

## Earth Fault Detection

Control loop failures may be attributed to sustained arcing ground faults that are not interrupted quickly because they involve current levels below normal load current and thus do not activate fuses or circuit breakers. These current levels, while low in comparison to faults involving two or more phases, are still high enough to dissipate substantial energy at the point of the fault, resulting in melting of metal, burning of insulation, and even explosive arcing. Detecting and quickly interrupting these low levels of ground fault current is the job of the KFD2-ELD-Ex16.

## 16-Channel Earth Leakage Detector




### Model Number KFD2-ELD-Ex16

- 16 channel
- 24 VDC supply/Power Rail compatible
- Lead breakage (LB) monitoring and short-circuit (SC) monitoring
- Group fault indication via relay output
- Individual channel fault LED

The KFD2-ELD-Ex16 is used to detect ground faults on field lines. This 16-channel unit continuously monitors floating intrinsically safe circuits and warns if their resistance to ground falls below 10 k $\Omega$ . With an input test facility, this allows for system tests to be done either manually or remotely.

The KFD2-ELD-Ex16 provides a group fault relay with selectable mode of operation. Ground faults are indicated by a red LED and through the collective error output via Power Rail.

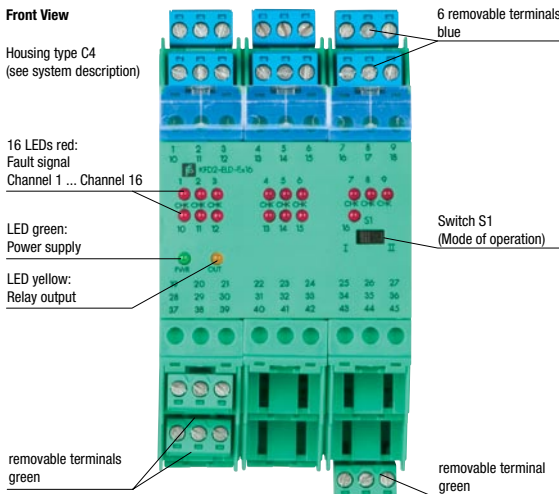
### Technical Data

<b>POWER SUPPLY</b>	Power Rail or terminals 44+, 45-
Rated voltage	20-35 VDC
Rated current	$\leq 50$ mA
<b>INPUT (not intrinsically safe)</b>	Terminals 1-16
Test function	24 VDC/5 mA; non-polarized
<b>INPUT (intrinsically safe)</b>	Terminals 28, 29
Signal-connection to earth	Terminal 17
Nominal data	5 V <sub>pp</sub> , 0.1 mA; rectangular
<b>OUTPUT (not intrinsically safe)</b>	
Output 1 (SPDT relay)	Terminals 19, 20, 21
Contact load	253 VAC/2 A/cos $\phi \geq 0.7$ ; 40 VDC/2 A
Mechanical life	10 <sup>7</sup> switching cycles
<b>TRANSFER CHARACTERISTICS</b>	
Rise time	$\leq 50$ s
<b>CERTIFICATES</b>	See page 237 for entity parameters
  Zone 0, 1, 2	TÜV 00 ATEX 1585,  II (1) GD [EEx ia] IIC
<b>MECHANICAL</b>	
Housing	Type C4 see page 454
Dimensions	4.21" x 2.36" x 4.53" (107 x 60 x 115 mm)
Weight	8.8 oz. ( $\approx$ 260 g)
<b>AMBIENT TEMPERATURE</b>	-4°F to +140°F (-20°C to +60°C)

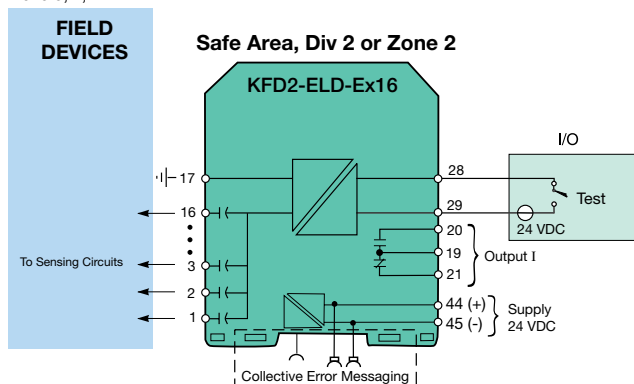


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### Connection Diagram



Class I; Div 1, 2  
Zone 0, 1, 2



**Earth Fault Detection Entity Parameters**



**European ATEX Entity Parameters**

Model Number	Terminals	U <sub>o</sub> (V)	I <sub>o</sub> (mA)	P <sub>o</sub> (mW)	Groups C <sub>a</sub> (μF)			Groups L <sub>a</sub> (mH)		
					IIC	IIB	IIA	IIC	IIB	IIA
KFD2-ELD-Ex16	1-16, 17	7.2	1.7	3	13.5	240	1000	1000	1000	1000

