Features

- 1-channel
- Input Ex ia
- Installation in suitable enclosures in Zone 1
- Module can be exchanged under voltage (hot swap)
- Converter for 2-, 3- and 4-wire Pt100, slide wire sensors
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring

Function

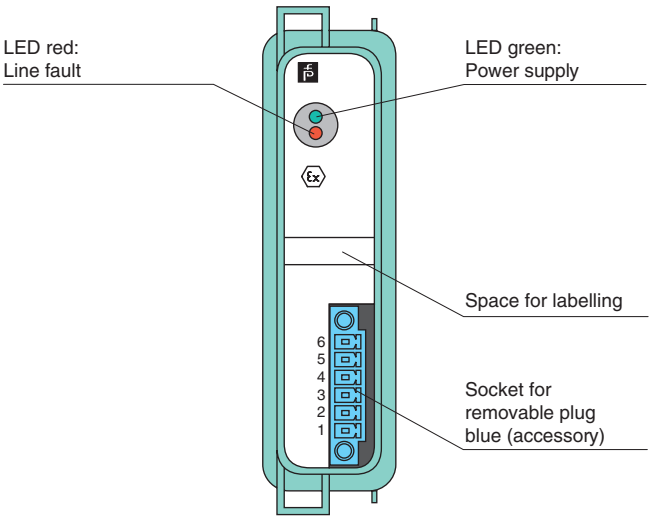
The RTD converter accepts 2-, 3-, 4-wire RTD signals (Pt100) from the hazardous area.

Open and short-circuit line faults are detected.

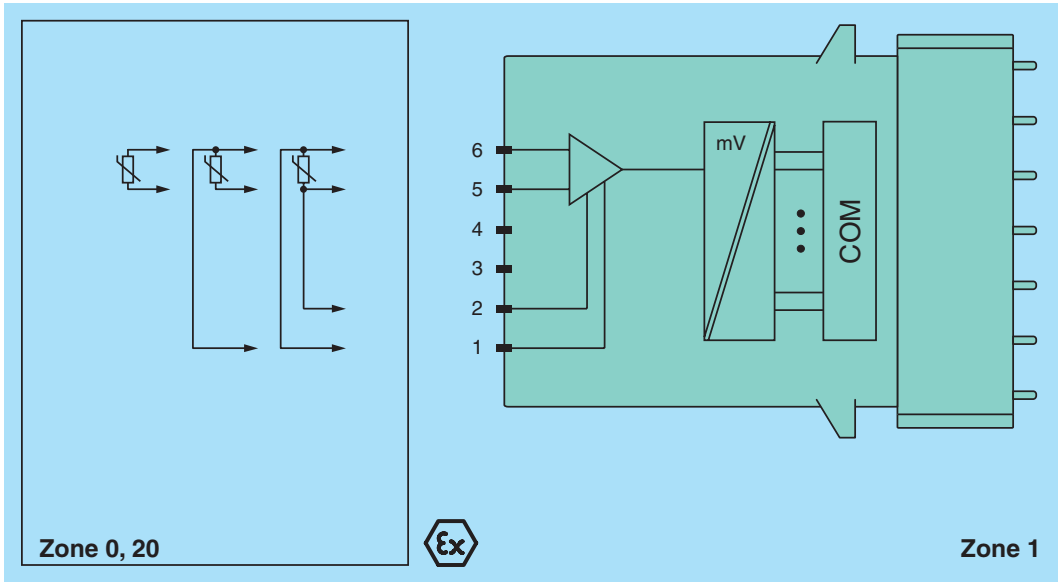
The intrinsically safe input is galvanically isolated from the bus and the power supply.

Assembly

Front view



Connection



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Slots		
Occupied slots		1
Supply		
Connection		backplane bus
Rated voltage	U_r	12 V DC , only in connection with the power supplies FB92**
Power dissipation		0.4 W
Power consumption		0.4 W
Internal bus		
Connection		backplane bus
Interface		manufacturer-specific bus to standard com unit
temperature input		
Number of channels		1
Suitable field devices		
Field device		resistance thermometer
Field device [3]		slide-wire sensors
Field device interface		
Connection		2-wire sensor
Connection [2]		3-wire sensor
Connection [3]		4-wire sensor
Connection		2-wire connection: 5, 6 3-wire connection: 1, 5, 6 4-wire connection: 1, 2, 5, 6
Measurement range		10 ... 400 Ω (500 Ω incl. line resistance)
Slide-wire sensor		10 ... 400 Ω
Measuring current		200 µA
Smallest span		20 Ω for 0.1 % accuracy
Linearity error		0.1 %
Conversion time		≤ 20 ms without LFD ≤ 150 ms with LFD
Lead resistance		≤ 50 Ω per strand
Line fault detection		can be switched on/off for each channel via configuration tool
Short-circuit		< 10 Ω
Open-circuit		> 1 kΩ
Transfer characteristics		
Deviation		
Influence of ambient temperature		max. 0,1 %/10 K
Indicators/settings		
LED indication		LED green: supply LED red: line fault
Coding		optional mechanical coding via front socket
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1
Conformity		
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
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Storage temperature		-25 ... 85 °C (-13 ... 185 °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 ± 0.075 mm/1 g; 10 cycles frequency range 5 ... 100 Hz; transition frequency: 13.2 Hz amplitude/acceleration ± 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
Mechanical specifications		
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^2) or screw terminals (0.08 ... 1.5 mm^2)
Mass		approx. 350 g
Dimensions		28 x 107 x 132 mm (1.1 x 4.2 x 5.2 inch)

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Data for application in connection with hazardous areas		
EU-Type Examination Certificate		PTB 97 ATEX 1074 U
Marking		⟨Ex⟩ II 2(1) G Ex d [ia Ga] IIC Gb ⟨Ex⟩ II (1) D [Ex ia Da] IIIC
Input		
Voltage	U_o	2.7 V
Current	I_o	43 mA
Power	P_o	93 mW (trapezoid characteristic curve)
Output		
Internal capacitance	C_i	
Galvanic isolation		
Input/power supply, internal bus		safe electrical isolation acc. to EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2009 EN 60079-1:2007 EN 60079-11:2007 EN 60079-26:2007 EN 61241-11:2006
International approvals		
ATEX approval		PTB 97 ATEX 1075 ; PTB 97 ATEX 1074 U
EAC approval		Russia: RU C-IT.MIII06.B.00129
Marine approval		
Lloyd Register		15/20021
DNV GL Marine		TAA0000034
American Bureau of Shipping		T1450280/UN
Bureau Veritas Marine		22449/B0 BV
General information		
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 www.pepperl-fuchs.com.

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