

# Digital Output

## LB6010AR



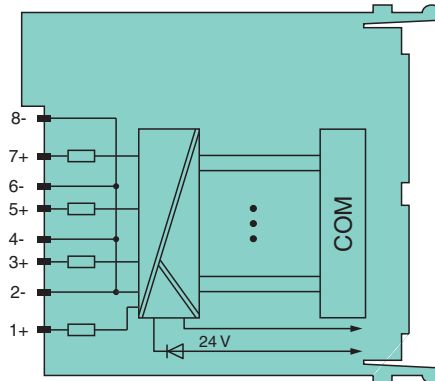
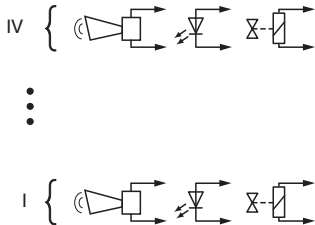
- 4-channel
- Outputs Ex ic
- Installation in Zone 2 and safe area
- Line fault detection (LFD)
- Positive or negative logic selectable
- Simulation mode for service operations (forcing)
- Permanently self-monitoring
- Output with watchdog



### Function

The digital output features 4 independent channels. It can drive solenoids, sounders, or LEDs. Line faults are detected. The outputs are galvanically isolated from the bus and the power supply (EN 60079-11).

### Connection



Zone 2

### Technical Data

<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>			

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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

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## Technical Data

Number of channels		4
<b>Suitable field devices</b>		
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. 370 $\Omega$
Current limit	$I_{max}$	37 mA
Open loop voltage	$U_s$	24.5 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 61326-1:2013
<b>Conformity</b>		
Electromagnetic compatibility		
Degree of protection		NE 21
Environmental test		IEC 60529
Shock resistance		EN 60068-2-14
Vibration resistance		EN 60068-2-27
Damaging gas		EN 60068-2-6
Relative humidity		EN 60068-2-42
Ambient conditions		EN 60068-2-78
<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
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 $\pm 0.075$ 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>		
Output		
Voltage	$U_o$	27.8 V
Current	$I_o$	90.4 mA
Power	$P_o$	629 mW
Internal capacitance	$C_i$	1.65 nF

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pa-info@sg.pepperl-fuchs.com

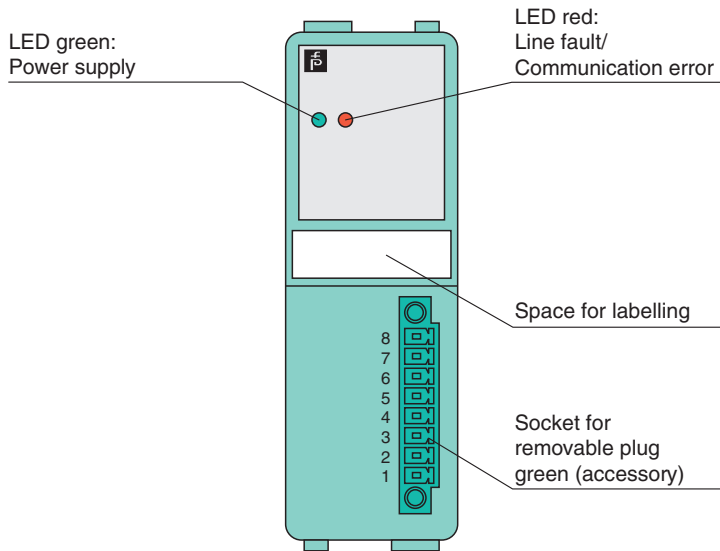
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**Technical Data**

Internal inductance	L <sub>i</sub>	0 mH
Certificate		PF 08 CERT 1234 X
Marking		Ⓜ II 3 G Ex nA [ic] 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
<b>International approvals</b>		
IECEX approval		
IECEX certificate		IECEX BVS 09.0037X
IECEX marking		Ex nA [ic] IIC T4 Gc
<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 or Zone 22) 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> .

**Assembly**

**Front view**



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## Product Versions

U (V)	R <sub>a</sub> (Ω)	Lim. (mA)	R <sub>ext</sub> (Ω)	U <sub>o</sub> (V)	I <sub>o</sub> (mA)	P <sub>o</sub> (mW)	Type/Order No.
24.5	370	55	175 ... 6000	27.8	90.4	629	LB6010A

### Remarks:

- R<sub>ext</sub> represents the operating range (coil resistance + cable resistance).
- U represents the open circuit voltage.
- R<sub>a</sub> represents the internal impedance.
- Output current =  $U / (R_a + R_{ext})$
- Lim. represents the functional electronic current limitation.