



Current/Voltage Converter KFD0-CC-Ex1

- 1-channel isolated barrier
- 24 V DC supply (loop powered)
- Current or voltage input
- Output: 4 ... 20 mA
- Potentiometer or DIP switch selectable ranges
- Line fault detection (LFD)



Function

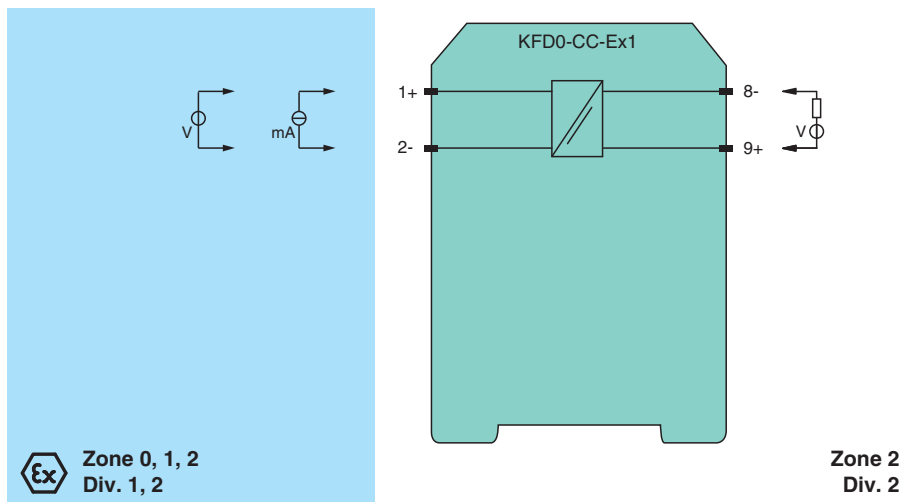
This isolated barrier is used for intrinsic safety applications. It converts a 2-wire voltage or current in the hazardous area to a 4 mA ... 20 mA signal in the safe area.

The device can be used to double signals in 20 mA measurement circuits due to the limited current signal input load of 50 Ω .

DIP switches and potentiometers make field calibration easy.

Since this isolator is loop-powered, use the technical data to verify that the proper voltage is available to the field devices.

Connection



Technical Data

General specifications

Signal type		Analog input	
Supply			
Rated voltage		U _r	12 ... 35 V DC loop powered
Power dissipation			0.4 W
Input			
Connection side			field side
Connection			terminals 1+, 2-
Current range			0 ... 20 mA , load ≤ 50 Ω
Voltage range			0 ... 10 V , load ≥ 100 kΩ
Output			

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0002
pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222
pa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
pa-info@sg.pepperl-fuchs.com

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Technical Data

Connection side		control side
Connection		terminals 9+, 8-
Load		(U -12 V) / 0.02 A
Current output		4 ... 20 mA , limited to ≤ 35 mA
Fault signal		downscaling ≤ 3 mA
Transfer characteristics		
Deviation		
After calibration		0.1 % of full-scale value
Temperature effect		span: 0.050 % of span /K ; zero point: 0.060 % of span /K
Linearization		≤ 0.04 % of full-scale value
Influence of supply voltage		6.5 ppm/V
Rise time		250 ms
Galvanic isolation		
Input/Output		safe isolation according to EN 50178, rated insulation voltage 253 V _{eff}
Indicators/settings		
Control elements		DIP switch potentiometer
Configuration		via DIP switches via potentiometer
Labeling		space for labeling at the front
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Conformity		
Galvanic isolation		EN 50178:1997
Degree of protection		IEC 60529:2001
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 100 g
Dimensions		20 x 119 x 115 mm (0.8 x 4.7 x 4.5 inch) (W x H x D) , housing type B2
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas		
EU-type examination certificate		ZELM 00 ATEX 0034
Marking		Ⓔ II (1)GD [Ex ia] IIC
Input		Ex ia IIC
Voltage	U _o	9.6 V
Current	I _o	0.5 mA
Power	P _o	1.1 mW linear characteristic
Output		
Maximum safe voltage	U _m	60 V (Attention! The rated voltage can be lower.)
Certificate		TÜV 01 ATEX 1777 X
Marking		Ⓔ II 3G Ex nA II T4
Galvanic isolation		
Input/Output		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 , EN 60079-15:2010
International approvals		
CSA approval		
Control drawing		116-0132
General information		

Release date: 2022-12-07 Date of issue: 2022-12-07 Filename: 043690_eng.pdf

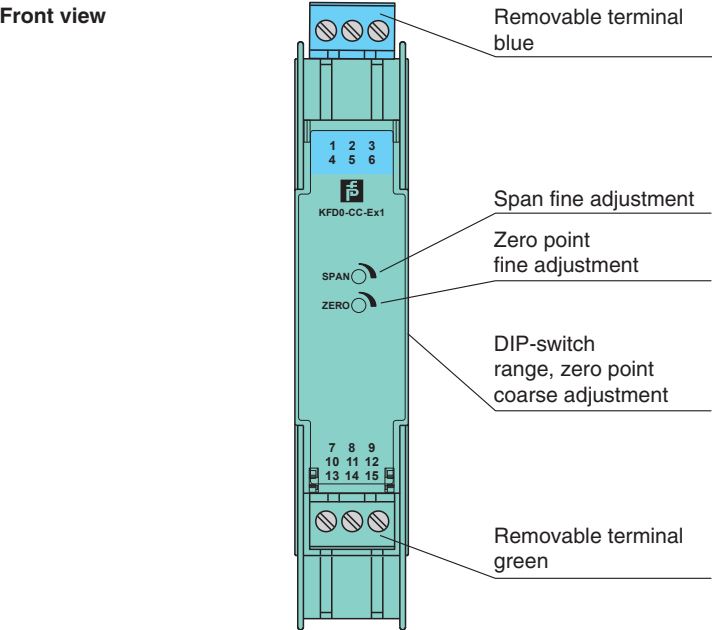
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pa-info@us.pepperl-fuchs.comGermany: +49 621 776 2222
pa-info@de.pepperl-fuchs.comSingapore: +65 6779 9091
pa-info@sg.pepperl-fuchs.com
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Technical Data

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

	K-DUCT-BU	Profile rail, wiring comb field side, blue
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Accessories

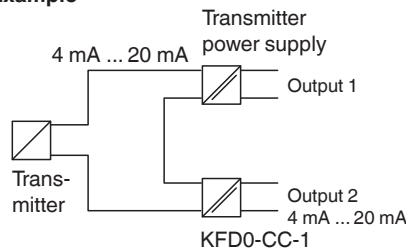
	KF-ST-5GN	Terminal block for KF modules, 3-pin screw terminal, green
	KF-ST-5BU	Terminal block for KF modules, 3-pin screw terminal, blue
	KF-CP	Red coding pins, packaging unit: 20 x 6

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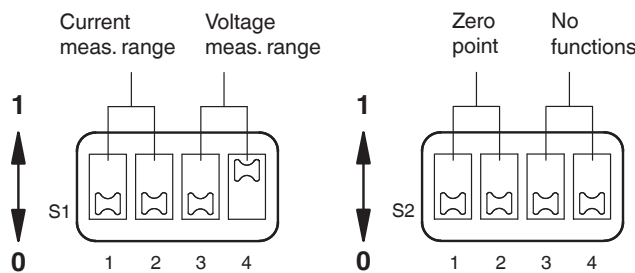
Configuration

The device is delivered with the input signal set of 4 mA ... 20 mA.

Example



DIP switches function



Measurement range	Switch S1 (range)				Switch S2 (zero point)			
	S1.1	S1.2	S1.3	S1.4	S2.1	S2.2	S2.3	S2.4
0 mA ... 20 mA	1	1	-	-	-	-	-	-
4 mA ... 20 mA	1	1	-	-	1	1	-	-
0 V ... 5 V	-	-	1	-	-	-	-	-
1 V ... 5 V	-	-	1	-	1	1	-	-
0 V ... 10 V	-	-	-	1	-	-	-	-
2 V ... 10 V	-	-	-	1	1	1	-	-

Adjustment instruction (example):

Input signal 0 mA ... 20 mA
Output signal 4 mA ... 20 mA

- 1. Set DIP switches S1.1 and S1.2 to the position 1. Set all other DIP switches to the position 0.
- 2. Set input to minimum value of 0 mA.
- 3. Adjust output, minimum zero point (4 mA).
- 4. Add maximum value of 20 mA.
- 5. Adjust output, range maximum value (20 mA)

Repeat steps 2. ... 5., until stable.