



Current Driver/Repeater

KFD0-CS-2.51P

- 2-channel signal conditioner
- 24 V DC supply (loop powered)
- Current input/output 0 mA ... 40 mA
- I/P or transmitter power supply
- Accuracy 1 %
- Reverse polarity protection
- 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 transfers DC signals of fire alarms and smoke alarms from the field side to the control side. The device can also be used to control I/P converters, valves, indicators, and audible alarms. A reverse polarity protection prevents damage to the device caused by faulty wiring. The device is loop powered. From the control side no additional power supply has to be connected. Use the technical data to verify that proper voltage is available to the field devices.

Application

Using the device for isolation of circuits

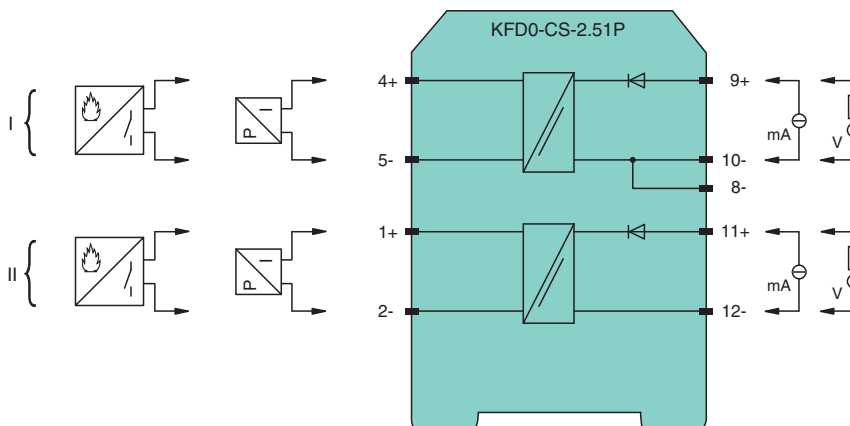
The device is used for isolation of circuits for the control of positioner, I/P converters etc. A current source is connected to the input terminals.

Using the device for isolation of a current signal

The device is used for isolation of a current signal from fire detectors or similar sensors. A voltage source is connected to the input terminals.

A specific measurement current across a passive sensor can be measured on the input with a series resistor (min. 50 Ω). When a voltage supply is used, the measuring resistor can also provide current limitations.

Connection



Technical Data

General specifications

Signal type Analog input/analog output

Functional safety related parameters

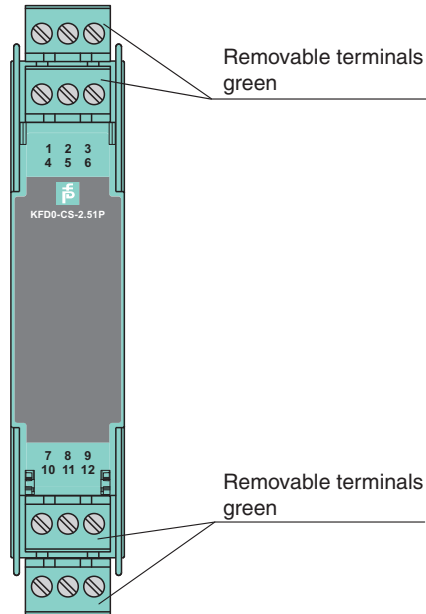
Safety Integrity Level (SIL) SIL 2

Technical Data


Supply		
Rated voltage	U_r	4 ... 35 V DC , loop powered
Control circuit		
Connection		terminals 12-, 11+; 8-, 10-, 9+
Voltage		4 ... 35 V DC
Current		0 ... 40 mA
Power dissipation		at 40 mA and $U_{in} < 22$ V: 700 mW per channel at 40 mA and $U_{in} > 22$ V: 1.2 W per channel
Field circuit		
Connection		terminals 1+, 2-; 4+, 5-
Voltage		for $4\text{ V} < U_{in} < 24\text{ V}$: $\geq U_{in} - (0.37 \times \text{current in mA}) - 1.0$ for $U_{in} > 24\text{ V}$: $\geq 21\text{ V} - (0.36 \times \text{current in mA})$
Short-circuit current		at $U_{in} > 24\text{ V}$: $\leq 65\text{ mA}$
Transfer current		$\leq 40\text{ mA}$
Transfer characteristics		
Accuracy		1 %
Deviation		
After calibration		$\leq \pm 200\ \mu\text{A}$; incl. calibration, linearity, hysteresis and load fluctuations at the field side up to a load of 1 k Ω and current $\leq 20\text{ mA}$ at 20 °C (68 °F)
Influence of ambient temperature		$\leq \pm 2\ \mu\text{A/K}$ at $U_{in} \leq 20\text{ V}$; $\leq \pm 5\ \mu\text{A/K}$ at $U_{in} > 20\text{ V}$
Rise time		$\leq 5\text{ ms}$ at bounce from 4 ... 20 mA and $U_{in} < 24\text{ V}$
Galvanic isolation		
Input/Output		basic insulation according to IEC 62103, rated insulation voltage 300 V _{eff}
Indicators/settings		
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 21:2012 EN 61326-3-2:2008
Degree of protection		IEC 60529:2001
Protection against electrical shock		EN 61010-1:2010
Ambient conditions		
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
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 100 g
Dimensions		20 x 107 x 115 mm (0.8 x 4.2 x 4.5 inch) (W x H x D) , housing type B1
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

	K-DUCT-GY	Profile rail, wiring comb field side, gray
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Accessories

	KF-ST-5GN	Terminal block for KF modules, 3-pin screw terminal, green
	KF-CP	Red coding pins, packaging unit: 20 x 6

Release date: 2023-05-31 Date of issue: 2023-05-31 Filename: 294988_eng.pdf

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

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