

Features

- 1-channel signal conditioner
- Universal usage at different power supplies
- Thermocouple, RTD, potentiometer or voltage input
- Redundant TC input
- Current output 0/4 mA ... 20 mA
- 2 relay contact outputs
- Configurable by PACTware or keypad
- Line fault (LFD) and sensor burnout detection
- Up to SIL2 acc. to IEC 61508/IEC 61511

Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits.

The device converts the signal of a resistance thermometer, thermocouple, potentiometer, or voltage source to a proportional output current. It also provides a relay trip value.

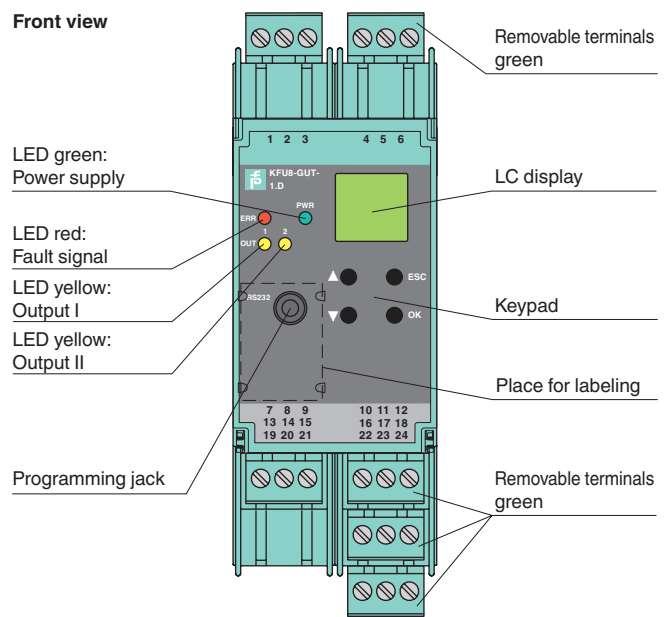
The removable terminal block K-CJC-** is available as an accessory for internal cold junction compensation of thermocouples.

A fault is signaled by LEDs acc. to NAMUR NE44.

The device is easily configured by the use of the PACTware configuration software.

For additional information, refer to the manual and www.pepperl-fuchs.com.

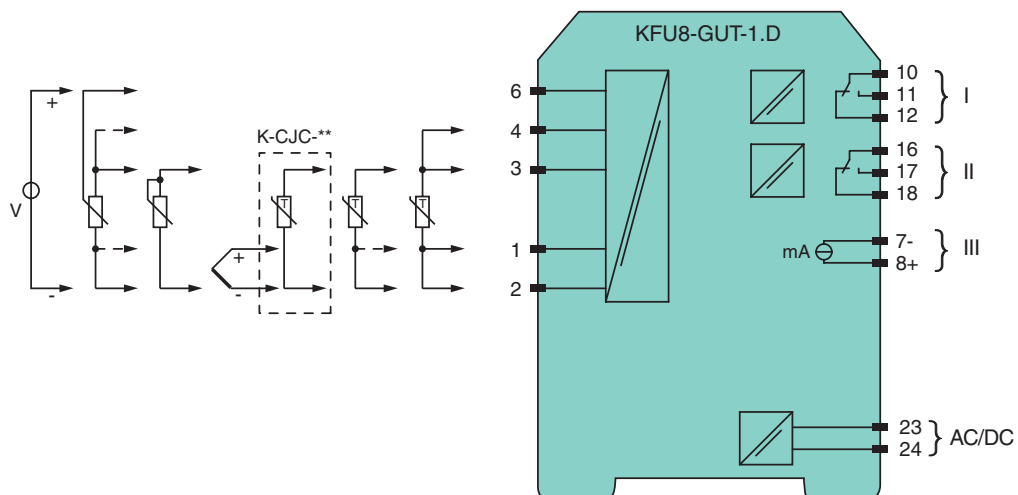
Assembly



CE

SIL2

Connection



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

General specifications	
Signal type	Analog input
Supply	
Connection	terminals 23, 24
Rated voltage U_n	20 ... 90 V DC / 48 ... 253 V AC
Power loss/power consumption	≤ 2 W ; 2.5 VA / 2.2 W ; 3 VA
Input	
Connection	terminals 1, 2, 3, 4, 6
RTD	
Measuring current	approx. 400 μ A
Types of measuring	2-, 3-, 4-wire technology
Lead resistance	≤ 50 Ω
Measuring circuit monitoring	sensor breakage, sensor short-circuit
Thermocouples	
Cold junction compensation	external and internal
Measuring circuit monitoring	sensor breakage
Voltage	0 ... 10 V , 2 ... 10 V , 0 ... 1 V , -100 ... 100 mV
Potentiometer	0.8 ... 20 k Ω
Types of measuring	2-, 3-, 5-wire technology
Open loop voltage	max. 5 V with resistance measuring sensor
Input resistance	≥ 250 k Ω (0 ... 10 V) ≥ 1 M Ω (0 ... 1 V, -100 ... 100 mV)
Output	
Connection	output I: terminals 10, 11, 12 output II: terminals 16, 17, 18 output III: terminals 8+, 7-
Output I, II	relay
Contact loading	250 V AC / 2 A / $\cos \phi \geq 0.7$; 40 DC / 2 A
Mechanical life	5 x 10 ⁷ switching cycles
Energized/De-energized delay	approx. 20 ms / approx. 20 ms
Output III	Analog current output
Current range	0 ... 20 mA or 4 ... 20 mA
Open loop voltage	≤ 24 V DC
Load	≤ 650 Ω
Fault signal	downscale I ≤ 3.6 mA, upscale I ≥ 21 mA (acc. NAMUR NE43)
Transfer characteristics	
Deviation	
Temperature effect	Input: 0.005 %/K (50 ppm) of span ; current output: 0.005 %/K (50 ppm) of span
RTD	≤ 0.2 % of span
Thermocouples	max. 10 μ V deviation of CJC: ±0.8 K
Voltage	0.1 % of span
Potentiometer	0.1 % of span when < 5 k Ω 0.5 % of span when > 5 k Ω
Current output	≤ 20 μ A
Sampling rate	approx. 700 ms
Electrical isolation	
Input/Other circuits	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Output I, II against each other	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Output I, II/other circuits	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Output III/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Interface/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2013 (industrial locations)
Low voltage	
Directive 2006/95/EC	EN 61010-1:2010
Conformity	
Electromagnetic compatibility	
Degree of protection	NE 21:2007
Degree of protection	IEC 60529:2001
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Degree of protection	IP20

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Mass	300 g
Dimensions	40 x 119 x 115 mm (1.6 x 4.7 x 4.5 in) , housing type C3
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
General information	
Supplementary information	Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com .

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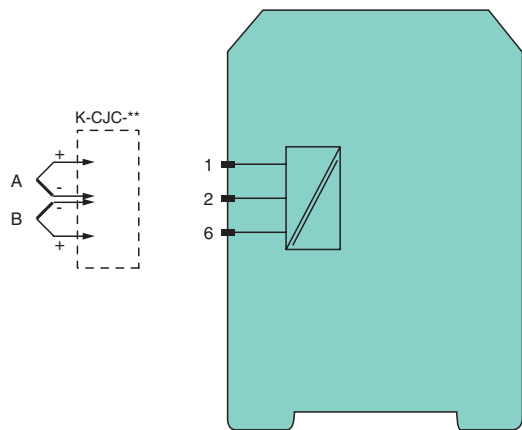
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Application



Redundant thermocouple

For higher availability it is possible to connect a second redundant thermocouple (B) of the same type to the temperature converter. The cold junction temperature is taken from the connected terminal block.

If the deviation of the both thermocouples (A and B) exceed the selected tolerance, an error will occur. If a lead breakage of one thermocouple (e. g. A) has been detected, an error message occurs and the value of the second thermocouple (B) will be taken for further calculation.

Accessories

K-CJC-**

This removable terminal block with integrated temperature measurement sensor is needed for internal cold junction compensation for thermocouples. One K-CJC-** is needed for each channel.

PACTware™

Device-specific drivers (DTM)

Adapter K-ADP-USB

Programming adapter for parameterisation via the serial USB interface of a PC/Notebook

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