

Features

- 2-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input 2-wire SMART transmitters
- Output 0/2 V ... 10 V
- Terminals with test points
- Up to SIL2 acc. to IEC 61508

Function

This isolated barrier is used for intrinsic safety applications. The device supplies 2-wire SMART transmitters in a hazardous area.

It transfers the analog input signal to the safe area as an isolated voltage value.

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.

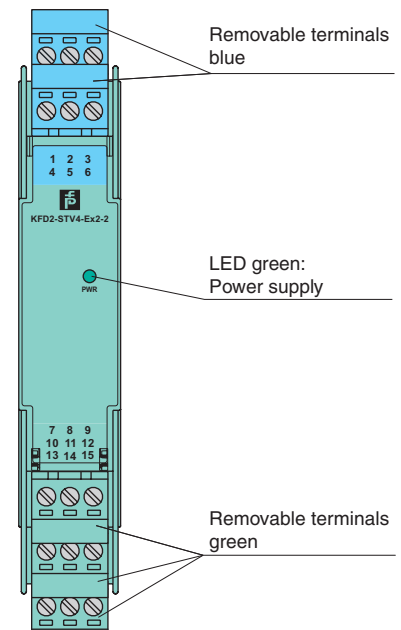
Application

The device supports the following SMART protocols:

- HART
- BRAIN
- Foxboro

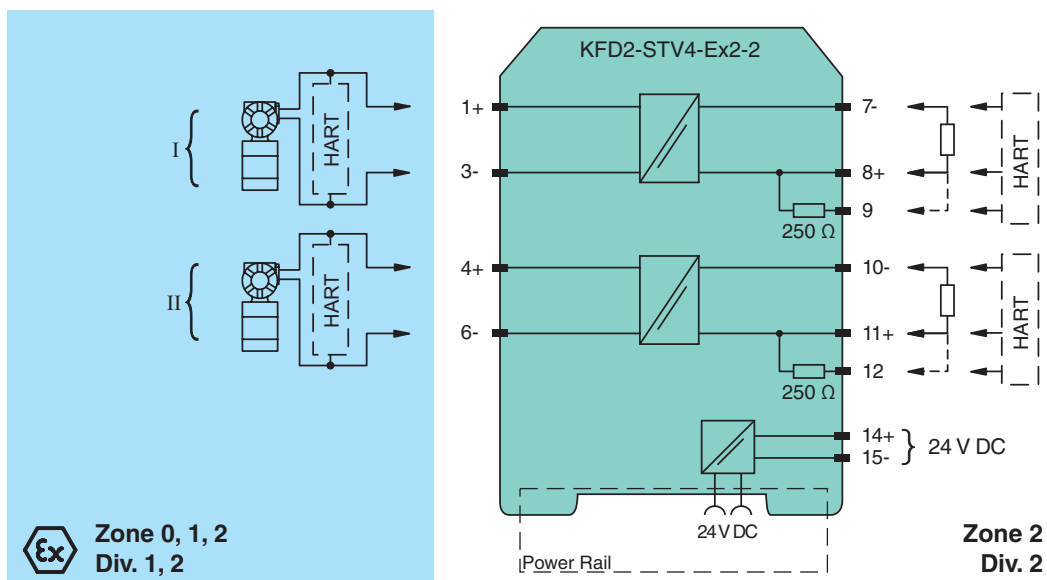
Assembly

Front view



SIL2

Connection



General specifications		
Signal type		Analog input
Supply		
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		≤ 2.8 W
Input		
Connection		terminals 1+, 3-; 4+, 6-
Input signal		0/4 ... 20 mA
Available voltage		≥ 16 V at 20 mA, terminals 1+, 3
Output		
Connection		terminals 7-, 8+; 10-, 11+
Load		output resistance: 500 Ω
Output signal		0/2 ... 10 V
Ripple		≤ 25 mV
Transfer characteristics		
Deviation		at 20 °C (68 °F), 0/2 ... 10 V ≤ 10 mV incl. calibration, linearity, hysteresis, loads and fluctuations of supply voltage
Influence of ambient temperature		≤ 20 ppm/K
Frequency range		field side into the control side: band width with 1 V _{pp} signal 0 ... 7.5 kHz (-3 dB) safe area to hazardous area: band width with 1 V _{SS} signal 0.3 ... 7.5 kHz (-3 dB)
Rise time		20 μs
Settling time		200 μs
De-energized delay		20 μs
Electrical isolation		
Output/power supply		functional insulation, rated insulation voltage 50 V AC
Output/Output		functional insulation, rated insulation voltage 50 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2004/108/EC		EN 61326-1:2006
Conformity		
Electromagnetic compatibility		NE 21
Protection degree		IEC 60529
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Protection degree		IP20
Mass		approx. 150 g
Dimensions		20 x 124 x 115 mm (0.8 x 4.9 x 4.5 in) , housing type B2
Data for application in connection with Ex-areas		
EC-Type Examination Certificate		BAS 99 ATEX 7025 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		Ⓔ 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]
Input		Ex ia IIC
Voltage	U _o	25.2 V
Current	I _o	93 mA
Power	P _o	0.586 W
Supply		
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 class		Ⓔ II 3G Ex nA II T4 [device in zone 2]
Electrical isolation		
Input/Output		safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
Input/power supply		safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity		
Directive 94/9/EC		EN 60079-0:2009, EN 60079-11:2007, EN 60079-15:2005, EN 61241-11:2006
International approvals		
UL approval		
Control drawing		116-0173 (cULus)
IECEX approval		IECEX BAS 04.0015
Approved for		[Zone 0] [Ex ia] IIC, [Ex iaD], [Ex ia] I

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 .

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 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.

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.



Attention

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