- 1-channel
- 24 V DC supply (Power Rail)
- Potentiometer input
- Current output 0 mA ... 24 mA
- Accuracy 0.05 %
- Up to SIL 2 acc. to IEC 61508

KFD2-PT2-Ex1-6-Y112844

Replacement device for KFD2-PT-Ex1
Attention: output polarity now 7-, 8+

Function

The transformer isolated barrier supplies power to the potentiometers in the hazardous area.

The loop voltages are transmitted.

The transformer isolated barrier is available with current and voltage outputs (terminals 7 and 8).

It can be operated in the 3-, 4- or 5-wire mode with the potentiometer.

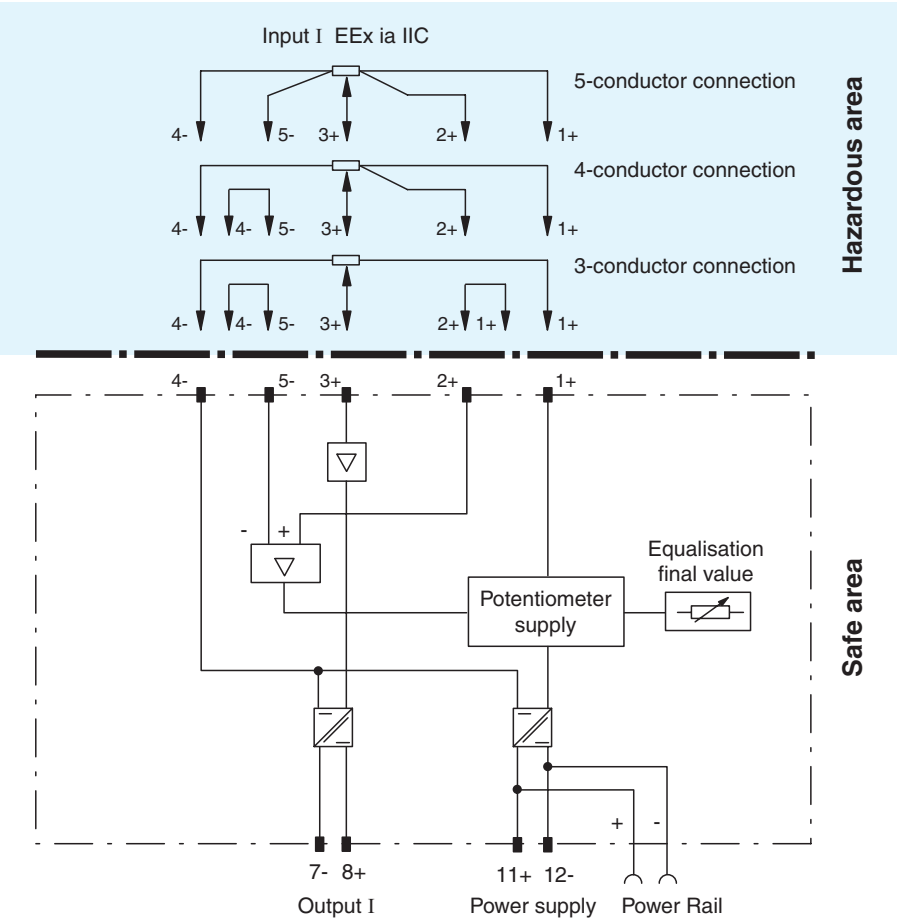
In the 5-wire mode of operation, the potentiometer voltage is measured at terminals 2 and 5 and automatically readjusted. For a 4-wire connection on the transformer isolated barrier, terminals 4- and 5- are bridged. With the resistance adjustment on the front housing panel, it is possible to adjust the final value. For potentiometer resistances greater than 500 Ω, the 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 %.

Terminals 4 and 5 as well as 1 and 2 must be bridged for a 3-wire connection to the potentiometer.

Application

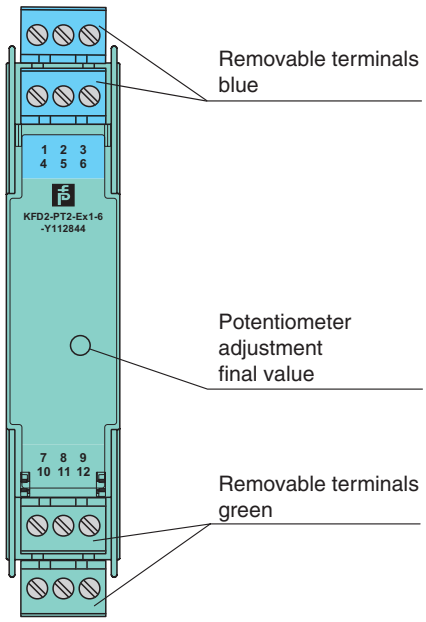
Because of the high transfer accuracy, the unit is well suited for precise path or positioning requirements per potentiometer, reference element, etc.

Connection



Composition

Front view



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General specifications		
Signal type		Analog input
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 2
Supply		
Connection		Power Rail or terminals 11+, 12-
Rated voltage U_r		20 ... 35 V DC
Ripple		within the supply tolerance
Power dissipation		1 W
Power consumption		1.3 W
Input		
Connection side		field side
Connection		terminals 4-, 5-, 3+, 2+, 1+
Potentiometer		
Nominal resistance		500 Ω to 100 kΩ
Supply voltage		approx. 4.7 V
Lead resistance		≤ 5 % of the potentiometer resistance at ≥ 500 Ω (can be equalized by user)
Output		
Connection side		control side
Connection		terminals 7-, 8+
Current output		0 ... 20 mA, load ≤1 kΩ
Transfer characteristics		
Accuracy		0.05 %
Deviation		
Linearity		≤ ± 10 µA
Influence of ambient temperature		≤ 1 µA/K
Rise time		10 to 90 % ≤ 8 ms; 10 to 90 % within 1 % of span ≤ 25 ms
Galvanic isolation		
Output/power supply		functional insulation, rated insulation voltage 50 V AC
Indicators/settings		
Control elements		potentiometer
Configuration		via potentiometer
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Conformity		
Electromagnetic compatibility		NE 21:2006
Degree of protection		IEC 60529:2001
Protection against electrical shock		UL 61010-1
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 120 g
Dimensions		20 x 107 x 115 mm (0.8 x 4.2 x 4.5 inch) , housing type B1
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas		
EU-Type Examination Certificate		BAS 00 ATEX 7171
Marking		⟨Ex⟩ II (1)G [Ex ia Ga] IIC , ⟨Ex⟩ II (1)D [Ex ia Da] IIIC , ⟨Ex⟩ I (M1) [Ex ia Ma] I (-20 °C ≤ T_{amb} ≤ 60 °C)
Voltage	U_o	10.4 V DC
Current	I_o	46 mA
Power	P_o	120 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.)
Certificate		TÜV 02 ATEX 1797 X
Marking		⟨Ex⟩ II 3G Ex nA II T4
Galvanic 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 2014/34/EU		EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010

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International approvals	
FM approval	
Control drawing	116-0129
UL approval	
Control drawing	116-0173 (cULus)
CSA approval	
Control drawing	116-0132
IECEx approval	
IECEx certificate	IECEx BAS 10.0060 IECEx BAS 10.0061X
IECEx marking	[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I Ex ec IIC T4 Gc
General information	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com.
Accessories	
Optional accessories	- power feed module KFD2-EB2(.R4A.B)(.SP) - universal power rail UPR-03(-M)(-S) - profile rail K-DUCT-BU(-UPR-03)

Notes

The transformer isolated barrier is available with various output options.

Model number	Output	Model number	Output
KFD2-PT2-Ex1-Y98312	0 V ... 10 V	KFD2-PT2-Ex1-2-Y107266	2 V ... 10 V
KFD2-PT2-Ex1-4-Y107268	0 mA ... 20 mA	KFD2-PT2-Ex1-1-Y107265	0 V ... 5 V
KFD2-PT2-Ex1-3-Y107267	1 V ... 5 V	KFD2-PT2-Ex1-5-Y107269	4 mA ... 20 mA
KFD2-PT2-Ex1-6-Y112844	0 mA ... 24 mA		

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