



## Frequency / Counter Input FB1303B2

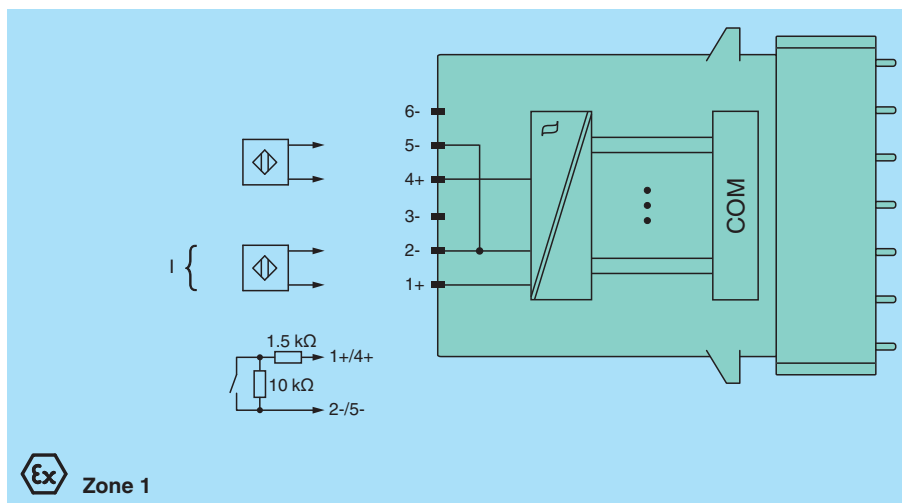
- 1-channel
- Inputs with plug-in Ex e terminals
- Installation in suitable enclosures in Zone 1
- Module can be exchanged under voltage (hot swap)
- Input for frequency, counter, direction of rotation
- Digital input max. 15 kHz
- Positive or negative logic selectable
- Simulation mode for service operations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



### Function

The device accepts digital input signals of NAMUR sensors from the hazardous area.  
Open and short circuit line faults are detected.  
The device is supplied with plug-in Ex e terminals and protective cover.  
The inputs are galvanically isolated from the bus and the power supply.

### Connection



### 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 FB92** |
| 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> |                                                |                                                             |

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

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## Technical Data

|                                                                |                |                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of channels                                             |                | 1                                                                                                                                                                                                                                                        |
| 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                                                                                                                                                                                                                                                |
| Operating frequency                                            |                | 0 ... 15 kHz                                                                                                                                                                                                                                             |
| <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 21:2007                                                                                                                                                                                                                                               |
| Degree of protection                                           |                | IEC 60529:2000                                                                                                                                                                                                                                           |
| Environmental test                                             |                | EN 60068-2-14:2009                                                                                                                                                                                                                                       |
| Shock resistance                                               |                | EN 60068-2-27:2009                                                                                                                                                                                                                                       |
| Vibration resistance                                           |                | EN 60068-2-6:2008                                                                                                                                                                                                                                        |
| Damaging gas                                                   |                | EN 60068-2-42:2003                                                                                                                                                                                                                                       |
| Relative humidity                                              |                | EN 60068-2-78:2001                                                                                                                                                                                                                                       |
| <b>Ambient conditions</b>                                      |                |                                                                                                                                                                                                                                                          |
| Ambient temperature                                            |                | -20 ... 60 °C (-4 ... 140 °F)                                                                                                                                                                                                                            |
| Storage temperature                                            |                | -25 ... 85 °C (-13 ... 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                                                     |                | Ex e spring terminal with protective cover                                                                                                                                                                                                               |
| Mass                                                           |                | approx. 350 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                                |                | BVS 11 ATEX E 093 X                                                                                                                                                                                                                                      |
| Marking                                                        |                | Ⓔ II 2 G Ex db eb IIC T4                                                                                                                                                                                                                                 |
| Galvanic isolation                                             |                |                                                                                                                                                                                                                                                          |
| Input/power supply, internal bus                               |                | safe electrical isolation acc. to EN 60079-11:2007 , voltage peak value 375 V                                                                                                                                                                            |
| Directive conformity                                           |                |                                                                                                                                                                                                                                                          |

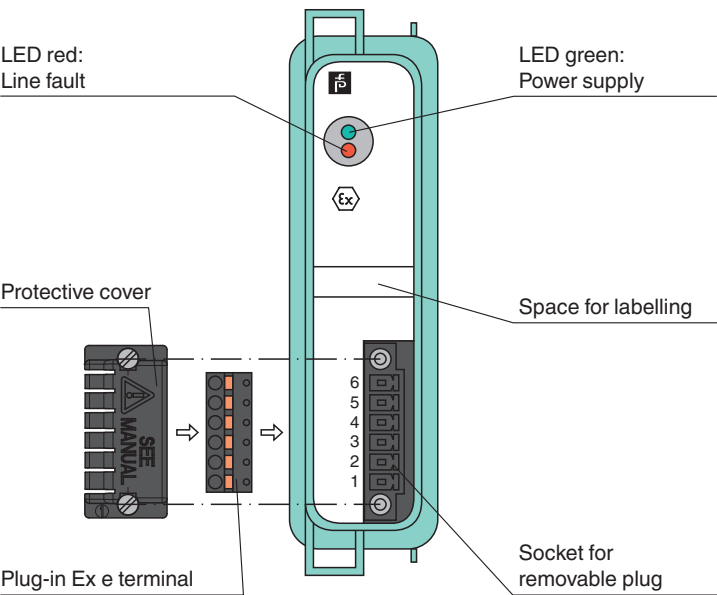
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Technical Data

|                           |                                                                                                                                                                                                                                                              |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Directive 2014/34/EU      | EN IEC 60079-0:2018+AC:2020<br>EN 60079-1:2014<br>EN 60079-7:2015+A1:2018                                                                                                                                                                                    |
| International approvals   |                                                                                                                                                                                                                                                              |
| ATEX approval             | BVS 11 ATEX E 093X                                                                                                                                                                                                                                           |
| General information       |                                                                                                                                                                                                                                                              |
| System information        | The module has to be mounted in appropriate backplanes (FB92**) in Zone 1, 2, or outside hazardous areas. 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

Front view



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