



Transmitter Power Supply KFU8-CRG2-Ex1.D

- 1-channel isolated barrier
- Universal usage at different power supplies
- Input 2-wire and 3-wire transmitters and 2-wire current sources
- Output 0/4 mA ... 20 mA
- 2 relay contact outputs
- Adjustable energized/de-energized delay
- Programmable high/low alarm
- Linearization function (max 20 points)
- Line fault detection (LFD)
- Up to SIL 2 acc. to IEC/EN 61508 / IEC/EN 61511



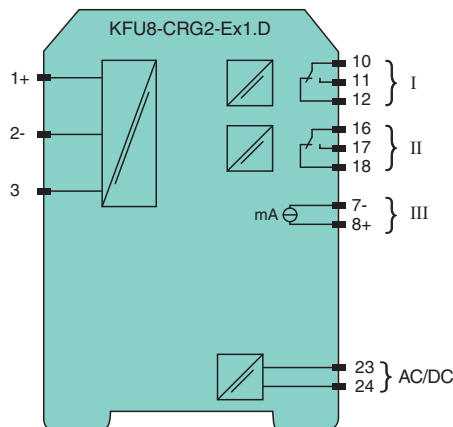
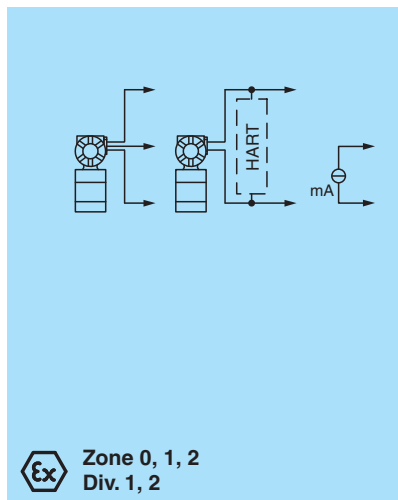
SIL 2



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 to 20 mA current source are available as outputs. The relay contacts and the current output can be integrated in safety-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 signalized by LEDs. For additional information, refer to the manual and www.pepperl-fuchs.com.

Connection



Technical Data

General specifications

Signal type Analog input

Functional safety related parameters

Safety Integrity Level (SIL) SIL 2

Supply

Connection terminals 23, 24

Rated voltage U_r 20 ... 90 V DC or 48 ... 253 V AC

Power dissipation 2 W / 3 VA

Power consumption 2.2 W / 4 VA

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

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Technical Data

Interface		
Programming interface		programming socket
Input		
Connection side		field side
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)
Line fault detection		breakage I < 0.2 mA; short-circuit I > 22 mA
Output		
Connection side		control side
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 / $\cos \phi \geq 0.7$; 40 DC / 2 A
Mechanical life		5 x 10 ⁷ switching cycles
Output III		Signal, analog
Current range		0 ... 20 mA or 4 ... 20 mA
Open loop voltage		max. 24 V DC
Load		max. 650 Ω
Fault signal		downscale I ≤ 3.6 mA, upscale I ≥ 21.5 mA (acc. NAMUR NE43)
Energized/De-energized delay		0 ... 250 s , adjustable
Transfer characteristics		
Input I		
Accuracy		< 30 μ A
Influence of ambient temperature		0.003 %/K (30 ppm)
Output I, II		
Response delay		≤ 200 ms at bounce from 0 ... 20 mA
Output III		
Resolution		≤ 10 μ A
Accuracy		< 20 μ A
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
Galvanic isolation		
Input/Other circuits		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Output I, II/other circuits		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Mutual output I, II, III		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Output III/power supply		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Interface/power supply		reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}
Indicators/settings		
Display elements		LEDs , display
Control elements		Control panel
Configuration		via operating buttons via PACTware
Labeling		space for labeling at the front
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Low voltage		
Directive 2014/35/EU		EN 61010-1:2010

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

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Technical Data

Conformity

Electromagnetic compatibility	NE 21:2006
Degree of protection	IEC 60529:2001

Ambient conditions

Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
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Mechanical specifications

Degree of protection	IP20
Connection	screw terminals
Mass	300 g
Dimensions	40 x 119 x 115 mm (1.6 x 4.7 x 4.5 inch) (W x H x D) , housing type C2
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001

Data for application in connection with hazardous areas

EU-type examination certificate	TÜV 01 ATEX 1701
Marking	Ⓔ II (1)G [Ex ia Ga] IIC Ⓔ II (1)D [Ex ia Da] IIIC Ⓔ I (M1) [Ex ia Ma] I
Input	Ex ia

Supply

Maximum safe voltage	U _m	253 V AC (Attention! The rated voltage can be lower.)
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Equipment	terminals 1+, 3-
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Voltage	U _o	25.8 V
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Current	I _o	93 mA
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Power	P _o	0.603 W
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Equipment	terminals 2-, 3
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Voltage	U _i	< 30 V
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Current	I _i	115 mA
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Voltage	U _o	5 V
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Current	I _o	0.3 mA
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Power	P _o	0.3 mW
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Equipment	terminals 1+, 2 / 3-
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Voltage	U _o	25.8 V
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Current	I _o	112 mA
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Power	P _o	720 mW
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Output I, II	terminals 10, 11, 12; 16, 17, 18 non-intrinsically safe
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Maximum safe voltage	U _m	253 V AC / 40 V DC (Attention! U _m is no rated voltage.)
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Contact loading	253 V AC/2 A/cos φ > 0.7; 40 V DC/2 A resistive load (TÜV 01 ATEX 1701)
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Output III	terminals 8+, 7- non-intrinsically safe
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Maximum safe voltage	U _m	40 V (Attention! The rated voltage can be lower.)
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Interface	RS 232
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Maximum safe voltage	U _m	40 V (Attention! The rated voltage can be lower.) , RS 232
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Galvanic isolation	
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Input/Other circuits	safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
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Directive conformity	
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Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-11:2012
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International approvals

FM approval

Control drawing	16-554FM-12 (cFMus)
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IECEx approval

IECEx certificate	IECEx TUN 09.0007
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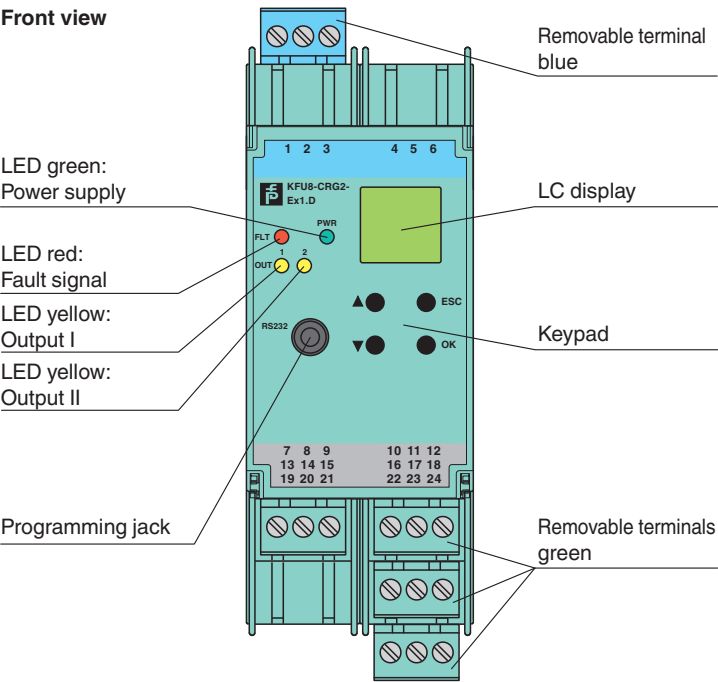
IECEx marking	[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I
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General information





Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .
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Assembly



Matching System Components

	DTM Interface Technology	Device type manager (DTM) for interface technology
	PACTware 5.0	FDT Framework
	K-ADP-USB	Programming adapter with USB interface
	K-DUCT-BU	Profile rail, wiring comb field side, blue

Accessories

	K-250R	Measuring resistor
	K-500R0%1	Measuring resistor
	KF-ST-5GN	Terminal block for KF modules, 3-pin screw terminal, green
	KF-ST-5BU	Terminal block for KF modules, 3-pin screw terminal, blue
	KF-CP	Red coding pins, packaging unit: 20 x 6

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Characteristic Curve

Maximum Switching Power of Output Contacts

