



- 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, up to SIL3 for a redundant structure

**2-channel
KFD0-CS-Ex2.51P**

Function

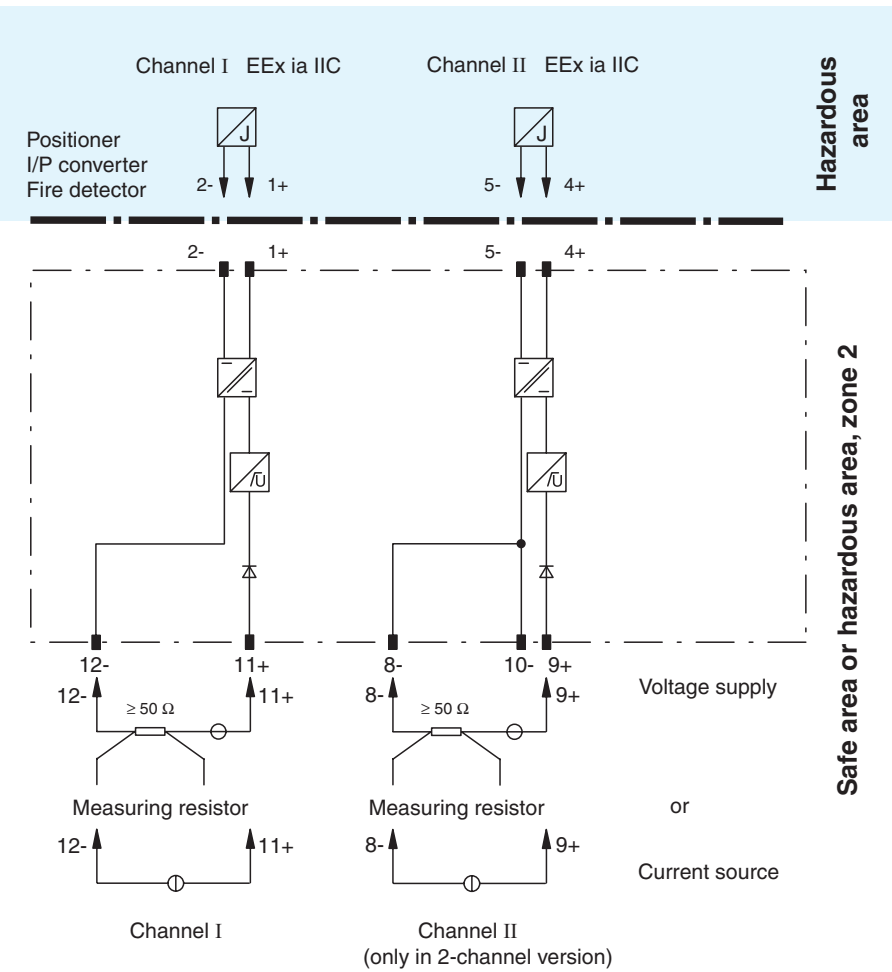
Each channel (4 terminals per channel) functions like a "DC current isolator". Both channels have separate reverse polarity protection. The input and output are galvanically isolated from each other.

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.

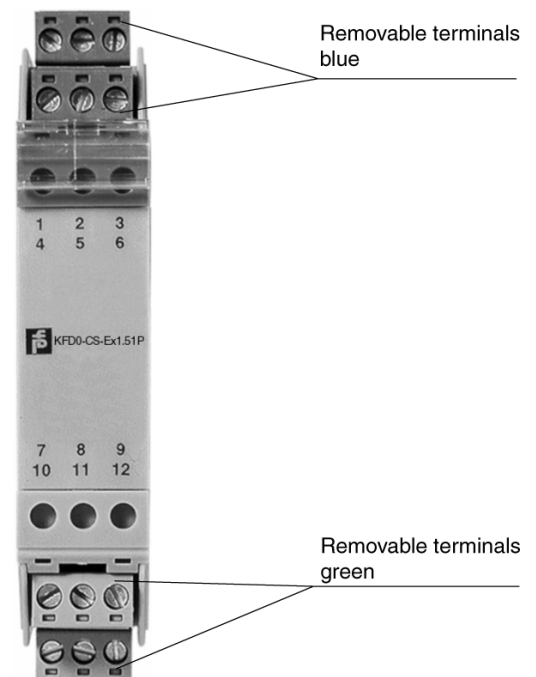
Connection



Composition

Front View

Housing type A4 (see system description)



Release date 2005-07-07 18:16 Date of issue 2005-07-07 072149_ENG.xml

Supply	
Rated voltage	loop powered
Inputs/Outputs (not intrinsically safe)	
Connection	terminals 12-, 11+; 8-, 10-, 9+
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
Inputs/Outputs (Intrinsically safe)	
Connection	terminals 1+, 2-; 4+, 5-
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	$\leq 40 \text{ mA}$
Transfer characteristics	
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 Ω and current ≤ 20 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 $U_{in} < 24 \text{ V}$
Electrical isolation	
Input/Output	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity	
Electromagnetic compatibility	
Directive 89/336/EC	EN 50081-2, EN 50082-2
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)
Data for application in conjunction with hazardous areas	
EC-Type Examination Certificate	
Group, category, type of protection	BAS 98 ATEX 7343 , for additional certificates see www.pepperl-fuchs.com
Voltage U_0	Ex II (1) G D [EEx ia] IIC (-20 °C $\leq T_{amb} \leq 60$ °C)
Current I_0	25.2 V
Power P_0	93 mA
Type of protection [EEx ia]	585 mW
Explosion group	IIA IIB IIC
External capacitance	2.9 μF 0.82 μF 0.107 μF
External inductance	33 mH 18 mH 4.3 mH
Statement of conformity	
Group, category, type of protection, temperature classification	TÜV 99 ATEX 1499 X , observe statement of conformity
Electrical isolation	Ex II 3 G EEx nA II T4
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
Entity parameter	
Certification number	4Z6A5.AX
FM control drawing	No. 116-0129
Suitable for installation in division 2	yes
Connection	terminals 1, 2; 4, 5
Input I	
Voltage V_{OC}	25.2 V
Current I_t	93 mA
Explosion group	A&B C&E D, F&G
Max. external capacitance C_a	0.17 μF 0.51 μF 1.36 μF
Max. external inductance L_a	4.2 mH 17.17 mH 33.4 mH

Release date 2005-07-07 18:16 Date of issue 2005-07-07 072149_ENG.xml

Safety parameter			
CSA control drawing	LR 65756-13		
Control drawing	No. 116-0132		
Connection	terminals 1, 2; 4, 5		
Input I			
Safety parameter	25.2 V / 270 Ω		
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 μF	0.82 μF	2.9 μF
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. For information see www.pepperl-fuchs.com.