

# Frequency / Counter Input LB1103C

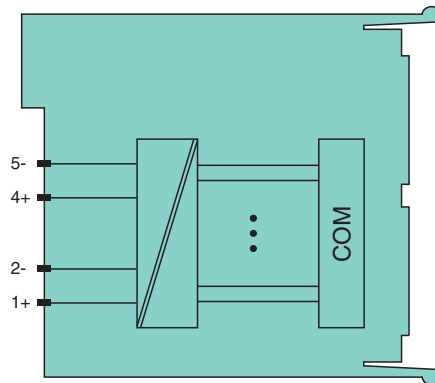
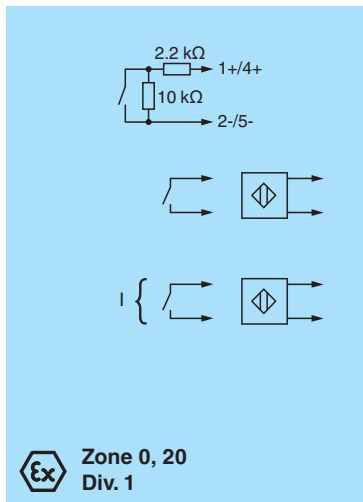
- 1-channel
- Input Ex ia
- Mounting in Zone 2, Class I/Div.2 or in the safe area
- Input for frequency, counter, direction of rotation
- Digital input max. 400 Hz
- Positive or negative logic selectable
- Simulation mode for service operations (forcing)
- Line fault detection (LFD)
- Permanently self-monitoring
- Module can be exchanged under voltage



## Function

The device accepts digital input signals of NAMUR sensors or mechanical contacts from the hazardous area. Open and short-circuit line faults are detected. The intrinsically safe input is galvanically isolated from the bus and the power supply.

## Connection



**Zone 2  
Div. 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	0.65 W		
Power consumption	0.65 W		
<b>Internal bus</b>			
Connection	backplane bus		
Interface	manufacturer-specific bus to standard com unit		
<b>Digital input</b>			
Number of channels	1		

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

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## Technical Data

Function		
Function		Counter
Function [2]		frequency
Function [3]		direction of rotation
Sensor interface		
Connection		NAMUR sensor
Connection [2]		volt-free contact
Connection		channel I: 1+, 2/3-; direction: 4+, 5/6-
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
Connection		mechanical switch with additional resistors (see connection diagram) proximity switches without additional wiring
Short-circuit		< 360 $\Omega$
Open-circuit		< 0.35 mA
Minimum pulse duration		; in frequency + counter mode: 12.5 ms ; otherwise 20 $\mu$ s
Operating frequency		0 ... 400 Hz ; in frequency + counter mode ... 40 Hz
<b>Indicators/settings</b>		
LED indication		Power LED (P) green: supply Status LED (1) red: line fault
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)
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. 90 g
Dimensions		16 x 100 x 102 mm (0.63 x 3.9 x 4 inch)
<b>Data for application in connection with hazardous areas</b>		
EU-type examination certificate		PTB 03 ATEX 2042 X

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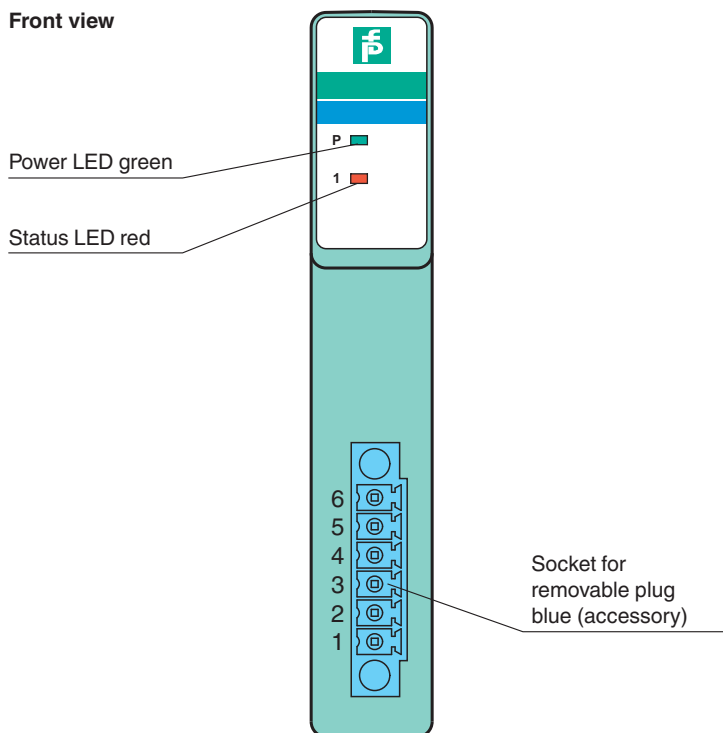
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**Technical Data**

Marking	Ⓢ II (1)G [Ex ia Ga] IIC Ⓢ II (1)D [Ex ia Da] IIIC Ⓢ I (M1) [Ex ia Ma] I		
Input			
Voltage	U <sub>o</sub>	10.5 V	
Current	I <sub>o</sub>	23.3 mA	
Power	P <sub>o</sub>	61.2 mW (linear characteristic)	
Certificate	PF 08 CERT 1234 X		
Marking	Ⓢ II 3 G Ex nA 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		
<b>International approvals</b>			
ATEX approval	PTB 03 ATEX 2042 X		
UL approval	E106378		
IECEx approval			
IECEx certificate	IECEx BVS 09.0037X		
IECEx marking	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> .		

**Assembly**

**Front view**



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