



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

**100 V AC**  
**KFA4-SR2-Ex2.W**

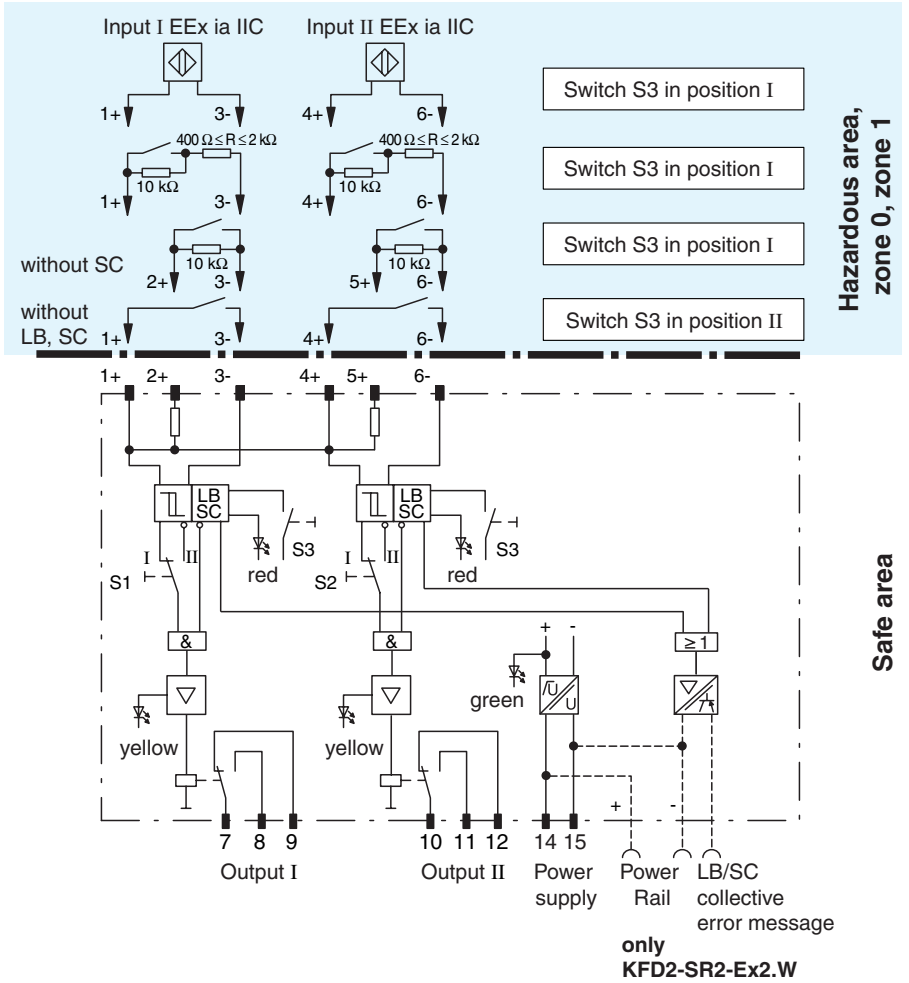
**Function**

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-Ex2.W, an LB/SC collective error message is in addition transferred through the Power Rail to the power feed module.

The intrinsically safe inputs per EN 50020 are safely isolated from the output and the power supply. Relay outputs are galvanically separated from the mains power in accordance with IEC 61140. Relay outputs are galvanically separated from each other in accordance with IEC 61140.

**Connection**



Hazardous area,  
zone 0, zone 1

Safe area

**Composition**

**Front View**

Housing type C  
(see system description)

LED yellow:  
Relay output I

LED red:  
LB/SC channel I

LED yellow:  
Relay output II

LED red:  
LB/SC channel II

Removable terminals  
blue

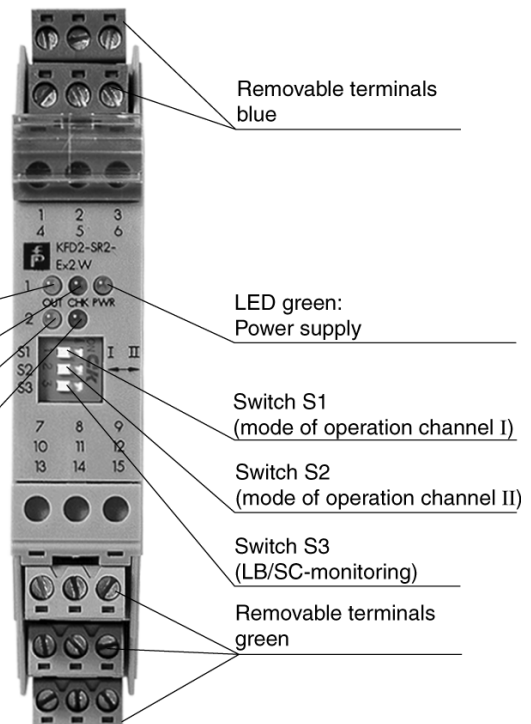
LED green:  
Power supply

Switch S1  
(mode of operation channel I)

Switch S2  
(mode of operation channel II)

Switch S3  
(LB/SC-monitoring)

Removable terminals  
green



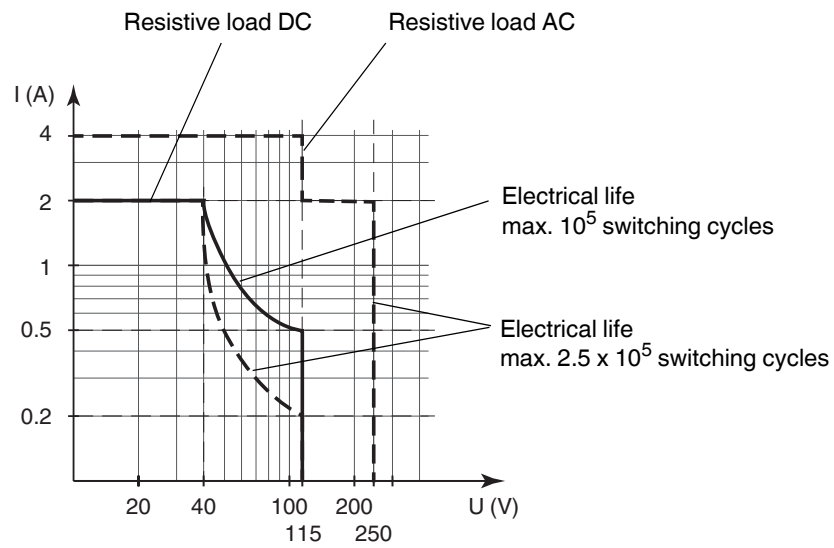
<b>General specifications</b>		
Signal type	Digital Input	
<b>Supply</b>		
Connection	terminals 14, 15	
Rated voltage $U_n$	90 ... 110 V AC , 45 ... 65 Hz	
Ripple	-	
Rated current $I_n$	-	
Power loss	1.2 W	
Power consumption	≤ 1.3 W	
<b>Input</b>		
Connection	terminals 1+, 2+, 3-; 4+, 5+, 6-	
Rated values	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	
<b>Output</b>		
Connection	output I: terminals 7, 8, 9 ; output II: terminals 10, 11, 12	
Output I, II	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 <sup>7</sup> switching cycles	
<b>Transfer characteristics</b>		
Switching frequency	≤ 10 Hz	
<b>Electrical isolation</b>		
Input/Output	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>	
Input/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>	
Output/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>	
Output/Output	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>	
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2004/108/EC	EN 61326-1:2006	
Low voltage		
Directive 2006/95/EC	EN 61010-1:2010	
<b>Conformity</b>		
Electromagnetic compatibility	NE 21:2006	
Degree of protection	IEC 60529:2001	
Input	EN 60947-5-6:2000	
<b>Ambient conditions</b>		
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)	
<b>Mechanical specifications</b>		
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	
<b>Data for application in connection with Ex-areas</b>		
EC-Type Examination Certificate	PTB 00 ATEX 2081 , for additional certificates see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a>	
Group, category, type of protection	$\text{Ex}$ II (1)G [Ex ia Ga] IIC $\text{Ex}$ II (1)D [Ex ia Da] IIIC $\text{Ex}$ 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)	
<b>Supply</b>		
Maximum safe voltage $U_m$	110 V AC (Attention! $U_m$ is no rated voltage.)	
<b>Output</b>		
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.)	
<b>Electrical isolation</b>		
Input/input	not available	
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		

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Directive 94/9/EC	EN 60079-0:2012 , EN 60079-11:2012
<b>International approvals</b>	
FM approval	
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
<b>General information</b>	
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 <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

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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.