

Features

- 1-channel signal conditioner
- 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
- Housing width 12.5 mm
- Up to SIL 2 acc. to IEC 61508

Function

This signal conditioner provides the isolation for non-intrinsically safe applications.

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

It transfers the analog input signal as an isolated current value. Digital signals may be superimposed on the input signal and are transferred bi-directionally.

Selectable output of current source, sink mode, or voltage output is available via DIP switches.

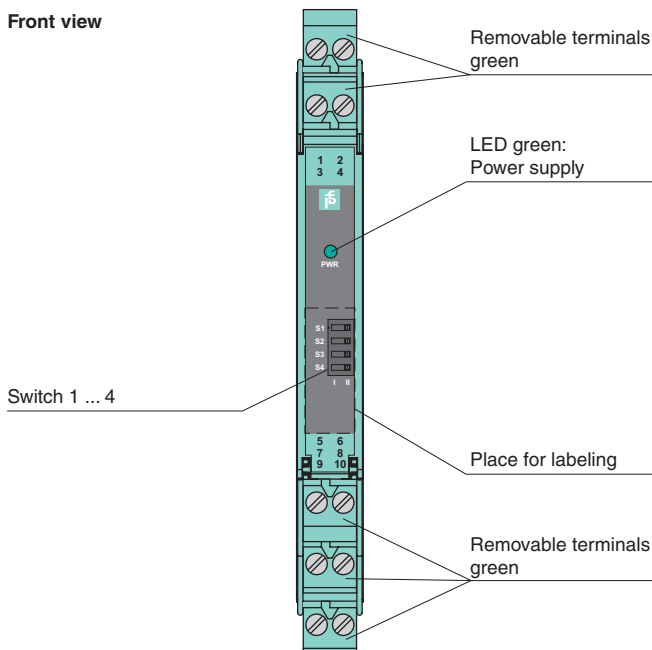
If the HART communication resistance in the loop is too low, the internal resistance of 250 Ω between terminals 6 and 8 can be used.

Test sockets for the connection of HART communicators are integrated into the terminals of the device.

Application

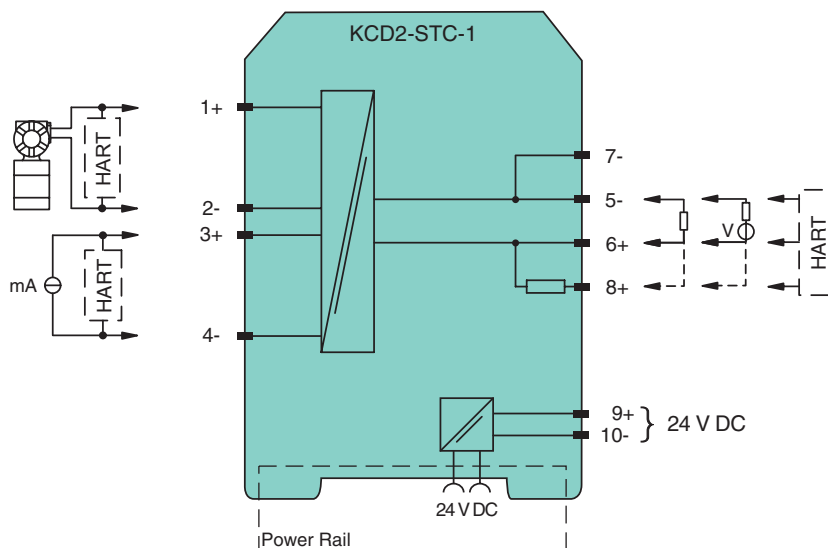
- The device supports the following SMART protocols:
- HART
 - BRAIN

Assembly



SIL 2

Connection



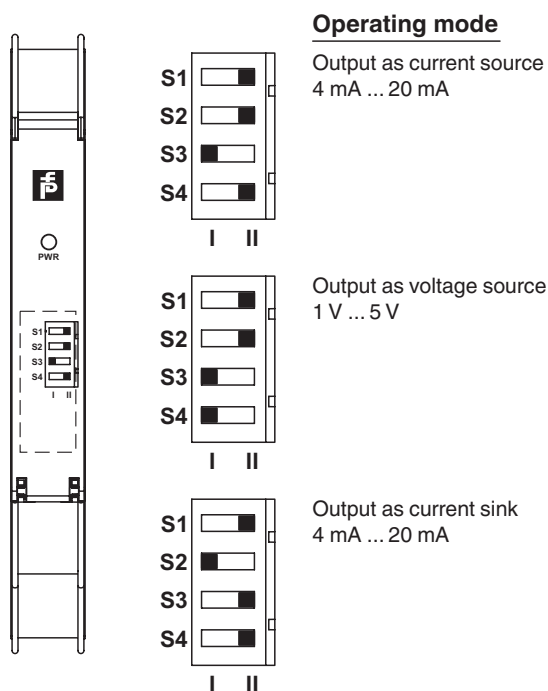
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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	19 ... 30 V DC
Ripple	$\leq 10 \%$
Rated current I_r	$\leq 45 \text{ mA}$
Power dissipation	$\leq 800 \text{ mW}$
Power consumption	$\leq 1.1 \text{ W}$
Input	
Connection side	field side
Connection	terminals 1+, 2-; 3+, 4-
Input signal	4 ... 20 mA limited to approx. 30 mA
Open circuit voltage/short-circuit current	terminals 1+, 2-: 22 V / 30 mA
Voltage drop	terminals 3+, 4- : approx. 5 V
Available voltage	terminals 1+, 2-: $\geq 15 \text{ V}$ at 20 mA
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 15.5 ... 26 V
Ripple	20 mV _{rms}
Transfer characteristics	
Deviation	at 20 °C (68 °F) $\leq \pm 0.1 \%$ incl. non-linearity and hysteresis (source mode 4 ... 20 mA) $\leq \pm 0.2 \%$ incl. non-linearity and hysteresis (sink mode 4 ... 20 mA) $\leq \pm 0.2 \%$ incl. non-linearity and hysteresis (source mode 1 ... 5 V)
Influence of ambient temperature	$< 2 \mu\text{A/K}$ (0 ... 60 °C (32 ... 140 °F)); $< 4 \mu\text{A/K}$ (-20 ... 0 °C (-4 ... 32 °F)) (source mode and sink mode 4 ... 20 mA) $< 0.5 \text{ mV/K}$ (0 ... 60 °C (32 ... 140 °F)); $< 1 \text{ mV/K}$ (-20 ... 0 °C (-4 ... 32 °F)) (source mode 1 ... 5 V)
Frequency range	bandwidth at 0.5 V _{ss} signal 0 ... 3 kHz (-3 dB)
Settling time	$\leq 200 \text{ ms}$
Rise time/fall time	$\leq 20 \text{ ms}$
Galvanic isolation	
Input/Output	reinforced insulation acc. to EN 50178, rated insulation voltage 300 V _{eff}
Input/power supply	reinforced insulation acc. to EN 50178, rated insulation voltage 300 V _{eff}
Output/power supply	reinforced insulation acc. to EN 50178, rated insulation voltage 300 V _{eff}
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 21:2006
Degree of protection	IEC 60529:2001
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 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
General information	
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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Configuration



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

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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