

**Features**

- 1-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 SIL 2 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.

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 and 9 is available, which may be used as the HART communication resistor.

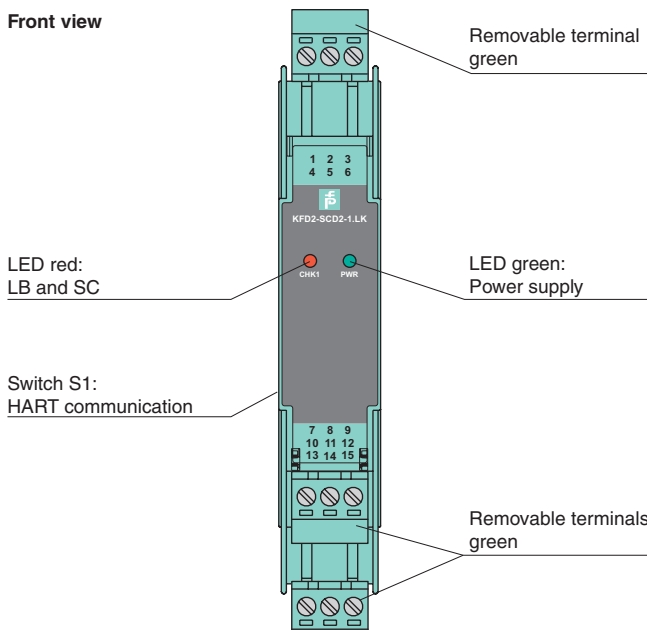
Terminal 3 is connected to terminal 2 via a 100 Ω resistor.

Terminal 3 can be used for an earth leakage connection in combination with the KFD2-ELD-Ex16.

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**

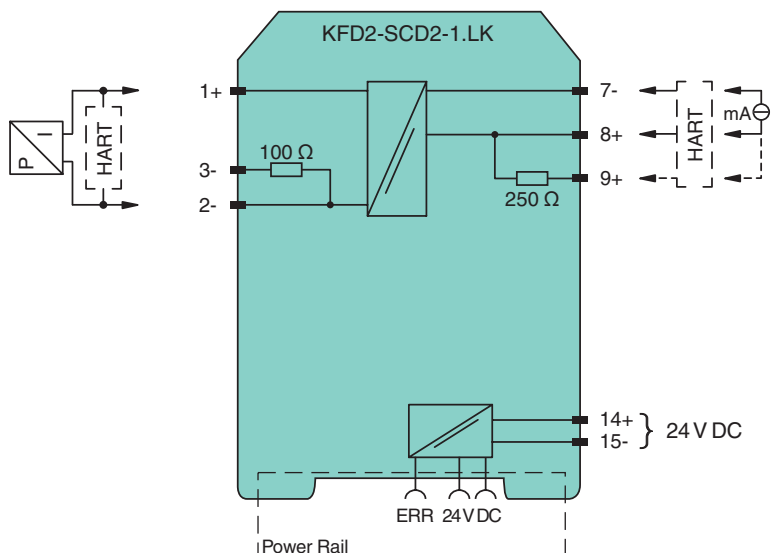


CE

SIL 2



**Connection**



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

<b>General specifications</b>	
Signal type	Analog output
<b>Supply</b>	
Connection	Power Rail or terminals 14+, 15-
Rated voltage $U_r$	20 ... 35 V DC
Ripple	within the supply tolerance
Power dissipation	0.8 W at 20 mA into 10 V (equivalent to 500 $\Omega$ ) load
Power consumption	1 W at 20 mA
<b>Input</b>	
Connection	terminals 7-, 8+, (9+)
Voltage drop	approx. 4 V or internal resistance 200 $\Omega$ at 20 mA
Input resistance	approx. 100 k $\Omega$ , when an open circuit is applied to the field circuit
Current	4 ... 20 mA limited to approx. 25 mA
<b>Output</b>	
Connection	terminals 1+, 2-, (3-)
Current	4 ... 20 mA
Load	100 ... 700 $\Omega$
Voltage	$\geq$ 14 V at 20 mA
<b>Transfer characteristics</b>	
Deviation	
After calibration	at 20 °C (68 °F): $\leq$ 10 $\mu$ A incl. non-linearity, calibration, hysteresis, supply and load changes
Influence of ambient temperature	$\leq$ 1 $\mu$ A/K
Rise time	$<$ 100 $\mu$ s , 10 ... 90 % step change
<b>Galvanic isolation</b>	
Input/Output	basic insulation according to IEC 61010-1, rated insulation voltage 300 V <sub>eff</sub>
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 <sub>eff</sub>
<b>Directive conformity</b>	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
<b>Conformity</b>	
Electromagnetic compatibility	NE 21:2011
Degree of protection	IEC 60529:2001
Protection against electrical shock	EN 61010-1:2010
<b>Ambient conditions</b>	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
<b>Mechanical specifications</b>	
Degree of protection	IP20
Mass	approx. 150 g
Dimensions	20 x 124 x 115 mm (0.8 x 4.9 x 4.5 inch) , housing type B2
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
<b>General information</b>	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

**Additional information**

**Line fault detection, input characteristics**

During lead breakage in the field, the input resistance is approximately 100 k $\Omega$  and the red LED is flashing.

During excess load, the input current is approximately the achieved output current and the input resistance is approximately the load resistance. The red LED flashes.

During short circuit ( $<$  50  $\Omega$ ) the field current is approximately 2 mA and the red LED flashes. The input current is also reduced to approximately 2 mA (equivalent to approximately 10 k $\Omega$ ).

The voltage drop is typically:

- 2 V + 40  $\Omega$  x transferred current with HART switch S1 in I position and
- 1.5 V + 40  $\Omega$  x transferred current with HART switch S1 in II position.

**Switch settings**

Short circuit monitoring can be disabled using switch S2 in the II position.

When using positioners, which do not meet the HART standard, set the switch S1 in the II position.

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Switch	Position	Function
S1	I	HART ON
	II	HART OFF
S2	I	Short circuit detection ON
	II	Short circuit detection OFF



**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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