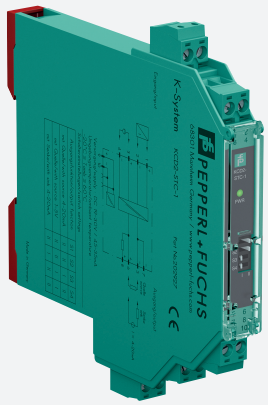


SMART Transmitter Power Supply

KCD2-STC-1

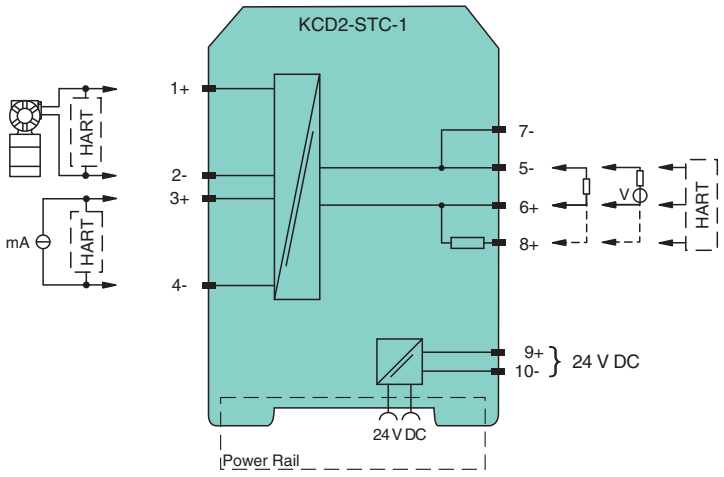
- 1-channel signal conditioner
- 24 V DC supply (Power Rail)
- Input for 2-wire SMART transmitters and current sources
- Output for 4 mA ... 20 mA or 1 V ... 5 V
- Sink or source mode
- Housing width 12.5 mm
- Up to SIL 2 acc. to IEC/EN 61508

CE SIL 2 HART COMMUNICATION PROTOCOL

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.

Connection



Technical Data

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		≤ 10 %
Rated current	I_r	≤ 45 mA
Power dissipation		≤ 800 mW

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Technical Data

Power consumption	≤ 1.1 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-: ≥ 15 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) ≤ ± 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)
Settling time	≤ 200 ms
Rise time/fall time	≤ 20 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	-40 ... 60 °C (-40 ... 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) (W x H x D) , 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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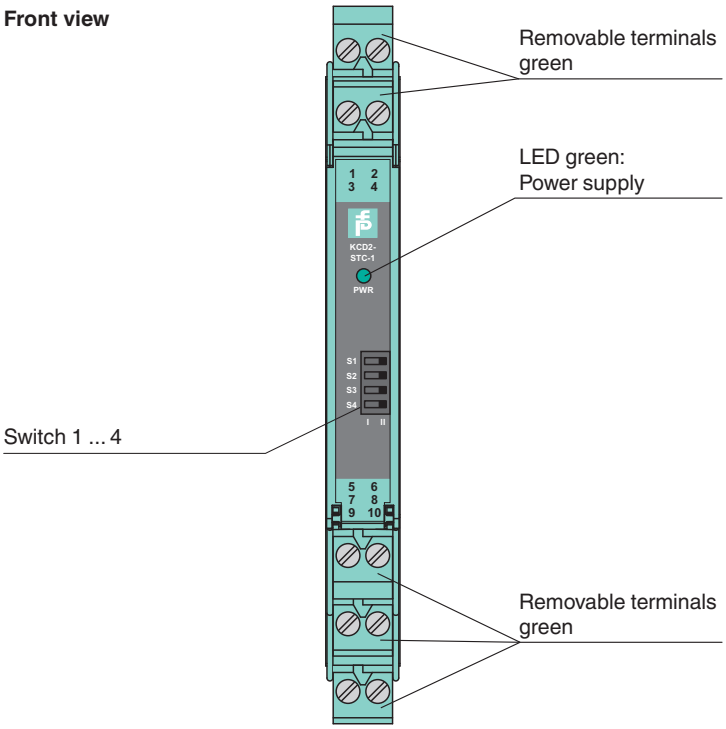
Assembly

Front view



Matching System Components

	**KFD2-EB2**	Power Feed Module
	**UPR-03**	Universal Power Rail with end caps and cover, 3 conductors, length: 2 m
	**UPR-03-M**	Universal Power Rail with end caps and cover, 3 conductors, length: 1,6 m
	**UPR-03-S**	Universal Power Rail with end caps and cover, 3 conductors, length: 0.8 m
	**K-DUCT-GY**	Profile rail, wiring comb field side, gray
	**K-DUCT-GY-UPR-03**	Profile rail with UPR-03-* insert, 3 conductors, wiring comb field side, gray

Accessories

	**KC-ST-5GN**	Terminal block for KC modules, 2-pin screw terminal, green
	**KC-STP-5GN**	Terminal block for KC modules, 2-pin screw terminal, with test sockets, green
	**KF-CP**	Red coding pins, packaging unit: 20 x 6

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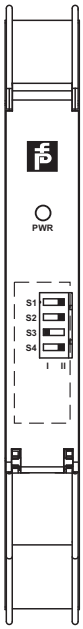
Application

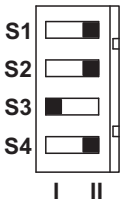
The device supports the following SMART protocols:

- HART
- BRAIN

Configuration



Operating mode



Output as current source
4 mA ... 20 mA

Output as voltage source
1 V ... 5 V

Output as current sink
4 mA ... 20 mA

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

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