

Features

- 1-channel signal conditioner
- 24 V DC supply (Power Rail)
- Input 2-wire SMART transmitters and 2-wire SMART current sources
- Output 4 mA ... 20 mA or 1 V ... 5 V
- Sink or source mode
- Housing width 12.5 mm
- Up to SIL2 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.

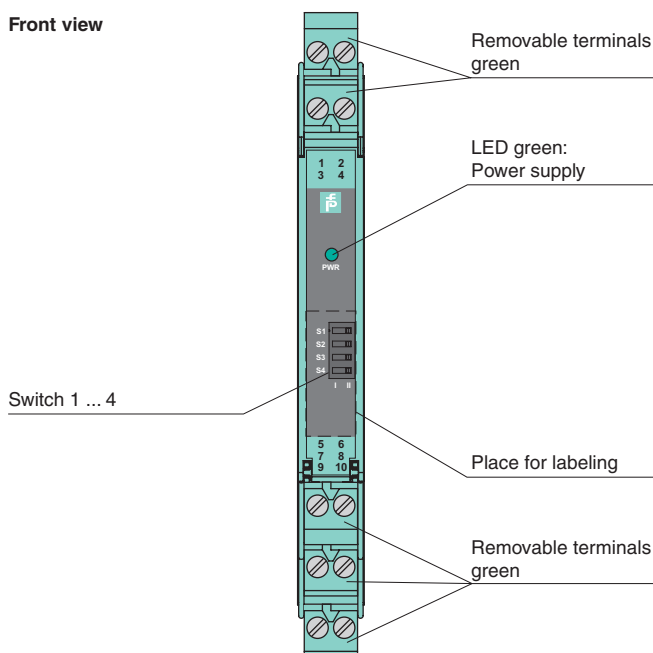
Application

The device supports the following SMART protocols:

- HART
- BRAIN

Assembly

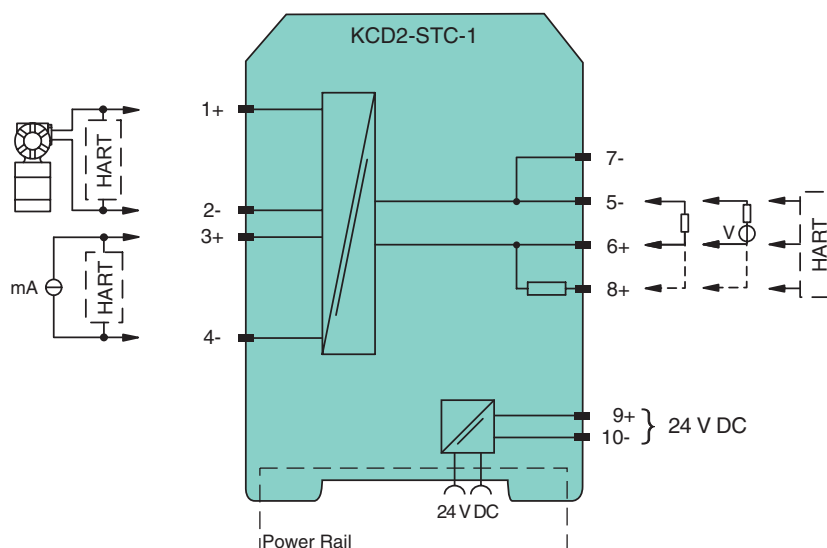
Front view



CE

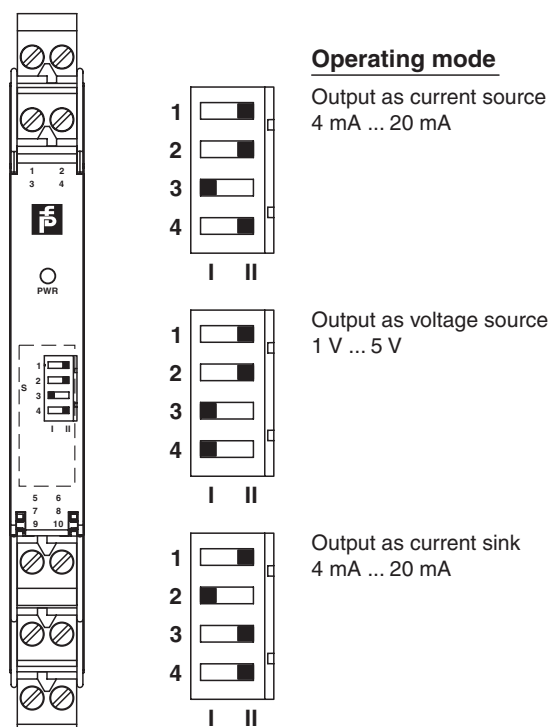
SIL2

Connection



General specifications	
Signal type	Analog input
Supply	
Connection	Power Rail or terminals 9+, 10-
Rated voltage	19 ... 30 V DC
Ripple	≤ 10 %
Rated current	≤ 45 mA
Power loss	≤ 800 mW
Power consumption	≤ 1.1 W
Input	
Connection	terminals 1+, 2-; 3+, 4-
Input signal	4 ... 20 mA limited to approx. 30 mA
Voltage drop U_d	approx. 5 V on terminals 3+, 4-
Available voltage	≥ 15 V at 20 mA terminals 1+, 2-
Output	
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) ≤ ± 0.1 % incl. non-linearity and hysteresis (source mode 4 ... 20 mA) ≤ ± 0.2 % incl. non-linearity and hysteresis (sink mode 4 ... 20 mA) ≤ ± 0.2 % incl. non-linearity and hysteresis (source mode 1 ... 5 V)
Influence of ambient temperature	< 2 μA/K (0 ... 60 °C (32 ... 140 °F)); < 4 μA/K (-20 ... 0 °C (-4 ... 32 °F)) (source mode and sink mode 4 ... 20 mA) < 0.5 mV/K (0 ... 60 °C (32 ... 140 °F)); < 1 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)
Rise time	10 to 90 % ≤ 20 ms
Electrical isolation	
Input/output	reinforced insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Input/power supply	reinforced insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Output/power supply	reinforced insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Indicators/settings	
LED PWR	green
DIP-switch	selection of operating mode: current source, current sink or voltage source
Factory setting	output: current source
Labeling	space for labeling at the front
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
Conformity	
Electromagnetic compatibility	NE 21
Protection degree	EN 60529
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Protection degree	IP20
Mass	approx. 100 g
Dimensions	12.5 x 114 x 124 mm (0.5 x 4.5 x 4.9 in) , housing type A2
General information	
Supplementary information	Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com .

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 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!