SMART Current Driver
KCD2-SCD-1

SIL 2

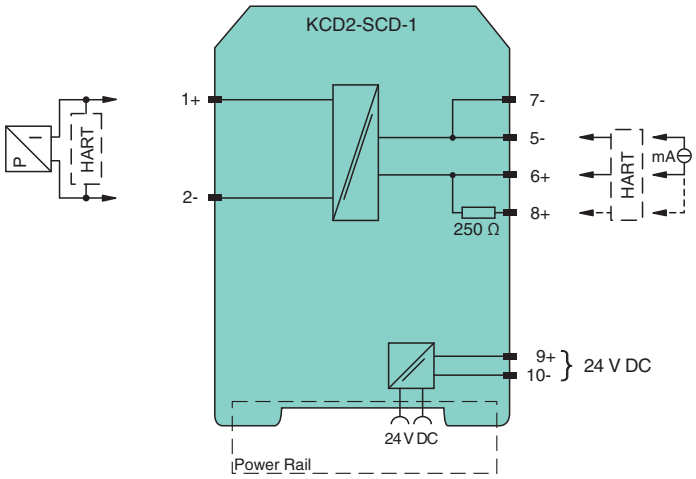
- 1-channel signal conditioner
- 24 V DC supply (Power Rail)
- Current output up to 650 Ω load
- HART I/P and valve positioner
- Lead breakage monitoring
- Accuracy 0.1 %
- Housing width 12.5 mm
- Up to SIL 2 acc. to IEC 61508

CE

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



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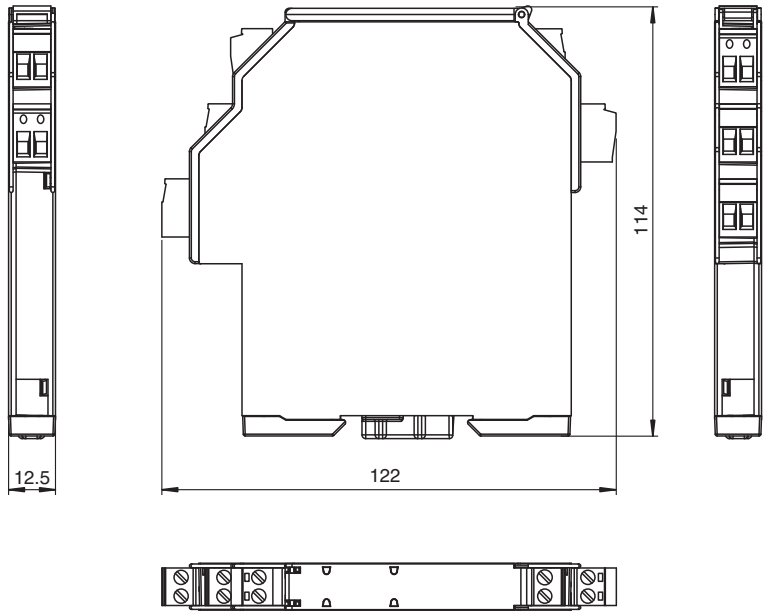
Dimensions



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
Power dissipation		≤ 600 mW
Power consumption		≤ 700 mW
Input		
Connection side		control side
Connection		terminals 5-, 6+
Input signal		4 ... 20 mA limited to approx. 30 mA
Input voltage		depending on switch configuration open loop voltage of the control system < 23 V open loop voltage of the control system < 27 V
Voltage drop		depending on switch configuration open loop voltage of the control system < 23 V: approx. 6 V at 20 mA open loop voltage of the control system < 27 V: approx. 10 V at 20 mA
Input resistance		> 100 kΩ, with field wiring open
Output		
Connection side		field side
Connection		terminals 1+, 2-
Current		4 ... 20 mA
Load		0 ... 650 Ω
Voltage		≥ 13 V at 20 mA
Ripple		20 mV $_{rms}$
Transfer characteristics		
Accuracy		0.1 %

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Deviation	at 20 °C (68 °F), 0/4 ... 20 mA ≤ ± 0.1 % incl. non-linearity and hysteresis
Influence of ambient temperature	< 2 µA/K (0 ... 60 °C (32 ... 140 °F)); < 4 µA/K (-20 ... 0 °C (-4 ... 32 °F))
Frequency range	bandwidth at 0.5 V_{ss} signal 0 ... 3 kHz (-3 dB)
Rise time	10 to 90 % ≤ 100 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
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 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) , 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.
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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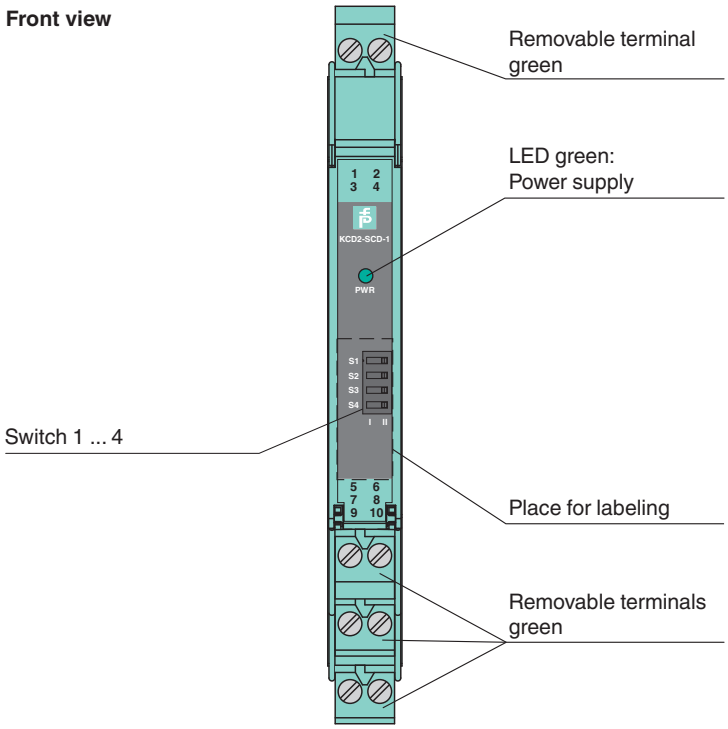
Assembly

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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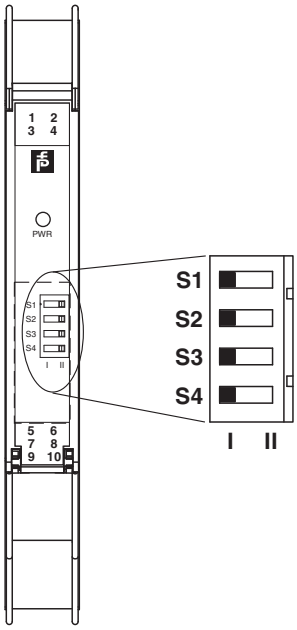
Configuration



Switch position

Function	S1	S2	S3	S4
Open loop voltage of the control system < 23 V	I	I	II	II
Open loop voltage of the control system < 27 V	II	I	II	II

Factory setting: open loop voltage of the control system < 23 V

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