

# HART Output Isolator with Shutdown Input

## LB4102C2

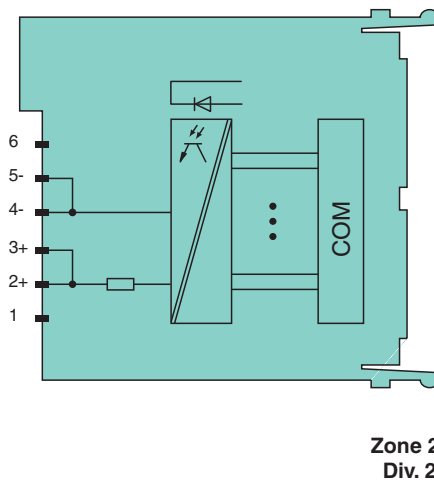
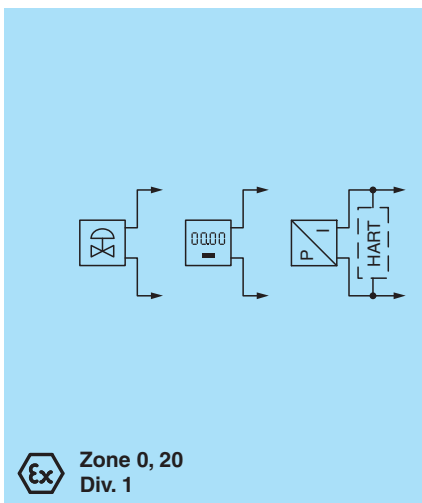
- 1-channel
- Output Ex ia
- Mounting in Zone 2, Class I/Div.2 or in the safe area
- Module can be exchanged under voltage
- Analog output module for 0/4 mA ... 20 mA
- HART communication via field bus or service bus
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring
- Output with bus-independent safety shutdown



### Function

The device drives positioners, proportional valves, I/P converters, or local indicators. Open and short circuit line faults are detected. The output can be switched off via a contact. This can be used for bus-independent safety applications. The output is galvanically isolated from the bus and the power supply.

### Connection



### Technical Data

<b>Slots</b>		
Occupied slots	1	
<b>Functional safety related parameters</b>		
Safety Integrity Level (SIL)	SIL 2	
<b>Supply</b>		
Connection	backplane bus	
Rated voltage	$U_r$	12 V DC , only in connection with the power supplies LB9***
Power dissipation	0.8 W	
Power consumption	0.95 W	
<b>Internal bus</b>		

Release date: 2023-10-19 Date of issue: 2023-10-19 Filename: 254724\_eng.pdf

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

**PEPPERL+FUCHS**

## Technical Data

Connection	backplane bus
Interface	manufacturer-specific bus to standard com unit
<b>Analog output</b>	
Number of channels	1
Suitable field devices	
Field device	Proportional Valve
Field device [2]	I/P converters
Field device [3]	on-site display
Connection	channel I: 2/3+, 4/5-
Current	0 ... 25 mA short-circuit protected
Line fault detection	can be switched on/off for each channel via configuration tool , configurable via configuration tool
Short-circuit	No
Open-circuit	deviation of preset output value > 0.5 mA
Load	750 Ω max.
HART communication	yes
HART secondary variable	MODBUS: yes; all other bus systems: no
Watchdog	within 0.5 s the device goes in safe state, e.g. after loss of communication
<b>Transfer characteristics</b>	
Deviation	
After calibration	0.1 % of the signal range at 20 °C (68 °F)
Influence of ambient temperature	0.1 %/10 K of the signal range
Refresh time	100 ms
<b>Indicators/settings</b>	
LED indication	Power LED (P) green: supply Diagnostic LED (I) red: module fault , red flashing: communication error , white: fixed parameter set (parameters from com unit are ignored) , white flashing: requests parameters from com unit Status LED (1) red: line fault (lead breakage or short circuit)
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	NE 21:2007
Degree of protection	IEC 60529:2000
Environmental test	EN 60068-2-14:2009
Shock resistance	EN 60068-2-27:2009
Vibration resistance	EN 60068-2-6:2008
Damaging gas	EN 60068-2-42:2003
Relative humidity	EN 60068-2-78:2001
<b>Ambient conditions</b>	
Ambient temperature	-40 ... 60 °C (-40 ... 140 °F)
Storage temperature	-40 ... 85 °C (-40 ... 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
<b>Mechanical specifications</b>	
Degree of protection	IP20 when mounted on backplane

Release date: 2023-10-19 Date of issue: 2023-10-19 Filename: 254724\_eng.pdf

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

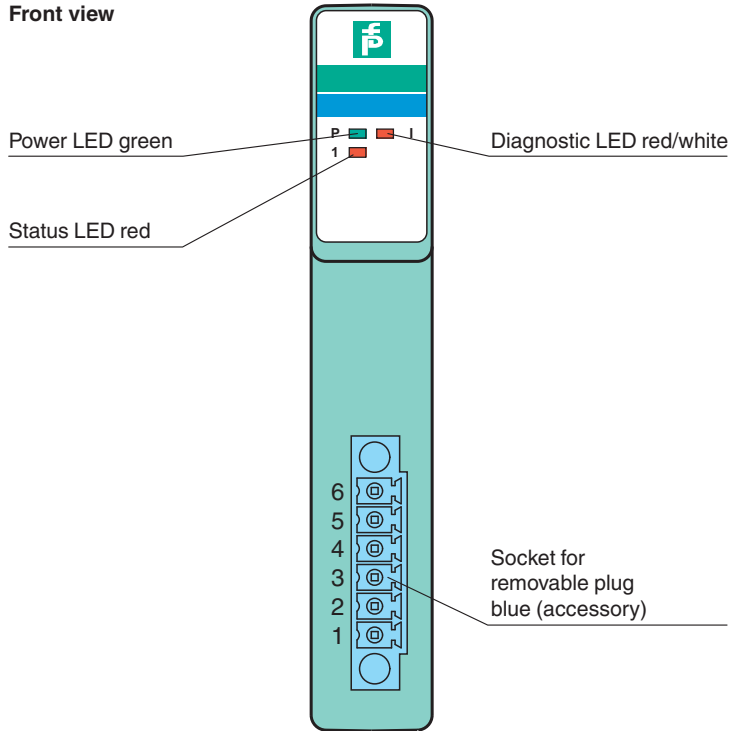
 **PEPPERL+FUCHS**

## Technical Data

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. 90 g
Dimensions		16 x 100 x 102 mm (0.63 x 3.9 x 4 inch)
<b>Data for application in connection with hazardous areas</b>		
EU-type examination certificate		BVS 11 ATEX E 116 X
Marking		Ⓜ II 3(1) G Ex nA [ia Ga] IIC T4 Gc Ⓜ I (M1) [Ex ia Ma] I Ⓜ II (1) D [Ex ia Da] IIIC
Output		
Voltage	U <sub>o</sub>	27 V
Current	I <sub>o</sub>	87 mA
Power	P <sub>o</sub>	575 mW (linear characteristic)
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>		
ATEX approval		BVS 11 ATEX E 116X
UL approval		E106378
IECEx approval		
IECEx certificate		IECEx BVS 11.0068X
IECEx marking		Ex nA [ia Ga] IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ma] I
<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> .

Assembly

Front view



Release date: 2023-10-19 Date of issue: 2023-10-19 Filename: 254724\_eng.pdf

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

**pf** PEPPERL+FUCHS