Features

- 2-channel isolated barrier
- 24 V DC supply (Power Rail)
- Dry contact or NAMUR inputs
- · Relay contact output
- Line fault detection (LFD)
- · Housing width 12.5 mm
- Up to SIL2 acc. to IEC 61508

Function

This isolated barrier is used for intrinsic safety applications. It transfers digital signals (NAMUR sensors/mechanical contacts) from a hazardous area to a safe area.

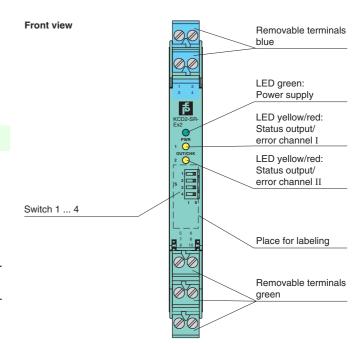
The proximity sensor or switch controls a form A normally open relay contact for the safe area load. The normal output state can be reversed using switches S1 and S2. Switch S3 is used to enable or disable line fault detection of the field circuit.

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.

Due to its compact housing design and low heat dissipation, this device is useful for detecting positions, end stops, and switching states in space-critical applications.

Assembly

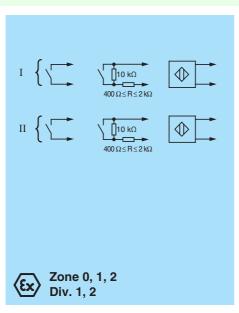


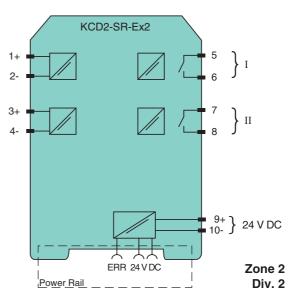




SIL2

Connection





General specifications			
Signal type		Digital Input	
Supply			
Connection		Power Rail or terminals 9+, 10-	
		19 30 V DC	
Rated voltage	U _n		
Ripple		≤ 10 %	
Rated current	I _n	≤ 30 mA	
Power loss		≤ 600 mW	
Power consumption		≤ 600 mW	
Input			
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		≥ 20 ms / ≥ 20 ms	
Output			
Connection		terminals 5, 6; 7, 8	
Output I		signal; relay	
Output II		signal; relay	
Contact loading		253 V AC/2 A/cos ϕ > 0.7; 126.5 V AC/4 A/cos ϕ > 0.7; 30 V DC/2 A resistive load	
Minimum switch current		2 mA / 24 V DC	
Energized/De-energized delay		≤ 20 ms / ≤ 20 ms	
Mechanical life		10 ⁷ switching cycles	
		TO SWITCHING CYCLES	
Transfer characteristics			
Switching frequency		≤ 10 Hz	
Electrical 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		reinforced insulation acc. to EN 50178, rated insulation voltage 300 V _{eff}	
Input/input		Basic insulation according to EN 50178, rated insulation voltage 300 V _{eff}	
Output/Output		reinforced insulation acc. to EN 50178, rated insulation voltage 300 V _{eff}	
Directive conformity		ell	
•			
Electromagnetic compatibility		[N] C4000 4.0040 (industrial leastions)	
Directive 2004/108/EC		EN 61326-1:2013 (industrial locations)	
Low voltage			
Directive 2006/95/EC		EN 61010-1:2010	
Conformity			
Electromagnetic compatibilit	ty	NE 21	
Degree of protection		IEC 60529:2001	
Ambient conditions			
Ambient temperature		-20 60 °C (-4 140 °F)	
Mechanical specifications			
Degree of protection		IP20	
Mass		approx. 100 g	
Dimensions		12.5 x 114 x 119 mm (0.5 x 4.5 x 4.7 in) , housing type A2	
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001	
Data for application in cor	nnection		
with Ex-areas			
EC-Type Examination Certificate		BASEEFA 06 ATEX 0092, for additional certificates see www.pepperl-fuchs.com	
Group, category, type of p	orotection	(₺) (1)G [Ex ia Ga] C, (₺) (1)D [Ex ia Da] C, (₺) (M1) [Ex ia Ma]	
Input		[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I	
Voltage	U _o	10.5 V	
Current	I _o	17.1 mA	
Power	P _o	45 mW (linear characteristic)	
	' 0	10 mm (miodi oridiaotoriolio)	
Supply Maximum anto voltage	11	QEQ V/ AC (Attention III is no voted voltage.)	
Maximum safe voltage	U _m	253 V AC (Attention! U _m is no rated voltage.)	
Output			
Contact loading		253 V AC/2 A/cos φ > 0.7; 126.5 V AC/4 A/cos φ > 0.7; 30 V DC/2 A resistive load	
Maximum safe voltage	U_{m}	253 V AC (Attention! The rated voltage can be lower.)	
Statement of conformity		PF 06 CERT 0972 X	
Group, category, type of protection, temperature class		⟨ II 3G Ex nA nC IIC T4 Gc	

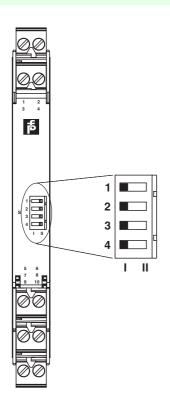


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Contact loading	50 V AC/2 A/cos φ > 0.7; 30 V DC/2 A resistive load	
Electrical isolation		
Input/Output	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V	
Input/power supply	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V	
Directive conformity		
Directive 94/9/EC	EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010	
International approvals		
FM approval		
Control drawing	16-533FM-12 (cFMus)	
UL approval		
Control drawing	16-533FM-12 (cULus)	
IECEx approval	IECEx BAS 06.0025	
Approved for	[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I	
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.pepperfuchs.com.	

Release date 2015-02-1815:30 Date of issue 2015-02-27 216720_eng.xml

Configuration



Switch position

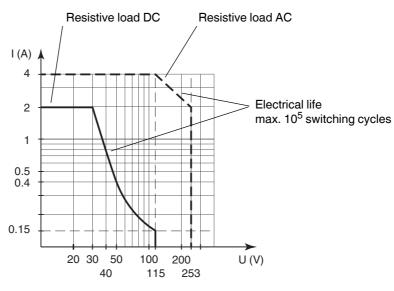
S	Fu	Position	
1	Mode of operation	with high input current	I
	Output I (relay) energized	with low input current	II
2	Mode of operation	with high input current	I
	Output II (relay) energized	with low input current	II
3	Line fault detection	ON	I
	Input I	OFF	II
4	Line fault detection	ON	I
	Input II	OFF	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

Maximum switching power of output contacts



The maximum number of switching cycles is depending on the electrical load and may be higher when reduced currents and voltages are applied.

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!