

# 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.

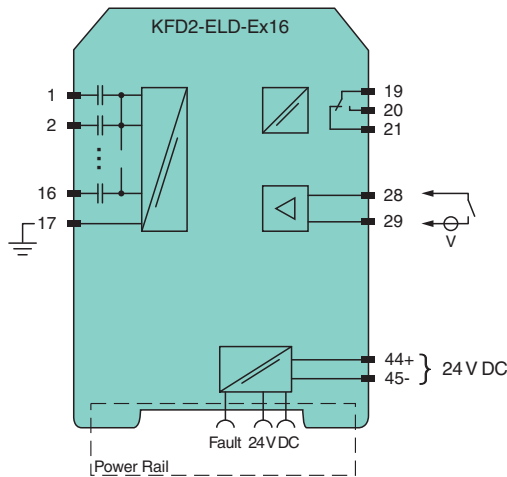
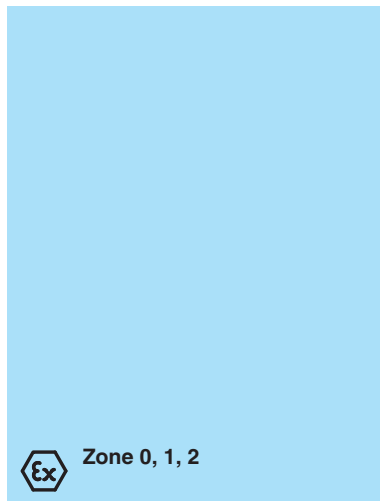
The device detects ground faults on field lines.

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.

### Connection



### Technical Data

#### General specifications

Signal type	Analog input		
<b>Supply</b>			
Connection	Power Rail or terminals 44+, 45-		
Rated voltage	U <sub>r</sub>	20 ... 30 V DC	
Ripple		≤ 10 %	
Rated current	I <sub>r</sub>	≤ 50 mA	
<b>Input</b>			
Connection side	field side		

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

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## Technical Data

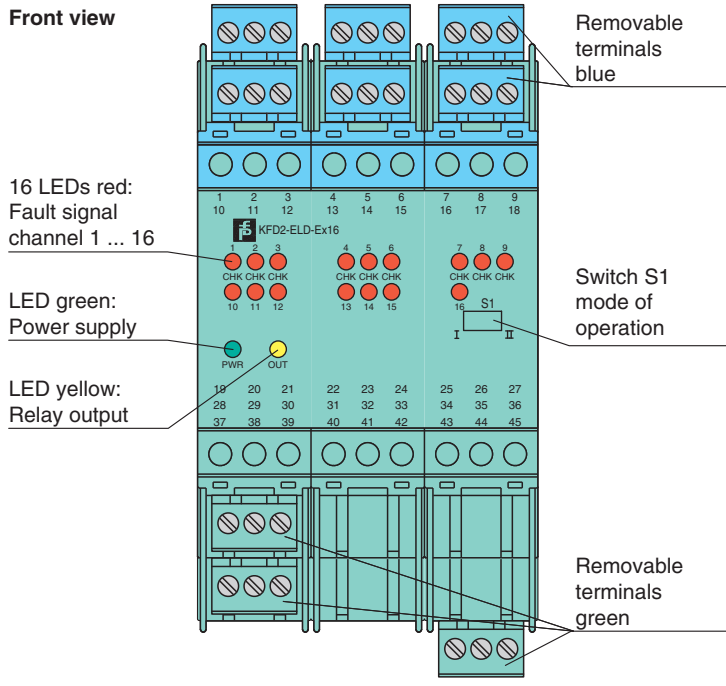
Connection	intrinsically safe: terminals 1 ... 16 non-intrinsically safe: terminals 28, 29	
Ground connection	terminal 17	
Rated values	5 V <sub>pp</sub> , 0.1 mA; rectangular	
Function	Test input: 24 V DC / 5 mA; non-polarized	
<b>Output</b>		
Connection side	control side	
Connection	terminals 19, 20, 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 <sup>7</sup> switching cycles	
<b>Transfer characteristics</b>		
Response delay	≤ 50 s	
<b>Galvanic isolation</b>		
Input/Output	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>	
Input/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>	
Output/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>	
<b>Indicators/settings</b>		
Display elements	LEDs	
Control elements	DIP switch	
Configuration	via DIP switches	
Labeling	space for labeling at the front	
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)	
Low voltage		
Directive 2014/35/EU	EN 61010-1:2010	
<b>Conformity</b>		
Electromagnetic compatibility	NE 21:2007	
Degree of protection	IEC 60529:2001	
<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. 260 g	
Dimensions	60 x 119 x 115 mm (2.4 x 4.7 x 4.5 inch) (W x H x D) , housing type D2	
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	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 <sub>o</sub>	7.2 V
Current	I <sub>o</sub>	1.7 mA
Power	P <sub>o</sub>	3 mW
Supply		
Maximum safe voltage	U <sub>m</sub>	40 V DC (Attention! The rated voltage can be lower.)
Collective error message		
Maximum safe voltage	U <sub>m</sub>	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		

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**Technical Data**

Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-11:2012
<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> .

**Assembly**



**Matching System Components**

	<b>KFD2-EB2</b>	Power Feed Module
	<b>UPR-03</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 2 m
	<b>UPR-03-M</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 1,6 m
	<b>UPR-03-S</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 0.8 m
	<b>K-DUCT-BU</b>	Profile rail, wiring comb field side, blue
	<b>K-DUCT-BU-UPR-03</b>	Profile rail with UPR-03- * insert, 3 conductors, wiring comb field side, blue



**Accessories**

	<b>KF-ST-5GN</b>	Terminal block for KF modules, 3-pin screw terminal, green
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**Accessories**

	<p><b>KF-ST-5BU</b></p>	<p>Terminal block for KF modules, 3-pin screw terminal, blue</p>
	<p><b>KF-CP</b></p>	<p>Red coding pins, packaging unit: 20 x 6</p>

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