



Temperature Converter with Trip Values

SIL 2

KFD2-GUT-Ex1.D

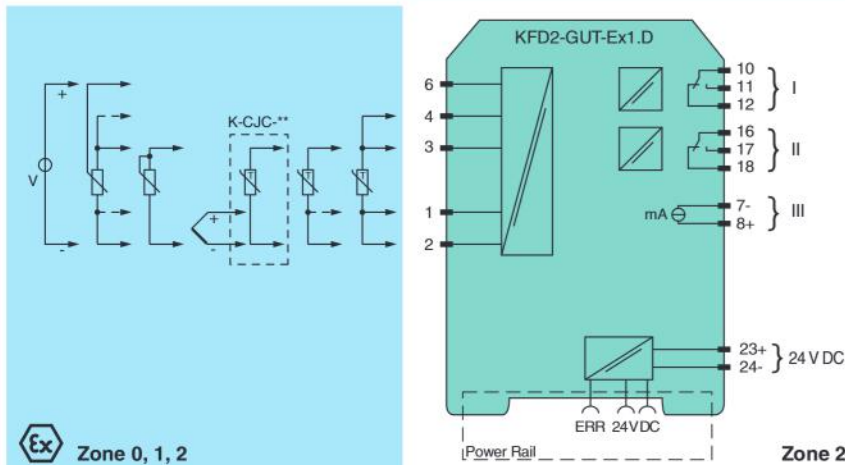
- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Thermocouple, RTD, potentiometer or voltage input
- Redundant TC input
- Current output 0/4 mA ... 20 mA
- 2 relay contact outputs
- Configurable by PACTware or keypad
- Line fault (LFD) and sensor burnout detection
- Up to SIL 2 acc. to IEC 61508/IEC 61511



Function

This isolated barrier is used for intrinsic safety applications. 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 and a separate collective error message output. 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.

Connection



Release date: 2020-09-23 Date of issue: 2020-09-23 Filename: 231225_eng.pdf

Technical Data

General specifications	
Signal type	Analog input
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 2
Supply	
Connection	terminals 23+, 24- or power feed module/Power Rail
Rated voltage	U_r 20 ... 30 V DC
Rated current	I_r approx. 100 mA
Power dissipation/power consumption	$\leq 2 \text{ W} / 2.2 \text{ W}$

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

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Technical Data

Interface	
Programming interface	programming socket
Input	
Connection side	field side
Connection	terminals 1, 2, 3, 4, 6
RTD	Pt100, Pt500, Pt1000, Ni100, Ni1000
Types of measuring	2-, 3-, 4-wire technology
Lead resistance	max. 50 Ω
Measurement loop monitoring	sensor breakage, sensor short-circuit
Thermocouples	type B, E, J, K, L, N, R, S, T (IEC 584-1: 1995)
Cold junction compensation	external and internal
Measurement loop monitoring	sensor breakage
Potentiometer	0.8 ... 20 k Ω
Types of measuring	2-, 3-, 5-wire technology
Voltage	0 ... 10 V, 2 ... 10 V, 0 ... 1 V, -100 ... 100 mV
Input resistance	≥ 250 k Ω (0 ... 10 V) min. 1 M Ω (0 ... 1 V, -100 ... 100 mV)
Measuring current	approx. 400 μ A with resistance measuring sensor
Output	
Connection side	control side
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	max. 24 V DC
Load	max. 650 Ω
Fault signal	downscale $I \leq 3.6$ mA, upscale $I \geq 21$ mA (acc. NAMUR NE43)
Collective error message	Power Rail
Transfer characteristics	
Deviation	
Temperature effect	Input: 0.005 %/K (50 ppm) of span ; current output: 0.005 %/K (50 ppm) of span
RTD	max. 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	max. 20 μ A
Sampling rate	approx. 700 ms
Galvanic isolation	
Input/Other circuits	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Output I, II against eachother	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 and collective error	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}
Indicators/settings	
Display elements	LEDs, display
Control elements	Control panel
Configuration	via operating buttons via PACTware

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