Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- 2-wire SMART transmitter
- Output 4 mA ... 20 mA
- SMART capable up to 40 kHz (-1dB)
- Suitable for Honeywell DE protocol
- Terminals with test points

Function

This isolated barrier is used for intrinsic safety applications. It provides a 2-wire SMART transmitter with power in a hazardous area and transfers the analog signal to the safe area as an isolated current source.

Digital signals up to 40 kHz may be superimposed on the analog values in the hazardous or safe area and are transferred bi-directionally.

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

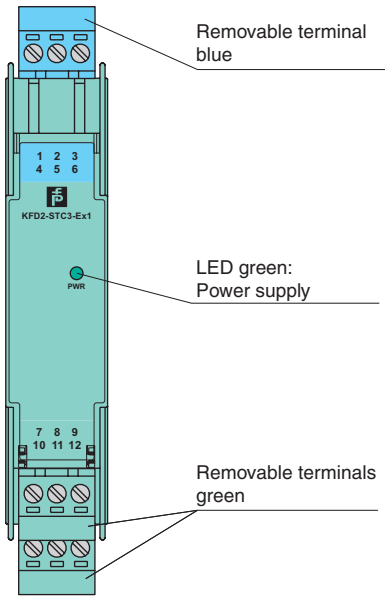
Application

The device supports the following SMART protocols:

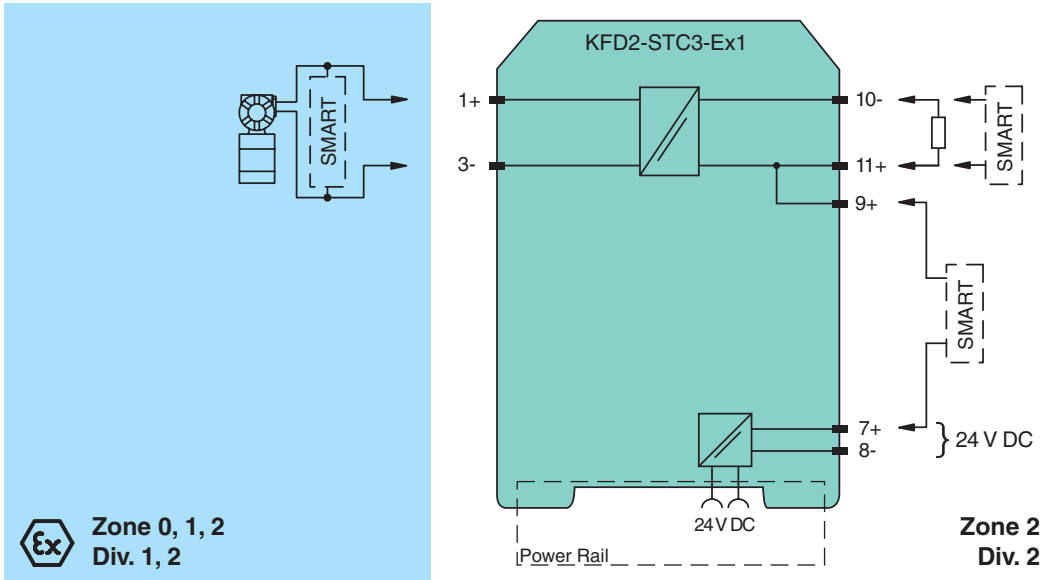
- HART
- BRAIN
- Honeywell DE

Assembly

Front view



Connection



Release date 2010-10-29 Date of issue 2010-10-29 126986_ENG.xml

General specifications		
Signal type		Analog input
Supply		
Connection		Power Rail or terminals 7+, 8-
Rated voltage		20 ... 35 V DC
Ripple		within the supply tolerance
Power loss		≤ 1.6 W
Power consumption		≤ 2 W
Input		
Connection		terminals 1+, 3-
Input signal		4 ... 20 mA
Available voltage		approx. 17 V at 4 ... 20 mA
Output		
Connection		terminals 9+, 10-, 11+
Output signal		4 ... 20 mA , max. load 1000 Ω , for HART ≥ 230 Ω, Honeywell DE 230 ... 280 Ω (transmitter and communicator dependent)
Ripple		≤ 0.05 % of output signal range
Transfer characteristics		
Deviation		≤ 0.05 % of output signal range (current output), ≤ 10 µA at 20 °C (68 °F)
Influence of ambient temperature		≤ 20 ppm/K
Frequency range		hazardous area to safe area: bandwidth with 1 mA_{pp} signal 0 ... 40 kHz (-1 dB); 0 ... 50 kHz (-6 dB) safe area to hazardous area: bandwidth with 250 mV_{pp} signal 2 Hz ... 40 kHz (-1 dB); 1 Hz ... 50 kHz (-6 dB)
Rise time		10 µs
Electrical isolation		
Output/power supply		functional insulation, rated insulation voltage 50 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2004/108/EC		EN 61326-1:2006
Conformity		
Electromagnetic compatibility		NE 21:2006
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 115 x 115 mm (0.8 x 4.5 x 4.5 in) , housing type B1
Data for application in connection with Ex-areas		
EC-Type Examination Certificate		BAS 01 ATEX 7369 , 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]
Input		Ex ia IIC
Voltage	U_o	25.2 V DC
Current	I_o	93 mA
Power	P_o	587 mW
Supply		
Maximum safe voltage U_m		250 V (Attention! The rated voltage can be lower.)
Statement of conformity		BASEEFA 09 ATEX 0218X , observe statement of conformity
Group, category, type of protection, temperature classification		⟨Ex⟩ 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 60079-15:2005, EN 61241-11:2006
International approvals		
UL approval		
Control drawing		116-0173 (cULus)
IECEx approval		IECEx BAS 06.0088 IECEx BAS 09.0102X
Approved for		[zone 0] [Ex ia] IIC, [Ex iaD], [Ex ia] I Ex nA II T4
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.

Release date 2010-10-29 09:53 Date of issue 2010-10-29 126986_ENG.xml

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!

Release date 2010-10-29 09:53 Date of issue 2010-10-29 126986_ENG.xml