



- Output EEx ia IIC
- Device installation permissible in zone 2
- Polarity reversal protected
- Accuracy 1 %
- EMC acc. to NAMUR NE 21
- Up to SIL2 acc. to IEC 61508

**1-channel**

**Function**

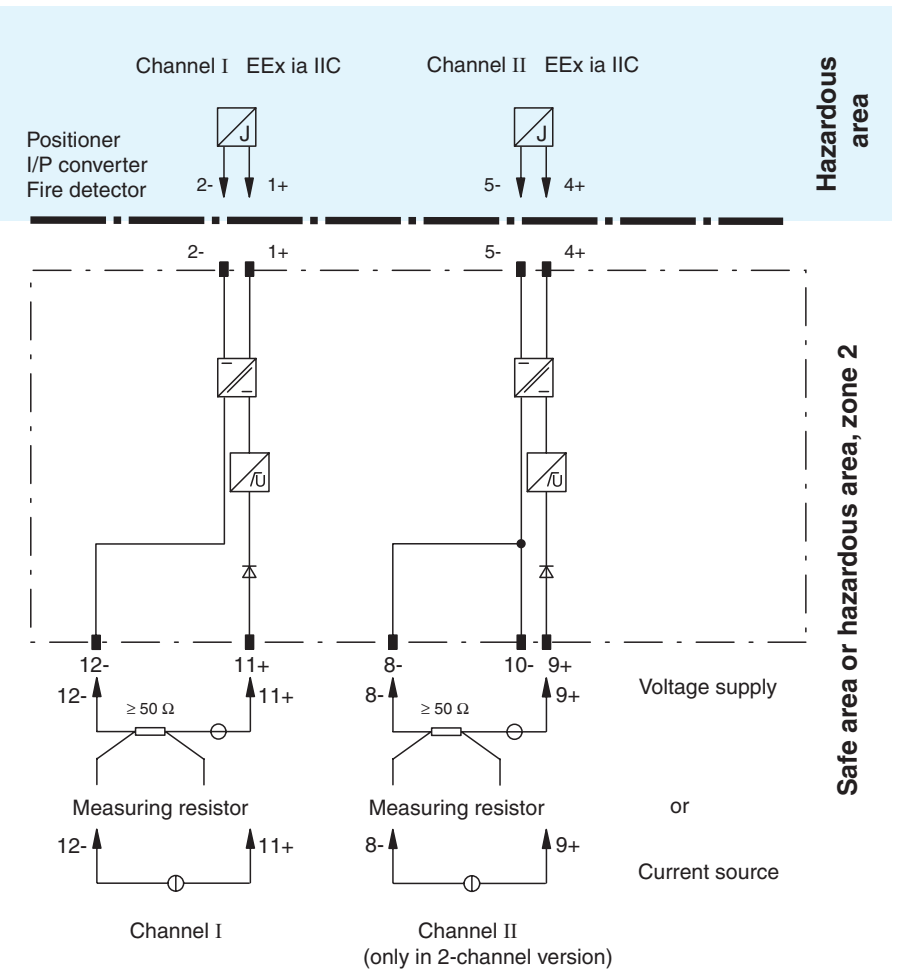
Each channel (4 terminals per channel) functions like a "DC current isolator". Both channels have separate reverse polarity protection. The input and output are galvanically isolated from each other.

These units are designed for the connection of fire detectors, smoke detectors, temperature sensors, etc. Their increased current range and the higher accuracy allow for differentiation between normal operation, fire alarm, lead breakage and short circuit currents in the safe area. In many cases they may also be used for controlling I/P converters. A separate power supply with auxiliary power is not required. The 2-channel version allows for the connection of 2 independent circuits in a single housing. Due to the input voltage limiting of 24 V, the maximum voltage output is 21 V.

**Application**

- The isolation of power loops for the control of positioner, I/P converters etc. A current source is connected to the safe area terminals.
- The isolation of a current signal from fire detectors or similar sensors. In this case, a voltage source can be connected to the safe area terminals. A specific measurement current across a passive sensor can be measured in the safe area with a series resistor (min. 50 Ω). When a voltage supply is used, the measuring resistor can also provide current limitations.

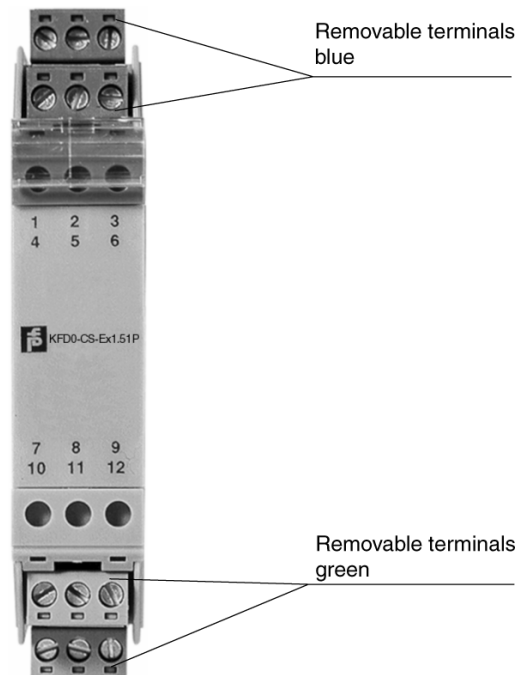
**Connection**





**Composition**

**Front View**

Housing type A4 (see system description)



<b>Supply</b>		
Rated voltage	loop powered	
<b>Inputs/outputs (not intrinsically safe)</b>		
Connection	terminals 12-, 11+	
Voltage	4 ... 35 V DC	
Current	0 ... 40 mA	
Power loss	at 40 mA and $U_{in} < 22$ V: 700 mW per channel at 40 mA and $U_{in} > 22$ V: 1.2 W per channel	
<b>Inputs/outputs (intrinsically safe)</b>		
Connection	terminals 1+, 2-	
Output voltage	for $4\text{ V} < U_{in} < 24\text{ V}$ : $\geq U_{in} - (0.37 \times \text{current in mA}) - 1.0$ for $U_{in} > 24\text{ V}$ : $\geq 21\text{ V} - (0.36 \times \text{current in mA})$	
Short-circuit current	at $U_{in} > 24\text{ V}$ : $\leq 65\text{ mA}$	
Transfer current	$\leq 40\text{ mA}$	
<b>Transfer characteristics</b>		
Deviation		
After calibration	$\leq \pm 200\ \mu\text{A}$ ; incl. calibration, linearity, hysteresis and load fluctuations at the output up to a load of 1 k $\Omega$ and current $\leq 20\text{ mA}$ at 20 °C (293 K)	
Influence of ambient temperature	$\leq \pm 2\ \mu\text{A/K}$ at $U_{in} \leq 20\text{ V}$ ; $\leq \pm 5\ \mu\text{A/K}$ at $U_{in} > 20\text{ V}$	
Rise time	$\leq 5\text{ ms}$ at 4 ... 20 mA step and $U_{in} < 24\text{ V}$	
<b>Electrical isolation</b>		
Input/output	safe electrical isolation acc. to EN 50020, voltage peak value 375 V	
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 89/336/EC	EN 50081-2, EN 50082-2	
<b>Conformity</b>		
Insulation coordination	EN 50178	
Electrical isolation	EN 50178	
Electromagnetic compatibility	NE 21	
Protection degree	IEC 60529	
<b>Ambient conditions</b>		
Ambient temperature	-20 ... 60 °C (253 ... 333 K)	
<b>Mechanical specifications</b>		
Protection degree	IP20	
Mass	approx. 100 g	
Dimensions	20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	
<b>Data for application in conjunction with hazardous areas</b>		
EC-Type Examination Certificate	BAS 98 ATEX 7343 , for additional certificates	
Group, category, type of protection	 II (1) G D [EEx ia] IIC (-20 °C $\leq$ T <sub>amb</sub> $\leq$ 60 °C)	
Voltage U <sub>0</sub>	25.2 V	
Current I <sub>0</sub>	93 mA	
Power P <sub>0</sub>	585 mW	
Type of protection [EEx ia]		
Explosion group	IIA	IIB IIC
External capacitance	2.9 $\mu\text{F}$	0.82 $\mu\text{F}$ 0.107 $\mu\text{F}$
External inductance	33 mH	18 mH 4.3 mH
<b>Input</b>		
Safety maximum voltage U <sub>m</sub>	250 V <sub>eff</sub> (Attention! The rated voltage can be lower.)	
<b>Output</b>		
Safety maximum voltage U <sub>m</sub>	250 V <sub>eff</sub> (Attention! The rated voltage can be lower.)	
<b>Statement of conformity</b>		
Group, category, type of protection, temperature classification	 II 3 G EEx nA II T4	
<b>Electrical isolation</b>		
Input/output	safe electrical isolation acc. to EN 50020, voltage peak value 375 V	
<b>Directive conformity</b>		
Directive 94/9 EC	EN 50014, EN 50020, EN 50021	
<b>Entity parameter</b>		
Certification number	4Z6A5.AX	
FM control drawing	No. 116-0129	
Suitable for installation in division 2	yes	
Connection	terminals 1, 2	
<b>Input I</b>		
Voltage V <sub>OC</sub>	25.2 V	

## Technical data

Current $I_t$	93 mA		
Explosion group	A&B	C&E	D, F&G
Max. external capacitance $C_a$	0.17 $\mu$ F	0.51 $\mu$ F	1.36 $\mu$ F
Max. external inductance $L_a$	4.2 mH	17.17 mH	33.4 mH
<b>Safety parameter</b>			
CSA control drawing	LR 65756-13		
Control drawing	No. 116-0132		
Connection	terminals 2, 1		
<b>Input I</b>			
Safety parameter	25.2 V / 270 $\Omega$		
Voltage $V_{OC}$	25.2 V		
Current $I_{SC}$	93 mA		
Explosion group	A&B	C&E	D, F&G
Max. external capacitance $C_a$	0.107 $\mu$ F	0.82 $\mu$ F	2.9 $\mu$ F
Max. external inductance $L_a$	4.3 mH	18 mH	33 mH

## Supplementary information

EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed.

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