



Repeater

KFD0-CS-Ex1.54

- 1-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



SIL 3



Function

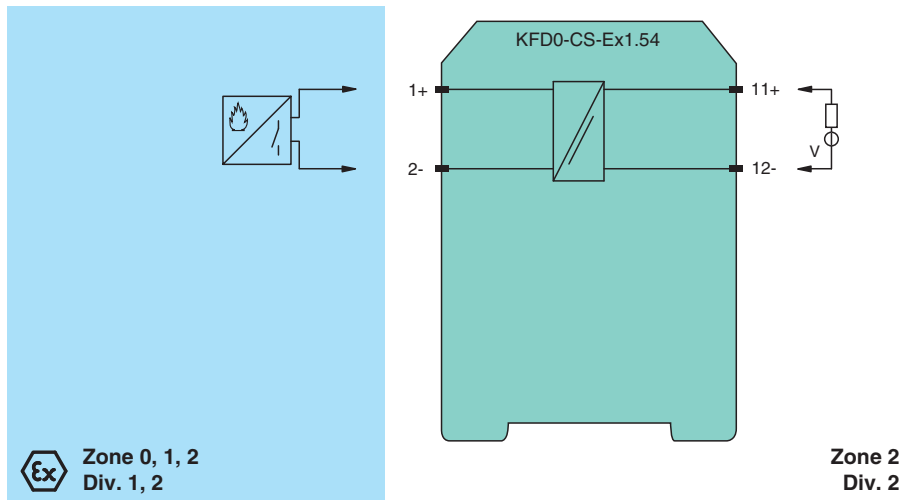
This isolated barrier is used for intrinsic safety applications. It provides control and signal transfer for SMART compatible fire and smoke alarm transmitters inside hazardous areas.

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 µs, 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 $U_{in} = 24 \text{ V}$, $I_{out} = 20 \text{ mA}$

Control circuit

Connection terminals 11+, 12-
Voltage 0 ... 24 V
Current 0 ... 20 mA

Technical Data

Current limit		max. 35 mA , limited by control sided current source	
Field circuit			
Connection		terminals 1+, 2-	
Voltage		for $4\text{ V} \leq U_{\text{in}} \leq 24\text{ V}$: $U_{\text{out}} \geq U_{\text{in}} - (0.41 \times I_{\text{in}} \text{ in mA}) - 0.5$	
Transmission range		voltage: 4 ... 20 V DC/0 ... 6 V _{pp} AC current: 1 ... 20 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	
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 21:2006	
Degree of protection		IEC 60529:2001	
Protection against electrical shock		UL 61010-1	
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	
Height		107 mm	
Width		20 mm	
Depth		115 mm	
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] IIIC Ⓜ 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)	

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Technical Data

IECEx approval		
IECEx certificate		IECEx BAS 08.0079 IECEx BAS 10.0007X
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

