

**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 **PACTwareJ™**
- Sensor burnout detection

**Function**

This isolated barrier is used for intrinsic safety applications. It accepts a variety of inputs including RTDs or thermocouples and provides a relay trip whenever it reaches a user-programmed set point.

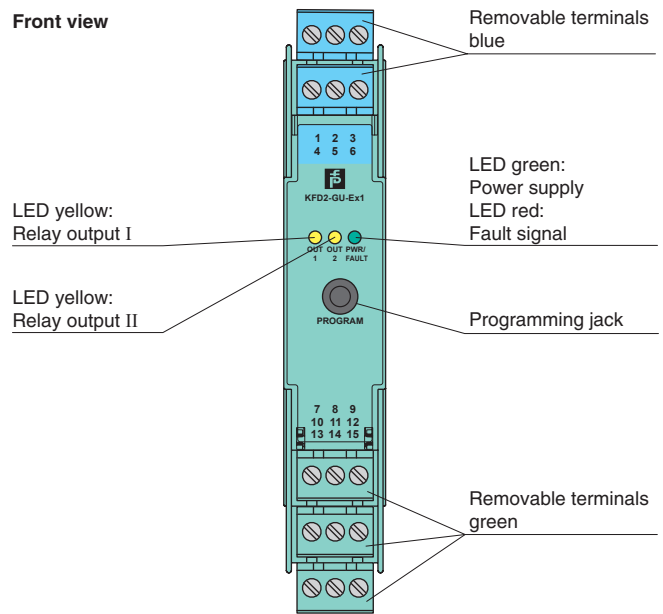
A removable terminal block K-CJC-\*\* is available for thermocouples when internal cold junction compensation is desired.

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

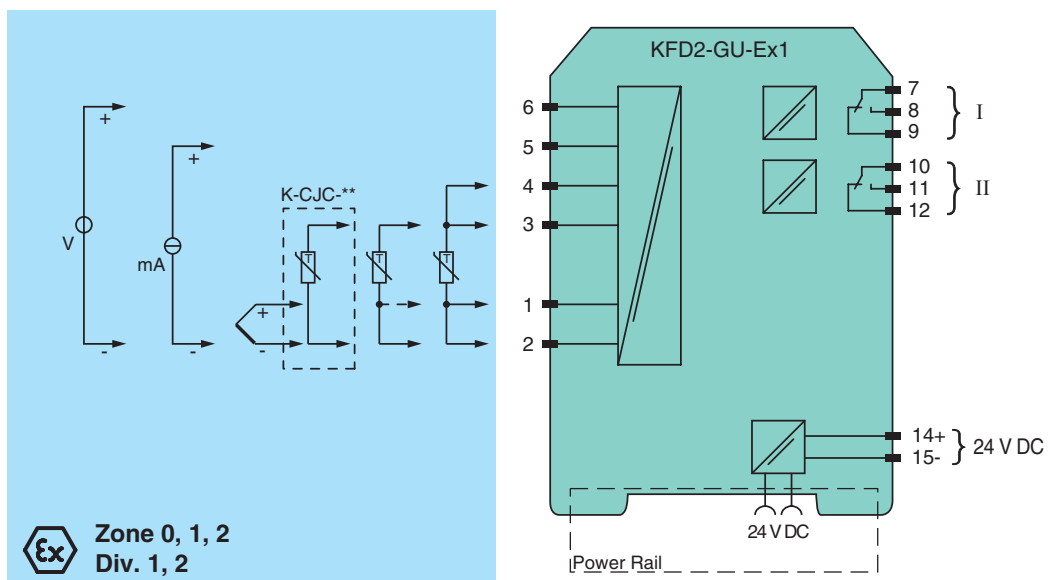
The unit is easily programmed with the **PACTware™** configuration software.

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 ; 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	
<b>Output</b>		
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 <sup>7</sup> switching cycles	
<b>Transfer characteristics</b>		
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	
<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).	
Influence of ambient temperature		
<u>Pt100</u>	± (0.0015 % of abs. temperature value of switching point in K + 0.01 K) / KΔT <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>	
<u>Thermocouple type R and S</u>	± (0.005 % of abs. temperature value of switching point in K + 0.01 K) / KΔT <sub>amb</sub> <sup>*)</sup>	
<u>Voltage source</u>	± (0.007 % of the switching point voltage) / KΔT <sub>amb</sub> <sup>*)</sup>	
<u>Current source</u>	± (0.007 % of the switching point current)/KΔT <sub>amb</sub> <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 I and II	basic insulation according to IEC 62103, rated insulation voltage 300 V <sub>rms</sub>	
Output/supply, programming input	basic insulation according to IEC 62103, rated insulation voltage 300 V <sub>rms</sub> 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.	
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 89/336/EEC	EN 50081-2, EN 50082-2	
<b>Conformity</b>		
Insulation coordination	EN 50178	
Electrical isolation	EN 50178	
Electromagnetic compatibility	NE 21	
Protection degree	IEC 60529	
<b>Ambient conditions</b>		
Ambient temperature	-20 ... 60 °C (253 ... 333 K)	
<b>Mechanical specifications</b>		
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	
<b>Data for application in conjunction with hazardous 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 [EEEx ia] IIC (-20 °C ≤ T <sub>amb</sub> ≤ 60 °C)	
Input	EEEx ia IIC	
Voltage	U <sub>o</sub>	10.5 V
Current	I <sub>o</sub>	27 mA
Power	P <sub>o</sub>	70 mW

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Supply	
Safety maximum voltage $U_m$	40 V DC (Attention! The rated voltage can be lower.)
Type of protection [Ex ia]	
Electrical isolation	
Input/other circuits	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity	
Directive 94/9/EC	EN 50014, EN 50020
<b>International approvals</b>	
UL approval	
Control drawing	116-0173 (cULus)
CSA approval	
Control drawing	116-0170
<b>General information</b>	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

**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<sub>ware</sub><sup>TM</sup>**

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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