



- 1-channel
- Output EEx ia IIC
- Device installation permissible in zone 2
- Up to SIL3 acc. to IEC 61508

Current limit 45 mA

**KFD2-SD-Ex1.48.90A**

### Function

The KFD2-SD-Ex1.48 and the KFD2-SD-Ex1.48.90A receives its power supply from the applied input signal. The input and output are galvanically isolated from each other.

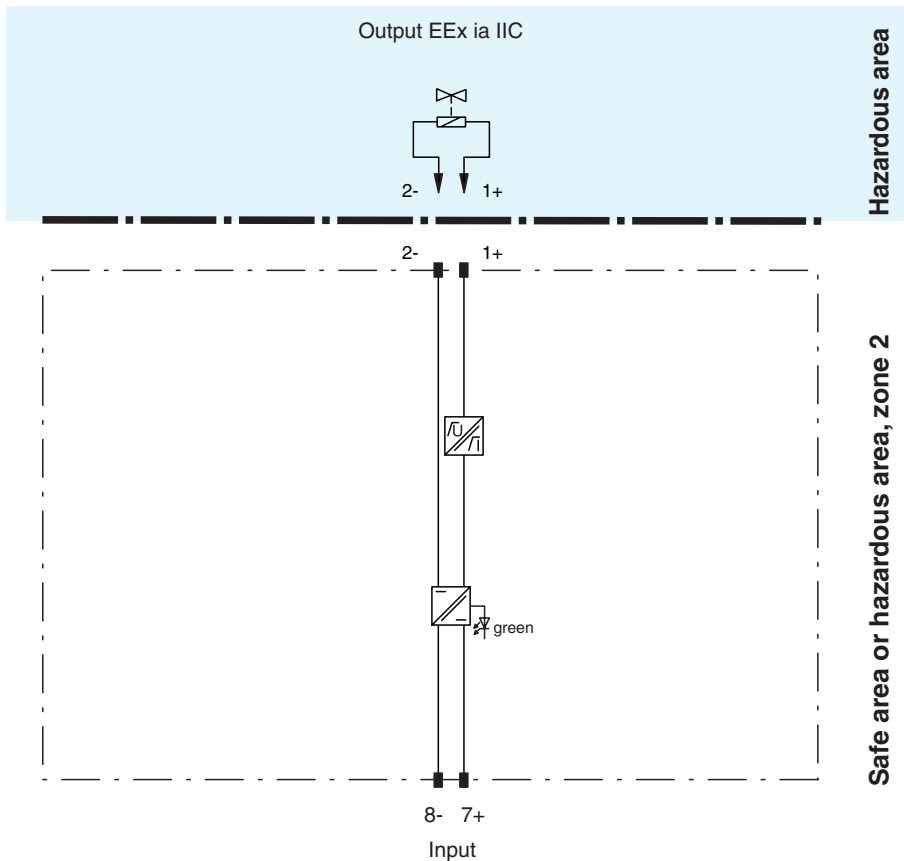
The voltage applied to terminals 7+ and 8- is transferred to the output by means of a DC/DC converter. For supply voltages up to 18 V, the open circuit output voltage is about 1.3 times the supply voltage. The input current is dependent on the load and carries a max. of 70 mA for the KFD2-SD-Ex1.48 or a max. of 85 mA for the KFD2-SD-Ex1.48.90A. The output current is limited to 35.3 mA or 45.3 mA. For an input voltage of above 18 V, the output voltage is limited by the internal Zener diodes. The open circuit voltage for both devices is DC 22.8 V.

The output voltage and the output current are dependent on the load as well as the input voltage.

### Application

- Control/supply of intrinsically safe valves, audible alarms, indicators etc.
- Control/supply of semiconductors (e. g. LED or LCD units)  
In case of controlling semiconductors, a parallel resistor of approx. 10 k $\Omega$ , directly connected at the load, may be necessary, if the lead breakage monitoring is activated.

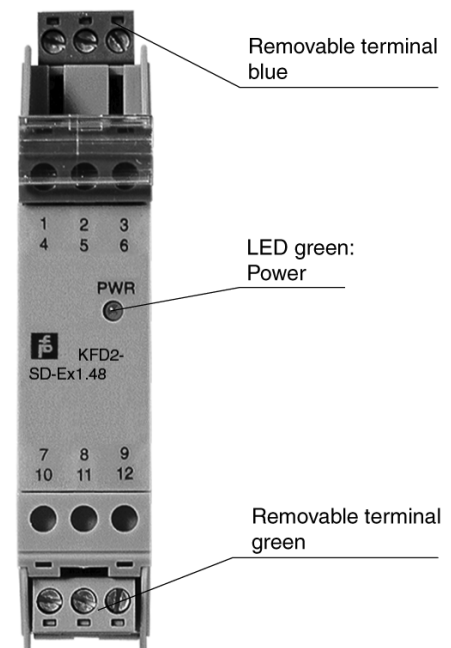
### Connection



### Composition

#### Front View

Housing type A3  
(see system description)



<b>Supply</b>	
Rated voltage	loop powered
Power loss	1.3 W
<b>Input</b>	
Connection	terminals 7+, 8-
Rated voltage $U_e$	5 ... 35 V DC
Current	7 mA at 18.5 V nominal supply voltage, 85 mA at 35 V nominal supply voltage
<b>Output</b>	
Internal resistor	$\leq 303 \Omega$
Limit	current $I_E: \geq 45.3 \text{ mA}$ voltage $U_E: 9.1 \text{ V}$
Open loop voltage	$\geq 22.8 \text{ V}$
Connection	terminals 1+, 2-
Output rated operating current	45 mA
Output signal	these values are valid for the rated operational voltage 20 ... 35 V DC
<b>Directive conformity</b>	
Electromagnetic compatibility	
Directive 89/336/EC	EN 61326, EN 50081-2
<b>Conformity</b>	
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 00 ATEX 7216 , for additional certificates see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a>
Group, category, type of protection	$\text{Ex}$ II (1) G D [Ex ia] IIC (-20 °C $\leq T_a \leq$ 60 °C) [circuit(s) in zone 0/1/2]
Output	Ex ia IIC
Voltage $U_0$	25.2 V
Current $I_0$	93 mA
Power $P_0$	590 mW
Type of protection [Ex 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	36.02 mH    17.72 mH    4.3 mH
<b>Input</b>	
Safety maximum voltage $U_m$	250 V (Attention! The rated voltage can be lower.)
Statement of conformity	TÜV 99 ATEX 1499 X , observe statement of conformity
Group, category, type of protection, temperature classification	$\text{Ex}$ II 3 G Ex nA II T4 [device in zone 2]
<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 $V_{OC}$	28 V
Current $I_t$	93 mA
Explosion group	A&B      C&E      D, F&G
Max. external capacitance $C_a$	0.14 $\mu\text{F}$ 0.43 $\mu\text{F}$ 1.14 $\mu\text{F}$
Max. external inductance $L_a$	4.18 mH    5.83 mH    34.21 mH
<b>Safety parameter</b>	
CSA control drawing	LR 65756-13
Control drawing	No. 116-0132
Connection	terminals 1, 2
<b>Input I</b>	

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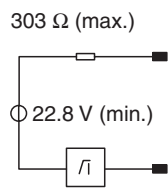
Safety parameter	28 V / 300 Ω		
Voltage $V_{OC}$	28 V		
Current $I_{SC}$	93 mA		
Explosion group	A&B	C&E	D, F&G
Max. external capacitance $C_a$	0.14 μF	0.42 μF	1.14 μF
Max. external inductance $L_a$	3.1 mH	16.7 mH	34 mH

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](http://www.pepperl-fuchs.com).

Notes

Output circuit diagram



Output characteristic for input voltage

20 V ... 35 V

E: Curve angle point ( $U_E, I_E$ )

