

**Features**

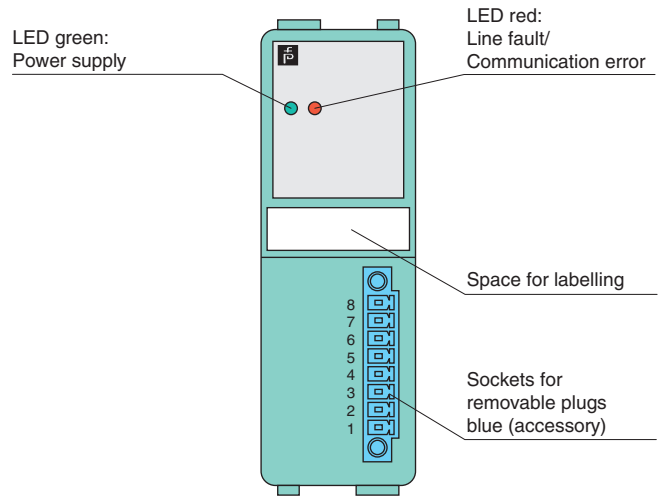
- 4-channel
- Outputs Ex ia
- Installation in Zone 2 or safe area
- Positive or negative logic selectable
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring
- Output with watchdog
- Output with bus-independent safety shutdown

**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.

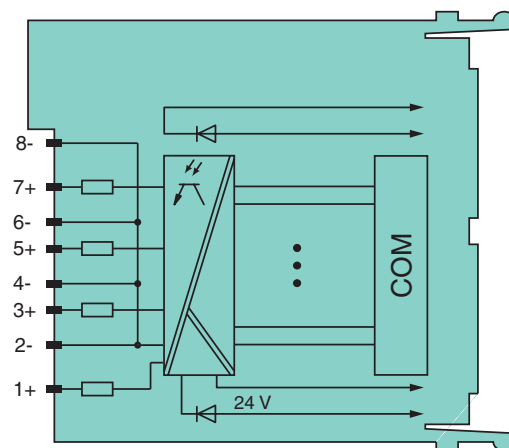
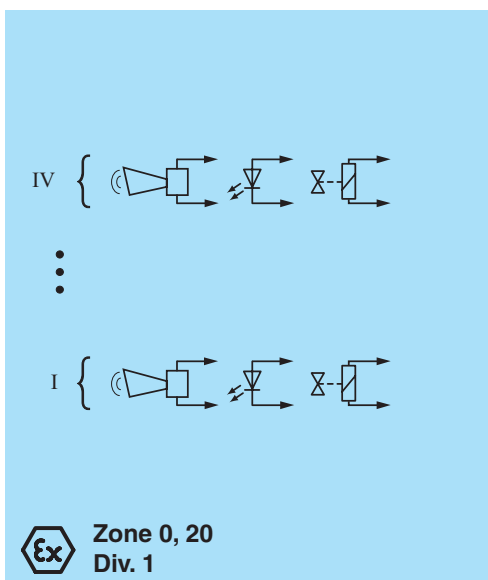
**Assembly**

Front view



**SIL2**

**Connection**



**Zone 2  
Div. 2**

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

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<b>Slots</b>		
Occupied slots		2
<b>Supply</b>		
Connection		backplane bus / booster terminals
Rated voltage	$U_r$	12 V DC , only in connection with the power supplies LB9***
Input voltage range	$U$	18.5 ... 32 V DC (SELV/PELV) booster voltage
Power dissipation		3 W
Power consumption		0.15 W
<b>Internal bus</b>		
Connection		backplane bus
Interface		manufacturer-specific bus to standard com unit
<b>Digital output</b>		
Number of channels		4
Suitable field devices		
Field device		Solenoid Valve
Field device [2]		audible alarm
Field device [3]		visual alarm
Connection		channel I: 1+, 2-; channel II: 3+, 4-; channel III: 5+, 6-; channel IV: 7+, 8-
Current limit	$I_{max}$	55 mA
Internal resistor	$R_i$	$\leq 355 \Omega$
Open loop voltage		23 V
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		$< 100 \Omega$
Open-circuit		$> 15 k\Omega$
Response time		10 ms (depending on bus cycle time)
Watchdog		within 0.5 s the device goes in safe state, e.g. after loss of communication
Reaction time		10 s
<b>Indicators/settings</b>		
LED indication		Power LED (P) green: supply Status LED (I) red: line fault , red flashing: communication error
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 °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 $\pm 0.075$ 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 when mounted on backplane
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. 150 g
Dimensions		32.5 x 100 x 102 mm (1.28 x 3.9 x 4 inch)
<b>Data for application in connection with hazardous areas</b>		
EU-Type Examination Certificate		PTB 03 ATEX 2042
Marking		 II (1) G [Ex ia] IIC  II (1) D [Ex ia] IIIC
<b>Output</b>		
Voltage	$U_o$	26 V

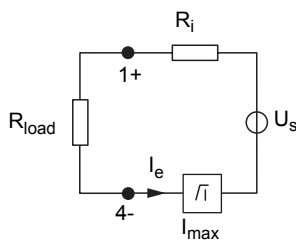
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Current	$I_o$	88.7 mA
Power	$P_o$	578 mW
Internal capacitance	$C_i$	1.65 nF
Internal inductance	$L_i$	0 mH
Certificate		PF 08 CERT 1234 X
Marking		⊕ II 3 G Ex nA IIC T4 Gc
Galvanic isolation		
Output/power supply, internal bus		safe electrical isolation acc. to EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2009 EN 60079-11:2007 EN 60079-15:2010 EN 61241-11:2006
<b>International approvals</b>		
ATEX approval		PTB 03 ATEX 2042
IECEx approval		BVS 09.0037X
Approved for		Ex nA [ia Ga] IIC T4 Gc [Ex ia Da] IIIC
Marine approval		
Lloyd Register		15/20021
DNV GL Marine		TAA0000034
Bureau Veritas Marine		22449/B0 BV
<b>General information</b>		
System information		The module has to be mounted in appropriate backplanes (LB9***) in Zone 2 or outside hazardous areas. Here, observe the corresponding declaration of conformity. For use in hazardous areas (e. g. Zone 2, Zone 22 or Div. 2) the module must be installed in an appropriate enclosure.
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> .

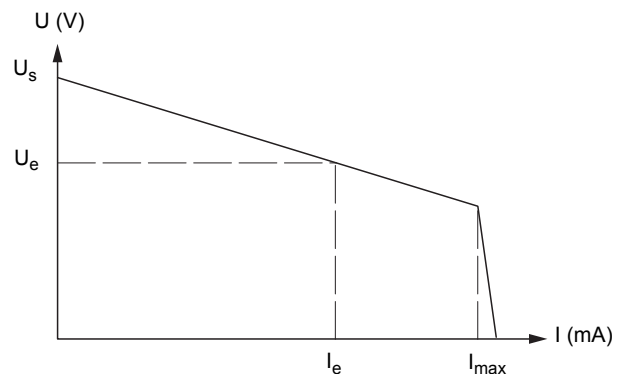
**Output data**

**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**



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