

**Features**

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Current output up to 700 Ω load
- HART I/P and valve positioner
- Line fault detection (LFD)
- Accuracy 0.1 %
- Terminal blocks with test sockets
- Up to SIL 2 acc. to IEC 61508

**Function**

This isolated barrier is used for intrinsic safety applications. It drives SMART I/P converters, electrical valves, and positioners in hazardous areas.

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

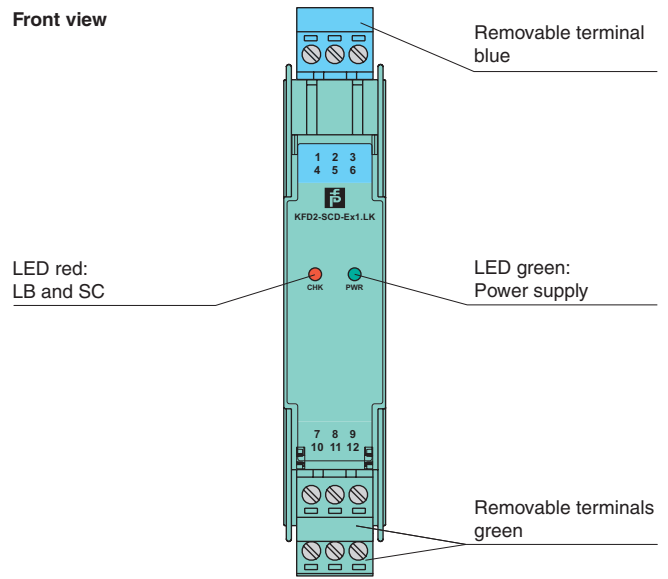
Current transferred across the DC/DC converter is repeated at terminals 1 and 2.

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 the 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.

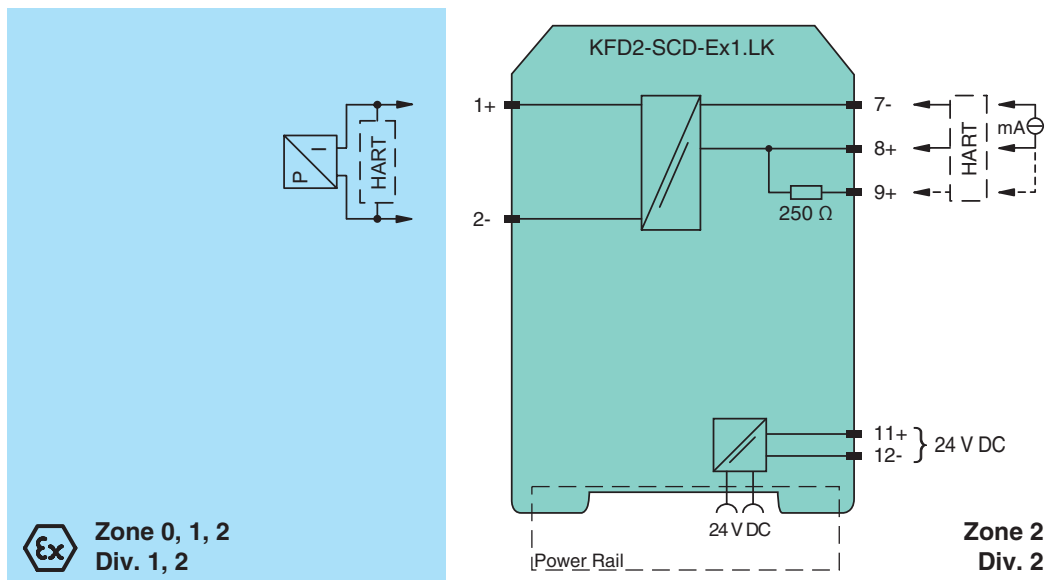
Sockets for the connection of a HART communicator are integrated into the terminals of the device.

**Assembly**



**SIL 2**

**Connection**



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

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<b>General specifications</b>		
Signal type		Analog output
<b>Functional safety related parameters</b>		
Safety Integrity Level (SIL)		SIL 2
<b>Supply</b>		
Connection		Power Rail or terminals 11+, 12-
Rated voltage	$U_r$	20 ... 35 V DC
Ripple		within the supply tolerance
Power dissipation		1.1 W at 20 mA into 10 V (equivalent to 500 Ω) load
Power consumption		1.3 W
<b>Input</b>		
Connection side		control side
Connection		terminals 7-, 8+
Voltage drop		approx. 4 V or internal resistance 200 Ω at 20 mA
Input resistance		> 100 kΩ, when wiring resistance in the field < 50 Ω or > 800 Ω at 20 mA
Current		4 ... 20 mA limited to approx. 25 mA
<b>Output</b>		
Connection side		field side
Connection		terminals 1+, 2-
Current		4 ... 20 mA
Load		100 ... 700 Ω
Voltage		≥ 14 V at 20 mA
<b>Transfer characteristics</b>		
Accuracy		0.1 %
<b>Deviation</b>		
After calibration		at 20 °C (68 °F): ≤ ± 0.1 % incl. non-linearity and hysteresis
Influence of ambient temperature		≤ ± 20 ppm/K
Rise time		< 100 μs at bounce from 10 ... 90 %
<b>Galvanic isolation</b>		
Input/power supply		basic insulation acc. to EN 50178, rated insulation voltage of 50 V AC
<b>Indicators/settings</b>		
Display elements		LEDs
Labeling		space for labeling at the front
<b>Directive conformity</b>		
<b>Electromagnetic compatibility</b>		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
<b>Conformity</b>		
Insulation coordination		EN 50178:1997
Galvanic isolation		EN 50178:1997
Electromagnetic compatibility		NE 21:2006
Degree of protection		IEC 60529:2001
<b>Ambient conditions</b>		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
<b>Mechanical specifications</b>		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 100 g
Dimensions		20 x 115 x 115 mm (0.8 x 4.5 x 4.5 inch) , housing type B1
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
<b>Data for application in connection with hazardous areas</b>		
<b>EU-Type Examination Certificate</b>		
Marking		⊕ II (1)G [Ex ia Ga] IIC , ⊕ II (1)D [Ex ia Da] IIIC , ⊕ I (M1) [Ex ia Ma] I
Output		Ex ia IIC, Ex iaD
Voltage	$U_o$	25.2 V
Current	$I_o$	93 mA
Power	$P_o$	0.58 W
<b>Supply</b>		
Maximum safe voltage	$U_m$	250 V <sub>rms</sub> (Attention! The rated voltage can be lower.)
<b>Certificate</b>		
Marking		⊕ II 3G Ex nA II T4 [device in zone 2]
<b>Galvanic isolation</b>		
Input/Output		safe electrical isolation acc. to EN 60079-11, voltage peak value 375 V
Output/power supply		safe electrical isolation acc. to EN 60079-11, voltage peak value 375 V
<b>Directive conformity</b>		

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Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010
<b>International approvals</b>	
FM approval	
Control drawing	116-0129
UL approval	
Control drawing	116-0173 (cULus)
IECEX approval	IECEX BAS 16.0045
Approved for	[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I
<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**

**Lead monitoring, input characteristics**

The range above a field load of 700 Ω is not designated for transferring signals. In case of short circuit or lead breakage in the field circuit the input resistance is increased to > 100 kΩ. The field current decreases to < 1 mA, and the red LED flashes.

During normal operation the DC input voltage is lower than 4 V (200 Ω at 20 mA respectively). The AC input impedance corresponds to the output impedance of the unit.

- Normal operation: 100 Ω ... 700 Ω field load
- Lead short circuit: up to < 50 Ω field load
- Lead breakage: up to > 2 kΩ field load when I<sub>on</sub> = 20 mA

**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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