

# Safety-Related Fieldbus Components for PROFIsafe, approved and TÜV-tested



The station FSDP-IM16-0001 allows direct connection to PROFIBUS-DP. The station is designed for connection of sixteen/eight SIL2/3 parameterisable mechanical contacts. The green LEDs indicate the input signal status. A green/red Bus LED indicates the ON-LINE/OFF-LINE status of the station.

Based on the PROFIsafe protocol, the station supports transmission rates of up to 12 Mbps and adjusts automatically to the transmission speed determined by the master. The station's address is set via two coded rotary switches which are located under a protective cover. Addresses between 1 and 99 may be set. The F address, which is required by the system, is set via four coded rotary switches (1...9999).

The station is extremely robust. It is epoxy-encapsulated and equipped throughout with metal connectors. Connections to PROFIBUS-DP are established via M12 x 1 connectors. Power is fed via a 5-pole 7/8" connector. A green "Power" LED signals that the station is powered.

The GSD file is available via the internet under [www.turck.com](http://www.turck.com) for download purposes.

Recommended connection components  
 PROFIBUS: Type: RSSW-RKSW451-2M  
 Power: Type: RKM52-2-RSM52, WKM52-6M

## FSDP-IM16-0001

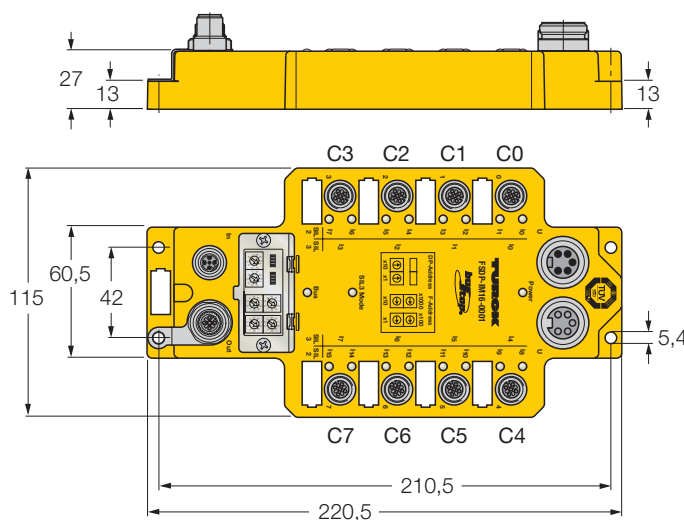
- Robust PROFIBUS-DP station
- 16 inputs SIL 2 or 8 inputs SIL 3
- Compact flat housing

### Applications

- For safety-related systems e. g. emergency stop buttons, door interlock switches etc.
- For connection of sixteen mechanical contacts

### Special features

- Glass-fibre reinforced plastic housing with encapsulated electronics and nickel-plated brass connectors, protection degree IP67
- Transmission speed of up to 12 Mbps



## Wiring diagram

Inputs	Bus line <sup>1)</sup>	Operating voltage
	<p>1 = 5 VDC<sup>2)</sup>                  2 = Bus-A                  3 = GND                  4 = Bus-B                  5 = Shield</p>	<p>1 = GND                  2 = GND                  3 = PE                  4 = U<sub>s</sub>                  5 = U<sub>L</sub></p>

<sup>1)</sup> reverse-keyed according to PNO guidelines

<sup>2)</sup> female bus connector only

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**TURCK**

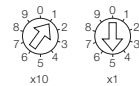
**Type** FSDP-IM16-0001  
Ident. no. 6825360

**Operating voltage**  $U_B$  20...28 VDC  
Internal current consumption (from  $U_B$ ) < 200 mA

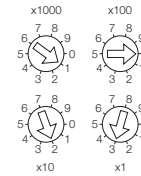
### Settings

PROFIBUS-DP address 1...99 (decimal) via 2 rotary switches under protective transparent cover  
F address 1...9999 (decimal) via 4 rotary switches under protective transparent cover

In this example PROFIBUS-DP address 15 is set.



In this example F address 1023 is set.



### Input circuits

(16) mechanical contacts SIL2 (normally closed mode)  
(8) mechanical contacts SIL3 (normally closed mode)  
Input voltage 24 VDC  
Input current < 10 mA, short-circuit protection  
Switching threshold OFF/ON 2 mA/8 mA  
Switching frequency 10 Hz  
Galvanic isolation to bus

### Approvals

IEC/EN 61508 SIL3  
EN 954-1, KAT 4  
TÜV certificate no. Z10 04 06 53279 001

### LED indications

Bus (2-colour LED) green: communication – red: no communication – flashing red: switch-off after error  
Power green: power on – off: supply voltage outside admissible range  
SIL3 Mode green: module parameterised for SIL3 – off: module parameterised for SIL2  
flashing green: parameterisation not yet completed or F functions not active  
Inputs green: ON

### I/O data mapping

Abbreviations/meaning:

SIL3

C0 connector 0  
(0 = OFF, 1 = ON)  
attention: SIL3 requires  
pin 2 and pin 4 for each channel

SIL2

C1P4 connector 1, pin 4  
(0 = OFF, 1 = ON)

SIL 3		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	Byte 0	C7	C6	C5	C4	C3	C2	C1	C0
	Byte 1	–	–	–	–	–	–	–	–
SIL 2		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	Byte 0	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4

Further data including diagnostics are contained in the manual "IP67 modules for safety-related applications" D300782.

### Connections

PROFIBUS-DP 1 x M12 x 1 male connector (IN), 1 x M12 x 1 female connector (OUT), 5-pole, reverse-keyed  
Power supply 1 x 7/8" male connector (IN), 1 x 7/8" female connector (OUT), 5-pole  
Inputs 8 x M12 x 1 connectors

### Housing

220.5 x 115 x 27 mm (H x B x T)  
Material PA6-GF30; nickel-plated brass connectors  
Colour yellow (similar to RAL 1012)  
Mounting via 4 through holes, Ø 5.4 mm  
Degree of protection (IEC 60529/EN 60529) IP67 (NEMA 1, 3, 4, 12, 13)  
Vibration and shock testing according to EN 60068-2-6/2-27  
Temperature range -25 °C up to +55 °C (-13 °F up to +131 °F)

