station, diagnostics for the AS-i system optimally guaranteed</li> </ul> <p>Your advantage: Easy connection of AS-Interface to PCS 7, little engineering and configuration.</p> <p>AS-Interface block library for PCS 7</p>	

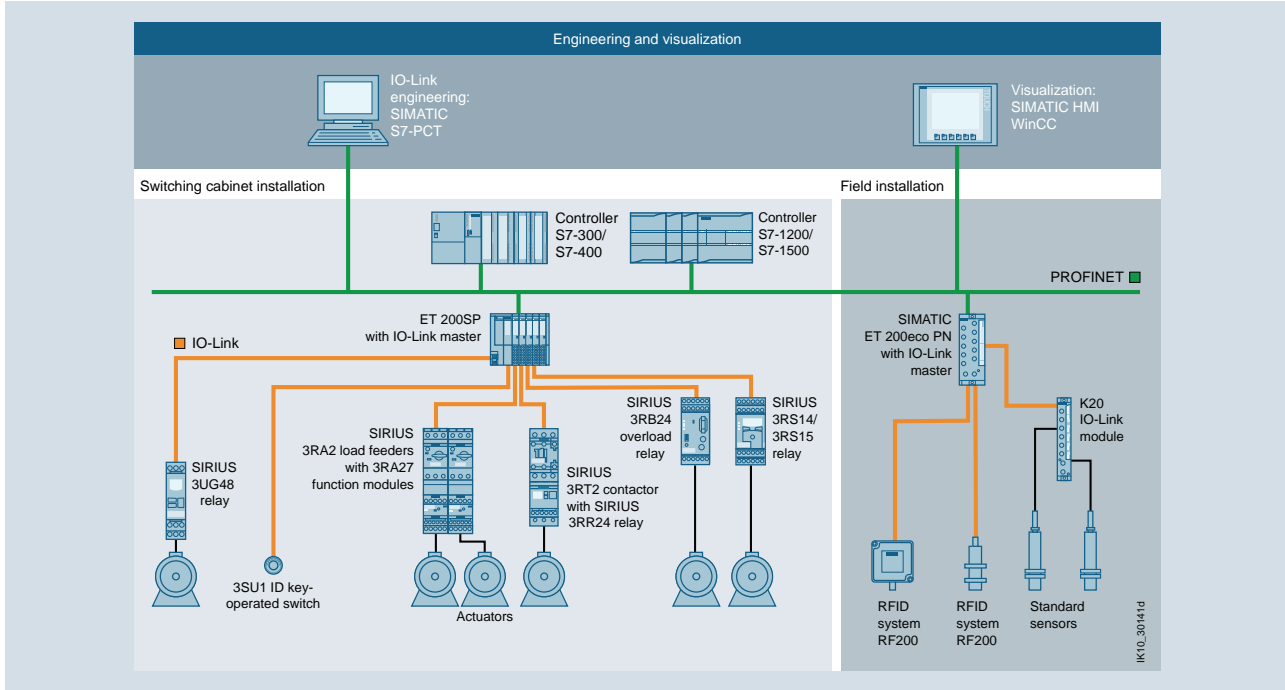
### Connection methods

-  Screw terminals
  -  Spring-type terminals, spring-type terminals (push-in)
  -  COMBICON connectors (plug-in screw terminals)
- The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Overview

More information

Siemens complete AS-Interface offering is found on our website [www.siemens.ca/industrialcontrols](http://www.siemens.ca/industrialcontrols)



Engineering and visualization

**IO-Link – more than just another interface**

IO-Link is an open communication standard for sensors and actuators – defined by the IO-Link Consortium.

IO-Link is a smart concept for the uniform connection of actuators and sensors to the control level by means of a low-cost point-to-point connections.

As an open interface, IO-Link can be integrated into all standard fieldbus and automation systems.

The IO-Link communication standard below fieldbus level enables central error diagnostics and localization down to actuator/sensor level, and facilitates both start up and maintenance by allowing parameter data to be dynamically changed directly from the application.

The increasing intelligence of field devices and their integration into automation as a whole now allows data to be accessed right down to the lowest field level. The result: greater plant availability and less engineering work.






Transparency in the process through IO-Link

High system availability and data transparency are market requirements that must also be met by the connecting of innovative control technology to a control system. A systematic diagnostics concept and efficient handling of parameter data are required for this purpose in automation.

With the aid of the IO-Link communication standard, a communication link is established between switchgear and controller, and this allows data to be exchanged efficiently. Based on a standard cable, it is therefore possible to integrate parameter, process and diagnostic data and measured values into the plant automation with ease. For example, the available diagnostic data allow potential errors to be detected quickly, thus avoiding lengthy plant down times.

As a consequence of their basic function, such as overload protection (SIRIUS 3RB24 solid-state overload relays for IO-Link), many controls have measured values. The availability of these via IO-Link now allows conclusions to be drawn at an early stage concerning wear and tear in the application.

At the same time the option of parameterizing via IO-Link supports the device not just when parameters concerning operating time are changed, but also when the device is replaced. In the case of a spare part, for example, the parameters can be quickly transmitted to a new device via the communication system.

		Article No.
<b>Masters</b>		
The IO-Link master modules form the heart of the IO-Link system.		
<b>IO-Link master module for SIMATIC S7-1200</b>		
	<b>SM 1278 4xIO-Link master</b> • IO-Link master as serial communication module with four ports (channels) according to IO-Link Specification V1.1 • Easy device exchange with automatic data recovery without engineering for IO-Link device • Up to four IO-Link devices (3-wire connections) can be connected to each IO-Link master module • Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device Your advantage: Easy connection of IO-Link connections to the SIMATIC S7-1200.	<b>6ES7</b>
	<b>SM 1278 4xIO-Link for SIMATIC S7-1200</b>	
	<b>IO-Link master modules for ET 200SP</b> <b>CM 4xIO-Link communication module</b> • IO-Link master as serial communication module with four ports (channels) according to IO-Link Specification V1.1 • Module replacement with automatic data recovery without engineering for IO-Link master and device • Up to four IO-Link devices (3-wire connections) can be connected to each IO-Link master module. • Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device Your advantage: Easy connection of IO-Link connections to distributed I/Os.	<b>6ES7</b>
	<b>CM 4x IO-Link for ET 200SP</b>	
	<b>IO-Link master module for ET 200pro</b> <b>4 IO-Link HF electronic module</b> • IO-Link master as serial communication module with four ports (channels) according to IO-Link Specification V1.1 • Easy device exchange with automatic data recovery without engineering for IO-Link device • Up to four IO-Link devices can be connected to each IO-Link master module • Support of IO-Link Port Class B • Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area.	<b>6ES7</b>
	<b>IO-Link master module for ET 200pro</b>	
	<b>IO-Link master module for ET 200eco PN</b> <b>ET 200eco PN IO-Link master</b> • 4 IO-L + 8 DI + 4 DO 24 V DC/1.3 A - Up to four IO-Link devices (IO-Link Port Class A) can be connected - Up to eight standard sensors (8 DI) and up to four standard actuators (4 DO) can be additionally connected - Enclosure width 60 mm • 4 IO-L - Up to four IO-Link devices (IO-Link Port Class B) can be connected - Enclosure width 30 mm Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area.	<b>6ES7</b>
	<b>6ES7148-6JA00-0AB0    6ES7148-6JD00-0AB0</b>	
	<b>IO-Link master module for ET 200AL</b> <b>CM IO-Link communication module</b> • IO-Link master as serial communication module with four ports (channels) according to IO-Link Specification V1.1 • Easy device exchange with automatic data recovery without engineering for IO-Link device • Up to four IO-Link devices can be connected to each IO-Link master module • Support of IO-Link Port Class B • Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area.	<b>6ES7</b>
	<b>CM 4xIO-Link for ET 200AL</b>	

**Input modules**



IO-Link module K20 with eight digital inputs

IO-Link input modules make full use of the potential of IO-Link and are a more attractive solution economically than a direct sensor connection.

**K20 IO-Link modules**

- Four or eight digital inputs
- Degree of protection IP65/IP67
- Connection sockets in M8/M12
- Contacting protected against polarity reversal

Your advantage: Reduction of mounting and startup times by up to 40 %.

**Article No.**

**3RK5**

**Industrial controls**

Starters and contactor assemblies for direct-on-line, reversing and star-delta (wye-delta) starting can be connected to IO-Link through function modules without any additional, complicated wiring.

**Contactors and contactor assemblies**

SIRIUS 3RT contactors, 3-pole up to 250 kW  
 SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW  
 SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

- Notable reduction of wiring in the control circuit
- Integrated mechanical interlocking
- Prevention of wiring errors in the main circuit

**3RT20  
3RA23  
3RA24**



SIRIUS contactor 3RT201.-1B...-0CC0



SIRIUS 3RA2711 function module for IO-Link

**SIRIUS 3RA27 function modules**

- Connection of 3RT20 power contactors with communication capability, 3RA23 reversing contactor assemblies, and 3RA24 contactor assemblies for star-delta (wye-delta) starting to IO-Link
- Reduction of control current wiring through plug-in technology, feeder groups and integrated monitoring of circuit breaker/motor starter protector and contactor
- Reduced space requirement in the control cabinet through fewer digital inputs and outputs in the control system
- Simple user program through operation of feeders instead of individual contactors
- Enhanced operational reliability and quick wiring thanks to spring-type connections
- Can be flexibly combined with many automation solutions using the open, standardized IO-Link wiring system
- Small number of variants through use of identical modules for size S00 to S3 contactors

Your advantage: Shortening of mounting and startup times

**3RA2711**

**Overload relays**

SIRIUS 3RB24 electronic overload relays for IO-Link for high-feature applications

- Diagnostics and current value transmission via IO-Link
- Current measuring modules (3RB29) for current values from 0.3 ... 630 A
- Controlling direct-on-line, reversing and wye-delta starters via IO-Link in conjunction with contactors
- Full motor protection through PTC connection

Your advantage: Communication-capable overload relay enables remote diagnostics and preventative maintenance.

**3RB24**



SIRIUS 3RB24 overload relay

**Motor starters for operation in the control cabinet**

3RA64, 3RA65 compact starters for IO-Link

- Integrated functionality of a circuit breaker, contactor and electronic overload relay and various functions of optional mountable accessories
- Can be used for direct starting of standard induction motors up to 32 A (approx. 15 kW/400 V)
- Compact design offers enormous savings in space and wiring in the control cabinet
- Low variance of devices thanks to wide setting ranges for the rated current and wide voltage ranges

Your advantage: The diagnostics data of the process collected by the 3RA6 compact starter, e.g. short circuit, end of service life, limit position etc., are not only indicated on the compact starter itself but also transmitted to the higher-level control system through IO-Link.

**3RA64  
3RA65**



SIRIUS 3RA64 compact starter

Industrial controls (continued)		Article No.
	<p><b>Monitoring relays</b></p> <p><u>SIRIUS 3RR24 monitoring relays for mounting onto 3RT2 contactors for IO-Link</u></p> <ul style="list-style-type: none"> <li>Monitoring relays for mounting onto 3RT2 contactors</li> <li>Parameterization and diagnostics via the display on the device or via IO-Link</li> <li>Adjustable warning and switch-off limit values and on/tripping delay times</li> <li>All current measured values available in the control system</li> </ul> <p>Your advantage: Communication-capable monitoring relay enables remote diagnostics and preventative maintenance.</p>	<p><b>3RR24</b></p>
	<p><u>SIRIUS 3UG48 monitoring relays for stand-alone installation for IO-Link</u></p> <ul style="list-style-type: none"> <li>Monitoring of                             <ul style="list-style-type: none"> <li>Network (3UG481)</li> <li>Voltage (3UG483)</li> <li>Current (3UG4822)</li> <li>Power factor (3UG484)</li> <li>Fault current (3UG4825)</li> <li>Speed (3UG485)</li> </ul> </li> <li>Parameterization and diagnostics via the display on the device or via IO-Link</li> <li>Adjustable warning and switch-off limit values and on/tripping delay times</li> <li>All current measured values available in the control system</li> </ul> <p>Your advantage: Communication-capable monitoring relay enables remote diagnostics and preventative maintenance.</p>	<p><b>3UG48</b></p>
	<p><u>SIRIUS 3RS14, 3RS15 temperature monitoring relays for IO-Link</u></p> <ul style="list-style-type: none"> <li>Measuring the temperature of solids, liquids and gases</li> <li>Use of resistance sensors (3RS14) or thermocouples (3RS15)</li> <li>Parameterization and diagnostics via the display on the device or via IO-Link; adjustable warning and switch-off limit values and on/tripping delay times</li> <li>All current measured values available in the control system</li> </ul> <p>Your advantage: Independent monitoring easily linked to the control system.</p>	<p><b>3RS14, 3RS15</b></p>
	<p><b>SIRIUS ACT pushbuttons and indicator lights</b></p> <p><u>SIRIUS ACT 3SU1 ID key-operated switches for IO-Link</u></p> <ul style="list-style-type: none"> <li>Access system and selection system for four authorization levels</li> <li>Authentication of groups and persons</li> <li>Five ID keys with different coding</li> <li>Option for individual coding via IO-Link</li> <li>For installation in enclosures or fastening on front plate</li> <li>Electronic module for ID key-operated switches must be ordered separately.</li> </ul> <p>Your advantage: Only authorized personnel can work on plants and machines.</p>	<p><b>3SU1</b></p>
	<p><u>SIRIUS ACT 3SU1 electronic modules for IO-Link</u></p> <ul style="list-style-type: none"> <li>Eight digital inputs and outputs possible</li> <li>DI and DQ freely selectable (programmable)</li> <li>Input and output functions parameterizable</li> <li>Connection system (push-in)</li> <li>For installation in enclosures or fastening on front plate</li> </ul> <p>Your advantage: No wiring required if ordered in a 3SU1 enclosure via configurator.</p>	<p><b>3SU1400</b></p>
<p><b>RFID system</b></p>		
	<p><b>SIMATIC RF200 RFID system in the HF range</b></p> <p>Products SIMATIC RF210R, SIMATIC RF220R, SIMATIC RF240R, SIMATIC RF250R, SIMATIC RF260R</p> <ul style="list-style-type: none"> <li>Simple identification tasks such as reading an ID number (UID)</li> <li>Reading of user data</li> <li>Writing of user data</li> <li>No RFID-specific programming, ideal for those new to RFID</li> <li>Simple connection via master modules for IO-Link, such as SIMATIC S7-1200, ET 200SP, ET 200pro, ET 200eco PN and ET 200AL</li> <li>Use with the tried and tested ISO 15693 transponders (MDS Dxxx)</li> </ul>	<p><b>6GT2</b></p>



Article No.

### Device Description (IODD)



IODD files for IO-Link

#### IODD files

These files provide the device description for IO-Link devices.

- Comprehensive IODD catalog of SIEMENS IO-Link devices
- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/ps/15851>



IODDfinder for IO-Link

#### IODDfinder

The entire world of IO-Link under one roof

The IODDfinder is a service provided by the IO-Link community. It is a central cross-vendor database for descriptive files (IODDs). In addition, the platform provides an overview of the available IO-Link devices.

For more information, see <https://ioddfinder.io-link.com/#/>.

### Software

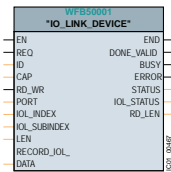


STEP 7 PCT

#### STEP 7 PCT (Port Configuration Tool)

Engineering software for configuring the IO-Link master modules for SIMATIC S7-1200, ET 200SP, ET 200pro, ET 200eco PN and ET 200AL

- Available as a stand-alone version or integrated into STEP 7 (V5.5 SP1 or later) and TIA (V12 or later)
- Engineering of the IO-Link devices connected to the master
- Monitoring of the process image of the IO-Link devices
- Open interface for importing further IODDs
- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/view/32469496>

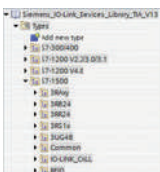


IO-Link device function block for TIA Portal

#### IO-Link function blocks (IO-Link Master and IO-Link device)

STEP 7 function block for easy acyclical data exchange in the user program

- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/view/82981502>



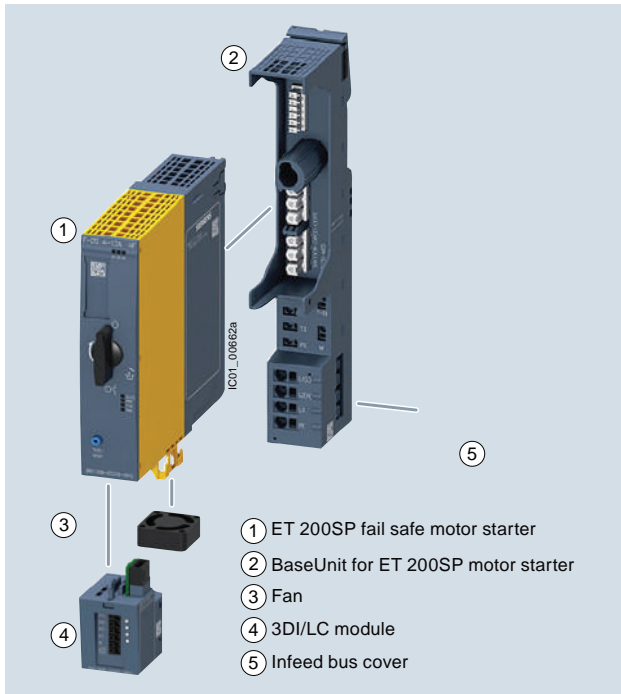
"Siemens IO-Link Devices" function block library

#### "Siemens IO-Link Devices" function block library

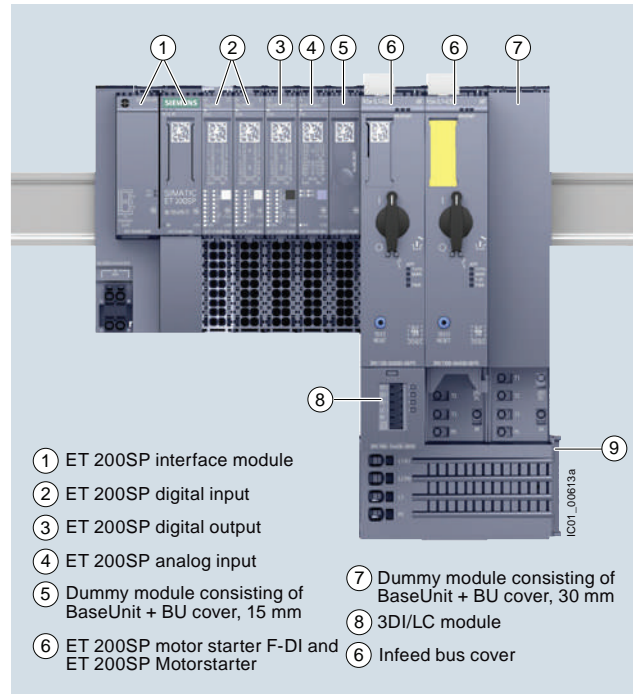
This library provides function blocks and user-defined data types (UDTs) for all IO-Link devices from the Siemens portfolio. These blocks and UDTs standardize and simplify communication with IO-Link devices.

- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/view/90529409>

### Overview



Motor starter, BaseUnit, fan and 3DI/LC control module



3RK1308 motor starter in the ET 200SP I/O system

### More information

Siemens complete ET 200SP Motor Starters offering is found on our website [www.siemens.ca/industrialcontrols](http://www.siemens.ca/industrialcontrols)

### ET 200SP motor starters

ET 200SP is a scalable and extremely flexible modular I/O system with IP20 degree of protection.

As I/O modules, the ET 200SP motor starters are an integral part of this I/O system. They are switching and protection devices for single and three-phase loads and are available as direct-on-line or reversing starters.

#### Basic functionality

All versions of the ET 200SP motor starter feature the following functionality:

- Fully pre-wired motor starters for switching and protecting any AC loads up to 5.5 kW from 48 V AC to 500 V AC
- Disconnection possible via fail-safe motor starters up to SIL 3 and PL e Cat. 4
- With self-assembling 32 A power bus, i.e. the load voltage is only fed in once for a group of motor starters
- All control supply voltages connected only once, i.e. when modules are added they are automatically connected to the next module
- Hot swapping is permissible
- Digital inputs can optionally be used via a 3DI/LC module
- Control of the motor starter from the control system and extensive diagnostics status via the cyclic process image
- Diagnostics capability for active monitoring of the switching and protection functions

- The signal states in the process image of the motor starter provide information about protective devices (short circuit or overload), the switching states of the motor starter, and system faults.

#### Use of fan

For motor starters with a 12 A rated current, the 3RW4928-8VB00 fan is included in the scope of delivery.

This fan can also be ordered as an option for motor starters with lower rated currents, if the boundary conditions demand this. For information on the ambient conditions for the use of motor starters, see chapter "Product overview" in the Manual.

#### Designing interference-free motor starters

For interference-free operation of the ET 200SP station in accordance with IEC 60947-4-2 standard, use a dummy module before the first motor starter. The dummy module consists of the 6ES7193-6BP00-0BA0 or 6ES7193-6BP00-0DA0 BaseUnit and the 6ES7133-6CV15-1AM0 BU cover 15 mm.

The 15 mm BU cover protects the plug contacts of the BaseUnit against dirt.

Both can be ordered as accessories, see also Catalog ST 70.

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

## Introduction

### Overview



SIRIUS M200D AS-i Basic motor starters 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

Siemens complete M200D Motor Starters offering is found on our website [www.siemens.ca/industrialcontrols](http://www.siemens.ca/industrialcontrols)

#### 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 failsafe 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 inverters and to the ET 200pro distributed I/O system
- Extensive diagnostics concept using LEDs
- Optional integrated manual local control with key-operated switch (ordering option)
- Optionally available brake actuation with voltages from 180 V DC (no rectifier needed in motor) or 230/400 V AC (order versions)

#### Article No. scheme

Product versions		Article number													
<b>Motor starters</b>		<b>3RK13</b>	<input type="checkbox"/> 5	-	<input type="checkbox"/> 6	<input type="checkbox"/> S	<input type="checkbox"/> 0	-	<input type="checkbox"/> A	<input type="checkbox"/>	<input type="checkbox"/>				
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 starter								1						
	Direct-on-line starters								2		with manual local operation				
	Reversing starter								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	0	-	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.