Features

- 2-channel isolated barrier
- 24 V DC supply (Power Rail)
- Dry contact or NAMUR inputs
- 2 passive transistor outputs
- Reversible mode of operation
- Line fault detection (LFD)
- Housing width 12.5 mm
- Connection via spring terminals with push-in connection technology
- Up to SIL 2 acc. to IEC 61508

Function

This isolated barrier is used for intrinsic safety applications.

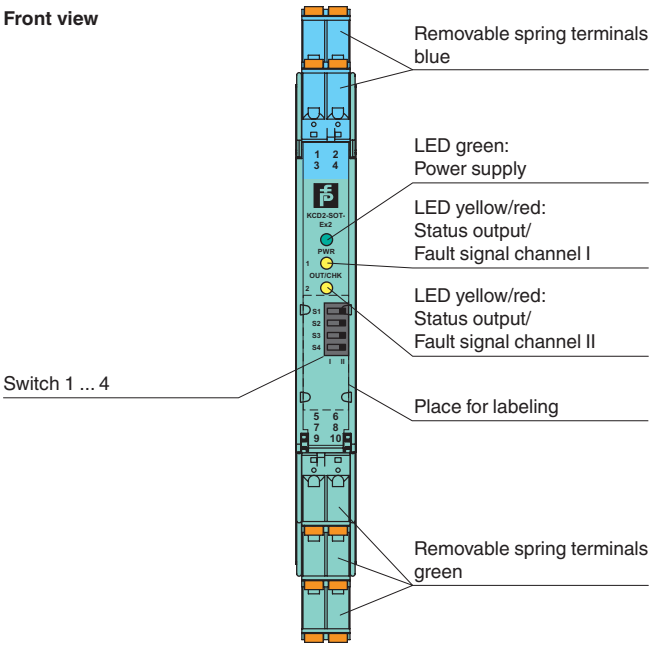
The device transfers digital signals (NAMUR sensors or dry contacts) from a hazardous area to a safe area.

Each input controls a passive transistor output.

Via switches the mode of operation can be reversed and the line fault detection can be switched off.

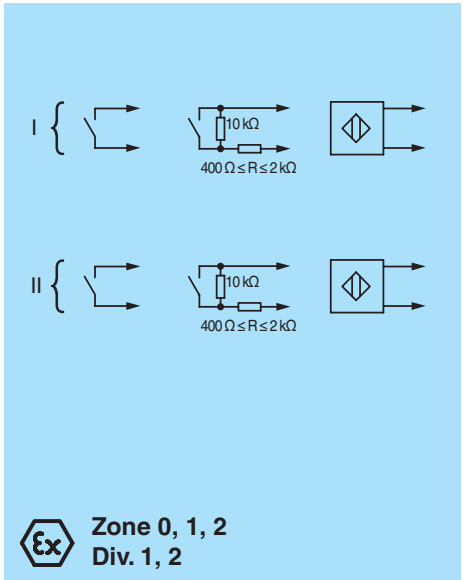
A fault is signalized by LEDs acc. to NAMUR NE44 and a separate collective error message output.

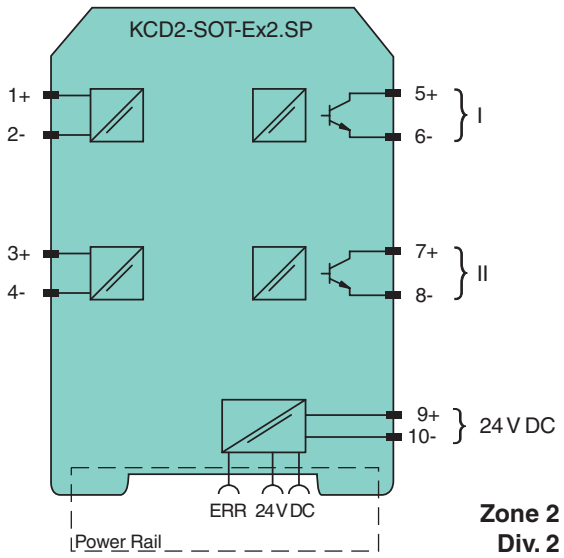
Assembly



SIL 2

Connection





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General specifications		
Signal type		Digital Input
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 2
Supply		
Connection		Power Rail or terminals 9+, 10-
Rated voltage	U_r	19 ... 30 V DC
Ripple		≤ 10 %
Rated current	I_r	30 ... 20 mA
Power dissipation		≤ 800 mW including maximum power dissipation in the output
Input		
Connection side		field side
Connection		terminals 1+, 2-; 3+, 4-
Rated values		acc. to EN 60947-5-6 (NAMUR)
Open circuit voltage/short-circuit current		approx. 10 V DC / approx. 8 mA
Switching point/switching hysteresis		1.2 ... 2.1 mA / approx. 0.2 mA
Line fault detection		breakage I ≤ 0.1 mA , short-circuit I ≥ 6.5 mA
Pulse/Pause ratio		≥ 100 µs / ≥ 100 µs
Output		
Connection side		control side
Connection		terminals 5, 6; 7, 8
Rated voltage	U_r	30 V DC
Rated current	I_r	50 mA
Response time		≤ 200 µs
Signal level		1-signal: (external voltage) - 3 V max. for 50 mA 0-signal: blocked output (off-state current ≤ 10 µA)
Output I		signal ; Transistor
Output II		signal ; Transistor
Collective error message		Power Rail
Transfer characteristics		
Switching frequency		≤ 5 kHz
Galvanic isolation		
Input/Output		reinforced insulation acc. to EN 50178, rated insulation voltage 300 V_{eff}
Input/power supply		reinforced insulation acc. to EN 50178, rated insulation voltage 300 V_{eff}
Output/power supply		basic insulation according to EN 50178, rated insulation voltage 50 V_{eff}
Output/Output		basic insulation according to EN 50178, rated insulation voltage 50 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)
Conformity		
Electromagnetic compatibility		NE 21:2011
Degree of protection		IEC 60529:2001
Protection against electrical shock		IEC 61010-1:2010
Input		EN 60947-5-6:2000
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		spring terminals
Mass		approx. 100 g
Dimensions		12.5 x 114 x 119 mm (0.5 x 4.5 x 4.7 inch) , housing type A2
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas		
EU-type examination certificate		BASEEFA 13 ATEX 0080
Marking		⟨Ex⟩ II (1)G [Ex ia Ga] IIC ⟨Ex⟩ II (1)D [Ex ia Da] IIIC ⟨Ex⟩ I (M1) [Ex ia Ma] I
Input		Ex ia
Voltage	U_o	10.5 V

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Current	I_o	17.1 mA
Power	P_o	45 mW (linear characteristic)
Supply		
Maximum safe voltage	U_m	253 V AC (Attention! U_m is no rated voltage.)
Output		
Maximum safe voltage	U_m	253 V AC (Attention! The rated voltage can be lower.)
Certificate		CML 19 ATEX 4410 X
Marking		Ex II 3G Ex ec IIC T4 Gc
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 IEC 60079-0:2018 , EN 60079-7:2015+A1:2018 , EN 60079-11:2012
International approvals		
UL approval		
Control drawing		116-0374 (cULus)
IECEx approval		
IECEx certificate		IECEx BAS 13.0046 IECEx CML 19.0147X
IECEx marking		[Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I Ex ec IIC T4 Gc
General information		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com.
Accessories		
Optional accessories		- power feed module KFD2-EB2(.R4A.B)(.SP) - universal power rail UPR-03(-M)(-S) - profile rail K-DUCT-BU(-UPR-03)

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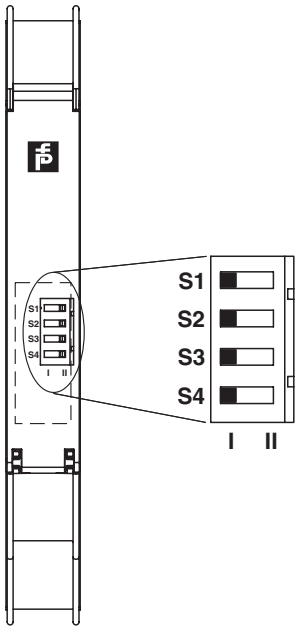
Configuration



Switch settings

S	Function		Position
1	Mode of operation output I (active)	with high input current	I
		with low input current	II
2	Mode of operation output II (active)	with high input current	I
		with low input current	II
3	Line fault detection of the input I	ON	I
		OFF	II
4	Line fault detection of the input II	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

Factory settings: switch 1, 2, 3 and 4 in position I

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