Features

- 1-channel signal conditioner
- 24 V DC supply (Power Rail)
- Strain gauge input
- Output 0 mA ... ± 20 mA or 0 V ... ± 10 V
- Relay contact output
- Programmable high/low alarm
- Configurable by **PACT***ware*™ or ke ypad
- RS 485 interface
- Line fault detection (LFD)

Function

This signal conditioner is used with strain gauges, load cells and resistance measuring bridges and provides isolation for non-intrinsically safe applications.

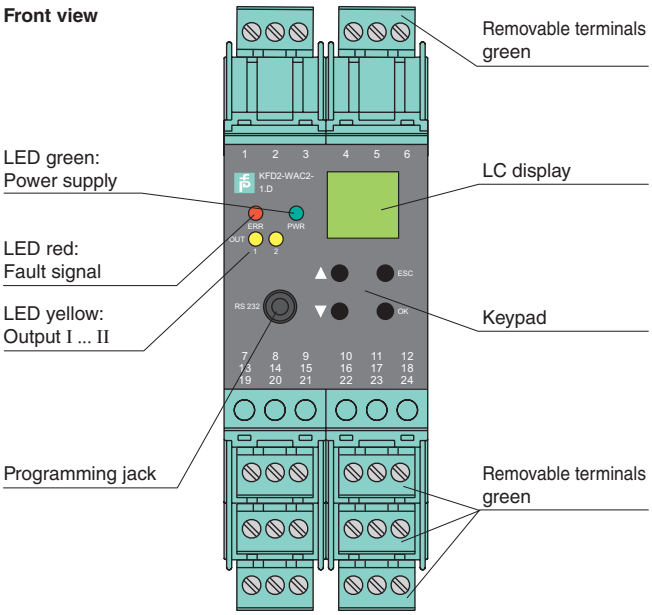
Designed to provide 5 V excitation voltage, this barrier's high quality A/D converter allows it to be used with those devices requiring 10 V.

The unit is easily programmed by the use of a keypad located on the front of the unit or with the **PACT***ware*™ configuration software. The actual measurement for tare, zero point, and final value can be entered in this manner.

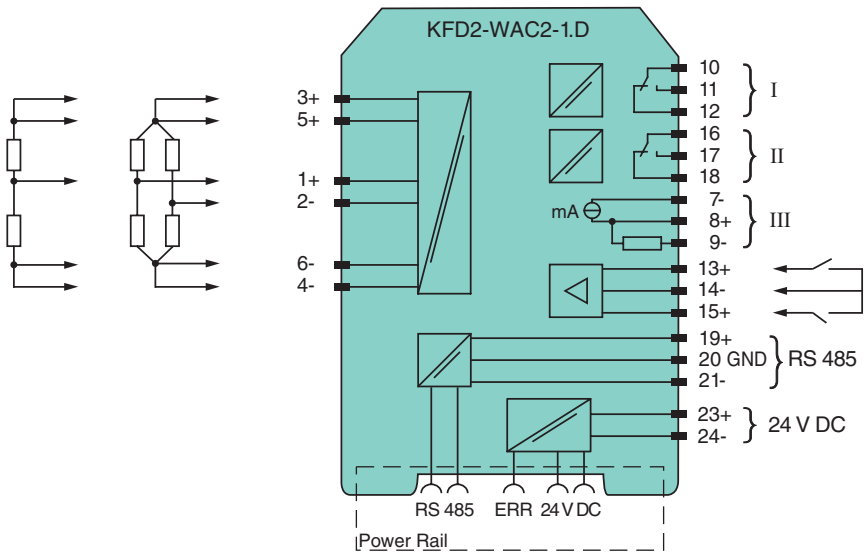
A unique collective error messaging feature is available when used with the Power Rail system.

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 23+, 24-
Rated voltage	20 ... 35 V DC
Ripple	within the supply tolerance
Power consumption	≤ 3 W
Interface	
Connection	Power Rail or terminals 19+, 20 GND, 21-
Type	RS 485
Programming interface	RS 232 programming jack
Field circuit	
Connection	terminals 1+, 2-, 3+, 4-, 5+, 6-
Line resistance	≤ 25 Ω per lead
Input I	
Connection	terminals 1+, 2-
Sensor supply	1 ... 5 V
Connection	terminals 3+, 4-, 5+, 6-
Short-circuit current	50 mA
Load	≥ 116 Ω up to 5V, ≥ 85 Ω up to 4V
Input	
Connection	input I: terminals 1+, 2-; input II: terminals 13+, 14-; input III: terminals 15+, 14-
Programmable Tare	0 ... 500 % of span
Input I	signal, analogue
Input signal	-100 ... 100 mV
Input resistance	> 1 MΩ for voltage measurement
Input II, III	tare adjustment, calibration and zero
Open circuit voltage/short-circuit current	18 V / 5 mA
Active/passive	I > 4 mA/I < 1.5 mA
Output	
Connection	output I: terminals 10, 11, 12; output II: terminals 16, 17, 18; output III: terminals 7-, 8+, 9-
Output I, II	Relay Output
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
Output III	analogue output
Current range	-20 ... 20 mA
Load	≤ 550 Ω
Analog voltage output	0 ... ± 10 V; output resistance 500 Ω (bridge between terminal 7 and 9)
Analog current output	0 ... ± 20 mA or 4 ... 20 mA; load 0 ... 550 Ω (terminals 7 and 8)
Line fault detection	downscale -21.5 mA (-10.75 V) or 2 mA (1 V), upscale 21.5 mA (10.75 V)
Transfer characteristics	
Deviation	
Resolution/accuracy	≤ ± 0.05 % incl. non-linearity and hysteresis
Temperature effect	≤ ± 0.01 %/K
Response time	300 ... 850 ms
Electrical isolation	
Input I/other circuits	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Output I, II against eachother	reinforced insulation acc. to IEC 61140, rated insulation voltage 300 V_{rms}
Output I, II/other circuits	reinforced insulation acc. to IEC 61140, rated insulation voltage 300 V_{rms}
Output III/input II, III	not available
Output III/programming jack	not available
Other circuits from each other	functional insulation acc. to IEC 62103, rated insulation voltage 50 V_{rms}
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
Low voltage	
Directive 2006/95/EC	EN 50178:1997
Conformity	
Electromagnetic compatibility	NE 21
Protection degree	IEC 60529
Protection against electric shock	IEC 61140
Ambient conditions	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Mechanical specifications	

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Protection degree	IP20
Mass	approx. 250 g
Dimensions	40 x 119 x 115 mm (1.6 x 4.7 x 4.5 in) , housing type C3
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.

Supplementary information

Single or parallel connection of strain gauges with resulting resistance between 116 Ω ... 10 kΩ can be connected and will provide a 4 mA ... 20 mA output and 2 relay outputs as well as an RS 485 interface in the safe area.

The device supports the transmission of measured values via the RS 485 interface. In this mode of operation, input signal range may be transmitted with 26 Bit resolution with up to 31 signal converters connected to the Power Rail UPR-05 or via terminals 19, 20 and 21.

RS 485 communication may be done via the Power Rail when using power feed modules with bus access, e. g. KFD2-EB2.R4A.B or via the terminals 19, 20 and 21 of one module. The device is addressed via keypad and display or with a PC with **PACT***ware***™** and adapter K-ADP1.

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

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-05

The Power Rail UPR-05 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!

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