

**Features**

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input 2-wire and 3-wire SMART transmitters and 2-wire SMART current sources
- Output 0/4 mA ... 20 mA
- Terminals with test points
- Up to SIL 2 acc. to IEC 61508

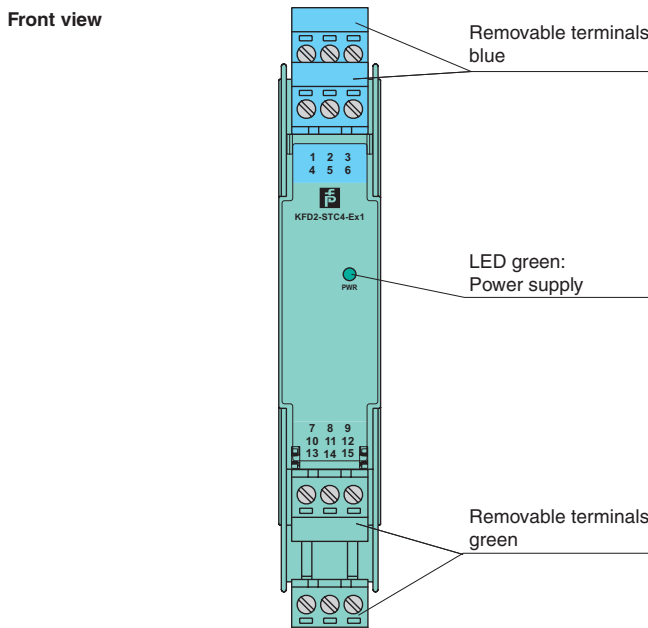
**Function**

This isolated barrier is used for intrinsic safety applications. The device supplies 2-wire and 3-wire SMART transmitters in a hazardous area, and can also be used with 2-wire SMART current sources. It transfers the analog input signal to the safe area as an isolated current value. Digital signals may be superimposed on the input signal in the hazardous or safe area and are transferred bi-directionally. If the HART communication resistance in the loop is too low, the internal resistance of 250 Ω between terminals 8 and 9 can be used. Test sockets for the connection of HART communicators are integrated into the terminals of the device.

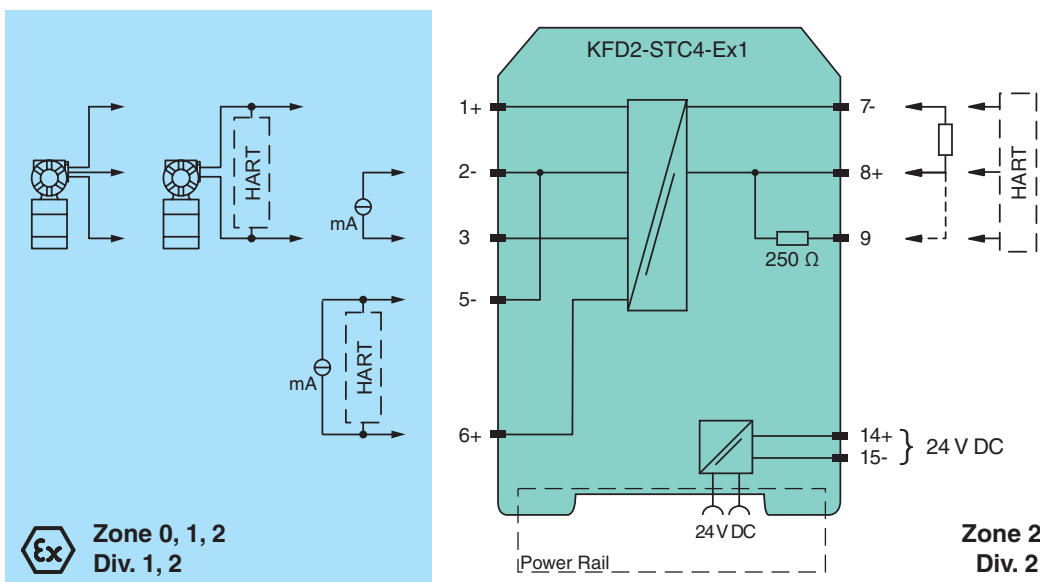
**Application**

- The device supports the following SMART protocols:
- HART
  - BRAIN
  - Foxboro

**Assembly**



**Connection**



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

|  |       |  |
|--|-------|--|
| <b>General specifications</b>                                  |       |  |
| Signal type  |       | Analog input   |
| <b>Functional safety related parameters</b>                    |       |  |
| Safety Integrity Level (SIL)                                   |       | SIL 2  |
| <b>Supply</b>  |       |  |
| Connection   |       | Power Rail or terminals 14+, 15-   |
| Rated voltage  | $U_r$ | 20 ... 35 V DC   |
| Ripple   |       | within the supply tolerance  |
| Power dissipation  |       | 1.4 W  |
| Power consumption  |       | 1.8 W  |
| <b>Input</b>   |       |  |
| Connection side  |       | field side   |
| Connection   |       | terminals 1+, 2-, 3 or 5-, 6+  |
| Input signal   |       | 0/4 ... 20 mA  |
| Voltage drop   |       | ≤ 2.4 V at 20 mA (terminals 5, 6)  |
| Input resistance   |       | ≤ 64 Ω terminals 2-, 3 ; ≤ 500 Ω terminals 1+, 3 (250 Ω load)  |
| Available voltage  |       | ≥ 16 V at 20 mA terminals 1+, 3  |
| <b>Output</b>  |       |  |
| Connection side  |       | control side   |
| Connection   |       | terminals 7-, 8+, 9  |
| Load   |       | 0 ... 800 Ω at 20 mA   |
| Output signal  |       | 0/4 ... 20 mA (overload > 25 mA)   |
| Ripple   |       | ≤ 50 μA <sub>rms</sub>   |
| <b>Transfer characteristics</b>                                |       |  |
| Deviation  |       | at 20 °C (68 °F), 0/4 ... 20 mA<br>≤ 10 μA incl. calibration, linearity, hysteresis, loads and fluctuations of supply voltage  |
| Influence of ambient temperature                               |       | 0.25 μA/K  |
| Frequency range  |       | field side into the control side: bandwidth with 0.5 V <sub>pp</sub> signal 0 ... 7.5 kHz (-3 dB)<br>control side into the field side: bandwidth with 0.5 V <sub>pp</sub> signal 0.3 ... 7.5 kHz (-3 dB) |
| Settling time  |       | 200 μs   |
| Rise time/fall time  |       | 20 μs  |
| <b>Galvanic isolation</b>                                      |       |  |
| Output/power supply  |       | functional insulation, rated insulation voltage 50 V AC  |
| <b>Indicators/settings</b>                                     |       |  |
| Display elements   |       | LED  |
| Labeling   |       | space for labeling at the front  |
| <b>Directive conformity</b>                                    |       |  |
| Electromagnetic compatibility                                  |       |  |
| Directive 2014/30/EU   |       | EN 61326-1:2013 (industrial locations)   |
| <b>Conformity</b>  |       |  |
| Electromagnetic compatibility                                  |       | NE 21:2011   |
| Degree of protection   |       | IEC 60529:2001   |
| Protection against electrical shock                            |       | UL 61010-1:2012  |
| <b>Ambient conditions</b>                                      |       |  |
| Ambient temperature  |       | -20 ... 60 °C (-4 ... 140 °F)  |
| <b>Mechanical specifications</b>                               |       |  |
| Degree of protection   |       | IP20   |
| Connection   |       | screw terminals  |
| Mass   |       | approx. 200 g  |
| Dimensions   |       | 20 x 124 x 115 mm (0.8 x 4.9 x 4.5 inch) , housing type B2   |
| Mounting   |       | on 35 mm DIN mounting rail acc. to EN 60715:2001   |
| <b>Data for application in connection with hazardous areas</b> |       |  |
| EU-Type Examination Certificate                                |       | BAS 99 ATEX 7060 X   |
| Marking  |       | ⊕ II (1)G [Ex ia Ga] IIC , ⊕ II (1)D [Ex ia Da] IIIC , ⊕ I (M1) [Ex ia Ma] I   |
| Input  |       | [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I  |
| <b>Supply</b>  |       |  |
| Maximum safe voltage   | $U_m$ | 250 V (Attention! The rated voltage can be lower.)   |
| <b>Equipment terminals 1+, 3-</b>                              |       |  |
| Voltage  | $U_o$ | 25.4 V   |
| Current  | $I_o$ | 86.8 mA  |
| Power  | $P_o$ | 551 mW   |
| <b>Equipment terminals 2-, 3</b>                               |       |  |
| Current $I_o$ /Current $I_i$                                   |       | 74 mA / 115 mA   |
| Current  | $I_i$ | 115 mA   |

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|                                |       |   |
|--------------------------------|-------|---|
| Voltage                        | $U_o$ | 3.5 V   |
| Current                        | $I_o$ | 74 mA   |
| Power                          | $P_o$ | 64 mW   |
| Equipment                      |       | terminals 1+, 2 / 3-  |
| Voltage                        | $U_i$ | 30 V  |
| Current                        | $I_i$ | 115 mA  |
| Voltage                        | $U_o$ | 25.4 V  |
| Current                        | $I_o$ | 115 mA  |
| Power                          | $P_o$ | 584 mW  |
| Equipment                      |       | terminals 5-, 6+  |
| Voltage                        | $U_i$ | 30 V  |
| Current                        | $I_i$ | 115 mA  |
| Voltage                        | $U_o$ | 8.7 V   |
| Current                        | $I_o$ | 0 mA  |
| Output                         |       |   |
| Maximum safe voltage           | $U_m$ | 250 V (Attention! The rated voltage can be lower.)  |
| Certificate                    |       | TÜV 99 ATEX 1499 X  |
| Marking                        |       | ⊕ II 3G Ex nA II T4 [device in zone 2]  |
| Galvanic isolation             |       |   |
| Input/Output                   |       | safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V   |
| Input/power supply             |       | safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V   |
| Directive conformity           |       |   |
| Directive 2014/34/EU           |       | EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010  |
| <b>International approvals</b> |       |   |
| UL approval                    |       |   |
| Control drawing                |       | 116-0428 (cULus)  |
| IECEX approval                 |       | IECEX BAS 04.0016X<br>IECEX CML 15.0055X  |
| Approved for                   |       | [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I<br>Ex nA IIC T4 Gc  |
| <b>General information</b>     |       |   |
| Supplementary information      |       | Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> . |

## Accessories

### Power feed module KFD2-EB2

The power feed module is used to supply the devices with 24 V DC via the Power Rail. The fuse-protected power feed module can supply up to 150 individual devices depending on the power consumption of the devices. Collective error messages received from the Power Rail activate a galvanically-isolated mechanical contact.

### Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical insert and an aluminium profile rail 35 mm x 15 mm. To make electrical contact, the devices are simply engaged.

### Profile Rail K-DUCT with Power Rail

The profile rail K-DUCT is an aluminum profile rail with Power Rail insert and two integral cable ducts for system and field cables. Due to this assembly no additional cable guides are necessary.



*Power Rail and Profile Rail must not be fed via the device terminals of the individual devices!*