

**Features**

- 1-channel
- Input Ex ia
- Installation in suitable enclosures in Zone 1
- Module can be exchanged under voltage (hot swap)
- Input for frequency, counter, direction of rotation
- Digital input max. 400 Hz
- Positive or negative logic selectable
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring

**Function**

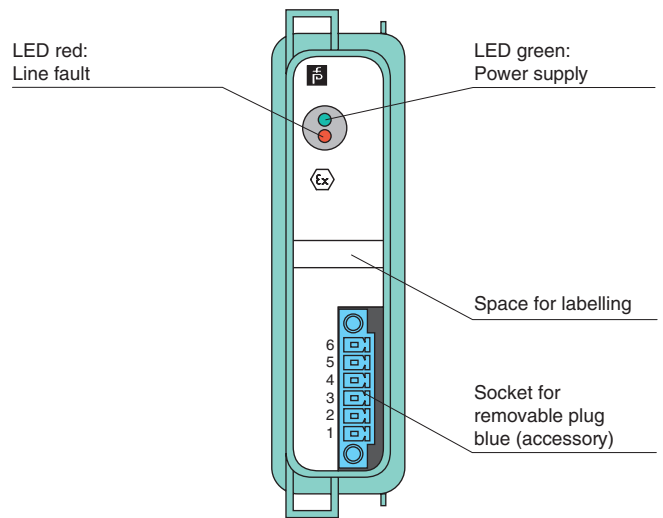
The device accepts digital input signals of NAMUR sensors or mechanical contacts from the hazardous area.

Open and short-circuit line faults are detected.

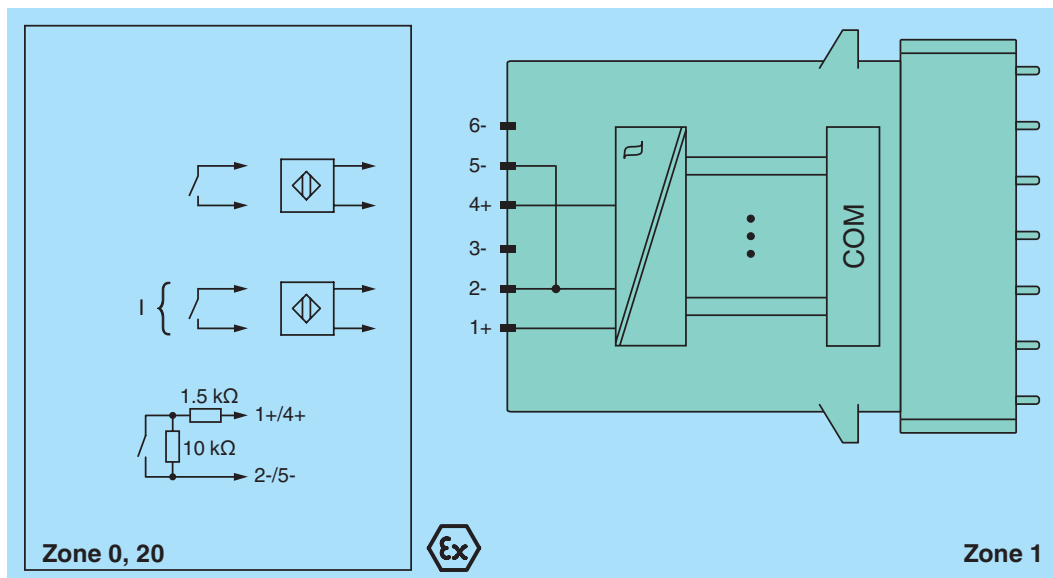
The intrinsically safe inputs are galvanically isolated from the bus and the power supply.

**Assembly**

Front view



**Connection**



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
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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<b>Slots</b>	
Occupied slots	1
<b>Supply</b>	
Connection	backplane bus
Rated voltage $U_r$	12 V DC , only in connection with the power supplies FB92**
Power dissipation	0.65 W
Power consumption	0.65 W
<b>Internal bus</b>	
Connection	backplane bus
Interface	manufacturer-specific bus to standard com unit
<b>Digital input</b>	
Number of channels	1
Function	
Function	Counter
Function [2]	frequency
Function [3]	direction of rotation
<b>Sensor interface</b>	
Connection	NAMUR sensor
Connection [2]	volt-free contact
Connection	channel I: 1+, 2/3-; direction: 4+, 5/6-
Rated values	acc. to EN 60947-5-6 (NAMUR)
Switching point/switching hysteresis	1.2 ... 2.1 mA / $\pm$ 0.2 mA
Internal resistor $R_i$	1 k $\Omega$
Line fault detection	can be switched on/off for each channel via configuration tool
Connection	mechanical switch with additional resistors (see connection diagram) proximity switches without additional wiring
Short-circuit	< 360 $\Omega$
Open-circuit	< 0.35 mA
Minimum pulse duration	; in frequency + counter mode: 12.5 ms ; otherwise 20 $\mu$ s
Operating frequency	0 ... 400 Hz ; in frequency + counter mode ... 40 Hz
<b>Indicators/settings</b>	
LED indication	LED green: supply LED red: line fault
Coding	optional mechanical coding via front socket
<b>Directive conformity</b>	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1
<b>Conformity</b>	
Electromagnetic compatibility	NE 21
Degree of protection	IEC 60529
Environmental test	EN 60068-2-14
Shock resistance	EN 60068-2-27
Vibration resistance	EN 60068-2-6
Damaging gas	EN 60068-2-42
Relative humidity	EN 60068-2-56
<b>Ambient conditions</b>	
Ambient temperature	-20 ... 60 $^{\circ}$ C (-4 ... 140 $^{\circ}$ F)
Storage temperature	-25 ... 85 $^{\circ}$ C (-13 ... 185 $^{\circ}$ F)
Relative humidity	95 % non-condensing
Shock resistance	shock type I, shock duration 11 ms, shock amplitude 15 g, number of shocks 18
Vibration resistance	frequency range 10 ... 150 Hz; transition frequency: 57.56 Hz, amplitude/acceleration $\pm$ 0.075 mm/1 g; 10 cycles frequency range 5 ... 100 Hz; transition frequency: 13.2 Hz amplitude/acceleration $\pm$ 1 mm/0.7 g; 90 minutes at each resonance
Damaging gas	designed for operation in environmental conditions acc. to ISA-S71.04-1985, severity level G3
<b>Mechanical specifications</b>	
Degree of protection	IP20 (module) , a separate housing is required acc. to the system description
Connection	removable front connector with screw flange (accessory) wiring connection via spring terminals (0.14 ... 1.5 mm <sup>2</sup> ) or screw terminals (0.08 ... 1.5 mm <sup>2</sup> )
Mass	approx. 350 g
Dimensions	28 x 107 x 132 mm (1.1 x 4.2 x 5.2 inch)
<b>Data for application in connection with hazardous areas</b>	
EU-Type Examination Certificate	PTB 97 ATEX 1074 U
Marking	 II 2(1) G Ex d [ia Ga] IIC Gb  II (1) D [Ex ia Da] IIIC

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<b>Input</b>		
Voltage	$U_o$	10.5 V
Current	$I_o$	23.3 mA
Power	$P_o$	61.2 mW (linear characteristic)
<b>Galvanic isolation</b>		
Input/power supply, internal bus		safe electrical isolation acc. to EN 60079-11, voltage peak value 375 V
<b>Directive conformity</b>		
Directive 2014/34/EU		EN 60079-0:2009 EN 60079-1:2007 EN 60079-11:2007 EN 60079-26:2007 EN 61241-11:2006
<b>International approvals</b>		
ATEX approval		PTB 97 ATEX 1075 ; PTB 97 ATEX 1074 U
EAC approval		Russia: RU C-IT.MIII06.B.00129
<b>Marine approval</b>		
Lloyd Register		15/20021
DNV GL Marine		TAA0000034
American Bureau of Shipping		T1450280/UN
Bureau Veritas Marine		22449/B0 BV
<b>General information</b>		
System information		The module has to be mounted in appropriate backplanes and housings (FB92**) in Zone 1, 2, 21, 22 or outside hazardous areas (gas or dust). Here, observe the corresponding EC-type examination certificate.
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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