



- 1-channel
- Control circuit EEx ia IIC
- Reversible mode of operation
- 1 relay output with 1 changeover contact
- EMC acc. to NAMUR NE 21
- LB/SC monitoring
- Up to SIL2 acc. to IEC 61508/IEC 61511

100 V AC
KFA4-SR2-Ex1.W

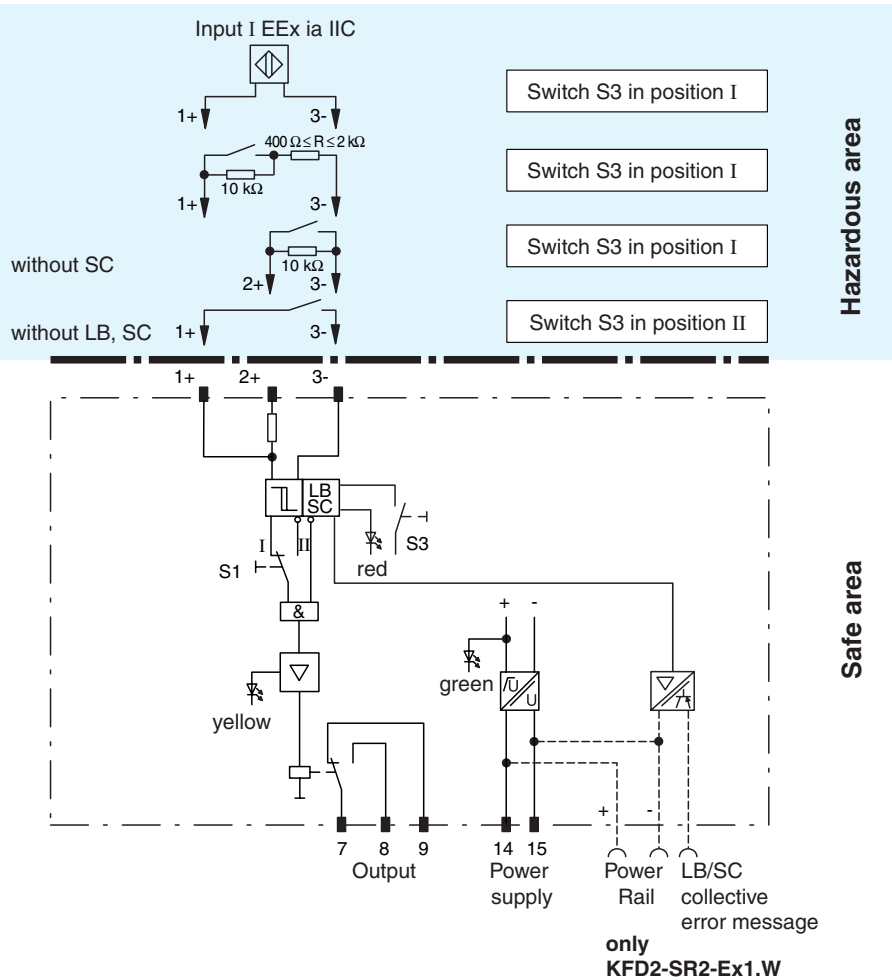
Function

The transformer isolated barrier transfers digital signals from the hazardous area. Sensors per EN 60947-5-6 (NAMUR) and mechanical contacts may be used as alarms. Control circuits are monitored for lead breakage (LB) and short circuit (SC). The external faults are indicated according to NAMUR NE44 by a red flashing LED.

For type KFD2-SR2-Ex1.W, an LB/SC collective error message is in addition transferred through the Power Rail to the power feed module.

The intrinsically safe input is per EN 50020 safely isolated from the output and the power supply. The relay output is in accordance with IEC 61140 safely isolated from the power supply.

Connection



Composition

Front View

Housing type B2
(see system description)

LED yellow:
Relay output

LED red:
LB/SC

Switch S2
(no functions)

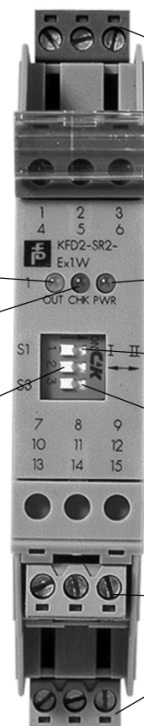
Removable terminal
blue

LED green:
Power supply

Switch S1
(Mode of operation)

Switch S3
(LB/SC-monitoring)

Removable terminals
green



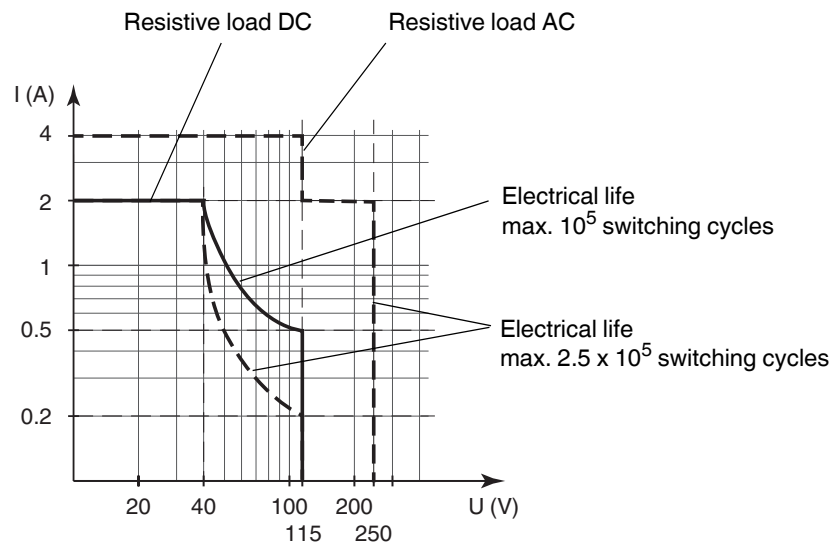
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General specifications	
Signal type	Digital Input
Supply	
Connection	terminals 14, 15
Rated voltage U_n	90 ... 110 V AC , 45 ... 65 Hz
Ripple	-
Rated current I_n	-
Power consumption	1 W
Input	
Connection	terminals 1+, 2+, 3-
Rated values	acc. to EN 60947-5-6 (NAMUR)
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
Line fault detection	breakage $I \leq 0.1$ mA , short-circuit $I > 6$ mA
Pulse/Pause ratio	≥ 20 ms / ≥ 20 ms
Output	
Connection	terminals 7, 8, 9
Output	signal ; relay
Contact loading	253 V AC/2 A/cos $\phi > 0.7$; 126.5 V AC/4 A/cos $\phi > 0.7$; 40 V DC/2 A resistive load
Energized/De-energized delay	approx. 20 ms / approx. 20 ms
Mechanical life	10^7 switching cycles
Transfer characteristics	
Switching frequency	< 10 Hz
Electrical isolation	
Input/Output	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Input/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Output/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
Low voltage	
Directive 2006/95/EC	EN 61010-1:2010
Conformity	
Electromagnetic compatibility	NE 21:2006
Degree of protection	IEC 60529:2001
Input	EN 60947-5-6:2000
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Degree of protection	IP20
Mass	approx. 150 g
Dimensions	20 x 119 x 115 mm (0.8 x 4.7 x 4.5 in) , housing type B2
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with Ex-areas	
EC-Type Examination Certificate	PTB 00 ATEX 2081 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	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	10.6 V
Current I_o	19.1 mA
Power P_o	51 mW (linear characteristic)
Supply	
Maximum safe voltage U_m	110 V AC (Attention! U_m is no rated voltage.)
Output	
Contact loading	253 V AC/2 A/cos $\phi > 0.7$; 126.5 V AC/4 A/cos $\phi > 0.7$; 40 V DC/2 A resistive load
Maximum safe voltage U_m	253 V AC (Attention! The rated voltage can be lower.)
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 , EN 60079-11:2012
International approvals	
FM approval	

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Control drawing	116-0035
CSA approval	
Control drawing	116-0047
IECEX approval	IECEX PTB 11.0031
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.pepperl-fuchs.com .

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.