SMART Current Driver

KCD2-SCD-1.SP

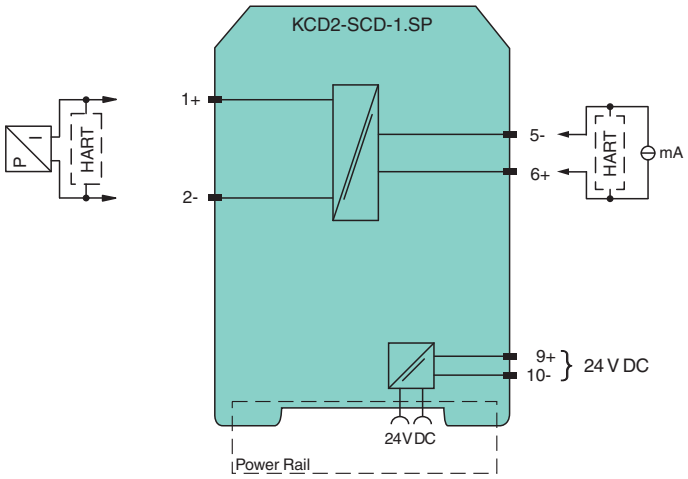
- 1-channel signal conditioner
- 24 V DC supply (Power Rail)
- Current output up to 900 Ω load
- HART I/P and valve positioner
- Lead breakage monitoring
- Housing width 12.5 mm
- Connection via spring terminals with push-in connection technology
- Up to SIL 2 acc. to IEC/EN 61508

CE SIL 2

Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits.
The device repeats the input signal from a control system to drive SMART I/P converters, electrical valves, and positioners located on the field side.
Digital signals are superimposed on the analog values at the field side or control side and are transferred bi-directionally.
The current is transferred via a DC/DC converter and repeated at the output terminals.
An open field circuit presents a high impedance to the control side to allow alarm conditions to be monitored by the control system.
Test sockets for the connection of HART communicators are integrated into the terminals of the device.

Connection



Technical Data

General specifications		
Signal type		Analog output
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	≤ 30 mA at 24 V
Power dissipation		≤ 600 mW at 20 mA and 500 Ω load

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Technical Data

Power consumption	≤ 700 mW
Input	
Connection side	control side
Connection	terminals 5-, 6+
Input signal	4 ... 20 mA , limited to approx. 26 mA
Input voltage	open loop voltage of the control system < 30 V
Voltage drop	approx. 6 V at 20 mA
Input resistance	> 100 kΩ, with field wiring open
Output	
Connection side	field side
Connection	terminals 1+, 2-
Voltage	≥ 18 V at 20 mA
Current	4 ... 20 mA
Load	0 ... 900 Ω
Ripple	20 mV_{rms}
Transfer characteristics	
Deviation	at 20 °C (68 °F), 4 ... 20 mA < 0.1 % of full scale, incl. non-linearity and hysteresis
Influence of ambient temperature	< 2 µA/K (-20 ... 70 °C (-4 ... 158 °F)); < 4 µA/K (-40 ... -20 °C (-40 ... -4 °F))
Frequency range	bandwidth at 0.5 V_{ss} signal 0 ... 3 kHz (-3 dB)
Rise time	10 to 90 % ≤ 10 ms
Galvanic isolation	
Input/Output	basic insulation according to IEC/EN 61010-1, rated insulation voltage 300 V_{eff}
Input/power supply	basic insulation according to IEC/EN 61010-1, rated insulation voltage 300 V_{eff}
Output/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V_{eff}
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 21:2017 EN 61326-3-2:2018
Degree of protection	IEC 60529
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications	
Degree of protection	IP20
Connection	spring 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
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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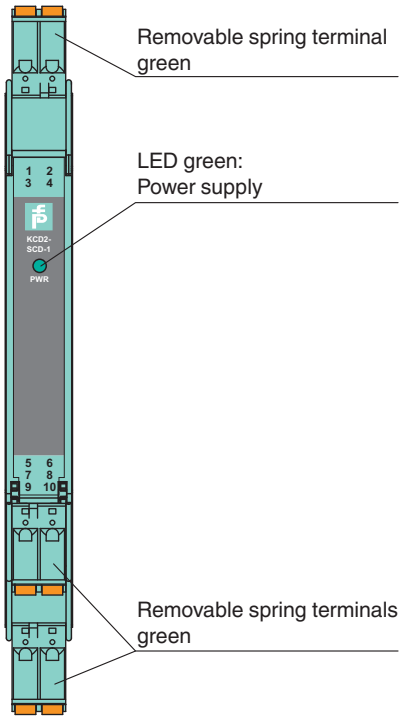
Assembly

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

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