

Features

- 4-channel
- Inputs Ex ia
- Converter for 2-, 3- and 4-wire RTDs (Pt100 ... Pt1000), slide wire sensors etc.
- Installation in suitable enclosures in Zone 1 or Zone 21
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring
- Module can be exchanged under voltage (hot swap)

Function

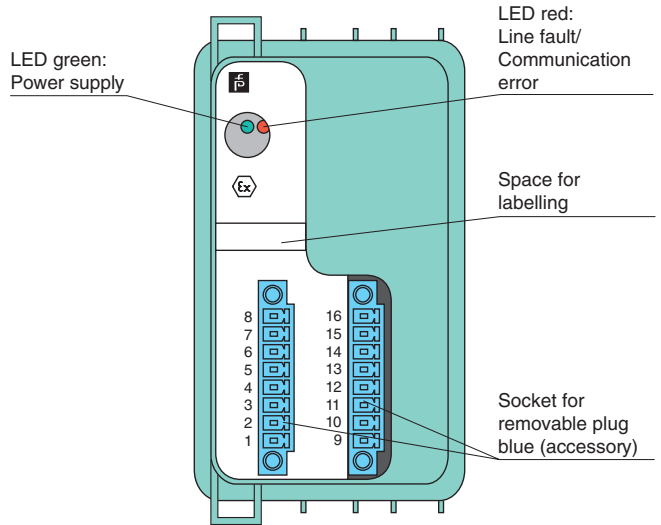
The RTD converter accepts 2-, 3-, 4-wire RTD signals (Pt100 ... Pt1000) and slide-wire sensors from the field. Ni100 through Ni1000 can also be connected.

Open and short-circuit line faults are detected.

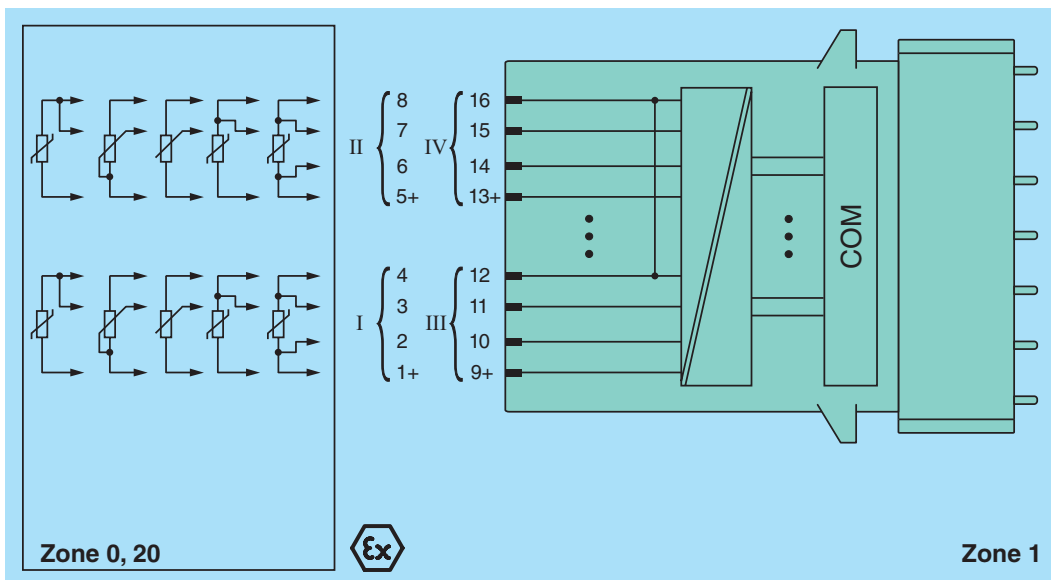
The intrinsically safe inputs are galvanically isolated from the bus and the power supply.

Assembly

Front view



Connection





Release date 2015-02-09 11:07 Date of issue 2015-02-09 542107_eng.xml

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

Supply		
Connection		backplane bus
Rated voltage	U_n	12 V DC , only in connection with the power supplies FB92**
Power consumption		0.6 W
Internal bus		
Connection		backplane bus
Interface		manufacturer-specific bus to standard com unit
Input		
Number of channels		4
Suitable sensors		2-, 3- , 4-wire connection, thermocouple , slide wire sensors
Connection		channel I: resistance/potentiometer input 1 ... 4 channel II: resistance/potentiometer input 5 ... 8 channel III: resistance/potentiometer input 9 ... 12 channel IV: resistance/potentiometer input 13 ... 16
Lead resistance		$\leq 50 \Omega$ per strand
Measurement range		Pt100 (18-390 Ω) (500 Ω incl. line resistance) Pt200 (37-780 Ω) Pt500 (92-1952 Ω) Pt1000 (185-3905 Ω) Ni100 (69-270 Ω) Ni500 (345-1350 Ω) Ni1000 (690-2700 Ω)
Slide-wire sensor		0 ... 10000 Ω
Measuring current		200 μ A
Line fault detection		can be switched on/off for each channel via configuration tool
Short-circuit		$< 10 \Omega$
Open-circuit		$> 1 \text{ k}\Omega$
Smallest span		50 Ω for 0.1 % accuracy
Linearity error		0.1 %
Conversion time		$\leq 500 \text{ ms}$ (4-channel) $\leq 1 \text{ s}$ (for 4x 3-wire Pt100)
Busy after download		5 ... 15 s
Transfer characteristics		
Deviation		
Influence of ambient temperature		max. 0,1 %/10 K
Indicators/settings		
LED indicator		LED green: supply LED red: line fault, collective alarm , flashing: communication error
Coding		optional mechanical coding via front socket
Directive conformity		
Electromagnetic compatibility		
Directive 2004/108/EC		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 $^{\circ}\text{C}$ (-4 ... 140 $^{\circ}\text{F}$)
Storage temperature		-25 ... 85 $^{\circ}\text{C}$ (-13 ... 185 $^{\circ}\text{F}$)
Relative humidity		95 % non-condensing
Shock resistance		shock type I, shock duration 11 ms, shock amplitude 50 m/s^2 , number of shock directions 6, number of shocks per direction 100
Vibration resistance		frequency range 5 ... 500 Hz, amplitude 5 ... 13.2 Hz $\pm 1.5 \text{ mm}$, 13.2 ... 100 Hz 1g, sweep rate 1 octave/min, duration 10 sweeps 5 Hz - 100 Hz - 5 Hz
Damaging gas		for plugs: 21 days in 25 ppm SO_2 , at 25 $^{\circ}\text{C}$ and 75 % rel. humidity, device 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. 750 g
Dimensions		57 x 107 x 132 mm (2.2 x 4.2 x 5.2 in)
Data for application in connection with Ex-areas		

Release date 2015-02-09 11:07 Date of issue 2015-02-09 542107_eng.xml

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

EC-Type Examination Certificate		PTB 97 ATEX 1074 U , PTB 97 ATEX 1075 (system) , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		 II 2(1) G Ex d [ia Ga] IIC Gb  II (1) D Ex [ia] IIIC Da
Input		
Voltage	U _o	7.14 V
Current	I _o	70 mA
Power	P _o	123 mW (linear characteristic)
Electrical isolation		
Input/power supply, internal bus		safe electrical isolation acc. to EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 94/9/EC		EN 60079-0:2009 EN 60079-1:2007 EN 60079-11:2007 EN 60079-26:2007 EN 61241-11:2006
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, the corresponding EC-Type Examination Certificate has to be observed.
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 .

Release date 2015-02-09 11:07 Date of issue 2015-02-09 542107_eng.xml

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0002
 pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222
 pa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
 pa-info@sg.pepperl-fuchs.com