

Features

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Current and voltage input
- Current or voltage output
- Factory configured input/output
- Accuracy 0.1 %
- Up to SIL 2 acc. to IEC 61508

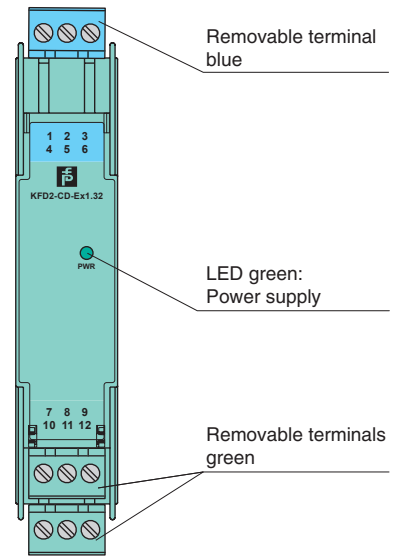
Function

This isolated barrier is used for intrinsic safety applications. It drives a voltage or current signal from the safe area to I/P converters, electrical valves and positioners located in the hazardous areas.

This barrier is designed to provide various inputs and outputs of voltage and current.

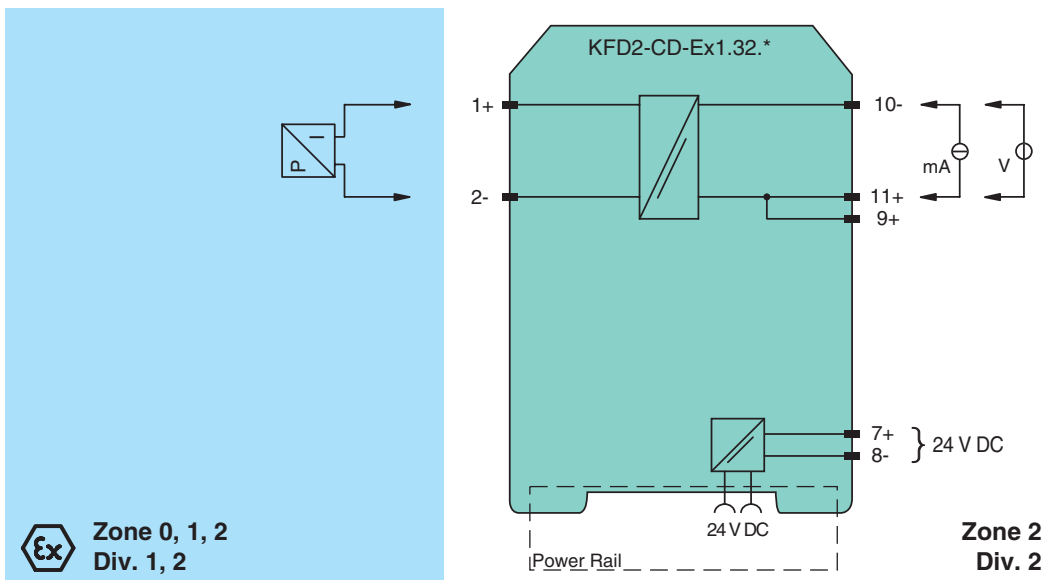
Assembly

Front view



SIL 2

Connection



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

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General specifications		
Signal type		Analog output
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 2
Supply		
Connection		Power Rail or terminals 7+, 8-
Rated voltage	U_r	20 ... 35 V DC
Ripple		within the supply tolerance
Rated current	I_r	current output: ≤ 50 mA ; voltage output: ≤ 20 mA
Power dissipation		1.2 W
Input		
Connection side		control side
Connection		terminals 9+, 10-, 11+
Voltage drop		optional current input: approx. 4 V at 20 mA
Input current		≤ 100 μ A up to 50 °C (122 °F) at 10 V
Limit		optional current input: Input current: approx. ≤ 40 mA optional voltage input: input voltage: 12 V DC
Transmission range		optional current input: 0 ... 20 mA/optional voltage input: 0 ... 10 V
Output		
Connection side		field side
Connection		terminals 1+, 2-
Current		optional current output: 0 ... 20 mA/optional voltage output: ≤ 20 mA
Load		optional current output: ≤ 850 Ω optional voltage output: output resistance ≤ 3 Ω
Voltage		optional current output: 17 V at 20 mA/optional voltage output: 0 ... 10 V
Transfer characteristics		
Accuracy		0.1 %
Deviation		
After calibration		$\leq \pm 0.1$ % incl. non-linearity and hysteresis at 20 °C (68 °F)
Influence of ambient temperature		$\leq \pm 0.01$ %/K
Rise time		< 10 ms
Galvanic isolation		
Input/power supply		functional insulation, rated insulation voltage 50 V AC
Indicators/settings		
Display elements		LED
Labeling		space for labeling at the front
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Conformity		
Degree of protection		IEC 60529:2001
Protection against electrical shock		UL 61010-1:2004
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 100 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 02 ATEX 7203
Marking		Ex II (1)G [Ex ia Ga] IIC , Ex II (1)D [Ex ia Da] IIIC , Ex I (M1) [Ex ia Ma] I
Voltage	U_o	25.2 V DC
Current	I_o	optional current output: 93 mA optional voltage output: 95 mA
Power	P_o	0.586 W
Supply		
Maximum safe voltage	U_m	250 V (Attention! The rated voltage can be lower.)
Input		
Maximum safe voltage	U_m	250 V (Attention! The rated voltage can be lower.)
Certificate		
Marking		Ex II 3G Ex nA II T4
Galvanic isolation		

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Input/Output	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Output/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
International approvals	
FM approval	
Control drawing	116-0129
UL approval	
Control drawing	116-0173 (cULus)
IECEX approval	IECEX BAS 05.0041
Approved for	[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I
General information	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com.

Additional information

Input/output options, model number

This barrier is designed to provide various inputs and outputs of voltage and current:

- **Current input option**
A current limit circuit in series to terminal 9 protects the device from damage. The max. voltage drop at the input is DC 4 V, allowing for the connection of several KFD2-CD-Ex1.32 repeaters due to the low voltage drop in order to maintain multiple galvanically isolated outputs (signal duplication).
- **Voltage input option**
The signal is transmitted to terminals 9 and 10 across an amplifier and the DC/DC converter within the allowable voltage range. A voltage limiter circuit protects the amplifier from incorrect input switching and overvoltage, but will draw current through a 50 mA fuse during operation. The fuse can be changed only by the manufacturer.
- **Current output option**
The open circuit voltage is DC 24 V within the allowable supply voltage range at terminals 1 and 2. The max. load that can be applied is 850 Ω.
- **Voltage output option**
At least 20 mA is available within the allowable supply voltage range at terminals 1 and 2 which means that with 10 V output voltage, a load of at least 500 Ω must be connected.

Input	Output						Ordering example
	0 mA ... 20 mA	4 mA ... 20 mA	0 V ... 5 V	1 V ... 5 V	0 V ... 10 V	2 V ... 10 V	
0 mA ... 20 mA	0	2	–	9	12	–	Input 0 V ... 10 V, Output 4 mA ... 20 mA: is code number 8 Type code: KFD2-CD-Ex1.32.8
4 mA ... 20 mA	1	(0)	10	–	13	(12)	
0 V ... 5 V	3	5	(15)	–	–	–	
1 V ... 5 V	–	(3)	–	(15)	–	–	
0 V ... 10 V	6	8	21	–	15	–	
2 V ... 10 V	–	(6)	–	–	–	(15)	

For options enclosed in parentheses, the transfer range for a base type is only partially used, i. e. 4 mA ... 20 mA from the base type 0 mA ... 20 mA.

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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 150 individual devices depending on the power consumption of the devices. Collective error messages received from the Power Rail activate a galvanically-isolated mechanical contact.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical insert 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!