

Current/Voltage Driver

KFD2-CD-Ex1.32-**

- 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/EN 61508



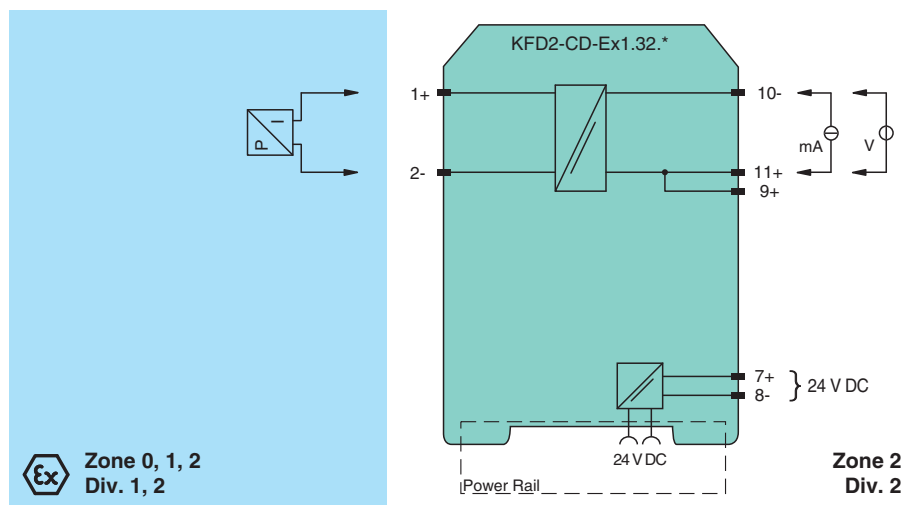
SIL 2



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.

Connection



Technical Data

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

Technical Data

Connection		terminals 9+, 10-, 11+
Voltage drop		optional current input: approx. 4 V at 20 mA
Input current		≤ 100 µA 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-
Voltage		optional current output: 17 V at 20 mA/optional voltage output: 0 ... 10 V
Current		optional current output: 0 ... 20 mA/optional voltage output: ≤ 20 mA
Load		optional current output: max. 850 Ω optional voltage output: output resistance max. 3 Ω
Transfer characteristics		
Accuracy		0.1 %
Deviation		
After calibration		≤ ± 0.1 % incl. non-linearity and hysteresis at 20 °C (68 °F)
Influence of ambient temperature		≤ ± 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) (W x H x D) , 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 X
Marking		Ⓔ II (1)G [Ex ia Ga] IIC , Ⓔ II (1)D [Ex ia Da] IIIC , Ⓔ 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	optional current output: 0.586 W optional voltage output: 0.59 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		TÜV 99 ATEX 1499 X
Marking		Ⓔ II 3G Ex nA II T4
Galvanic isolation		
Input/Output		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V

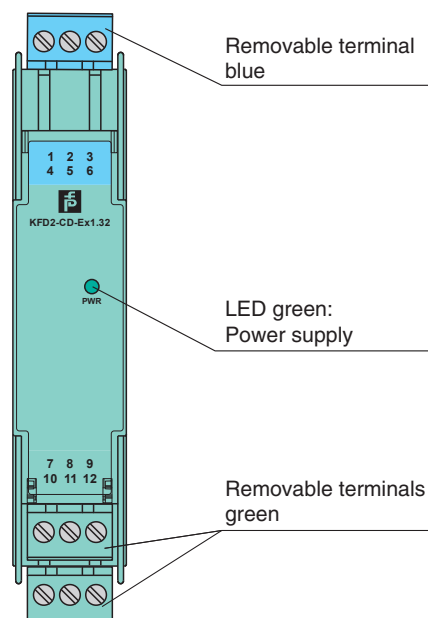
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Technical Data

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 certificate	IECEX BAS 05.0041
IECEX marking	[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 .

Assembly

Front view



Matching System Components

	KFD2-EB2	Power Feed Module
	UPR-03	Universal Power Rail with end caps and cover, 3 conductors, length: 2 m
	UPR-03-M	Universal Power Rail with end caps and cover, 3 conductors, length: 1,6 m
	UPR-03-S	Universal Power Rail with end caps and cover, 3 conductors, length: 0.8 m

Matching System Components

	K-DUCT-BU	Profile rail, wiring comb field side, blue
	K-DUCT-BU-UPR-03	Profile rail with UPR-03- * insert, 3 conductors, wiring comb field side, blue

Accessories

	KF-ST-5GN	Terminal block for KF modules, 3-pin screw terminal, green
	KF-ST-5BU	Terminal block for KF modules, 3-pin screw terminal, blue
	KF-CP	Red coding pins, packaging unit: 20 x 6

Product Versions

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.