



- 1-channel
- 24 V DC nominal supply voltage
- Accuracy $\pm 0.1\%$
- Adjustment option of temperature measuring range for Pt100, Ni100 in 2-, 3- or 4-wire versions
- Adjustment option of thermocouple (B, E, J, K, L, N, R, S or T)
- Freely definable characteristic curve for resistance $0\ \Omega \dots 400\ \Omega$ and voltage $-50\ mV \dots +150\ mV$
- Internal or external cold junction compensation
- Sensor burnout monitoring for thermocouples
- Sensor burnout and short-circuit monitoring (SC) for Pt100
- Online adjustments via serial interface to PC
- Factory set on request
- EMC acc. to NAMUR NE 21

Voltage output 1 V ... 5 V
KFD2-UT-1-1

Function

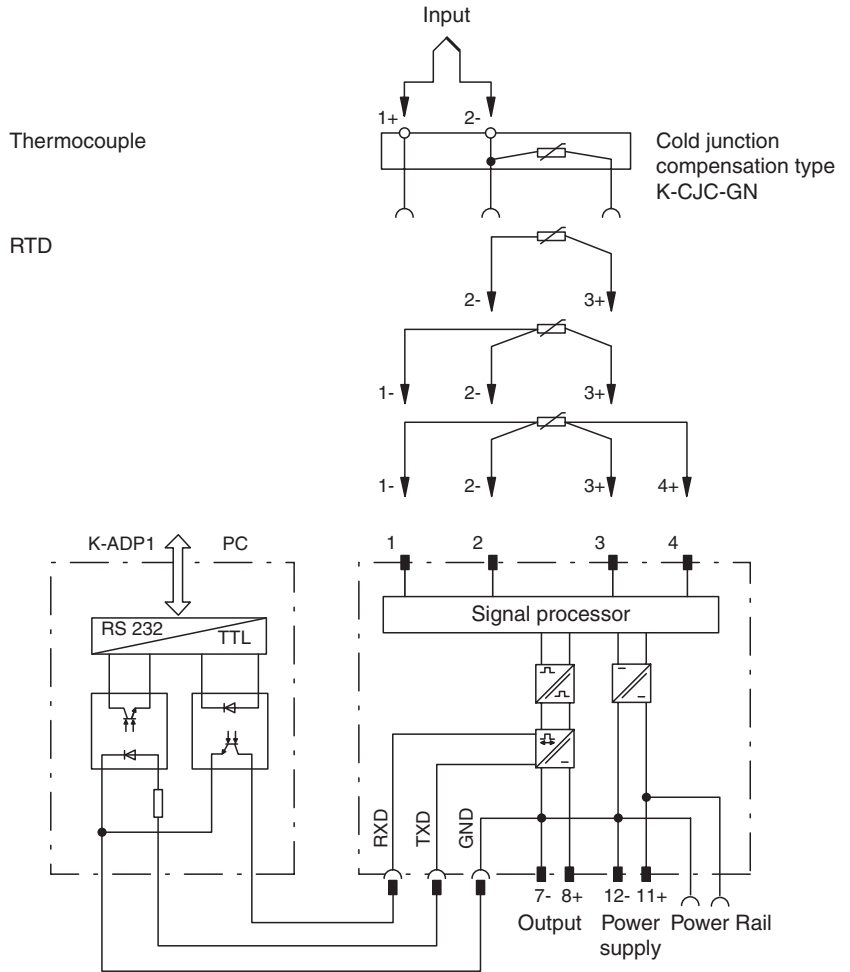
The device is designed for the connection of Pt 100, Ni 100 (2, 3, or 4 wire modes) and models B, E, J, K, L, N, R, S, or T thermocouples. A current signal of 4 mA ... 20 mA proportional to the temperature is available at the output.

Programming is accomplished with the K-SK software. The surface of this software meets VDI/VDEGMA 2187. The input is galvanically isolated from the output, the programming input and the power supply. The serial interface of the PC is galvanically isolated from the programming input through the connection of the K-ADP1 programming adapter.

The internal or external cold junction compensation options can be selected when using thermocouples. The K-CJC-BK terminal is available for internal compensation.

The response to fault signals is programmable (upscaled or downscaled output). A fault is indicated by a red flashing LED per NAMUR NE44.

Connection



Composition

Front View

Housing type A4
 (see system description)

LED green:
 Power supply

Removable terminals
 green

LED red:
 Fault signal

Programming jack

Removable terminals
 green



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Supply	
Connection	Power Rail or terminals 11+, 12-
Rated voltage	20 ... 35 V DC
Ripple	within the supply tolerance
Power loss	0.85 W
Power consumption	≤ 1.5 W
Input	
Connection	terminals 1, 2, 3 and 4 suitable for Pt100, Ni100, thermocouples type B, E, J, K, L, N, R, S or T (IEC 584) configuration via programming jack
Line resistance	≤ 50 Ω per lead
Measuring current	approx. 400 μA with resistance measuring sensor current for lead breakage monitoring switched off during the measurement
Output	
Connection	terminals 7-, 8+ voltage output 1 ... 5 V; 5,125 V at input signal overrange
Load	≥ 10 kΩ
Fault signal	downscale 0.5 ... 1 V (programmable) or upscale 5.025 ... 5.125 V (programmable)
Output resistance	≤ 10 Ω
Transfer characteristics	
Deviation	
Influence of ambient temperature	voltage output (deviation of CJC included): <u>Pt100</u> : (± 0.0015 % of measuring value in K + 0.0075 % of span)/K ΔT _{amb} ^{*)} <u>thermocouple</u> : (± 0.02 K + 0.004 % of measuring value in °C + 0.0075 % of span)/K ΔT _{amb} ^{*)} ^{*)} ΔT _{amb} = ambient temperature change referenced to 23 °C (296 K)
<u>Pt100</u>	± 0.01 % of measurement value in K + 0.05 % of span + 0.1 K (4-wire connection)
<u>Thermocouple</u>	± 0.05 % of measurement value in °C + 0.05 % of span + 1 K; this includes ± 0.8 K error of the cold junction compensation
Influence of supply voltage	≤ 0.01 % of span
Influence of load	≤ 0.001 % of output value per 100 Ω
Response time	≤ 430 ms
Electrical isolation	
Input/output	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Input/power supply	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Input/programming input	available There is no electrical isolation between the programming input and the supply and output. The K-ADP1 interface (see section accessories and installation) provide electrical isolation so that ground loops are avoided.
Standard conformity	
Insulation coordination	acc. to DIN EN 50178
Electrical isolation	acc. to DIN EN 50178
Electromagnetic compatibility	acc. to EN 50081-2 / EN 50082-2, NAMUR NE 21
Climatic conditions	acc. to DIN IEC 721
Ambient conditions	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Mechanical specifications	
Protection degree	IP20
Mass	approx. 110 g

Supplementary information

Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com.

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Accessories

Power Rail PR-03

Power Rail UPR-03

Power feed module KFD2-EB2...

Using Power Rail PR-03 or UPR-03 the devices are supplied with 24 V DC by means of the power feed modules. If no Power Rails are used, power supply of the individual devices is possible directly via their device terminals.

Each power feed module is used for fusing and monitoring groups with up to 100 individual devices. The Power Rail PR-03 is an inset component for the DIN rail. The Power Rail UPR-03 is a complete unit consisting of the electrical inset and an aluminium profile rail 35 mm x 15 mm x 2000 mm. To make electrical contact, the devices are simply engaged.

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

K-CJC

Removable terminals with integrated temperature measurement sensor for cold junction compensation for thermocouples.

PACT_{ware}TM

Device-specific drivers (DTM)

Adapter K-ADP1

Interface adapter for connection with the RS 232 serial interface of a PC/Notebook