- 1-channel
- Output EEx ia IIC
- 24 V DC supply voltage
- Output current max. 45 mA
- Logic input, non-polarized
- EMC acc. to NAMUR NE 21
- Lead monitoring: LED flashing red and signal via Power Rail
- LED accord. to NAMUR NE 44
- Up to SIL2 acc. to IEC 61508

**Lead monitoring**

# KFD2-SL2-Ex1

## Function

The devices each have a logic input that is isolated from the power supply. The field devices are controlled by means of these logic inputs.

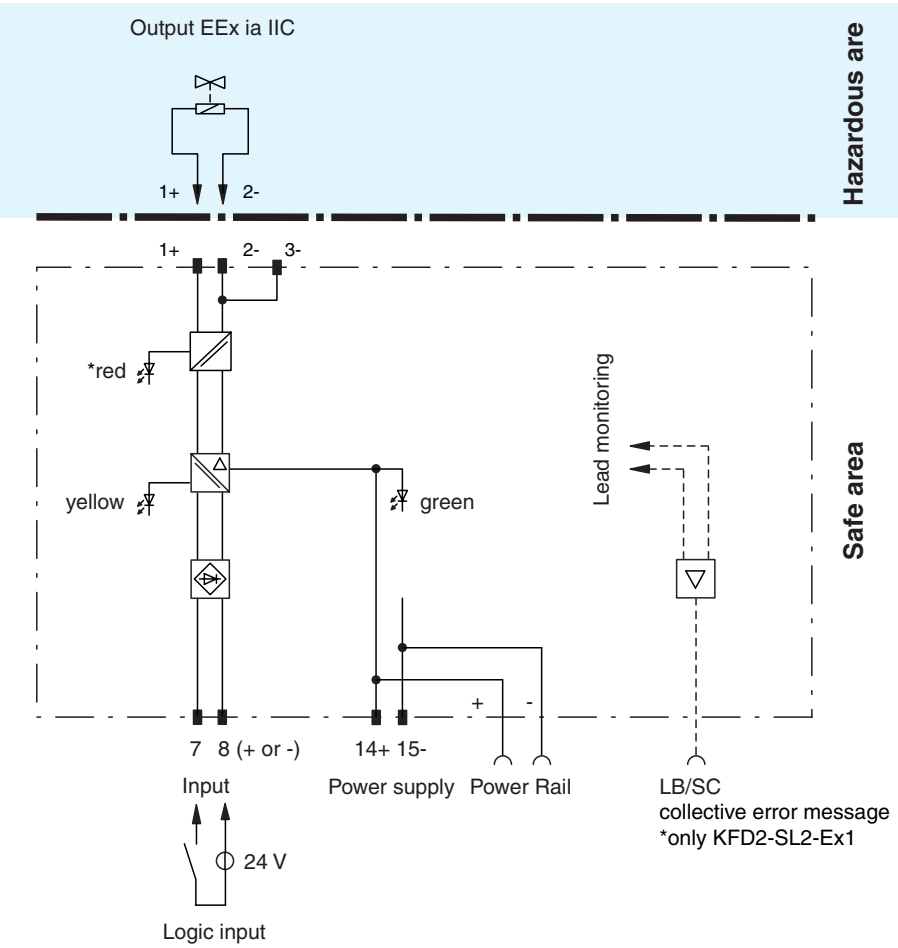
Voltage signals in a range of 16 V DC ... 30 V DC are accepted as 1-signals. The 0-signal must be within a range of DC 0 V... 5 V. The current consumption of the logic inputs is about 3 mA each.

The outputs have the characteristics of a voltage supply with 24 V and 270 Ω. The output current is limited to 45 mA.

## Application

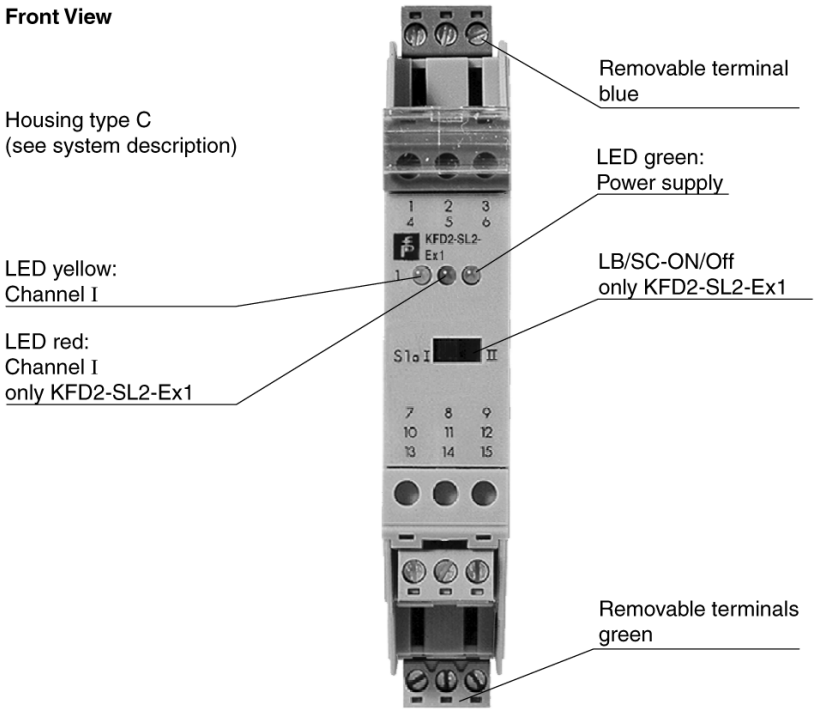
- Control/supply of intrinsically safe valves, audible alarms, indicators etc.
- Control/supply of semiconductors (e. g. LED or LCD units)
  In case of controlling semiconductors, a parallel resistor of approx. 10 kΩ, directly connected at the load, may be necessary, if the lead breakage monitoring is activated.

## Connection




## Composition

**Front View**

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| | |
|---|---|
| **Supply** | |
| Connection | Power Rail or terminals 14+, 15- |
| Rated voltage | 20 ... 30 V DC |
| Power consumption | ≤ 1.7 W at 45 mA output current |
| **Input** | |
| Connection | terminals 7, 8 |
| Input current | approx. 3 mA at 24 V DC |
| Signal level | 1-signal: 16 ... 30 V DC<br>0-signal: 0 ... 5 V DC |
| **Output** | |
| Internal resistor | 270 Ω |
| Limit | current $I_E$: 45 mA<br>voltage $U_E$: 11.8 V |
| Open loop voltage | ≥ 24 V |
| Connection | terminals 1+, 2- or 3- |
| Output rated operating current | 45 mA |
| Output signal | these values are valid for rated operational voltages from 20 ... 30 V DC |
| Energized/de-energized delay | ≤ 20 ms / ≤ 20 ms |
| **Electrical isolation** | |
| Input/power supply | functional insulation acc. to EN 50178, rated insulation voltage 50 $V_{eff}$ |
| **Directive conformity** | |
| Electromagnetic compatibility | |
| Directive 89/336/EC | EN 61326, EN 50081-2 |
| **Conformity** | |
| Electromagnetic compatibility | NE 21 |
| Protection degree | IEC 60529 |
| **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 4.7 x 4.5 in) |
| **Data for application in conjunction with hazardous areas** | |
| EC-Type Examination Certificate | ZELM 00 ATEX 0024 , for additional certificates see www.pepperl-fuchs.com |
| Group, category, type of protection | ⟨Ex⟩ II (1)GD [EEx ia] IIC [circuit(s) in zone 0/1/2] |
| Output | EEx ia IIC |
| Voltage $U_o$ | 28 V |
| Current $I_o$ | 110 mA |
| Power $P_o$ | 770 mW (linear characteristic) |
| Supply | |
| Safety maximum voltage $U_m$ | 40 V (Attention! The rated voltage can be lower.) |
| Input | |
| Safety maximum voltage $U_m$ | 60 V (Attention! The rated voltage can be lower.) |
| Collective error indication | |
| Safety maximum voltage $U_m$ | 40 V (Attention! The rated voltage can be lower.) |
| Statement of conformity | TÜV 02 ATEX 1820 X , observe statement of conformity |
| Group, category, type of protection, temperature classification | ⟨Ex⟩ II 3G EEx nA II T4 bzw. EEx nAC IIC T4 [device in zone 2] |
| Electrical isolation | |
| Input/output | safe electrical isolation acc. to EN 50020, voltage peak value 375 V |
| Output/power supply | safe electrical isolation acc. to EN 50020, voltage peak value 375 V |
| Directive conformity | |
| Directive 94/9 EC | EN 50014, EN 50020, EN 50021 |

## 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.

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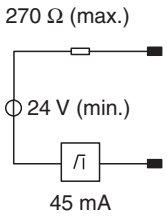
## Notes

**Lead monitoring (only KFD2-SL2-Ex1)**

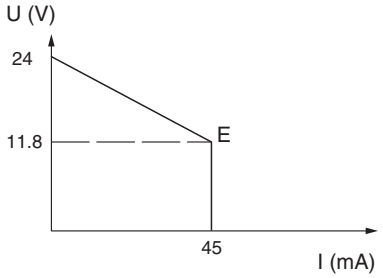
A fault signal is activated across the Power Rail (UPR-03) in the case of an error (lead breakage > 10 kΩ or lead short circuit < 50 Ω). The power feed module evaluates and passes on the fault signal by means of a potentially free contact.

**Output circuit diagramm**




**Output characteristic for input voltage 20 V ... 30 V**

E: Curve angle point ($U_E$, $I_E$)




## 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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