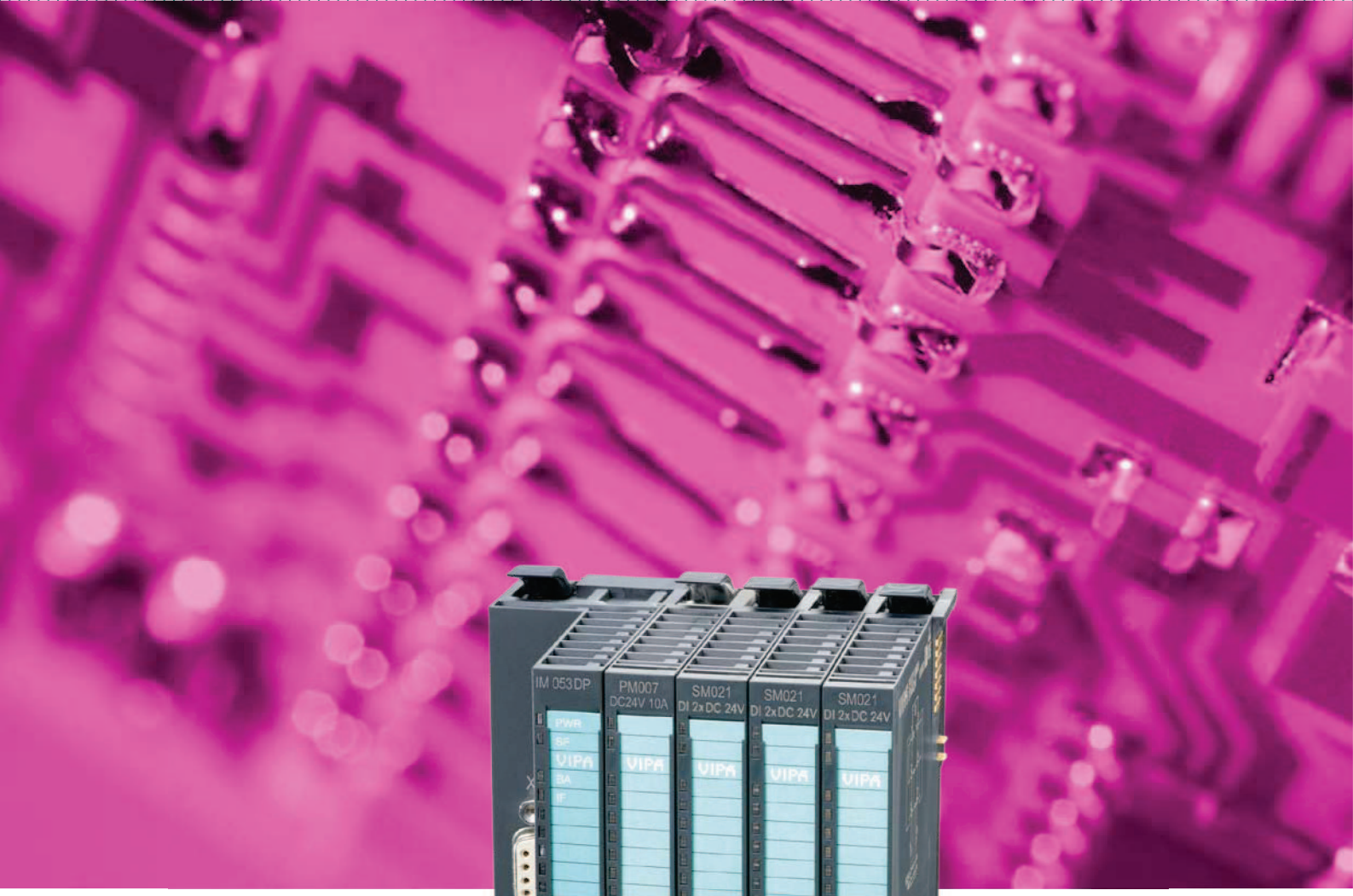


System SLIO

the fine-granular I/O system

System description SLIO

Structure and Concept

SLIO stands for Slice I/O. The system is very compact and can be adapted piecemeal exactly to the requirements of the application.

The system is designed for decentralized automation tasks.

With the help of the power module (PM), color contrasted from the signal modules (SM) and functional modules (FM), these are supplied with power and separate potential groups can be defined as required. The terminal module (TM) combines clamp, seating for the electronic module (EM) and mechanical bus connector. The electronic modules are connected to the terminal module in a secure sliding mechanism. In the case of service, only the electronic module is replaced by simply pulling out of the terminal module – wiring and mounting remain on the 35 mm profile rail. The step-formed spring-type terminals on the terminal module enable a quick, clear and secure wiring. Through integrated status LEDs and the label strip on the front a channel-specific, unambiguous allocation, and readability of the channel conditions of the electronic module is ensured.

All interface modules (IM) for PROFIBUS-DP, CANopen, PROFINET, EtherCAT, DeviceNet and Modbus support up to 64 electronic modules.

The space-saving assembly size allows use in any automation environment.

Assembly is very easy: First the terminal modules are connected, then the electronic modules are inserted into the slot designated for the terminal module until the connection between both module parts is established by an audible click.

The system SLIO is one of the most highly efficient decentral systems worldwide and is evolving daily.

Performance and Application

The system SLIO is designed for large decentralized automation tasks in the manufacturing and process industries. The system SLIO expands key solutions and is integrated with the help of the device master files into existing fieldbus infrastructure. Through the new backplane bus concept the interface modules (fieldbus slave) in the system SLIO enable very short response times for signal processing.

Functions

A variety of signal modules are available for the connection of sensors and actuators for acquiring digital and analog signals to and from the process.

For positioning, path measurement, counting tasks and other functions further functional modules are continuously being developed.

Communication

The system SLIO includes interface modules (fieldbus slave modules) with different fieldbus protocols by which the system, manufacturer-independent, can be integrated into most automation concepts.

Clamp modules

Assembly and function

Terminal modules are passive modules for 2- or 3-wire installations, whose contacts are vertical electrical connected internal. Within the module the back-plane bus feed-through. The module does not have any module identification, but is considered at the maximum number of the modules.

Through the application of the terminal modules, distributors for power supply could be realized easily and enables so the connection of active supplied sensors like proximity switch. The wiring is done via timesaving and secure cage clamp technique.

The terminal modules are fixed on the mounting surface by means of a 35mm DIN rail.

Features

- Maintenance-free cage clamp technique
- Backplane bus feed-through
- Max. terminal voltage 10A
- Potential separation 500Veff (field voltage to bus)
- Mounting on a 35mm DIN rail
- 24 month guarantee

Overview

Order no.	Name/Description	Page
Clamp modules		
001-1BA00	**CM 001 - Potential distributor module** › 8xDC 24V Clamps	**18**
001-1BA10	**CM 001 - Potential distributor module** › 8xDC 0V Clamps	**18**
001-1BA20	**CM 001 - Potential distributor module** › 4xDC 24V, 4xDC 0V Clamps	**18**

Clamp modules

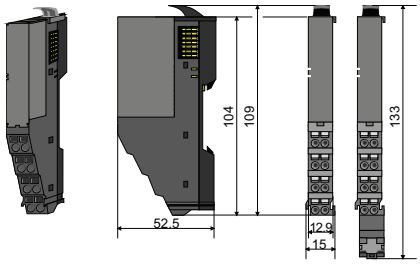
Clamp modules | Clamp modules						
001-1BA00 001-1BA10 001-1BA20						

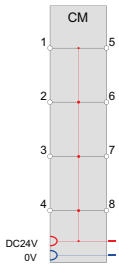
Order number	001-1BA00	001-1BA10	001-1BA20	
Figure				
Type	CM 001	CM 001	CM 001	
Module ID	-	-	-	
General information				
Note	-	-	-	
Features	› 8xDC 24V Clamps	› 8xDC 0V Clamps	› 4xDC 24V, 4xDC 0V Clamps	
Clamp parameter				
Terminal voltage max.	DC 30 V	DC 0 V	DC 30 V	
Terminal current max.	10 A	10 A	10 A	
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 52.5 mm	12.9 mm x 109 mm x 52.5 mm	12.9 mm x 109 mm x 52.5 mm	
Weight	50 g	50 g	50 g	
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	
Certifications				
UL508 certification	in preparation	in preparation	in preparation	

Connections, Interfaces

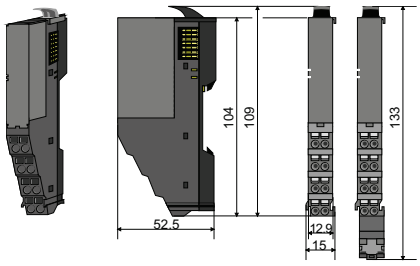
Clamp modules | Clamp modules						
001-1BA00 001-1BA10 001-1BA20						

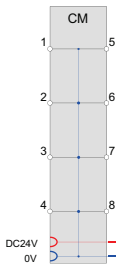
001-1BA00



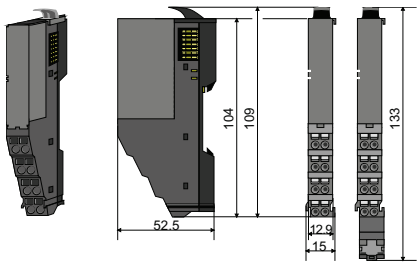


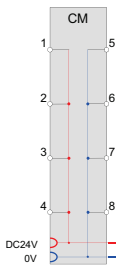
001-1BA10



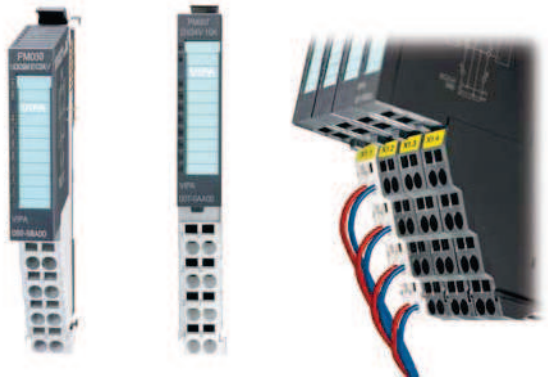


001-1BA20





Power modules



Structure and Function

In the system SLIO the power supply is provided via power modules.

Both the bus interface as well as the electronics of the connected peripheral modules are supplied with power via the power module (PM) integrated in interface module (IM). The DC 24 V load power supply for the connected peripheral modules is provided via a further connection in the PM.

With the help of color-contrasted power modules within the system further potential areas for the DC 24 V load power supply can be defined.

The two-component design allows for the easiest of service by separating the electronics from the terminal module.

Characteristics

- Power supply of the sensor/actuator-level
- Nominal input voltage DC 24 V
- Output current max. 10 A
- Isolation from potential groups
- Front integrated status LEDs
- Mounting security by reverse polarity and overvoltage protection
- 24 months warranty

Overview

Order no.	Name/Description	Page
Power modules		
007-1AB00	**PM 007 - Power module** › Power supply DC 24 V, 10 A › Reverse polarity protection › Overvoltage protection	**22**
007-1AB10	**PM 007 - Power module** › Power supply DC 24 V, 4 A › Power supply DC 24 V for bus supply 5 V, 2 A › Reverse polarity protection › Overvoltage protection	**22**

Power modules

Power modules | Power modules						
007-1AB00 007-1AB10						

Order number	007-1AB00	007-1AB10		
Figure				
Type	PM 007	PM 007		
Module ID	-	-		
General information				
Note	-	-		
Features	› Power supply DC 24 V, 10 A › Reverse polarity protection › Overvoltage protection	› Power supply DC 24 V, 4 A › Power supply DC 24 V for bus supply 5 V, 2 A › Reverse polarity protection › Overvoltage protection		
Technical data power supply				
Input voltage (rated value)	DC 24 V	DC 24 V		
Input voltage (permitted range)	DC 20.4...28.8 V	DC 20.4...28.8 V		
Mains frequency (rated value)	-	-		
Mains frequency (permitted range)	-	-		
Input voltage (at 120 V)	-	-		
Input voltage (at 230 V)	-	-		
Inrush current	-	-		
Power consumption	-	-		
Output voltage (rated value)	24 V	24 V		
Output current (rated value)	10 A	4 A		
Power supply parallel switchable	-	-		
Reverse polarity protection	yes	yes		
Overvoltage protection	36 V	36 V		
Ripple of output voltage (max.)	-	-		
Efficiency	-	89 %		
Power loss	-	1.4 W		
Status information, alarms, diagnostics				
Status display	yes	yes		
Interrupts	no	no		
Process alarm	no	no		
Diagnostic interrupt	no	no		
Diagnostic functions	no	no		
Diagnostics information read-out	none	none		
Supply voltage display	green LED	green LED		

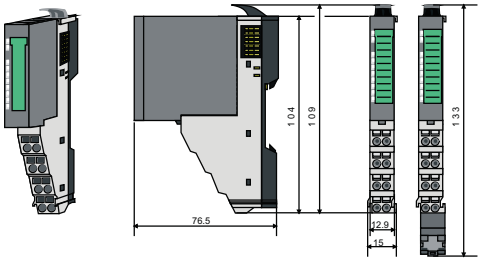
Power modules | Power modules						
007-1AB00 007-1AB10						

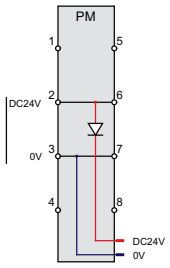
Order number	007-1AB00	007-1AB10		
Group error display	red LED	red LED		
Channel error display	none	none		
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm		
Weight	60 g	75 g		
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C		
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C		
Certifications				
UL508 certification	in preparation	in preparation		

Connections, Interfaces

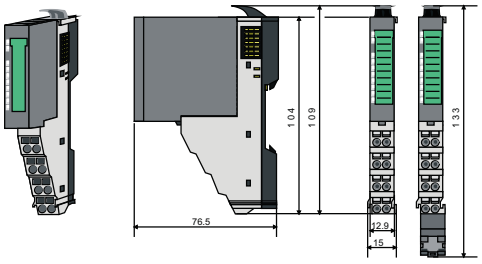
Power modules | Power modules						
007-1AB00 007-1AB10						

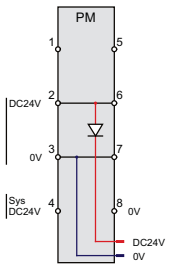
007-1AB00



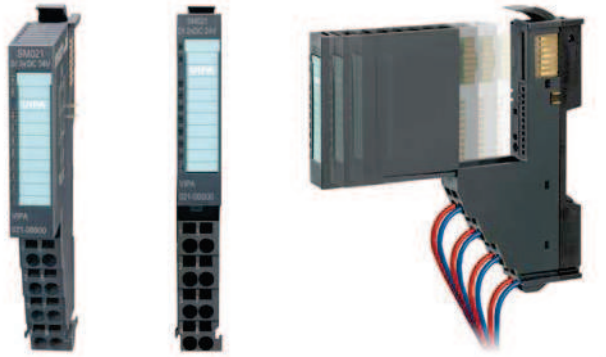


007-1AB10





Signal modules digital



Structure and Function

Signal modules (SM) to connect sensors and actuators are the interfaces of the system to the process. Digital signal modules acquire the binary control signals to and from the process level.

A variety of different digital signal modules provides exactly the I/O modules, which are required for each task. The digital modules differ in the number of channels, voltage and current ranges, isolation, and diagnostic and alarm capability.

Each signal module consists of a terminal and an electronic module.

The terminal module (TM) contains the receptacle for the electronic module (EM), the backplane connectors and contacts for the distribution of the load power supply electronics, the modular connection to DC 24 V load power supply and the staircase-shaped terminal block for wiring.

Furthermore the terminal module processes a locking system for fixing to a profile rail. The SLIO system can also be constructed "block by block" outside the cabinet and later assembled as a complete system in the control cabinet.

The functionality of the signal module is defined via the electronics module that is connected by a secure sliding mechanism to the terminal module.

During service the defective electronic module can be replaced without detaching the wiring.

Characteristics

- Electrically isolated digital inputs and outputs to the backplane bus
- 2, 4 or 8 channel
- Various modules, suitable for switches and proximity switches as well as for measuring transducers
- Direct mapping and readability of the channel conditions via status LEDs
- Safe and time-saving installation by the terminal assignment mounted on the module
- When changing the module equipment identification (BMK) is retained on the TM
- Individual single-channel lettering on insertion strip
- 24 month warranty

Overview

Order no.	Name/Description	Page
Digital input modules		
021-1BB00	**SM 021 - Digital input** › 2 inputs	**29**
021-1BB10	**SM 021 - Digital input** › 2 fast inputs › Input filter time delay parameterizable 2 µs...4 ms	**29**
021-1BB50	**SM 021 - Digital input** › 2 inputs › Active low input	**29**
021-1BB70	**SM 021 - Digital input** › 2 inputs › Time stamp	**29**
021-1BD00	**SM 021 - Digital input** › 4 inputs	**32**
021-1BD10	**SM 021 - Digital input** › 4 fast inputs › Input filter time delay parameterizable 2 µs...4 ms	**32**
021-1BD40	**SM 021 - Digital input** › 4 digital inputs › Connect 2/3-wire	**32**
021-1BD50	**SM 021 - Digital input** › 4 inputs › Active low input	**32**
021-1BD70	**SM 021 - Digital input** › 4 inputs › Time stamp	**35**
021-1BF00	**SM 021 - Digital input** › 8 inputs	**35**
021-1BF50	**SM 021 - Digital input** › 8 inputs › Active low input	**35**
021-1SD00	**SM 021 - Digital input** › 4 inputs › Safety	**35**
Digital output modules		
022-1BB00	**SM 022 - Digital output** › 2 outputs › Output current 0.5 A	**38**
022-1BB20	**SM 022 - Digital output** › 2 outputs › Output current 2 A	**38**
022-1BB50	**SM 022 - Digital output** › 2 Low-Side outputs › Output current 0.5 A	**38**
022-1BB70	**SM 022 - Digital output** › 2 outputs › Time stamp › Output current 0.5 A	**38**
022-1BB90	**SM 022 - Digital output** › 2 outputs › PWM	**41**
022-1BD00	**SM 022 - Digital output** › 4 outputs › Output current 0.5 A	**41**
022-1BD20	**SM 022 - Digital output** › 4 outputs › Output current 2 A	**41**
022-1BD50	**SM 022 - Digital output** › 4 Low-Side outputs › Output current 0.5 A	**41**
022-1BD70	**SM 022 - Digital output** › 4 outputs › Time stamp › Output current 0.5 A	**44**
022-1BF00	**SM 022 - Digital output** › 8 outputs › Output current 0.5 A	**44**

Overview

Order no.	Name/Description	Page
022-1BF50	**SM 022 - Digital output** › 8 Low-Side outputs › Output current 0.5 A	**44**
022-1HB10	**SM 022 - Digital output** › 2 relay outputs › DC 30 V/ AC 230 V › Output current 3 A	**44**
022-1SD00	**SM 022 - Digital output** › 4 outputs › Safety › Output current 0.5 A	**47**

Digital input modules

Signal modules digital | Digital input modules						
021-1BB00 021-1BB10 021-1BB50 021-1BB70	021-1BD00 021-1BD10 021-1BD40 021-1BD50	021-1BD70 021-1BF00 021-1BF50 021-1SD00				

Order number	021-1BB00	021-1BB10	021-1BB50	021-1BB70
Figure				
Type	SM 021	SM 021	SM 021	SM 021
Module ID	0001 9F82	000A 1F02	0002 9F82	0F01 47C1
General information				
Note	-	-	-	-
Features	› 2 inputs	› 2 fast inputs › Input filter time delay parameterizable 2 µs...4 ms	› 2 inputs › Active low input	› 2 inputs › Time stamp
Current consumption/power loss				
Current consumption from backplane bus	55 mA	95 mA	60 mA	85 mA
Power loss	0.5 W	0.9 W	0.5 W	0.9 W
Technical data digital inputs				
Number of inputs	2	2	2	2
Cable length, shielded	1000 m	1000 m	1000 m	1000 m
Cable length, unshielded	600 m	600 m	600 m	600 m
Rated load voltage	-	DC 20.4...28.8 V	-	DC 24 V
Current consumption from load voltage L+ (without load)	-	12 mA	-	10 mA
Rated value	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V
Input voltage for signal "0"	DC 0...5 V	DC 0...5 V	DC 15...28.8 V	DC 0...5 V
Input voltage for signal "1"	DC 15...28.8 V	DC 15...28.8 V	DC 0...5 V	DC 15...28.8 V
Input voltage hysterese	-	-	-	-
Frequency range	-	-	-	-
Input resistance	-	-	-	-
Input current for signal "1"	3 mA	3 mA	3 mA	3 mA
Connection of Two-Wire-BEROs possible	✓	✓	✓	✓
Max. permissible BERO quiescent current	0.5 mA	0.5 mA	0.5 mA	0.5 mA
Input delay of "0" to "1"	3 ms	parameterizable 2µs - 3ms	3 ms	parameterizable 2µs - 3ms
Input delay of "1" to "0"	3 ms	parameterizable 2µs - 3ms	3 ms	parameterizable 2µs - 3ms
Number of simultaneously utilizable inputs horizontal configuration	2	2	2	2
Number of simultaneously utilizable inputs vertical configuration	2	2	2	2
Input characteristic curve	IEC 61131, type 1	IEC 61131, type 1	-	IEC 61131, type 1
Initial data size	2 Bit	2 Bit	2 Bit	60 Byte

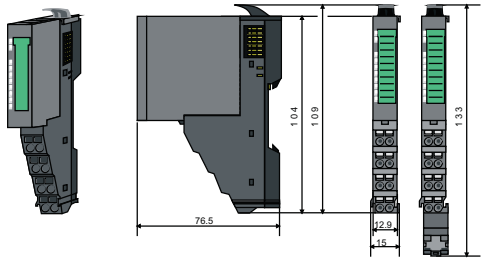
Signal modules digital | Digital input modules						
021-1BB00 021-1BB10 021-1BB50 021-1BB70	021-1BD00 021-1BD10 021-1BD40 021-1BD50	021-1BD70 021-1BF00 021-1BF50 021-1SD00				

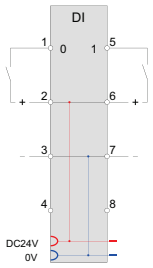
Order number	021-1BB00	021-1BB10	021-1BB50	021-1BB70
Status information, alarms, diagnostics				
Status display	green LED per channel	green LED per channel	green LED per channel	green LED per channel
Interrupts	no	yes, parameterizable	no	no
Process alarm	no	yes, parameterizable	no	no
Diagnostic interrupt	no	yes, parameterizable	no	no
Diagnostic functions	no	yes	no	no
Diagnostics information read-out	none	possible	none	possible
Module state	green LED	green LED	green LED	green LED
Module error display	red LED	red LED	red LED	red LED
Channel error display	none	none	none	none
Isolation				
Between channels	-	-	-	-
Between channels of groups to	-	-	-	-
Between channels and backplane bus	✓	✓	✓	✓
Insulation tested with	DC 500 V	DC 500 V	DC 500 V	DC 500 V
Safety				
Safety protocoll	-	-	-	-
Safety requirements	-	-	-	-
Secure user address	-	-	-	-
Watchdog	-	-	-	-
Two channels	-	-	-	-
Test pulse outputs	-	-	-	-
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm
Weight	60 g	60 g	60 g	60 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

Connections, Interfaces

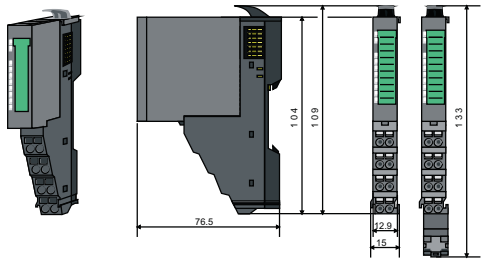
Signal modules digital | Digital input modules						
021-1BB00	021-1BD00	021-1BD70				
021-1BB10	021-1BD10	021-1BF00				
021-1BB50	021-1BD40	021-1BF50				
021-1BB70	021-1BD50	021-1SD00				

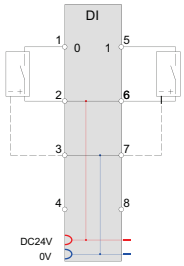
021-1BB00



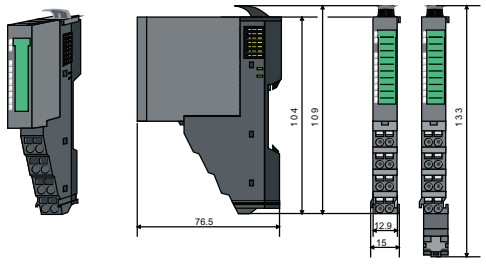


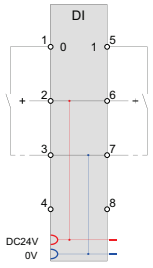
021-1BB10



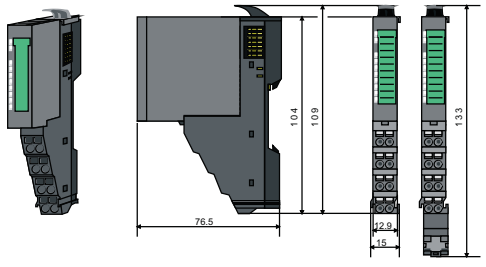


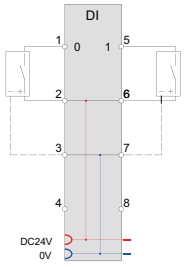
021-1BB50





021-1BB70





Digital input modules

Signal modules digital | Digital input modules						
021-1BB00 021-1BB10 021-1BB50 021-1BB70	021-1BD00 021-1BD10 021-1BD40 021-1BD50	021-1BD70 021-1BF00 021-1BF50 021-1SD00				

Order number	021-1BD00	021-1BD10	021-1BD40	021-1BD50
Figure				
Type	SM 021	SM 021	SM 021	SM 021
Module ID	0003 9F84	0009 1F04	0008 9F84	0004 9F84
General information				
Note	-	-	-	-
Features	› 4 inputs	› 4 fast inputs › Input filter time delay parameterizable 2 µs...4 ms	› 4 digital inputs › Connect 2/3-wire	› 4 inputs › Active low input
Current consumption/power loss				
Current consumption from backplane bus	55 mA	95 mA	55 mA	65 mA
Power loss	0.6 W	0.95 W	0.6 W	0.6 W
Technical data digital inputs				
Number of inputs	4	4	4	4
Cable length, shielded	1000 m	1000 m	1000 m	1000 m
Cable length, unshielded	600 m	600 m	600 m	600 m
Rated load voltage	-	DC 20.4...28.8 V	-	-
Current consumption from load voltage L+ (without load)	-	15 mA	-	-
Rated value	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V
Input voltage for signal "0"	DC 0...5 V	DC 0...5 V	DC 0...5 V	DC 15...28.8 V
Input voltage for signal "1"	DC 15...28.8 V	DC 15...28.8 V	DC 15...28.8 V	DC 0...5 V
Input voltage hysterese	-	-	-	-
Frequency range	-	-	-	-
Input resistance	-	-	-	-
Input current for signal "1"	3 mA	3 mA	3 mA	3 mA
Connection of Two-Wire-BEROs possible	✓	✓	✓	✓
Max. permissible BERO quiescent current	0.5 mA	0.5 mA	0.5 mA	0.5 mA
Input delay of "0" to "1"	3 ms	parameterizable 2µs - 3ms	3 ms	3 ms
Input delay of "1" to "0"	3 ms	parameterizable 2µs - 3ms	3 ms	3 ms
Number of simultaneously utilizable inputs horizontal configuration	4	4	4	4
Number of simultaneously utilizable inputs vertical configuration	4	4	4	4
Input characteristic curve	IEC 61131, type 1	IEC 61131, type 1	IEC 61131, type 1	-
Initial data size	4 Bit	4 Bit	4 Bit	4 Bit

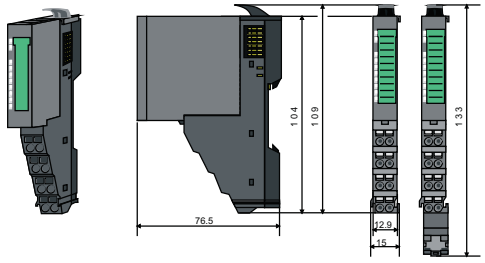
Signal modules digital | Digital input modules						
021-1BB00 021-1BB10 021-1BB50 021-1BB70	021-1BD00 021-1BD10 021-1BD40 021-1BD50	021-1BD70 021-1BF00 021-1BF50 021-1SD00				

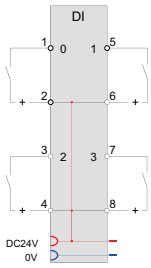
Order number	021-1BD00	021-1BD10	021-1BD40	021-1BD50
Status information, alarms, diagnostics				
Status display	green LED per channel	green LED per channel	green LED per channel	green LED per channel
Interrupts	no	yes, parameterizable	no	no
Process alarm	no	yes, parameterizable	no	no
Diagnostic interrupt	no	yes, parameterizable	no	no
Diagnostic functions	no	yes	no	no
Diagnostics information read-out	none	possible	none	none
Module state	green LED	green LED	green LED	green LED
Module error display	red LED	red LED	red LED	red LED
Channel error display	none	none	none	none
Isolation				
Between channels	-	-	-	-
Between channels of groups to	-	-	-	-
Between channels and backplane bus	✓	✓	✓	✓
Insulation tested with	DC 500 V	DC 500 V	DC 500 V	DC 500 V
Safety				
Safety protocoll	-	-	-	-
Safety requirements	-	-	-	-
Secure user address	-	-	-	-
Watchdog	-	-	-	-
Two channels	-	-	-	-
Test pulse outputs	-	-	-	-
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm
Weight	60 g	60 g	60 g	60 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

Connections, Interfaces

Signal modules digital | Digital input modules						
021-1BB00 021-1BB10 021-1BB50 021-1BB70	021-1BD00 021-1BD10 021-1BD40 021-1BD50	021-1BD70 021-1BF00 021-1BF50 021-1SD00				

021-1BD00





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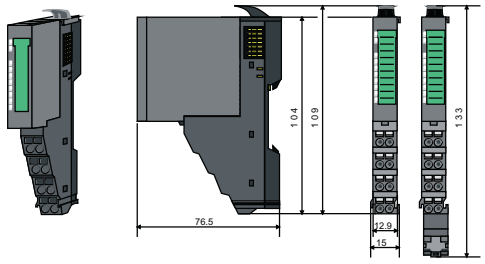
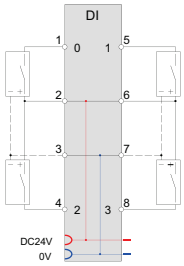
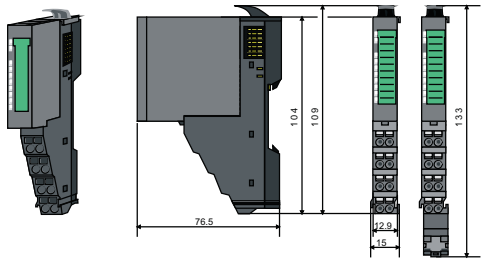
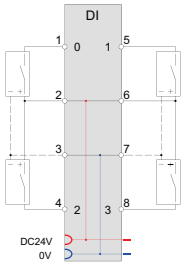


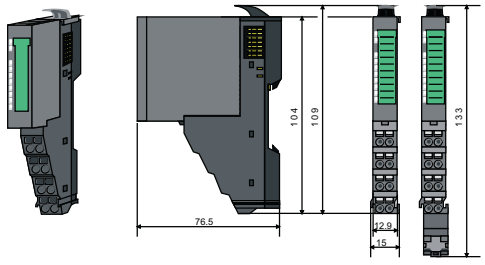


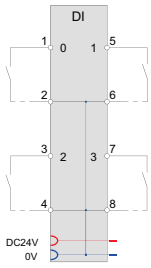
021-1BD40





021-1BD50





Digital input modules

Signal modules digital | Digital input modules						
021-1BB00 021-1BB10 021-1BB50 021-1BB70	021-1BD00 021-1BD10 021-1BD40 021-1BD50	021-1BD70 021-1BF00 021-1BF50 021-1SD00				

Order number	021-1BD70	021-1BF00	021-1BF50	021-1SD00
Figure				
Type	SM 021	SM 021	SM 021	SM 021
Module ID	0F03 47C2	0005 9FC1	0007 9FC1	0C81 2E00
General information				
Note	-	-	-	Coming soon
Features	› 4 inputs › Time stamp	› 8 inputs	› 8 inputs › Active low input	› 4 inputs › Safety
Current consumption/power loss				
Current consumption from backplane bus	85 mA	60 mA	65 mA	80 mA
Power loss	0.95 W	0.9 W	0.9 W	0.8 W
Technical data digital inputs				
Number of inputs	4	8	8	4
Cable length, shielded	1000 m	1000 m	1000 m	1000 m
Cable length, unshielded	600 m	600 m	600 m	600 m
Rated load voltage	DC 24 V	-	-	-
Current consumption from load voltage L+ (without load)	15 mA	-	-	-
Rated value	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V
Input voltage for signal "0"	DC 0...5 V	DC 0...5 V	DC 15...28.8 V	DC 0...5 V
Input voltage for signal "1"	DC 15...28.8 V	DC 15...28.8 V	DC 0...5 V	DC 15...28.8 V
Input voltage hysterese	-	-	-	-
Frequency range	-	-	-	-
Input resistance	-	-	-	-
Input current for signal "1"	3 mA	3 mA	3 mA	3 mA
Connection of Two-Wire-BEROs possible	✓	✓	✓	✓
Max. permissible BERO quiescent current	0.5 mA	0.5 mA	0.5 mA	0.5 mA
Input delay of "0" to "1"	parameterizable 2µs - 3ms	3 ms	3 ms	parameterizable 3ms - 1s
Input delay of "1" to "0"	parameterizable 2µs - 3ms	3 ms	3 ms	parameterizable 3ms - 1s
Number of simultaneously utilizable inputs horizontal configuration	4	8	8	4
Number of simultaneously utilizable inputs vertical configuration	4	8	8	4
Input characteristic curve	IEC 61131, type 1	IEC 61131, type 1	-	IEC 61131, type 1
Initial data size	60 Byte	8 Bit	8 Bit	4 Bit
Status information, alarms, diagnostics				

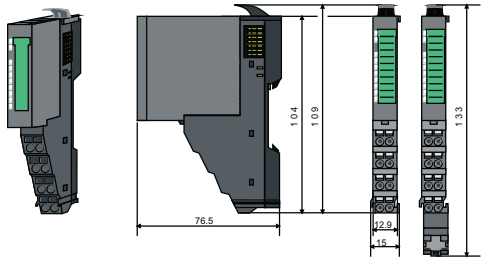
Signal modules digital | Digital input modules						
021-1BB00 021-1BB10 021-1BB50 021-1BB70	021-1BD00 021-1BD10 021-1BD40 021-1BD50	021-1BD70 021-1BF00 021-1BF50 021-1SD00				

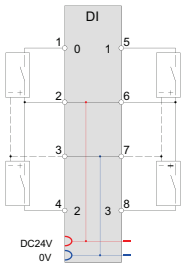
Order number	021-1BD70	021-1BF00	021-1BF50	021-1SD00
Status display	green LED per channel	green LED per channel	green LED per channel	green LED per channel
Interrupts	no	no	no	yes, parameterizable
Process alarm	no	no	no	no
Diagnostic interrupt	no	no	no	yes, parameterizable
Diagnostic functions	no	no	no	yes, parameterizable
Diagnostics information read-out	possible	none	none	possible
Module state	green LED	green LED	green LED	green LED
Module error display	red LED	red LED	red LED	red LED
Channel error display	none	none	none	none
Isolation				
Between channels	-	-	-	-
Between channels of groups to	-	-	-	-
Between channels and backplane bus	✓	✓	✓	✓
Insulation tested with	DC 500 V	DC 500 V	DC 500 V	DC 500 V
Safety				
Safety protocoll	-	-	-	PROFIsafe V1 and PROFIsafe V2
Safety requirements	-	-	-	SIL CL 3 and PL e
Secure user address	-	-	-	1 - 4095
Watchdog	-	-	-	parameterizable 10ms - 1s
Two channels	-	-	-	Each 2 of 4 inputs switchable
Test pulse outputs	-	-	-	4
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm
Weight	60 g	60 g	60 g	60 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

Connections, Interfaces

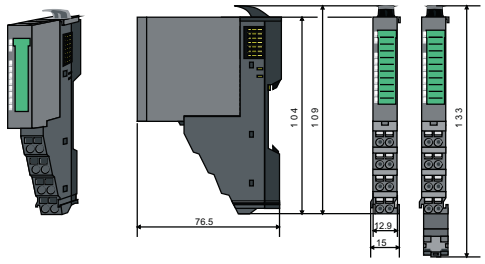
Signal modules digital | Digital input modules						
021-1BB00 021-1BB10 021-1BB50 021-1BB70	021-1BD00 021-1BD10 021-1BD40 021-1BD50	021-1BD70 021-1BF00 021-1BF50 021-1SD00				

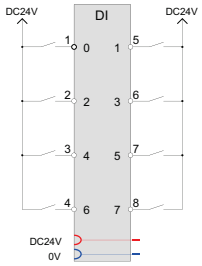
021-1BD70





021-1BF00





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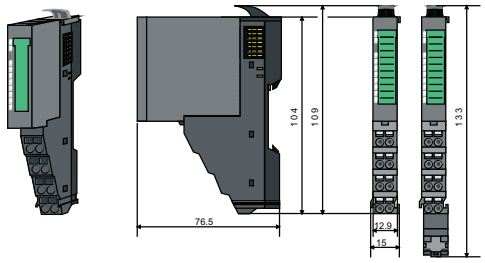
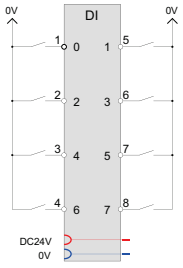
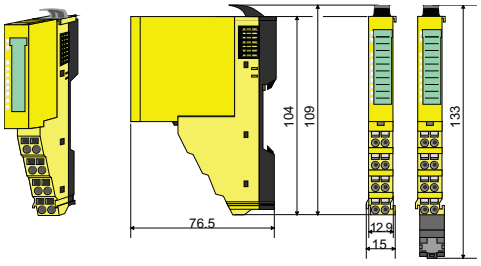
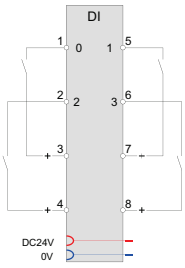




021-1SD00





Digital output modules

Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

Order number	022-1BB00	022-1BB20	022-1BB50	022-1BB70
Figure				
Type	SM 022	SM 022	SM 022	SM 022
Module ID	0101 AF90	0102 AF90	0103 AF90	0F41 57E1
General information				
Note	-	-	-	-
Features	› 2 outputs › Output current 0.5 A	› 2 outputs › Output current 2 A	› 2 Low-Side outputs › Output current 0.5 A	› 2 outputs › Time stamp › Output current 0.5 A
Current consumption/power loss				
Current consumption from backplane bus	55 mA	60 mA	60 mA	85 mA
Power loss	0.4 W	0.55 W	0.4 W	0.95 W
Technical data digital outputs				
Number of outputs	2	2	2	2
Cable length, shielded	1000 m	1000 m	1000 m	1000 m
Cable length, unshielded	600 m	600 m	600 m	600 m
Rated load voltage	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V
Current consumption from load voltage L+ (without load)	5 mA	10 mA	2.5 mA	15 mA
Output current at signal "1", rated value	0.5 A	2 A	0.5 A	0.5 A
Output delay of "0" to "1"	30 µs	100 µs	30 µs	max. 100 ns
Output delay of "1" to "0"	175 µs	175 µs	100 µs	max. 100 ns
Minimum load current	-	-	-	-
Lamp load	10 W	10 W	10 W	10 W
Parallel switching of outputs for redundant control of a load	not possible	not possible	not possible	not possible
Parallel switching of outputs for increased power	not possible	not possible	not possible	not possible
Actuation of digital input	✓	✓	✓	✓
Switching frequency with resistive load	max. 1000 Hz	max. 1000 Hz	max. 1000 Hz	max. 40 kHz
Switching frequency with inductive load	max. 0.5 Hz	max. 0.5 Hz	max. 0.5 Hz	max. 40 kHz
Switching frequency on lamp load	max. 10 Hz	max. 10 Hz	max. 10 Hz	max. 40 kHz
Internal limitation of inductive shut-off voltage	L+ (-52 V)	L+ (-52 V)	+45 V	L+ (-52 V)
Short-circuit protection of output	yes, electronic	yes, electronic	yes, electronic	yes, electronic, and only highside
Trigger level	1 A	4 A	1.7 A	2.5 A
Number of operating cycle of relay outputs	-	-	-	-
Switching capacity of contacts	-	-	-	-

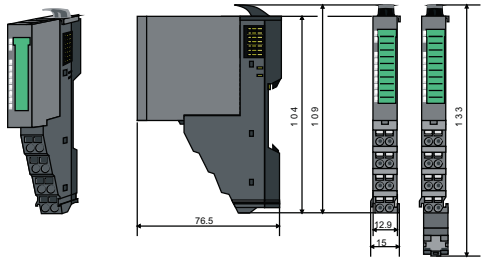
Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

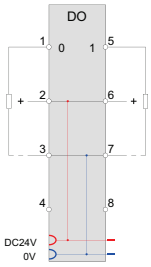
Order number	022-1BB00	022-1BB20	022-1BB50	022-1BB70
Output data size	2 Bit	2 Bit	2 Bit	60 Byte
Status information, alarms, diagnostics				
Status display	green LED per channel	green LED per channel	green LED per channel	green LED per channel
Interrupts	no	no	no	no
Process alarm	no	no	no	no
Diagnostic interrupt	no	no	no	no
Diagnostic functions	no	no	no	no
Diagnostics information read-out	none	none	none	possible
Module state	green LED	green LED	green LED	green LED
Module error display	red LED	red LED	red LED	red LED
Channel error display	none	none	none	none
Isolation				
Between channels	-	-	-	-
Between channels of groups to	-	-	-	-
Between channels and backplane bus	✓	✓	✓	✓
Insulation tested with	DC 500 V	DC 500 V	DC 500 V	DC 500 V
Safety				
Safety protocoll	-	-	-	-
Safety requirements	-	-	-	-
Secure user address	-	-	-	-
Watchdog	-	-	-	-
Two channels	-	-	-	-
Test pulse length	-	-	-	-
Circuit monitoring	-	-	-	-
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm
Weight	60 g	60 g	60 g	60 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

Connections, Interfaces

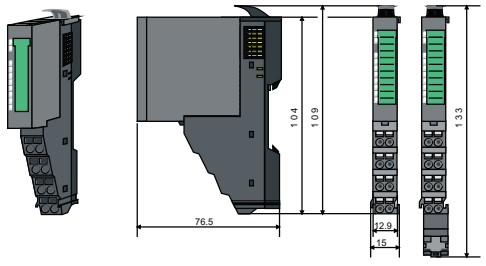
Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

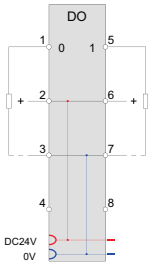
022-1BB00



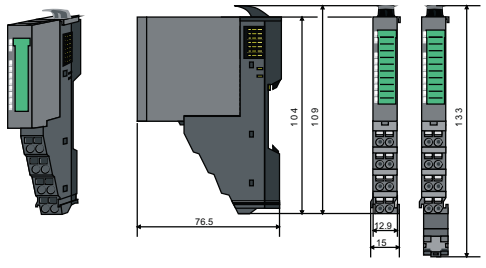


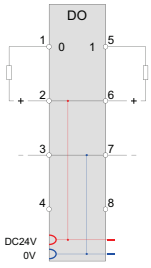
022-1BB20



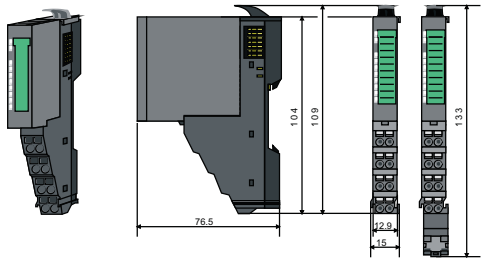


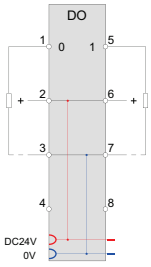
022-1BB50





022-1BB70





Digital output modules

Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

Order number	022-1BB90	022-1BD00	022-1BD20	022-1BD50
Figure				
Type	SM 022	SM 022	SM 022	SM 022
Module ID	0901 4880	0104 AFA0	0108 AFA0	0105 AFA0
General information				
Note	-	-	-	-
Features	› 2 outputs › PWM	› 4 outputs › Output current 0.5 A	› 4 outputs › Output current 2 A	› 4 Low-Side outputs › Output current 0.5 A
Current consumption/power loss				
Current consumption from backplane bus	85 mA	55 mA	65 mA	65 mA
Power loss	0.95 W	0.5 W	0.8 W	0.5 W
Technical data digital outputs				
Number of outputs	2	4	4	4
Cable length, shielded	1000 m	1000 m	1000 m	1000 m
Cable length, unshielded	600 m	600 m	600 m	600 m
Rated load voltage	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V
Current consumption from load voltage L+ (without load)	15 mA	10 mA	20 mA	5 mA
Output current at signal "1", rated value	0.5 A	0.5 A	2 A	0.5 A
Output delay of "0" to "1"	max. 100 ns	30 µs	100 µs	30 µs
Output delay of "1" to "0"	max. 100 ns	175 µs	175 µs	100 µs
Minimum load current	-	-	-	-
Lamp load	10 W	10 W	10 W	10 W
Parallel switching of outputs for redundant control of a load	not possible	not possible	not possible	not possible
Parallel switching of outputs for increased power	not possible	not possible	not possible	not possible
Actuation of digital input	✓	✓	✓	✓
Switching frequency with resistive load	max. 40 kHz	max. 1000 Hz	max. 1000 Hz	max. 1000 Hz
Switching frequency with inductive load	max. 40 kHz	max. 0.5 Hz	max. 0.5 Hz	max. 0.5 Hz
Switching frequency on lamp load	max. 40 kHz	max. 10 Hz	max. 10 Hz	max. 10 Hz
Internal limitation of inductive shut-off voltage	L+ (-52 V)	L+ (-52 V)	L+ (-52 V)	+45 V
Short-circuit protection of output	yes, electronic, and only highside	yes, electronic	yes, electronic	yes, electronic
Trigger level	2.5 A	1 A	2.7 A	1.7 A
Number of operating cycle of relay outputs	-	-	-	-
Switching capacity of contacts	-	-	-	-

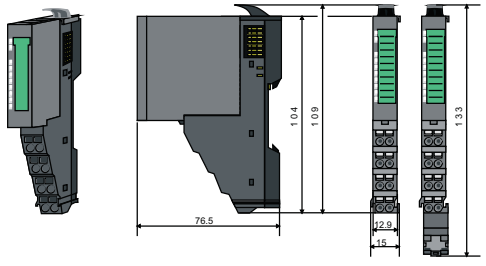
Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

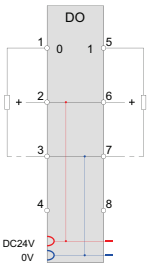
Order number	022-1BB90	022-1BD00	022-1BD20	022-1BD50
Output data size	12 Byte	4 Bit	4 Bit	4 Bit
Status information, alarms, diagnostics				
Status display	green LED per channel	green LED per channel	green LED per channel	green LED per channel
Interrupts	no	no	no	no
Process alarm	no	no	no	no
Diagnostic interrupt	no	no	no	no
Diagnostic functions	no	no	no	no
Diagnostics information read-out	possible	none	none	none
Module state	green LED	green LED	green LED	green LED
Module error display	red LED	red SF LED	red SF LED	red SF LED
Channel error display	none	none	none	none
Isolation				
Between channels	-	-	-	-
Between channels of groups to	-	-	-	-
Between channels and backplane bus	✓	✓	✓	✓
Insulation tested with	DC 500 V	DC 500 V	DC 500 V	DC 500 V
Safety				
Safety protocoll	-	-	-	-
Safety requirements	-	-	-	-
Secure user address	-	-	-	-
Watchdog	-	-	-	-
Two channels	-	-	-	-
Test pulse length	-	-	-	-
Circuit monitoring	-	-	-	-
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm
Weight	60 g	60 g	60 g	60 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

Connections, Interfaces

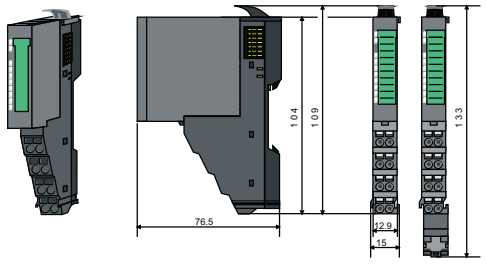
Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

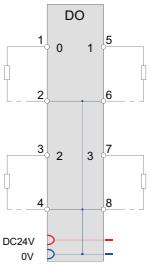
022-1BB90





022-1BD00





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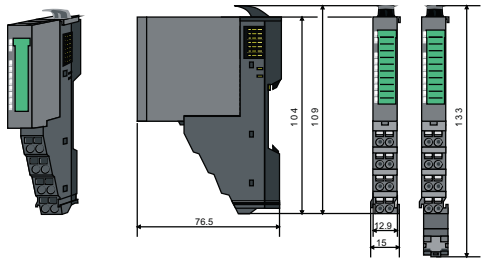
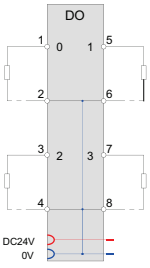
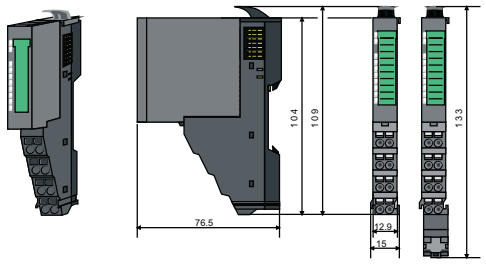
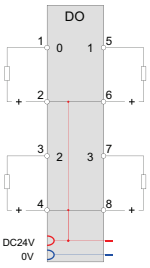




022-1BD50





Digital output modules

Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

Order number	022-1BD70	022-1BF00	022-1BF50	022-1HB10
Figure				
Type	SM 022	SM 022	SM 022	SM 022
Module ID	0F43 57E2	0106 AFC8	0107 AFC8	0109 AF90
General information				
Note	-	-	-	-
Features	› 4 outputs › Time stamp › Output current 0.5 A	› 8 outputs › Output current 0.5 A	› 8 Low-Side outputs › Output current 0.5 A	› 2 relay outputs › DC 30 V/ AC 230 V › Output current 3 A
Current consumption/power loss				
Current consumption from backplane bus	90 mA	65 mA	70 mA	130 mA
Power loss	0.95 W	0.7 W	0.6 W	0.7 W
Technical data digital outputs				
Number of outputs	4	8	8	2
Cable length, shielded	1000 m	1000 m	1000 m	-
Cable length, unshielded	600 m	600 m	600 m	-
Rated load voltage	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 30 V/ AC 230 V
Current consumption from load voltage L+ (without load)	25 mA	15 mA	10 mA	-
Output current at signal "1", rated value	0.5 A	0.5 A	0.5 A	3 A
Output delay of "0" to "1"	max. 100 ns	30 µs	30 µs	-
Output delay of "1" to "0"	max. 100 ns	175 µs	100 µs	-
Minimum load current	-	-	-	-
Lamp load	10 W	10 W	10 W	-
Parallel switching of outputs for redundant control of a load	not possible	not possible	not possible	-
Parallel switching of outputs for increased power	not possible	not possible	not possible	-
Actuation of digital input	✓	✓	✓	-
Switching frequency with resistive load	max. 40 kHz	max. 1000 Hz	max. 1000 Hz	max. 100 Hz
Switching frequency with inductive load	max. 40 kHz	max. 0.5 Hz	max. 0.5 Hz	-
Switching frequency on lamp load	max. 40 kHz	max. 10 Hz	max. 10 Hz	-
Internal limitation of inductive shut-off voltage	L+ (-52 V)	L+ (-52 V)	+45 V	-
Short-circuit protection of output	yes, electronic, and only highside	yes, electronic	yes, electronic	-
Trigger level	2.5 A	1 A	1.7 A	-
Number of operating cycle of relay outputs	-	-	-	-
Switching capacity of contacts	-	-	-	-

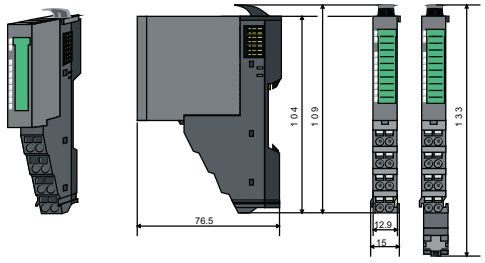
Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

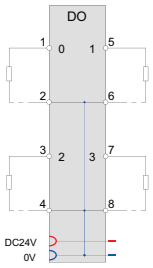
Order number	022-1BD70	022-1BF00	022-1BF50	022-1HB10
Output data size	60 Byte	8 Bit	8 Bit	2 Bit
Status information, alarms, diagnostics				
Status display	green LED per channel	green LED per channel	red LED per channel	red LED per channel
Interrupts	no	no	no	no
Process alarm	no	no	no	no
Diagnostic interrupt	no	no	no	no
Diagnostic functions	no	no	no	no
Diagnostics information read-out	possible	none	none	none
Module state	green LED	green LED	green LED	green LED
Module error display	red SF LED	red SF LED	red LED	red LED
Channel error display	none	none	none	none
Isolation				
Between channels	-	-	-	✓
Between channels of groups to	-	-	-	-
Between channels and backplane bus	✓	✓	✓	✓
Insulation tested with	DC 500 V	DC 500 V	DC 500 V	DC 500 V
Safety				
Safety protocoll	-	-	-	-
Safety requirements	-	-	-	-
Secure user address	-	-	-	-
Watchdog	-	-	-	-
Two channels	-	-	-	-
Test pulse length	-	-	-	-
Circuit monitoring	-	-	-	-
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm
Weight	60 g	60 g	60 g	60 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

Connections, Interfaces

Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

022-1BD70





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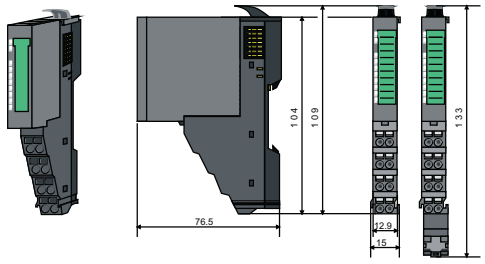
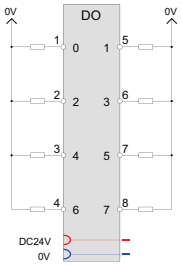
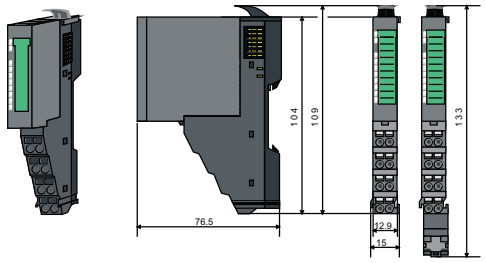
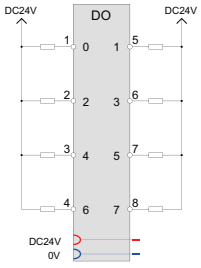


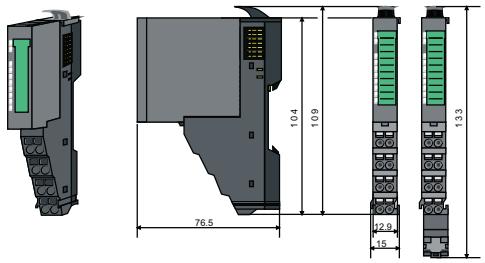


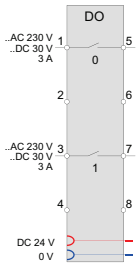
022-1BF50





022-1HB10





Digital output modules

Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

Order number	022-1SD00			
Figure				
Type	SM 022			
Module ID	0C41 1E00			
General information				
Note	Coming soon			
Features	› 4 outputs › Safety › Output current 0.5 A			
Current consumption/power loss				
Current consumption from backplane bus	80 mA			
Power loss	1.2 W			
Technical data digital outputs				
Number of outputs	4			
Cable length, shielded	1000 m			
Cable length, unshielded	600 m			
Rated load voltage	DC 20.4...28.8 V			
Current consumption from load voltage L+ (without load)	10 mA			
Output current at signal "1", rated value	0.5 A			
Output delay of "0" to "1"	100 µs			
Output delay of "1" to "0"	175 µs			
Minimum load current	-			
Lamp load	5 W			
Parallel switching of outputs for redundant control of a load	not possible			
Parallel switching of outputs for increased power	not possible			
Actuation of digital input	✓			
Switching frequency with resistive load	max. 100 Hz			
Switching frequency with inductive load	max. 0.5 Hz			
Switching frequency on lamp load	max. 10 Hz			
Internal limitation of inductive shut-off voltage	L+ (-52 V)			
Short-circuit protection of output	yes, electronic			
Trigger level	1.7 A			
Number of operating cycle of relay outputs	-			
Switching capacity of contacts	-			

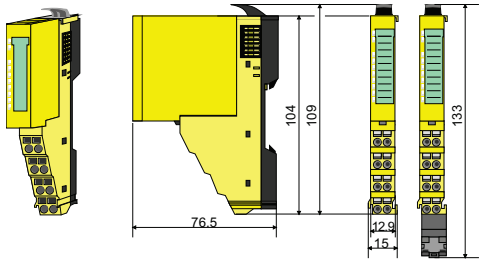
Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

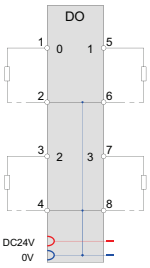
Order number	022-1SD00			
Output data size	4 Bit			
Status information, alarms, diagnostics				
Status display	green LED per channel			
Interrupts	yes, parameterizable			
Process alarm	no			
Diagnostic interrupt	yes, parameterizable			
Diagnostic functions	yes, parameterizable			
Diagnostics information read-out	possible			
Module state	green LED			
Module error display	red SF LED			
Channel error display	none			
Isolation				
Between channels	-			
Between channels of groups to	-			
Between channels and backplane bus	✓			
Insulation tested with	DC 500 V			
Safety				
Safety protocoll	PROFIsafe V1 and PROFIsafe V2			
Safety requirements	SIL CL 3 and PL e			
Secure user address	1 - 4095			
Watchdog	parameterizable 10ms - 1s			
Two channels	Each 2 of 4 outputs switchable			
Test pulse length	parameterizable 500µs - 16ms			
Circuit monitoring	✓			
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm			
Weight	60 g			
Environmental conditions				
Operating temperature	0 °C to 60 °C			
Storage temperature	-25 °C to 70 °C			
Certifications				
UL508 certification	in preparation			

Connections, Interfaces

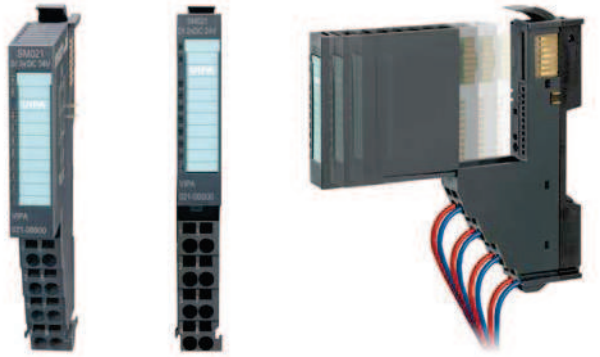
Signal modules digital | Digital output modules						
022-1BB00 022-1BB20 022-1BB50 022-1BB70	022-1BB90 022-1BD00 022-1BD20 022-1BD50	022-1BD70 022-1BF00 022-1BF50 022-1HB10	022-1SD00			

022-1SD00





Signal modules analog



Structure and Function

Signal modules (SM) to connect sensors and actuators are the interfaces of the system to the process. Analog signal modules acquire the analog control signals (e.g. measurement data) to and out of the process level. Depending on the application and type the control signals are acquired from the process level and converted into interpretable signals for controlling. Analog output modules convert the internal control signals into signals suitable for the process level.

A variety of different analog signal modules accurately provide the inputs and outputs that are required for each task. The analog modules differ in the number of channels, voltage and current ranges, isolation, and diagnostic and alarm capability.

Each signal module consists of a terminal and an electronics module.

The terminal module (TM) contains the retainer for the electronic module (EM), the backplane connectors and contacts for the distribution of the load power supply electronics, the modular connection to DC 24 V load power supply and the staircase-shaped terminal block for the wiring.

Furthermore the terminal module processes a locking system for fixing to a profile rail. The SLIO system can also be constructed "block by block" outside the cabinet and later assembled as a complete system in the control cabinet.

The functionality of the signal module is defined via the electronics module that is connected by a secure sliding mechanism to the terminal module.

During service the defective electronic module can be replaced without detaching the wiring.

Characteristics

- 2 or 4 channel
- 12 bit or 16 bit resolution
- Functions of the inputs / outputs programmable
- Most various assemblies, suitable for measuring transducers (current/ voltage, resistance or temperature sensors)
- Direct mapping and readability of the channel conditions via status LEDs
- Safe and time-saving installation by the terminal assignment mounted on the module
- When changing the module equipment identification (BMK) is retained on the TM
- Individual single-channel lettering on insertion strip
- 24 month warranty

Overview

Order no.	Name/Description	Page
Analog input modules		
031-1BB30	**SM 031 - Analog input** › 2 inputs 12Bit › Voltage 0...10 V	**52**
031-1BB40	**SM 031 - Analog input** › 2 inputs 12Bit › Current 0(4)...20 mA	**52**
031-1BB60	**SM 031 - Analog input** › 2 inputs 12Bit › Current 4...20 mA › 2 wire	**52**
031-1BB70	**SM 031 - Analog input** › 2 inputs 12Bit › Voltage -10 V...+10 V	**52**
031-1BB90	**SM 031 - Analog input** › 2 inputs 16Bit › Thermocouple › Voltage -80mV...+80mV	**56**
031-1BD30	**SM 031 - Analog input** › 4 inputs 12Bit › Voltage 0...10 V	**56**
031-1BD40	**SM 031 - Analog input** › 4 inputs 12Bit › Current 0(4)...20 mA	**56**
031-1BD70	**SM 031 - Analog input** › 4 inputs 12Bit › Voltage -10 V...+10 V	**56**
031-1BD80	**SM 031 - Analog input** › 4 inputs 16Bit › Resistance 0...3000 Ohm › Resistance measurment with 2, 3, and 4-wires	**60**
Analog output modules		
032-1BB30	**SM 032 - Analog output** › 2 outputs 12Bit › Voltage 0...10 V	**64**
032-1BB40	**SM 032 - Analog output** › 2 outputs 12Bit › Current 0(4)...20 mA	**64**
032-1BB70	**SM 032 - Analog output** › 2 outputs 12Bit › Voltage -10 V...+10 V	**64**
032-1BD30	**SM 032 - Analog output** › 4 outputs 12Bit › Voltage 0...10 V	**64**
032-1BD40	**SM 032 - Analog output** › 4 outputs 12Bit › Current 0(4)...20mA	**67**
032-1BD70	**SM 032 - Analog output** › 4 outputs 12Bit › Voltage -10 V...+10 V	**67**
032-1CB30	**SM 032 - Analog output** › 2 outputs 16Bit › Voltage 0...10 V	**67**
032-1CB70	**SM 032 - Analog output** › 2 outputs 16Bit › Voltage -10 V...+10 V	**67**
032-1CD30	**SM 032 - Analog output** › 4 outputs 16Bit › Voltage 0...10 V	**70**
032-1CD70	**SM 032 - Analog output** › 4 outputs 16Bit › Voltage -10 V...+10 V	**70**

Analog input modules

Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

Order number	031-1BB30	031-1BB40	031-1BB60	031-1BB70
Figure				
Type	SM 031	SM 031	SM 031	SM 031
Module ID	0401 15C3	0402 15C3	0407 15C3	0408 15C3
General information				
Note	-	-	-	-
Features	› 2 inputs 12Bit › Voltage 0...10 V	› 2 inputs 12Bit › Current 0(4)...20 mA	› 2 inputs 12Bit › Current 4...20 mA › 2 wire	› 2 inputs 12Bit › Voltage -10 V...+10 V
Current consumption/power loss				
Current consumption from backplane bus	70 mA	70 mA	70 mA	70 mA
Power loss	0.7 W	0.7 W	0.7 W	0.7 W
Technical data analog inputs				
Number of inputs	2	2	2	2
Cable length, shielded	200 m	200 m	200 m	200 m
Rated load voltage	DC 24 V	DC 24 V	DC 24 V	DC 24 V
Current consumption from load voltage L+ (without load)	15 mA	15 mA	15 mA	15 mA
Voltage inputs	✓	-	-	✓
Min. input resistance (voltage range)	100 kΩ	-	-	100 kΩ
Input voltage ranges	0 V ... +10 V	-	-	-10 V ... +10 V
Operational limit of voltage ranges	+/-0.3%	-	-	+/-0.3%
Operational limit of voltage ranges with SFU	-	-	-	-
Basic error limit voltage ranges	+/-0.2%	-	-	+/-0.2%
Basic error limit voltage ranges with SFU	-	-	-	-
Current inputs	-	✓	✓	-
Min. input resistance (current range)	-	110 Ω	110 Ω	-
Input current ranges	-	0 mA ... +20 mA +4 mA ... +20 mA	+4 mA ... +20 mA	-
Operational limit of current ranges	-	+/-0.3% ... +/-0.5%	+/-0.5%	-
Operational limit of current ranges with SFU	-	-	-	-
Basic error limit current ranges	-	+/-0.2% ... +/-0.3%	+/-0.3%	-
Basic error limit current ranges with SFU	-	-	-	-
Resistance inputs	-	-	-	-
Resistance ranges	-	-	-	-
Operational limit of resistor ranges	-	-	-	-

Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

Order number	031-1BB30	031-1BB40	031-1BB60	031-1BB70
Basic error limit	-	-	-	-
Resistance thermometer inputs	-	-	-	-
Resistance thermometer ranges	-	-	-	-
Operational limit of resistance thermometer ranges	-	-	-	-
Operational limit of resistor ranges with SFU	-	-	-	-
Basic error limit thermoresistor ranges	-	-	-	-
Operational limit of resistor ranges with SFU	-	-	-	-
Thermocouple inputs	-	-	-	-
Thermocouple ranges	-	-	-	-
Operational limit of thermocouple ranges	-	-	-	-
Operational limit of thermocouple ranges with SFU	-	-	-	-
Basic error limit thermoelement ranges	-	-	-	-
Basic error limit thermoelement ranges with SFU	-	-	-	-
Programmable temperature compensation	-	-	-	-
External temperature compensation	-	-	-	-
Internal temperature compensation	-	-	-	-
Resolution in bit	12	12	12	12
Measurement principle	successive approximation	successive approximation	successive approximation	successive approximation
Basic conversion time	2 ms all channels	2 ms all channels	2 ms all channels	2 ms all channels
Noise suppression for frequency	>50dB at 50Hz (UCM<2V)	>50dB at 50Hz (UCM<2V)	>50dB at 50Hz (UCM<2V)	>50dB at 50Hz (UCM<2V)
Initial data size	4 Byte	4 Byte	4 Byte	4 Byte
Status information, alarms, diagnostics				
Status display	yes	yes	yes	yes
Interrupts	no	no	no	no
Process alarm	no	no	no	no
Diagnostic interrupt	no	no	no	no
Diagnostic functions	yes	yes	yes	yes
Diagnostics information read-out	possible	possible	possible	possible
Module state	green LED	green LED	green LED	green LED
Module error display	red LED	red LED	red LED	red LED
Channel error display	red LED per channel	red LED per channel	red LED per channel	red LED per channel
Isolation				
Between channels	-	-	-	-
Between channels of groups to	-	-	-	-
Between channels and backplane bus	✓	✓	✓	✓

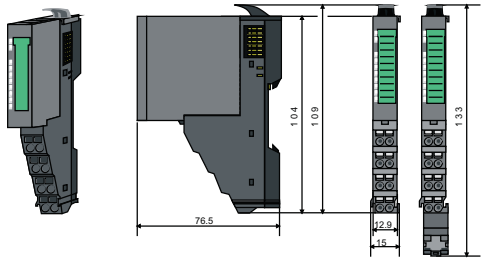
Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

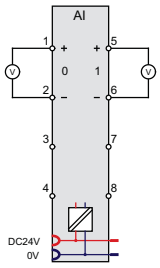
Order number	031-1BB30	031-1BB40	031-1BB60	031-1BB70
Between channels and power supply	✓	✓	✓	✓
Max. potential difference between circuits	-	-	-	-
Max. potential difference between inputs (Ucm)	DC 2 V	DC 2 V	DC 2 V	DC 2 V
Max. potential difference between Mana and Mintern (Uiso)	-	-	-	-
Max. potential difference between inputs and Mana (Ucm)	-	-	-	-
Max. potential difference between inputs and Mintern (Uiso)	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V
Max. potential difference between Mintern and outputs	-	-	-	-
Insulation tested with	DC 500 V	DC 500 V	DC 500 V	DC 500 V
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm
Weight	60 g	60 g	60 g	60 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

Connections, Interfaces

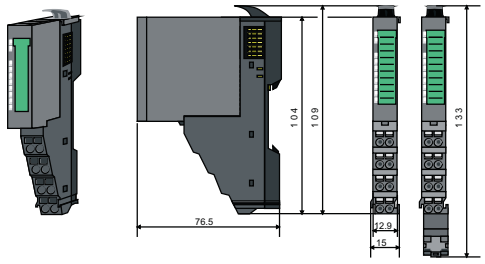
Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

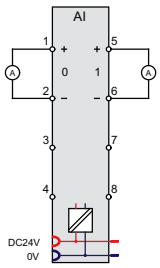
031-1BB30



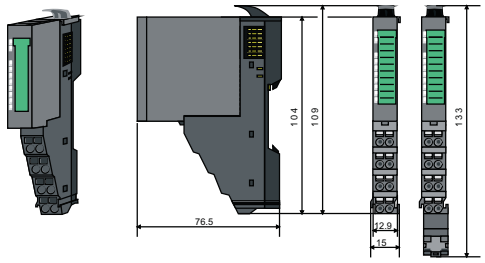


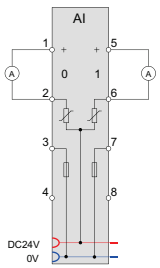
031-1BB40



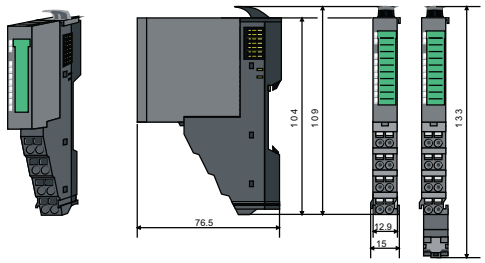


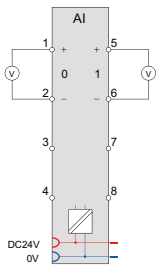
031-1BB60





031-1BB70





Analog input modules

Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

Order number	031-1BB90	031-1BD30	031-1BD40	031-1BD70
Figure				
Type	SM 031	SM 031	SM 031	SM 031
Module ID	0403 1543	0404 15C4	0405 15C4	0409 15C4
General information				
Note	-	-	-	-
Features	› 2 inputs 16Bit › Thermocouple › Voltage -80mV...+80mV	› 4 inputs 12Bit › Voltage 0...10 V	› 4 inputs 12Bit › Current 0(4)...20 mA	› 4 inputs 12Bit › Voltage -10 V...+10 V
Current consumption/power loss				
Current consumption from backplane bus	75 mA	70 mA	70 mA	70 mA
Power loss	1 W	0.7 W	0.7 W	0.7 W
Technical data analog inputs				
Number of inputs	2	4	4	4
Cable length, shielded	200 m	200 m	200 m	200 m
Rated load voltage	DC 24 V	DC 24 V	DC 24 V	DC 24 V
Current consumption from load voltage L+ (without load)	30 mA	15 mA	15 mA	15 mA
Voltage inputs	-	✓	-	✓
Min. input resistance (voltage range)	10 MΩ	100 kΩ	-	100 kΩ
Input voltage ranges	-80 mV ... +80 mV	0 V ... +10 V	-	-10 V ... +10 V
Operational limit of voltage ranges	±0.3%	+/-0.3%	-	+/-0.3%
Operational limit of voltage ranges with SFU	±0.1%	-	-	-
Basic error limit voltage ranges	±0.25%	+/-0.2%	-	+/-0.2%
Basic error limit voltage ranges with SFU	±0.05%	-	-	-
Current inputs	-	-	✓	-
Min. input resistance (current range)	-	-	110 Ω	-
Input current ranges	-	-	0 mA ... +20 mA +4 mA ... +20 mA	-
Operational limit of current ranges	-	-	+/-0.3% ... +/-0.5%	-
Operational limit of current ranges with SFU	-	-	-	-
Basic error limit current ranges	-	-	+/-0.2% ... +/-0.3%	-
Basic error limit current ranges with SFU	-	-	-	-
Resistance inputs	-	-	-	-
Resistance ranges	-	-	-	-
Operational limit of resistor ranges	-	-	-	-

Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

Order number	031-1BB90	031-1BD30	031-1BD40	031-1BD70
Basic error limit	-	-	-	-
Resistance thermometer inputs	-	-	-	-
Resistance thermometer ranges	-	-	-	-
Operational limit of resistance thermometer ranges	-	-	-	-
Operational limit of resistor ranges with SFU	-	-	-	-
Basic error limit thermoresistor ranges	-	-	-	-
Operational limit of resistor ranges with SFU	-	-	-	-
Thermocouple inputs	✓	-	-	-
Thermocouple ranges	type B type C type E type J type K type L type N type R type S type T	-	-	-
Operational limit of thermocouple ranges	Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±8.0K	-	-	-
Operational limit of thermocouple ranges with SFU	Type E, L, T, J, K, N: ±1.5K / Type B, C, R, S: ±4.0K	-	-	-
Basic error limit thermoelement ranges	Type E, L, T, J, K, N: ±2.0K / Type B, C, R, S: ±7.0K	-	-	-
Basic error limit thermoelement ranges with SFU	Type E, L, T, J, K, N: ±1.0K / Type B, C, R, S: ±3.0K	-	-	-
Programmable temperature compensation	✓	-	-	-
External temperature compensation	✓	-	-	-
Internal temperature compensation	✓	-	-	-
Resolution in bit	16	12	12	12
Measurement principle	Sigma-Delta	successive approximation	successive approximation	successive approximation
Basic conversion time	4.2...324.1 ms (50 Hz) 3.8...270.5 ms (60 Hz) per channel	4 ms all channels	4 ms all channels	4 ms all channels
Noise suppression for frequency	>90dB at 50Hz (UCM<10V)	>50dB at 50Hz (UCM<2V)	>50dB at 50Hz (UCM<2V)	>50dB at 50Hz (UCM<2V)
Initial data size	4 Byte	8 Byte	8 Byte	8 Byte
Status information, alarms, diagnostics				
Status display	yes	yes	yes	yes
Interrupts	yes	no	no	no

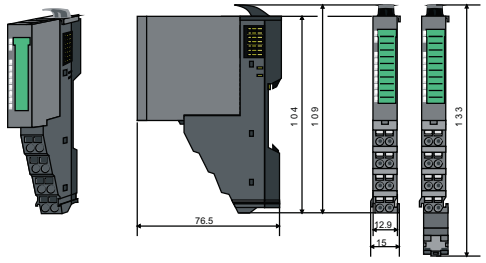
Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

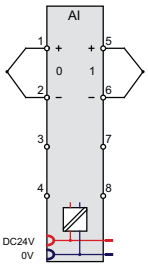
Order number	031-1BB90	031-1BD30	031-1BD40	031-1BD70
Process alarm	yes, parameterizable	no	no	no
Diagnostic interrupt	yes, parameterizable	no	no	no
Diagnostic functions	yes	yes	yes	yes
Diagnostics information read-out	possible	possible	possible	possible
Module state	green LED	green LED	green LED	green LED
Module error display	red LED	red LED	red LED	red LED
Channel error display	red LED per channel	red LED per channel	red LED per channel	red LED per channel
Isolation				
Between channels	-	-	-	-
Between channels of groups to	-	-	-	-
Between channels and backplane bus	✓	✓	✓	✓
Between channels and power supply	-	✓	✓	✓
Max. potential difference between circuits	-	-	-	-
Max. potential difference between inputs (Ucm)	DC 140 V/ AC 60 V	DC 2 V	DC 2 V	DC 2 V
Max. potential difference between Mana and Mintern (Uiso)	-	-	-	-
Max. potential difference between inputs and Mana (Ucm)	-	-	-	-
Max. potential difference between inputs and Mintern (Uiso)	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V
Max. potential difference between Mintern and outputs	-	-	-	-
Insulation tested with	DC 500 V	DC 500 V	DC 500 V	DC 500 V
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm
Weight	60 g	60 g	60 g	60 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

Connections, Interfaces

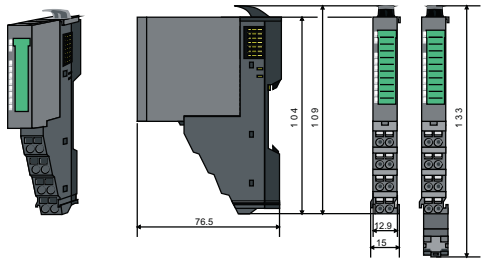
Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

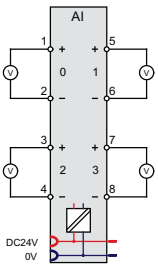
031-1BB90



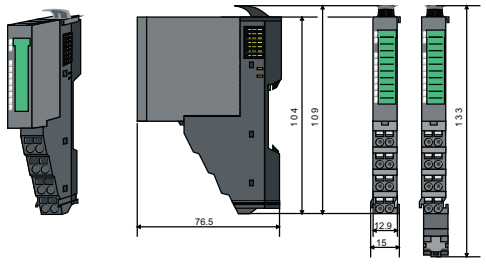


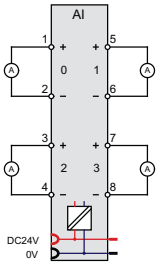
031-1BD30



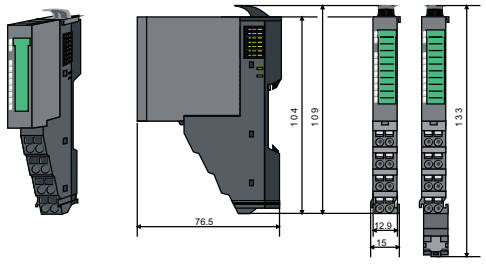


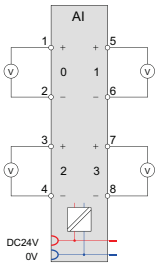
031-1BD40





031-1BD70





Analog input modules

Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

Order number	031-1BD80			
Figure				
Type	SM 031			
Module ID	0406 1544			
General information				
Note	-			
Features	› 4 inputs 16Bit › Resistance 0...3000 Ohm › Resistance measurment with 2, 3, and 4-wires			
Current consumption/power loss				
Current consumption from backplane bus	75 mA			
Power loss	1 W			
Technical data analog inputs				
Number of inputs	4			
Cable length, shielded	200 m			
Rated load voltage	DC 24 V			
Current consumption from load voltage L+ (without load)	30 mA			
Voltage inputs	-			
Min. input resistance (voltage range)	-			
Input voltage ranges	-			
Operational limit of voltage ranges	-			
Operational limit of voltage ranges with SFU	-			
Basic error limit voltage ranges	-			
Basic error limit voltage ranges with SFU	-			
Current inputs	-			
Min. input resistance (current range)	-			
Input current ranges	-			
Operational limit of current ranges	-			
Operational limit of current ranges with SFU	-			
Basic error limit current ranges	-			
Basic error limit current ranges with SFU	-			
Resistance inputs	✓			

Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

Order number	031-1BD80			
Resistance ranges	0 ... 60 Ohm 0 ... 600 Ohm 0 ... 3000 Ohm			
Operational limit of resistor ranges	+/- 0.4 %			
Basic error limit	+/- 0.2 %			
Resistance thermometer inputs	✓			
Resistance thermometer ranges	Pt100 Pt1000 Ni100 Ni1000			
Operational limit of resistance thermometer ranges	+/- 0.4 %			
Operational limit of resistor ranges with SFU	-			
Basic error limit thermoresistor ranges	+/- 0.2 %			
Operational limit of resistor ranges with SFU	-			
Thermocouple inputs	-			
Thermocouple ranges	-			
Operational limit of thermocouple ranges	-			
Operational limit of thermocouple ranges with SFU	-			
Basic error limit thermoelement ranges	-			
Basic error limit thermoelement ranges with SFU	-			
Programmable temperature compensation	-			
External temperature compensation	-			
Internal temperature compensation	-			
Resolution in bit	16			
Measurement principle	Sigma-Delta			
Basic conversion time	4.2...324.1 ms (50 Hz) 3.8...270.5 ms (60 Hz) per channel			
Noise suppression for frequency	>80dB at 50Hz (UCM<6V)			
Initial data size	8 Byte			
Status information, alarms, diagnostics				
Status display	yes			
Interrupts	yes, parameterizable			
Process alarm	yes, parameterizable			
Diagnostic interrupt	yes, parameterizable			
Diagnostic functions	yes			
Diagnostics information read-out	possible			
Module state	green LED			

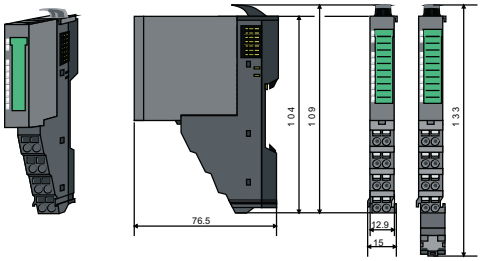
Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

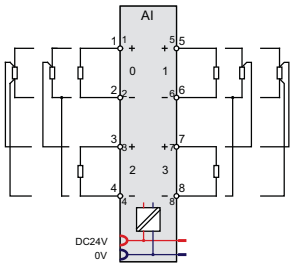
Order number	031-1BD80			
Module error display	red LED			
Channel error display	red LED per channel			
Isolation				
Between channels	-			
Between channels of groups to	-			
Between channels and backplane bus	✓			
Between channels and power supply	-			
Max. potential difference between circuits	-			
Max. potential difference between inputs (Ucm)	DC 6 V			
Max. potential difference between Mana and Mintern (Uiso)	-			
Max. potential difference between inputs and Mana (Ucm)	-			
Max. potential difference between inputs and Mintern (Uiso)	DC 75 V/ AC 60 V			
Max. potential difference between Mintern and outputs	-			
Insulation tested with	DC 500 V			
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm			
Weight	60 g			
Environmental conditions				
Operating temperature	0 °C to 60 °C			
Storage temperature	-25 °C to 70 °C			
Certifications				
UL508 certification	in preparation			

Connections, Interfaces

Signal modules analog | Analog input modules						
031-1BB30 031-1BB40 031-1BB60 031-1BB70	031-1BB90 031-1BD30 031-1BD40 031-1BD70	031-1BD80				

031-1BD80





Analog output modules

Signal modules analog | Analog output modules						
032-1BB30 032-1BB40 032-1BB70 032-1BD30	032-1BD40 032-1BD70 032-1CB30 032-1CB70	032-1CD30 032-1CD70				

Order number	032-1BB30	032-1BB40	032-1BB70	032-1BD30
Figure				
Type	SM 032	SM 032	SM 032	SM 032
Module ID	0501 25D8	0502 25D8	0505 25D8	0503 25E0
General information				
Note	-	-	Coming soon	-
Features	› 2 outputs 12Bit › Voltage 0...10 V	› 2 outputs 12Bit › Current 0(4)...20 mA	› 2 outputs 12Bit › Voltage -10 V...+10 V	› 4 outputs 12Bit › Voltage 0...10 V
Current consumption/power loss				
Current consumption from backplane bus	80 mA	80 mA	80 mA	80 mA
Power loss	1.2 W	0.8 W	1.2 W	1.2 W
Technical data analog outputs				
Number of outputs	2	2	2	4
Cable length, shielded	200 m	200 m	200 m	200 m
Rated load voltage	DC 24 V	DC 24 V	DC 24 V	DC 24 V
Current consumption from load voltage L+ (without load)	35 mA	15 mA	35 mA	35 mA
Voltage output short-circuit protection	✓	-	✓	✓
Voltage outputs	✓	-	✓	✓
Min. load resistance (voltage range)	5 kΩ	-	5 kΩ	5 kΩ
Max. capacitive load (current range)	1 µF	-	1 µF	1 µF
Output voltage ranges	0 V ... +10 V	-	-10 V ... +10 V	0 V ... +10 V
Operational limit of voltage ranges	+/-0.3%	-	+/-0.3%	+/-0.3%
Basic error limit voltage ranges with SFU	+/-0.2%	-	+/-0.2%	+/-0.2%
Current outputs	-	✓	-	-
Max. in load resistance (current range)	-	350 Ω	-	-
Max. inductive load (current range)	-	10 mH	-	-
Output current ranges	-	0 mA ... +20 mA +4 mA ... +20 mA	-	-
Operational limit of current ranges	-	+/-0.4% ... +/-0.5%	-	-
Basic error limit current ranges with SFU	-	+/-0.2% ... +/-0.3%	-	-
Settling time for ohmic load	1.5 ms	0.25 ms	1.5 ms	1.5 ms
Settling time for capacitive load	2 ms	-	2 ms	2 ms
Settling time for inductive load	-	1.5 ms	-	-
Resolution in bit	12	12	12	12
Conversion time	2 ms all channels	2 ms all channels	2 ms all channels	2 ms all channels
Substitute value can be applied	yes	yes	yes	yes

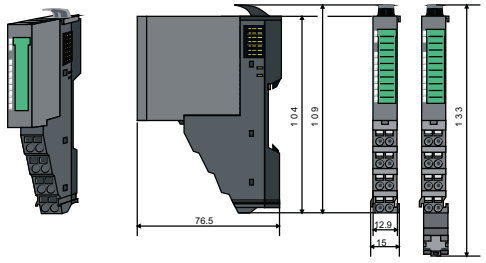
Signal modules analog | Analog output modules						
032-1BB30 032-1BB40 032-1BB70 032-1BD30	032-1BD40 032-1BD70 032-1CB30 032-1CB70	032-1CD30 032-1CD70				

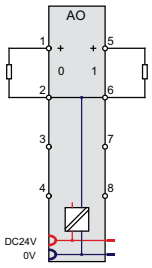
Order number	032-1BB30	032-1BB40	032-1BB70	032-1BD30
Output data size	4 Byte	4 Byte	4 Byte	8 Byte
Status information, alarms, diagnostics				
Status display	yes	yes	yes	yes
Interrupts	no	no	no	no
Process alarm	no	no	no	no
Diagnostic interrupt	no	no	no	no
Diagnostic functions	yes	yes	yes	yes
Diagnostics information read-out	possible	possible	possible	possible
Module state	green LED	green LED	green LED	green LED
Module error display	red LED	red LED	red LED	red LED
Channel error display	red LED per channel	red LED per channel	red LED per channel	red LED per channel
Isolation				
Between channels	-	-	-	-
Between channels of groups to	-	-	-	-
Between channels and backplane bus	✓	✓	✓	✓
Between channels and power supply	✓	✓	✓	✓
Max. potential difference between circuits	-	-	-	-
Max. potential difference between inputs (Ucm)	-	-	-	-
Max. potential difference between Mana and Mintern (Uiso)	-	-	-	-
Max. potential difference between inputs and Mana (Ucm)	-	-	-	-
Max. potential difference between inputs and Mintern (Uiso)	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V
Max. potential difference between Mintern and outputs	-	-	-	-
Insulation tested with	DC 500 V	DC 500 V	DC 500 V	DC 500 V
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm
Weight	60 g	60 g	60 g	60 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

Connections, Interfaces

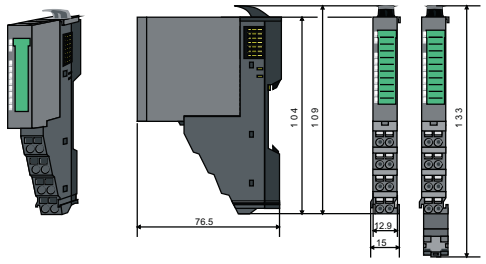
Signal modules analog | Analog output modules						
032-1BB30 032-1BB40 032-1BB70 032-1BD30	032-1BD40 032-1BD70 032-1CB30 032-1CB70	032-1CD30 032-1CD70				

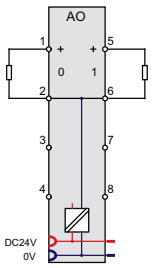
032-1BB30



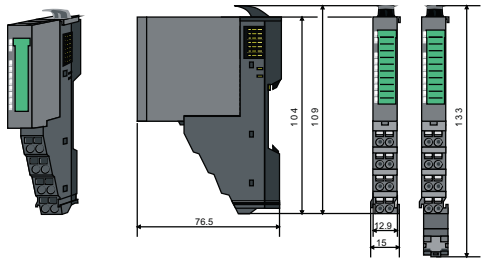


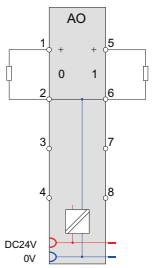
032-1BB40



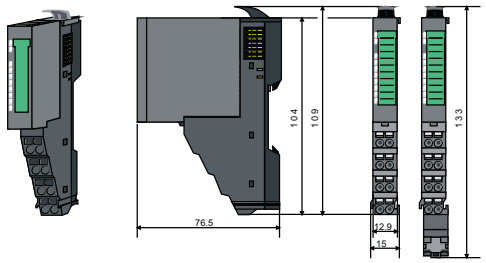


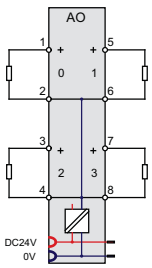
032-1BB70





032-1BD30





Analog output modules

Signal modules analog | Analog output modules						
032-1BB30 032-1BB40 032-1BB70 032-1BD30	032-1BD40 032-1BD70 032-1CB30 032-1CB70	032-1CD30 032-1CD70				

Order number	032-1BD40	032-1BD70	032-1CB30	032-1CB70
Figure				
Type	SM 032	SM 032	SM 032	SM 032
Module ID	0504 25E0	0506 25E0	0507 2558	0508 2558
General information				
Note	-	Coming soon	Coming soon	Coming soon
Features	› 4 outputs 12Bit › Current 0(4)...20mA	› 4 outputs 12Bit › Voltage -10 V...+10 V	› 2 outputs 16Bit › Voltage 0...10 V	› 2 outputs 16Bit › Voltage -10 V...+10 V
Current consumption/power loss				
Current consumption from backplane bus	80 mA	80 mA	80 mA	80 mA
Power loss	0.8 W	1.2 W	1.2 W	1.2 W
Technical data analog outputs				
Number of outputs	4	4	2	2
Cable length, shielded	200 m	200 m	200 m	200 m
Rated load voltage	DC 24 V	DC 24 V	DC 24 V	DC 24 V
Current consumption from load voltage L+ (without load)	15 mA	35 mA	35 mA	35 mA
Voltage output short-circuit protection	-	✓	✓	✓
Voltage outputs	-	✓	✓	✓
Min. load resistance (voltage range)	-	5 kΩ	5 kΩ	5 kΩ
Max. capacitive load (current range)	-	1 µF	1 µF	1 µF
Output voltage ranges	-	-10 V ... +10 V	0 V ... +10 V	-10 V ... +10 V
Operational limit of voltage ranges	-	+/-0.3%	+/-0.3%	+/-0.3%
Basic error limit voltage ranges with SFU	-	+/-0.2%	+/-0.2%	+/-0.2%
Current outputs	✓	-	-	-
Max. in load resistance (current range)	350 Ω	-	-	-
Max. inductive load (current range)	10 mH	-	-	-
Output current ranges	0 mA ... +20 mA +4 mA ... +20 mA	-	-	-
Operational limit of current ranges	+/-0.4% ... +/-0.5%	-	-	-
Basic error limit current ranges with SFU	+/-0.2% ... +/-0.3%	-	-	-
Settling time for ohmic load	0.25 ms	1.5 ms	200 µs	200 µs
Settling time for capacitive load	-	2 ms	2 ms	2 ms
Settling time for inductive load	1.5 ms	-	-	-
Resolution in bit	12	12	16	16
Conversion time	2 ms all channels	2 ms all channels	200 µs all channels	200 µs all channels
Substitute value can be applied	yes	yes	yes	yes

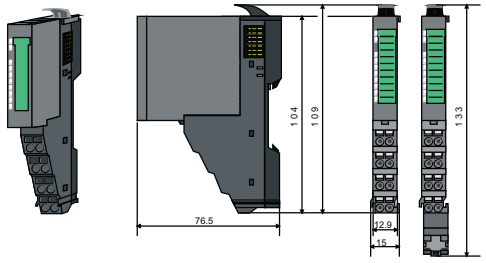
Signal modules analog | Analog output modules						
032-1BB30 032-1BB40 032-1BB70 032-1BD30	032-1BD40 032-1BD70 032-1CB30 032-1CB70	032-1CD30 032-1CD70				

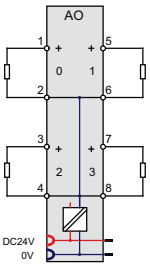
Order number	032-1BD40	032-1BD70	032-1CB30	032-1CB70
Output data size	8 Byte	8 Byte	4 Byte	4 Byte
Status information, alarms, diagnostics				
Status display	yes	yes	yes	yes
Interrupts	no	no	no	no
Process alarm	no	no	no	no
Diagnostic interrupt	no	no	no	no
Diagnostic functions	yes	yes	yes	yes
Diagnostics information read-out	possible	possible	possible	possible
Module state	green LED	green LED	green LED	green LED
Module error display	red LED	red LED	red LED	red LED
Channel error display	red LED per channel	red LED per channel	red LED per channel	red LED per channel
Isolation				
Between channels	-	-	-	-
Between channels of groups to	-	-	-	-
Between channels and backplane bus	✓	✓	✓	✓
Between channels and power supply	✓	✓	✓	✓
Max. potential difference between circuits	-	-	-	-
Max. potential difference between inputs (Ucm)	-	-	-	-
Max. potential difference between Mana and Mintern (Uiso)	-	-	-	-
Max. potential difference between inputs and Mana (Ucm)	-	-	-	-
Max. potential difference between inputs and Mintern (Uiso)	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V
Max. potential difference between Mintern and outputs	-	-	-	-
Insulation tested with	DC 500 V	DC 500 V	DC 500 V	DC 500 V
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm
Weight	60 g	60 g	60 g	60 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

Connections, Interfaces

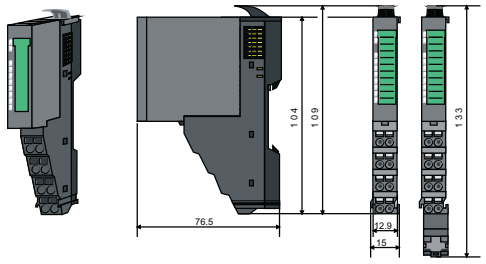
Signal modules analog | Analog output modules						
032-1BB30 032-1BB40 032-1BB70 032-1BD30	032-1BD40 032-1BD70 032-1CB30 032-1CB70	032-1CD30 032-1CD70				

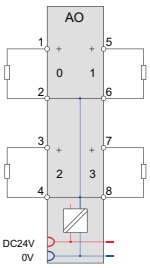
032-1BD40



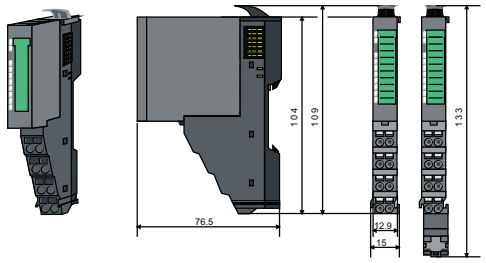


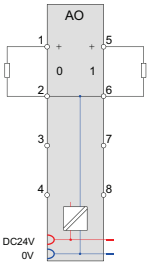
032-1BD70



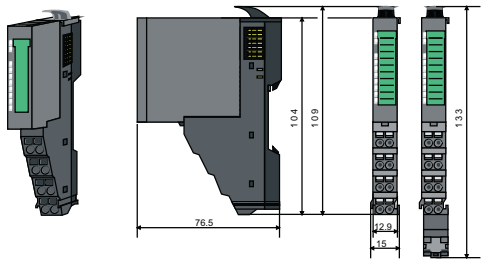


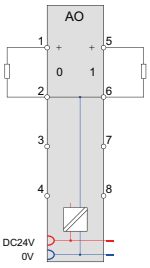
032-1CB30





032-1CB70





Analog output modules

Signal modules analog | Analog output modules						
032-1BB30 032-1BB40 032-1BB70 032-1BD30	032-1BD40 032-1BD70 032-1CB30 032-1CB70	032-1CD30 032-1CD70				

Order number	032-1CD30	032-1CD70		
Figure				
Type	SM 032	SM 032		
Module ID	0509 2560	050A 2560		
General information				
Note	Coming soon	Coming soon		
Features	› 4 outputs 16Bit › Voltage 0...10 V	› 4 outputs 16Bit › Voltage -10 V...+10 V		
Current consumption/power loss				
Current consumption from backplane bus	80 mA	80 mA		
Power loss	1.2 W	1.2 W		
Technical data analog outputs				
Number of outputs	4	4		
Cable length, shielded	200 m	200 m		
Rated load voltage	DC 24 V	DC 24 V		
Current consumption from load voltage L+ (without load)	35 mA	35 mA		
Voltage output short-circuit protection	✓	✓		
Voltage outputs	✓	✓		
Min. load resistance (voltage range)	5 kΩ	5 kΩ		
Max. capacitive load (current range)	1 µF	1 µF		
Output voltage ranges	0 V ... +10 V	-10 V ... +10 V		
Operational limit of voltage ranges	+/-0.3%	+/-0.3%		
Basic error limit voltage ranges with SFU	+/-0.2%	+/-0.2%		
Current outputs	-	-		
Max. in load resistance (current range)	-	-		
Max. inductive load (current range)	-	-		
Output current ranges	-	-		
Operational limit of current ranges	-	-		
Basic error limit current ranges with SFU	-	-		
Settling time for ohmic load	200 µs	200 µs		
Settling time for capacitive load	2 ms	2 ms		
Settling time for inductive load	-	-		
Resolution in bit	16	16		
Conversion time	200 µs all channels	200 µs all channels		
Substitute value can be applied	yes	yes		

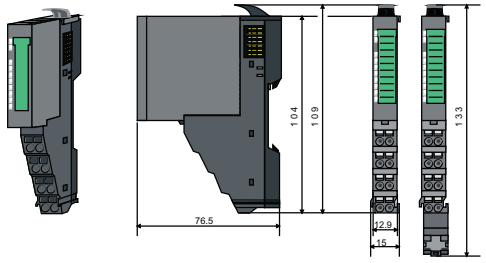
Signal modules analog | Analog output modules						
032-1BB30 032-1BB40 032-1BB70 032-1BD30	032-1BD40 032-1BD70 032-1CB30 032-1CB70	032-1CD30 032-1CD70				

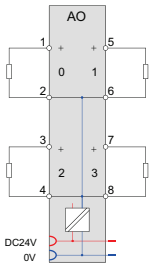
Order number	032-1CD30	032-1CD70		
Output data size	8 Byte	8 Byte		
Status information, alarms, diagnostics				
Status display	yes	yes		
Interrupts	no	no		
Process alarm	no	no		
Diagnostic interrupt	no	no		
Diagnostic functions	yes	yes		
Diagnostics information read-out	possible	possible		
Module state	green LED	green LED		
Module error display	red LED	red LED		
Channel error display	red LED per channel	red LED per channel		
Isolation				
Between channels	-	-		
Between channels of groups to	-	-		
Between channels and backplane bus	✓	✓		
Between channels and power supply	✓	✓		
Max. potential difference between circuits	-	-		
Max. potential difference between inputs (Ucm)	-	-		
Max. potential difference between Mana and Mintern (Uiso)	-	-		
Max. potential difference between inputs and Mana (Ucm)	-	-		
Max. potential difference between inputs and Mintern (Uiso)	DC 75 V/ AC 60 V	DC 75 V/ AC 60 V		
Max. potential difference between Mintern and outputs	-	-		
Insulation tested with	DC 500 V	DC 500 V		
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm		
Weight	60 g	60 g		
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C		
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C		
Certifications				
UL508 certification	in preparation	in preparation		

Connections, Interfaces

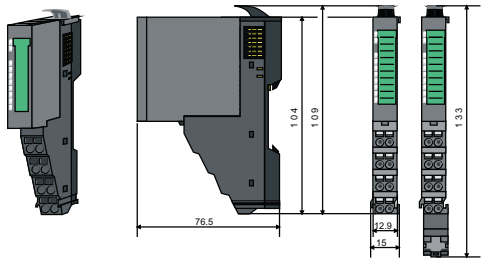
Signal modules analog | Analog output modules						
032-1BB30 032-1BB40 032-1BB70 032-1BD30	032-1BD40 032-1BD70 032-1CB30 032-1CB70	032-1CD30 032-1CD70				

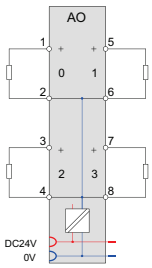
032-1CD30



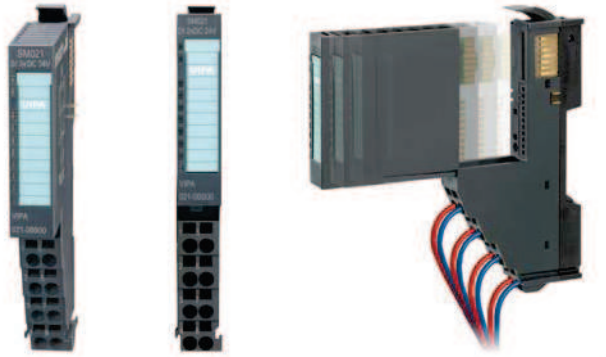


032-1CD70





Communication processors



Structure and Function

Communications processors are used to connect different target and source systems, e.g. via Ethernet to higher-level ERP systems or serially to scanners, printers and other peripherals.

CP 040 - serial

The communication processors CP 040 serial enable the serial process coupling to different target and source systems. Depending on the module they have a RS232 or a RS422/485 interface.

Characteristics

- Support for all standard protocols (ASCII, STX/ETX, 3964 (R) and Modbus (master, slave)
- Internal communication via VIPA FBs
- Compact design
- LED status indicator
- Electrically isolated to the backplane bus
- Assembly with 35 mm profile rail
- 24 month warranty

Overview

Order no.	Name/Description	Page
RS232/422/485- and other CPs		
040-1BA00	**CP 040 - Communication processor** › RS232 interface	**76**
040-1CA00	**CP 040 - Communication processor** › RS422/485 interface	**76**

RS232/422/485- and other CPs

Communication processors | RS232/422/485- and other CPs						
040-1BA00 040-1CA00						

Order number	040-1BA00	040-1CA00		
Figure				
Type	CP 040, PtP RS232	CP 040, RS422/485		
Module ID	0A01 1C0F	0A41 1C1F		
General information				
Note	-	-		
Features	› RS232 interface	› RS422/485 interface		
Current consumption/power loss				
Current consumption from backplane bus	100 mA	100 mA		
Power loss	1 W	1 W		
Status information, alarms, diagnostics				
Status display	yes	yes		
Interrupts	yes, parameterizable	yes, parameterizable		
Process alarm	no	no		
Diagnostic interrupt	yes, parameterizable	yes, parameterizable		
Diagnostic functions	yes, parameterizable	yes, parameterizable		
Diagnostics information read-out	possible	possible		
Supply voltage display	green LED	green LED		
Group error display	red LED	red LED		
Channel error display	red LED	red LED		
Point-to-point communication				
PtP communication	✓	✓		
Interface isolated	✓	✓		
RS232 interface	✓	-		
RS422 interface	-	✓		
RS485 interface	-	✓		
Connector	Terminal module	Terminal module		
Transmission speed, min.	150 bit/s	150 bit/s		
Transmission speed, max.	115.2 kbit/s	115.2 kbit/s		
Cable length, max.	15 m	1200 m		
Point-to-point protocol				
ASCII protocol	✓	✓		
STX/ETX protocol	✓	✓		
3964(R) protocol	✓	✓		
RK512 protocol	-	-		

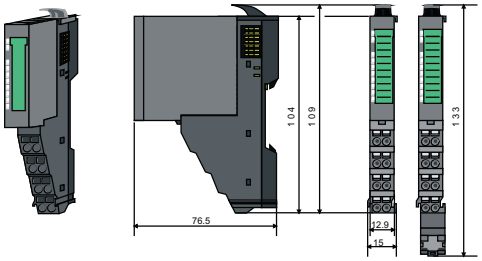
Communication processors | RS232/422/485- and other CPs						
040-1BA00 040-1CA00						

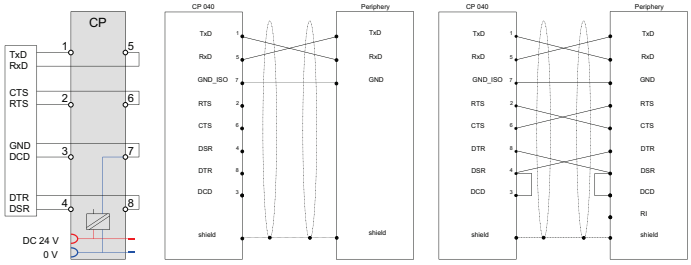
Order number	040-1BA00	040-1CA00		
USS master protocol	-	-		
Modbus master protocol	✓	✓		
Modbus slave protocol	✓	✓		
Special protocols	-	-		
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm		
Weight	60 g	60 g		
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C		
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C		
Certifications				
UL508 certification	in preparation	in preparation		

Connections, Interfaces

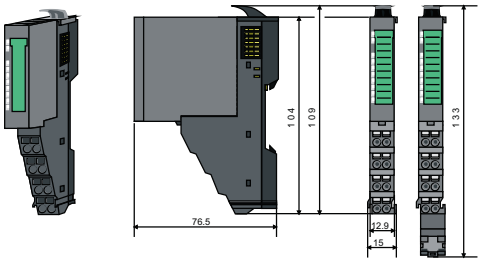
Communication processors | RS232/422/485- and other CPs						
040-1BA00 040-1CA00						

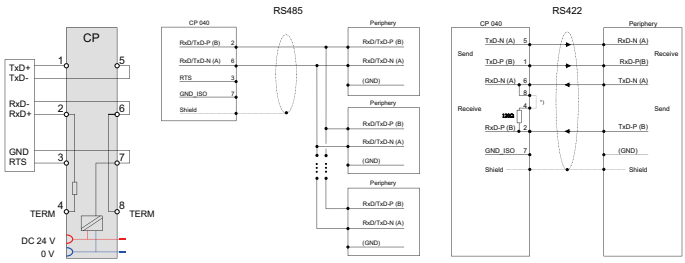
040-1BA00





040-1CA00





Function modules

Structure and Function

Function modules (FM) are intelligent modules that perform technological tasks such as position determination, counting and positioning, and other complex functions in the automation independently. They are used when there are high demands on accuracy and dynamic in the starting of automation tasks.

Different functional modules, for example counter modules, SSI modules provide exactly the functions that are required for the respective tasks.

Each functional module consists of a terminal and an electronic module.

The terminal module (TM) contains the retainer for the electronic module (EM), the backplane connectors and contacts for the distribution of the load power supply electronics, the modular connection to DC 24 V load power supply and the staircase-shaped terminal block for the wiring.

Furthermore the terminal module processes a locking system for fixing to a profile rail. The SLIO system can also be constructed "block by block" outside the cabinet and later assembled as a complete system in the control cabinet.

The functionality of the signal module is defined via the electronic module that is connected by a secure sliding mechanism to the terminal module.

During service the defective electronic module can be replaced without detaching the wiring.

Characteristics

- Supports fast counter systems up to 1 MHz
- Counting direction invertible
- Integrated digital outputs
- For direct connection of incremental encoders
- Electrically isolated to the backplane bus
- Direct mapping and readability of the channel conditions via status LEDs
- Safe and time-saving installation by the terminal assignment mounted on the module
- When changing the module equipment identification (BMK) is retained on the TM
- Individual single-channel lettering on insertion strip
- 24 month warranty

Overview

Order no.	Name/Description	Page
Counter modules		
050-1BA00	**FM 050 - Counter module** › 1 Counter 32 Bit (AB) › DC 24 V	**82**
050-1BA10	**FM 050 - Counter module** › 1 Counter 32 Bit (AB) › DC 5 V	**82**
050-1BB00	**FM 050 - Counter module** › 2 Counter 32 Bit (AB) › DC 24 V	**82**
050-1BB30	**FM 050 - Counter module** › 2 Counter 32 Bit (AB) › DC 24 V	**82**
SSI modules		
050-1BS00	**FM 050S - SSI module** › SSI - Encoder › Master or slave mode › Encoder frequency 125 kHz...2 MHz › µs time stamp for encoder value	**86**

Counter modules

Function modules | Counter modules						
050-1BA00 050-1BA10 050-1BB00 050-1BB30						

Order number	050-1BA00	050-1BA10	050-1BB00	050-1BB30
Figure				
Type	FM 050	FM 050	FM 050	FM 050
Module ID	08C1 3800	08C2 3801	08C3 380A	08C4 388B
General information				
Note	-	-	-	-
Features	› 1 Counter 32 Bit (AB) › DC 24 V	› 1 Counter 32 Bit (AB) › DC 5 V	› 2 Counter 32 Bit (AB) › DC 24 V	› 2 Counter 32 Bit (AB) › DC 24 V
Current consumption/power loss				
Current consumption from backplane bus	75 mA	70 mA	75 mA	75 mA
Power loss	1 W	0.85 W	0.9 W	0.9 W
Technical data digital inputs				
Number of inputs	5	-	4	4
Cable length, shielded	100 m	100 m	100 m	100 m
Cable length, unshielded	-	-	-	-
Rated load voltage	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V
Reverse polarity protection of rated load voltage	-	-	-	-
Current consumption from load voltage L+ (without load)	20 mA	20 mA	15 mA	15 mA
Rated value	DC 20.4...28.8 V	-	DC 20.4...28.8 V	DC 20.4...28.8 V
Input voltage for signal "0"	DC 0...5 V	-	DC 0...5 V	DC 0...5 V
Input voltage for signal "1"	DC 15...28.8 V	-	DC 15...28.8 V	DC 15...28.8 V
Input voltage hysterese	-	-	-	-
Frequency range	-	-	-	-
Input resistance	-	120 Ω	-	-
Input current for signal "1"	3 mA	-	3 mA	3 mA
Connection of Two-Wire-BEROs possible	✓	-	✓	✓
Max. permissible BERO quiescent current	0.5 mA	-	0.5 mA	0.5 mA
Input delay of "0" to "1"	0,8 µs	0,8 µs	0,8 µs	0,8 µs
Input delay of "1" to "0"	0,8 µs	0,8 µs	0,8 µs	0,8 µs
Number of simultaneously utilizable inputs horizontal configuration	5	-	4	4
Number of simultaneously utilizable inputs vertical configuration	5	-	4	4
Input characteristic curve	IEC 61131, type 1	-	IEC 61131, type 1	IEC 61131, type 1
Initial data size	12 Byte	8 Byte	12 Byte	12 Byte
Technical data digital outputs				

Function modules | Counter modules						
050-1BA00 050-1BA10 050-1BB00 050-1BB30						

Order number	050-1BA00	050-1BA10	050-1BB00	050-1BB30
Number of outputs	1	-	-	-
Cable length, shielded	100 m	-	-	-
Cable length, unshielded	100 m	-	-	-
Rated load voltage	DC 20.4...28.8 V	-	-	-
Current consumption from load voltage L+ (without load)	-	-	-	-
Output delay of "0" to "1"	30 µs	-	-	-
Output delay of "1" to "0"	30 µs	-	-	-
Minimum load current	-	-	-	-
Lamp load	10 W	-	-	-
Parallel switching of outputs for redundant control of a load	not possible	-	-	-
Parallel switching of outputs for increased power	not possible	-	-	-
Actuation of digital input	✓	-	-	-
Switching frequency with resistive load	max. 10 kHz	-	-	-
Switching frequency with inductive load	max. 0.5 Hz	-	-	-
Switching frequency on lamp load	max. 10 kHz	-	-	-
Internal limitation of inductive shut-off voltage	L+ (-52 V)	-	-	-
Short-circuit protection of output	yes, electronic	-	-	-
Trigger level	1 A	-	-	-
Number of operating cycle of relay outputs	-	-	-	-
Switching capacity of contacts	-	-	-	-
Output data size	10 Byte	10 Byte	12 Byte	4 Byte
Technical data counters				
Number of counters	1	1	2	2
Counterwidth	32 Bit	32 Bit	32 Bit	32 Bit
Maximum input frequency	100 kHz	500 kHz	100 kHz	100 kHz
Maximum count frequency	400 kHz	2 MHz	400 kHz	400 kHz
Mode incremental encoder	✓	✓	✓	✓
Mode pulse / direction	✓	✓	✓	✓
Mode pulse	-	-	-	-
Mode frequency counter	-	-	-	-
Mode period measurement	-	-	-	-
Gate input available	✓	-	-	-
Latch input available	✓	-	-	-
Reset input available	✓	✓	-	-
Counter output available	✓	-	-	-
Status information, alarms, diagnostics				

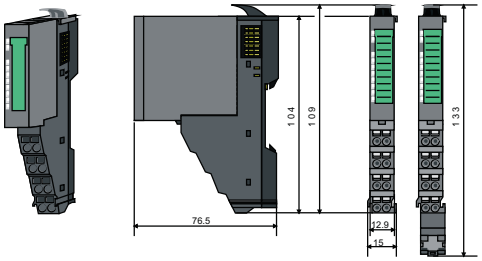
Function modules | Counter modules						
050-1BA00 050-1BA10 050-1BB00 050-1BB30						

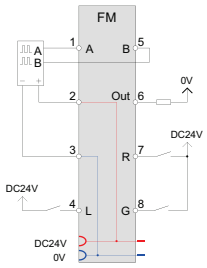
Order number	050-1BA00	050-1BA10	050-1BB00	050-1BB30
Status display	yes	yes	yes	yes
Interrupts	yes, parameterizable	yes, parameterizable	yes, parameterizable	no
Process alarm	yes, parameterizable	yes, parameterizable	yes, parameterizable	no
Diagnostic interrupt	yes, parameterizable	yes, parameterizable	yes, parameterizable	no
Diagnostic functions	yes, parameterizable	yes, parameterizable	yes, parameterizable	no
Diagnostics information read-out	possible	possible	possible	possible
Module state	green LED	green LED	green LED	green LED
Module error display	red LED	red LED	red LED	red LED
Channel error display	none	none	none	none
Isolation				
Between channels	-	-	-	-
Between channels of groups to	-	-	-	-
Between channels and backplane bus	✓	✓	✓	✓
Between channels and power supply	-	-	-	-
Max. potential difference between circuits	-	-	-	-
Max. potential difference between inputs (Ucm)	-	-	-	-
Max. potential difference between Mana and Mintern (Uiso)	-	-	-	-
Max. potential difference between inputs and Mana (Ucm)	-	-	-	-
Max. potential difference between inputs and Mintern (Uiso)	-	-	-	-
Max. potential difference between Mintern and outputs	-	-	-	-
Insulation tested with	DC 500 V	DC 500 V	DC 500 V	DC 500 V
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm	12.9 mm x 109 mm x 76.5 mm
Weight	60 g	60 g	60 g	60 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

Connections, Interfaces

Function modules | Counter modules						
050-1BA00 050-1BA10 050-1BB00 050-1BB30						

050-1BA00





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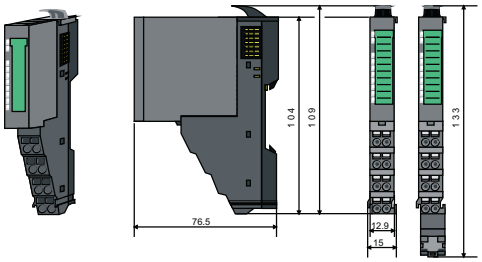

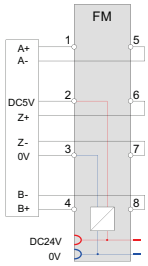

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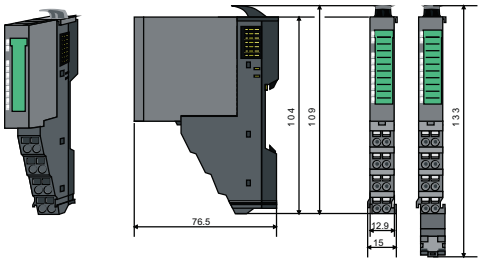

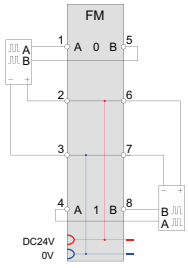

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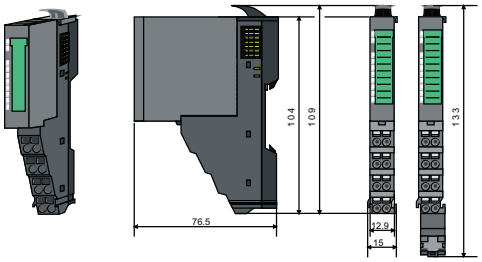
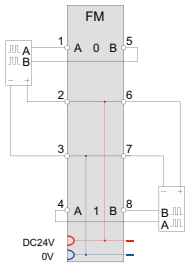




SSI modules

Function modules | SSI modules						
050-1BS00						

Order number	050-1BS00			
Figure				
Type	FM 050			
Module ID	09C1 7800			
General information				
Note	-			
Features	› SSI - Encoder › Master or slave mode › Encoder frequency 125 kHz...2 MHz › µs time stamp for encoder value			
Current consumption/power loss				
Current consumption from backplane bus	70 mA			
Power loss	1 W			
Parallel switching of outputs for increased power	-			
Status information, alarms, diagnostics				
Status display	yes			
Interrupts	yes, parameterizable			
Process alarm	no			
Diagnostic interrupt	yes, parameterizable			
Diagnostic functions	yes, parameterizable			
Diagnostics information read-out	possible			
Module state	green LED			
Module error display	red LED			
Channel error display	none			
Isolation				
Between channels	-			
Between channels of groups to	-			
Between channels and backplane bus	✓			
Between channels and power supply	-			
Max. potential difference between circuits	-			
Max. potential difference between inputs (Ucm)	-			
Max. potential difference between Mana and Mintern (Uiso)	-			
Max. potential difference between inputs and Mana (Ucm)	-			

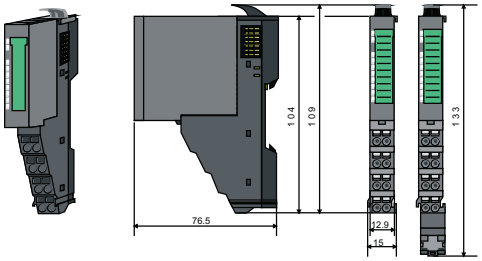
Function modules | SSI modules						
050-1BS00						

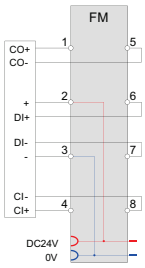
Order number	050-1BS00			
Max. potential difference between inputs and Mintern (Uiso)	-			
Max. potential difference between Mintern and outputs	-			
Insulation tested with	DC 500 V			
Mechanical data				
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm			
Weight	60 g			
Environmental conditions				
Operating temperature	0 °C to 60 °C			
Storage temperature	-25 °C to 70 °C			
Certifications				
UL508 certification	in preparation			

Connections, Interfaces

Function modules | SSI modules						
050-1BS00						

050-1BS00





Interface modules

Structure and Function

Interface modules (IM) form the interface between process level and parent bus system. All control signals are transmitted through the internal backplane bus to the electronics module (EM).

In the case of the interface module the bus interface and power module (PM) are integrated in a single casing. Both the bus interface and the electronics of the connected peripheral modules are supplied with power via the integrated power module.

Up to 64 I/O modules can be operated on the interface module.

Characteristics

- Support for various fieldbus systems
- Functional DIP switches for address setting for the PROFIBUS-DP and CANopen with transparent cover
- MAC address on the front in plain text
- Electrical isolation between fieldbus and input/output field
- Integrated DC 24 V power module to the electronic and load voltage supply of the peripheral modules
- Easy to maintain, replaceable power module
- Up to 64 signal and function modules per interface module
- 24 month warranty

Overview

Order no.	Name/Description	Page
Fieldbus slave modules without I/Os		
053-1CA00	**IM 053CAN - CANopen slave** › CANopen slave › 16 Rx und 16 Tx PDOs › 2 SDOs › PDO-Linking › PDO-Mapping: fix	**92**
053-1DN00	**IM 053DN - DeviceNet slave** › DeviceNet slave › Group 2 only Device › Poll only Device › Baude rate: 125, 250 and 500kbit/s › max. 64 peripheral modules	**92**
053-1DP00	**IM 053DP - PROFIBUS-DP slave** › PROFIBUS-DP slave (DP-V0, DP-V1), › For max. 64 Periphery modules › 244 Byte input and 244 Byte output data	**92**
053-1EC00	**IM 053EC - EtherCAT slave** › EtherCAT slave › 64 peripheral modules › RJ45 jack 100BaseTX	**92**
053-1MT00	**IM 053MT - Modbus/TCP slave** › Modbus/TCP slave, › I/O configuration via field bus › Adjustable I/O cycle (0.5...4 ms)	**95**
053-1PN00	**IM 053PN - PROFINET-IO slave** › PROFINET-IO slave › Transfer rate 100Mbit/s › max. 64 peripheral modules	**95**

Fieldbus slave modules without I/Os

Interface modules | Fieldbus slave modules without I/Os						
053-1CA00 053-1DN00 053-1DP00 053-1EC00	053-1MT00 053-1PN00					

Order number	053-1CA00	053-1DN00	053-1DP00	053-1EC00
Figure				
Type	IM 053CAN	IM 053DN	IM 053DP	IM 053EC
Module ID	-	-	-	-
General information				
Note	-	Coming soon	-	-
Features	› CANopen slave › 16 Rx und 16 Tx PDOs › 2 SDOs › PDO-Linking › PDO-Mapping: fix	› DeviceNet slave › Group 2 only Device › Poll only Device › Baude rate: 125, 250 and 500kbit/s › max. 64 peripheral modules	› PROFIBUS-DP slave (DP-V0, DP-V1), › For max. 64 Periphery modules › 244 Byte input and 244 Byte output data	› EtherCAT slave › 64 peripheral modules › RJ45 jack 100BaseTX
Technical data power supply				
Power supply (rated value)	DC 24 V	DC 24 V	DC 24 V	DC 24 V
Power supply (permitted range)	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V	DC 20.4...28.8 V
Reverse polarity protection	✓	✓	✓	✓
Current consumption (no-load operation)	90 mA	90 mA	90 mA	95 mA
Current consumption (rated value)	0.95 A	0.95 A	0.95 A	0.95 A
Inrush current	2.8 A	2.8 A	2.8 A	2.8 A
I^2t	0.25 A^2s	0.25 A^2s	0.25 A^2s	0.25 A^2s
Max. current drain at backplane bus	3 A	3 A	3 A	3 A
Max. current drain load supply	10 A	10 A	10 A	10 A
Power loss	3 W	3 W	3 W	3 W
Status information, alarms, diagnostics				
Status display	yes	yes	yes	yes
Interrupts	yes, parameterizable	-	yes, parameterizable	yes, parameterizable
Process alarm	no	-	yes, parameterizable	yes, parameterizable
Diagnostic interrupt	yes, parameterizable	-	yes, parameterizable	yes, parameterizable
Diagnostic functions	yes, parameterizable	-	yes, parameterizable	yes, parameterizable
Diagnostics information read-out	possible	possible	possible	possible
Supply voltage display	green LED	green LED	green LED	green LED
Service Indicator	-	-	-	-
Group error display	red LED	red SF LED	red LED	red SF LED
Channel error display	none	none	none	none
Hardware configuration				
Racks, max.	1	1	1	1
Modules per rack, max.	64	64	64	64

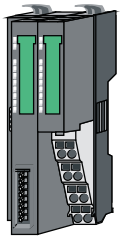
Interface modules | Fieldbus slave modules without I/Os						
053-1CA00 053-1DN00 053-1DP00 053-1EC00	053-1MT00 053-1PN00					

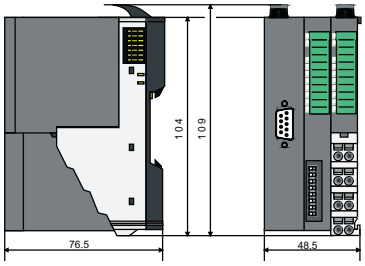
Order number	053-1CA00	053-1DN00	053-1DP00	053-1EC00
Number of digital modules, max.	64	64	64	64
Number of analog modules, max.	64	64	64	64
Communication				
Fieldbus	CANopen	DeviceNet	PROFIBUS-DP to EN 50170	EtherCAT
Type of interface	CAN	CAN	RS485 isolated	Ethernet 100 MBit
Connector	Sub-D, 9-pin, male	5-pin Open Style Connector	Sub-D, 9-pin, female	2 x RJ45
Topology	Linear bus with bus termination at both ends	Linear bus with bus termination at both ends	Linear bus with bus termination at both ends	-
Electrically isolated	✓	✓	✓	✓
Number of participants, max.	127	64	125	65535
Node addresses	1 - 127	0 - 63	1 - 125	-
Transmission speed, min.	10 kbit/s	125 kbit/s	9.6 kbit/s	100 Mbit/s
Transmission speed, max.	1 Mbit/s	500 kbit/s	12 Mbit/s	100 Mbit/s
Address range inputs, max.	128 Byte	256 Byte	244 Byte	4 KB
Address range outputs, max.	128 Byte	256 Byte	244 Byte	4 KB
Number of TxPDOs, max.	16	-	-	-
Number of RxPDOs, max.	16	-	-	-
Mechanical data				
Dimensions (WxHxD)	48.5 mm x 109 mm x 76.5 mm	48.5 mm x 109 mm x 76.5 mm	48.5 mm x 109 mm x 76.5 mm	48.5 mm x 109 mm x 76.5 mm
Weight	155 g	155 g	155 g	155 g
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C	-25 °C to 70 °C
Certifications				
UL508 certification	in preparation	in preparation	in preparation	in preparation

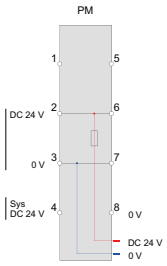
Connections, Interfaces

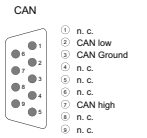
Interface modules | Fieldbus slave modules without I/Os						
053-1CA00 053-1DN00 053-1DP00 053-1EC00	053-1MT00 053-1PN00					

053-1CA00

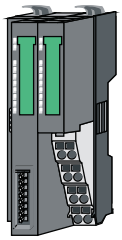


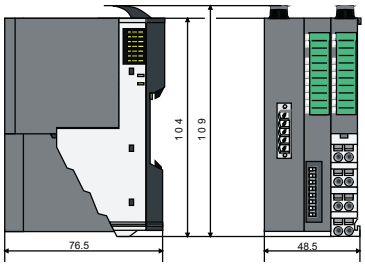


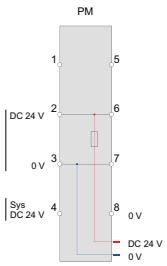


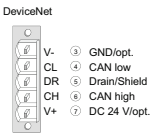


053-1DN00

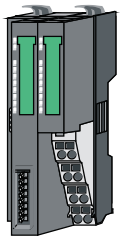


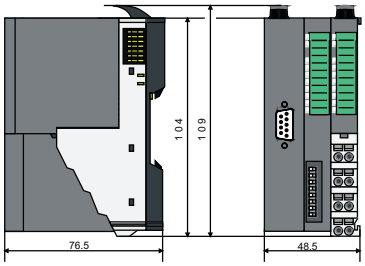


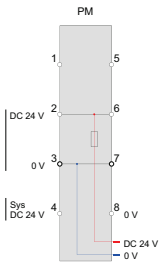


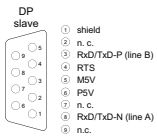


053-1DP00









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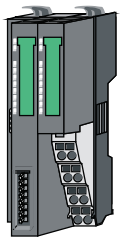
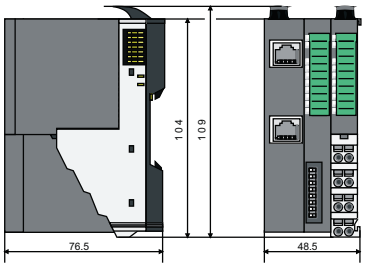
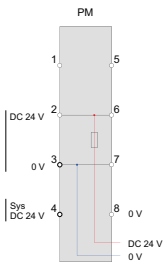
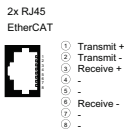








Fieldbus slave modules without I/Os

Interface modules | Fieldbus slave modules without I/Os						
053-1CA00 053-1DN00 053-1DP00 053-1EC00	053-1MT00 053-1PN00					

Order number	053-1MT00	053-1PN00		
Figure				
Type	IM 053MT	IM 053PN		
Module ID	-	-		
General information				
Note	Coming soon	Coming soon		
Features	› Modbus/TCP slave, › I/O configuration via field bus › Adjustable I/O cycle (0.5...4 ms)	› PROFINET-IO slave › Transfer rate 100Mbit/s › max. 64 peripheral modules		
Technical data power supply				
Power supply (rated value)	DC 24 V	DC 24 V		
Power supply (permitted range)	DC 20.4...28.8 V	DC 20.4...28.8 V		
Reverse polarity protection	✓	✓		
Current consumption (no-load operation)	95 mA	95 mA		
Current consumption (rated value)	0.95 A	0.95 A		
Inrush current	2.8 A	2.8 A		
I^2t	0.25 A^2s	0.25 A^2s		
Max. current drain at backplane bus	3 A	3 A		
Max. current drain load supply	10 A	10 A		
Power loss	3 W	3 W		
Status information, alarms, diagnostics				
Status display	yes	yes		
Interrupts	yes, parameterizable	yes, parameterizable		
Process alarm	yes, parameterizable	yes, parameterizable		
Diagnostic interrupt	yes, parameterizable	yes, parameterizable		
Diagnostic functions	yes, parameterizable	yes, parameterizable		
Diagnostics information read-out	possible	possible		
Supply voltage display	green LED	green LED		
Service Indicator	yellow LED	yellow LED		
Group error display	red SF LED	red SF LED		
Channel error display	none	none		
Hardware configuration				
Racks, max.	-	-		
Modules per rack, max.	64	64		
Number of digital modules, max.	64	64		

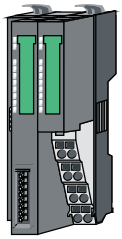
Interface modules | Fieldbus slave modules without I/Os						
053-1CA00 053-1DN00 053-1DP00 053-1EC00	053-1MT00 053-1PN00					

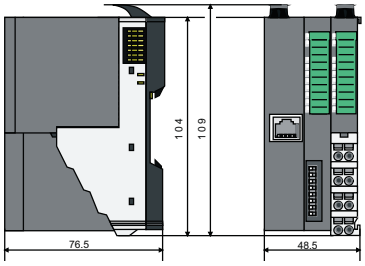
Order number	053-1MT00	053-1PN00		
Number of analog modules, max.	64	64		
Communication				
Fieldbus	Modbus / TCP/IP	PROFINET-IO		
Type of interface	Ethernet 10/100 MBit	Ethernet 100 MBit		
Connector	RJ45	2 x RJ45		
Topology	-	-		
Electrically isolated	✓	✓		
Number of participants, max.	-	-		
Node addresses	-	-		
Transmission speed, min.	10 Mbit/s	100 Mbit/s		
Transmission speed, max.	100 Mbit/s	100 Mbit/s		
Address range inputs, max.	1 KB	512 Byte		
Address range outputs, max.	1 KB	512 Byte		
Number of TxPDOs, max.	-	-		
Number of RxPDOs, max.	-	-		
Mechanical data				
Dimensions (WxHxD)	48.5 mm x 109 mm x 76.5 mm	48.5 mm x 109 mm x 76.5 mm		
Weight	155 g	155 g		
Environmental conditions				
Operating temperature	0 °C to 60 °C	0 °C to 60 °C		
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C		
Certifications				
UL508 certification	in preparation	in preparation		

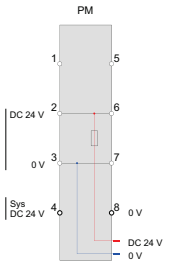
Connections, Interfaces

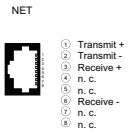
Interface modules | Fieldbus slave modules without I/Os						
053-1CA00 053-1DN00 053-1DP00 053-1EC00	053-1MT00 053-1PN00					

053-1MT00

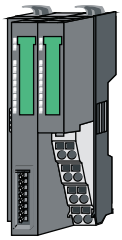


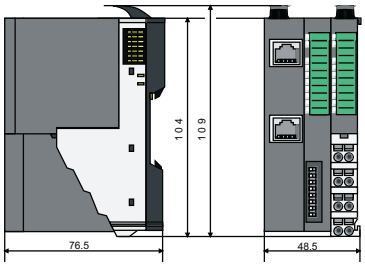


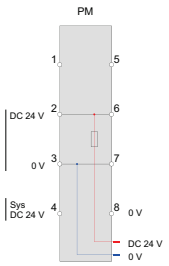


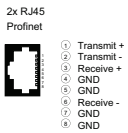


053-1PN00









System SLIO accessories

Structure and Function

System accessories expand the use of the system and facilitate starting.

35 mm profile rail

Using 35 mm profile rails the respective modules can be mounted directly on the mounting surface. The profile rail is available in various lengths.

Manuals

The technical documentation of the respective modules includes various manuals with the necessary hardware and programming information, detailed descriptions of each module, and instructions for structure and assembly.

SLIO starterKIT

Order number	Type	Description	Note
800-1DK10		consisting of: 1 x IM 053DP - PROFIBUS-DP slave, 1x CM 001 Clamps module (4xDC 24V, 4xDC 0V Clamps), 1 x SM 021 Digital Input (DI 8xDC 24V), 1 x SM 021 Digital Input (DI 4xDC 24V), 1x SM 022 Digital Output (DO 4xDC 24V, 0,5A), 1x SM 031 Analog Input (AI 2x12Bit, U), 1x SM 032 Analog Output (AO 2x12Bit, U), 1x PROFIBUS cable ready for connecting including 2x PB connector (972-0DP01 + 972-0DP10), 1x profil rail, 1x SLIO USB stick (with GSD files, Manual, Catalog (german/english), example programs), 1x transport case	

35 mm profile rail

Order number	Type	Description	Note
290-1AF00	35 mm profile rail	lenght 2000 mm	
290-1AF30	35 mm profile rail	lenght 530 mm	

Miscellaneous

Order number	Type	Description	Note
000-0AA00	SLIO bus cover		
000-0AB00	SLIO shield bus carrier	10 pieces	

Manuals and operating instructions

Order number	Title	Contents	Language
HB300D	Manual system SLIO, german	Manual System SLIO - Compendium, German HB300D_SM, HB300D_IM, HB300D_FM, HB300D_PS-CM	DE
HB300E	Manual system SLIO, english	Manual System SLIO - Compendium, English HB300E_SM, HB300E_IM, HB300E_FM, HB300_PS-CM	EN
HB300D_IM	Manual system SLIO - IM	IM - Interface modules	DE
HB300D_SM	Manual system SLIO - SM	SM - Signal modules	DE
HB300D_FM	Manual system SLIO - FM	FM - Function modules	DE
HB300D_PS-CM	Manual system SLIO - PS-CM	PS-CM - Power modules / Clamp modules	DE
HB300E_IM	Manual system SLIO - IM	IM - Interface modules	EN
HB300E_SM	Manual system SLIO - SM	SM - Signal modules	EN
HB300E_FM	Manual system SLIO - FM	FM - Function modules	EN
HB300E_PS-CM	Manual system SLIO - PS-CM	PS-CM - Power modules / Clamps modules	EN