- 1-channel
- Control circuit EEx ia IIC
- Reversible mode of operation
- Output I: relay contact output (change-over contact)
- Output II: optionally signal output/fault signal
- EMC acc. to NAMUR NE 21
- LB/SC monitoring
- LB/SC combined error signal via Power Rail
- Up to SIL 2 acc. to IEC 61508

**24 V DC**

## KFD2-SR2-Ex1.W.LB

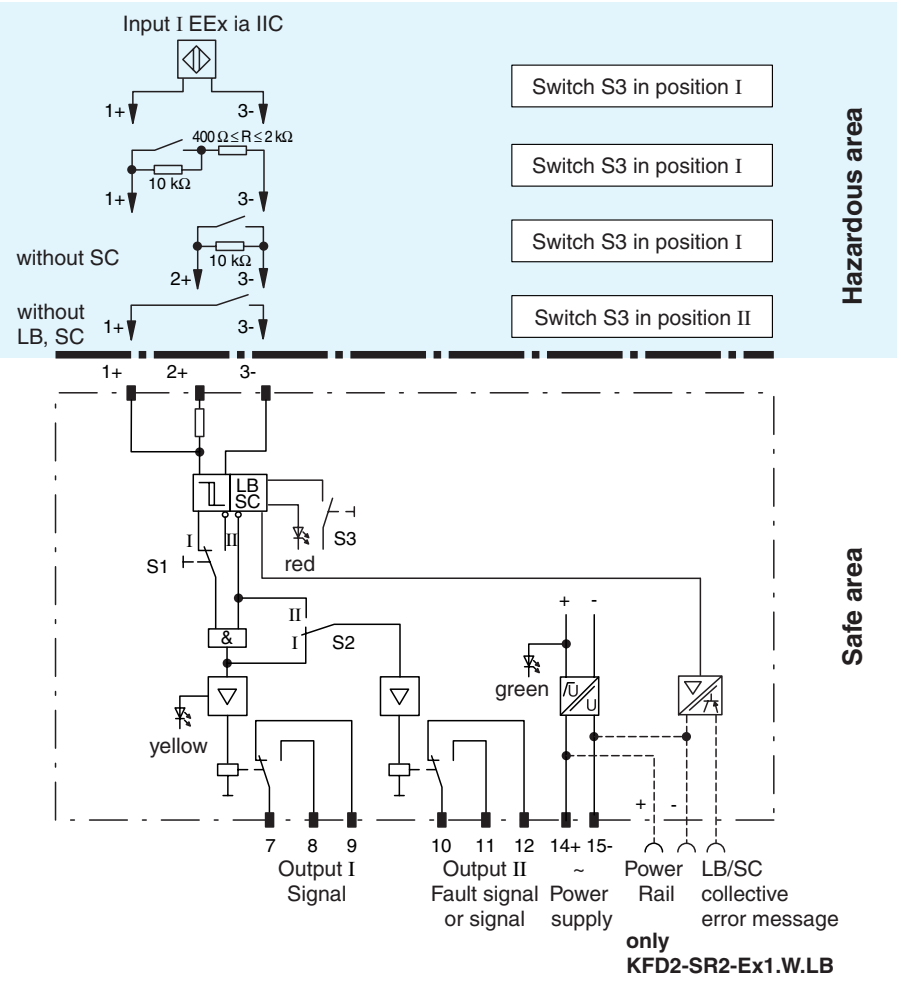
## Function

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 collevtive 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.

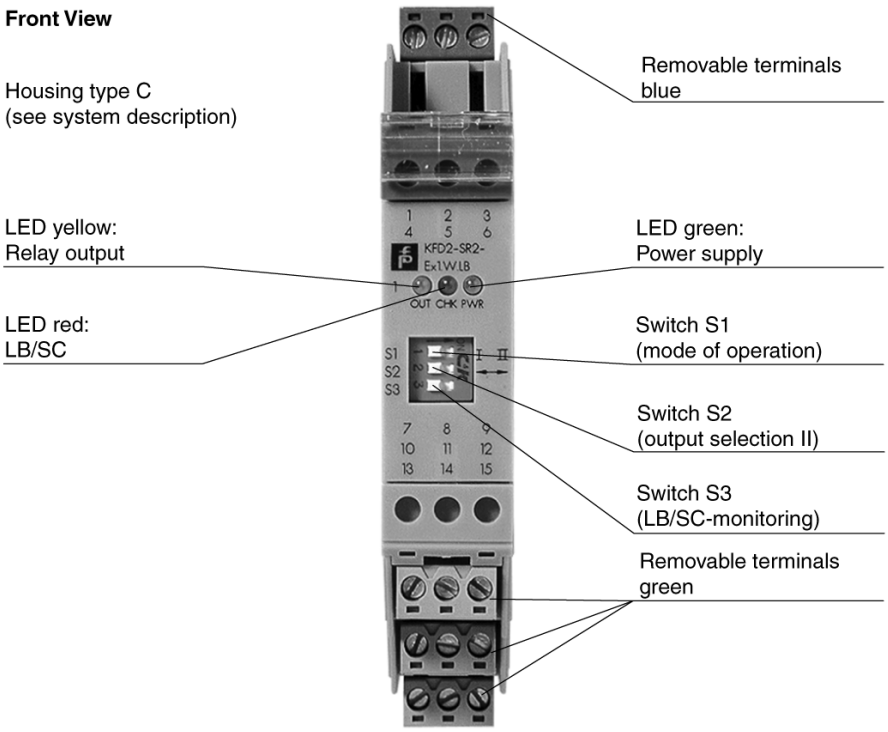
The intrinsically safe input is securely separated from the output and mains power in accordance with EN 50020. Relay outputs must be securely separated from the mains power in accordance with IEC 61140. Relay outputs are galvanically separated from each other in accordance with IEC 61140.

## Connection




## Composition

**Front View**

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| | |
|---|---|
| **Supply** | |
| Connection | Power Rail or terminals 14+, 15- |
| Rated voltage $U_r$ | 20 ... 30 V DC |
| Ripple | ≤ 10 % |
| Rated current $I_r$ | ≤ 50 mA |
| Power dissipation | 0.7 W |
| **Input** | |
| Connection | terminals 1+, 2+, 3- |
| Rated values | acc. to EN 60947-5-6 (NAMUR), see system description for electrical data |
| 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 |
| Pulse/Pause ratio | ≥ 20 ms / ≥ 20 ms |
| Line fault detection | breakage I ≤ 0.1 mA , short-circuit I > 6 mA |
| **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 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 | $10^7$ switching cycles |
| **Transfer characteristics** | |
| Switching frequency | ≤ 10 Hz |
| **Galvanic isolation** | |
| Output/power supply | reinforced insulation according 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/EEC | EN 61326, EN 50081-2 |
| **Conformity** | |
| Electromagnetic compatibility | NE 21 |
| Degree of protection | IEC 60529 |
| Protection against electrical shock | IEC 61140 |
| **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 inch) |
| **Data for application in connection with hazardous areas** | |
| EU-Type Examination Certificate | PTB 00 ATEX 2080 , for additional certificates see www.pepperl-fuchs.com |
| Marking | ⟨Ex⟩ II (1)GD [EEx ia] IIC [circuit(s) in zone 0/1/2] |
| Input | EEx ia IIC |
| Voltage $U_o$ | 10.5 V |
| Current $I_o$ | 13 mA |
| Power $P_o$ | 34 mW (linear characteristic) |
| Supply | |
| Maximum safe voltage $U_m$ | 253 V AC / 125 V DC (Attention! $U_m$ is no rated voltage.) |
| Type of protection [EEx ia and EEx ib] | |
| Output | |
| 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)<br>50 V AC/4 A/cos ϕ > 0.7; 40 V DC/2 A resistive load (TÜV 99 ATEX 1493 X) |
| Maximum safe voltage $U_m$ | 253 V AC (Attention! The rated voltage can be lower.) |
| Certificate | TÜV 99 ATEX 1493 X , observe statement of conformity |
| Marking | ⟨Ex⟩ II 3G EEx nAC IIC T4 [device in zone 2] |
| Galvanic isolation | |
| Input/Output | safe galvanic isolation acc. to EN 50020, voltage peak value 375 V |
| Input/power supply | safe galvanic isolation acc. to EN 50020, voltage peak value 375 V |
| Directive conformity | |
| Directive 94/9/EC | EN 50014, EN 50020, EN 50021 |

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## 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.

## 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!**

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