

Ground Fault Detection KFD2-ELD-Ex16

- 16-channel isolated barrier
- 24 V DC supply (Power Rail)
- Analog or digital field device inputs
- Monitors leakage current
- Fault relay contact output
- LED status indication
- Test circuit for validation
- Parallel connection for easy integration
- Conformal coating

24 V DC



Function

This isolated barrier is used for intrinsic safety applications.

The device detects ground faults on field lines.

The 16 channels of the device continuously monitor galvanically isolated circuits and warns if their resistance to ground falls below 10 kΩ.

During an alarm condition, the appropriate channel LED is illuminated and the change-over contact is initiated (S1 = position I). The function of this relay can be reversed with switch S1' (S1' = position II).

A self-test can be activated via the test input of the device. The device reacts by switching the relay. The self-test can be triggered manually by the user or remotely by the control system.

Technical Data

General specifications

| | |
|-------------|--------------|
| Signal type | Analog input |
|-------------|--------------|

Supply

| | |
|---------------|----------------------------------|
| Connection | Power Rail or terminals 44+, 45- |
| Rated voltage | U_r 20 ... 30 V DC |
| Ripple | ≤ 10 % |
| Rated current | I_r ≤ 50 mA |

Input

| | |
|-------------------|--|
| Connection side | field side |
| Connection | intrinsically safe: terminals 1 ... 16 non-intrinsically safe: terminals 28, 29 |
| Ground connection | terminal 17 |
| Rated values | 5 V _{pp} , 0.1 mA; rectangular |
| Function | Test input: 24 V DC / 5 mA; non-polarized |

Output

| | |
|-----------------|--|
| Connection side | control side |
| Connection | terminals 19, 20, 21 |
| Output | signal ; relay |
| Contact loading | 253 V AC/2 A /cos φ > 0.7; 40 V DC/2 A resistive load; |
| Mechanical life | 10 ⁷ switching cycles |

Transfer characteristics

| | |
|----------------|--------|
| Response delay | ≤ 50 s |
|----------------|--------|

Galvanic isolation

| | |
|---------------------|--|
| Input/Output | reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff} |
| Input/power supply | reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff} |
| Output/power supply | reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff} |

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

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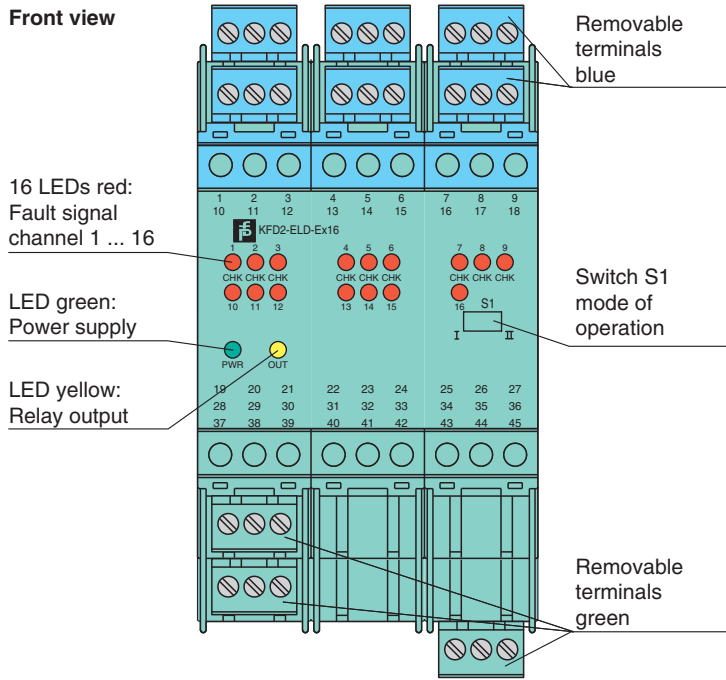
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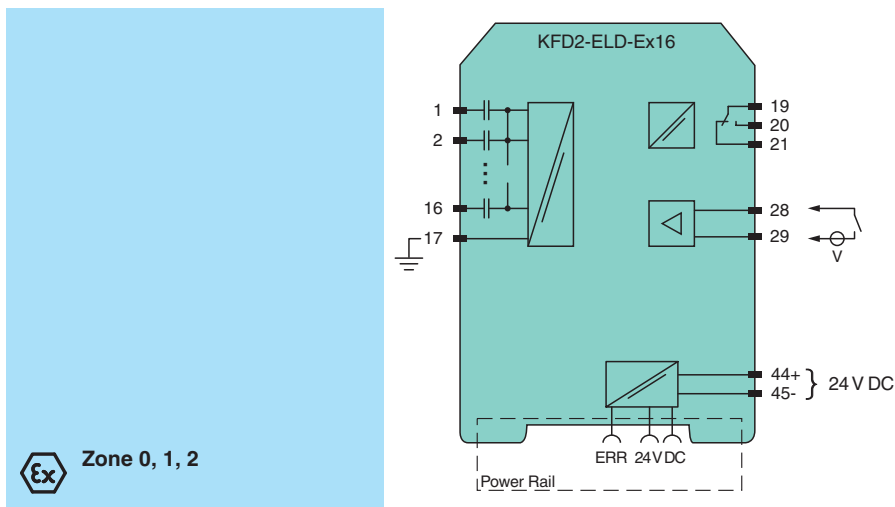
Technical Data

| | | |
|--|----------------|---|
| Indicators/settings | | |
| Display elements | | LEDs |
| Control elements | | DIP-switch |
| Configuration | | via DIP switches |
| Labeling | | space for labeling at the front |
| Directive conformity | | |
| Electromagnetic compatibility | | |
| Directive 2014/30/EU | | EN 61326-1:2013 (industrial locations) |
| Low voltage | | |
| Directive 2014/35/EU | | EN 61010-1:2010 |
| Conformity | | |
| Electromagnetic compatibility | | |
| | | NE 21:2007 |
| Degree of protection | | |
| | | IEC 60529:2001 |
| Ambient conditions | | |
| Ambient temperature | | |
| | | -20 ... 60 °C (-4 ... 140 °F) |
| Mechanical specifications | | |
| Degree of protection | | |
| | | IP20 |
| Connection | | |
| | | screw terminals |
| Mass | | |
| | | approx. 260 g |
| Dimensions | | |
| | | 60 x 119 x 115 mm (2.4 x 4.7 x 4.5 inch) , housing type D2 |
| Mounting | | |
| | | on 35 mm DIN mounting rail acc. to EN 60715:2001 |
| Data for application in connection with hazardous areas | | |
| EU-type examination certificate | | |
| | | TÜV 00 ATEX 1585 |
| Marking | | |
| | | ⊕ II (1)G [Ex ia Ga] IIC ⊕ II (1) D [Ex ia Da] IIIC ⊕ I (M1) [Ex ia Ma] I |
| Voltage | U _o | 7.2 V |
| Current | I _o | 1.7 mA |
| Power | P _o | 3 mW |
| Supply | | |
| Maximum safe voltage | U _m | 40 V DC (Attention! The rated voltage can be lower.) |
| Collective error message | | |
| Maximum safe voltage | U _m | 40 V (Attention! The rated voltage can be lower.) |
| 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 |
| General information | | |
| Supplementary information | | |
| | | Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com . |

Assembly




Connection



Accessories

| | | |
|--|------------------|---|
| | KFD2-EB2 | Power Feed Module |
| | UPR-03 | Universal Power Rail with end caps and cover, 3 conductors, length: 2 m |
| | UPR-03-M | Universal Power Rail with end caps and cover, 3 conductors, length: 1,6 m |
| | UPR-03-S | Universal Power Rail with end caps and cover, 3 conductors, length: 0.8 m |
| | K-DUCT-BU | |

Accessories

| | | |
|---|-------------------------|---|
|  | K-DUCT-BU-UPR-03 | Profile rail with UPR-03- * insert, 3 conductors, wiring comb field side blue |
|---|-------------------------|---|

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