

HART Transmitter Power Supply, Input Isolator

LB3102A2

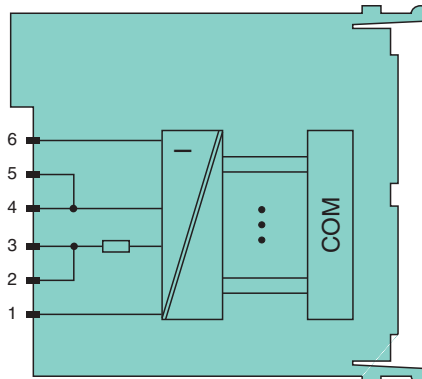
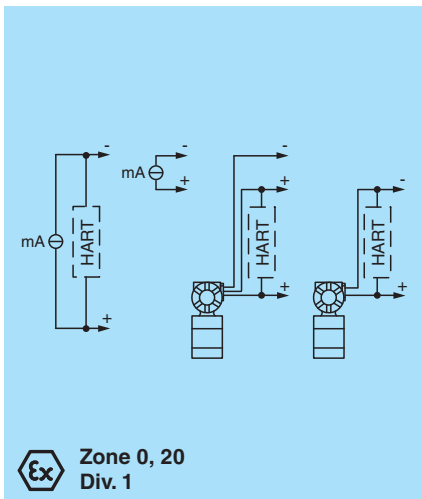
- 1-channel
- Input Ex ia
- Mounting in Zone 2, Class I/Div.2 or in the safe area
- Power supply for 2- or 3-wire transmitters with 4 mA ... 20 mA
- Supply circuit 15 V (20 mA)
- Input from active signals of 4-wire transmitters
- HART communication via field bus or service bus
- HART communication also for separately powered devices
- Simulation mode for service operations (forcing)
- Line fault detection (LFD) and Live Zero monitoring
- Permanently self-monitoring
- Module can be exchanged under voltage



Function

The transmitter power supply feeds 2- and 3-wire transmitters. Active signals from separately powered field devices and 4-wire transmitters can be connected. Open circuit, short circuit, and Live Zero status are detected. The intrinsically safe input is galvanically isolated from the bus and the power supply.

Connection



Technical Data

Slots

Occupied slots	1
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Supply

Connection	backplane bus
Rated voltage	U_r 12 V DC , only in connection with the power supplies LB9***
Power dissipation	0.75 W
Power consumption	1.1 W

Internal bus

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

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Technical Data

Interface		manufacturer-specific bus to standard com unit	
Analog input			
Number of channels		1	
Suitable field devices			
Field device		pressure converter	
Field device [2]			flow converter
Field device [3]		level converter	
Field device [4]			Temperature Converter
Field device interface			
Connection		2-wire transmitter	
Connection [2]		3-wire transmitter	
Connection [3]		4-wire transmitter	
Connection		2-wire transmitter (HART): supply circuit: 2/3+, 4/5- 3-wire transmitter (HART): supply circuit: 2/3+, 6- measuring circuit: 4/5+, 6- 4-wire transmitter (separately powered): measuring circuit: 4/5+, 6- HART measuring circuit: 1+, 6-	
Transmitter supply voltage			min. 15 V at 20 mA ; 21.5 V at 4 mA
Input resistance		15 Ω (terminals 5, 6) <P></P> 236 Ω (terminals 1, 6) HART	
Line fault detection		can be switched on/off for each channel via configuration tool , configurable via configuration tool	
Short-circuit		factory setting: > 22 mA configurable between 0 ... 26 mA	
Open-circuit		factory setting: < 1 mA configurable between 0 ... 26 mA	
HART communication		yes	
HART secondary variable			yes
Transfer characteristics			
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	
Resolution		12 Bit (0 ... 26 mA)	
Refresh time		100 ms	
Indicators/settings			
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) Status LED (2) yellow: Live Zero monitoring	
Coding		optional mechanical coding via front socket	
Directive conformity			
Electromagnetic compatibility			
Directive 2014/30/EU			EN 61326-1:2013
Conformity			
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	
Ambient conditions			
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	

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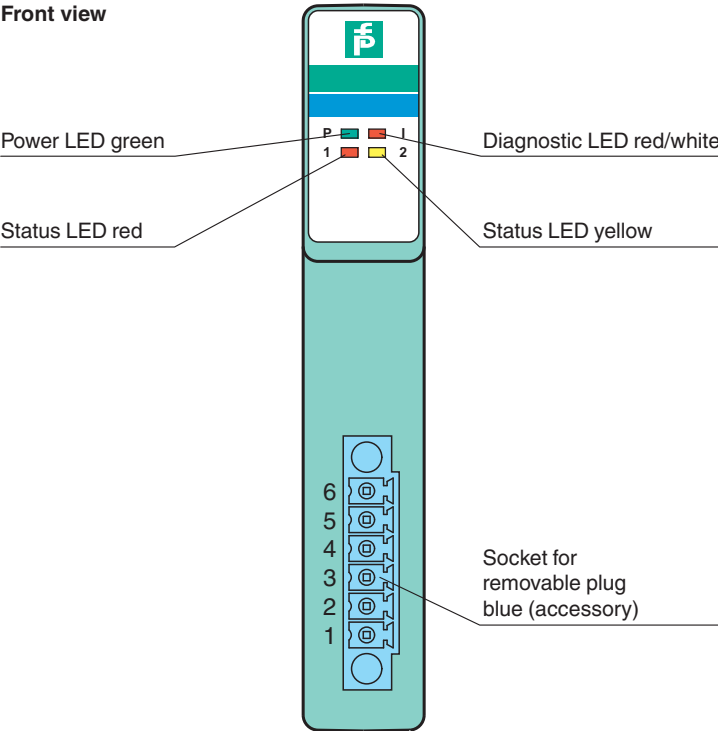
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Technical Data

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. 90 g
Dimensions		16 x 100 x 102 mm (0.63 x 3.9 x 4 inch)
Data for application in connection with hazardous areas		
EU-type examination certificate		BVS 12 ATEX E 100 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
Supply		
Voltage	U _o	27 V
Current	I _o	92 mA
Power	P _o	619 mW (linear characteristic)
Connection 1 to 6		
Voltage		8.9 V
Current		4 mA
Power		24 mW (trapezoid characteristic curve)
Input		
Voltage	U _o	0.7 V
Current	I _o	7 mA
Voltage	U _i	30 V DC
Current	I _i	100 mA
Power	P _i	100 mW P _i < 100 mW is fulfilled by I _i < 100 mA, so a comparison of P _o < P _i is not necessary.
Internal capacitance	C _i	242 nF
Internal inductance	L _i	0 mH
Galvanic isolation		
Input/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		BVS 12 ATEX E 100X
UL approval		E106378
IECEx approval		BVS 13.0043X
Approved for		Ex nA [ia Ga] IIC T4 Gc [Ex ia Da] IIIC [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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