Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input for dry contacts or SN/S1N sensors
- Active signal output
- Relay contact output
- Error message output
- For usage in accordance with ISO 13849-1
- Line fault detection (LFD)
- Up to SIL3 acc. to IEC 61508

Function

This isolated barrier is used for intrinsic safety applications. It transfers digital signals (SN/S1N proximity sensors and approved mechanical contacts) from a hazardous area to a safe area. It has an additional protective circuitry to maintain a reliable safety function.

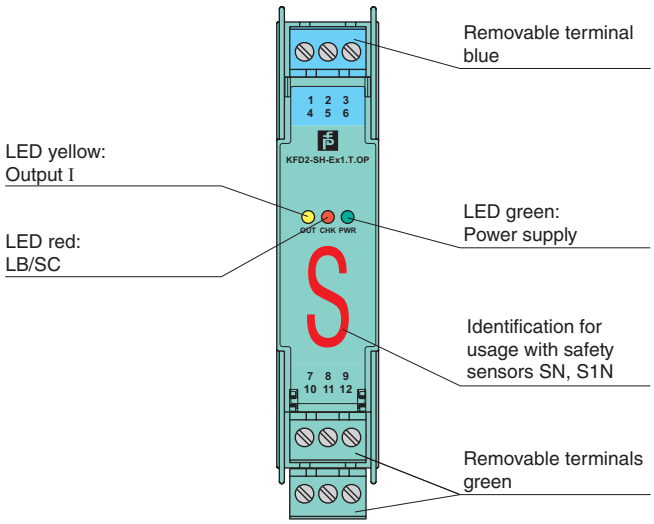
The proximity sensor or switch controls a safety-related electronic output (output I) and a relay output (output II) with a form A normally open relay contact. Lead breakage (LB) and short circuit (SC) conditions are continuously monitored.

During an error condition, fault output energizes and outputs I and II de-energize.

For safety applications, terminals 7 and 8 (output I) must be used.

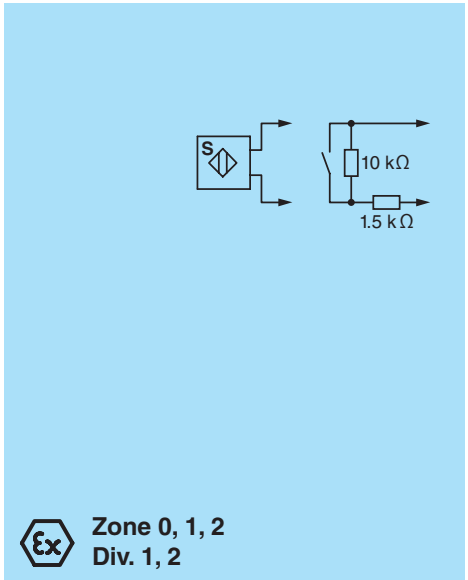
Assembly

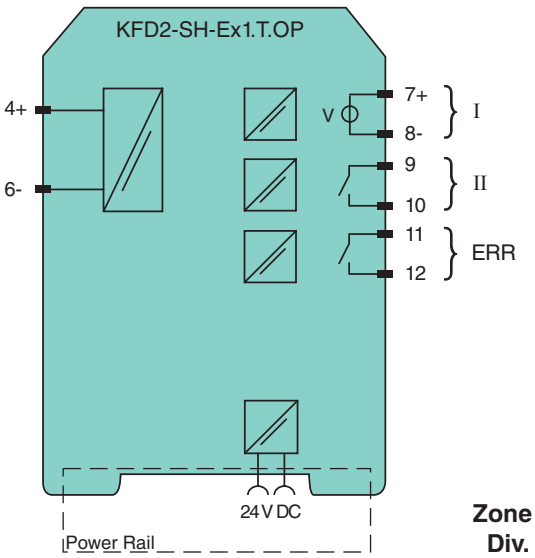
Front view



SIL3

Connection





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General specifications	
Signal type	Digital input
Supply	
Connection	Power Rail
Rated voltage	20 ... 30 V DC
Ripple	≤ 10 %
Rated current	≤ 100 mA
Power loss	1.5 W
Power consumption	≤ 1.7 W
Input	
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 mA and I > 5.9 mA , output switched off
Relay energized	2.8 mA < I < 5.3 mA , output switched on
Response delay	≤ 1 ms
Output	
Connection	output I: terminals 7+, 8- ; output II: terminals 9, 10 ; output III: terminals 11, 12
Output I	safety oriented ; electronic output, active
Rated voltage	24 V DC (≥ 20 V DC)
Current	> 15 mA (short-circuit current ≤ 25 mA)
Output II	not safety oriented ; relay
Output II and III	
Contact loading	50 V AC/DC, 250 mA
Mechanical life	≤ 20 x 10^6 switching cycles
Output III	not safety oriented , fault signal ; relay
Transfer characteristics	
Switching frequency	
Output I	≤ 50 Hz
Output II	≤ 5 Hz
Output III	≤ 5 Hz
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
Conformity	
Electromagnetic compatibility	NE 21
Protection degree	IEC 60529
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Protection degree	IP20
Mass	approx. 150 g
Dimensions	20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in) , housing type B1
Data for application in connection with Ex-areas	
EC-Type Examination Certificate	PTB 00 ATEX 2041 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	⟨Ex⟩ II (1)GD [EEx ia] IIC [circuit(s) in zone 0/1/2]
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	50 V AC/DC, 250 mA
Maximum safe voltage U_m	60 V AC/DC (Attention! The rated voltage can be lower.)
Statement of conformity	TÜV 99 ATEX 1493 X , observe statement of conformity
Group, category, type of protection, temperature classification	⟨Ex⟩ II 3G Ex nA nC IIC T4
Electrical isolation	
Input/Output	safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
Input/power supply	safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity	
Directive 94/9/EC	EN 50014, EN 50020 , EN 60079-0:2006, EN 60079-15:2005

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International approvals	
FM approval	
Control drawing	116-0158
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com.

Function

Unlike an SN/S1N series NAMUR 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.

For safety applications, terminals 7 and 8 (output I) **must** be used.

Accessories

Power feed modules 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 100 individual devices depending on the power consumption of the devices. A galvanically isolated mechanical contact uses the Power Rail to transmit collective error messages.

Power Rail UPR-03

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

The Power Rail must not be fed via the device terminals of the individual devices!

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