

# Repeater

## KFD0-CS-Ex2.54

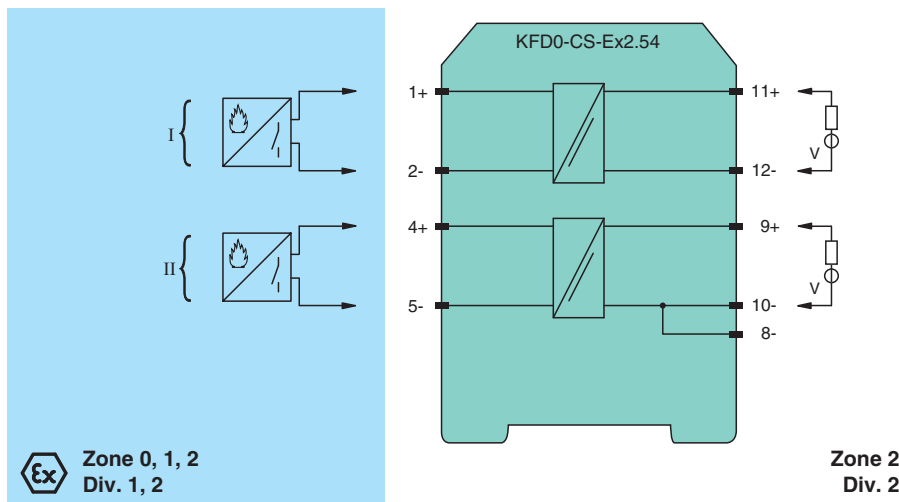
- 2-channel isolated barrier
- 24 V DC supply (loop powered)
- SMART fire alarm input
- Current input 1 mA ... 20 mA
- Up to SIL 3 acc. to IEC/EN 61508



### 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  $\mu$ 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



**Ex** Zone 0, 1, 2  
Div. 1, 2

Zone 2  
Div. 2

### 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

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

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## Technical Data

Current limit	max. 35 mA , limited by control sided current source		
<b>Field circuit</b>			
Connection	terminals 1+, 2-; 4+, 5-		
Voltage	for $4\text{ V} \leq U_{in} \leq 24\text{ V}$ : $U_{out} \geq U_{in} - (0.41 \times I_{in} \text{ in mA}) - 0.5$		
Transmission range	voltage: 4 ... 20 V DC/0 ... 6 V <sub>pp</sub> AC current: 1 ... 20 mA		
<b>Transfer characteristics</b>			
Deviation			
After calibration	≤ 3.5 mA current loss at 20 mA load current		
Influence of ambient temperature	± 20 μA / K		
Rise time/fall time	≤ 50 μs (load current ≥ 1 mA)		
<b>Galvanic isolation</b>			
Input/Output	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V		
<b>Indicators/settings</b>			
Labeling	space for labeling at the front		
<b>Directive conformity</b>			
Electromagnetic compatibility			
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)		
<b>Conformity</b>			
Electromagnetic compatibility	NE 21:2006		
Degree of protection	IEC 60529:2001		
Protection against electrical shock	UL 61010-1		
<b>Ambient conditions</b>			
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)		
<b>Mechanical specifications</b>			
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		
<b>Data for application in connection with hazardous areas</b>			
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 <sub>o</sub>	28 V	
Current	I <sub>o</sub>	93 mA	
Power	P <sub>o</sub>	653 mW	
<b>Supply</b>			
Maximum safe voltage	U <sub>m</sub>	253 V (Attention! The rated voltage can be lower.)	
Certificate	TÜV 99 ATEX 1499 X		
Marking	Ⓜ II 3G Ex nA II T4		
<b>Galvanic isolation</b>			
Input/Output	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V		
<b>Directive conformity</b>			
Directive 2014/34/EU	EN IEC 60079-0:2018+AC:2020 , EN 60079-11:2012 , EN 60079-15:2010		
<b>International approvals</b>			
<b>FM approval</b>			
Control drawing	116-0129 (cFMus)		
<b>UL approval</b>			
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
<b>General information</b>		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

## Assembly

Front view

