

SMART Transmitter Power Supply, Output Current Sink

SIL 2

KFD2-STC4-Ex2-Y1

- 2-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input 2-wire SMART transmitters
- Output 0/4 mA ... 20 mA current sink
- Terminal blocks with test sockets
- Up to SIL 2 acc. to IEC 61508

Input 0/4 mA ... 20 mA Output 0/4 mA ... 20 mA (current sink)



Function

This isolated barrier is used for intrinsic safety applications.
The device supplies 2-wire SMART transmitters in a hazardous area.
It transfers the analog input signal to the safe area as an isolated current value.
Digital signals may be superimposed on the input signal in the hazardous or safe area and are transferred bi-directionally.
It is designed to provide a sink mode output on the safe area terminals.
If the HART communication resistance in the loop is too low, the internal resistance of 250 Ω between terminals 8, 9 and 11, 12 can be used.
Test sockets for the connection of HART communicators are integrated into the terminals of the device.

Technical Data

General specifications

Signal type	Analog input
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Functional safety related parameters

Safety Integrity Level (SIL)	SIL 2
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Supply

Connection	Power Rail or terminals 14+, 15-
Rated voltage	U_r 20 ... 35 V DC
Ripple	within the supply tolerance
Power dissipation	1.9 W
Power consumption	max. 2.8 W

Input

Connection side	field side
Connection	terminals 1+, 3-; 4+, 6-
Input signal	0/4 ... 20 mA
Available voltage	≥ 16 V at 20 mA, terminals 1+, 3

Output

Connection side	control side
Connection	terminals 7+, 8-; 10+, 11-
Output signal	0/4 ... 20 mA (overload > 25 mA)
Ripple	max. 50 μA_{rms}
External supply (loop)	11 ... 30 V DC

Transfer characteristics

Deviation	at 20 °C (68 °F), 0/4 ... 20 mA $\leq 10 \mu A$ incl. calibration, linearity, hysteresis, loads and fluctuations of supply voltage
Influence of ambient temperature	0.25 $\mu A/K$

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

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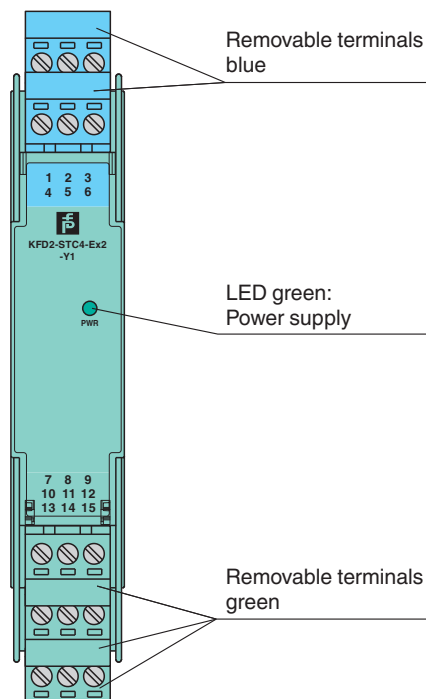
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Technical Data

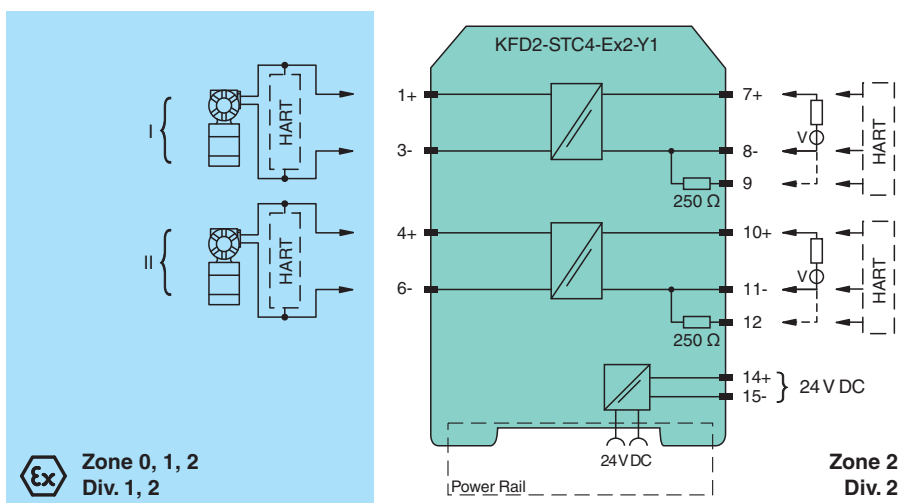
Frequency range		field side into the control side: band width with 1 V _{pp} signal 0 ... 7.5 kHz (-3 dB) safe area to hazardous area: band width with 1 V _{SS} signal 0.3 ... 7.5 kHz (-3 dB)
Settling time		200 µs
Rise time/fall time		20 µs
Galvanic isolation		
Output/power supply		functional insulation, rated insulation voltage 50 V AC
Output/Output		functional insulation, rated insulation voltage 50 V AC
Indicators/settings		
Display elements		LED
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 21:2011
Degree of protection		IEC 60529:2001
Protection against electrical shock		UL 61010-1:2012
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 200 g
Dimensions		20 x 124 x 115 mm (0.8 x 4.9 x 4.5 inch) , housing type B2
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 99 ATEX 7025 X
Marking		Ⓔ II (1)G [Ex ia Ga] IIC , Ⓔ II (1)D [Ex ia Da] IIIC , Ⓔ I (M1) [Ex ia Ma] I
Input		[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I
Voltage	U _o	25.2 V
Current	I _o	93 mA
Power	P _o	0.586 W
Supply		
Maximum safe voltage	U _m	250 V (Attention! The rated voltage can be lower.)
Certificate		TÜV 99 ATEX 1499 X
Marking		Ⓔ II 3G Ex nA II T4 [device in zone 2]
Galvanic isolation		
Input/Output		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Input/power supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010
International approvals		
UL approval		
Control drawing		116-0428 (cULus)
IECEx approval		
		IECEx BAS 04.0015X IECEx CML 15.0055X
Approved for		[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



Connection



Accessories

	KFD2-EB2	Power Feed Module
	UPR-03	Universal Power Rail with end caps and cover, 3 conductors, length: 2 m
	UPR-03-M	Universal Power Rail with end caps and cover, 3 conductors, length: 1,6 m
	UPR-03-S	Universal Power Rail with end caps and cover, 3 conductors, length: 0.8 m
	K-DUCT-BU	

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Accessories



K-DUCT-BU-UPR-03

Profile rail with UPR-03- * insert, 3 conductors, wiring comb field side blue

Application

The device supports the following SMART protocols:

- HART
- BRAIN
- Foxboro