Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Voltage input 0 mV ... ± 50 mV
- Voltage output 0 mV ... ± 50 mV
- Selectable up/downscale sensor breakage detection

Function

This isolated barrier is used for intrinsic safety applications. It transfers low voltage signals from thermocouples, load cells, strain gauges, operational amplifiers, and inductive oscillation sensors located in hazardous areas to safe areas.

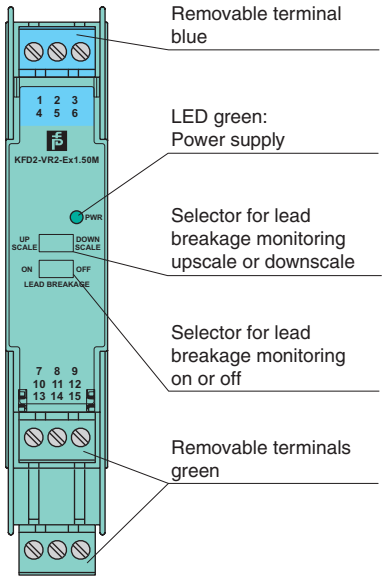
The input voltage of the terminals 4 and 5 is transferred to the terminals 7 and 8.

The input, output, and power supply are galvanically isolated from each other. Upscale or downscale lead breakage monitoring is selectable via switches located on the front panel of the device.

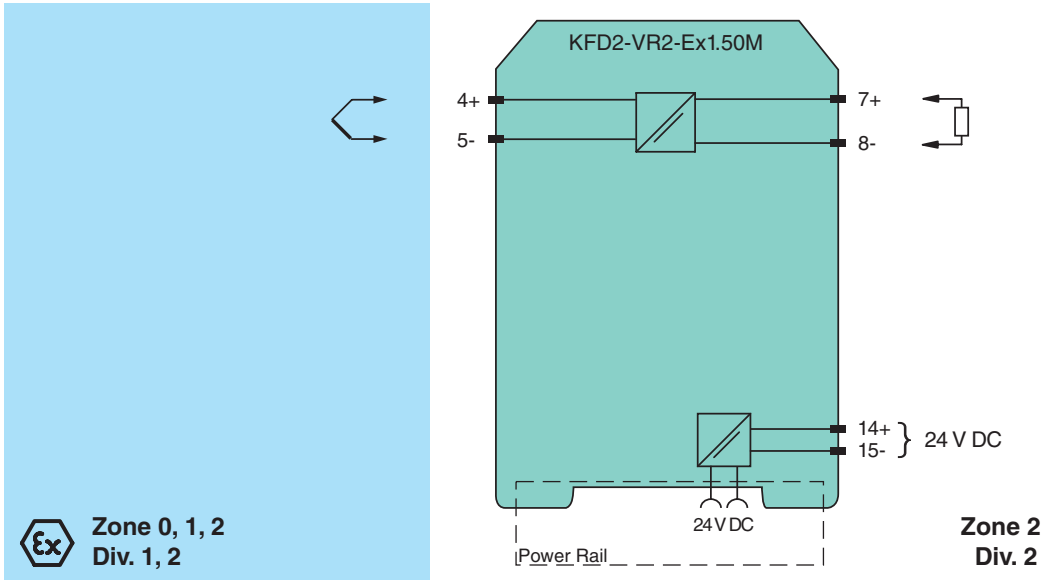
Note: This unit requires three minutes after power-up to reach the accuracy cited in the technical data.

Assembly

Front view



Connection



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General specifications		
Signal type		Analog input
Supply		
Connection		Power Rail or terminals 14+, 15-
Rated voltage	U_n	19 ... 30 V DC
Ripple		within the supply tolerance
Rated current	I_n	≤ 11 mA
Power loss/power consumption		0.3 W max.
Input		
Connection		terminals 4+, 5-
Input resistance		≥ 20 MΩ
Transmission range		0 ... ± 50 mV
Offset voltage/current		≤ 5 µV / ≤ 5 nA
Line fault detection		100 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
Fault signal		sensor breakage: > +100 mV (upscale), < -100 mV (downscale)
Output resistance		≤ 3 Ω
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		± 1 µV/K (typical ± 0.25 µV/K)
Absolute		< 0.25 K at 30 V voltage supply
Bandwidth		DC to 350 Hz (-3 dB)
Rise time		≤ 1 ms
Electrical isolation		
Output/power supply		functional insulation, rated insulation voltage 50 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2004/108/EC		EN 61326-1:2013 (industrial locations)
Conformity		
Electromagnetic compatibility		NE 21
Degree of protection		IEC 60529
Protection against electrical shock		UL 61010-1
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Degree of protection		IP20
Mass		approx. 125 g
Dimensions		20 x 119 x 115 mm (0.8 x 4.7 x 4.5 in) , housing type B2
Data for application in connection with Ex-areas		
EC-Type Examination Certificate		BASEEFA 06 ATEX 0040 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		⟨Ex⟩ II (1)GD, I (M1), [Ex ia] IIC, [Ex iaD], [Ex ia] I (-20 °C ≤ T_{amb} ≤ 60 °C) [circuit(s) in zone 0/1/2]
Voltage	U_o	5.5 V DC
Current	I_o	2.4 mA
Power	P_o	3.3 mW
Supply		
Maximum safe voltage	U_m	250 V (Attention! The rated voltage can be lower.)
Statement of conformity		BASEEFA 09 ATEX 0219X , observe statement of conformity
Group, category, type of protection, temperature class		⟨Ex⟩ II 3G Ex nA II T4 [device in zone 2]
Electrical isolation		
Input/Output		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Input/power supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 94/9/EC		EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010
International approvals		
UL approval		
Control drawing		116-0173 (cULus) or 116-0334 (cULus)
IECEx approval		IECEx BAS 06.0011 IECEx BAS 09.0103X

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Approved for	[Zone 0] [Ex ia] IIC, [Ex iaD], [Ex ia] I Ex nA II T4
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com.

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!

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