



## Frequency / Counter Input FB1203B3

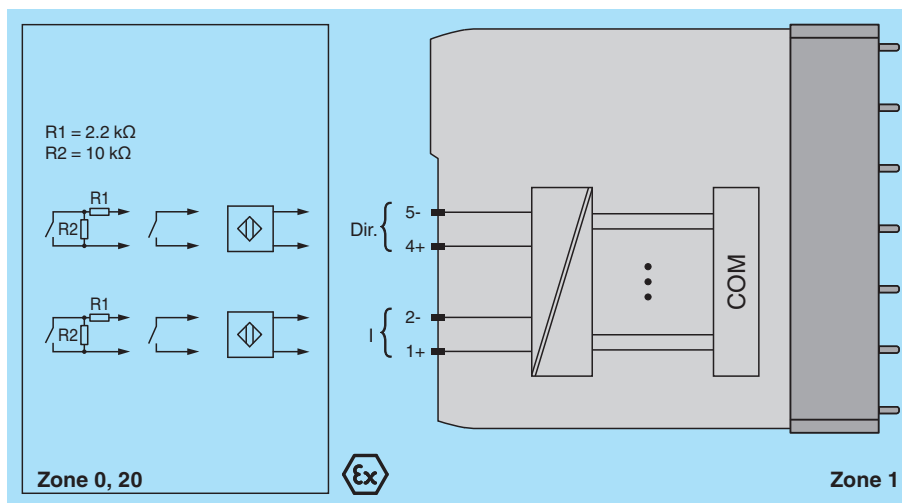
- 1-channel
- Input Ex ia
- Installation in suitable enclosures in Zone 1
- Module can be exchanged under voltage (hot swap)
- Input for frequency, counter, direction of rotation
- Digital input max. 15 kHz
- Positive or negative logic selectable
- Simulation mode for service operations (forcing)
- Line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



### 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 inputs are galvanically isolated from the bus and the power supply.

### Connection



### Technical Data

#### Slots

|                |   |
|----------------|---|
| Occupied slots | 1 |
|----------------|---|

#### Supply

|                   |   |
|-------------------|---|
| Connection        | backplane bus   |
| Rated voltage     | $U_r$ 12 V DC , only in connection with the power supplies FB92** |
| 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 |
|--------------------|---|

## Technical Data

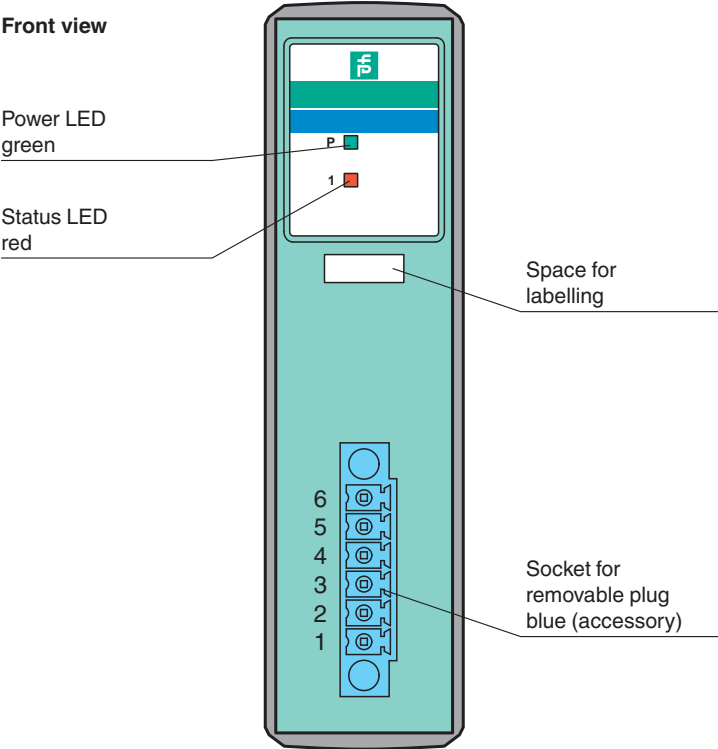
|  |                |  |
|--|----------------|--|
| Function   |                |  |
| Function   |                | Counter  |
| Function [2]   |                | frequency  |
| Function [3]   |                | direction of rotation  |
| Sensor interface   |                |  |
| Connection   |                | 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  |
| 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   |                | 20 ms  |
| Operating frequency  |                | 0 ... 15 kHz ; in frequency + counter mode ... 40 Hz   |
| <b>Indicators/settings</b>                                     |                |  |
| LED indication   |                | LED green: supply<br>LED 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  |
| 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<br>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 (module) , a separate housing is required acc. to the system description  |
| Connection   |                | removable front connector with screw flange (accessory)<br>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. 420 g  |
| Dimensions   |                | 28 x 107 x 132 mm (1.1 x 4.2 x 5.2 inch)   |
| <b>Data for application in connection with hazardous areas</b> |                |  |
| EU-type examination certificate                                |                | Presafe 19 ATEX 14058U   |
| Marking  |                | Ⓔ II 2(1)G Ex db eb q [ia Ga] IIC Gb<br>II (1)D [Ex ia Da] IIIC<br>I (M1) [Ex ia Ma] I   |
| Input  |                |  |

Release date: 2023-06-20 Date of issue: 2023-06-20 Filename: 276062\_eng.pdf

Technical Data

|                                  |                |  |
|----------------------------------|----------------|--|
| Voltage                          | U <sub>o</sub> | 10.5 V   |
| Current                          | I <sub>o</sub> | 23.34 mA   |
| Power                            | P <sub>o</sub> | 61.27 mW (linear characteristic)   |
| 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<br>EN 60079-1:2014<br>EN 60079-5:2015<br>EN 60079-7:2015+A1:2018<br>EN 60079-11:2012   |
| International approvals          |                |  |
| ATEX approval                    |                | Presafe 19 ATEX 14058U   |
| IECEx approval                   |                | IECEx PRE 19.0013U   |
| Approved for                     |                | Ex db eb q [ia Ga] IIC Gb<br>[Ex ia Da] IIIC<br>[Ex ia Ma] I   |
| General information              |                |  |
| System information               |                | The module has to be mounted in appropriate backplanes and housings (FB92**) in Zone 1, 2, 21, 22 or outside hazardous areas (gas or dust). Here, observe the corresponding EC-type examination certificate.   |
| 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



Accessories

|         |                       |
|---------|-----------------------|
| FB9224* | Field Unit            |
| FB9225* | Redundancy Field Unit |
| FB9248* | Field Unit            |