

Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Potentiometer input
- Voltage output 0 V ... 10 V
- Lead resistance compensation adjustment
- Accuracy 0.05 %
- Up to SIL2 acc. to IEC 61508

Function

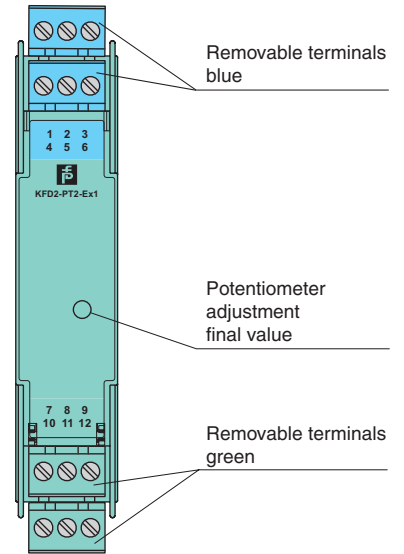
This isolated barrier is used for intrinsic safety applications. It provides the source voltage to a potentiometer and transfers its wiper position from hazardous areas to safe areas. It then converts the signal to a 0 V ... 10 V voltage output (consistent with 0 mA ... 20 mA current output, see for example KFD2-PT2-Ex1-4).

The unit can be used in a 3-, 4-, or 5-wire configuration depending on the required measurement accuracy. Terminals 2 and 5 are used as the sense line for the potentiometer lead resistance compensation in a 5-wire configuration.

The barrier's potentiometer can be used to compensate for lead resistance up to 5 % of the hazardous area potentiometer value.

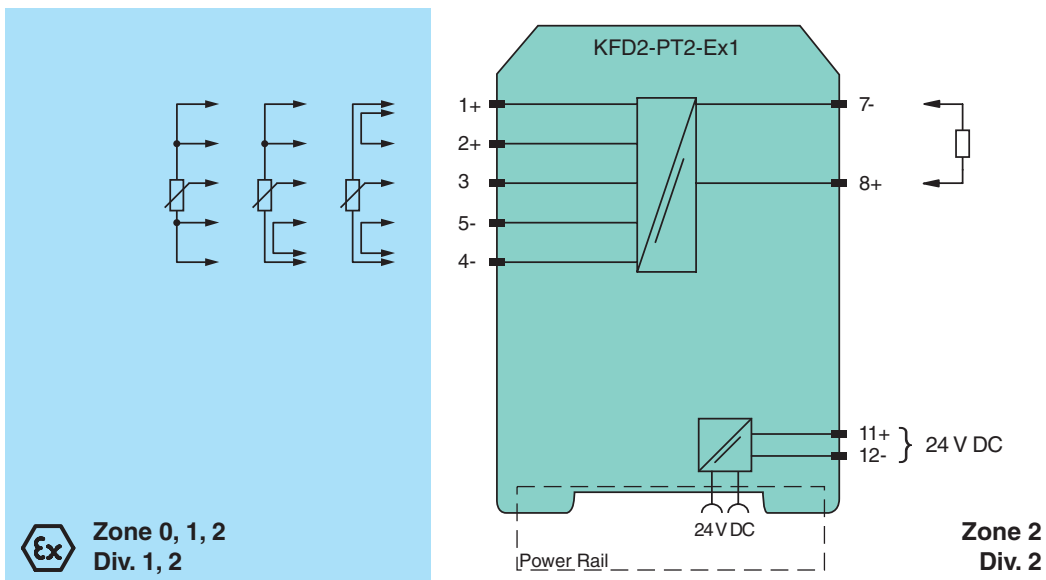
Assembly

Front view



SIL2

Connection



Release date 2010-12-08 09:45 Date of issue 2010-12-08 072018_ENG.xml

General specifications	
Signal type	Analog input
Supply	
Connection	Power Rail or terminals 11+, 12-
Rated voltage	20 ... 35 V DC
Ripple	within the supply tolerance
Power loss	0.5 W
Power consumption	0.6 W
Input	
Connection	terminals 4-, 5-, 3+, 2+, 1+
Potentiometer	
Types of measuring	3-, 4-, 5-wire technology
Nominal resistance	≥ 800 Ω
Supply voltage	approx. 4.7 V
Lead resistance	5 % of the potentiometer resistance (adjustable)
Output	
Voltage output	0 ... 10 V
Connection	terminals 7-, 8+
Output resistance	≤ 30 Ω
Transfer characteristics	
Deviation	
Linearity	≤ ± 5 mV
Influence of ambient temperature	≤ 0.5 mV/K
Rise time	10 to 90 % ≤ 8 ms; 10 to 90 % within 1 % of span ≤ 25 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. 120 g
Dimensions	20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in) , housing type B1
Data for application in connection with Ex-areas	
EC-Type Examination Certificate	BAS 00 ATEX 7171 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	⊕ 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	10.4 V
Current I _o	31.4 mA
Power P _o	82 mW
Supply	
Maximum safe voltage U _m	250 V (Attention! The rated voltage can be lower.)
Output	
Maximum safe voltage U _m	250 V (Attention! The rated voltage can be lower.)
Statement of conformity	
Group, category, type of protection, temperature classification	⊕ II 3G Ex nA II T4
Electrical isolation	
Input/Output	safe electrical isolation acc. to IEC 60079-11, voltage peak value 375 V
Input/power supply	safe electrical isolation acc. to IEC 60079-11, voltage peak value 375 V
Directive conformity	
Directive 94/9/EC	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-11:2006
International approvals	
FM approval	
Control drawing	116-0129
UL approval	
Control drawing	116-0173 (cULus)
CSA approval	

Release date 2010-12-08 09:45 Date of issue 2010-12-08 072018_ENG.xml

Control drawing	116-0132
IECEX approval	IECEX BAS 10.0060 IECEX BAS 10.0061X
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 .

Additional information

Jumpers must be used on terminals 1, 2 and 4, 5 in 3-wire configurations. A jumper must be used between terminals 4 and 5 in 4-wire connections. In the 5-wire mode of operation, the potentiometer voltage is measured at terminals 2 and 5 and automatically readjusted.

The front side potentiometer can be used to compensate for lead resistances up to 5 % of the potentiometer value. During adjustment, the potentiometer is set to 100 % of its value and the output signal is adjusted to 100 % of the required value. This adjustment can be repeated setting the potentiometer to 0 %.

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.



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