



- 1-channel
- Control circuit EEx ia IIC
- Reversible mode of operation
- Output I: signal output (changeover contact)
- Output II: optionally signal output/fault signal
- EMC acc. to NAMUR NE 21
- LB/SC monitoring
- Up to SIL2 acc. to IEC 61508

230 V AC

KFA6-SR2-Ex1.W.LB

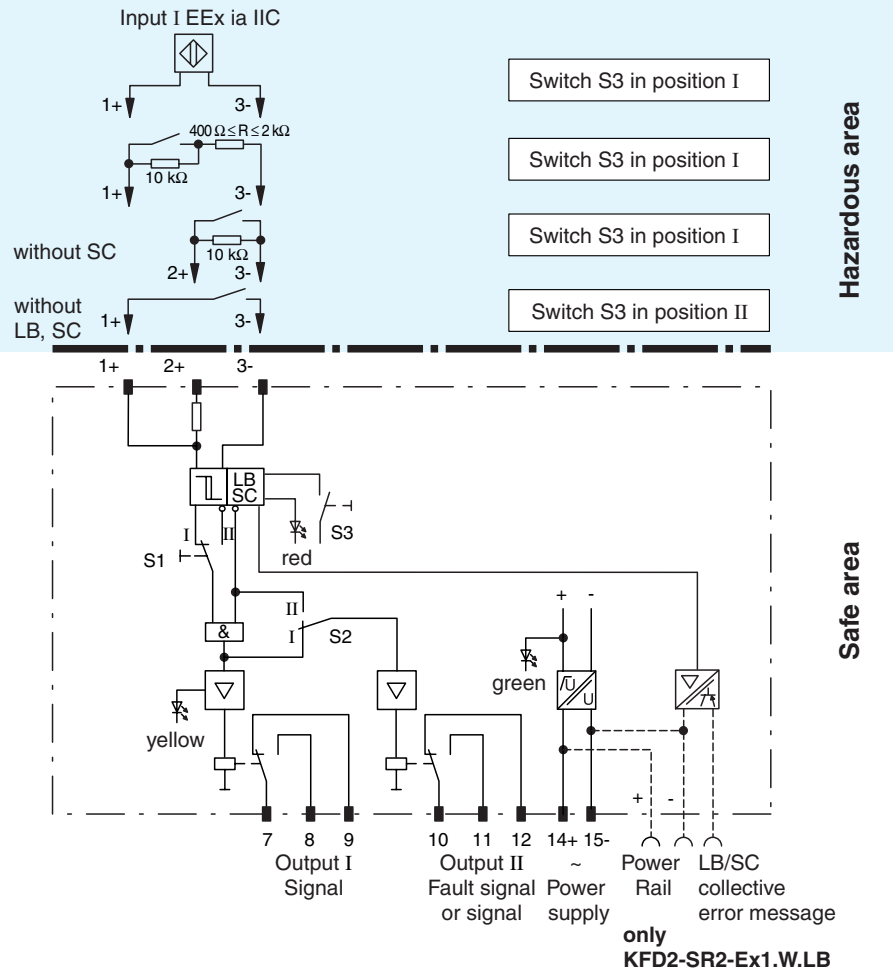
Function

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. The control circuit is monitored for lead breakage (LB) and short circuit (SC). The external faults are indicated according to NAMUR NE44 by a red flashing LED.

In the case of type KFD2-SR2-Ex1.W.LB, an LB/SC collective error message is in addition transmitted to the power feed module through the Power Rail. Relay output II can optionally be assigned to the input signal or the error message for all devices with the aid of switch S2.

The intrinsically safe input is securely separated from the output and mains power in accordance with EN 50020. Relay outputs must be securely 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

LED red:
LB/SC

Removable terminals
blue

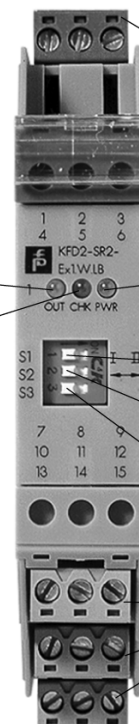
LED green:
Power supply

Switch S1
(mode of operation)

Switch S2
(output selection II)

Switch S3
(LB/SC-monitoring)

Removable terminals
green



Supply	
Connection	terminals 14, 15
Rated voltage	207 ... 253 V AC, 45 ... 65 Hz
Ripple	-
Rated current	-
Power loss	1.2 W
Power consumption	≤ 1.3 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	output I: terminals 7, 8, 9; output II: terminals 10, 11, 12
Output I	signal; relay
Output II	signal or error message; 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	
Output/power supply	reinforced insulation acc. to IEC 61140, rated insulation voltage 300 V _{eff}
Output/output	basic insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Directive conformity	
Electromagnetic compatibility	
Directive 89/336/EC	EN 61326, EN 50081-2
Conformity	
Electromagnetic compatibility	NE 21
Protection degree	IEC 60529
Protection against electric shock	IEC 61140
Ambient conditions	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Mechanical specifications	
Protection degree	IP20
Mass	approx. 150 g
Dimensions	20 x 119 x 115 mm (0.8 x 4.6 x 4.5 in)
Data for application in conjunction with hazardous areas	
EC-Type Examination Certificate	PTB 00 ATEX 2081, for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	⊕ II (1)GD [Ex ia] IIC [circuit(s) in zone 0/1/2]
Input	Ex ia IIC
Voltage U _o	10.6 V
Current I _o	19.1 mA
Power P _o	51 mW (linear characteristic)
Supply	
Safety maximum voltage U _m	253 V AC / 126.5 V AC (Attention! U _m is no rated voltage.)
Type of protection [Ex ia and Ex ib]	
Explosion group	IIA IIB IIC
External capacitance	72 µF 16.2 µF 2.32 µF
External inductance	780 mH 390 mH 97 mH
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
Safety maximum voltage U _m	253 V AC (Attention! The rated voltage can be lower.)
Electrical isolation	
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
Directive conformity	
Directive 94/9 EC	EN 50014, EN 50020
Entity parameter	
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 μF	3.82 μF	10.18 μF
Max. external inductance L_a	84.8 mH	254.4 mH	678.4 mH
Safety parameter			
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 Ω		
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 μF	3.82 μF	10.18 μF
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.