



## Digital Input LB1009A

- 8-channel
- Inputs Ex ic
- Installation in Zone 2 or safe area
- Dry contact or NAMUR inputs
- Positive or negative logic selectable
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring
- Module can be exchanged under voltage

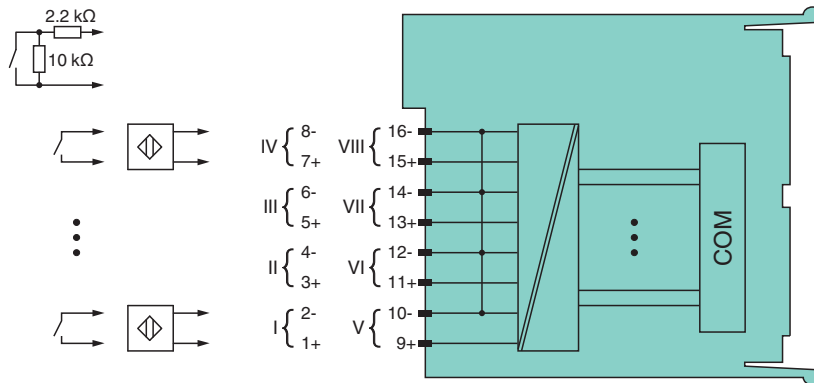
### Digital Input



### Function

The device accepts digital input signals of NAMUR sensors or mechanical contacts from the field. Furthermore it can accept active signals with 24 V or 5 V DC in the safe area. Open and short circuit line faults are detected. This does not apply for active signals. The inputs are galvanically isolated from the bus and the power supply.

### Connection



Zone 2

### Technical Data

<b>Slots</b>		
Occupied slots	1	
<b>Supply</b>		
Connection	backplane bus	
Rated voltage	U <sub>r</sub>	12 V DC , only in connection with the power supplies LB9***
Power dissipation	1.55 W	
Power consumption		1.55 W
<b>Internal bus</b>		
Connection		backplane bus
Interface	manufacturer-specific bus to standard com unit	
<b>Digital input</b>		
Number of channels	8	

## Technical Data

Sensor interface		
Connection		NAMUR sensor
Connection [2]		volt-free contact
Connection [3]		Usage without connection to areas where there is a risk of explosion: active signals, mechanical contacts, NAMUR proximity switches, 2-wire sensors If the device has been operated in general electrical systems that are <i>not</i> connected to areas where there is a risk of explosion, the device cannot then be used in electrical systems that <i>are</i> connected to areas where there is a risk of explosion. Usage with connection to areas where there is a risk of explosion: mechanical contacts, NAMUR proximity switches
Connection		Terminals 1+, 2-, 3+, 4-, 5+, 6-, 7+, 8-, 9+, 10-, 11+, 12-, 13+, 14-, 15+, 16-
Rated values		acc. to EN 60947-5-6 (NAMUR)
Switching point/switching hysteresis		1.2 ... 2.1 mA / $\pm$ 0.2 mA
Voltage		8.2 V
Internal resistor	R <sub>i</sub>	1 k $\Omega$
Line fault detection		can be switched on/off for each channel via configuration tool , active signals (24 V, 5 V) without line fault detection
Connection		mechanical switch with additional resistors (see connection diagram) proximity switches without additional wiring
Short-circuit		< 360 $\Omega$
Open-circuit		< 0.35 mA
Digital signals (active)		Use in safe area: configurable 24 V 5 V
Switching point: ON		> 8 V > 2.7 V
Switching point: OFF		< 3 V < 2.3 V
Minimum pulse duration		15 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 (1-8) red: line fault (lead breakage or short circuit) , yellow: signal (per channel)
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
Degree of protection		IEC 60529
Environmental test		EN 60068-2-14
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Damaging gas		EN 60068-2-42
Relative humidity		EN 60068-2-78
<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 $\pm$ 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 spring terminal (0.14 ... 0.5 mm <sup>2</sup> )

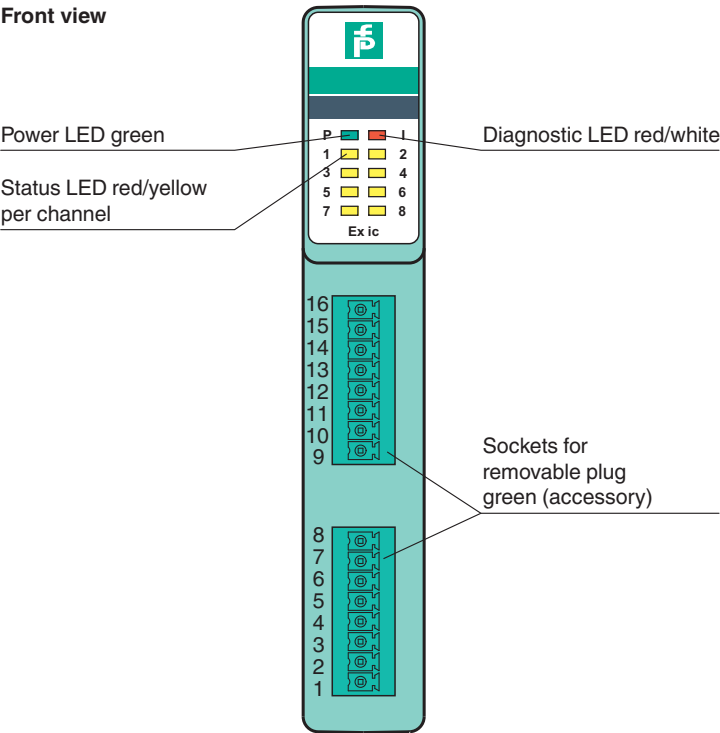
Release date: 2023-11-28 Date of issue: 2023-11-28 Filename: 244407\_eng.pdf

Technical Data

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		
Input		
Voltage	U <sub>o</sub>	10 V
Current	I <sub>o</sub>	12 mA
Power	P <sub>o</sub>	30 mW (linear characteristic)
Certificate		EXA 13 ATEX 0037X
Marking		Ⓔ II 3 G Ex nA [ic] IIC T4 Gc
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		EXA 13 ATEX 0037X
IECEx approval		
IECEx certificate		IECEx EXA 13.0003X
IECEx marking		Ex nA [ic] IIC T4 Gc
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 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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