

**Features**

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input 2-wire and 3-wire SMART transmitters and 2-wire SMART current sources
- Dual output 0/4 mA ... 20 mA
- Terminals with test points
- Up to SIL3 acc. to IEC 61508

**Function**

This isolated barrier is used for intrinsic safety applications.

The device supplies 2-wire and 3-wire SMART transmitters in a hazardous area, and can also be used with 2-wire SMART current sources.

It transfers the analog input signal to the safe area as two isolated current values.

Digital signals may be superimposed on the input signal in the hazardous or safe area and are transferred bi-directionally.

If the HART communication resistance in the loop is too low, the internal resistance of 250 Ω between terminals 8, 9 and 11, 12 can be used.

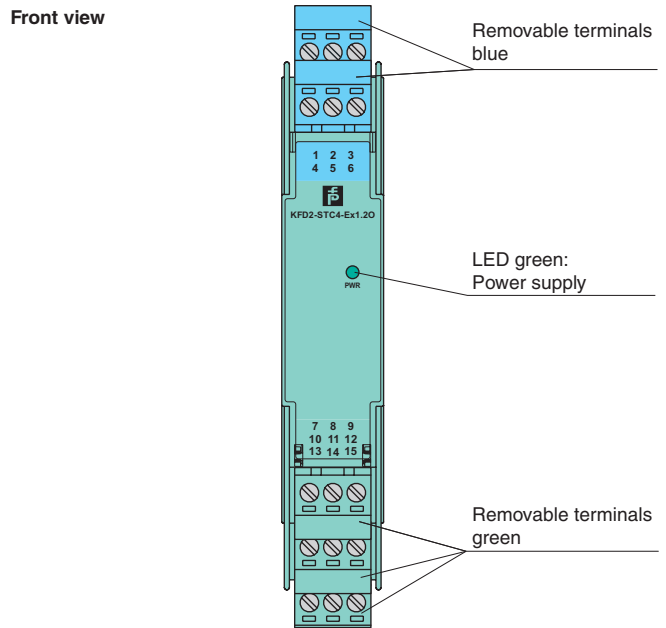
Test sockets for the connection of HART communicators are integrated into the terminals of the device.

**Application**

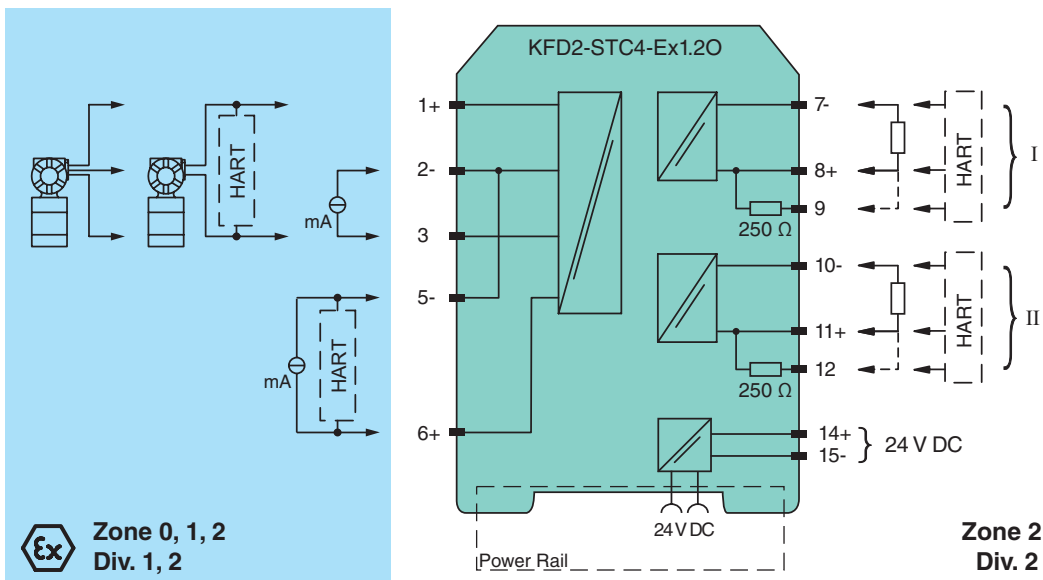
The device supports the following SMART protocols:

- HART
- BRAIN
- Foxboro

**Assembly**



**Connection**



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<b>General specifications</b>	
Signal type	Analog input
<b>Supply</b>	
Connection	Power Rail or terminals 14+, 15-
Rated voltage	20 ... 35 V DC
Ripple	within the supply tolerance
Power loss	1.9 W
Power consumption	2.5 W
<b>Input</b>	
Connection	terminals 1+, 2-, 3 or 5-, 6+
Input signal	0/4 ... 20 mA
Voltage drop $U_d$	$\leq 2.4$ V at 20 mA (terminals 5, 6)
Input resistance	$\leq 76$ $\Omega$ terminals 2-, 3 ; $\leq 500$ $\Omega$ terminals 1+, 3 (250 $\Omega$ load)
Available voltage	$\geq 16$ V at 20 mA terminals 1+, 3
<b>Output</b>	
Connection	terminals 7-, 8+,9; 10-, 11+,12
Load	0 ... 550 $\Omega$
Output signal	0/4 ... 20 mA (overload > 25 mA)
Ripple	$\leq 50$ $\mu$ A <sub>rms</sub>
<b>Transfer characteristics</b>	
Deviation	at 20 °C / 0/4 ... 20 mA $\leq 10$ $\mu$ A incl. calibration, linearity, hysteresis, loads and fluctuations of supply voltage
Influence of ambient temperature	0.25 $\mu$ A/°C
Frequency range	hazardous area into the safe area: bandwidth with 0.5 $V_{SS}$ 0 ... 7.5 kHz (-3 dB) safe area into the hazardous area: bandwidth with 0.5 $V_{SS}$ 0.3 ... 7.5 kHz (-3 dB)
Rise time	20 $\mu$ s
Start-up time	200 $\mu$ s
<b>Electrical isolation</b>	
Output/power supply	functional insulation, rated insulation voltage 50 V AC
Output/Output	functional insulation, rated insulation voltage 50 V AC
<b>Directive conformity</b>	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
<b>Conformity</b>	
Electromagnetic compatibility	NE 21:2006
Protection degree	IEC 60529
<b>Ambient conditions</b>	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
<b>Mechanical specifications</b>	
Protection degree	IP20
Mass	approx. 200 g
Dimensions	20 x 124 x 115 mm (0.8 x 4.9 x 4.5 in) , housing type B2
<b>Data for application in connection with Ex-areas</b>	
EC-Type Examination Certificate	BAS 99 ATEX 7060 , for additional certificates see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a>
Group, category, type of protection	$\text{Ex}$ II (1)GD, [Ex ia] IIC, [Ex iaD] (-20 °C $\leq T_{amb}$ $\leq$ 60 °C) [circuit(s) in zone 0/1/2]
Input	Ex ia IIC
<b>Supply</b>	
Maximum safe voltage $U_m$	250 V (Attention! The rated voltage can be lower.)
<b>Equipment</b>	
Voltage $U_o$	25.4 V
Current $I_o$	86.8 mA
Power $P_o$	551 mW
<b>Equipment</b>	
Current $I_o$ /Current $I_i$	74 mA / 115 mA
Current $I_i$	115 mA
Voltage $U_o$	3.5 V
Current $I_o$	74 mA
Power $P_o$	64 mW
<b>Equipment</b>	
Voltage $U_i$	30 V
Current $I_i$	115 mA
Voltage $U_o$	25.4 V
Current $I_o$	115 mA
Power $P_o$	584 mW

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Equipment		terminals 5-, 6+
Voltage	$U_i$	30 V
Current	$I_i$	115 mA
Voltage	$U_o$	8.7 V
Current	$I_o$	0 mA
Output		
Maximum safe voltage $U_m$		250 V (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 classification		⊕ II 3G Ex nA II T4 [device in zone 2]
Electrical isolation		
Input/Output		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Input/power supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 94/9/EC		EN 60079-0:2006, EN 60079-11:2007, EN 61241-11:2006 , EN 60079-15:2005
<b>International approvals</b>		
UL approval		
Control drawing		116-0173 (cULus)
<b>General information</b>		
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 <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

## Accessories

**Power feed modules 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 100 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.

**The Power Rail must not be fed via the device terminals of the individual devices!**

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