



- 1-channel
- Output EEx ia IIC
- 24 V DC supply voltage
- Device installation permissible in zone 2
- Conversion of current/voltage or voltage/current
- Elevation/Suppression of the "life zero"
- Accuracy 0.1 %
- EMC acc. to NAMUR NE 21
- Up to SIL2 acc. to IEC 61508

KFD2-CD-Ex1.32

Function

The KFD2-CD-Ex1.32 transmits an electrical unit signal from the safe area to the hazardous area. The conversion of a current signal into a voltage signal and vice versa is possible.

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.

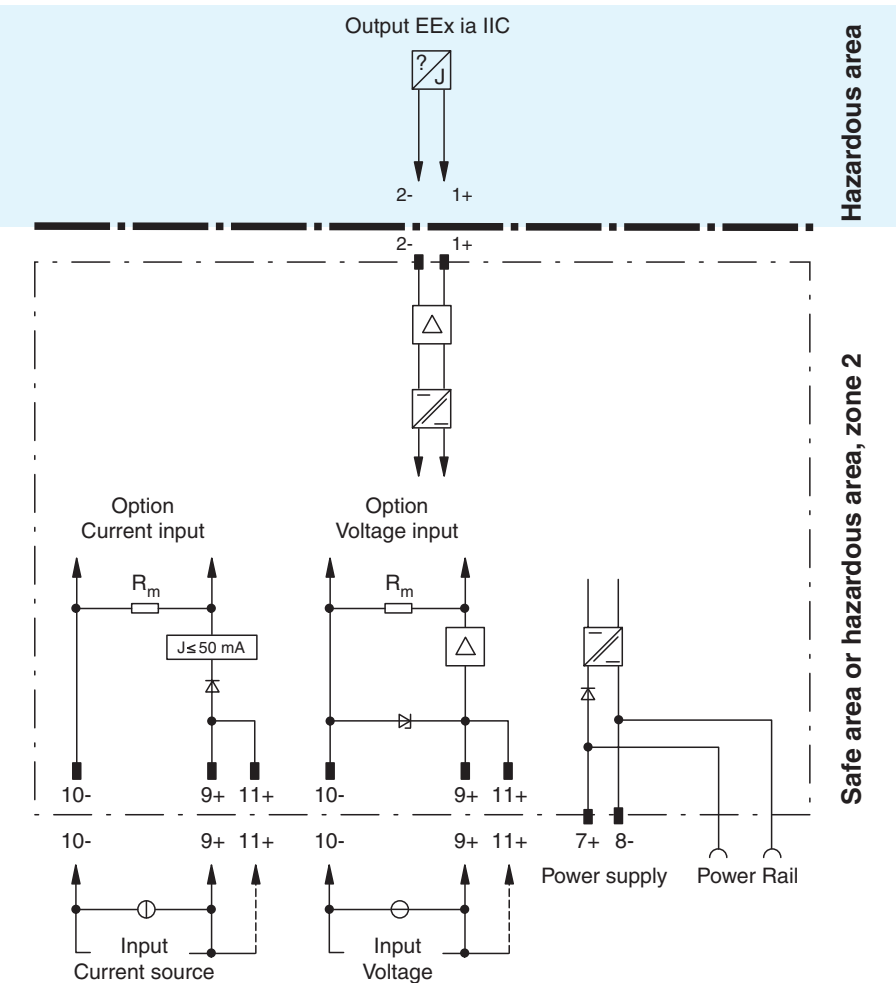
Current output option

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.

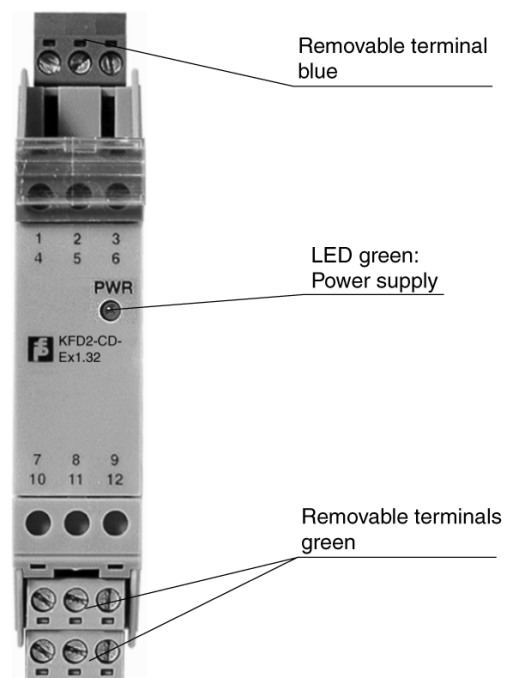
Connection



Composition

Front View

Housing type A4
(see system description)



Supply	
Connection	Power Rail or terminals 7+, 8-
Rated voltage	20 ... 35 V DC
Ripple	within the supply tolerance
Rated current	current output: ≤ 50 mA ; voltage output: ≤ 20 mA
Power loss	1.2 W
Input	
Connection	terminals 9+, 10-, 11+
Voltage drop U_d	optional current input: approx. 4 V at 20 mA
Input current	≤ 100 μ A up to 50 °C 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	terminals 1+, 2-
Current	optional current output: 0 ... 20 mA/optional voltage output: ≤ 20 mA
Voltage	optional current output: 17 V at 20 mA/optional voltage output: 0 ... 10 V
Load	optional current output: ≤ 850 Ω optional voltage output: output resistance ≤ 3 Ω
Transfer characteristics	
Deviation	
After calibration	$\leq \pm 0.1$ % incl. non-linearity and hysteresis at 20 °C (293 K)
Influence of ambient temperature	$\leq \pm 0.01$ %/K
Rise time	< 10 ms
Electrical isolation	
Output/power supply	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity	
Electromagnetic compatibility	
Directive 89/336/EC	EN 50081-2, EN 50082-2
Conformity	
Insulation coordination	EN 50178
Electrical isolation	EN 50178
Electromagnetic compatibility	NE 21
Protection degree	IEC 60529
Ambient conditions	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Mechanical specifications	
Protection degree	IP20
Mass	approx. 100 g
Dimensions	20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)
Data for application in conjunction with hazardous areas	
EC-Type Examination Certificate	BAS 02 ATEX 7203 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	 II (1) G D [EEEx ia] IIC (-20 °C $\leq$ T _{amb} $\leq$ 60 °C)
Voltage U_0	25.2 V DC
Current I_0	optional current output: 93 mA optional voltage output: 95 mA
Power P_0	0.586 W
Supply	
Safety maximum voltage U_m	250 V (Attention! The rated voltage can be lower.)
Type of protection [EEEx ia]	
Explosion group	IIA IIB IIC
External capacitance	2.9 μ F 0.82 μ F 0.107 μ F
External inductance	34.58 mH 17.04 mH 4.12 mH
Internal capacitance	0 nF
Internal inductance	0 mH
Input	
Safety maximum voltage U_m	250 V (Attention! The rated voltage can be lower.)
Statement of conformity	
Group, category, type of protection, temperature classification	 II 3 G EEEx nA II T4
Electrical isolation	
Input/output	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Output/power supply	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity	

Directive 94/9 EC	EN 50014, EN 50020, EN 50021		
Entity parameter			
Certification number	4Z6A5.AX		
FM control drawing	No. 116-0129		
Suitable for installation in division 2	yes		
Connection	terminals 1, 2		
Input I			
Voltage V_{OC}	28 V		
Current I_t	93 mA		
Explosion group	A&B	C&E	D, F&G
Max. external capacitance C_a	0.14 μ F	0.43 μ F	1.14 μ F
Max. external inductance L_a	4.18 mH	16.83 mH	34.21 mH
Safety parameter			
CSA control drawing	LR 65756-13		
Control drawing	No. 116-0132		
Connection	terminals 1, 2		
Input I			
Safety parameter	28 V / 300 Ω		
Voltage V_{OC}	28 V		
Current I_{SC}	93 mA		
Explosion group	A&B	C&E	D, F&G
Max. external capacitance C_a	0.14 μ F	0.42 μ F	1.14 μ F
Max. external inductance L_a	3.1 mH	16.7 mH	34 mH

Supplementary information

EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com.

Application

Used to drive I/P converters and valve positioners.

Table: input/output options, type

For options enclosed in parantheses, 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.

	OUTPUT	0 mA ... 20 mA	4 mA ... 20 mA	0 V ... 5 V	1 V ... 5 V	0 V ... 10 V	2 V ... 10 V	Ordering example:
I N P U T	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	

Accessories

Power Rail PR-03

Power Rail UPR-03

Power feed module KFD2-EB2...

Using Power Rail PR-03 or UPR-03 the devices are supplied with 24 V DC by means of the power feed modules. If no Power Rails are used, power supply of the individual devices is possible directly via their device terminals.

Each power feed module is used for fusing and monitoring groups with up to 100 individual devices. The Power Rail PR-03 is an inset component for the DIN rail. The Power Rail UPR-03 is a complete unit consisting of the electrical inset and an aluminium profile rail 35 mm x 15 mm x 2000 mm. To make electrical contact, the devices are simply engaged.

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