Features

- 1-channel signal conditioner
- 24 V DC supply (Power Rail)
- Thermocouple, RTD, voltage or current input
- 2 relay contact outputs
- Programmable high/low alarm
- Configurable by **PACT***ware*]™
- Sensor burnout detection

Function

This signal conditioner accepts a variety of inputs including RTDs or thermocouples and provides a relay trip whenever it reaches a user-programmed set point. It also provides isolation for non-intrinsically safe applications.

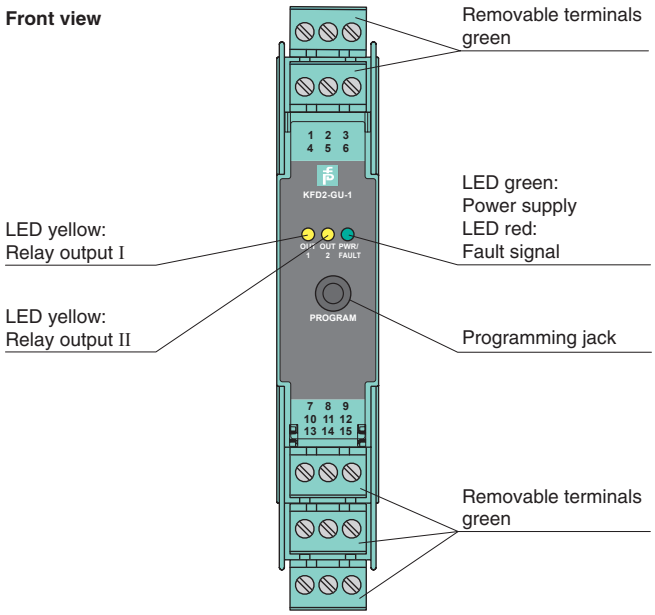
A removable terminal block K-CJC-** is available for thermocouples when internal cold junction compensation is desired.

A fault is indicated by a red flashing LED per NAMUR NE44 and user-configured fault outputs.

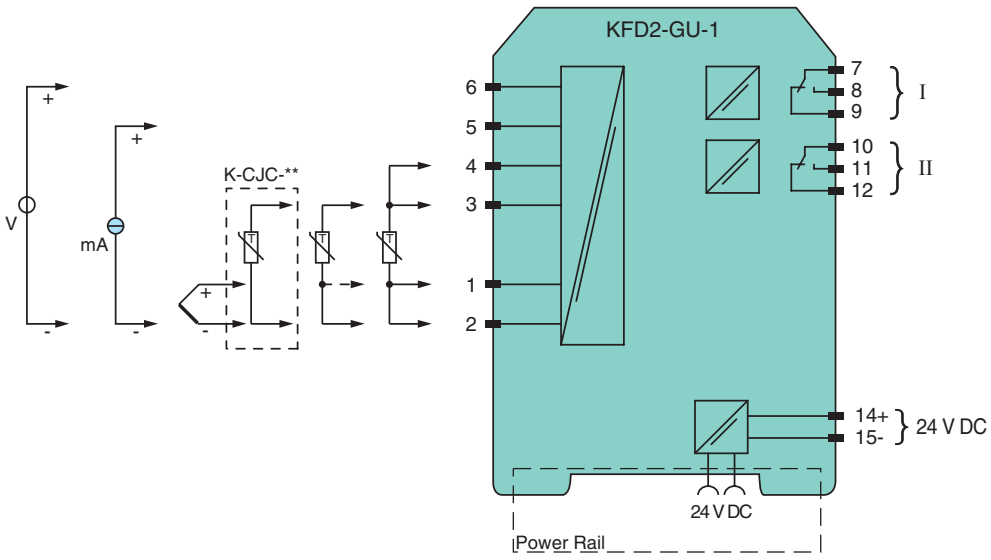
The unit is easily programmed with the **PACT***ware*™ configuration software.

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

Assembly



Connection



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General specifications	
Signal type	Analog input
Supply	
Connection	Power Rail or terminals 14+, 15-
Rated voltage	19 ... 35 V DC
Ripple	within the supply tolerance
Power loss	0.8 W
Power consumption	0.8 W
Input	
Connection	terminals 1, 2, 3, 4, 5, 6 ; suitable for Pt100, Ni100, thermocouples type B, E, J, K, L, N, R, S or T 0 ... 10 V, 0 ... 20 mA, 0 ... 500 Ω configuration via programming jack
Line resistance	≤ 50 Ω per lead
Measuring current	for Pt100: approx. 400 µA ; current for lead monitoring switched off during the measurement
Load	20 Ω for 20 mA; 200 kΩ for 10 V
Output	
Connection	output I: terminals 7, 8, 9; output II: terminals 10, 11, 12
Output I, II	
Contact loading	253 V AC/2 A/500 VA/cos ϕ min. 0.7; 40 V DC/2 A resistive load
Mechanical life	2 x 10^7 switching cycles
Transfer characteristics	
Deviation	
Voltage input	± 0.02 % of 10 V measuring range
Resistance input	± 0.025 % of measuring range (4-wire connection)
Current input	± 0.02 % of 20 mA measuring range
Pt100	± 0.01 % of abs. temperature value of switching point in K + 0.2 K (4-wire connection)
Thermocouple	± 0.05 % of abs. temperature value of switching point in K + 1.1 K (1.2 K for thermocouple types R and S) this includes ± 0.8 K error of the cold junction compensation (+0.9 K for thermocouple types R and S).
Influence of ambient temperature	
Pt100	± (0.0015 % of abs. temperature value of switching point in K + 0.01 K) / KΔT_{amb}*)
Thermocouple	± (0.004 % of abs. temperature value of switching point in K + 0.01 K) / KΔT_{amb}*)
Thermocouple type R and S	± (0.005 % of abs. temperature value of switching point in K + 0.01 K) / KΔT_{amb}*)
Voltage source	± (0.007 % of the switching point voltage) / KΔT_{amb}*)
Current source	± (0.007 % of the switching point current)/KΔT_{amb}*) *) ΔT_{amb} = ambient temperature change referenced to 23 °C (296 K)
Influence of supply voltage	< 0.001 % of sensor input range
Input delay	≤ 370 ms (rise time and energizing delay of relay)
Electrical isolation	
Input/other circuits	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Output I and II	basic insulation according to IEC 62103, rated insulation voltage 300 V_{rms}
Output/supply, programming input	basic insulation according to IEC 62103, rated insulation voltage 300 V_{rms} There is no electrical isolation between the programming input and the supply. The programming cable (see section accessories and installation) provides galvanic isolation so that ground loops are avoided.
Directive conformity	
Electromagnetic compatibility	
Directive 89/336/EEC	EN 50081-2, EN 50082-2
Conformity	
Insulation coordination	EN 50178
Electrical isolation	EN 50178
Electromagnetic compatibility	NE 21
Protection degree	IEC 60529
Ambient conditions	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Mechanical specifications	
Protection degree	IP20
Mass	approx. 150 g
Dimensions	20 x 119 x 115 mm (0.8 x 4.7 x 4.5 in) , housing type B2
General information	
Supplementary information	Statement of Conformity, Declaration of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com.

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Accessories

Power feed modules 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 100 individual devices depending on the power consumption of the devices. A galvanically isolated mechanical contact uses the Power Rail to transmit collective error messages.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical inset and an aluminium profile rail 35 mm x 15 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-**

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.

PACT*ware*™

Device-specific drivers (DTM)

Adapter K-ADP1

Programming adapter for parameterisation via the serial RS 232 interface of a PC/Notebook

For programming, please use the new version of adapter K-ADP1 (part no. 181953, connector length 14mm). When using the previous version K-ADP1 (connector length 18 mm) the plug is exposed by approx. 3 mm. The function is not affected.

Adapter K-ADP-USB

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

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