



- 1-channel
- Input EEx ia IIC
- 24 V DC nominal supply voltage
- EMC acc. to NAMUR NE 21

Transmission range 0 mV ... ± 500 mV
KFD2-VR-Ex1.500m

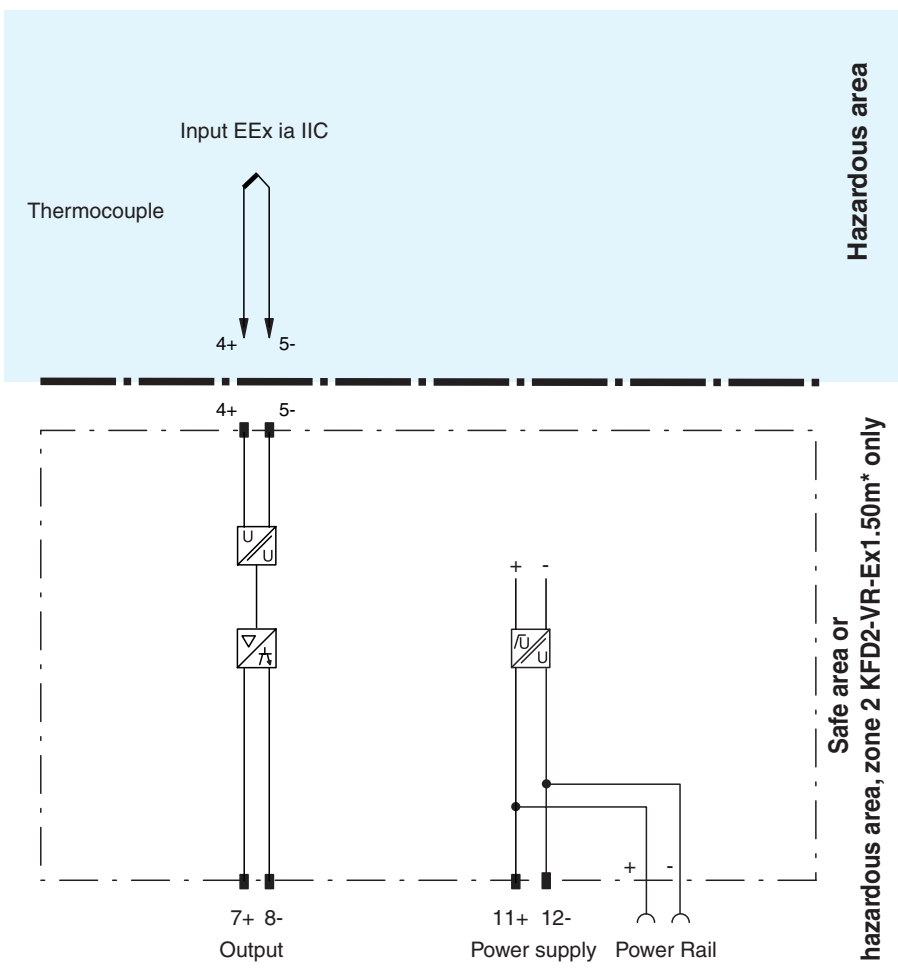
Function

The voltage repeater transfers analogue voltage signals from the hazardous area to the safe area. Input, output and power supply are galvanically isolated from each other. The input voltage at terminals 4 and 5 is transferred to the output (terminals 7 and 8). Terminal 7 has the same polarity as terminal 4.

Application

The transfer of voltage signals from thermocouples, test bridges, operations amplifiers, inductive oscillation sensors etc.

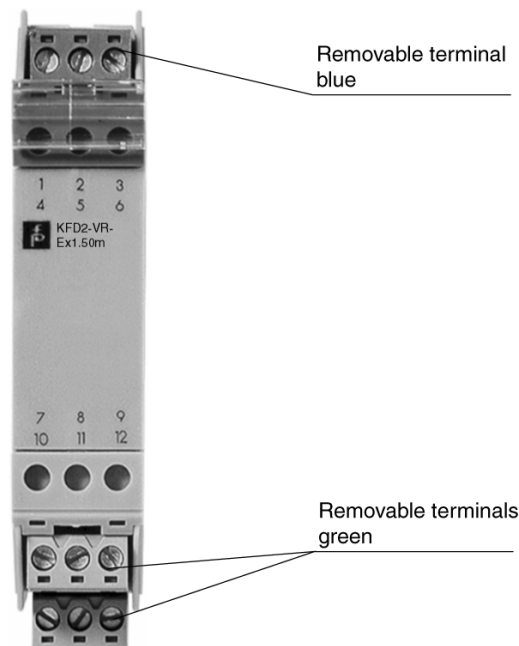
Connection



Composition

Front View

Housing type A2
 (see system description)



Supply

Connection	Power Rail or terminals 11+, 12-
Rated voltage	20 ... 35 V DC
Ripple	within the supply tolerance
Rated current	≤ 7 mA

Input

Connection	terminals 4+, 5-
Input resistance	≤ 20 MΩ
Transmission range	0 ... ± 500 mV
Offset voltage/Current	≤ 5 μV / ≤ 5 nA
Lead monitoring	-

Output

Connection	terminals 7+, 8-
Voltage	0 ... ± 500 mV
Load	accuracy figures for infinite load impedance, additional 0.03 % of span for a load resistance of 10 kOhm
Output resistance	≤ 3 Ω

Transfer characteristics

Deviation	
After calibration	at 293 K (20 °C), ± 30 μV to ± 100 mV / ± 0.3 % of span up to ± 500 mV
Temperature	max. 10 μV / K (typical 9 μV / K)
Cutoff frequency	-3 db at 1,3 kHz
Absolute	0,25 K (at DC 40 V nominal supply voltage)
Rise time	≤ 250 μs

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	basic insulation acc. to DIN EN 50178, rated insulation voltage of AC 50 V

Directive conformity

Electromagnetic compatibility	standards
Directive 89/336/EC	on request

Standard conformity

Coordination of insulation	acc. to DIN EN 50178
Electrical isolation	acc. to DIN EN 50178
Electromagnetic compatibility	acc. to EN 50081-2 / EN 50082-2, NAMUR NE 21
Climatic conditions	acc. to DIN IEC 721

Ambient conditions

Ambient temperature	-20 ... 60 °C (253 ... 333 K)
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Mechanical specifications

Protection degree	IP20
Mass	approx. 125 g

Data for application in conjunction with hazardous areas

EC-Type Examination Certificate	BASEEFA No. Ex-89.C.2121 ; for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	[EEx ia] IIC (T _{amb} = 60 °C)
Voltage U ₀	5,5 V DC
Current I ₀	2,4 mA
Power P ₀	3,3 mW

Supply

Safety maximum voltage U _m	250 V
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Type of protection [EEx ia]

Explosion group	IIA	IIB	IIC
External capacitance	6400 μF	2400 μF	800 μF
External inductance	1000 mH	1000 mH	1000 mH

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	standards
Directive 94/9 EC	on request

Entity parameter

Certification number	4Z6A5.AX
FM control drawing	No. 116-0129
Suitable for installation in division 2	yes
Connection	terminals 4, 5
Input I	
Voltage V _{OC}	5,1 V
Current I _t	2,2 mA
Explosion group	A&B C&E D, F&G

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Max. external capacitance C_a	1000 μ F	3000 μ F	8000 μ F
Max. external inductance L_a	1 mH	1 mH	1 mH
Safety parameter			
CSA control drawing	LR 65756-13		
Control drawing	No. 116-0132		
Connection	terminals 4, 5		
Input I			
Safety parameter	5,1 V / 2280 Ohm		
Voltage V_{OC}	5,1 V		
Current I_{SC}	2,2 mA		
Explosion group	A&B	C&E	D, F&G
Max. external capacitance C_a	1000 μ F	3000 μ F	8000 μ F
Max. external inductance L_a	1000 mH	1000 mH	1000 mH

Notes

These units require about 3 minutes after power up to reach the accuracy cited in the technical data.

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.

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.