

Data Sheet

# KFD2-CRG2-EX1.D



Supplied by

**247cable.com**

Call us on +44 (0)118 916 9420 | Email [info@247able.com](mailto:info@247able.com)

## Transmitter Power Supply

## KFD2-CRG2-Ex1.D

### 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/IEC 61511

### Function

This isolated barrier is used for intrinsic safety applications. The device supplies 2-wire and 3-wire transmitters, and can also be used with 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.

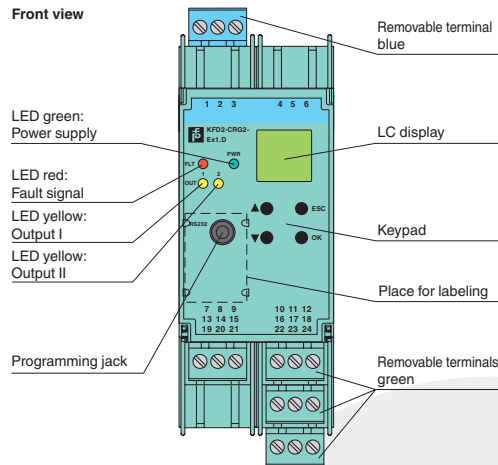
The device is easily configured by the use of keypad or with the PACTware configuration software.

The input has a line fault detection.

A fault is signaled by LEDs acc. to NAMUR NE44 and a separate collective error message output.

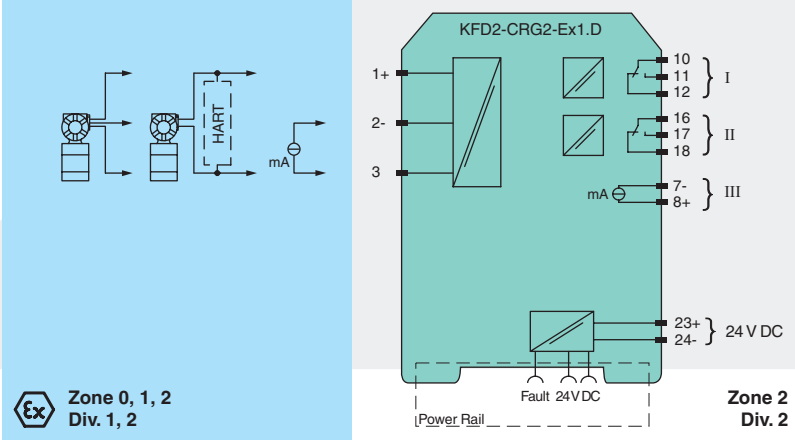
For additional information, refer to the manual and [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

### Assembly



CE SIL2

### Connection






**Technical data**

**KFD2-CRG2-Ex1.D**

<b>General specifications</b>	
Signal type	Analog input
<b>Supply</b>	
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
<b>Input</b>	
Connection	terminals 1, 2, 3
<b>Input I</b>	
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
<b>Output</b>	
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 <sup>7</sup> switching cycles
<b>Output III</b>	
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)
<b>Transfer characteristics</b>	
<b>Input I</b>	
Accuracy	< 30 μA
Influence of ambient temperature	0.003 %/K (30 ppm)
<b>Output I, II</b>	
Response delay	≤ 200 ms at bounce from 0 ... 20 mA
<b>Output III</b>	
Resolution	≤ 10 μA
Accuracy	< 20 μA
Influence of ambient temperature	0.005 %/K (50 ppm)
Reaction time	< 650 ms at bounce from 0 ... 20 mA at the input, 90 % of output full-scale value
<b>Electrical isolation</b>	
Input/Other circuits	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>
Mutual output I, II, III	reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub>
Output III/power supply and collective error	functional insulation acc. to IEC 62103, rated insulation voltage 50 V <sub>eff</sub>
Interface/power supply and collective error	functional insulation acc. to IEC 62103, rated insulation voltage 50 V <sub>eff</sub>
<b>Directive conformity</b>	
<b>Electromagnetic compatibility</b>	
Directive 2004/108/EC	EN 61326-1:2006
<b>Low voltage</b>	
Directive 2006/95/EC	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
Mass	300 g
Dimensions	40 x 119 x 115 mm (1.6 x 4.7 x 4.5 in) , housing type C3
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001

## Technical data

## KFD2-CRG2-Ex1.D

Data for application in connection with Ex-areas		
EC-Type Examination Certificate		TÜV 01 ATEX 1701 , for additional certificates see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a>
Group, category, type of protection		 II (1) G [Ex ia] IIC  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 $\phi$ > 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 class		 II 3G Ex nA nC IIC T4
Output I, II		
Contact loading		50 V AC/2 A/cos $\phi$ > 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 60079-0:2009, EN 60079-11:2007, EN60079-15:2005 , EN 60079-26:2007 , EN 61241-11:2006
<b>International approvals</b>		
FM approval		
Control drawing		16-554FM-12 (cFMus)
<b>General information</b>		
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 <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

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### 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 150 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.



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

#### PACT<sup>ware</sup>™

Device-specific drivers (DTM)

#### Adapter K-ADP-USB

Programming adapter for parameterisation via the serial USB interface of a PC/Notebook

#### Reading Office

Cutbush Park, Danehill, Lower Earley,  
Reading, Berkshire. RG6 4UT. UK.  
Tel: +44 (0)118 9311188  
Email: info@able.co.uk

#### Aberdeen Office

Unit 6 Airside Business Park, Kirkhill Industrial Estate,  
Dyce, Aberdeen. AB21 0GT. UK.  
Tel: +44 (0)1224 725999  
Email: ab@able.co.uk

Internet: www.able.co.uk  
e-procurement: www.247able.com  
Registered in England No: 01851002  
VAT No: GB 417 2481 61

