

Features

- 1-channel signal conditioner
- 24 V DC supply (Power Rail)
- Input for 2-wire SMART transmitters and current sources
- Signal splitter (1 input and 2 outputs)
- Dual output 0/4 mA ... 20 mA or 0/1 V ... 5 V
- Terminal blocks with test sockets
- Up to SIL 2 acc. to IEC 61508

Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits.

The device supplies 2-wire transmitters, and can also be used with current sources.

The device transfers the analog input signal to the control side as two isolated output signals.

Bi-directional communication is supported for SMART transmitters that use current modulation to transmit data and voltage modulation to receive data.

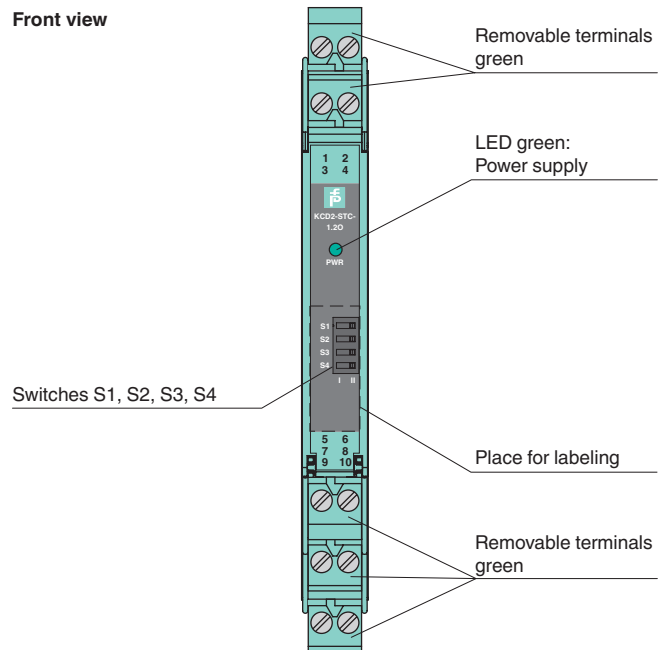
The output is selected as a current source, current sink, or voltage source via switches.

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

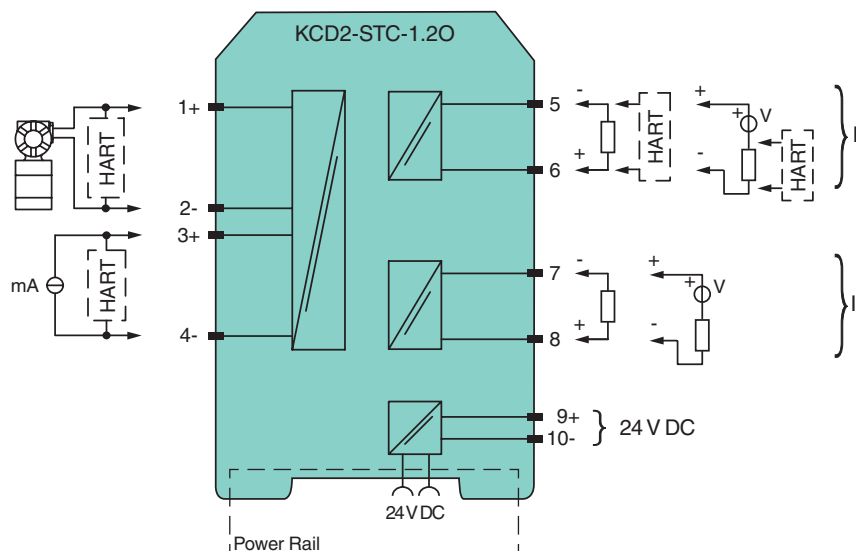
Assembly



SIL 2



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 2
Supply	
Connection	Power Rail or terminals 9+, 10-
Rated voltage U_r	18 ... 30 V DC
Ripple	within the supply tolerance
Power dissipation	approx. 1.4 W at 20 mA transfer current, 250 Ω in both outputs
Power consumption	2 W
Input	
Connection side	field side
Connection	terminals 1+, 2- (sink); 3+, 4- (source)
Input signal	0/4 ... 20 mA
Voltage drop	terminals 3, 4: ≤ 6.1 V at 20 mA
Short-circuit current	terminals 1+, 2-: 25 mA
Input resistance	terminals 1+, 2-: $\leq 500 \Omega$ (250 Ω load)
Available voltage	terminals 1+, 2-: ≥ 16 V at 20 mA , ≥ 18.5 V at 4 mA
Output	
Connection side	control side
Connection	source: terminals 5-, 6+; 7-, 8+ sink: terminals 5+, 6-, 7+, 8-
Load	channel 1: 0 ... 500 Ω (20 mA)/ > 1 M Ω (5 V) channel 2: 0 ... 500 Ω (20 mA)/ > 1 M Ω (5 V)
Output signal	0/4 ... 20 mA or 0/1 ... 5 V
Ripple	$\leq 50 \mu\text{A}_{\text{rms}}$
Transfer characteristics	
Deviation	$I_{\text{out}} < 20 \mu\text{A}$ (0.1 %); $V_{\text{out}} < 7.5$ mV (0.15 %) incl. calibration, linearity, hysteresis and fluctuation of supply voltage, at 20 °C (68 °F), 0/4 ... 20 mA, 0/1 ... 5 V
Influence of ambient temperature	current output: 0.25 $\mu\text{A}/\text{K}$ voltage output: 80 $\mu\text{V}/\text{K}$
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)
Settling time	6 ms
Rise time/fall time	2 ms
Galvanic isolation	
Input/Output	basic insulation according to IEC 61010-1, rated insulation voltage 300 V_{eff}
Input/power supply	basic insulation according to IEC 61010-1, rated insulation voltage 300 V_{eff}
Output/power supply	functional insulation, rated insulation voltage 50 V AC
Output/Output	functional insulation, rated insulation voltage 50 V AC
Indicators/settings	
Display elements	LED
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 21:2012 EN 61326-3-2:2008
Degree of protection	IEC 60529:2001
Protection against electrical shock	UL 61010-1:2012
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Degree of protection	IP20
Connection	screw terminals
Mass	approx. 100 g
Dimensions	12.5 x 114 x 122 mm (0.5 x 4.5 x 4.8 inch) , housing type A2
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
General information	
Note	Both output loads must be connected to ensure complete and correct operation within the technical specification.

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Supplementary information

Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com.

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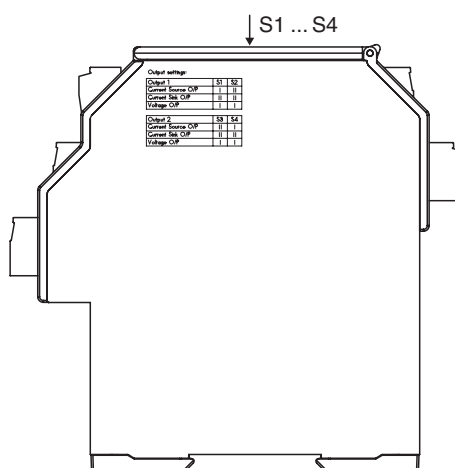
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Configuration



Output switch settings

Output 1	S1	S2
Current source output	I	II
Current sink output	II	II
Voltage output	I	I
Not valid	II	I

Output 2	S3	S4
Current source output	II	I
Current sink output	II	II
Voltage output	I	I
Not valid	I	II

Factory settings: current source output, for both channels.

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 150 individual devices depending on the power consumption of the devices. Collective error messages received from the Power Rail activate a galvanically-isolated mechanical contact.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical insert 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.



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

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