



# SMART Transmitter Power Supply KCD2-STC-1.20

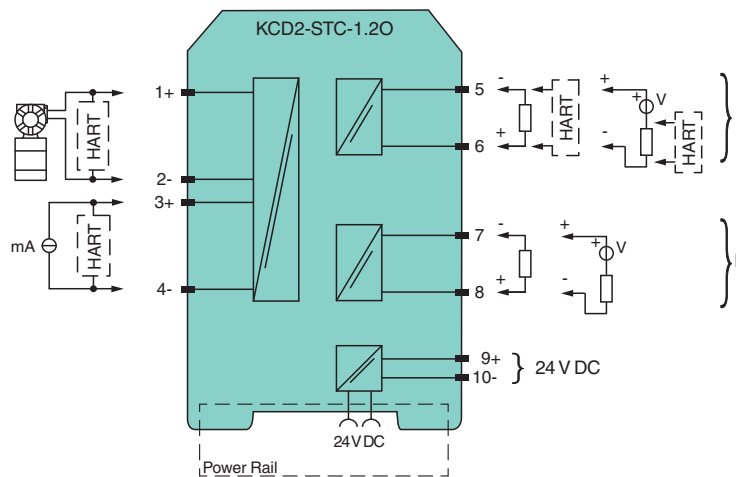
- 1-channel signal conditioner
- 24 V DC supply (Power Rail)
- Input for 2-wire SMART transmitters and current sources
- Signal splitter (1 input and 2 outputs)
- Dual output 0/4 mA ... 20 mA or 0/1 V ... 5 V
- Terminal blocks with test sockets
- Up to SIL 2 (SC 3) acc. to IEC/EN 61508



## 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.

## Connection



## Technical Data

General specifications	
Signal type	Analog input
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 2
Systematic capability (SC)	SC 3
Supply	
Connection	Power Rail or terminals 9+, 10-
Rated voltage	$U_r$ 19 ... 30 V DC
Ripple	within the supply tolerance
Power dissipation	approx. 1.4 W at 20 mA transfer current, 250 $\Omega$ in both outputs

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

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## Technical Data

Power consumption	2 W
<b>Input</b>	
Connection side	field side
Connection	terminals 1+, 2- (sink); 3+, 4- (source)
Input signal	0/4 ... 20 mA
Voltage drop	terminals 3, 4: $\leq 6.1$ V at 20 mA
Short-circuit current	terminals 1+, 2-: 25 mA
Input resistance	terminals 1+, 2-: max. 500 $\Omega$ (BRAIN) (250 $\Omega$ load)
Available voltage	terminals 1+, 2-: $\geq 16$ V at 20 mA , $\geq 18.5$ V at 4 mA
<b>Output</b>	
Connection side	control side
Connection	source: terminals 5-, 6+; 7-, 8+ sink: terminals 5+, 6-, 7+, 8-
Load	channel 1: 0 ... 500 $\Omega$ (20 mA)/ $> 1$ M $\Omega$ (5 V) channel 2: 0 ... 500 $\Omega$ (20 mA)/ $> 1$ M $\Omega$ (5 V)
Output signal	0/4 ... 20 mA or 0/1 ... 5 V
Ripple	max. 50 $\mu$ A <sub>rms</sub>
<b>Transfer characteristics</b>	
Deviation	$I_{out} < 20$ $\mu$ A (0.1 %); $V_{out} < 7.5$ 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 $\mu$ A/K voltage output: 80 $\mu$ V/K
Frequency range	field side into the control side: bandwidth with 0.5 V <sub>pp</sub> signal 0 ... 7.5 kHz (-3 dB) control side into the field side: bandwidth with 0.5 V <sub>pp</sub> signal 0.3 ... 7.5 kHz (-3 dB)
Settling time	6 ms
Rise time/fall time	2 ms
<b>Galvanic isolation</b>	
Input/Output	basic insulation according to IEC 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Input/power supply	basic insulation according to IEC 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output/power supply	functional insulation, rated insulation voltage 50 V AC
Output/Output	functional insulation, rated insulation voltage 50 V AC
<b>Indicators/settings</b>	
Display elements	LED
Control elements	DIP switch
Configuration	via DIP switches
Labeling	space for labeling at the front
<b>Directive conformity</b>	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
<b>Conformity</b>	
Electromagnetic compatibility	NE 21:2012 EN 61326-3-2:2008
Degree of protection	IEC 60529:2001
Protection against electrical shock	UL 61010-1:2012
<b>Ambient conditions</b>	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F) extended ambient temperature range up to 70 °C (158 °F), refer to manual for necessary mounting conditions
<b>Mechanical specifications</b>	
Degree of protection	IP20
Connection	screw terminals
Mass	approx. 100 g
Dimensions	12.5 x 124 x 114 mm (0.5 x 4.9 x 4.5 inch) (W x H x D) , housing type A2
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
<b>General information</b>	

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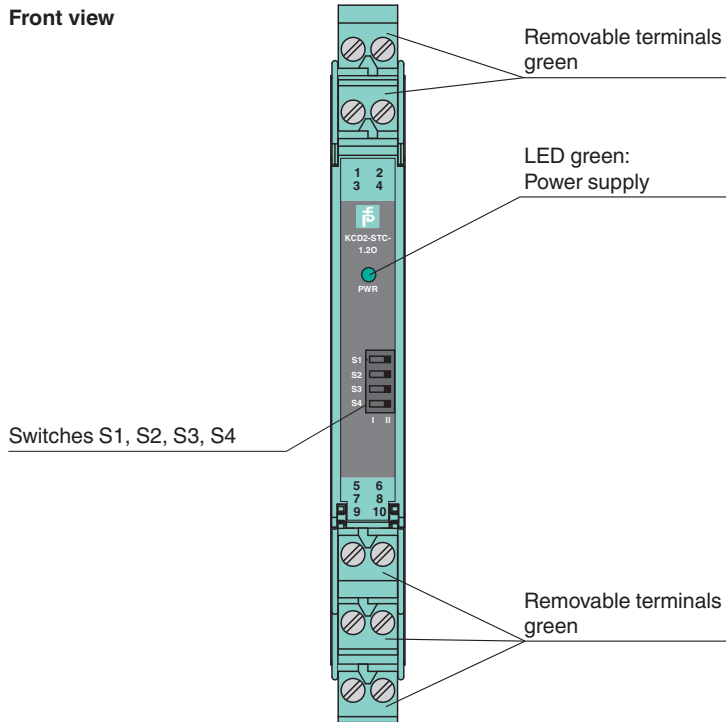
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**Technical Data**

Note	Both output loads must be connected to ensure complete and correct operation within the technical specification.
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

**Assembly**



**Matching System Components**



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

**Accessories**

	<b>KC-STP-5GN</b>	Terminal block for KC modules, 2-pin screw terminal, with test sockets, green
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**Accessories**

	<p><b>KC-ST-5GN</b></p>	<p>Terminal block for KC modules, 2-pin screw terminal, green</p>
	<p><b>KF-CP</b></p>	<p>Red coding pins, packaging unit: 20 x 6</p>

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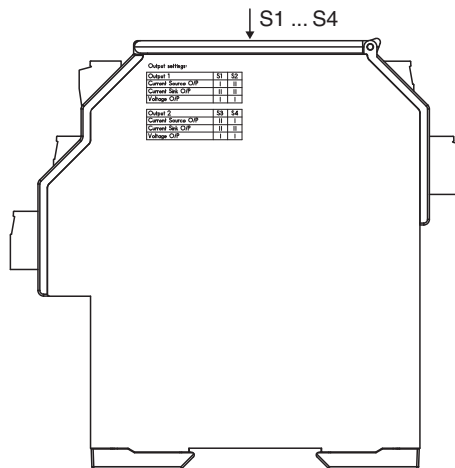
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## Application

The device supports the following SMART protocols:

- HART
- BRAIN
- Foxboro

## 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.