

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.

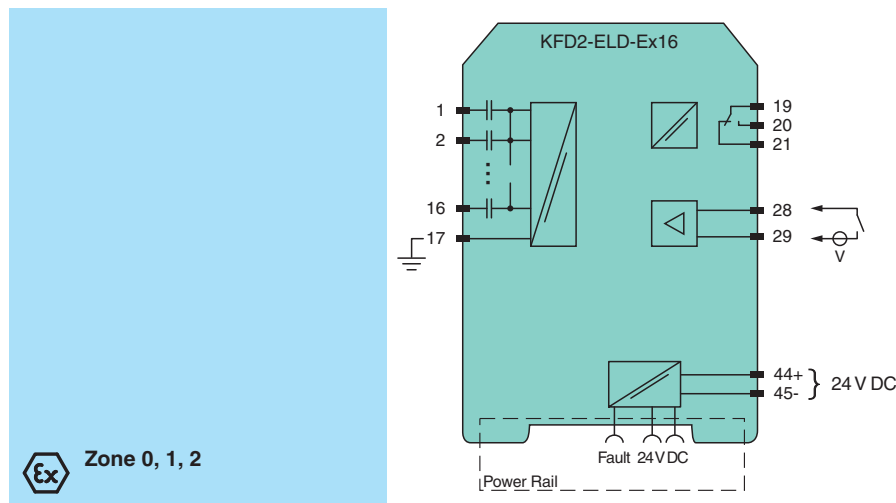
The device detects ground faults on field lines.

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

Supply

Connection Power Rail or terminals 44+, 45-

Rated voltage U_r 20 ... 30 V DC

Ripple $\leq 10\%$

Rated current I_r $\leq 50\text{ mA}$

Input

Connection side field side

Technical Data

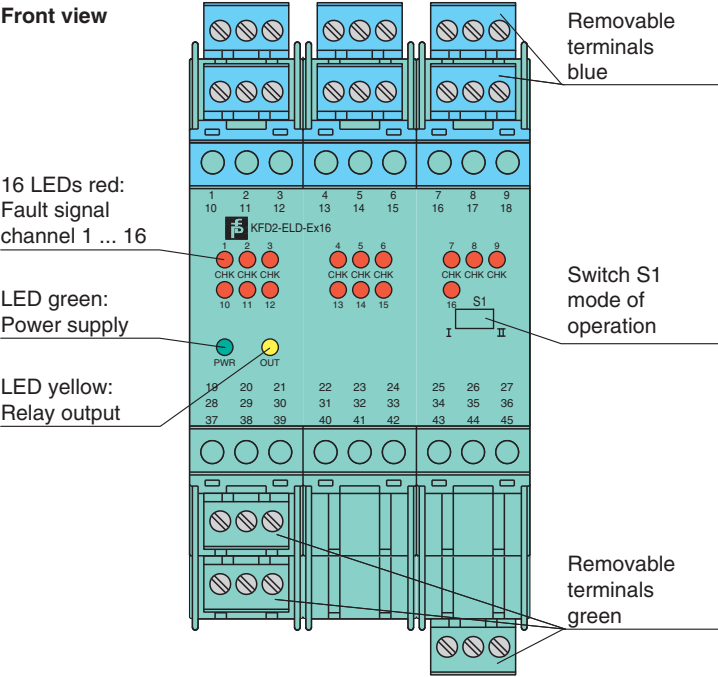
Connection	intrinsically safe: terminals 1 ... 16 non-intrinsically safe: terminals 28, 29	
Ground connection		terminal 17
Rated values	5 V _{pp} , 0.1 mA; rectangular	
Function		Test input: 24 V DC / 5 mA; non-polarized
Output		
Connection side		control side
Connection		terminals 19, 20, 21
Output		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}
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) (W x H x D) , 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		

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Technical Data

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



Matching System Components



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

Accessories

	KF-ST-5GN	Terminal block for KF modules, 3-pin screw terminal, green
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Accessories

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

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