

**Features**

- For 12 intrinsically safe binary inputs
- Installation in Zone 1...2/Div. 2, intrinsically safe
- Sensors in Zone 0/Div. 1
- Connection to fieldbus acc. to FISCO or Entity
- For PROFIBUS PA
- Galvanic separation between bus and sensors
- EMC acc. to NAMUR NE 21

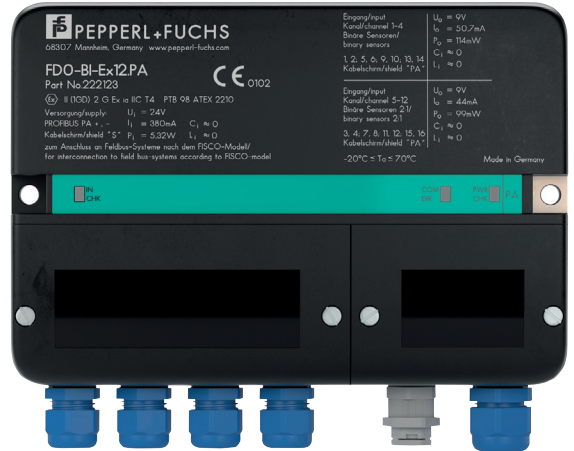
**Function**

The binary input (BI) for outside installation connects up to twelve digital inputs to the DCS via fieldbus. It is installed close to the sensors in the hazardous area. Inputs include intrinsically safe NAMUR sensors or mechanical contacts.

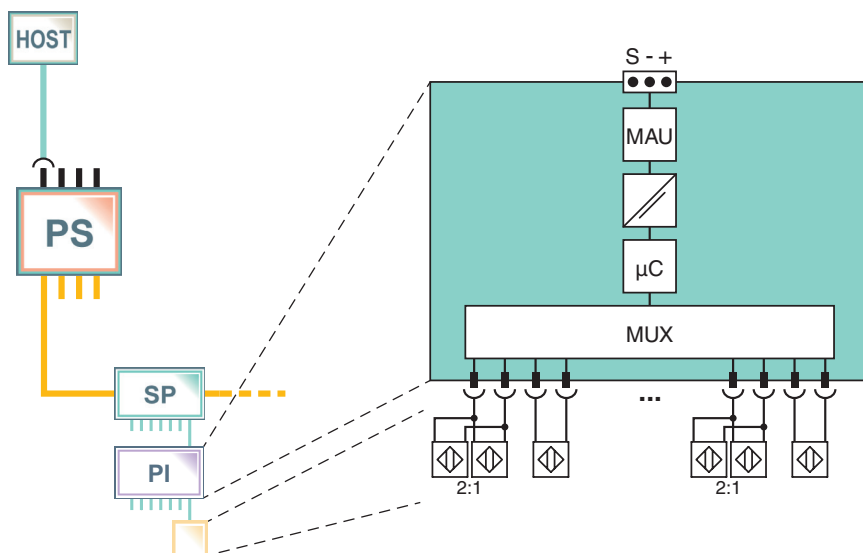
The BI communicates all data, configuration, and alarms via one fieldbus address to the DCS. System integration is possible through GSD files. Fieldbus powers the sensors and the binary interface itself, additional power or wiring is not required.

Four inputs are connected directly, eight inputs are connected via 2:1 technology. See the list with compatible sensors online. The binary input monitors the sensors for proper function.

**Assembly**



**Connection**



Zone 1

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<b>Fieldbus interface</b>		
PROFIBUS PA		
Connection	Connection +, -	
Rated voltage	9 ... 32 V	
Rated current	≤ 23 mA	
Baud rate	31.25 kBit/s	
Protocol	PROFIBUS DP V1	
Terminal "S"	only for the connection of the cable screen (BUS) and/or the potential compensation	
Terminal "PA"	only for the connection of the cable screen (sensor interface) and/or grounding	
Grounding plate	only for the connection of the potential compensation	
<b>Field circuit</b>		
Inputs		
Connection	4, for binary sensors: terminals 1+, 2-, 5+, 6-, 9+, 10-, 13+, 14- 8, for binary sensors: terminals 3, 4, 7, 8, 11, 12, 15, 16	
Sensor supply voltage	4, for binary sensors: 5.5 V 8, for binary sensors: 5 V	
Sensor supply current	4, for binary sensors: 4.5 mA 8, for binary sensors: ≤ 5 mA	
Time delay before availability	for 4 binary sensors, 1 s for 8 binary sensors, < 3 ms	
Max. cycle time	for binary 4 sensors, 4 x 1 s = 4 s for 8 binary sensors, 8 x 12.5 ms = 100 ms	
<b>Electrical isolation</b>		
PROFIBUS PA/Field circuit	safe galvanic isolation acc. to EN 50020, voltage peak value 60 V	
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2004/108/EC	EN 61326-1:2006	
<b>Standard conformity</b>		
Electrical isolation	EN 50178	
Electromagnetic compatibility	NE 21:2006	
Protection degree	IEC/EN 60529	
Fieldbus standard	EN 50170/2	
<b>Ambient conditions</b>		
Ambient temperature	-20 ... 70 °C (-4 ... 158 °F)	
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)	
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3	
<b>Mechanical specifications</b>		
Core cross-section	Bus cable: Ø 5 mm ... 10 mm cable sensors: Ø 4 mm ... 8 mm	
Housing	187 mm x 129 mm x 46 mm	
Protection degree	IP65	
Installation position	Cable glands downwards	
Mass	approx. 290 g	
Mounting	panel mounting	
<b>Data for application in connection with Ex-areas</b>		
EC-Type Examination Certificate	PTB 98 ATEX 2210	
Group, category, type of protection, temperature class	Ⓔ II (1)2G EEx ia IIC T4	
PROFIBUS PA		
Voltage $U_i$	24 V	
Current $I_i$	380 mA	
Power $P_i$	5.32 W	
FDE (Fault Disconnect Equipment)	6.7 mA	
Terminal "S"	only for the connection of the cable screen (BUS) and/or the potential compensation	
Terminal "PA"	only for the connection of the cable screen (sensor interface) and/or grounding	
Grounding plate	only for the connection of the potential compensation	
Field-side		
Voltage $U_o$	9 V	
Current $I_o$	44 mA	
Power $P_o$	99 mW	
Directive conformity		
Directive 94/9/EC	EN 50014:1997 EN 50020:1994	
<b>International approvals</b>		
FM approval	3009604	

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Control drawing	No. 116-0259
Approved for	IS Class I, Division 1, Groups A, B, C, D / Class I, Zone 0, AEx ia IIC T4
IECEX approval	IECEX TUN 04.0002
Approved for	Ex ia IIC T4
<b>General information</b>	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

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**Accessories**

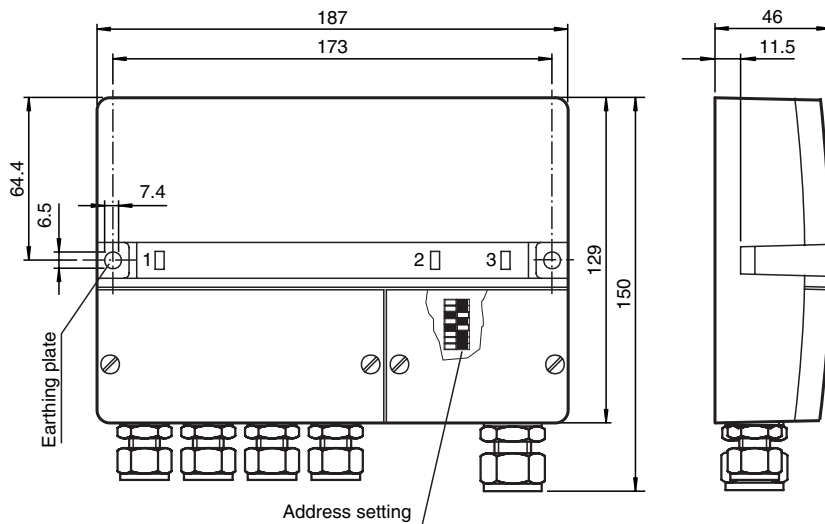
**Electrical connection**

Terminal 1	Sensor 1+
Terminal 2	Sensor 1-
Terminal 3	Sensor 2+, Sensor 3-
Terminal 4	Sensor 2-, Sensor 3+
Terminal 5	Sensor 4+
Terminal 6	Sensor 4-
Terminal 7	Sensor 5+, Sensor 6-
Terminal 8	Sensor 5-, Sensor 6+
Terminal 9	Sensor 7+
Terminal 10	Sensor 7-
Terminal 11	Sensor 8+, Sensor 9-
Terminal 12	Sensor 8-, Sensor 9+
Terminal 13	Sensor 10+
Terminal 14	Sensor 10-
Terminal 15	Sensor 11+, Sensor 12-
Terminal 16	Sensor 11-, Sensor 12+
Terminal +	PROFIBUS PA+
Terminal S	Shield
Terminal -	PROFIBUS PA-

**Note**

The device-specific master data file (DSF, German GSD) is required to be able to use this device. The file is available through the PROFIBUS User Organization or it can be downloaded from our homepage on the Internet (<http://www.pepperl-fuchs.com>).

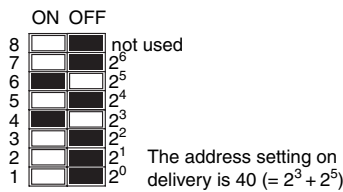
**Dimensions**



**LED-Assignment**

- 1 CHK-centralised fault ind.
- 2 COM/ERR
- 3 PWR/CHK

**Example address setting**



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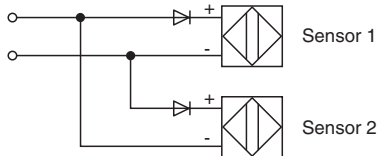
**Connectable sensors (2:1 procedure)**

The 2:1 procedure allows to transfer two independent binary signals on a single wire pair without a bus system. To do this, the two sensors (or mechanical switches) are controlled and evaluated antiparallel in time multiplex mode. Due to the condition of time multiplex mode, not all NAMUR proximity switches can be operated using the 2:1 procedure.

For information regarding connectable sensor types, please contact Pepperl+Fuchs.

Some sensor types can be connected by means of additional external Polarity Reversal Protection.

**Polarity Reversal Protection**



**Application example**

