

Interface modules

3.1 Interface module SB10

Article number

6DD1681-0AE2

Description

The interface module passes digital signals from SIMATIC TDC / FM458-1DP components to the plant **or** receives digital signals from the plant and passes them to SIMATIC TDC / FM458-1DP components. The interface module is connected to SIMATIC TDC / FM458-1DP components via cables SC62 or SC66 and on the plant side via terminals. There is no electrical isolation between the SIMATIC TDC / FM458-1DP component side and the plant side.

Module design

- Enclosure for snap-on mounting to rails
- Ribbon cable connector (X1):
 - 8 pins for digital signals, 24 V DC
 - 2 pins for 1P, 1M supply voltages
- Connector (X2), 2x 8-pole:
 - 8 terminals for 24 V DC digital signals
 - 8 terminals for reference potentials (1M, 1P is also possible)
- 1 terminal pair X3: 1P and 1M
- Double test socket X5: 1P(+), 1M(G)
- LED displays for diagnostics

Voltage supply on SIMATIC side

The SIMATIC TDC / FM458-1DP-side voltage supply is fed to terminal X3:

Terminal X3	Voltage on SIMATIC TDC / FM458-1DP side
1P	+24 V
1M	0 V

The cables are connected with the SM11 parts kit "Power supply connector for interface modules" (article number: 6DD1680-0BB0).

The maximum conductor cross-section at terminal X3 is 2.5 mm².

Green LED

The SIMATIC TDC / FM458-1DP-side voltage supply is indicated by a green LED (P).

Red LED

The SIMATIC TDC / FM458-1DP-side voltage supply (1P, 1M) is short-circuited (fault).

Test socket

By means of the double test socket (G; +), the voltages 1P and 1M can be used to simulate an input signal for SIMATIC TDC / FM458-1DP.

Double test socket X5	Voltage
+ (1P of X3)	+24 V
G (1M of X3)	0 V

 WARNING
Explosion hazard It is not allowed to use the X5 test sockets in potentially explosive environments.

Note

For connection of the voltage supply, observe the information in section Installation and EMC guidelines (Page 7).

3.1.1 Signals

Yellow LED

The status of each of the 8 signals (1...8) is displayed by means of a yellow LED. Each signal is provided a screw terminal on the two terminal blocks X2:

- Terminals 1 to 8 for digital signals
- Terminals 51 to 58 for reference points

Reference potential of the signals

The reference points of the signals may be derived from 1M or 1P potential. The polarity is selected on the module by means of soldering bridge:

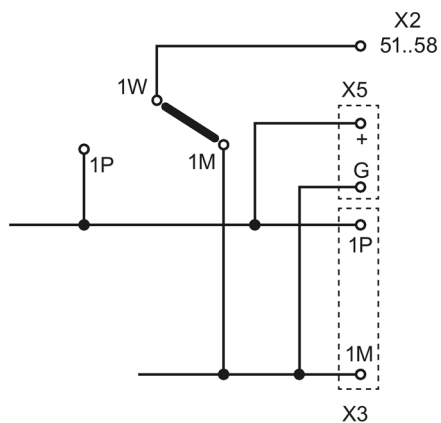


Figure 3-1 Soldering bridge for setting the signal reference points

Note

Bridge 1M-1W is inserted in the factory

3.1.2 Application notes

The interface module is suitable for vertical **and** horizontal mounting positions.

Other information

For more information on EMC and ambient conditions, refer to section General technical specifications (Page 26).

Example

The following figure shows a typical application:

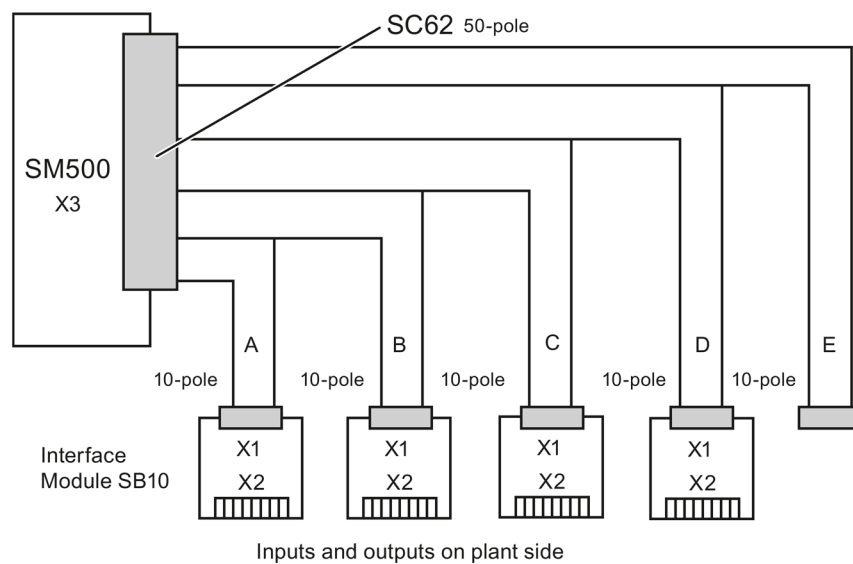


Figure 3-2 Application example of an SB10 interface module on the digital I/O module SM500

The plant-side digital signals are connected directly to the SIMATIC TDC / FM458-1DP modules via the interface module. A cable SC62 is used accordingly.

3.1.3 Technical specifications

General data

Mounting system	Suitable for snap-on mounting on rails
Dimensions W x H x D [mm]	45 x 129 x 160 mm
Weight	0.3 kg

Ambient temperatures

Ambient temperatures	max. 60 °C
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Power supply

Description		SIMATIC TDC / FM458-1DP
Supply voltage (V _v) at rated value		DC 24 V
Valid range		20.4 V to 28.8 V DC
Briefly t<500 ms		1.5 x V _{rated}
Current consumption		
	At rated value ¹⁾	20 mA
	Maximum current per supply line	400 mA
¹⁾ LED intrinsic consumption without load on system modules		

The maximum current of 1 A may not be exceeded on connector X3 if the supply of several terminal blocks is routed via this connector.

Digital signals

Number	8
Rated voltage	DC 24 V
Maximum current per channel	30 mA

3.1.4 Pin assignment

Ribbon cable connector X1

The cables SC62 or SC66 are used to connect the interface modules to the SIMATIC TDC / FM458-1DP components.

Terminal block X2

Table 3- 1 Pin assignment of the digital I/O of interface module SB10

Terminal	Designation
1	Channel 1 (digital input/output 1)
2	Channel 2 (digital input/output 2)
3	Channel 3 (digital input/output 3)
4	Channel 4 (digital input/output 4)
5	Channel 5 (digital input/output 5)
6	Channel 6 (digital input/output 6)
7	Channel 7 (digital input/output 7)
8	Channel 8 (digital input/output 8)
51	Reference busbar, 1M (1P can be set)
52	Reference busbar, 1M (1P can be set)
53	Reference busbar, 1M (1P can be set)
54	Reference busbar, 1M (1P can be set)
55	Reference busbar, 1M (1P can be set)
56	Reference busbar, 1M (1P can be set)
57	Reference busbar, 1M (1P can be set)
58	Reference busbar, 1M (1P can be set)

Cable cross-section

The minimum conductor cross-section for the terminal block X1 is 0.2mm² and the maximum is 2.5 mm².

3.1.5 Block diagram

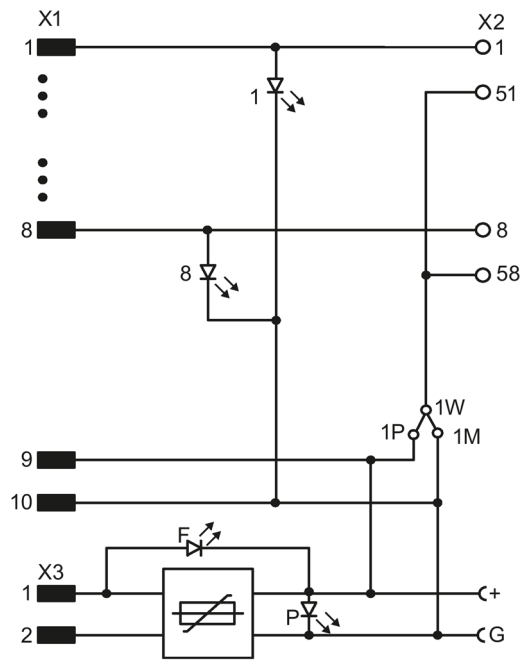


Figure 3-3 Block diagram of interface module SB10