



- 1-channel
- Output EEx ia IIC
- 24 V DC nominal supply voltage
- Logic input for connection and disconnection
- Up to SIL3 acc. to IEC 61508

Current limit 45 mA

KFD2-SL-Ex1.48.90A

Function

The KFD2-SL-Ex1.48 and KFD2-SL-Ex1.48.90A each have a logic input which is isolated from the power supply. The field device is controlled across the logic input. Voltage signals in a range of 5 V DC ... 35 V DC are accepted as Logic-1. Logic-0 must lie in the range of 0 V DC ... 2.2 V DC.

The open circuit voltage at the output is dependent on the supply voltage. The relationship is as follows:

(supply voltage - 1 V) x 1.3.

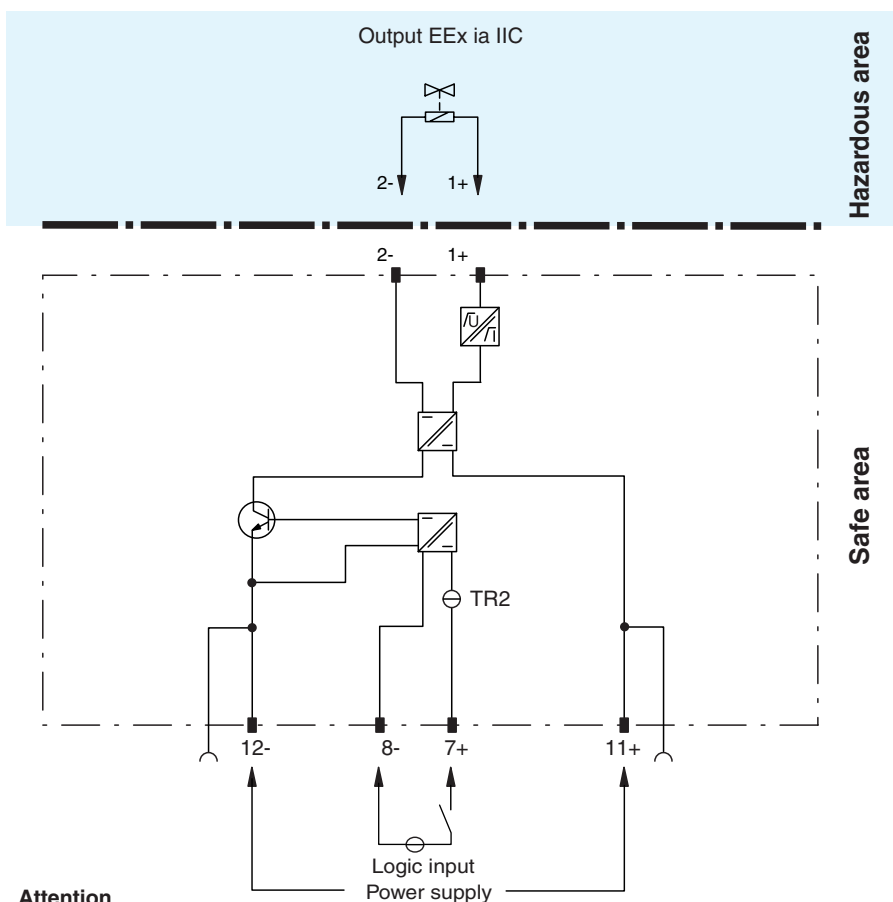
The voltage limit at the output is set by a supply voltage of 20 V DC. Therefore, the maximum open circuit voltage at the output is 26 V DC. The output current is limited to 35.3 mA (KFD2-SL-Ex1.48) or 45.3 mA (KFD2-SL-Ex1.48.90A) depending on the model.

The output, logic input and power supply are galvanically isolated from each other.

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 kΩ, directly connected at the load, may be necessary, if the lead breakage monitoring is activated.

Connection



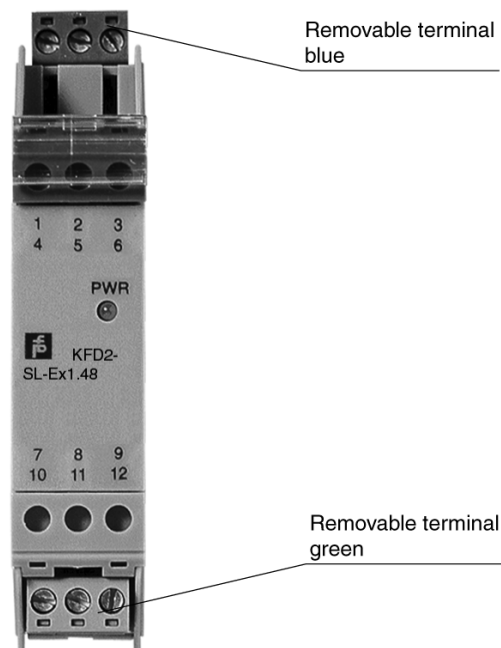
Attention
changed terminal numbers

new	12-	8-	7+	11+
old	8-	10-	9+/11+	7+

Composition

Front View

Housing type A3
(see system description)



Supply	
Connection	Power Rail or terminals 11+, 12-
Rated voltage	5 ... 35 V DC
No-load supply current	7 mA at 19 V nominal supply voltage 85 mA at 35 V nominal supply voltage
Power loss	1.3 W
Input	
Connection	terminals 7+, 8-
Signal level	1-signal: 3 ... 35 V DC 0-signal: 0 ... 2 V DC input current: approx. 5 mA at 24 V DC
Output	
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
Directive conformity	
Electromagnetic compatibility	
Directive 89/336/EC	EN 61326, EN 50081-2
Conformity	
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 118 x 115 mm (0.8 x 4.6 x 4.5 in)
Data for application in conjunction with hazardous areas	
EC-Type Examination Certificate	BAS 00 ATEX 7216 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	Ex II (1) G D [EEx ia] IIC (-20 °C $\leq T_a \leq 60$ °C) [circuit(s) in zone 0/1/2]
Output	EEx ia IIC
Voltage U_0	25.2 V
Current I_0	93 mA
Power P_0	590 mW
Type of protection [EEx ia]	
Explosion group	IIA IIB IIC
External capacitance	2.9 μF 0.82 μF 0.107 μF
External inductance	36.02 mH 17.72 mH 4.3 mH
Input	
Safety maximum voltage U_m	250 V (Attention! The rated voltage can be lower.)
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
Output/power supply	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity	
Directive 94/9 EC	EN 50014, EN 50020
Entity parameter	
Certification number	4Z6A5.AX
FM control drawing	No. 116-0129
Suitable for installation in division 2	yes
Connection	
Input I	terminals 1, 2
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 5.83 mH 34.21 mH
Safety parameter	
CSA control drawing	LR 65756-13
Control drawing	No. 116-0132

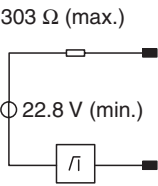
Connection	terminals 1, 2		
Input I			
Safety parameter	28 V / 300 Ω		
Voltage V_{OC}	28 V		
Current I_{SC}	93 mA		
Explosion group	A&B	C&E	D, F&G
Max. external capacitance C_a	0.14 μF	0.42 μF	1.14 μF
Max. external inductance L_a	3.1 mH	16.7 mH	34 mH

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.

Notes

Output circuit diagramm



Output characteristic for input voltage
20 V ... 35 V

E: Curve angle point (U_E, I_E)

