

Switch Amplifier

KCD2-SOT-1.LB.SP

- 1-channel signal conditioner
- 24 V DC supply (Power Rail)
- Dry contact or NAMUR input
- 2 passive transistor outputs
- Usable as signal splitter (1 input and 2 outputs)
- Reversible mode of operation
- Line fault detection (LFD)
- Housing width 12.5 mm
- Connection via spring terminals with push-in connection technology
- Up to SIL 2 acc. to IEC/EN 61508

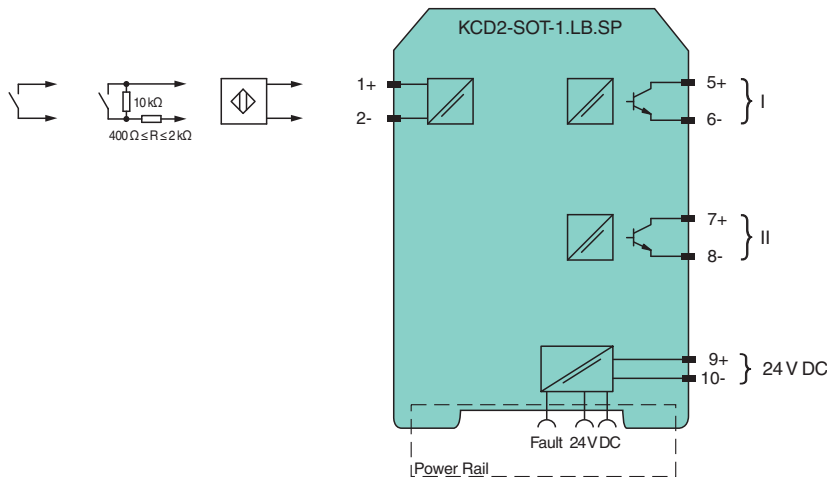
24 V DC

CE SIL2

Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits. The device transfers digital signals (NAMUR sensors or dry contacts) from the field to the control system. The input controls two passive transistor outputs. Via switches the mode of operation can be reversed and the line fault detection can be switched off. Via switch the function of the second output can be defined as a signal output or an error output. A fault is signalized by LEDs acc. to NAMUR NE44 and a separate collective error message output.

Connection



Technical Data

General specifications	
Signal type	Digital Input
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 20 ... 15 mA
Power dissipation	≤ 700 mW including maximum power dissipation in the output

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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-
Rated values	acc. to EN 60947-5-6 (NAMUR)
Open circuit voltage/short-circuit current	approx. 10 V DC / approx. 8 mA
Switching point/switching hysteresis	1.2 ... 2.1 mA / approx. 0.2 mA
Line fault detection	breakage $I \leq 0.1$ mA , short-circuit $I \geq 6.5$ mA
Pulse/Pause ratio	min. 100 μ s / min. 100 μ s
Output	
Connection side	control side
Connection	output I: terminals 5, 6 ; output II: terminals 7, 8
Rated voltage	U_r 30 V DC
Rated current	I_r 50 mA
Response time	≤ 200 μ s
Signal level	1-signal: (external voltage) - 3 V max. for 50 mA 0-signal: blocked output (off-state current ≤ 10 μ A)
Output I	signal ; Transistor
Output II	signal or fault message ; Transistor
Collective error message	Power Rail
Transfer characteristics	
Switching frequency	≤ 5 kHz
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	basic insulation according to EN 50178, rated insulation voltage 50 V_{eff}
Output/Output	basic insulation according to EN 50178, rated insulation voltage 50 V_{eff}
Indicators/settings	
Display elements	LEDs
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 21:2011
Degree of protection	IEC 60529:2001
Protection against electrical shock	IEC 61010-1:2010
Input	EN 60947-5-6:2000
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F) extended ambient temperature range up to 70 °C (158 °F) , refer to manual and derating characteristics for necessary mounting conditions
Mechanical specifications	
Degree of protection	IP20
Connection	spring terminals
Mass	approx. 100 g
Dimensions	12.5 x 119 x 114 mm (0.5 x 4.7 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 .

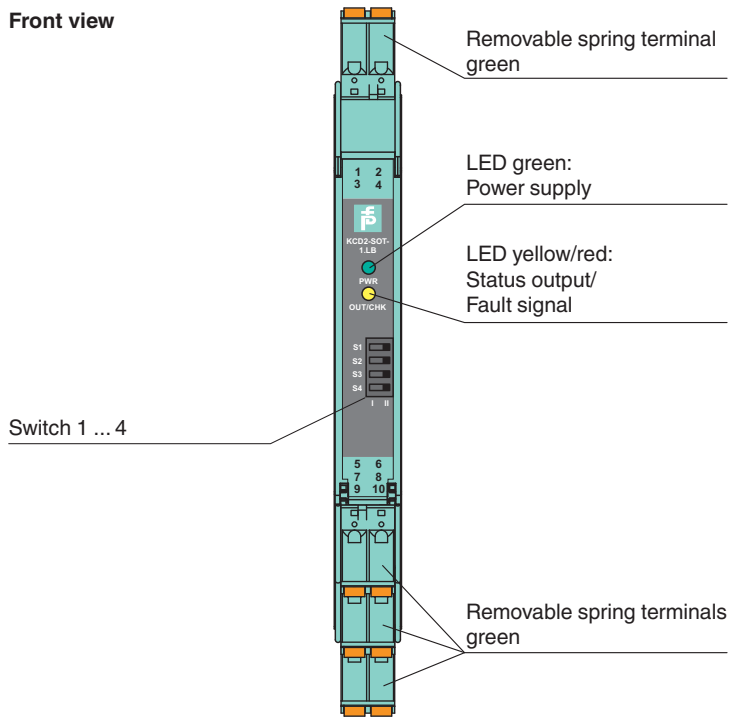
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Assembly

Front view



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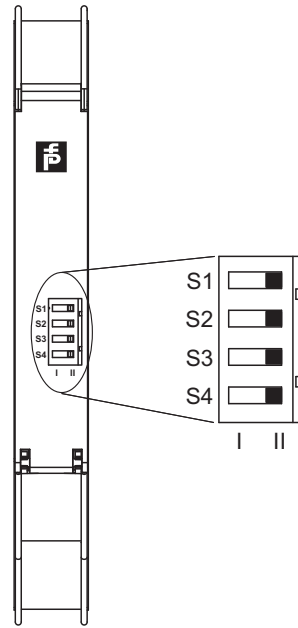
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Configuration



Switch settings

S	Function	Position	
1	Mode of operation output I (active)	with high input current	I
		with low input current	II
2	Assignment output II	Switching state like output I	I
		Fault indication output (passive if fault)	II
3	Line fault detection of the input	ON	I
		OFF	II
4	no function		

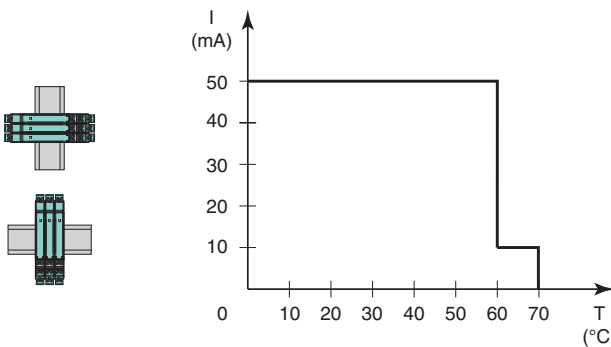
Operating states

Control circuit	Input signal
Initiator high impedance/contact opened	low input current
Initiator low impedance/contact closed	high input current
Lead breakage, lead short circuit	Line fault

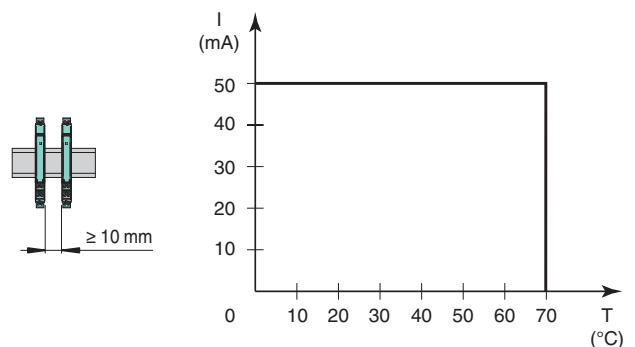
Factory setting: switch 1, 2, 3 and 4 in position I

Characteristic Curve

Derating of the rated current I_r at the output



- Horizontal or vertical mounting
- without separation distance
 - with the same device type



- Horizontal mounting
- with separation distance
 - with different device types

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