

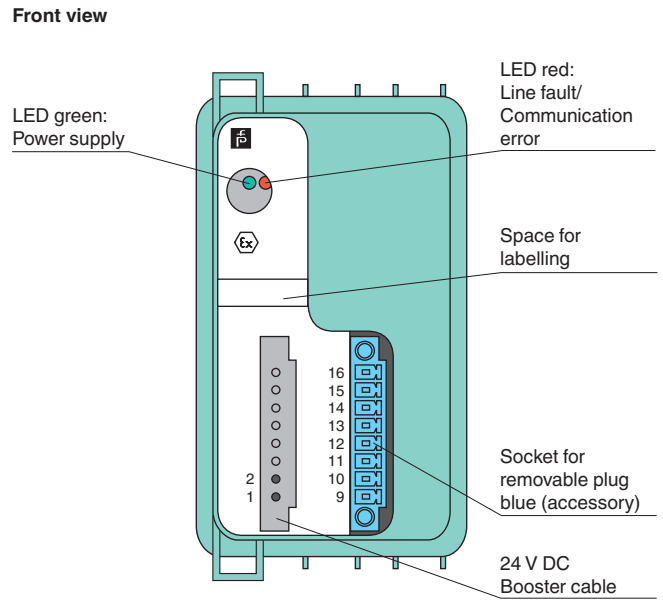
Features

- 4-channel
- Outputs Ex ia
- Installation in suitable enclosures in Zone 1 or Zone 21
- Line fault detection (LFD)
- Positive or negative logic selectable
- Simulation mode for service operations (forcing)
- Permanently self-monitoring
- Output with watchdog
- Up to SIL2 acc. to IEC 61508
- Output with bus-independent safety shutdown input
- Module can be exchanged under voltage (hot swap)

Function

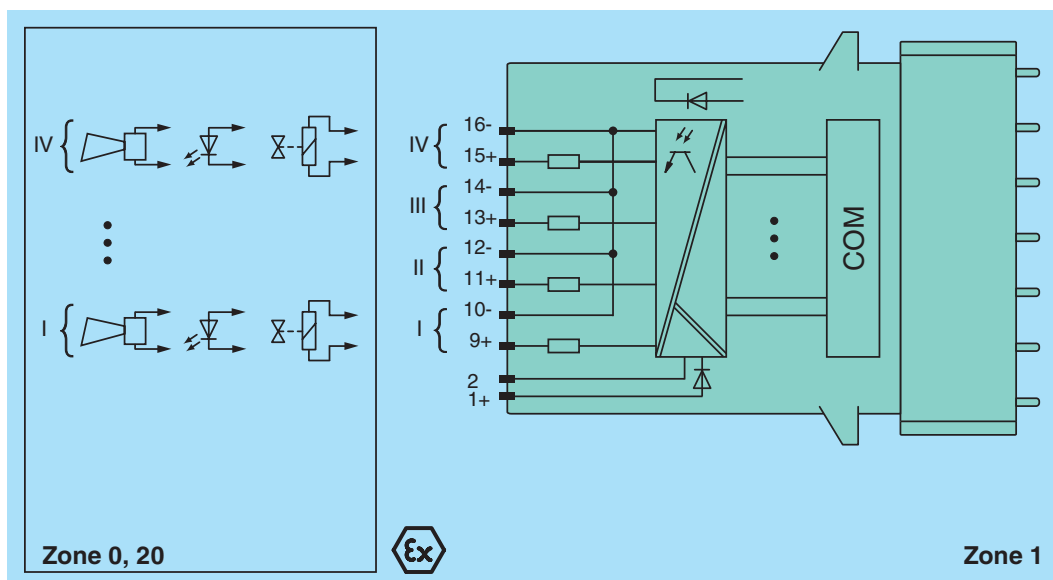
The digital output features 4 independent channels.
 The device can be used to drive solenoids, sounders, or LEDs.
 Open and short-circuit line faults are detected.
 The outputs are galvanically isolated from the bus and the power supply.
 The output can be switched off via a contact. This can be used for bus-independent safety applications.

Assembly



SIL2

Connection



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Supply		
Connection		backplane bus / booster terminals
Rated voltage	U_n	12 V DC , only in connection with the power supplies FB92**
Power consumption		0.6 W at power supply 5 W if 24 V booster voltage
Internal bus		
Connection		backplane bus
Interface		manufacturer-specific bus to standard com unit
Output		
Number of channels		4
Connection		channel I: 1+, 2-; channel II: 3+, 4-; channel III: 5+, 6-; channel IV: 7+, 8-
Internal resistor	R_i	78 Ω
Open loop voltage	U_s	16.2 V
Current limit	I_{max}	80 mA
Response time		10 ms (depending on bus cycle time)
Line fault detection		can be switched on/off for each channel via configuration tool , also when turned off (every 2.5 s the valve is turned on for 2 ms)
Short-circuit		< 155 Ω
Open-circuit		> 6 k Ω
Watchdog		within 0.5 s the device goes in safe state, e.g. after loss of communication
Indicators/settings		
LED indicator		LED green: supply LED red: line fault , red 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 °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 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 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 °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		
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
Output		
Voltage	U_o	18.9 V
Current	I_o	286 mA
Power	P_o	1350 mW
Internal capacitance	C_i	2.5 nF
Internal inductance	L_i	0 mH
Electrical isolation		
Output/power supply, internal bus		safe electrical isolation acc. to EN 60079-11, voltage peak value 375 V
Directive conformity		

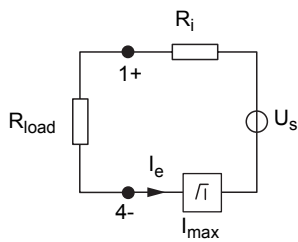
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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 .

Output data

Load calculation



R_{load} = Field loop resistance
 $U_e = U_s - R_i \times I_e$
 $I_e = U_s / (R_i + R_{load})$

Output characteristics

