



- 2-channel
- Control circuit EEx ia IIC
- Reversible mode of operation
- 1 signal output with 1 changeover contact per channel
- EMC acc. to NAMUR NE 21
- LB/SC monitoring
- LB/SC collective error message via Power Rail
- Up to SIL2 acc. to IEC 61508

**24 V DC**  
**KFD2-SR2-Ex2.W**

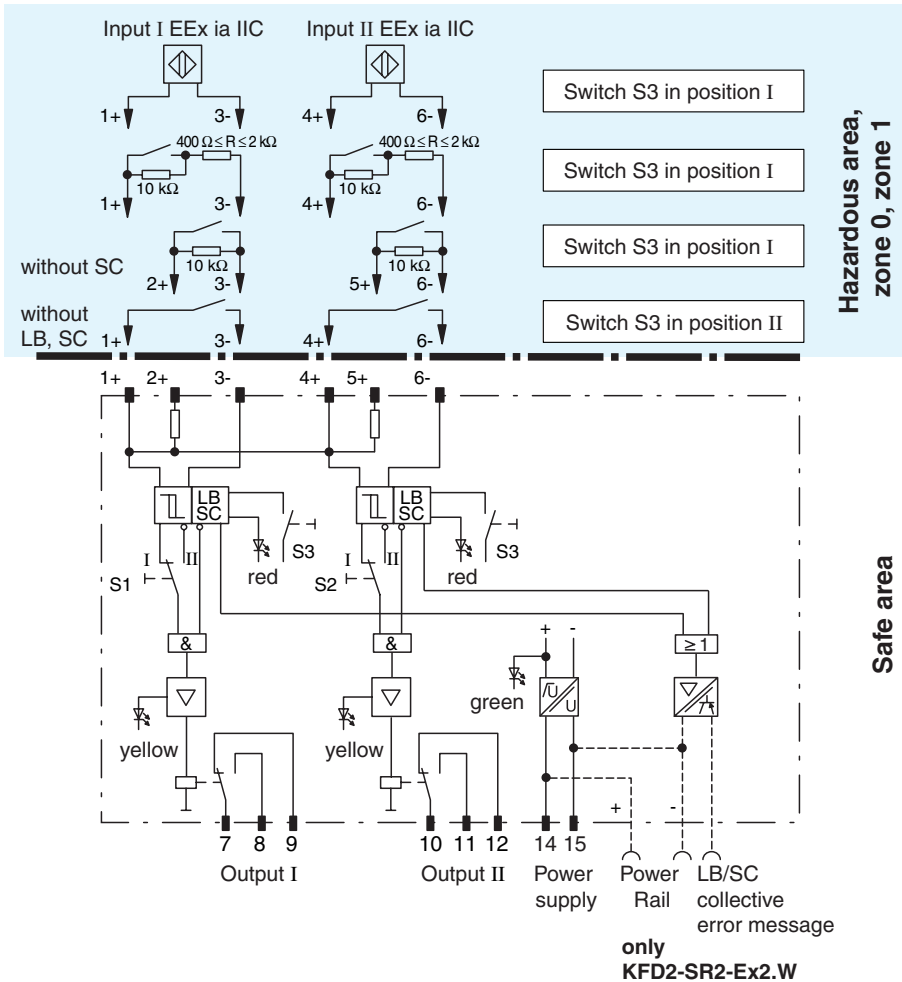
**Function**

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**



**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

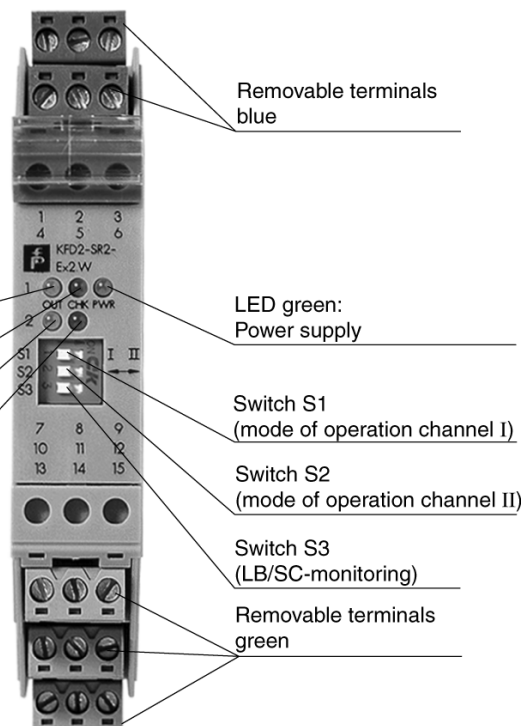
LED green:  
Power supply

Switch S1  
(mode of operation channel I)

Switch S2  
(mode of operation channel II)

Switch S3  
(LB/SC-monitoring)

Removable terminals green



<b>Supply</b>	
Connection	Power Rail or terminals 14+, 15-
Rated voltage	20 ... 30 V DC
Ripple	≤ 10 %
Rated current	≤ 50 mA
Power loss	0.7 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 ≤ 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 and II	signal ; relay
Contact loading	253 V AC / 2 A / cos φ > 0.7; 126.5 V AC / 4 A / cos φ > 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>	
Output/power supply	reinforced insulation acc. to IEC 61140, rated insulation voltage 300 V <sub>eff</sub>
Output/output	reinforced insulation acc. to IEC 61140, rated insulation voltage 300 V <sub>eff</sub>
<b>Directive conformity</b>	
Electromagnetic compatibility	
Directive 89/336/EC	EN 61326, EN 50081-2
<b>Conformity</b>	
Electromagnetic compatibility	NE 21
Protection degree	IEC 60529
Protection against electric shock	IEC 61140
<b>Ambient conditions</b>	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
<b>Mechanical specifications</b>	
Protection degree	IP20
Mass	approx. 150 g
Dimensions	20 x 119 x 115 mm (0.8 x 4.6 x 4.5 in)
<b>Data for application in conjunction with hazardous areas</b>	
EC-Type Examination Certificate	PTB 00 ATEX 2080 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	⊕ II (1)GD [EEx ia] IIC [circuit(s) in zone 0/1/2]
Input	EEx ia IIC
Voltage U <sub>o</sub>	10.5 V
Current I <sub>o</sub>	13 mA
Power P <sub>o</sub>	34 mW (linear characteristic)
<b>Supply</b>	
Safety maximum voltage U <sub>m</sub>	253 V AC / 125 V DC (Attention! U <sub>m</sub> is no rated voltage.)
Type of protection [EEx ia and EEx ib]	
Explosion group	IIA      IIB      IIC
External capacitance	75 μF    16.8 μF    2.41 μF
External inductance	1000 mH    840 mH    210 mH
<b>Output</b>	
Contact loading	253 V AC / 2 A / cos φ > 0.7; 126.5 V AC / 4 A / cos φ > 0.7; 40 V DC / 2 A resistive load (PTB 00 ATEX 2080) 50 V AC/4 A/cos φ > 0.7; 40 V DC/2 A resistive load (TÜV 99 ATEX 1493 X)
Safety maximum voltage U <sub>m</sub>	253 V AC (Attention! The rated voltage can be lower.)
<b>Statement of conformity</b>	
Group, category, type of protection, temperature classification	⊕ II 3G EEx nAC IIC T4 [device in zone 2]
<b>Electrical isolation</b>	
Input/input	not available
Input/output	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Input/power supply	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
<b>Directive conformity</b>	
Directive 94/9 EC	EN 50014, EN 50020, EN 50021

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<b>Entity parameter</b>				
Certification number	J.I.3002773			
FM control drawing	No. 116-0035			
Suitable for installation in division 2	yes			
Connection	terminals 1, 3; 2, 3; 4, 6; 5, 6			
Input I				
Voltage $V_{OC}$	12.9 V			
Current $I_t$	19.8 mA			
Explosion group	A&B	C&E	D, F&G	
Max. external capacitance $C_a$	1.273 $\mu$ F	3.82 $\mu$ F	10.18 $\mu$ F	
Max. external inductance $L_a$	84.8 mH	254.4 mH	678.4 mH	
<b>Safety parameter</b>				
UL control drawing	E 106378			
CSA control drawing	LR 36087-19			
Control drawing	No. 116-0047			
Connection	terminals 1, 3; 2, 3; 4, 6; 5, 6			
Input I				
Safety parameter	12.6 V / 650 $\Omega$			
Voltage $V_{OC}$	12.9 V			
Current $I_{SC}$	19.8 mA			
Explosion group	A&B	C&E	D, F&G	
Max. external capacitance $C_a$	1.273 $\mu$ F	3.82 $\mu$ F	10.18 $\mu$ F	
Max. external inductance $L_a$	84.88 mH	298.7 mH	744.4 mH	

**Supplementary information**

EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

**Accessories**

**Power Rail PR-03**

**Power Rail UPR-03**

**Power feed module KFD2-EB2...**

Using Power Rail PR-03 or UPR-03 the devices are supplied with 24 V DC by means of the power feed modules. If no Power Rails are used, power supply of the individual devices is possible directly via their device terminals.

Each power feed module is used for fusing and monitoring groups with up to 100 individual devices. The Power Rail PR-03 is an inset component for the DIN rail. The Power Rail UPR-03 is a complete unit consisting of the electrical inset and an aluminium profile rail 35 mm x 15 mm x 2000 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!**