

Repeater KFD0-CS-Ex2.54

- 2-channel isolated barrier
- 24 V DC supply (loop powered)
- SMART fire alarm input
- Current input 1 mA ... 20 mA
- Up to SIL 3 acc. to IEC/EN 61508



Function

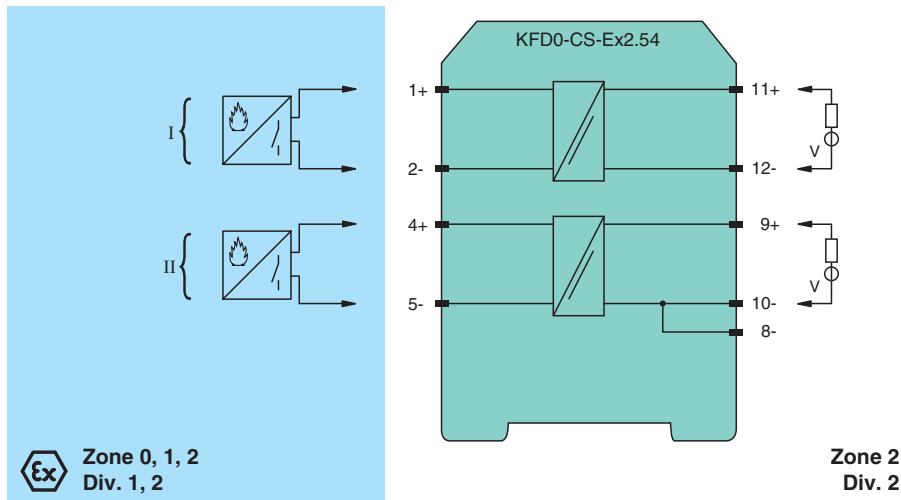
This isolated barrier is used for intrinsic safety applications. It provides control and signal transfer for SMART compatible fire and smoke alarm transmitters inside hazardous areas.

Digital signals may be superimposed on the analog values in the hazardous or safe area and are transferred bidirectionally.

The fall time of the digital signal must be less than 50 μ s, the current in the hazardous area must be bigger than 1 mA.

Since this isolator is loop-powered, use the technical data to verify that proper voltage is available to the field devices.

Connection



Technical Data

General specifications

Signal type Analog input

Functional safety related parameters

Safety Integrity Level (SIL) SIL 3

Supply

Rated voltage U_r 0 ... 24 V DC, loop powered
Power dissipation < 0.2 W for $U_{in} = 24$ V, $I_{out} = 20$ mA

Control circuit

Connection terminals 11+, 12-; 9+, 10-, 8-
Voltage 0 ... 24 V
Current 0 ... 20 mA, $I < 35$ mA

Technical Data

Field circuit

Connection		terminals 1+, 2-; 4+, 5-
Voltage		for $4\text{ V} \leq U_{in} \leq 24\text{ V}$: $U_{out} \geq U_{in} - (0.41 \times I_{in} \text{ in mA}) - 0.5$
Short-circuit current		$\leq 35\text{ mA}$
Transmission range		voltage: $4 \dots 20\text{ V DC}/0 \dots 6\text{ V}_{pp}\text{ AC}$ current: $1 \dots 20\text{ mA}$

Transfer characteristics

Deviation		
After calibration		$\leq 3.5\text{ mA}$ current loss at 20 mA load current
Influence of ambient temperature		$\pm 20\text{ }\mu\text{A} / \text{K}$
Rise time/fall time		$\leq 50\text{ }\mu\text{s}$ (load current $\geq 1\text{ mA}$)

Galvanic isolation

Input/Output		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
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Indicators/settings

Labeling		space for labeling at the front
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Directive conformity

Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)

Conformity

Electromagnetic compatibility		NE 21:2006
Degree of protection		IEC 60529:2001
Protection against electrical shock		UL 61010-1

Ambient conditions

Ambient temperature		$-20 \dots 60\text{ }^{\circ}\text{C}$ ($-4 \dots 140\text{ }^{\circ}\text{F}$)
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Mechanical specifications

Degree of protection		IP20
Connection		screw terminals
Mass		approx. 100 g
Dimensions		$20 \times 107 \times 115\text{ mm}$ ($0.8 \times 4.2 \times 4.5\text{ inch}$) (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 00 ATEX 7087
Marking		Ⓔ II (1)G [Ex ia Ga] IIC Ⓔ II (1)D [Ex ia Da] IIC Ⓔ I (M1) [Ex ia Ma] I
Voltage	U_o	28 V
Current	I_o	93 mA
Power	P_o	653 mW
Supply		
Maximum safe voltage	U_m	253 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
Directive conformity		
Directive 2014/34/EU		EN IEC 60079-0:2018+AC:2020 , EN 60079-11:2012 , EN 60079-15:2010

International approvals

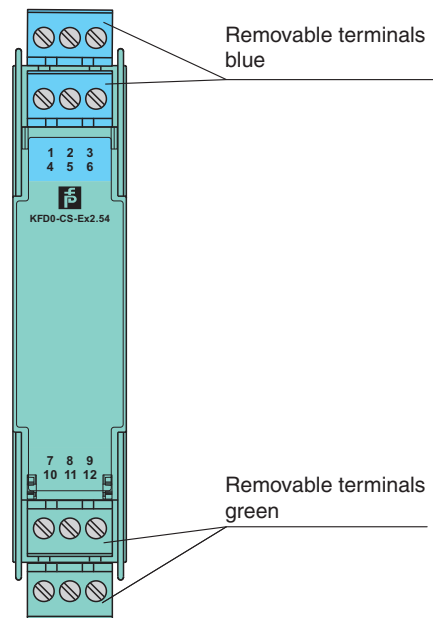
FM approval		
Control drawing		116-0129 (cFMus)
UL approval		E106378
Control drawing		116-0348 (cULus)
IECEx approval		
IECEx certificate		IECEx BAS 08.0079 IECEx BAS 10.0007X

Technical Data

IECEX marking	[Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I Ex nA 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

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