

Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input for 2-wire SMART transmitters and current sources
- Output for 4 mA ... 20 mA or 1 V ... 5 V
- Sink or source mode
- Line fault detection (LFD)
- Housing width 12.5 mm
- Up to SIL 3 acc. to IEC 61508

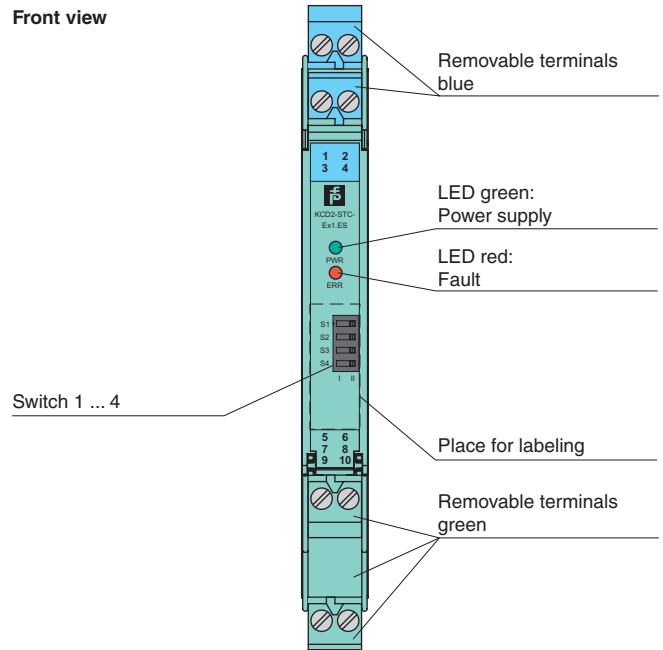
Function

This isolated barrier is used for intrinsic safety applications. The device supplies 2-wire transmitters in the hazardous area, and can also be used with current sources. It transfers the analog input signal to the safe area as an isolated current value. Bi-directional communication is supported for SMART transmitters that use current modulation to transmit data and voltage modulation to receive data. The output is selected as a current source, current sink, or voltage source via DIP switches. A fault is signaled by LEDs acc. to NAMUR NE44 and a separate collective error message output. Test sockets for the connection of HART communicators are integrated into the terminals of the device.

Application

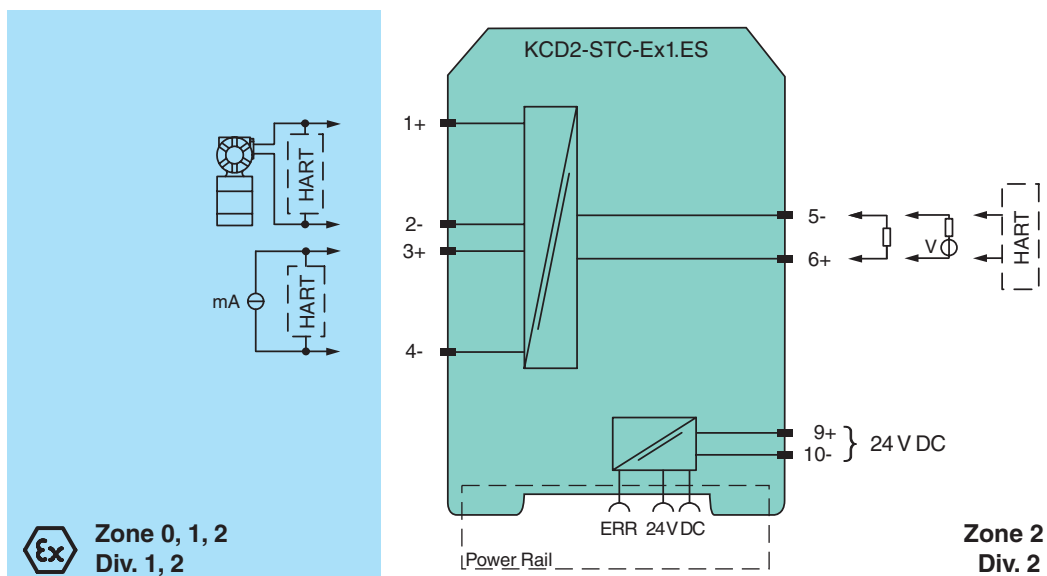
- The device supports the following SMART protocol:
- HART

Assembly



SIL 3

Connection







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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

General specifications		
Signal type		Analog input
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 3
Supply		
Connection		Power Rail or terminals 9+, 10-
Rated voltage	U_r	19 ... 30 V DC
Ripple		≤ 10 %
Rated current	I_r	≤ 50 mA
Power dissipation		≤ 800 mW
Power consumption		≤ 1.2 W
Input		
Connection side		field side
Connection		terminals 1+, 2-; 3+, 4-
Input signal		4 ... 20 mA , limited to approx. 27 mA reverse polarity protected
Line fault detection		downscaling ≤ 3 mA ; upscaling ≥ 22 mA
Voltage drop		approx. 5 V on terminals 3+, 4-
Available voltage		≥ 15 V at 20 mA terminals 1+, 2-
Output		
Connection side		control side
Connection		terminals 5-, 6+
Load		0 ... 300 Ω (source mode)
Output signal		4 ... 20 mA or 1 ... 5 V (on 250 Ω, 0.1 % internal shunt) 4 ... 20 mA (sink mode), operating voltage 16 ... 28 V
Ripple		20 mV _{rms}
Fault indication output		
Output type		fault bus signal , open collector transistor
Transfer characteristics		
Deviation		at 20 °C (68 °F) ≤ ± 20 μA incl. calibration, linearity, hysteresis, loads and supply voltage fluctuations (source mode and sink mode 4 ... 20 mA) ≤ 10 mV incl. calibration, linearity, hysteresis and fluctuations of supply voltage (source mode 1 ... 5 V)
Influence of ambient temperature		< 2 μA/K (0 ... 70 °C (32 ... 158 °F)); < 4 μA/K (-20 ... 0 °C (-4 ... 32 °F)) (source mode and sink mode 4 ... 20 mA) < 0.5 mV/K (0 ... 70 °C (32 ... 158 °F)); < 1 mV/K (-20 ... 0 °C (-4 ... 32 °F)) (source mode 1 ... 5 V)
Frequency range		field side into the control side: bandwidth with 1 mA _{pp} signal 0 ... 3 kHz (-3 dB) control side into the field side: bandwidth with 0.5 V _{pp} signal 0 ... 3 kHz (-3 dB)
Settling time		≤ 200 ms
Rise time/fall time		≤ 20 ms
Galvanic 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
Output/power supply		Basic isolation acc. to EN 61010-1 rated insulation voltage ≤ 50 V
Indicators/settings		
Display elements		LEDs
Control elements		DIP-switch
Configuration		via DIP switches
Labeling		space for labeling at the front
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Conformity		
Electromagnetic compatibility		NE 21:2006
Degree of protection		IEC 60529:2001
Ambient conditions		
Ambient temperature		-20 ... 70 °C (-4 ... 158 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 100 g
Dimensions		12.5 x 114 x 124 mm (0.5 x 4.5 x 4.9 inch) , housing type A2
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas		
EU-type examination certificate		CESI 10 ATEX 071

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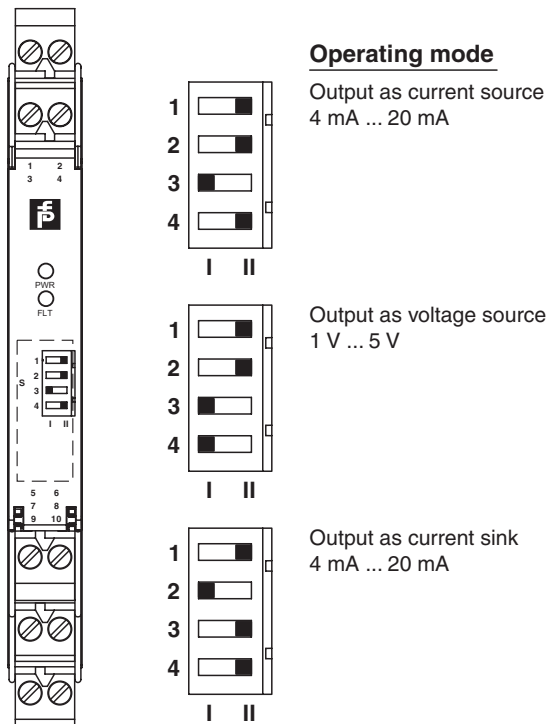
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Marking		 II (1)G [Ex ia Ga] IIC  II (1)D [Ex ia Da] IIIC  I (M1) [Ex ia Ma] I
Input		Ex ia, Ex iaD
Supply		
Maximum safe voltage	U_m	253 V AC (Attention! U_m is no rated voltage.)
Equipment		terminals 1+, 2-
Voltage	U_o	25.2 V
Current	I_o	100 mA
Power	P_o	630 mW
Internal capacitance	C_i	5.7 nF
Internal inductance	L_i	negligible
Equipment		terminals 3+, 4-
Voltage	U_i	< 30 V
Current	I_i	< 128 mA
Voltage	U_o	7.2 V
Current	I_o	100 mA
Power	P_o	25 mW
Internal capacitance	C_i	5.7 nF
Internal inductance	L_i	negligible
Certificate		PF 10 CERT 1749 X
Marking		 II 3G Ex nA IIC T4 Gc
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010
International approvals		
UL approval		
Control drawing		116-0378 (cULus)
IECEX approval		IECEX CES 11.0001
General information		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .
Accessories		
Optional accessories		- power feed module KFD2-EB2(.R4A.B)(.SP) - universal power rail UPR-03(-M)(-S) - profile rail K-DUCT-BU(-UPR-03)

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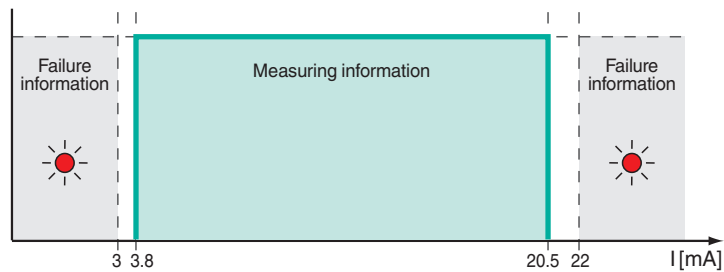
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Configuration



Factory settings: output as current source 4 mA ... 20 mA

Transfer characteristic



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