Features

- 1-channel isolated barrier
- 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 isolated barrier is used for intrinsic safety applications. It is used with strain gauges, load cells and resistance measuring bridges.

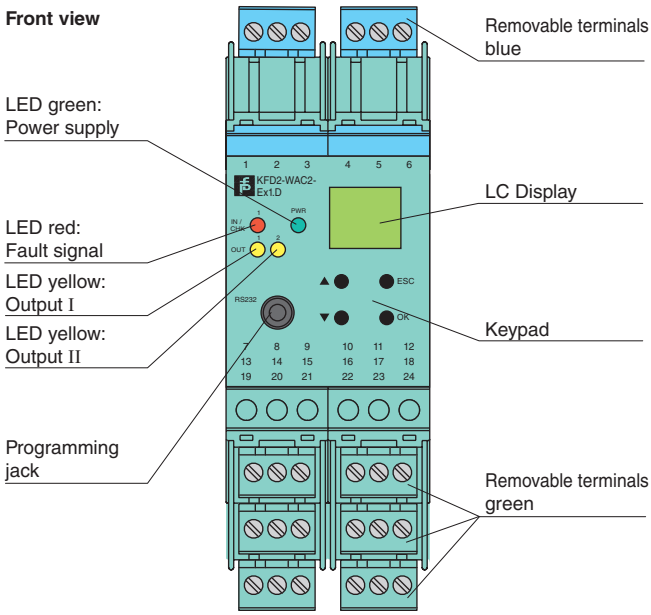
Designed to provide 5 V excitation voltage, this barrier's high quality A/D converter allows it to be used with those devices requiring 10 V.

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.

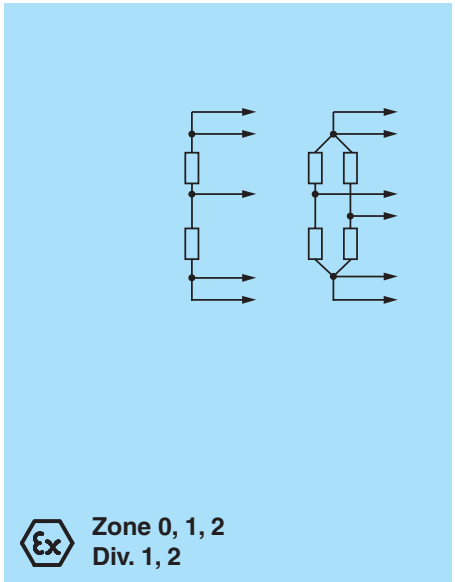
A unique collective error messaging feature is available when used with the Power Rail system.

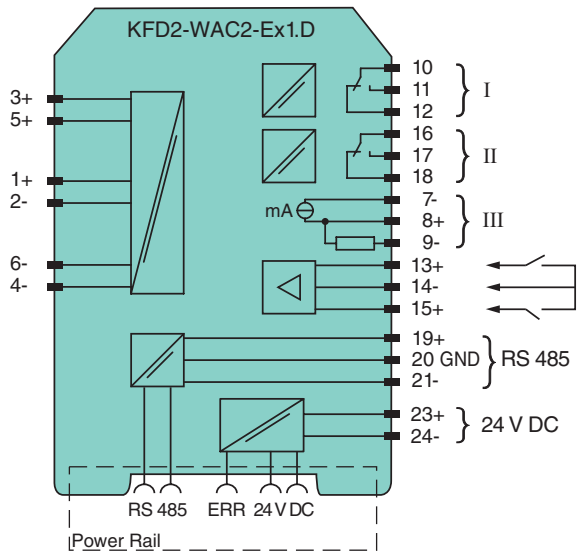
For additional information, refer to the manual and www.pepperl-fuchs.com.

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-
Lead 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, analog
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	Analog 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
Reaction time	300 ... 850 ms
Electrical isolation	
Output I, II against eachother	reinforced insulation according to IEC 61140, rated insulation voltage 300 V_{eff}
Output I, II/other circuits	reinforced insulation according to IEC 61140, rated insulation voltage 300 V_{eff}
Output III/Input II, III	not available
Output III/Programming socket	not available
Other circuits from each other	functional insulation acc. to IEC 62103, rated insulation voltage 50 V_{eff}
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 (-4 ... 140 °F)
Mechanical specifications	
Protection degree	IP20

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Mass		approx. 250 g
Dimensions		40 x 119 x 115 mm (1.6 x 4.7 x 4.5 in) , housing type C3
Data for application in connection with Ex-areas		
EC-Type Examination Certificate		TÜV 04 ATEX 2531 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		⟨Ex⟩ II (1)GD [EEx ia] IIC [circuit(s) in zone 0/1/2]
Supply		Power Rail or terminals 23+, 24- non-intrinsically safe
Maximum safe voltage U_m		40 V DC (Attention! U_m is no rated voltage.)
Input I		terminals 1+, 2- EEx ia IIC
Voltage	U_o	14 V
Current	I_o	238 mA
Power	P_o	833 mW (linear characteristic)
Input II and III		terminals 13+, 14-; 15+, 14- non-intrinsically safe
Maximum safe voltageU_m		40 V DC (Attention! U_m is no rated voltage.)
Output I, II		terminals 10, 11, 12; 16, 17, 18 non-intrinsically safe
Maximum safe voltage U_m		253 V AC / 40 V DC (Attention! U_m is no rated voltage.)
Contact loading		253 V AC/2 A/500 VA/cos ϕ min. 0.7; 40 V DC/2 A resistive load
Output III		terminals 7-, 8+, 9- non-intrinsically safe
Maximum safe voltageU_m U_m		40 V DC (Attention! U_m is no rated voltage.)
Interface		RS 485 programming jack
Maximum safe voltage U_m		40 V DC (Attention! U_m is no rated voltage.)
Electrical isolation		
Input I/other circuits		safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity		
Directive 94/9/EC		EN 50014, EN 50020
General information		
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.

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 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 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.

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.



Attention

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

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