

**Features**

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input for approved dry contacts or SN/S1N sensors
- Active voltage output
- Relay output
- Fault indication output
- Line fault detection (LFD)
- Up to SIL3 acc. to IEC 61508
- Up to PL d acc. to EN/ISO 13849

**Function**

This isolated barrier is used for intrinsic safety applications. The device transfers digital signals (SN/S1N proximity sensors or approved dry contacts) from a hazardous area to a safe area.

The input controls one active voltage output and one relay contact output with a NO contact.

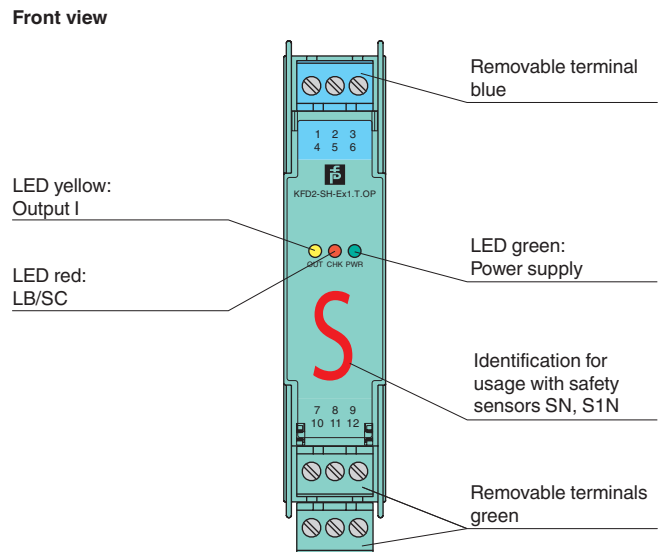
Unlike an SN/S1N series proximity sensor, a mechanical contact requires a 10 kΩ resistor to be placed across the contact in addition to a 1.5 kΩ resistor in series.

Lead breakage (LB) and short circuit (SC) conditions of the control circuit are continuously monitored.

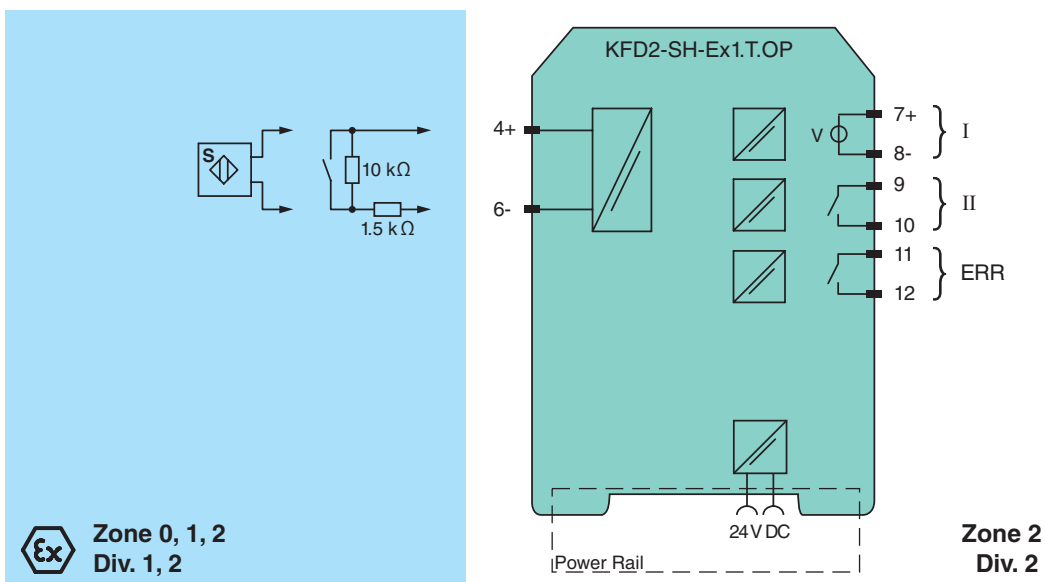
During an fault condition, the fault indication output and the outputs I and II de-energize.

For safety applications up to SIL3, output I must be used. For safety applications up to SIL2, output I and output II can be used.

**Assembly**




**Connection**



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

<b>General specifications</b>		
Signal type		Digital Input
<b>Functional safety related parameters</b>		
Safety Integrity Level (SIL)		SIL 3
Performance level (PL)		PL d
<b>Supply</b>		
Connection		Power Rail
Rated voltage	$U_r$	20 ... 30 V DC
Ripple		≤ 10 %
Rated current	$I_r$	≤ 100 mA
Power dissipation		1.5 W
Power consumption		≤ 1.7 W
<b>Input</b>		
Connection side		field side
Connection		terminals 4+, 6-
Open circuit voltage/short-circuit current		approx. 8.4 V DC / approx. 11.7 mA
Lead resistance		≤ 50 Ω , cable capacitances and inductances must be observed in hazardous areas
Switching point		
Relay de-energized		$I < 2.1 \text{ mA}$ and $I > 5.9 \text{ mA}$ , output switched off
Relay energized		$2.8 \text{ mA} < I < 5.3 \text{ mA}$ , output switched on
Response delay		≤ 1 ms
<b>Output</b>		
Connection side		control side
Connection		output I: terminals 7+, 8- ; output II: terminals 9, 10 ; output III: terminals 11, 12
Output I		active voltage output, short-circuit proof 0-signal: 0 V 1-signal: 20 ... 31 V DC at max. 15 mA fault: 0 V
Output II		relay
Contact loading		48 V AC/DC 250 mA
Mechanical life		≤ 20 x 10 <sup>6</sup> switching cycles
Output III		relay , fault signal
Contact loading		48 V AC/DC 250 mA
Mechanical life		≤ 20 x 10 <sup>6</sup> switching cycles
<b>Transfer characteristics</b>		
Switching frequency		
Output I		≤ 50 Hz
Output II		≤ 5 Hz
Output III		≤ 5 Hz
<b>Indicators/settings</b>		
Display elements		LEDs
Labeling		space for labeling at the front
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Machinery Directive		
Directive 2006/42/EC		EN/ISO 13849-1:2008
<b>Conformity</b>		
Electromagnetic compatibility		NE 21:2011
Degree of protection		IEC 60529:2001
Safety		IEC/EN 61508:2010
<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. 150 g
Dimensions		20 x 107 x 115 mm (0.8 x 4.2 x 4.5 inch) , housing type B1
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		PTB 00 ATEX 2041
Marking		 II (1)GD [EEx ia] IIC [circuit(s) in zone 0/1/2]

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Input		EEx ia IIC
Voltage	$U_o$	9.56 V
Current	$I_o$	16.8 mA
Power	$P_o$	41 mW (linear characteristic)
Supply		
Maximum safe voltage	$U_m$	40 V AC/DC (Attention! The rated voltage can be lower.)
Output		
Contact loading		48 V AC/DC 250 mA
Maximum safe voltage	$U_m$	60 V AC/DC (Attention! The rated voltage can be lower.)
Certificate		TÜV 99 ATEX 1493 X
Marking		Ⓔ II 3G Ex nA nC IIC T4
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 , EN 60079-15:2010
<b>International approvals</b>		
FM approval		
Control drawing		116-0158
<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> .

## Accessories

### Power feed module 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 150 individual devices depending on the power consumption of the devices. Collective error messages received from the Power Rail activate a galvanically-isolated mechanical contact.

### Power Rail UPR-03

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

### Profile Rail K-DUCT with Power Rail

The profile rail K-DUCT is an aluminum profile rail with Power Rail insert and two integral cable ducts for system and field cables. Due to this assembly no additional cable guides are necessary.



*Power Rail and Profile Rail must not be fed via the device terminals of the individual devices!*