

Current Driver/Repeater KFD0-CS-Ex1.51P

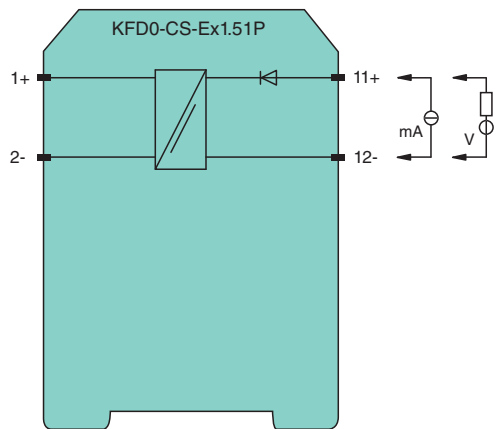
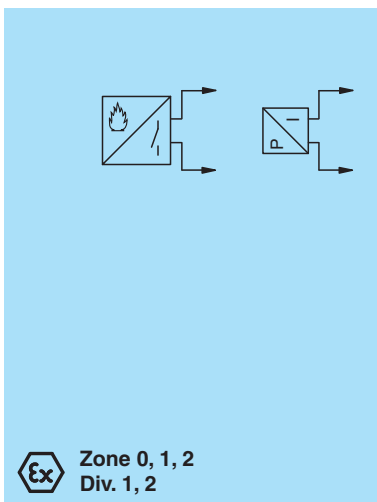
- 1-channel isolated barrier
- 24 V DC supply (loop powered)
- Current input/output 0 mA ... 40 mA
- I/P or transmitter power supply
- Accuracy 1 %
- Reverse polarity protection
- Up to SIL 2 (SC 3) acc. to IEC/EN 61508



Function

This isolated barrier is used for intrinsic safety applications. The device transfers DC signals of fire alarms and smoke alarms from the hazardous area to the non-hazardous area. The device can also be used to control I/P converters, valves, indicators, and audible alarms. A reverse polarity protection prevents damage to the device caused by faulty wiring. The device is loop powered. From the control side no additional power supply has to be connected. Use the technical data to verify that proper voltage is available to the field devices.

Connection



**Zone 2
Div. 2**

Technical Data

General specifications

Signal type Analog input/analog output

Functional safety related parameters

Safety Integrity Level (SIL) SIL 2

Systematic capability (SC) SC 3

Supply

Rated voltage U_r loop powered

Control circuit

Connection terminals 12-, 11+

Voltage 4 ... 35 V DC

Current 0 ... 40 mA

Technical Data

Power dissipation	at 40 mA and $U_{in} < 22$ V: 700 mW per channel at 40 mA and $U_{in} > 22$ V: 1.2 W per channel		
Field circuit			
Connection	terminals 1+, 2-		
Voltage	for 4 V $< U_{in} < 24$ V: $\geq U_{in} - (0.37 \times \text{current in mA}) - 1.0$ for $U_{in} > 24$ V: ≥ 21 V - $(0.36 \times \text{current in mA})$		
Short-circuit current	at $U_{in} > 24$ V: ≤ 65 mA		
Transfer current	≤ 40 mA		
Transfer characteristics			
Accuracy	1 %		
Deviation			
After calibration	$\leq \pm 200$ μ A; incl. calibration, linearity, hysteresis and load fluctuations at the field side up to a load of 1 k Ω and current ≤ 20 mA at 20 °C (68 °F)		
Influence of ambient temperature	$\leq \pm 2$ μ A/K at $U_{in} \leq 20$ V; $\leq \pm 5$ μ A/K at $U_{in} > 20$ V		
Rise time	≤ 5 ms at bounce from 4 ... 20 mA and $U_{in} < 24$ V		
Galvanic isolation			
Field circuit/control circuit	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V		
Indicators/settings			
Labeling	space for labeling at the front		
Directive conformity			
Electromagnetic compatibility			
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)		
Conformity			
Electromagnetic compatibility			
	NE 21:2012 EN 61326-3-2:2008		
Degree of protection	IEC 60529:2001		
Protection against electrical shock	UL 61010-1:2012		
Ambient conditions			
Ambient temperature	-20 ... 70 °C (-4 ... 158 °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 98 ATEX 7343 X		
Marking	Ⓔ II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I (-20 °C $\leq T_{amb} \leq 60$ °C)		
Voltage	U_o	25.2 V	
Current	I_o	93 mA	
Power	P_o	585 mW	
Control circuit			
Maximum safe voltage	U_m	250 V _{eff} (Attention! The rated voltage can be lower.)	
Field circuit			
Maximum safe voltage	U_m	250 V _{eff} (Attention! The rated voltage can be lower.)	
Certificate			
Marking	Ⓔ II 3G Ex ec IIC T4 Gc [device in zone 2]		
Galvanic isolation			
Field circuit/control circuit	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V		
Directive conformity			
Directive 2014/34/EU	EN IEC 60079-0:2018 , EN 60079-11:2012 , EN IEC 60079-7:2015+A1:2018		
International approvals			
FM approval			
Control drawing	116-0437		

Release date: 2023-01-03 Date of issue: 2023-01-03 Filename: 294980_eng.pdf

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

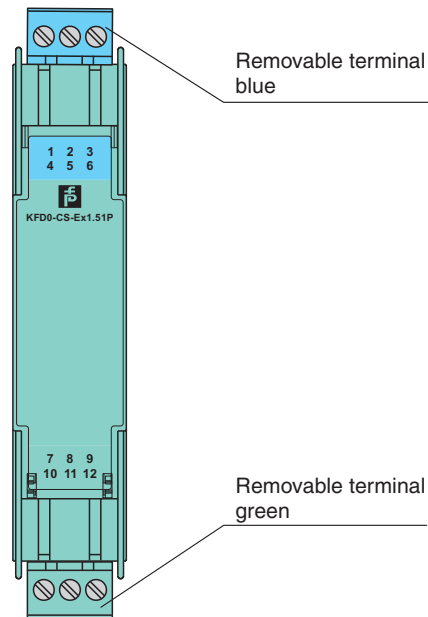
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Technical Data


UL approval	
Control drawing	116-0438 (cULus)
IECEX approval	
IECEX certificate	IECEX BAS 05.0004X IECEX CML 19.0040X
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 .

Assembly




Front view



Matching System Components

	K-DUCT-BU	Profile rail, wiring comb field side, blue
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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

Application

The device is used for isolation of power loops for the control of positioner, I/P converters etc. A current source is connected to the safe area terminals.

The device is used for isolation of a current signal from fire detectors or similar sensors. In this case, a voltage source can be connected to the safe area terminals. A specific measurement current across a passive sensor can be measured in the safe area with a series resistor (min. 50 Ω). When a voltage supply is used, the measuring resistor can also provide current limitations.