

Features

- 4-channel signal conditioner
- 24 V DC supply (Power Rail)
- Output 600 mA per channel
- Logic inputs
- Common safety-oriented disable input
- Line fault detection (LFD)
- Up to SIL 2 acc. to IEC 61508

Function

This signal conditioner is a 4-channel barrier with outputs that switch 600 mA to high-power solenoids. It is also used as power amplifier up to a switching frequency of 1 kHz.

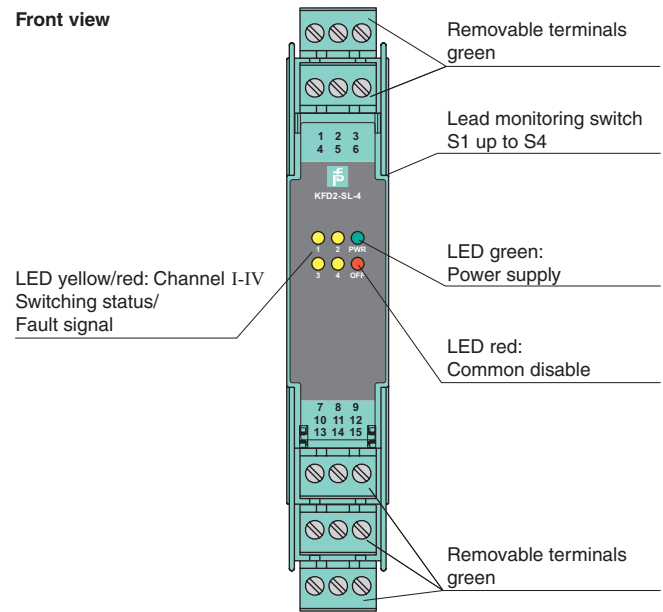
Two channels per module can be paralleled. The output current of a parallel combination is 1.2 A. If the supply voltage falls below 18 V, the outputs will be switched off.

The outputs are sustained short-circuit proofed and overload-proofed.

Lead breakage and short circuit, which is selected via DIP switch, is indicated by a red LED and through the collective error output via Power Rail.

With the common disable input (terminals 11 and 12), the auxiliary power for all 4 channels can be switched off simultaneously. This central switch-off is also indicated by a red LED and reported as an error signal to the Power Rail.

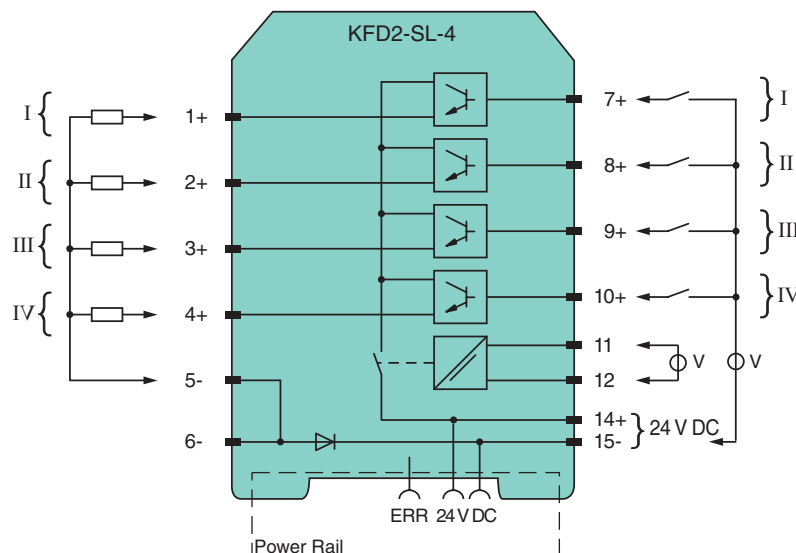
Assembly



CE

SIL 2

Connection



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

General specifications	
Signal type	Digital Output
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 2
Supply	
Connection	Power Rail or terminals 14+, 15-
Rated voltage U_r	20 ... 30 V DC
Undervoltage switching-off	≤ 18 V DC
Quiescent current indication	< 50 mA at 24 V DC
Power dissipation	< 2 W supply voltage 30 V, all outputs loaded with 600 mA
Input	
Connection side	control side
Connection	Terminals 7+, 8+, 9+, 10+, 15-
Input current	approx. 2 mA at 24 V DC
Signal level	0-signal: 0 ... 5 V DC 1-signal: 16 ... 30 V
Common disable	
Connection	terminals 11, 12
Input current	≤ 50 mA at 24 V, depolarized currentless state: downscale of the outputs
Switch on	≥ 15 V
Switch off	≤ 5 V
Output	
Connection side	field side
Current I_e	≤ 600 mA
Voltage U_e	typ. 23.8 V
Open loop voltage U_s	24 V DC
Connection	terminals 1+, 2+, 3+, 4+, 5-, 6-
Switching frequency f	1 kHz
Output rated operating current	600 mA per channel , sustained short-circuit proof and overload-proof
Off-state current I_r	< 1 mA at 24 V DC
Line fault detection	lead breakage: ≤ 4 mA
Galvanic isolation	
Common disable/input and outputs	basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V _{eff}
Indicators/settings	
Display elements	LEDs
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
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Degree of protection	IP20
Connection	screw terminals
Mass	approx. 100 g
Dimensions	20 x 119 x 115 mm (0.8 x 4.7 x 4.5 inch) , housing type B2
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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Notes

The outputs are switched high and current-limited for each channel (electronically pulsed). They are suited for inductive loads such as magnet operated valves or solenoid coils and incandescent lamps or indicator lamps.

Each channel is continuous short circuit- and overload-proof. In this case, the max. power loss in the device of 2 W ($U_b = 24\text{ V}$) is not exceeded.

2 channels per device may be paralleled input- and output-sided. The output current of this dual combination may not exceed 1.2 A. Both remaining channels may not be loaded with more than (in sum) 200 mA.

The maximum current loading capacity of the Power Rail is to be considered. Alternatively, the device may be supplied with the terminals 14+, 15-.

Device behavior

Behavior in the event of lead breakage (LB)

Input (control side)	Switch position S1 ... S4 line fault detection	LED indication switching state/fault signal	Collective error
0-Signal	II	off	not active
1-Signal	II	yellow	not active
0-Signal	I	flashing red	active
1-Signal	I	yellow	not active

Lead breakage detection is only active when the output is deactivated (0-Signal).

Behavior in the event of a short circuit (SC)

Input (control side)	Switch position S1 ... S4 line fault detection	LED indication switching state/fault signal	Collective error
0-Signal	II	off	not active
1-Signal	II	yellow	not active
0-Signal	I	off	not active
1-Signal	I	flashing red	active

Short circuit detection is only active when the output is activated (1-Signal).

Behavior when common disable is active

If common disable is active (0-Signal at terminals 11, 12), all outputs are switched to a de-energized state. When line fault monitoring S1 ... S4 of a channel is active, its switching state/fault signal LED flashes red and the collective error is output to the Power Rail.

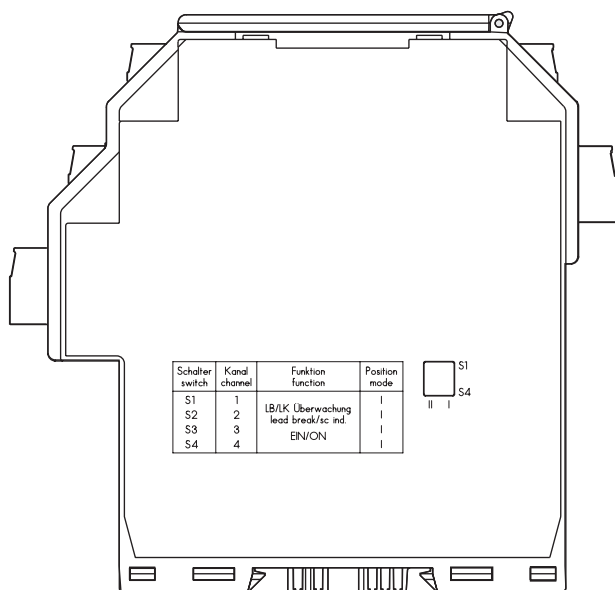
Behavior in the event of undervoltage

If the supply voltage falls below 18 V, the device reacts as follows:

- All outputs are disabled.
- The green power LED goes out.
- A collective error message is output.

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Configuration



Switch position

Switch	Channel	Function		Position
		ON	OFF	
S1	1	LB/SC	ON	I
			OFF	II
S2	2	LB/SC	ON	I
			OFF	II
S3	3	LB/SC	ON	I
			OFF	II
S4	4	LB/SC	ON	I
			OFF	II

Accessories

Power feed module KFD2-EB2

The power feed module is used to supply the devices with 24 V DC via the Power Rail. The fuse-protected power feed module can supply up to 150 individual devices depending on the power consumption of the devices. Collective error messages received from the Power Rail activate a galvanically-isolated mechanical contact.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical insert and an aluminium profile rail 35 mm x 15 mm. To make electrical contact, the devices are simply engaged.

Profile Rail K-DUCT with Power Rail

The profile rail K-DUCT is an aluminum profile rail with Power Rail insert and two integral cable ducts for system and field cables. Due to this assembly no additional cable guides are necessary.



Power Rail and Profile Rail must not be fed via the device terminals of the individual devices!