



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

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-CD32-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

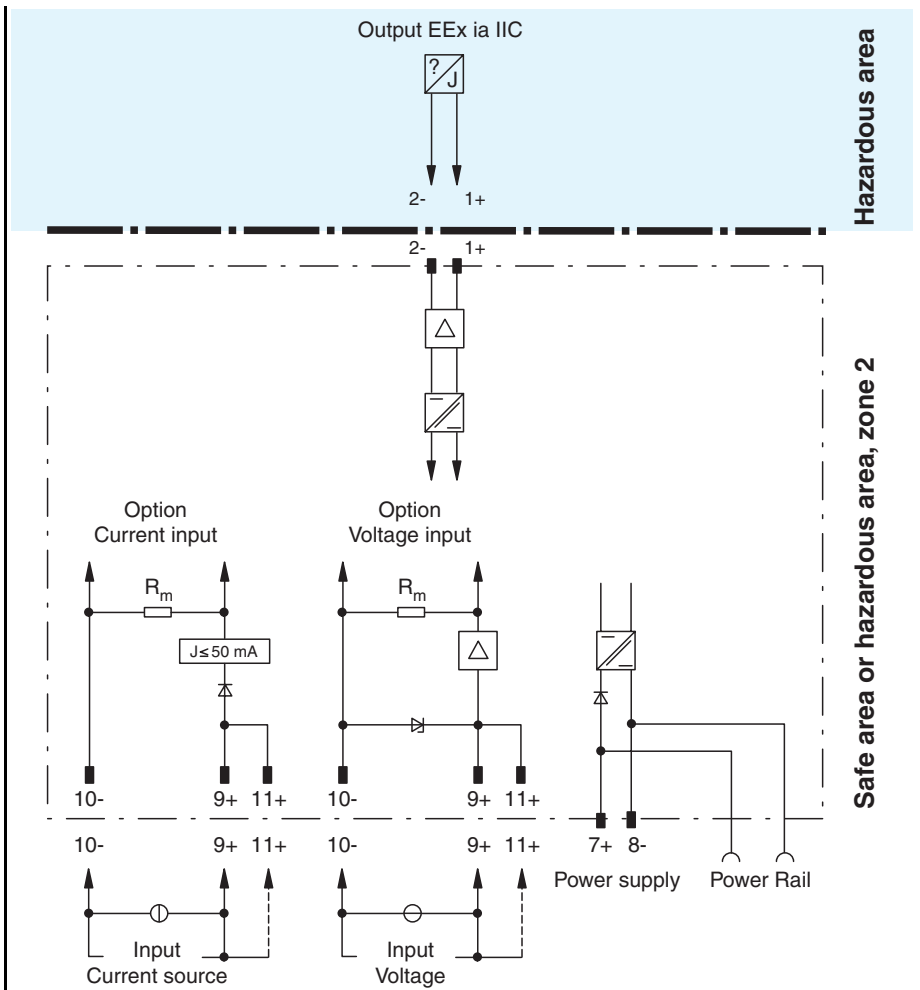
The open circuit voltage is DC 24 V within the allowable supply voltage range at terminals 1 and 2. The max. load that can be applied is 850 Ohm.

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 Ohm must be connected.

Application

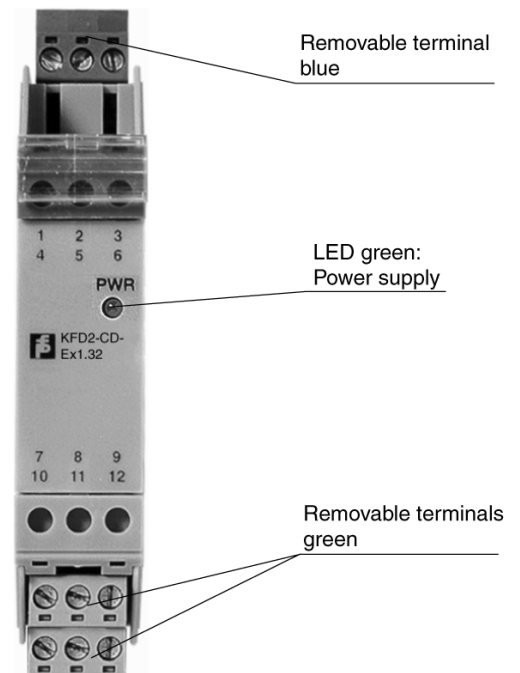
Used to drive I/P converters and valve positioners.



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 μA 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
Safety maximum voltage U_m	250 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	≤ ± 0.1 % incl. non-linearity and hysteresis at 20 °C (293 K)
Temperature	≤ ± 0.01 %/K
Rise time	< 10 ms
Electrical isolation	
Input/Output	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Input/Power supply	basic insulation acc. to DIN EN 50178, rated insulation voltage of AC 50 V
Output/Power supply	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Directive conformity	
Electromagnetic compatibility	standards
Directive 89/336/EEC	on request
Standard conformity	
Coordination of insulation	acc. to DIN EN 50178
Electrical isolation	acc. to DIN EN 50178
Electromagnetic compatibility	acc. to EN 50081-2 / EN 50082-2, NAMUR NE 21
Climatic conditions	acc. to DIN IEC 721
Ambient conditions	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Mechanical specifications	
Protection degree	IP20
Mass	approx. 100 g
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 [EEx ia] IIC (-20 °C ≤ T _a ≤ 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
Type of protection [EEx ia]	
Explosion group	IIA IIB IIC
External capacitance	2,9 μF 0,82 μF 0,107 μF
External inductance	34,58 mH 17,04 mH 4,12 mH
Internal capacitance (EEx ia)	0 nF
Internal inductance (EEx ia)	0 mH
Statement of conformity	
Group, category, type of protection, Temperature classification	⊕ II 3 G EEx 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	standards on request
Entity parameter	

Certification number	4Z6A5.AX		
FM control drawing	No. 116-0129		
Suitable for installation in division 2	yes		
Connection	terminals 2, 1		
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 2, 1		
Input I			
Safety parameter	28 V / 300 Ohm		
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

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

PR-03 Power Rail

UPR-03 Power Rail

KFD2-EB2 power feed module

The devices are supplied with 24 V DC through the KFD2-EB2 power feed module and the PR-03 or the UPR-03 Power Rail. Each power feed module monitors and provides protection for groups of as many as 100 individual devices. The PR-03 Power Rail is an insert component for the DIN rail. The UPR-03 Power Rail is a complete unit consisting of an electrical insert and an aluminium DIN rail measuring 35 mm x 15 mm x 2000 mm. The devices are simply snapped in place to make electrical contact.

If a Power Rail is not being used, power can be supplied to the devices directly through the device terminals.