



SMART Current Driver KCD2-SCD-1.SP

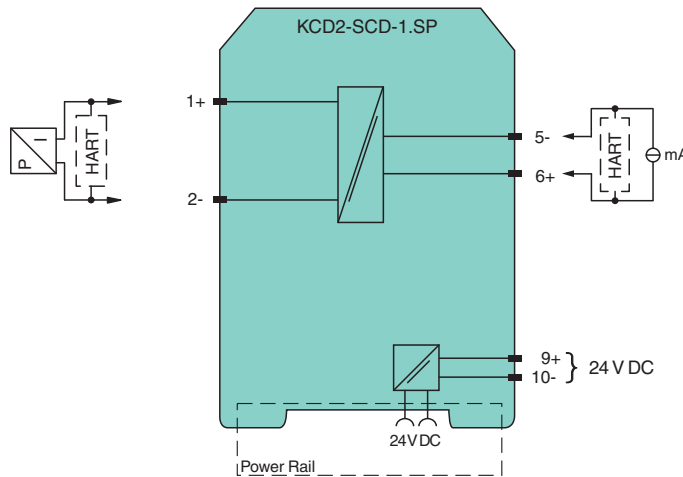
- 1-channel signal conditioner
- 24 V DC supply (Power Rail)
- Current output up to 900 Ω load
- HART I/P and valve positioner
- Lead breakage monitoring
- Housing width 12.5 mm
- Connection via spring terminals with push-in connection technology
- Up to SIL 2 acc. to IEC/EN 61508

CE SIL2

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

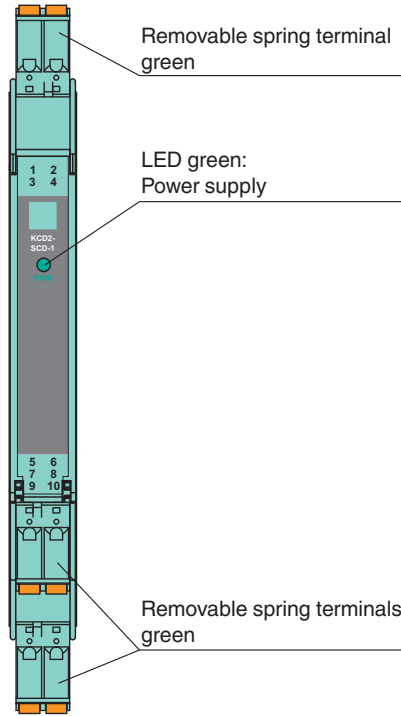
| | | |
|-------------------|-------|--|
| Connection | | Power Rail or terminals 9+, 10- |
| Rated voltage | U_r | 19 ... 30 V DC |
| Ripple | | $\leq 10 \%$ |
| Rated current | I_r | $\leq 30 \text{ mA at } 24 \text{ V}$ |
| Power dissipation | | $\leq 600 \text{ mW at } 20 \text{ mA and } 500 \Omega \text{ load}$ |

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 . |

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 |

Release date: 2021-12-13 Date of issue: 2021-12-13 Filename: 321421_eng.pdf