

# HART Output Isolator

## LB4002A2

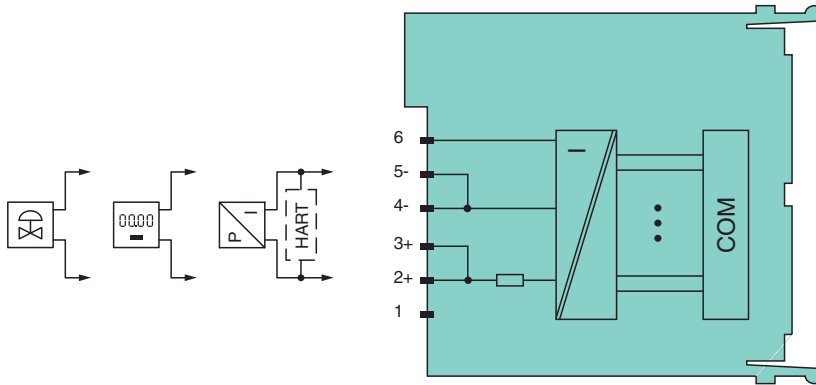
- 1-channel
- Analog output module for 0/4 mA ... 20 mA
- Installation in Zone 2 or safe area
- HART communication via field bus or service bus
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring



### Function

The device drives positioners, proportional valves, I/P converters, or local indicators. Open and short circuit line faults are detected. The output is galvanically isolated from the bus and the power supply.

### Wiring Diagram



Zone 2

### Technical Data

<b>Slots</b>	
Occupied slots	1
<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>	
Connection	backplane bus
Interface	manufacturer-specific bus to standard com unit
<b>Analog output</b>	
Number of channels	1
Suitable field devices	

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## Technical Data

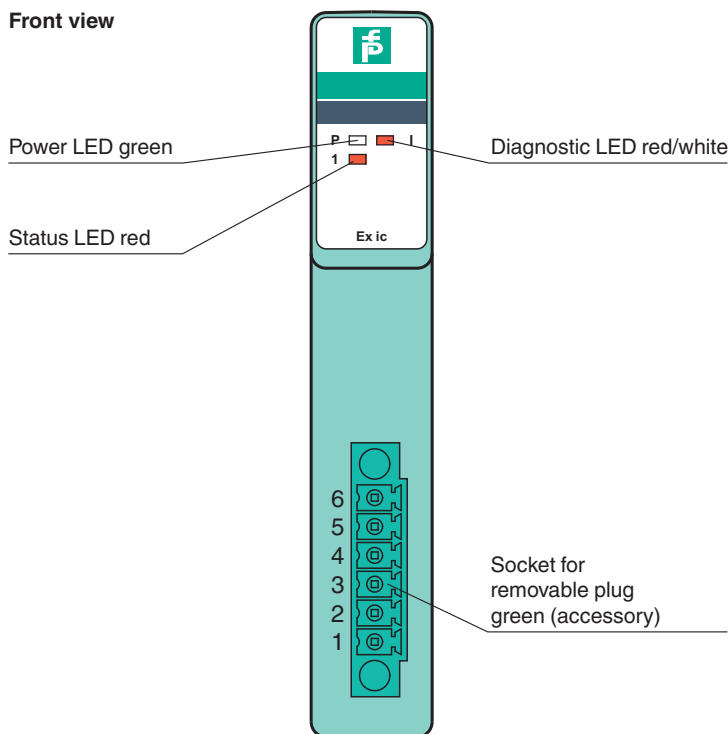
Field device	Proportional Valve
Field device [2]	I/P converters
Field device [3]	on-site display
Connection	channel I: 2/3+, 4/5-
Current	0 ... 25 mA short-circuit protected
Line fault detection	can be switched on/off for each channel via configuration tool , configurable via configuration tool
Short-circuit	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) , 70 °C (non-Ex)
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
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>	
Certificate	BVS 12 ATEX E 115 X

**Technical Data**

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>	
ATEX approval	BVS 12 ATEX E 115 X
IECEX approval	
IECEX certificate	IECEX BVS 11.0068X
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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