



- 1-channel
- Input EEx ia IIC;  $U_0 = 26\text{ V}$
- 24 V DC nominal supply voltage
- Output: allowable load max. 1 kOhm
- EMC acc. to NAMUR NE 21

**Input 4 mA ... 20 mA**  
**Output 0 mA ... 20 mA**  
**KFD2-CR-Ex1.30340**

**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).

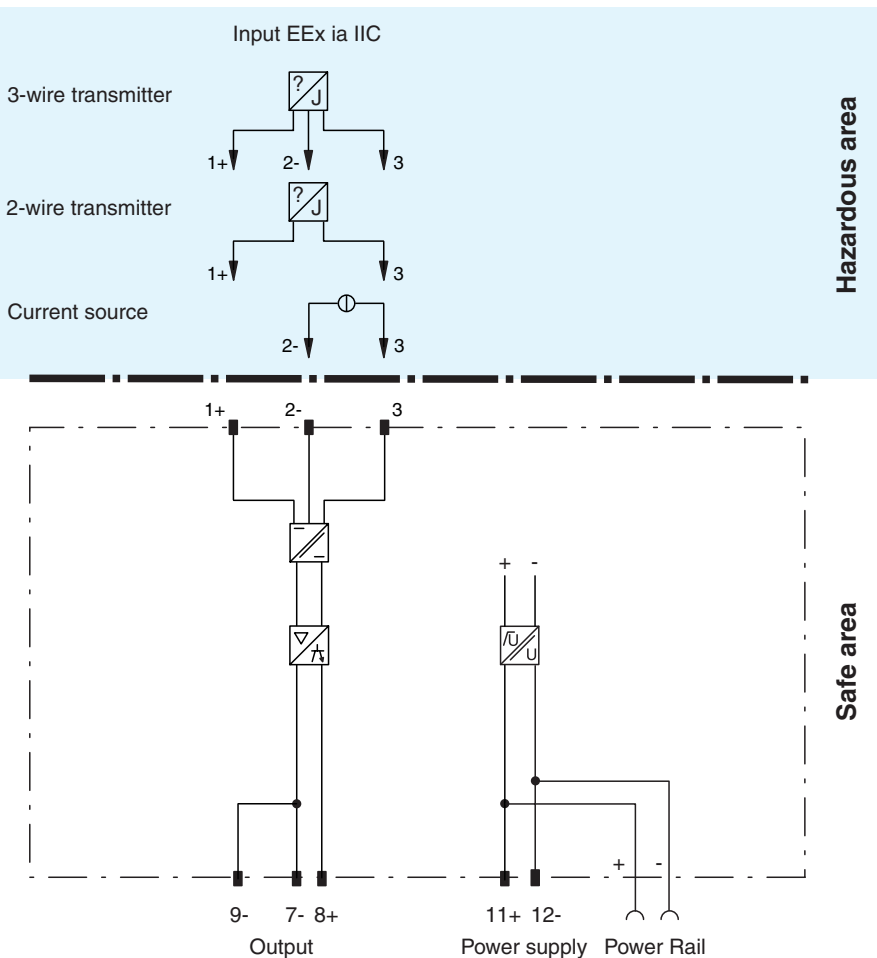
For a supply voltage that is > DC 20 V , the open circuit voltage at the terminals is DC 25 V and is greater than DC 18 V with a current of 20 mA .

**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.

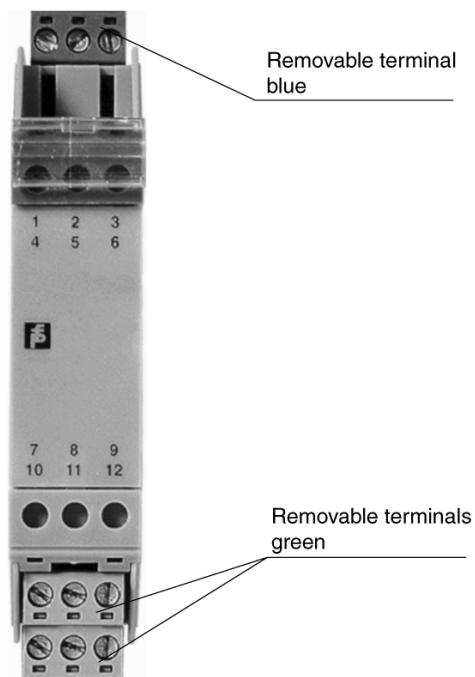
**Connection**



**Composition**

**Front View**

Housing type A4  
 (see system description)



<b>Supply</b>	
Connection	Power Rail or terminals 11+, 12-
Rated voltage	20 ... 35 V DC
Ripple	within the supply tolerance
Power loss	1,3 W
Power consumption	approx. 1,9 W
<b>Input</b>	
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-
<b>Output</b>	
Connection	terminals 7-, 8+, 9-
Load	≤ 1 kOhm
Output signal	0 ... 20 mA
Ripple	≤ 20 μA <sub>SS</sub>
Available voltage	20 V DC
Safety maximum voltage U <sub>m</sub>	250 V <sub>eff</sub>
<b>Transfer characteristics</b>	
Deviation	
After calibration	≤ ± 10 μA incl. non-linearity and load fluctuations
Influence of ambient temperature	≤ ± 0.5 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
<b>Electrical isolation</b>	
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
Output/power supply	function insulation acc. to DIN EN 50178, rated insulated voltage 250 V AC
<b>Directive conformity</b>	
Electromagnetic compatibility	standards
Directive 89/336/EC	EN 61326, EN 50081-2, NE 21
<b>Standard conformity</b>	
Climatic conditions	acc. to DIN IEC 721
<b>Ambient conditions</b>	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
<b>Mechanical specifications</b>	
Protection degree	IP20
Mass	approx. 100 g
<b>Data for application in conjunction with hazardous areas</b>	
EC-Type Examination Certificate	BAS 00 ATEX 7164 X ; for additional certificates refer to the approval list
Group, category, type of protection	⊕ II (1) G D [Ex ia] IIC (-20 °C ≤ T <sub>a</sub> ≤ 60 °C)
Equipment	terminals 1, 2, 3      terminals 1, 2      terminals 1, 3      terminals 3, 2
Voltage U <sub>0</sub>	26 V      26 V      26 V      4,3 V
Current I <sub>0</sub>	115 mA      93 mA      56 mA      22 mA
Power P <sub>0</sub>	0,624 W      0,6 W      0,36 W      0,024 W
<b>Supply</b>	
Safety maximum voltage U <sub>m</sub>	250 V <sub>eff</sub>
Type of protection [Ex 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
Statement of conformity TÜV 02 ATEX 1797 X (observe statement of conformity)	
Group, category, type of protection, temperature classification	⊕ II 3 G EEx nA II T4
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	on request
<b>Entity parameter</b>	
Certification number	4Z6A5.AX
FM control drawing	No. 116-0129
Suitable for installation in division 2	yes

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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 $\mu$ F	0,43 $\mu$ F	1,14 $\mu$ F
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 $\mu$ F	3000 $\mu$ F	8000 $\mu$ F
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 $\mu$ F	0,39 $\mu$ F	1,05 $\mu$ F
Max. external inductance $L_a$		2,68 mH	11,46 mH	22,41 mH
<b>Safety parameter</b>				
CSA control drawing		LR 65756-13		
Control drawing		No. 116-0132		

## Accessories

### PR-03 Power Rail

### UPR-03 Power Rail

### KFD2-EB2 power feed module

The devices are supplied with 24 V DC through the KFD2-EB2 power feed module and the PR-03 or the UPR-03 Power Rail. Each power feed module monitors and provides protection for groups of as many as 100 individual devices. The PR-03 Power Rail is an insert component for the DIN rail. The UPR-03 Power Rail is a complete unit consisting of an electrical insert and an aluminium DIN rail measuring 35 mm x 15 mm x 2000 mm. The devices are simply snapped in place to make electrical contact. If a Power Rail is not being used, power can be supplied to the devices directly through the device terminals.