

SMART Transmitter Power Supply KFD2-STC5-2

SIL 2

- 2-channel signal conditioner
- 24 V DC supply (Power Rail)
- Input 2-wire and 3-wire SMART transmitters and 2-wire SMART current sources
- Output 0/4 mA ... 20 mA current sink/current source
- Terminals with test points
- Up to SIL 2 acc. to IEC 61508

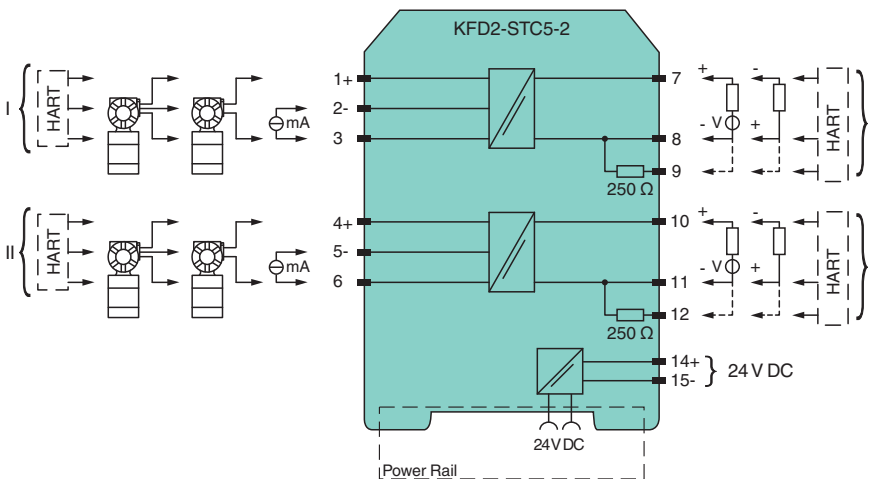
Input 0/4 mA ... 20 mA Output 0/4 mA ... 20 mA (current sink)



Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits. The device supplies 2-wire and 3-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 on the field side or on the control side and are transferred bi-directionally. The device provides a sink mode or a source mode output on the control side terminals. The device has an internal resistor. Use this resistor if the HART communication resistance in the control circuit is too low. 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 14+, 15-

Rated voltage U_r 18 ... 30 V DC

Ripple within the supply tolerance

Power dissipation ≤ 1.4 W at maximum load

Power consumption ≤ 2.6 W at maximum load

Release date: 2020-10-07 Date of issue: 2020-10-07 Filename: 203646_eng.pdf

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

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Technical Data

Input	
Connection side	field side
Connection	terminals 1+, 2-, 3; 4+, 5-, 6
Input signal	0/4 ... 20 mA
Open circuit voltage/short-circuit current	terminals 1+, 3; 4+, 6: 23 V / 25 mA
Input resistance	max. 265 Ω terminals 2-, 3; 5-, 6, max. 330 Ω terminals 1+, 3; 4+, 6
Available voltage	≥ 16 V at 20 mA ; ≥ 20 V at 4 mA, terminals 1+, 3; 4+, 6
Output	
Connection side	control side
Connection	terminals 7+, 8-, 9-; 10+, 11-, 12- (sink) terminals 7-, 8+, 9+; 10-, 11+, 12+ (source) see additional information
Load	0 ... 600 Ω
Output signal	0/4 ... 20 mA (overload > 25 mA)
Ripple	max. 50 μA_{rms}
External supply (loop)	2 ... 30 V DC
Transfer characteristics	
Deviation	at 20 °C (68 °F), 0/4 ... 20 mA $\leq 10 \mu\text{A}$ incl. calibration, linearity, hysteresis, loads and fluctuations of supply voltage
Influence of ambient temperature	$\leq 0.25 \mu\text{A/K}$
Frequency range	field side into the control side: band width with 1 V_{pp} signal 0 ... 7.5 kHz (-3 dB) safe area to hazardous area: band width with 1 V_{SS} signal 0.3 ... 7.5 kHz (-3 dB)
Settling time	200 μs
Rise time/fall time	100 μs
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
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. 150 g
Dimensions	20 x 124 x 115 mm (0.8 x 4.9 x 4.5 inch), housing type B2
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 .
Accessories	
Optional accessories	- power feed module KFD2-EB2(.R4A.B)(.SP) - universal power rail UPR-03(-M)(-S) - profile rail K-DUCT-GY(-UPR-03)

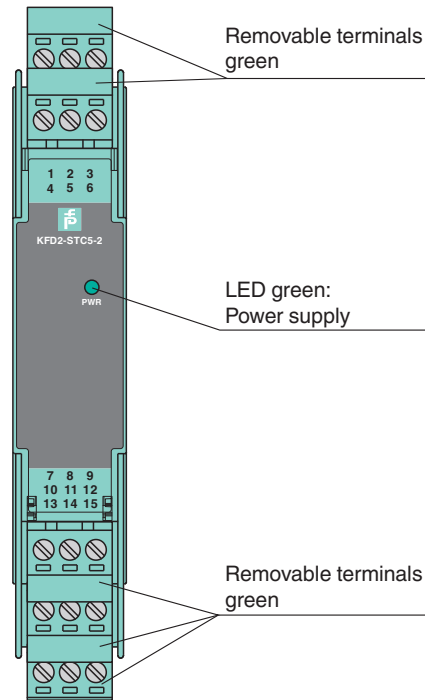
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




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Assembly

Front view



Accessories

	KFD2-EB2	Power Feed Module
	KFD2-EB2.R4A.B	Power feed module, redundant supply
	KFD2-EB2.R4A.B.SP	Power feed module with spring terminals, redundant supply
	KFD2-EB2.SP	Power feed module with spring terminals
	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	
	K-DUCT-GY-UPR-03	Profile rail with UPR-03-* insert, 3 conductors, wiring comb field side gray

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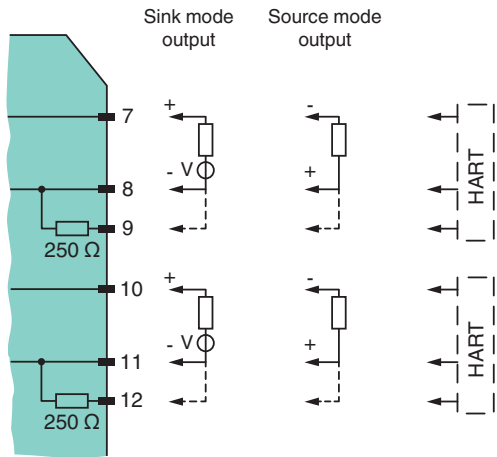
Application

The device supports the following SMART protocols:

- HART
- BRAIN
- Foxboro

Connection

The device provides 2 outputs on the control side terminals. These outputs can be operated in any combination of the current sink operating mode and current source operating mode. Please refer to the following diagram for connection.



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