



Solenoid Driver

KFD0-SD2-Ex1.1180

- 1-channel isolated barrier
- 24 V DC supply (loop powered)
- Current limit 80 mA at 11 V DC
- Up to SIL 3 acc. to IEC 61508



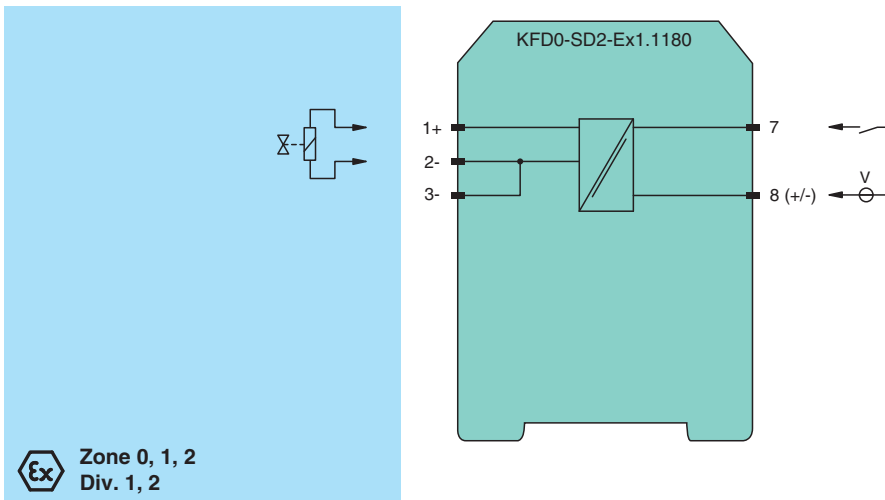
SIL 3



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 loop powered, so the available energy at the output is received from the input signal. The output signal has a resistive characteristic. As a result the output voltage and current are dependent on the load and the input voltage. At full load, 11 V at 80 mA is available for the hazardous area application.

Connection



Technical Data

General specifications

Signal type Digital Output

Functional safety related parameters

Safety Integrity Level (SIL) SIL 3

Supply

Rated voltage U_r loop powered
 Power dissipation $< 1 \text{ W } (\leq 30 \text{ V})$

Input

Connection side control side
 Connection terminals 7, 8
 Rated voltage U_r 20 ... 35 V DC

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical Data

| | | |
|--|-------|---|
| Current | | 140 mA at 20 V input voltage, load = 140 Ω 100 mA at 35 V input voltage, load = 140 Ω |
| Output | | |
| Connection side | | field side |
| Connection | | terminals 1+, 2- |
| Internal resistor | R_i | $\leq 150 \Omega$ |
| Current | I_e | $\geq 80 \text{ mA}$ |
| Voltage | U_e | $\geq 11 \text{ V}$ |
| Open loop voltage | U_s | min. 22.7 V |
| Output rated operating current | | 80 mA |
| Output signal | | These values are valid for the rated operating voltage 20 ... 35 V DC. |
| Energized/De-energized delay | | single operation: typ. 1.7 ms/50 μs ; periodical: typ. 5 μs /50 μs |
| Indicators/settings | | |
| Display elements | | LED |
| Labeling | | space for labeling at the front |
| Directive conformity | | |
| Electromagnetic compatibility | | |
| Directive 2014/30/EU | | EN 61326-1:2013 (industrial locations) |
| Conformity | | |
| Electromagnetic compatibility | | NE 21:2006 |
| Degree of protection | | IEC 60529:2001 |
| Protection against electrical shock | | UL 61010-1:2004 |
| Ambient conditions | | |
| Ambient temperature | | -20 ... 60 $^{\circ}\text{C}$ (-4 ... 140 $^{\circ}\text{F}$) |
| Mechanical specifications | | |
| Degree of protection | | IP20 |
| Connection | | screw terminals |
| Mass | | approx. 100 g |
| Dimensions | | 20 x 107 x 115 mm (0.8 x 4.2 x 4.5 inch) , housing type B1 |
| Mounting | | on 35 mm DIN mounting rail acc. to EN 60715:2001 |
| Data for application in connection with hazardous areas | | |
| EU-type examination certificate | | BASEEFA 06 ATEX 0252 |
| Marking | | ⊕ II (1)G [Ex ia Ga] IIB, II (1)D [Ex ia Da] IIIB, I (M1) [Ex ia Ma] I (-20 $^{\circ}\text{C} \leq T_{\text{amb}} \leq 60 \text{ }^{\circ}\text{C}$) |
| Voltage | U_o | 25.2 V |
| Current | I_o | 184 mA |
| Power | P_o | 1.159 W |
| Input | | |
| Maximum safe voltage | U_m | 250 V (Attention! The rated voltage can be lower.) |
| Certificate | | TÜV 99 ATEX 1499 X |
| Marking | | ⊕ II 3G Ex nA II T4 [device in zone 2] |
| Galvanic isolation | | |
| Input/Output | | safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V |
| Directive conformity | | |
| Directive 2014/34/EU | | EN IEC 60079-0:2018+AC:2020 , EN 60079-11:2012 , EN 60079-15:2010 |
| International approvals | | |
| FM approval | | |
| Control drawing | | 116-0309 |
| UL approval | | |
| Control drawing | | 116-0316 (cULus) |
| IECEx approval | | |
| IECEx certificate | | IECEx BAS 06.0058 IECEx CML 19.0093X |
| IECEx marking | | [Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I Ex ec IIC T4 Gc |

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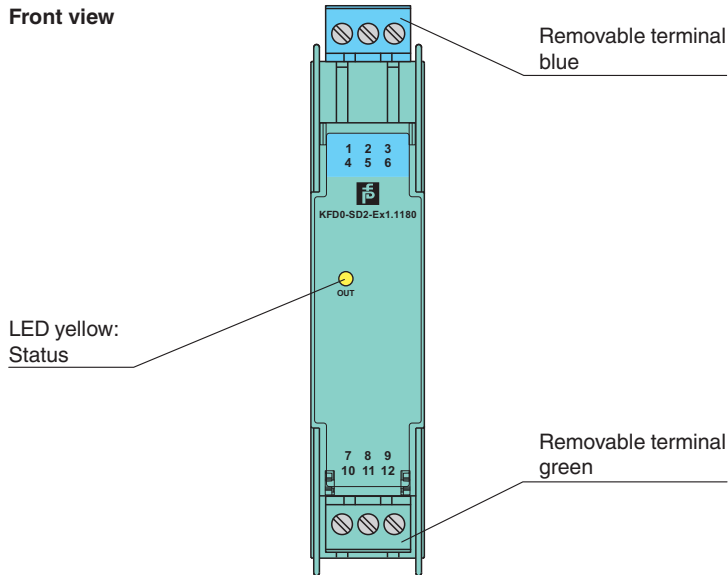
General information

Supplementary information


Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com.

Assembly




Front view



Matching System Components

| | | |
|---|------------------|--|
|  | K-DUCT-BU | Profile rail, wiring comb field side, blue |
|---|------------------|--|

Accessories

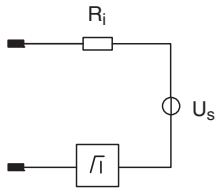
| | | |
|---|------------------|--|
|  | KF-ST-5GN | Terminal block for KF modules, 3-pin screw terminal, green |
|  | KF-ST-5BU | Terminal block for KF modules, 3-pin screw terminal, blue |
|  | KF-CP | Red coding pins, packaging unit: 20 x 6 |

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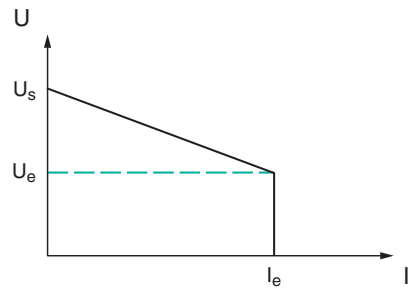
Characteristic Curve

Output characteristics

Output circuit diagram



Output characteristic



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