

# 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

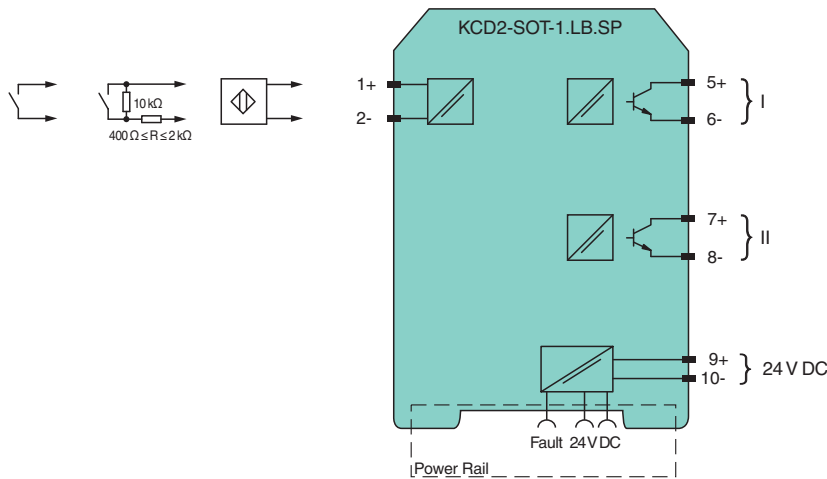
24 V DC

# 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 signaled by LEDs acc. to NAMUR NE44 and a separate collective error message output.

### Connection



### Technical Data

<b>General specifications</b>		
Signal type	Digital Input	
<b>Functional safety related parameters</b>		
Safety Integrity Level (SIL)	SIL 2	
<b>Supply</b>		
Connection	Power Rail or terminals 9+, 10-	
Rated voltage	$U_r$	19 ... 30 V DC
Ripple	≤ 10 %	
Rated current	$I_r$	20 ... 15 mA

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

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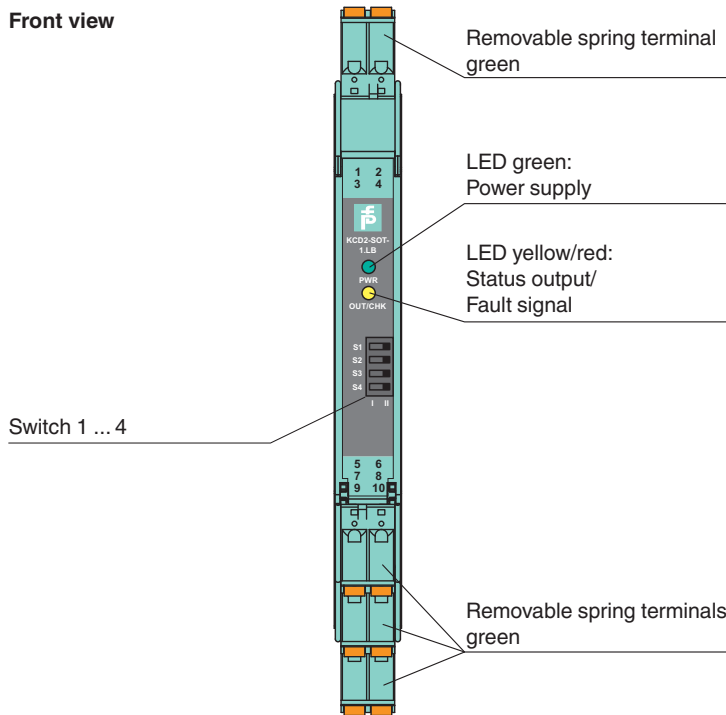
## Technical Data

Power dissipation	≤ 700 mW including maximum power dissipation in the output	
<b>Input</b>		
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 $\mu$ s / min. 100 $\mu$ s	
<b>Output</b>		
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 $\mu$ s	
Signal level	1-signal: (external voltage) - 3 V max. for 50 mA 0-signal: blocked output (off-state current ≤ 10 $\mu$ A)	
Output I	signal ; Transistor	
Output II	signal or error message ; Transistor	
Collective error message	Power Rail	
<b>Transfer characteristics</b>		
Switching frequency	≤ 5 kHz	
<b>Galvanic isolation</b>		
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 $V_{eff}$	
<b>Indicators/settings</b>		
Display elements	LEDs	
Control elements	DIP switch	
Configuration	via DIP switches	
Labeling	space for labeling at the front	
<b>Directive conformity</b>		
Electromagnetic compatibility	EN 61326-1:2013 (industrial locations)	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)	
<b>Conformity</b>		
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	
<b>Ambient conditions</b>		
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F) extended ambient temperature range up to 70 °C (158 °F), refer to manual for necessary mounting conditions	
<b>Mechanical specifications</b>		
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	
<b>General information</b>		
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .	

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**Assembly**

Front view



**Matching System Components**

	<b>KFD2-EB2</b>	Power Feed Module
	<b>UPR-03</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 2 m
	<b>UPR-03-M</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 1,6 m
	<b>UPR-03-S</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 0.8 m
	<b>K-DUCT-GY</b>	Profile rail, wiring comb field side, gray
	<b>K-DUCT-GY-UPR-03</b>	Profile rail with UPR-03-* insert, 3 conductors, wiring comb field side, gray

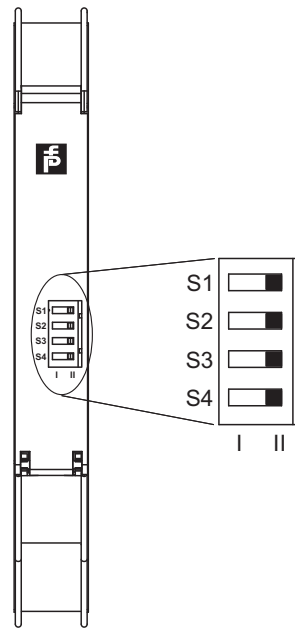
**Accessories**

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

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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

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