



- 1-channel
- Input EEx ia IIC
- Device installation in Zone 2
- 24 V DC supply voltage
- EMC acc. to NAMUR NE 21

Transmission range 0 mV ... ± 50 mV
KFD2-VR-Ex1.50M*

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.

The KFD2-VR-Ex1.50m.* is available with lead breakage monitoring (LB) (versions KFD2-VR-Ex1.50m.L and KFD2-VR-Ex1.50m.R.

KFD2-VR-Ex1.50*m
 without lead breakage monitoring

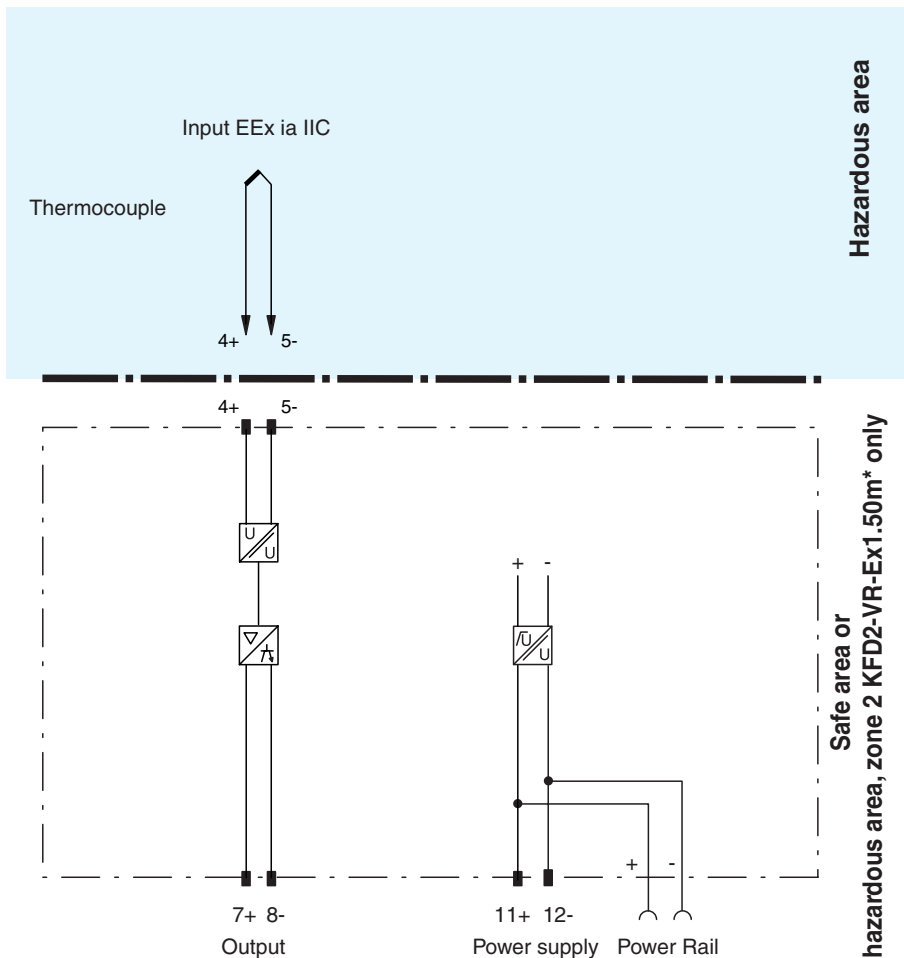
KFD2-VR-Ex1.50m.L
 These devices are designed so that the lead breakage in the input circuit will be signaled by an output voltage of -80 mV between terminals 7 and 8.

KFD2-VR-Ex1.50m.R
 These devices are designed so that the lead breakage in the input circuit will be signaled by an output voltage of +80 mV between terminals 7 and 8.

Application

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

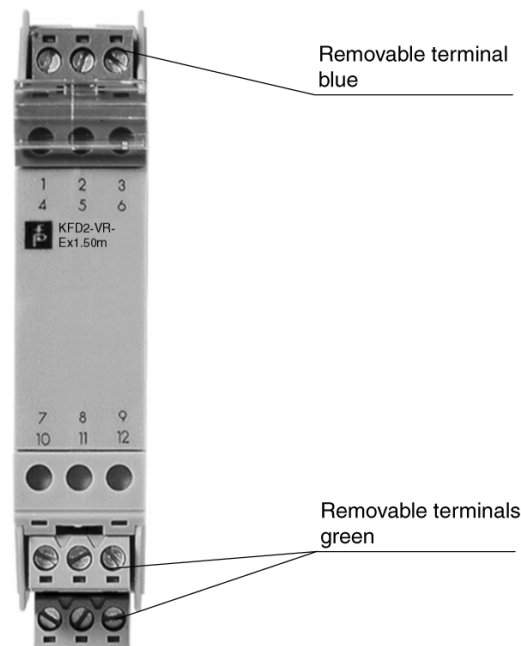
Connection



Composition

Front View

Housing type A2
 (see system description)



Supply	
Connection	Power Rail or terminals 11+, 12-
Rated voltage	10 ... 40 V DC
Ripple	within the supply tolerance
Rated current	≤ 7 mA
Power loss/power consumption	0.28 W max.
Input	
Connection	terminals 4+, 5-
Input resistance	≥ 20 MΩ (10 MΩ for .L- and .R version)
Transmission range	0 ... ± 50 mV
Offset voltage/current	≤ 5 μV / ≤ 5 nA
Output	
Connection	terminals 7+, 8-
Load	Accuracy figures for infinite load impedance. Additional 0.03 % of span for a load resistance of 10 kΩ
Voltage	0 ... ± 50 mV
Output resistance	≤ 3 Ω
Line fault detection	+80 mV (version *.R) -80 mV (version *.L)
Transfer characteristics	
Deviation	
After calibration	at 20 °C (68 °F): ± 3 μV up to ± 10 mV/± 0.03 % of the span up to +50 mV/± 0.05 % of the span up to -50 mV
Influence of ambient temperature	± 2 μV/K (typical ± 0.5 μV/K)
Absolute	< 0.25 K at 40 V voltage supply
Bandwidth	-3 dB at 350 Hz
Rise time	≤ 1 ms
Electrical isolation	
Output/power supply	basic insulation acc. to EN 50178, rated insulation voltage of 50 V AC
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
Conformity	
Insulation coordination	EN 50178
Electrical isolation	EN 50178
Electromagnetic compatibility	NE 21
Protection degree	IEC 60529
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Protection degree	IP20
Mass	approx. 125 g
Dimensions	20 x 100 x 115 mm (0.8 x 3.9 x 4.5 in)
Data for application in connection with Ex-areas	
EC-Type Examination Certificate	
Group, category, type of protection	BASEEFA 03 ATEX 0076 , for additional certificates see www.pepperl-fuchs.com
Voltage U _o	[EEx ia] IIC (T _{amb} = 60 °C)
Current I _o	5.5 V DC
Power P _o	2.4 mA
	3.3 mW
Supply	
Maximum safe voltage U _m	250 V (Attention! The rated voltage is lower.)
Type of protection [EEx ia]	
Output	
Maximum safe voltage U _m	250 V (Attention! The rated voltage is lower.)
Statement of conformity	
Group, category, type of protection, temperature classification	TÜV 99 ATEX 1499 X , observe statement of conformity
	⊕ II 3G EEx nA II T4
Electrical isolation	
Input/Output	safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
Input/power supply	safe galvanic isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity	
Directive 94/9/EC	EN 50014, EN 50020, EN 50021

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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

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

Accessories

Power feed module KFD2-EB2

The power feed module is used to supply the devices with 24 V DC via the Power Rail. The fuse-protected power feed module can supply up to 100 individual devices depending on the power consumption of the devices. A galvanically isolated mechanical contact uses the Power Rail to transmit collective error messages.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical inset and an aluminium profile rail 35 mm x 15 mm. To make electrical contact, the devices are simply engaged.

Profile Rail K-DUCT with Power Rail

The profile rail K-DUCT is an aluminum profile rail with Power Rail insert and two integral cable ducts for system and field cables. Due to this assembly no additional cable guides are necessary.



Attention

Power Rail and Profile Rail must not be fed via the device terminals of the individual devices!