

Digital Output

LB6113AR



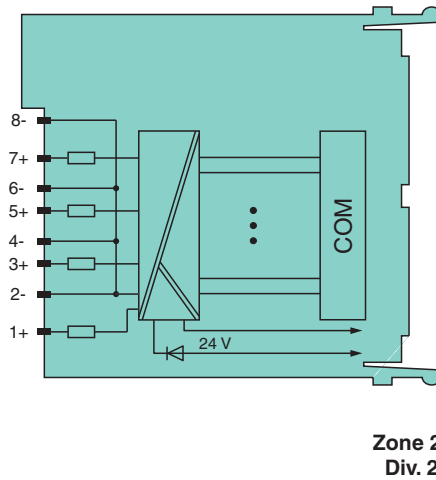
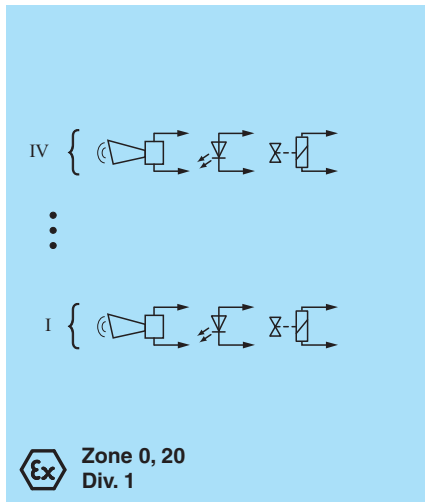
- 4-channel
- Outputs Ex ia
- Installation in Zone 2 or safe area
- Line fault detection (LFD)
- Positive or negative logic selectable
- Simulation mode for service operations (forcing)
- Permanently self-monitoring
- Output with watchdog



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.

Connection



Technical Data

Slots			
Occupied slots	2		
Supply			
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		
Internal bus			
Connection	backplane bus		
Interface	manufacturer-specific bus to standard com unit		
Digital output			

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

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Technical Data

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-
Internal resistor	R_i	max. 290 Ω
Current limit	I_{max}	42 mA
Open loop voltage	U_s	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 Ω
Open-circuit		> 15 k Ω
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
Indicators/settings		
LED indication		Power LED (P) green: supply Status LED (I) red: line fault , red flashing: communication error
Coding		optional mechanical coding via front socket
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
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 60068-2-78
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Storage temperature		-25 ... 85 °C (-13 ... 185 °F)
Relative humidity		95 % non-condensing
Altitude		max. 2000 m
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 when mounted on backplane
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. 150 g
Dimensions		32.5 x 100 x 102 mm (1.28 x 3.9 x 4 inch)
Data for application in connection with hazardous areas		
EU-type examination certificate		PTB 03 ATEX 2042 X
Marking		Ⓢ II (1)G [Ex ia Ga] IIC Ⓢ II (1)D [Ex ia Da] IIIC Ⓢ I (M1) [Ex ia Ma] I
Output		
Voltage	U_o	26 V

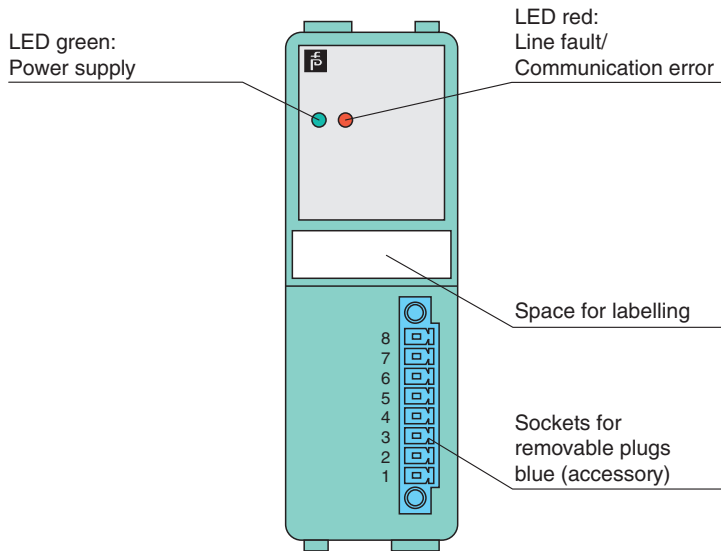
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Technical Data

Current	I_o	110 mA
Power	P_o	714 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 IEC 60079-0:2018+AC:2020 EN 60079-11:2012 EN 60079-15:2010	
International approvals		
ATEX approval	PTB 03 ATEX 2042 X	
IECEX approval		
IECEX certificate	IECEX BVS 09.0037X	
IECEX marking	Ex nA [ia Ga] IIC T4 Gc [Ex ia Da] IIC [Ex ia Ma] I	
General information		
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 www.pepperl-fuchs.com .	

Assembly

Front view

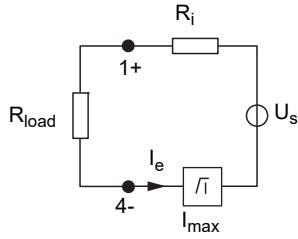


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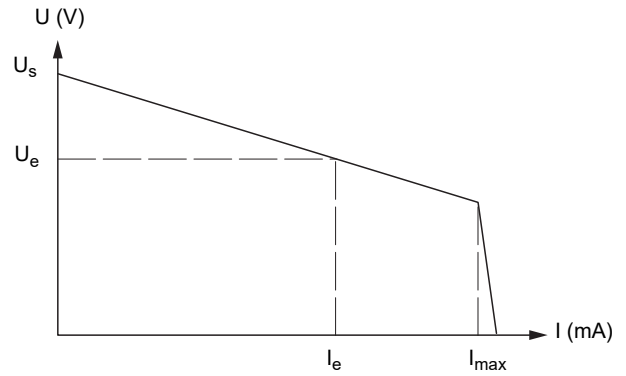
Characteristic Curve

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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