

Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Output 45 mA at 11.2 V DC
- Logic input, non-polarized
- Error message output
- Line fault detection (LFD)
- Up to SIL2 acc. to IEC 61508

Function

This isolated barrier is used for intrinsic safety applications. It supplies power to solenoids, LEDs, and audible alarms, located in a hazardous area.

It is controlled via a logic signal. The input has two defined states: 1-Signal = 16 V DC ... 30 V DC, 0-Signal = 0 V DC ... 5 V DC.

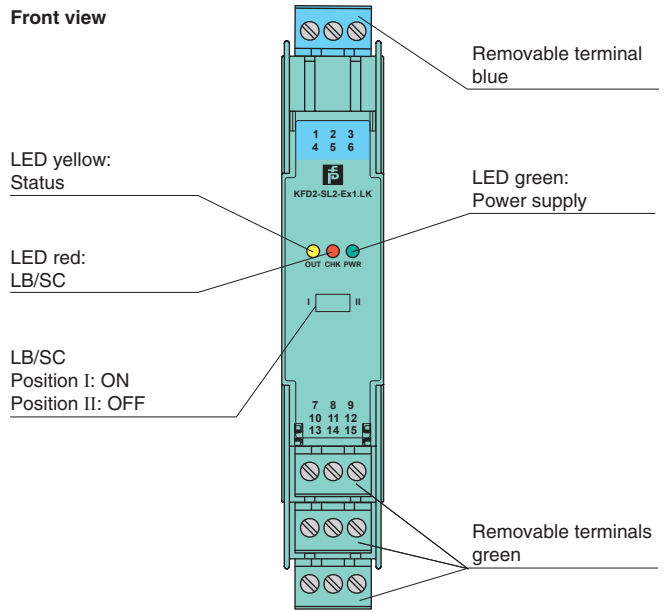
At full load, 11.2 V at 45 mA is available for the hazardous area application.

If the field impedance is > 10 kΩ for lead breakage or < 50 Ω for short circuits a line fault is detected.

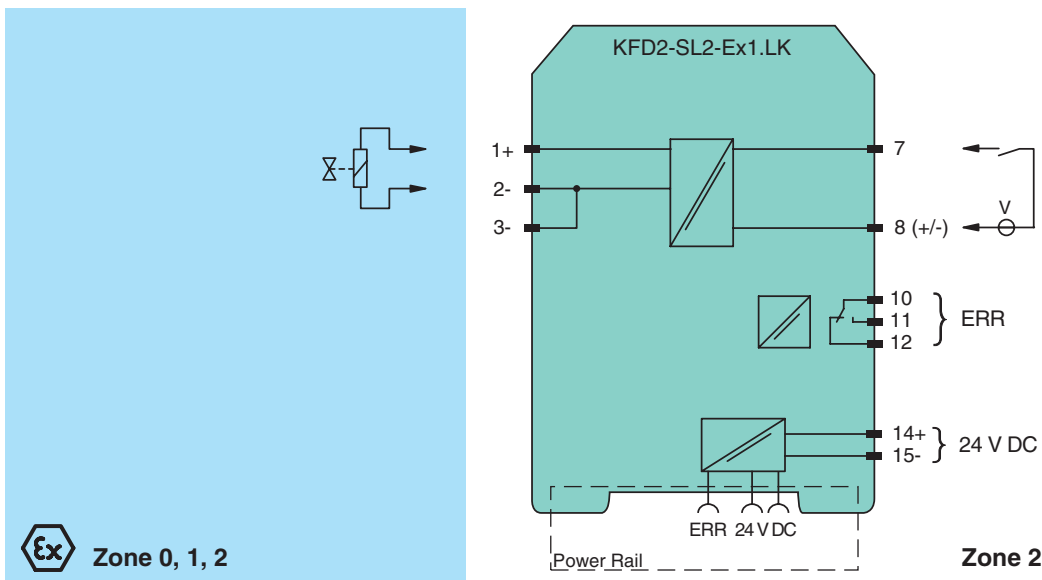
During an error condition, the fault indication output de-energizes.

A fault is signaled by LEDs acc. to NAMUR NE44 and a separate collective error message output.

Assembly



Connection



Release date 2011-10-24 16:18 Date of issue 2011-10-24 200542_eng.xml

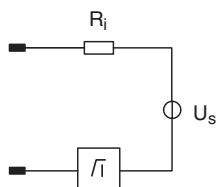
| | | |
|---|-------|---|
| General specifications | | |
| Signal type | | Digital Output |
| Supply | | |
| Connection | | Power Rail or terminals 14+, 15- |
| Rated voltage | | 19 ... 30 V DC |
| Power consumption | | ≤ 1.9 W at 45 mA output current |
| Input | | |
| Connection | | terminals 7, 8 |
| Input current | | approx. 3 mA |
| Signal level | | 1-signal: 16 ... 30 V DC 0-signal: 0 ... 5 V DC |
| Output | | |
| Output I | | |
| Connection | | terminals 1+, 2- or 3- |
| Internal resistor | R_i | 270 Ω |
| Current | I_e | ≤ 45 mA |
| Voltage | U_e | ≥ 11.2 V |
| Open loop voltage | U_s | ≥ 23.5 V |
| Output signal | | These values are valid for the rated operational voltage 19 ... 30 V DC. |
| Energized/De-energized delay | | ≤ 20 ms / ≤ 20 ms |
| Line fault detection | | signal at short-circuit $R_B < 50 \Omega$, lead breakage $R_B > 10 \text{ k}\Omega$; test current < 650 μA |
| Output II | | |
| Connection | | terminals 10, 11, 12, non-intrinsically safe |
| Contact loading | | 253 V AC/2 A/cos $\phi > 0.7$; 40 V DC/2 A resistive load |
| Mechanical life | | 2 x 10 ⁷ switching cycles |
| 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 2004/108/EC | | EN 61326-1:2006, EN 61000-6-4:2007 |
| Low voltage | | |
| Directive 2006/95/EC | | EN 50178:1997 |
| Conformity | | |
| Electromagnetic compatibility | | NE 21:2006 |
| Protection degree | | IEC 60529 |
| Ambient conditions | | |
| Ambient temperature | | -20 ... 60 °C (-4 ... 140 °F) |
| 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), housing type B2 |
| Data for application in connection with Ex-areas | | |
| EC-Type Examination Certificate | | |
| Group, category, type of protection | | ZELM 99 ATEX 0015, for additional certificates see www.pepperl-fuchs.com Ex II (1)GD [Ex ia] IIC, [Ex iaD] [circuit(s) in zone 0/1/2] |
| Output I | | |
| Voltage | U_o | 28 V |
| Current | I_o | 110 mA |
| Power | P_o | 770 mW (linear characteristic) |
| Supply | | |
| Maximum safe voltage | U_m | 40 V (Attention! The rated voltage can be lower.) |
| Input | | |
| Maximum safe voltage | U_m | 60 V (Attention! The rated voltage can be lower.) |
| Collective error indication | | |
| Maximum safe voltage | U_m | 40 V (Attention! The rated voltage can be lower.) |
| Statement of conformity | | |
| Group, category, type of protection, temperature class | | TÜV 02 ATEX 1820 X Ex II 3G Ex nA nC IIC T4 |
| Output II | | |
| Contact loading | | 50 V AC/2 A/cos $\phi > 0.7$; 40 V DC/1 A resistive load |
| Electrical isolation | | |
| Output I/other circuits | | safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V |
| Directive conformity | | |
| Directive 94/9/EC | | EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-11:2006, EN 61241-0:2006 |

Release date 2011-10-24 16:18 Date of issue 2011-10-24 200542_eng.xml

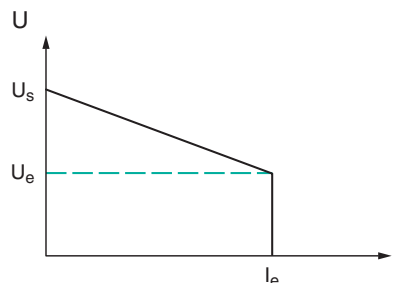
| | |
|----------------------------|--|
| General information | |
| Supplementary information | EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com . |

Output characteristics

Output circuit diagram



Output characteristic



Accessories

Power feed module KFD2-EB2

The power feed module is used to supply the devices with 24 V DC via the Power Rail. The fuse-protected power feed module can supply up to 100 individual devices depending on the power consumption of the devices. A galvanically isolated mechanical contact uses the Power Rail to transmit collective error messages.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical inset and an aluminium profile rail 35 mm x 15 mm. To make electrical contact, the devices are simply engaged.

Profile Rail K-DUCT with Power Rail

The profile rail K-DUCT is an aluminum profile rail with Power Rail insert and two integral cable ducts for system and field cables. Due to this assembly no additional cable guides are necessary.



Attention

Power Rail and Profile Rail must not be fed via the device terminals of the individual devices!