Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input 2-wire and 3-wire transmitters and 2-wire current sources
- Signal splitter (1 input and 2 outputs)
- Dual output 0/4 mA ... 20 mA
- Accuracy 0.1 %
- Up to SIL3 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 2-wire current sources.

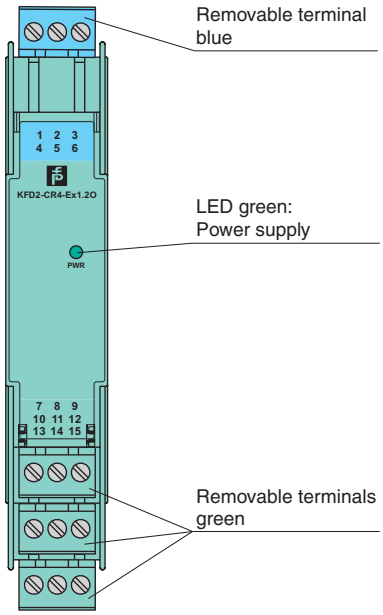
It transfers the analog input signal to the safe area as two isolated current values.

Both outputs provide a 0/4 mA ... 20 mA current corresponding to the input signal. The minimum available field voltage is 16 V at 20 mA.

If necessary, the internal resistance of 250 Ω between terminals 8, 9 and 11, 12 can be used for conversion into a 0 V ... 5 V voltage signal.

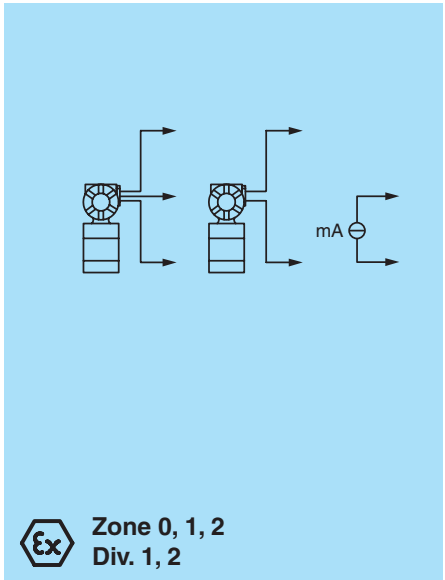
Assembly

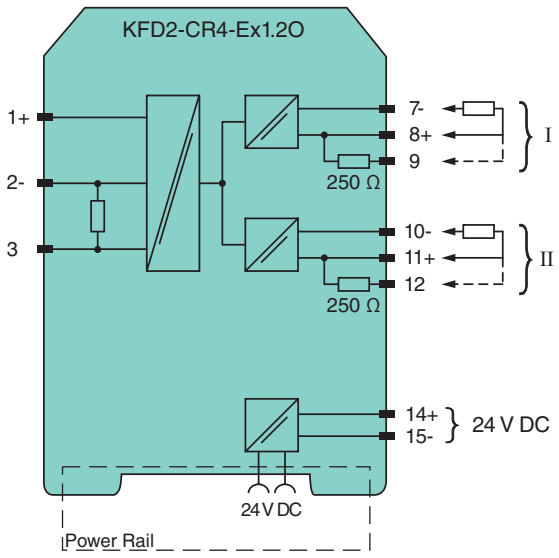
Front view



SIL 3

Connection





Release date 2017-08-09 14:11 Date of issue 2017-08-09 232444_eng.xml

General specifications		
Signal type		Analog input
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 3
Supply		
Connection		Power Rail or terminals 14+, 15-
Rated voltage	U_r	20 ... 35 V DC
Ripple		within the supply tolerance
Power dissipation		1.8 W
Power consumption		2.4 W
Input		
Connection side		field side
Connection		terminals 1+, 2-, 3-
Input signal		0/4 ... 20 mA
Open circuit voltage/short-circuit current		terminals 1+, 3-: 22.7 V / 38 mA
Input resistance		terminals 2-, 3: ≤ 64 Ω
Available voltage		terminals 1+, 3: ≥ 16 V at 20 mA
Ripple		50 mV_{ss} at 20 mA
Output		
Connection side		control side
Connection		terminals 7-, 8+,9; 10-, 11+,12
Load		0 ... 550 Ω
Output signal		0/4 ... 20 mA
Ripple		≤ 50 μA_{rms}
Transfer characteristics		
Deviation		at 20 °C (68 °F), 0/4 ... 20 mA ≤ 10 µA incl. calibration, linearity, hysteresis, loads and fluctuations of supply voltage
Influence of ambient temperature		0.25 µA/K
Rise time		20 µs
Settling time		200 µs
De-energized delay		20 µs
Galvanic isolation		
Output/power supply		functional insulation, rated insulation voltage 50 V AC
Output/Output		functional insulation, rated insulation voltage 50 V AC
Indicators/settings		
Display elements		LED
Labeling		space for labeling at the front
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Conformity		
Electromagnetic compatibility		NE 21:2006
Degree of protection		IEC 60529:2001
Protection against electrical shock		UL 61010-1
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 150 g
Dimensions		20 x 119 x 115 mm (0.8 x 4.7 x 4.5 inch) , 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		BAS 99 ATEX 7060
Marking		⟨Ex⟩ II (1)GD, [Ex ia] IIC, [Ex iaD], (-20 °C ≤ T_{amb} ≤ 60 °C) [circuit(s) in zone 0/1/2]
Input		Ex ia IIC, Ex iaD
Supply		
Maximum safe voltage	U_m	250 V (Attention! The rated voltage can be lower.)
Equipment		terminals 1+, 3-
Voltage	U_o	25.4 V
Current	I_o	88.2 mA
Power	P_o	560 mW
Equipment		terminals 2-, 3
Current I_o/Current I_i		74 mA / 115 mA

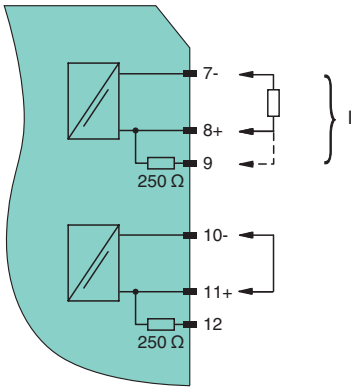
Release date 2017-08-09 14:11 Date of issue 2017-08-09 232444_eng.xml

Current	I_i	115 mA
Voltage	U_o	3.5 V
Current	I_o	74 mA
Power	P_o	64 mW
Equipment		terminals 1+, 2 / 3-
Voltage	U_i	30 V
Current	I_i	115 mA
Voltage	U_o	25.4 V
Current	I_o	115 mA
Power	P_o	584 mW
Galvanic isolation		
Input/Output		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Input/power supply		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 , EN 50303:2000
International approvals		
UL approval		
Control drawing		116-0173 (cULus)
IECEx approval		IECEx BAS 04.0016 IECEx CML 15.0055X
Approved for		[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I Ex nA IIC T4 Gc
General information		
Note		Both output loads must be connected to ensure complete and correct operation within the technical specification.
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com.

Release date 2017-08-09 14:11 Date of issue 2017-08-09 232444_eng.xml

Configuration active output (source)

If only one output of the two outputs is used, a plug-in jumper have to be set as follows.



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. Collective error messages received from the Power Rail activate a galvanically-isolated mechanical contact.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical insert 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!

Release date 2017-08-09 14:11 Date of issue 2017-08-09 232444_eng.xml