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 SIL2 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.

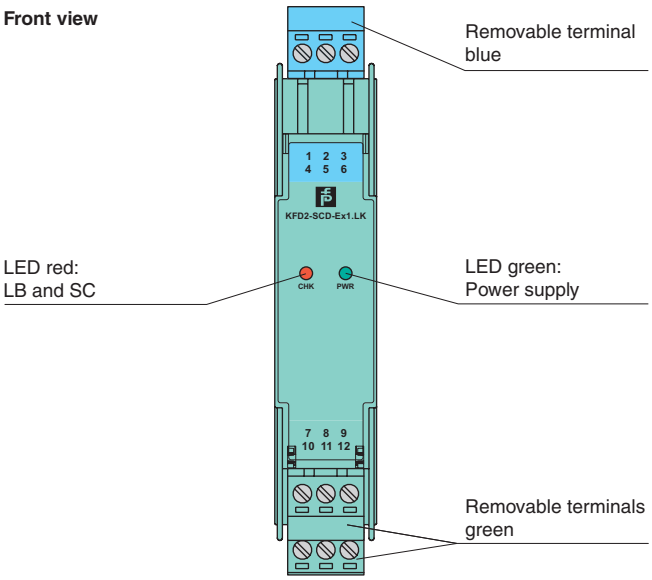
Current transferred across the DC/DC converter is repeated at terminals 1 and 2.

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.

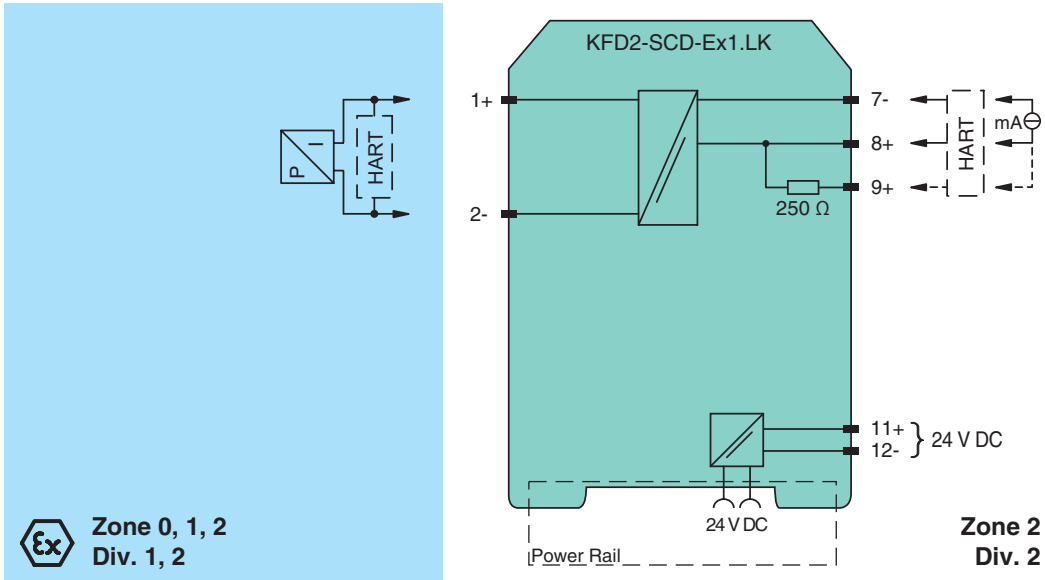
Sockets for the connection of a HART communicator are integrated into the terminals of the device.

Assembly



SIL2

Connection



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General specifications		
Signal type		Analog output
Supply		
Connection		Power Rail or terminals 11+, 12-
Rated voltage		20 ... 35 V DC
Ripple		within the supply tolerance
Power loss		1.1 W at 20 mA into 10 V (equivalent to 500 Ω) load
Power consumption		1.3 W
Input		
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
Output		
Connection		terminals 1+, 2-
Current		4 ... 20 mA
Load		100 ... 700 Ω
Voltage		≥ 14 V at 20 mA
Transfer characteristics		
Deviation		
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 (bounce from 10 ... 90 %)
Electrical isolation		
Input/power supply		basic insulation acc. to EN 50178, rated insulation voltage of 50 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2004/108/EC		EN 61326-1:2006
Conformity		
Insulation coordination		EN 50178:1997
Electrical isolation		EN 50178:1997
Electromagnetic compatibility		NE 21:2006
Protection degree		IEC 60529:2001
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Protection degree		IP20
Mass		approx. 100 g
Dimensions		20 x 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with Ex-areas		
EC-Type Examination Certificate		BAS 00 ATEX 7215 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		⟨Ex⟩ II (1)GD, I (M1), [Ex ia] IIC, [Ex iaD], [Ex ia] I (-20 °C ≤ T_{amb} ≤ 60 °C) [circuit(s) in zone 0/1/2]
Output		Ex ia IIC, Ex iaD
Voltage	U_o	25.2 V
Current	I_o	93 mA
Power	P_o	585 mW
Supply		
Maximum safe voltage	U_m	250 V_{rms} (Attention! The rated voltage can be lower.)
Equipment		
Voltage	U_o	25.5 V
Current	I_o	93 mA
Power	P_o	0.58 W
Input		
Maximum safe voltage	U_m	250 V_{rms} (Attention! The rated voltage can be lower.)
Statement of conformity		TÜV 99 ATEX 1499 X , observe statement of conformity
Group, category, type of protection, temperature class		⟨Ex⟩ II 3G Ex nA II T4 [device in zone 2]
Electrical isolation		
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
Directive conformity		
Directive 94/9/EC		EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-11:2006
International approvals		

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FM approval	
Control drawing	116-0129
UL approval	
Control drawing	116-0173 (cULus)
CSA approval	
Control drawing	116-0132
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.

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_{on} = 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. 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.

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

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