

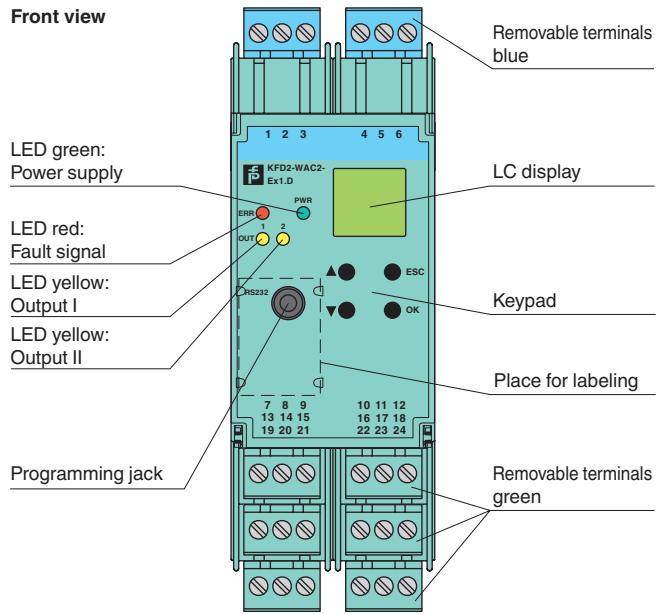
**Features**

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Strain gauge input (full or half bridge)
- Output 0 mA ... ± 20 mA or 0 V ... ± 10 V
- 2 relay contact outputs
- Programmable high/low alarm
- Configurable by PACTware or keypad
- RS-485 interface
- Line fault detection (LFD)

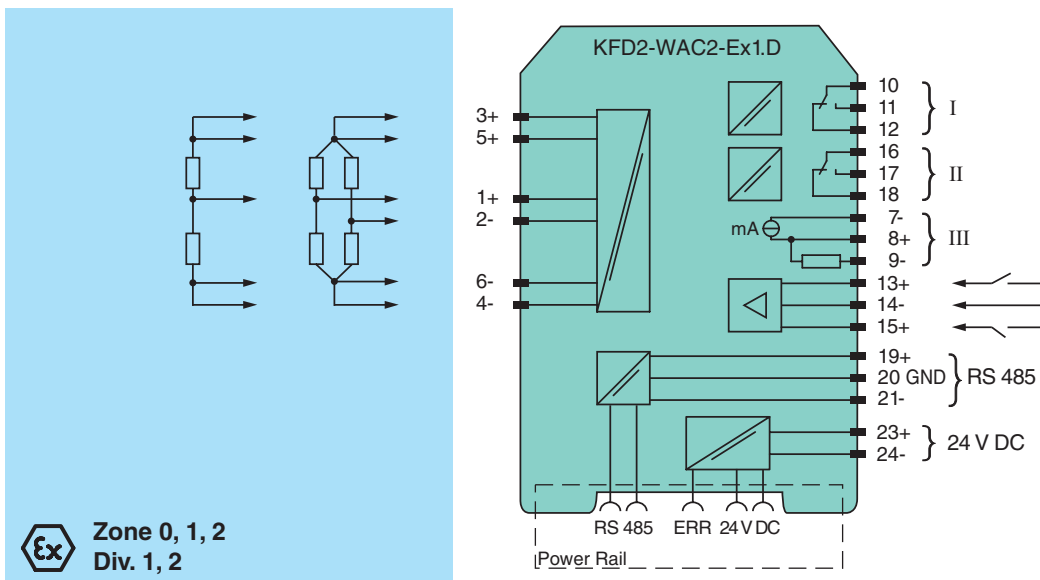
**Function**

This isolated barrier is used for intrinsic safety applications. The device 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. Up to four 350 Ω strain gauges connected in parallel may be powered and evaluated. The device is easily configured by the use of keypad or with the PACTware configuration software. The current measurement for tare, zero point, and final value can be entered in this manner. A fault is signaled by LEDs and a separate collective error message output. For additional information, refer to the manual and [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

**Assembly**



**Connection**



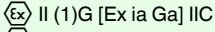
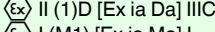
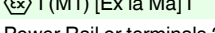
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

<b>General specifications</b>	
Signal type	Analog input
<b>Supply</b>	
Connection	Power Rail or terminals 23+, 24-
Rated voltage	$U_r$ 20 ... 35 V DC
Ripple	within the supply tolerance
Power consumption	≤ 3 W
<b>Interface</b>	
Connection	Power Rail or terminals 19+, 20 GND, 21-
Type	RS-485
Programming interface	programming socket
<b>Field circuit</b>	
Connection	terminals 1+, 2-, 3+, 4-, 5+, 6-
Lead resistance	≤ 25 Ω per line
<b>Input I</b>	
Connection	terminals 1+, 2-
Sensor supply	1 ... 5 V
Connection	terminals 3+, 4- (supply); 5+, 6- (signal)
Short-circuit current	50 mA
Load	≥ 116 Ω up to 5V, ≥ 85 Ω up to 4V
<b>Input</b>	
Connection side	field side
Connection	Input I: terminals 1+, 2-; Input II: terminals 13+, 14-; Input III: terminals 15+, 14-
Programmable Tare	0 ... 500 % of span
<b>Input I</b>	
Input signal	-100 ... 100 mV
Input resistance	> 1 MΩ for voltage measurement
<b>Input II, III</b>	
Open circuit voltage/short-circuit current	18 V / 5 mA
Active/Passive	I > 4 mA / I < 1.5 mA
<b>Output</b>	
Connection side	control side
Connection	Output I: terminals 10, 11, 12; Output II: terminals 16, 17, 18; Output III: terminals 7-, 8+, 9-
<b>Output I, II</b>	
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>Output III</b>	
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)
Collective error message	Power Rail
<b>Transfer characteristics</b>	
<b>Deviation</b>	
Resolution/accuracy	≤ ± 0.05 % incl. non-linearity and hysteresis
Temperature effect	≤ ± 0.01 %/K
Reaction time	300 ... 850 ms
<b>Galvanic isolation</b>	
Input I/other circuits	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output I, II against each other	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output I, II/other circuits	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output III/Input II, III	not available
Output III/Programming socket	not available
Other circuits from each other	functional insulation, rated insulation voltage 50 V <sub>eff</sub>
<b>Indicators/settings</b>	
Display elements	LEDs , display
Control elements	Control panel
Configuration	via operating buttons via PACTware
Labeling	space for labeling at the front
<b>Directive conformity</b>	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)

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Low voltage		
Directive 2014/35/EU		EN 61010-1:2010
<b>Conformity</b>		
Electromagnetic compatibility		NE 21:2006
Degree of protection		IEC 60529:2001
<b>Ambient conditions</b>		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
<b>Mechanical specifications</b>		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 250 g
Dimensions		40 x 119 x 115 mm (1.6 x 4.7 x 4.5 inch) , housing type C3
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
<b>Data for application in connection with hazardous areas</b>		
EU-type examination certificate		TÜV 04 ATEX 2531
Marking		 II (1)G [Ex ia Ga] IIC  II (1)D [Ex ia Da] IIIC  I (M1) [Ex ia Ma] I
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- Ex ia IIC, Ex iaD
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 voltage	$U_m$	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 $\phi$ min. 0.7; 40 V DC/2 A resistive load
Output III		terminals 7-, 8+, 9- non-intrinsically safe
Maximum safe voltage	$U_m U_m$	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.)
Galvanic isolation		
Input I/other circuits		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2012+A11:2013 , EN 60079-11:2012
<b>International approvals</b>		
FM approval		
Control drawing		116-0302 (cFMus)
UL approval		E223772
IECEx approval		
IECEx certificate		IECEx TUN 06.0005
IECEx marking		[Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I
<b>General information</b>		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .
<b>Accessories</b>		
Optional accessories		- power feed module KFD2-EB2(.R4A.B)(.SP) - universal power rail UPR-05(-S) - profile rail K-DUCT-BU(-UPR-05) - FDT framework PACTware 5.X - device type manager DTM Interface Technology - adapter K-ADP-USB

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## Supplementary information

Single or parallel connection of strain gauges with resulting resistance between  $116 \Omega$  ...  $10 \text{ k}\Omega$  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 PACTware and adapter K-ADP-USB.

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