Features

- 1-channel isolated barrier
- 24 V DC supply (loop powered)
- Current or voltage output
- Output: 4 mA ... 20 mA
- 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.

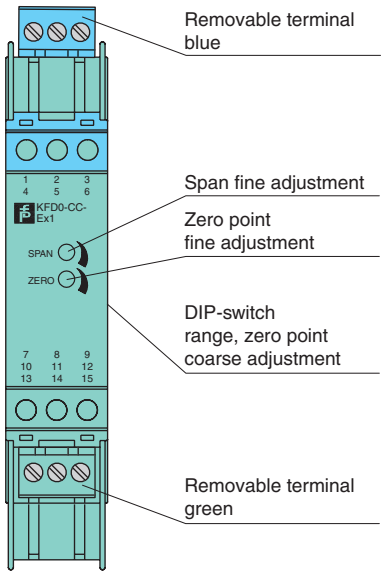
The device can be used to double signals in 20 mA measurement circuits due to the limited current signal input load of 50 Ω.

DIP switches and potentiometers make field calibration easy.

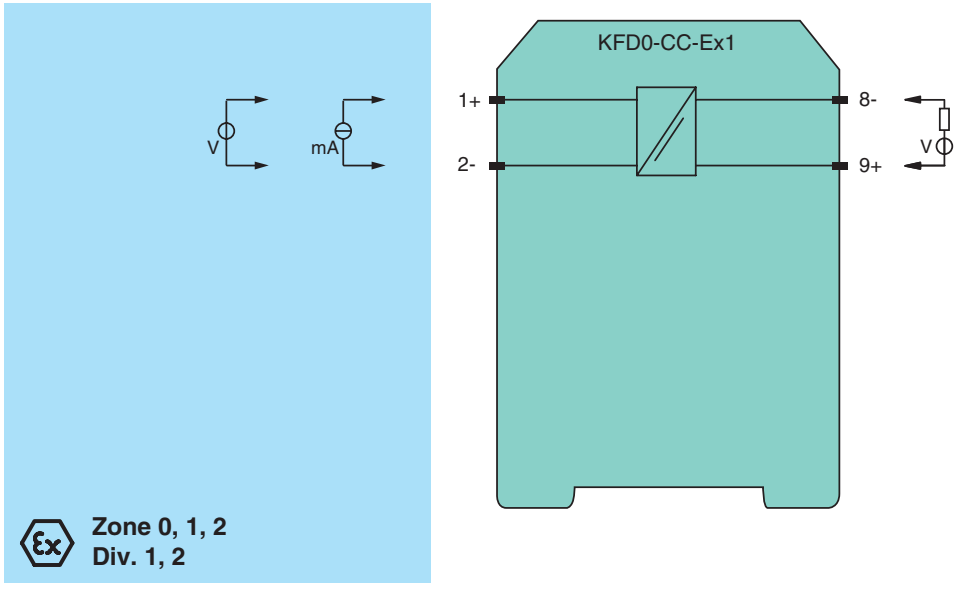
Since this isolator is loop-powered, use the technical data to verify that the proper voltage is available to the field devices.

Assembly

Front view



Connection



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Supply		
Rated voltage		12 ... 35 V DC loop powered
Power loss		0.4 W
Input		
Connection		terminals 1+, 2-
Current range		0 ... 20 mA , load ≤ 50 Ω
Voltage range		0 ... 10 V , load ≥ 100 kΩ
Output		
Connection		terminals 9+, 8-
Load		(U -12 V) / 0.02 A
Current output		4 ... 20 mA , limited to ≤ 35 mA
Fault signal		downscale ≤ 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
Linearisation		≤ 0.04 % of full-scale value
Influence of supply voltage		6.5 ppm/V
Rise time		250 ms
Electrical isolation		
Input/output		safe isolation according to EN 50178, rated insulation voltage 253 V_{eff}
Directive conformity		
Electromagnetic compatibility		
Directive 89/336/EC		EN 61326, EN 50081-2
Conformity		
Insulation coordination		EN 50178
Electrical isolation		EN 50178
Electromagnetic compatibility		NE 21
Protection degree		IEC 60529
Ambient conditions		
Ambient temperature		-20 ... 60 °C (253 ... 333 K)
Mechanical specifications		
Protection degree		IP20
Mass		approx. 100 g
Dimensions		20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in) , housing type B1
Data for application in conjunction with hazardous areas		
EC-Type Examination Certificate		ZELM 00 ATEX 0034 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		⟨Ex⟩ II (1)GD [EEx ia] IIC
Input		EEx ia IIC
Voltage	U_o	9.6 V
Current	I_o	0.5 mA
Power	P_o	1.1 mW linear characteristic
Output		
Safety maximum voltage U_m		60 V (Attention! The rated voltage can be lower.)
Statement of conformity		TÜV 01 ATEX 1777X , observe statement of conformity
Group, category, type of protection, temperature classification		⟨Ex⟩ II 3G EEx nA II T4
Electrical isolation		
Input/output		safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity		
Directive 94/9 EC		EN 50014, EN 50020, EN 50021
International approvals		
CSA approval		
Control drawing		116-0132
General information		
Supplementary information		EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com.

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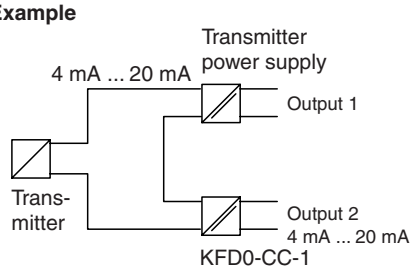
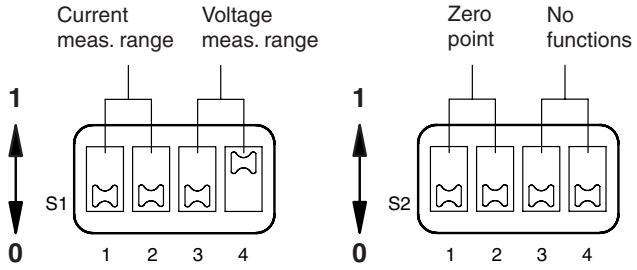
Configuration

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.

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