



- 1-channel
- 24 V DC supply (Power Rail)
- Potentiometer input
- Voltage output 0 V ... 10 V
- Accuracy 0.05 %
- Up to SIL 2 acc. to IEC 61508

KFD2-PT2-Ex1-Y98312

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.

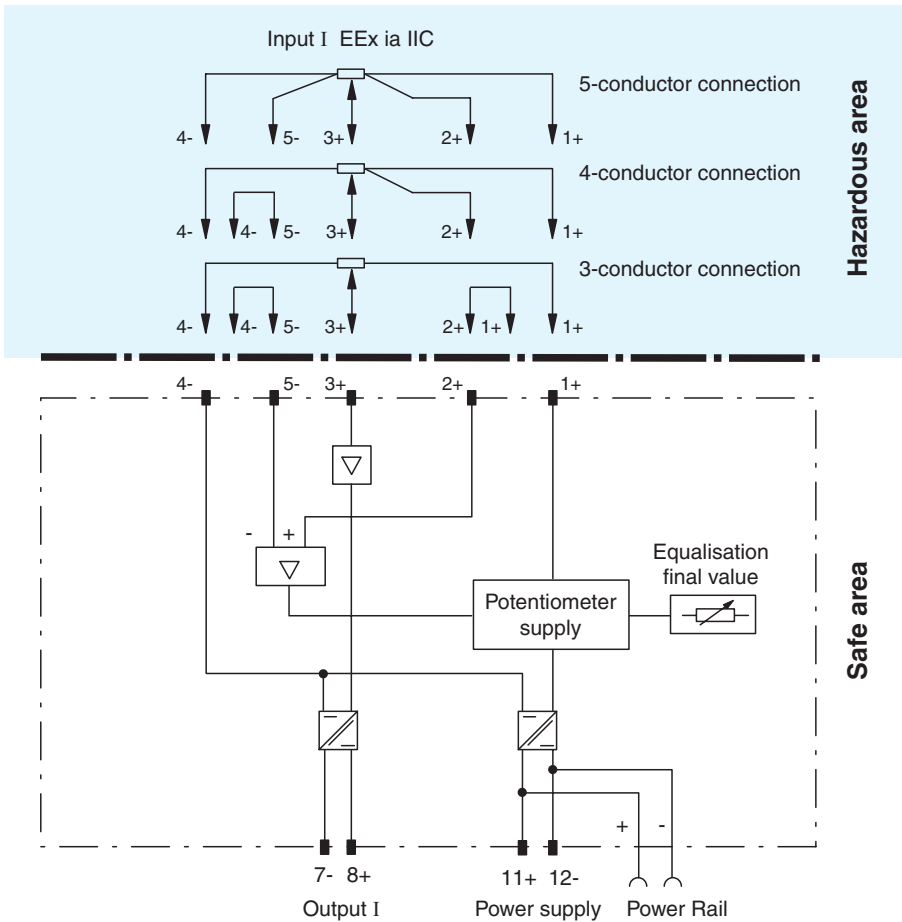
In the 5-wire mode of operation, the potentiometer voltage is measured at terminals 2 and 5 and automatically readjusted. For a 4-wire connection on the transformer isolated barrier, terminals 4- and 5- are bridged. With the resistance adjustment on the front housing panel, it is possible to adjust the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

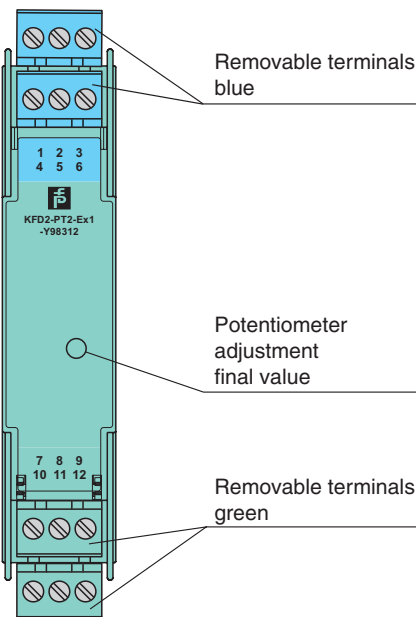
Because of the high transfer accuracy, the unit is well suited for precise path or positioning requirements per potentiometer, reference element, etc.

Connection



Composition

Front view



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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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	0.6 W
Power consumption	0.7 W
Input	
Connection side	field side
Connection	terminals 4-, 5-, 3+, 2+, 1+
Potentiometer	
Nominal resistance	500 Ω to 100 k Ω
Supply voltage	approx. 4.7 V
Lead resistance	5 % of the potentiometer resistance at $\geq 500 \Omega$ (can be equalized by user)
Output	
Connection side	control side
Connection	terminals 7-, 8+
Voltage output	0 ... 10 V
Output resistance	$\leq 30 \Omega$
Transfer characteristics	
Accuracy	0.05 %
Deviation	
Linearity	$\leq \pm 5 \text{ mV}$
Influence of ambient temperature	$\leq 0.5 \text{ mV/K}$
Rise time	10 to 90 % $\leq 8 \text{ ms}$; 10 to 90 % within 1 % of span $\leq 25 \text{ ms}$
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	
Degree of protection	NE 21:2006
Protection against electrical shock	IEC 60529:2001
UL 61010-1	UL 61010-1
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Degree of protection	
Connection	IP20
Mass	screw terminals
Dimensions	approx. 120 g
Mounting	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	
Marking	BAS 00 ATEX 7171
Voltage U_o	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 $\leq T_{\text{amb}} \leq 60$ °C)
Current I_o	10.4 V
Power P_o	46 mA
Power	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	
Marking	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	

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Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010
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		