Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Isolated dry contacts or NAMUR inputs
- Isolated passive transistor output
- Line fault detection (LFD)
- Reversible mode of operation

Function

This isolated switch amplifier transfers digital signals (NAMUR sensors/mechanical contacts) from a hazardous area to a safe area.

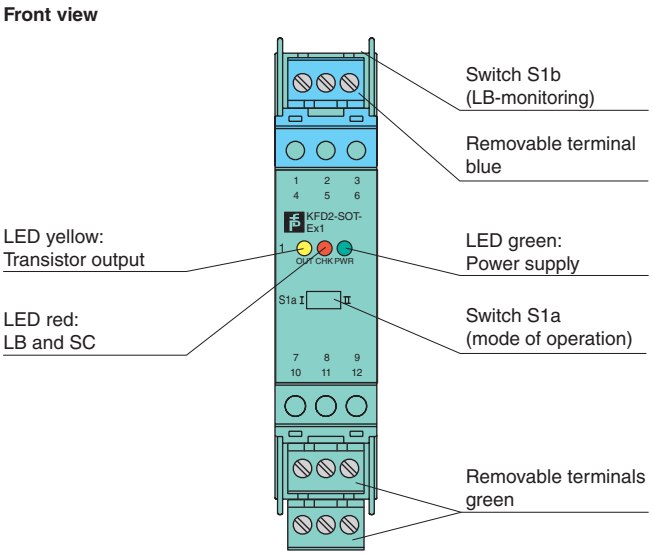
Each proximity sensor or switch controls a passive transistor output for the safe area load. The intrinsically safe inputs and the outputs are isolated from each other. The normal output state can be reversed using switch S1a. Switch S1b enables or disables line fault detection of the field circuit.

During an error condition, relays revert to their de-energized state and LEDs indicate the fault according to NAMUR NE44.

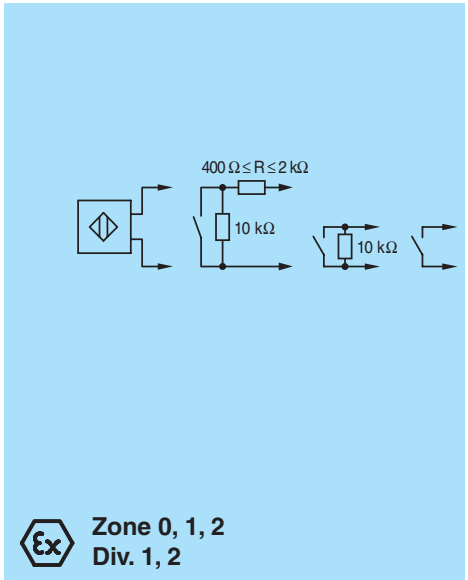
A unique collective error messaging feature is available when used with the Power Rail system.

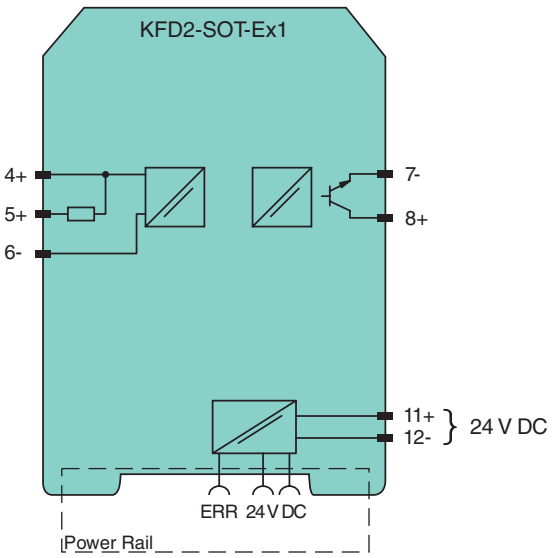
Assembly

Front view



Connection





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General specifications	
Signal type	Digital input
Supply	
Connection	Power Rail or terminals 11+, 12-
Rated voltage	20 ... 35 V DC
Ripple	≤ 10 %
Rated current	≤ 17 mA
Input	
Connection	terminals 4+, 5+, 6-
Open circuit voltage/short-circuit current	approx. 8 V DC / approx. 8 mA
Switching point/switching hysteresis	1.2 ... 2.1 mA / approx. 0.2 mA
Lead monitoring	breakage I ≤ 0.1 mA , short-circuit I > 6 mA
Output	
Connection	terminals 7-, 8+
Switching voltage	≤ 40 V
Switching current	≤ 100 mA , short-circuit proof
Output	electronic output, passive
Collective error message	Power Rail
Signal level	1-signal: switching voltage - 2.5 V max. at 10 mA switching current or 3 V max. at 100 mA switching current 0-signal: switched off (off-state current ≤ 10 µA)
Transfer characteristics	
Switching frequency	≤ 5 kHz
Electrical isolation	
Output/power supply	according to DIN EN 50178, rated insulation voltage 50 V_{eff} AC
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
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 2082 , 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	12.7 V
Current I_o	17.3 mA
Power P_o	55 mW (linear characteristic)
Supply	
Maximum safe voltage U_m	253 V AC / 125 V DC (Attention! U_m is no rated voltage.)
Output	
Maximum safe voltage U_m	60 V AC (Attention! The rated voltage can be lower.)
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
International approvals	
FM approval	
Control drawing	116-0035
CSA approval	
Control drawing	116-0047
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.

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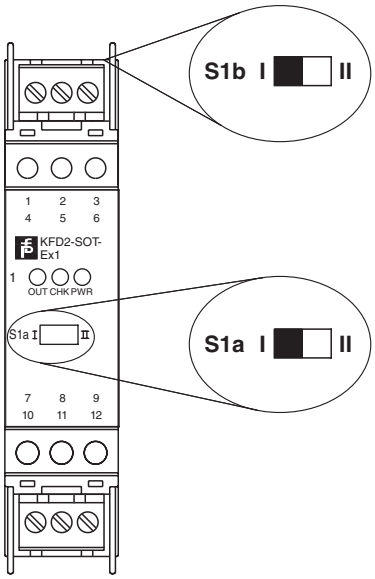
Configuration



Switch position

S	Function		Position
1a	Mode of operation active	with high input current	I
		with low input current	II
1b	Line fault detection	ON	I
		OFF	II

Operating status

Control circuit	Input signal
Initiator high impedance/ contact opened	low input current
Initiator low impedance/ contact closed	high input current
Lead breakage, lead short-circuit	Line fault

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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