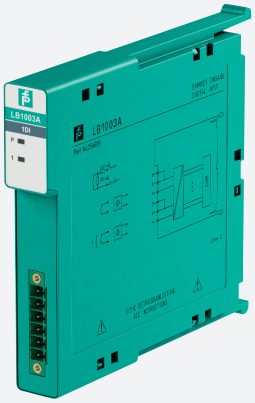


Frequency / Counter Input

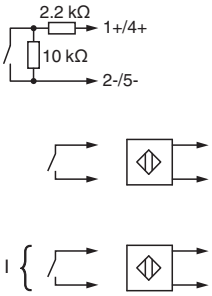
LB1003A

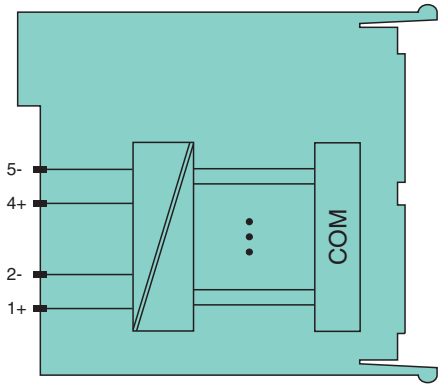
- 1-channel
- Input for frequency, counter, direction of rotation
- Installation in Zone 2 or safe area
- Digital input max. 15 kHz
- Positive or negative logic selectable
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring
- Module can be exchanged under voltage

Function

The device accepts digital input signals of NAMUR sensors or mechanical contacts from the field.
Open and short circuit line faults are detected.
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		0.65 W
Power consumption		0.65 W
Internal bus		
Connection		backplane bus
Interface		manufacturer-specific bus to standard com unit
Digital input		
Number of channels		1
Function		

Release date: 2023-10-19 Date of issue: 2023-10-19 Filename: 254609_eng.pdf

Technical Data

Function		Counter
Function [2]		frequency
Function [3]		direction of rotation
Sensor interface		
Connection		NAMUR sensor
Connection [2]		volt-free contact
Connection		channel I: 1+, 2-; direction: 4+, 5-
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
Connection		mechanical switch with additional resistors (see connection diagram) proximity switches without additional wiring
Short-circuit		< 360 Ω
Open-circuit		< 0.35 mA
Minimum pulse duration		; in frequency + counter mode: 12.5 ms ; otherwise 20 µs
Operating frequency		0 ... 15 kHz ; in frequency + counter mode ... 40 Hz
Indicators/settings		
LED indication		Power LED (P) green: supply Status LED (1) red: line fault
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 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		
Certificate		PF 08 CERT 1234 X
Marking		⟨Ex⟩ II 3 G Ex nA [ic] IIC T4 Gc
Galvanic isolation		

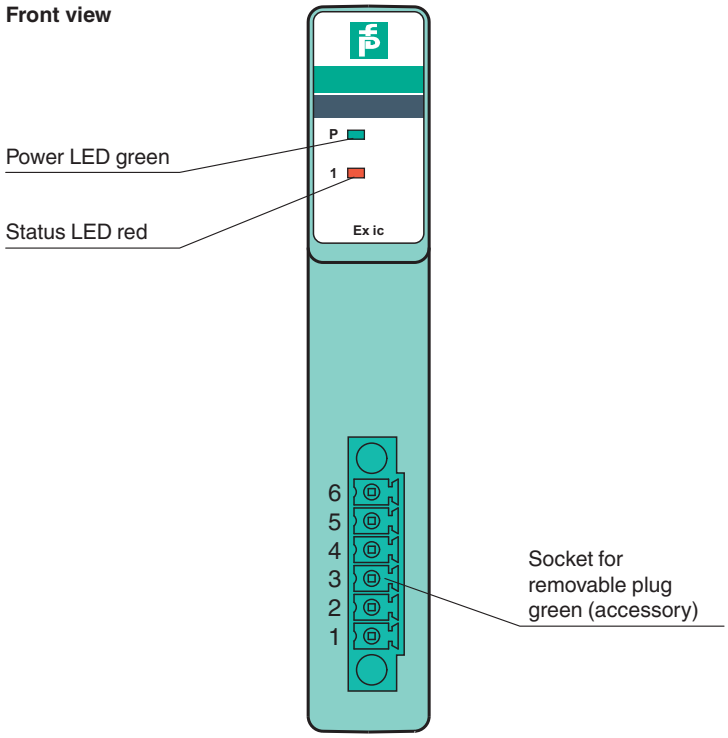
Release date: 2023-10-19 Date of issue: 2023-10-19 Filename: 254609_eng.pdf

Technical Data

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	PTB 03 ATEX 2042 X
IECEx approval	
IECEx certificate	IECEx BVS 09.0037X
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



Release date: 2023-10-19 Date of issue: 2023-10-19 Filename: 254609_eng.pdf