

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

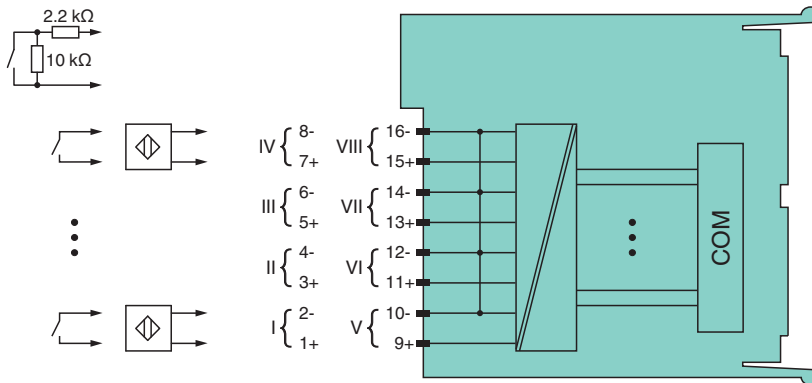
Digital Input



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

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

Technical Data

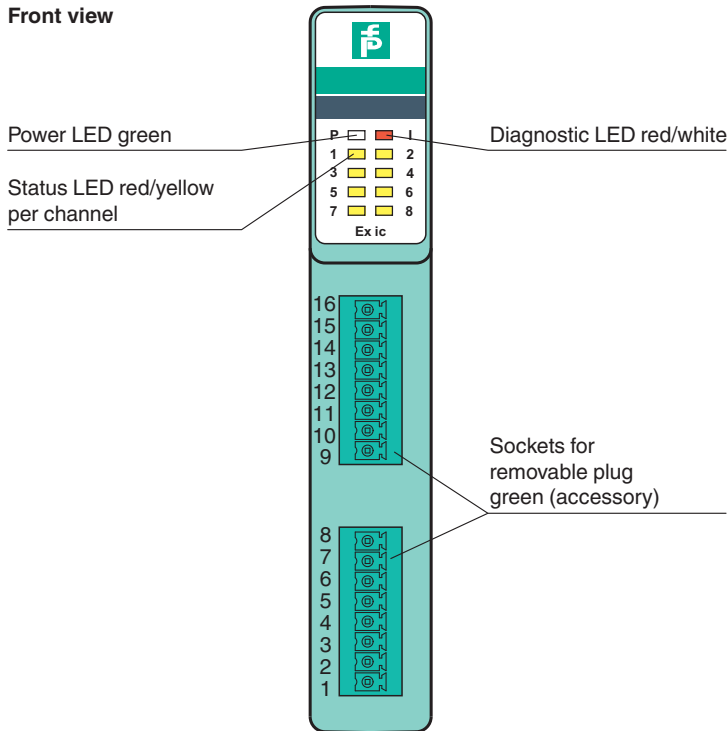
Sensor interface		
Connection		NAMUR sensor
Connection [2]		volt-free contact
Connection [3]		Usage without connection to areas where there is a risk of explosion: active signals, mechanical contacts, NAMUR proximity switches, 2-wire sensors If the device has been operated in general electrical systems 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 / ± 0.2 mA
Voltage		8.2 V
Internal resistor	R _i	1 kΩ
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 Ω
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
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 (1-8) red: line fault (lead breakage or short circuit) , yellow: signal (per channel)
Coding		optional mechanical coding via front socket
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
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
Ambient conditions		
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
Mechanical specifications		
Degree of protection		IP20 when mounted on backplane
Connection		removable front connector with spring terminal (0.14 ... 0.5 mm ²)

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_o	10 V	
Current	I_o	12 mA	
Power	P_o	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 www.pepperl-fuchs.com .		

Assembly

Front view



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