

Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input 2-wire and 3-wire transmitters and 2-wire current sources
- Output 0/4 mA ... 20 mA
- 2 relay contact outputs
- Programmable high/low alarm
- Linearization function (max 20 points)
- Line fault detection (LFD)
- Up to SIL2 acc. to IEC 61508

Function

This isolated barrier is used for intrinsic safety applications. The device supplies 2-wire and 3-wire transmitters in a hazardous area, and can also be used with active current sources.

Two relays and an active 0/4 mA ... 20 mA current source are available as outputs. The relay contacts and the current output can be integrated in security-relevant circuits. The current output is easily scaled.

On the display the measured value can be indicated in various physical units.

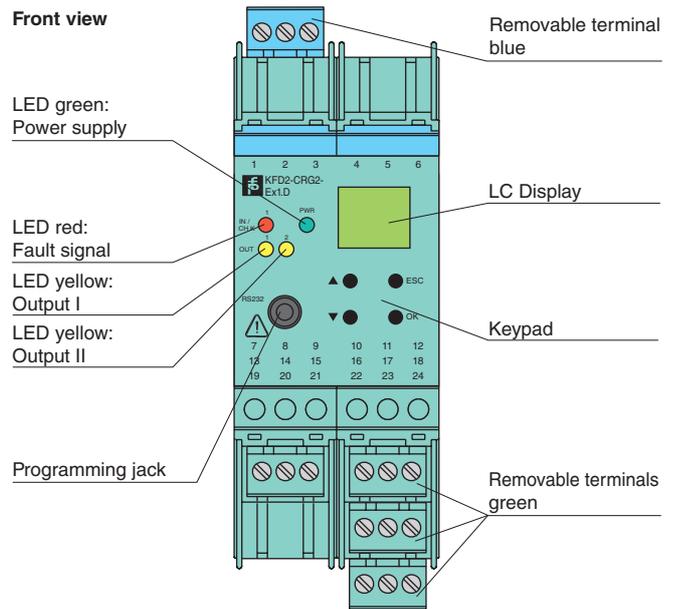
The unit is easily programmed by the use of a keypad located on the front of the unit or with the **PACTware™** configuration software.

The input has a line fault detection.

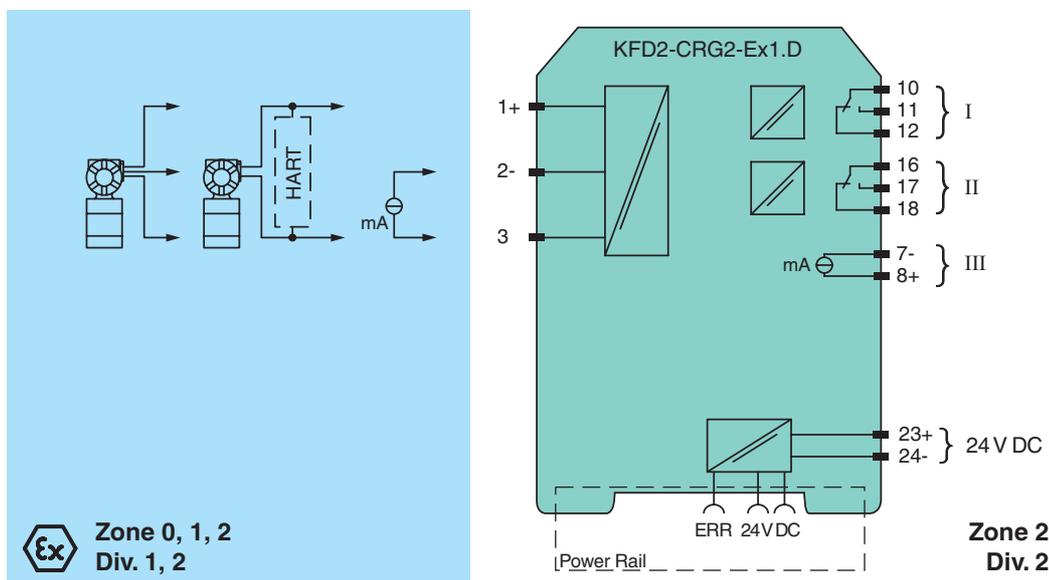
A unique collective error messaging feature is available when used with the Power Rail system.

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 ... 30 V DC
Rated current	approx. 130 mA
Power loss	2 W
Power consumption	2.5 W
Input	
Connection	terminals 1, 2, 3
Input I	
Input signal	0/4 ... 20 mA
Available voltage	≥ 15 V at 20 mA
Open circuit voltage/short-circuit current	24 V / 33 mA
Input resistance	45 Ω (terminals 2, 3)
Lead monitoring	breakage I < 0.2 mA; short-circuit I > 22 mA acc. to NAMUR NE43
Output	
Connection	output I: terminals 10, 11, 12 output II: terminals 16, 17, 18 output III: terminals 8+, 7-
Output signal	0 ... 20 mA or 4 ... 20 mA
Output I, II	signal, relay
Contact loading	250 V AC / 2 A / cos φ ≥ 0.7 ; 40 DC / 2 A
Mechanical life	5 x 10 ⁷ switching cycles
Energized/De-energized delay	approx. 20 ms / approx. 20 ms
Output III	Signal, analog
Current range	0 ... 20 mA or 4 ... 20 mA
Open loop voltage	≤ 24 V DC
Load	≤ 650 Ω
Fault signal	downscale I ≤ 3.6 mA, upscale I ≥ 21 mA (acc. NAMUR NE43)
Transfer characteristics	
Input I	
Accuracy	< 30 μA
Measuring time	< 100 ms
Influence of ambient temperature	0.003 %/K (30 ppm)
Output I, II	
Response delay	≤ 200 ms
Output III	
Resolution	≤ 10 μA
Accuracy	< 20 μA
Influence of ambient temperature	0.005 %/K (50 ppm)
Electrical isolation	
Output I, II/other circuits	reinforced insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Mutual output I, II, III	reinforced insulation according to IEC 61140, rated insulation voltage 300 V _{eff}
Output III/power supply and collective error	functional insulation acc. to IEC 62103, rated insulation voltage 50 V _{eff}
Interface/power supply and collective error	functional insulation acc. to IEC 62103, rated insulation voltage 50 V _{eff}
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006 , EN 61000-6-4:2007
Low voltage	
Directive 2006/95/EC	EN 50178:1997
Conformity	
Insulation coordination	IEC 62103
Electrical isolation	IEC 62103
Electromagnetic compatibility	NE 21
Protection degree	IEC 60529
Protection against electric shock	IEC 61140
Input	EN 60947-5-6
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Protection degree	IP20

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Mass	300 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 01 ATEX 1701 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	Ex II (1) G [Ex ia] IIC Ex II (1) D [Ex iaD]
Input	Ex ia IIC, Ex iaD
Supply	
Maximum safe voltage U_m	40 V DC (Attention! The rated voltage can be lower.)
Equipment	
	terminals 1+, 3-
Voltage U_o	25.8 V
Current I_o	93 mA
Power P_o	0.603 W
Equipment	
	terminals 2-, 3
Voltage U_i	< 30 V
Current I_i	115 mA
Voltage U_o	5 V
Current I_o	0.3 mA
Power P_o	0.3 mW
Equipment	
	terminals 1+, 2 / 3-
Voltage U_o	25.8 V
Current I_o	112 mA
Power P_o	720 mW
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/cos ϕ > 0.7; 40 V DC/2 A resistive load (TÜV 01 ATEX 1701)
Output III	
	terminals 8+, 7- non-intrinsically safe
Maximum safe voltage U_m U_m	40 V (Attention! The rated voltage can be lower.)
Interface	
	RS 232
Maximum safe voltage U_m	40 V (Attention! The rated voltage can be lower.) , RS 232
Statement of conformity	
	TÜV 02 ATEX 1885 X , observe statement of conformity
Group, category, type of protection, temperature classification	Ex II 3G Ex nA nC IIC T4
Output I, II	
Contact loading	50 V AC/2 A/cos ϕ > 0.7; 40 V DC/1 A resistive load
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 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 60079-26:2007, EN 61241-0:2006, EN 61241-11:2006
International approvals	
FM approval	
Control drawing	16-554FM-12 (cFMus)
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 .

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-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.



Attention

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

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