



# Transmitter Power Supply, Input Isolator

## LB3104A2

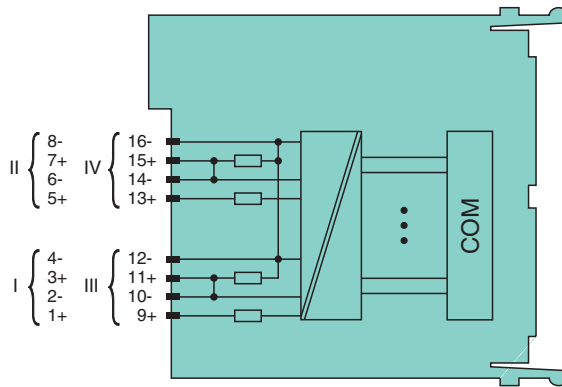
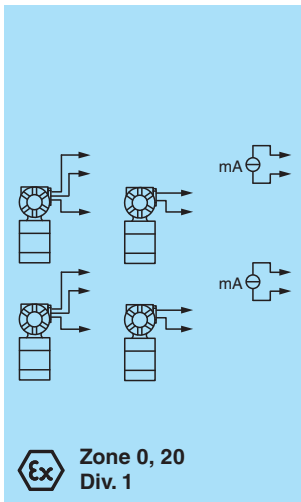
- 4-channel
- Inputs Ex ia
- Mounting in Zone 2, Class I/Div.2 or in the safe area
- Power supply for 2-wire transmitters with 4 mA ... 20 mA
- Supply circuit 15 V (20 mA)
- Input from active signals of 4-wire transmitters
- Simulation mode for service operations (forcing)
- Line fault detection (LFD): one LED per channel
- Permanently self-monitoring
- Module can be exchanged under voltage



### Function

The transmitter power supply feeds 2-wire transmitters.  
 Active signals from separately powered field devices and 4-wire transmitters can be connected.  
 Open and short-circuit line faults are detected.  
 The intrinsically safe inputs are galvanically isolated from the bus and the power supply.

### Connection



Zone 2  
Div. 2

### Technical Data

<b>Slots</b>			
Occupied slots	2		
<b>Supply</b>			
Connection	backplane bus		
Rated voltage	$U_r$	12 V DC , only in connection with the power supplies LB9***	
Power dissipation	1.5 W		
Power consumption	2.7 W		
<b>Internal bus</b>			
Connection	backplane bus		
Interface	manufacturer-specific bus to standard com unit		

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## Technical Data

<b>Analog input</b>	
Number of channels	4
Suitable field devices	
Field device	pressure converter
Field device [2]	flow converter
Field device [3]	level converter
Field device [4]	Temperature Converter
<b>Field device interface</b>	
Connection	2-wire transmitter
Connection [2]	3-wire transmitter
Connection [3]	4-wire transmitter
Connection	2-wire transmitter: supply circuit: channel I 1+, 2-, channel II 5+, 6-, channel III 9+, 10-, channel IV 13+, 14- 3-wire transmitter: supply circuit: channel I 1+, 4-, channel II 5+, 8-, channel III 9+, 12-, channel IV 13+, 16- measuring circuit: channel I 3+, 4-, channel II 7+, 8-, channel III 11+, 12-, channel IV 15+, 16- 4-wire transmitter (separately powered): measuring circuit: channel I 3+, 4-, channel II 7+, 8-, channel III 11+, 12-, channel IV 15+, 16-
Transmitter supply voltage	min. 15 V at 20 mA ; 21.5 V at 4 mA
Input resistance	15 Ω
Conversion time	max. 100 ms
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	no
HART secondary variable	no
<b>Analog output</b>	
HART communication	no
HART secondary variable	no
<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
Resolution	12 Bit (0 ... 26 mA)
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 (1-4) 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>	

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## Technical Data

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 $\pm 0.075$ 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>		
EU-type examination certificate		BVS 12 ATEX E 024 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
<b>Supply</b>		
Voltage	U <sub>o</sub>	27 V
Current	I <sub>o</sub>	90 mA
Power	P <sub>o</sub>	588 mW (linear characteristic)
<b>Input</b>		
Voltage	U <sub>o</sub>	0.7 V
Current	I <sub>o</sub>	2.78 mA
Power	P <sub>o</sub>	2 mW (trapezoid characteristic curve)
Internal capacitance	C <sub>i</sub>	242 nF
Internal inductance	L <sub>i</sub>	0 mH
<b>Galvanic isolation</b>		
Input/power supply, internal bus		safe electrical isolation acc. to EN 60079-11, voltage peak value 375 V
<b>Directive conformity</b>		
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 024 X
UL approval		E106378
IECEX approval		IECEX BVS 12.0055X
Approved for		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> .

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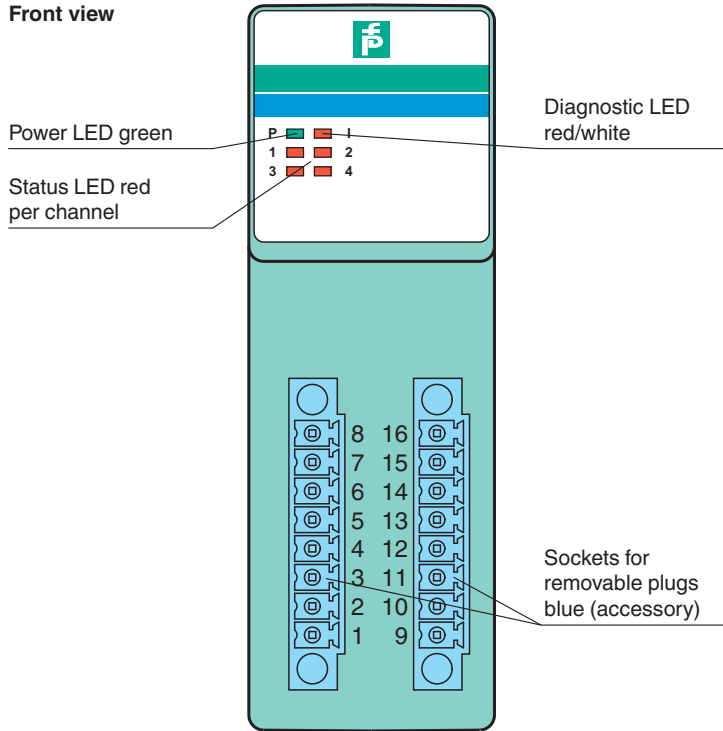
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**Assembly**

Front view



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