- 1-channel
- Input EEx ia IIC; U_0 = 26 V
- 24 V DC supply voltage
- Output: allowable load max. 1 kΩ
- EMC acc. to NAMUR NE 21

Input 0/4 mA ... 20 mA
Output 0/4 mA ... 20 mA

KFD2-CR-Ex1.30300

Function

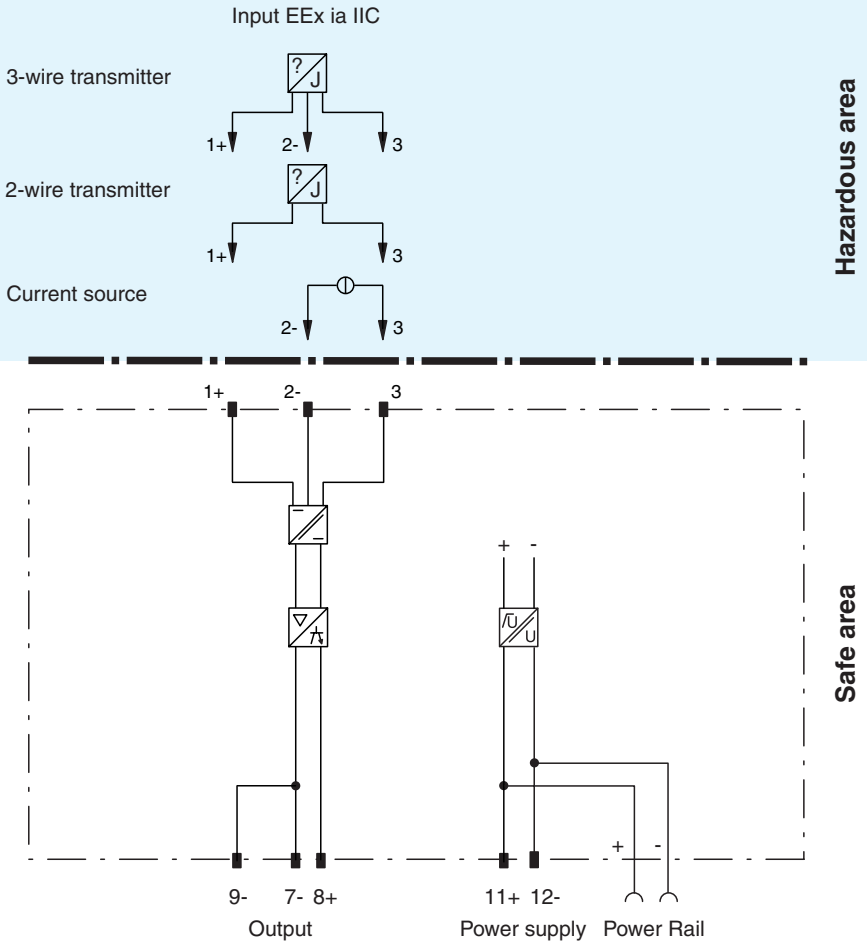
The devices are suited for the connection of 2- and 3-wire transmitters. They may also be used as repeaters for 0/4 mA ... 20 mA signals (current source).
For a supply voltage that is > DC 20 V , the open circuit voltage at the terminals is DC 25 V and is greater than DC 18 V with a current of 20 mA .

2-wire transmitters are connected to terminals 1 and 3. The input for the signal current is terminal 3. The minimum available voltage is 13.6 V at 20 mA.

The power supply is provided to terminals 1+ and 2- for 3-wire transmitters. With a 25 mA supply current, the voltage between the terminals is about 16.5 V.

Power supplies, whose currents do not have to be transferred to the hazardous area, are connected to terminals 2 and 3. Terminal 1+ remains free and the sources are not supplied with power.

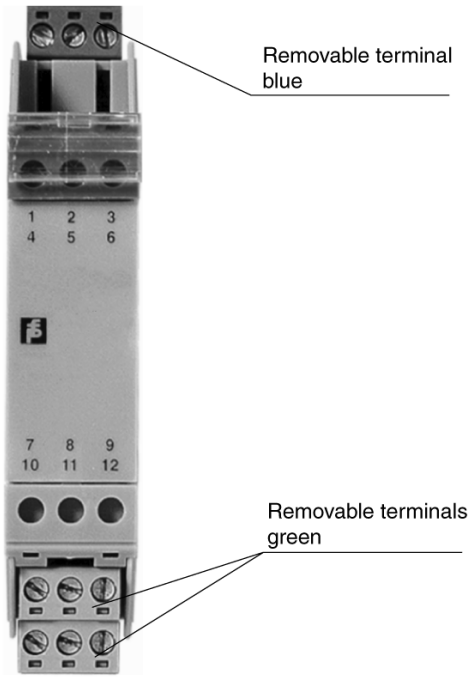
Connection



Composition

Front View

Housing type A4
(see system description)



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Supply					
Connection		Power Rail or terminals 11+, 12-			
Rated voltage		20 ... 35 V DC			
Ripple		< 20 μA_{rms}			
Power loss		1.3 W			
Power consumption		approx. 1.8 W			
Input					
Connection		terminals 1+, 2+, 3-			
Input resistance		approx. 220 Ω terminals 2-, 3			
Available voltage		approx. 16.5 V at 25 mA terminals 1+, 2- ≥ 13.6 V at 20 mA terminals 1+, 3-			
Output					
Connection		terminals 7-, 8+, 9-			
Load		≤ 1 kΩ			
Output signal		0 ... 20 mA			
Ripple		≤ 20 μA_{ss}			
Available voltage		20 V DC			
Transfer characteristics					
Deviation					
After calibration		≤ ± 10 µA incl. non-linearity and load fluctuations			
Influence of ambient temperature		≤ ± 0.2 µA / K in the range of 273 K ... 333 K; ± 1.0 µA in the range of 253 K ... 273 K			
Rise time		approx. 50 µs; load = 250 Ω			
De-energized delay		approx. 50 µs; load = 250 Ω			
Electrical isolation					
Output/power supply		function insulation acc. to EN 50178, rated insulation voltage 253 V_{eff}			
Directive conformity					
Electromagnetic compatibility					
Directive 89/336/EC		EN 61326, EN 50081-2			
Conformity					
Electromagnetic compatibility		EN 50081-2, EN 50082-2, NE 21, IEC 801-4, 801-5 and 801-6, intensity level 3			
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)			
Data for application in conjunction with hazardous areas					
EC-Type Examination Certificate		BAS 00 ATEX 7164 , for additional certificates see www.pepperl-fuchs.com			
Group, category, type of protection		⟨Ex⟩ II (1) G D [EEx ia] IIC (-20 °C ≤ T_a ≤ 60 °C) [circuit(s) in zone 0/1/2]			
Equipment		terminals 1, 2, 3 terminals 1, 2 terminals 1, 3 terminals 3, 2			
Input		EEx ia IIC			
Voltage	U_0	26 V	26 V	26 V	4.3 V
Current	I_0	115 mA	93 mA	56 mA	22 mA
Power	P_0	0.624 W	0.6 W	0.36 W	0.024 W
Supply					
Safety maximum voltage U_m		250 V_{eff} (Attention! The rated voltage can be lower.)			
Type of protection [EEx ia]					
Explosion group		IIA	IIB	IIC	
External capacitance		2.6 µF	0.77 µF	0.099 µF	
External inductance		23.98 mH	12 mH	2.82 mH	
Output					
Safety maximum voltage U_m		250 V_{eff} (Attention! The rated voltage can be lower.)			
Statement of conformity		TÜV 02 ATEX 1797 X , observe statement of conformity			
Group, category, type of protection, temperature classification		⟨Ex⟩ II 3 G EEx nA II T4 [device in zone 2]			
Electrical isolation					
Input/output		safe electrical isolation acc. to EN 50020, voltage peak value 375 V			
Input/power supply		safe electrical isolation acc. to EN 50020, voltage peak value 375 V			
Directive conformity					
Directive 94/9 EC		EN 50014, EN 50020, EN 50021			
Entity parameter					
Certification number		4Z6A5.AX			

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FM control drawing		No. 116-0129		
Suitable for installation in division 2		yes		
Input I		terminals 1, 3		
Voltage	V_{OC}	28 V		
Current	I_t	93 mA		
Explosion group		A&B	C&E	D, F&G
Max. external capacitance C_a		0.14 µF	0.43 µF	1.14 µF
Max. external inductance L_a		4.18 mH	16.83 mH	34.21 mH
Input II		terminals 2, 3		
Voltage	V_{OC}	4.4 V		
Current	I_{SC}	22.2 mA		
Explosion group		A&B	C&E	D, F&G
Max. external capacitance C_a		1000 µF	3000 µF	8000 µF
Max. external inductance L_a		67.82 mH	239 mH	597 mH
Input III		terminals 1, 2, 3		
Voltage	V_t	29 V		
Current	I_t	115 mA		
Explosion group		A&B	C&E	D, F&G
Max. external capacitance C_a		0.13 µF	0.39 µF	1.05 µF
Max. external inductance L_a		2.68 mH	11.46 mH	22.41 mH
Safety parameter				
CSA control drawing		LR 65756-13		
Control drawing		No. 116-0132		
Input I		terminals 1, 2		
Safety parameter		28 V / 300 Ω		
Input II		terminals 2, 3		
Safety parameter		4.1 V / 200 Ω		
Input III		terminals 1, 2, 3		
Voltage	V_{OC}	28 V		
Current	I_{SC}	113 mA		
Explosion group		A&B	C&E	D, F&G
Max. external capacitance C_a		0.14 µF	0.42 µF	1.14 µF
Max. external inductance L_a		2.7 mH	11.8 mH	23.2 mH

Supplementary information

EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com.

Accessories

Power Rail PR-03
Power Rail UPR-03
Power feed module KFD2-EB2...

Using Power Rail PR-03 or UPR-03 the devices are supplied with 24 V DC by means of the power feed modules. If no Power Rails are used, power supply of the individual devices is possible directly via their device terminals.

Each power feed module is used for fusing and monitoring groups with up to 100 individual devices. The Power Rail PR-03 is an inset component for the DIN rail. The Power Rail UPR-03 is a complete unit consisting of the electrical inset and an aluminium profile rail 35 mm x 15 mm x 2000 mm. To make electrical contact, the devices are simply engaged.

The Power Rail must not be fed via the device terminals of the individual devices!

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