

**Features**

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Thermocouple, RTD, voltage or current input
- 2 relay contact outputs
- Programmable high/low alarm
- Configurable by **PACTware<sup>TM</sup>**
- Sensor breakage detection

**Function**

This isolated barrier is used for intrinsic safety applications. The device accepts a variety of inputs including RTDs or thermocouples. The device provides a relay trip whenever it reaches a userprogrammed set point.

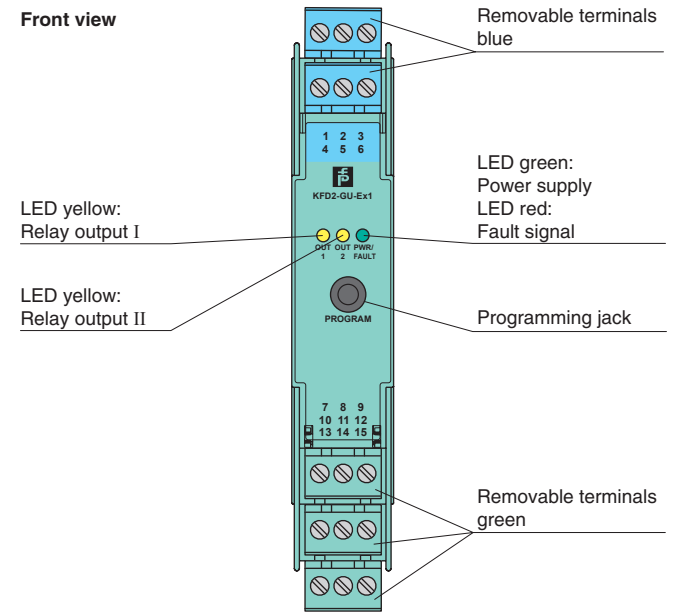
The removable terminal block K-CJC-\*\* is available as an accessory for internal cold junction compensation of thermocouples.

A fault is indicated by LEDs acc. to NAMUR NE44 and by user-configured fault indication outputs.

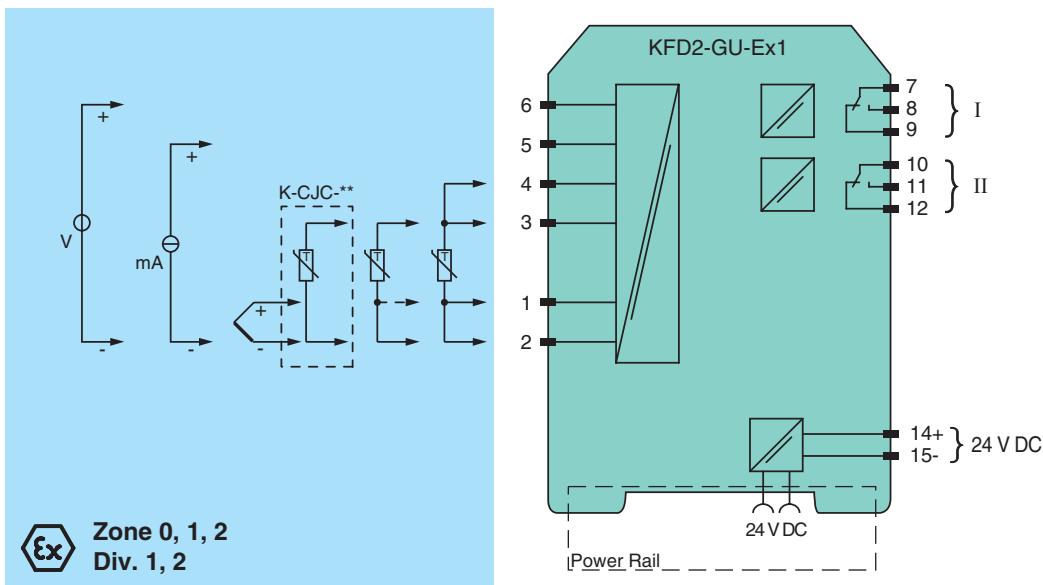
The device is easily configured by the use of the PACTware configuration software.

For additional information, refer to the manual and [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

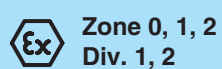
**Assembly**



**Connection**



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<b>General specifications</b>	
Signal type	Analog input
<b>Supply</b>	
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
<b>Input</b>	
Connection	terminals 1, 2, 3, 4, 5, 6
RTD or resistance	type Pt100 (EN 60751: 1995) type Ni100 (DIN 43760) 0 ... 500 Ω (including lead resistance)
Measuring current	approx. 400 μA with RTD
Lead resistance	≤ 50 Ω per lead
Thermocouples	type B, E, J, K, N, R, S, T (IEC 584-1: 1995) type L (DIN 43710: 1985)
Voltage	0 ... 10 V, 2 ... 10 V
Current	0 ... 20 mA, 4 ... 20 mA
Load	20 Ω for 20 mA; 200 kΩ for 10 V
<b>Output</b>	
Connection	output I: terminals 7, 8, 9; output II: terminals 10, 11, 12
Output I, II	relay
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 <sup>7</sup> switching cycles
<b>Transfer characteristics</b>	
Resolution	temperature: 0.0625 °C, resistance: 62.5 mΩ, voltage: 62.5 μV, current: 625 nA
<b>Deviation</b>	
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
<u>Pt100</u>	± 0.01 % of abs. temperature value of switching point in K + 0.2 K (4-wire connection)
<u>Thermocouple</u>	± 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). Note! Because the sensitivity of thermocouples is, in general, lower at low temperatures than at high temperatures, the specified accuracy figures cannot be guaranteed when measuring temperatures below those listed here. -50 °C (type E and K thermocouples) -100 °C (type J, L and T thermocouples) +500 °C (type B thermocouple)
<b>Influence of ambient temperature</b>	
<u>Pt100</u>	± (0.0015 % of abs. temperature value of switching point in K + 0.01 K)/K ΔT <sub>amb</sub> <sup>*</sup> )
<u>Thermocouple</u>	± (0.004 % of abs. temperature value of switching point in K + 0.01 K) / KΔT <sub>amb</sub> <sup>*</sup> )
Voltage input	± (0.007 % of the switching point voltage) / KΔT <sub>amb</sub> <sup>*</sup> )
Current input	± (0.004 % of the switching point current)/KΔT <sub>amb</sub> <sup>*</sup> ) <sup>*</sup> ) ΔT <sub>amb</sub> = 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)
<b>Electrical isolation</b>	
Output/power supply	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output I/II	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Power supply/programming input	no electrical isolation
<b>Directive conformity</b>	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
Low voltage	
Directive 2006/95/EC	EN 61010-1:2010
<b>Conformity</b>	
Electromagnetic compatibility	NE 21:2006
Protection degree	IEC 60529:2001
<b>Ambient conditions</b>	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
<b>Mechanical specifications</b>	
Protection degree	IP20
Mass	approx. 150 g

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

Dimensions	20 x 119 x 115 mm (0.8 x 4.7 x 4.5 in) , housing type B2	
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001	
<b>Data for application in connection with Ex-areas</b>		
EC-Type Examination Certificate	BAS 98 ATEX 7152 , for additional certificates see www.pepperl-fuchs.com	
Group, category, type of protection	⊕ II (1)GD, I (M1) [Ex ia] IIC, [Ex iaD], [Ex ia] I (-20 °C ≤ T <sub>amb</sub> ≤ 60 °C)	
Input	Ex ia IIC	
Voltage	U <sub>o</sub>	10.5 V
Current	I <sub>o</sub>	27 mA
Power	P <sub>o</sub>	70 mW
Supply		
Maximum safe voltage	U <sub>m</sub>	40 V DC (Attention! The rated voltage can be lower.)
Statement of conformity		
Group, category, type of protection, temperature class	⊕ II 3G Ex nA nC IIC T4	
Electrical isolation		
Input/Other circuits	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V	
Directive conformity		
Directive 94/9/EC	EN 60079-0:2012 , EN 60079-11:2007 , EN 60079-15:2010 , EN 61241-11:2006	
<b>International approvals</b>		
UL approval		
Control drawing	116-0173 (cULus)	
IECEX approval	IECEX BAS 06.0022	
<b>General information</b>		
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com.	

**Accessories**

**Power feed module 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 150 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.

**Profile Rail K-DUCT with Power Rail**  
 The profile rail K-DUCT is an aluminum profile rail with Power Rail insert and two integral cable ducts for system and field cables. Due to this assembly no additional cable guides are necessary.



*Power Rail and Profile 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.

**PACTware™**  
 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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