

Features

- 2-channel signal conditioner
- 24 V DC supply (Power Rail)
- Current output up to 700 Ω load
- HART I/P and valve positioner
- Line fault detection (LFD)
- Accuracy 0.05 %
- Terminal blocks with test sockets
- Up to SIL2 acc. to IEC 61508

Function

This signal conditioner drives SMART I/P converters, electrical valves, and positioners and provides isolation for non-intrinsically safe applications.

Digital signals are superimposed on the analog values at the field or control side and are transferred bi-directionally.

Current transferred across the DC/DC converter is repeated at terminals 1, 2 and 4, 5.

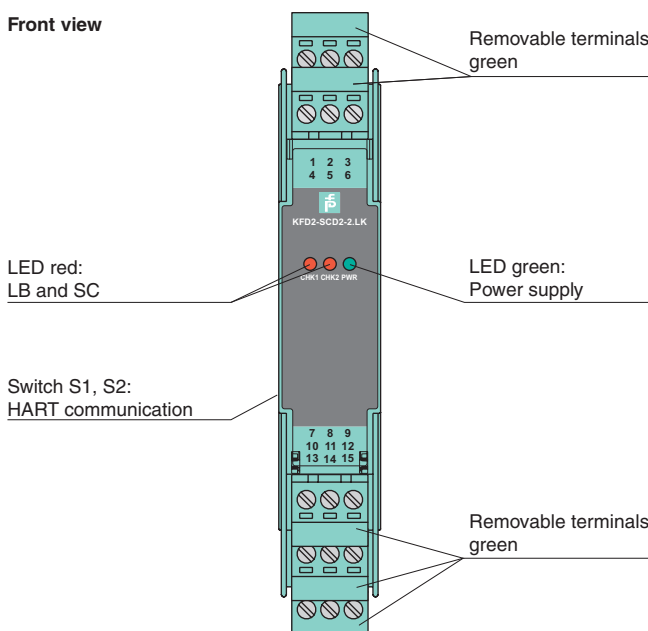
An open and shorted field circuit presents a high input impedance to the control side to allow line fault detection by control system.

If the loop resistance for digital communication is too low, an internal resistor of 250 Ω between terminals 8, 9 and 11, 12 is available, which may be used as the HART communication resistor.

Sockets for the connection of a HART communicator are integrated into the terminals of the device.

A unique collective error messaging feature is available when used with the Power Rail system.

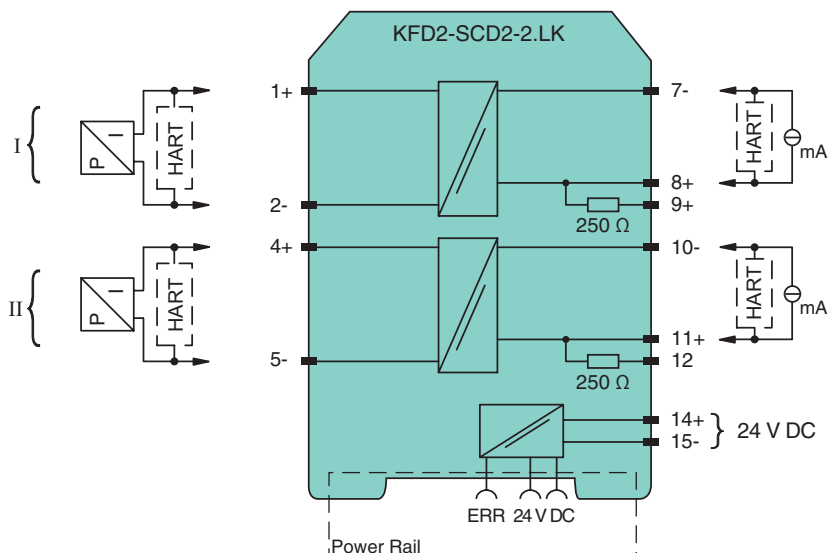
Assembly



SIL2



Connection



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| | |
|-------------------------------------|---|
| General specifications | |
| Signal type | Analog output |
| Supply | |
| Connection | Power Rail or terminals 14+, 15- |
| Rated voltage | U_n 20 ... 35 V DC |
| Ripple | within the supply tolerance |
| Power loss | 1.4 W at 20 mA into 10 V (equivalent to 500 Ω) load |
| Power consumption | 1.8 W at 20 mA |
| Input | |
| Connection | terminals 7-, 8+, (9+); 10-, 11+, (12+) |
| Voltage drop | approx. 4 V or internal resistance 200 Ω at 20 mA |
| Input resistance | > 100 k Ω , when wiring resistance in the field > 16 V (equivalent to 800 Ω at 20 mA) |
| Current | 4 ... 20 mA limited to approx. 25 mA |
| Output | |
| Connection | terminals 1+, 2-; 4+, 5- |
| Current | 4 ... 20 mA |
| Load | 100 ... 700 Ω |
| Voltage | \geq 14 V at 20 mA |
| Transfer characteristics | |
| Deviation | |
| After calibration | at 20 °C (68 °F): \leq 10 μ A incl. non-linearity, calibration, hysteresis, supply and load changes |
| Influence of ambient temperature | \leq 1 μ A/K |
| Rise time | < 100 μ s , 10 ... 90 % step change |
| Electrical isolation | |
| Input/Output | basic insulation according to IEC 61010-1, rated insulation voltage 300 V _{eff} |
| Input/power supply | functional insulation, rated insulation voltage 50 V AC |
| Output/power supply | basic insulation according to IEC 61010-1, rated insulation voltage 300 V _{eff} |
| Directive conformity | |
| Electromagnetic compatibility | |
| Directive 2004/108/EC | EN 61326-1:2006 |
| Conformity | |
| Electromagnetic compatibility | NE 21:2011 |
| Degree of protection | IEC 60529:2001 |
| Protection against electrical shock | EN 61010-1:2010 |
| Ambient conditions | |
| Ambient temperature | -20 ... 60 °C (-4 ... 140 °F) |
| Mechanical specifications | |
| Degree of protection | IP20 |
| Mass | approx. 150 g |
| Dimensions | 20 x 124 x 115 mm (0.8 x 4.9 x 4.5 in) , housing type B2 |
| Mounting | on 35 mm DIN mounting rail acc. to EN 60715:2001 |
| General information | |
| Supplementary information | Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com . |

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Additional information

Lead monitoring, input characteristics

During lead breakage (> 16 V) in the field the input resistance is > 100 kΩ, the field current is < 1 mA and the red LED is flashing. During short circuit (< 50 Ω) in the field the input resistance is approx. 20 kΩ, the input current and the field current are approx. 1 mA and the red LED is flashing.

The voltage drop at the current input (terminals 7-, 8+ and 10-, 11+) is lower than 4 V. Thus, it corresponds to an input resistance of 200 Ω at 20 mA. The AC input impedance corresponds to the load impedance of the unit.

Adjustment HART function

When using positioners, which do not meet the HART standard, set the switches to the 1 position (without HART function) (see adjustment table).

| Switch | | Position | Function |
|-----------|-----------|----------|----------|
| Channel 1 | Channel 2 | | |
| S1.1 | S2.1 | 0 (OFF) | HART |
| S1.2 | S2.2 | 0 (OFF) | |
| S1.1 | S2.1 | 0 (OFF) | non HART |
| S1.2 | S2.2 | 1 (ON) | |
| S1.1 | S2.1 | 1 (ON) | |
| S1.2 | S2.2 | 0 (OFF) | |
| S1.1 | S2.1 | 1 (ON) | |
| S1.2 | S2.2 | 1 (ON) | |



If you are using field devices with high input impedance and a control system with low output impedance, check whether HART transparency is working correctly.

If necessary, deactivate HART transparency via the DIP switches S1. If the impedances are combined as described above, you can for example use the device KCD2-SCD-Ex1 alternatively.

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 150 individual devices depending on the power consumption of the devices. Collective error messages received from the Power Rail activate a galvanically-isolated mechanical contact.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical insert 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.



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

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