

Features

- 2-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input 2-wire SMART transmitters
- Output 0/1 V ... 5 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.

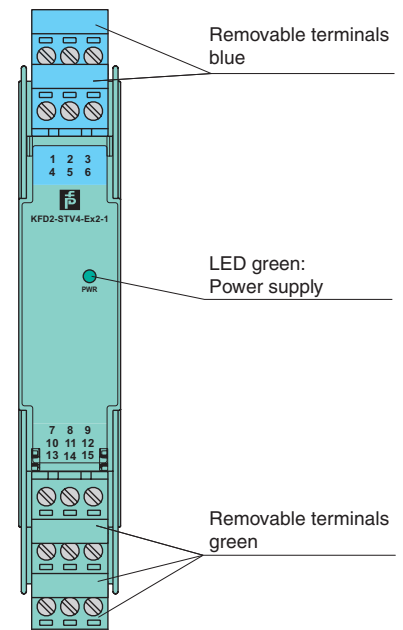
Application

The device supports the following SMART protocols:

- HART
- BRAIN
- Foxboro

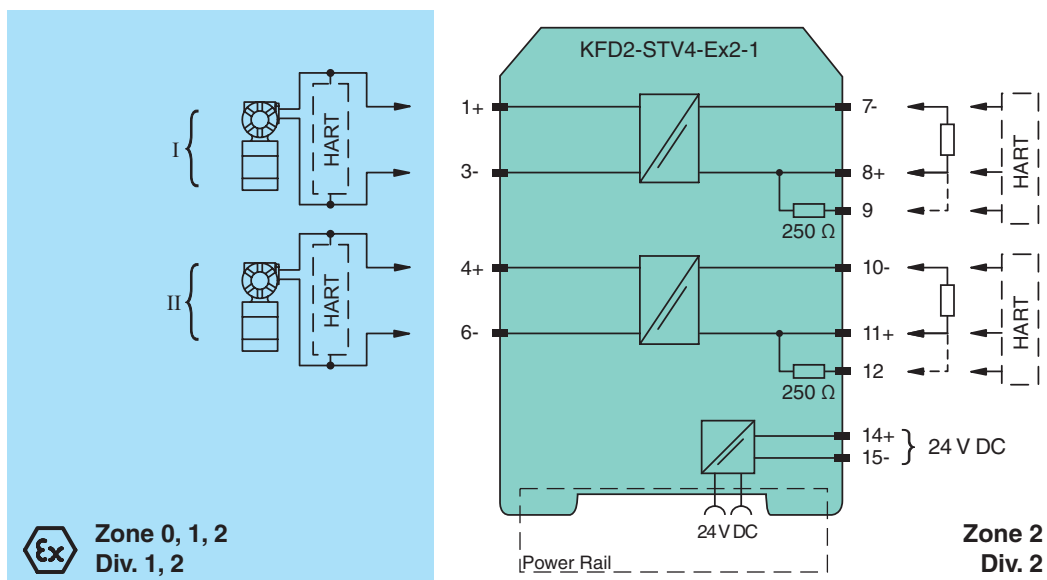
Assembly

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: 250 Ω
Output signal	0/1 ... 5 V
Ripple	≤ 12.5 mV
Transfer characteristics	
Deviation	at 20 °C (68 °F), 0/1 ... 5 V ≤ 5 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: bandwidth with 0.5 V _{pp} signal 0 ... 7.5 kHz (-3 dB) control side into the field side: bandwidth with 0.5 V _{pp} signal 0.3 ... 7.5 kHz (-3 dB)
Rise time	20 μs
Settling time	200 μs
De-energized delay	20 μs
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
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	
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!