

Features

- 2-channel isolated barrier
- 24 V DC supply (Power Rail)
- Dry contact or NAMUR inputs
- Isolated passive transistor output, non-polarized
- Line fault detection (LFD)
- Reversible mode of operation
- Up to SIL2 acc. to IEC 61508

Function

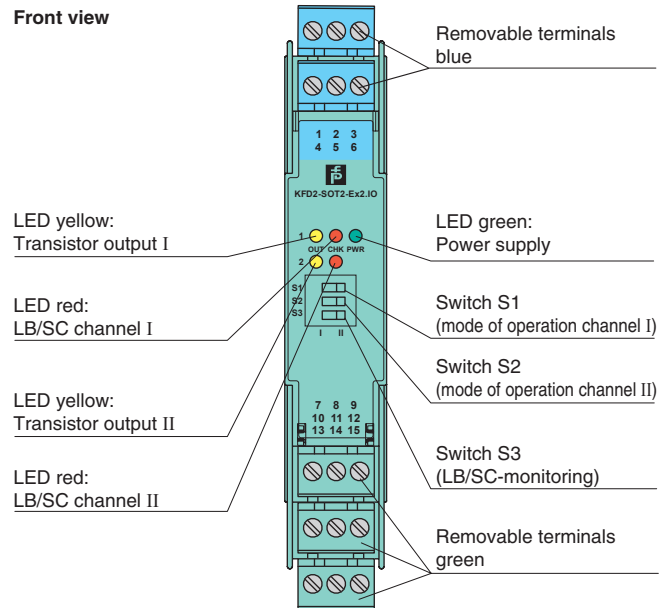
This isolated barrier is used for intrinsic safety applications. It transfers digital signals (NAMUR sensors/mechanical contacts) from a hazardous area to a safe area.

Each proximity sensor or switch controls a passive transistor output for the safe area load. Both transistor outputs are isolated from each other and isolated from the power supply. The normal output state can be reversed using switch S1 for channel I and switch S2 for channel II. Switch S3 enables or disables line fault detection of the field circuit.

During an error condition, the transistors revert to their de-energized state and LEDs indicate the fault according to NAMUR NE44.

A unique collective error messaging feature is available when used with the Power Rail system.

Assembly

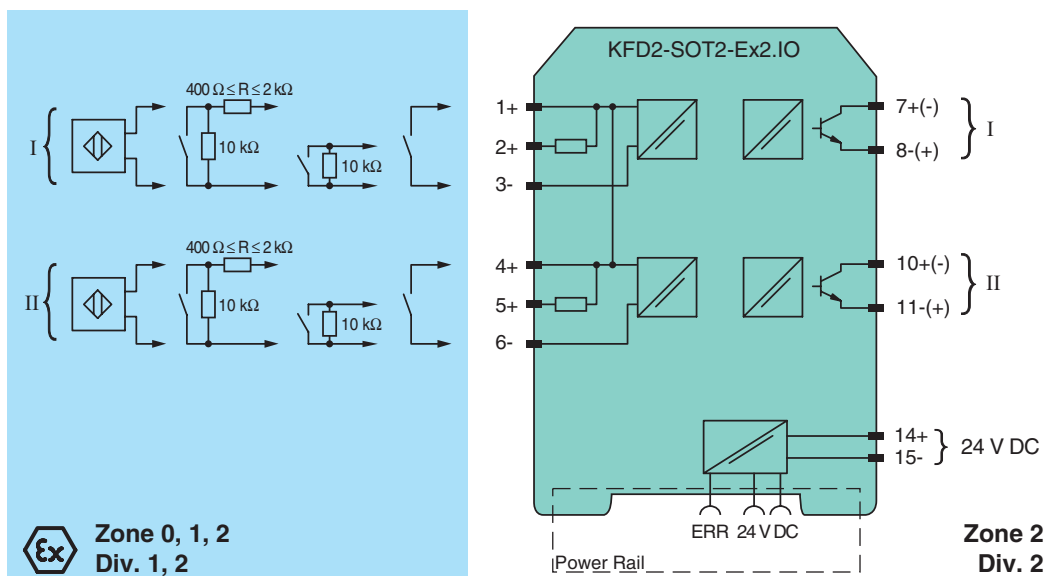


CE



SIL2

Connection

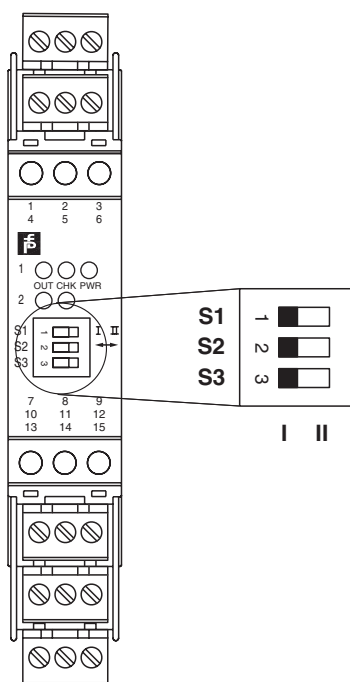


| | | |
|---|----------------|---|
| General specifications | | |
| Signal type | | Digital Input |
| Supply | | |
| Connection | | Power Rail or terminals 14+, 15- |
| Rated voltage | | 20 ... 30 V DC |
| Ripple | | ≤ 10 % |
| Rated current | | ≤ 50 mA |
| Input | | |
| Connection | | terminals 1+, 2+, 3-; 4+, 5+, 6- |
| Rated values | | acc. to EN 60947-5-6 (NAMUR), see system description for electrical data |
| Open circuit voltage/short-circuit current | | approx. 8 V DC / approx. 8 mA |
| Switching point/switching hysteresis | | 1.2 ... 2.1 mA / approx. 0.2 mA |
| Line fault detection | | breakage I ≤ 0.1 mA , short-circuit I > 6 mA |
| Output | | |
| Connection | | output I: terminals 7, 8 ; output II: terminals 10, 11 |
| Switching voltage | | ≤ 30 V |
| Switching current | | ≤ 100 mA , short-circuit protected |
| Signal level | | 1-signal: switching voltage - 2.5 V max. at 10 mA switching current or 3 V max. at 100 mA switching current 0-signal: switched off (off-state current ≤ 10 µA) |
| Output I, II | | signal ; electronic output, passive |
| Collective error message | | Power Rail |
| Transfer characteristics | | |
| Switching frequency | | ≤ 5 kHz |
| Electrical isolation | | |
| Input/Output | | reinforced insulation acc. to IEC 62103, rated insulation voltage 300 V _{rms} |
| Input/power supply | | reinforced insulation acc. to IEC 62103, rated insulation voltage 300 V _{rms} |
| Output/power supply | | basic insulation according to IEC 62103, rated insulation voltage 50 V _{eff} |
| Input/input | | not available |
| Output/output | | basic insulation according to IEC 62103, rated insulation voltage 50 V _{eff} |
| Directive conformity | | |
| Electromagnetic compatibility | | |
| Directive 2004/108/EC | | EN 61326-1:2006 |
| Conformity | | |
| Electrical isolation | | IEC 62103:2003 |
| Electromagnetic compatibility | | NE 21:2004 |
| Protection degree | | IEC 60529:2001 |
| Input | | EN 60947-5-6:2000 |
| Ambient conditions | | |
| Ambient temperature | | -20 ... 60 °C (-4 ... 140 °F) |
| Mechanical specifications | | |
| Protection degree | | IP20 |
| Mass | | approx. 150 g |
| Dimensions | | 20 x 119 x 115 mm (0.8 x 4.7 x 4.5 in) , housing type B2 |
| Mounting | | on 35 mm DIN mounting rail acc. to EN 60715:2001 |
| Data for application in connection with Ex-areas | | |
| EC-Type Examination Certificate | | PTB 00 ATEX 2035 , for additional certificates see www.pepperl-fuchs.com |
| Group, category, type of protection | | Ⓔ II (1) G [Ex ia] IIC Ⓔ II (1) D [Ex ia] IIIC |
| Input | | Ex ia IIC, Ex ia IIIC |
| Voltage | U _o | 10.5 V |
| Current | I _o | 13 mA |
| Power | P _o | 34 mW (linear characteristic) |
| Supply | | |
| Maximum safe voltage | U _m | 40 V DC (Attention! The rated voltage can be lower.) |
| Output | | |
| Maximum safe voltage | U _m | 40 V DC (Attention! The rated voltage can be lower.) |
| EC-Type Examination Certificate | | DMT 01 ATEX E 133 |
| Group, category, type of protection | | Ⓔ I (M1) [Ex ia] I |
| Statement of conformity | | TÜV 99 ATEX 1499 X , observe statement of conformity |
| Group, category, type of protection, temperature class | | Ⓔ II 3G Ex nA II T4 |
| Electrical 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 |

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|--------------------------------|--|
| Directive conformity | |
| Directive 94/9/EC | EN 60079-0:2012 , EN 60079-11:2012 , EN 60079-15:2010 , EN 50303:2000 |
| International approvals | |
| FM approval | |
| Control drawing | 116-0035 |
| CSA approval | |
| Control drawing | 116-0047 |
| IECEx approval | IECEx PTB 05.0011 |
| Approved for | [Ex ia] IIC , [Ex ia] I , [Ex ia] IIIC |
| General information | |
| 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 . |

Configuration



Switch position

| S | Function | | Position |
|---|---------------------------------------|-------------------------|----------|
| 1 | Mode of operation Output I active | with high input current | I |
| | | with low input current | II |
| 2 | Mode of operation Output II active | with high input current | I |
| | | with low input current | II |
| 3 | Line fault detection | ON | I |
| | | OFF | II |

Operating status

| Control circuit | Input signal |
|---|--------------------|
| Initiator high impedance/ contact opened | low input current |
| Initiator low impedance/ contact closed | high input current |
| Lead breakage, lead short-circuit | Line fault |

Factory settings: switch 1, 2 and 3 in position I

Accessories

Power feed modules 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 100 individual devices depending on the power consumption of the devices. A galvanically isolated mechanical contact uses the Power Rail to transmit collective error messages.

Power Rail UPR-03

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

The Power Rail must not be fed via the device terminals of the individual devices!