

# SMART Transmitter Power Supply, Output Current Sink

## KFD2-STC4-Ex2-Y1

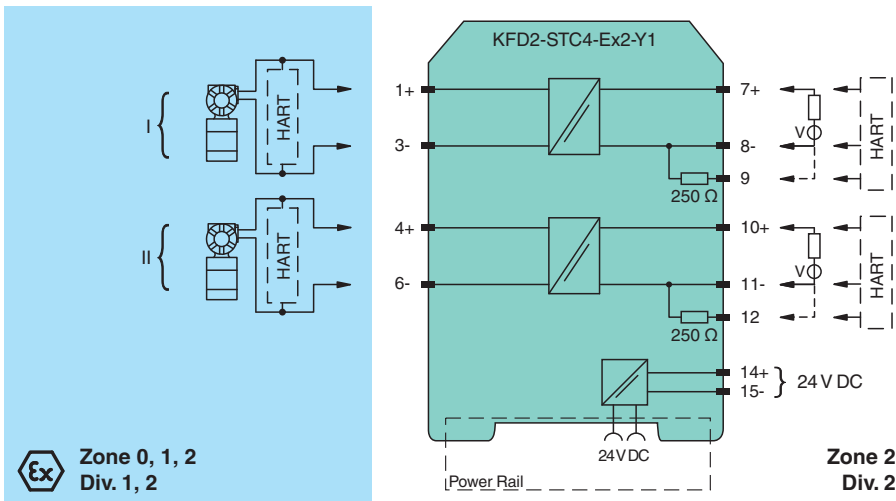
- 2-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input 2-wire SMART transmitters
- Output 0/4 mA ... 20 mA current sink
- Terminal blocks with test sockets
- Up to SIL 2 acc. to IEC/EN 61508



### 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.

### Connection



### Technical Data

General specifications	
Signal type	Analog input
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 2
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

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

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## Technical Data

<b>Input</b>	
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
<b>Output</b>	
Connection side	control side
Connection	terminals 7+, 8-; 10+, 11-
Output signal	0/4 ... 20 mA (overload > 25 mA)
Ripple	max. 50 $\mu\text{A}_{\text{rms}}$
External supply (loop)	11 ... 30 V DC
<b>Transfer characteristics</b>	
Deviation	at 20 °C (68 °F), 0/4 ... 20 mA ≤ 10 $\mu\text{A}$ incl. calibration, linearity, hysteresis, loads and fluctuations of supply voltage
Influence of ambient temperature	0.25 $\mu\text{A}/\text{K}$
Frequency range	field side into the control side: band width with 1 $V_{\text{pp}}$ signal 0 ... 7.5 kHz (-3 dB) safe area to hazardous area: band width with 1 $V_{\text{SS}}$ signal 0.3 ... 7.5 kHz (-3 dB)
Settling time	200 $\mu\text{s}$
Rise time/fall time	20 $\mu\text{s}$
<b>Galvanic isolation</b>	
Output/power supply	functional insulation, rated insulation voltage 50 V AC
Output/Output	functional insulation, rated insulation voltage 50 V AC
<b>Indicators/settings</b>	
Display elements	LED
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 21:2011
Degree of protection	IEC 60529:2001
Protection against electrical shock	UL 61010-1:2012
<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. 200 g
Dimensions	20 x 124 x 115 mm (0.8 x 4.9 x 4.5 inch) , (W x H x D) housing type B2
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 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
<b>Supply</b>	
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]
<b>Galvanic isolation</b>	
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

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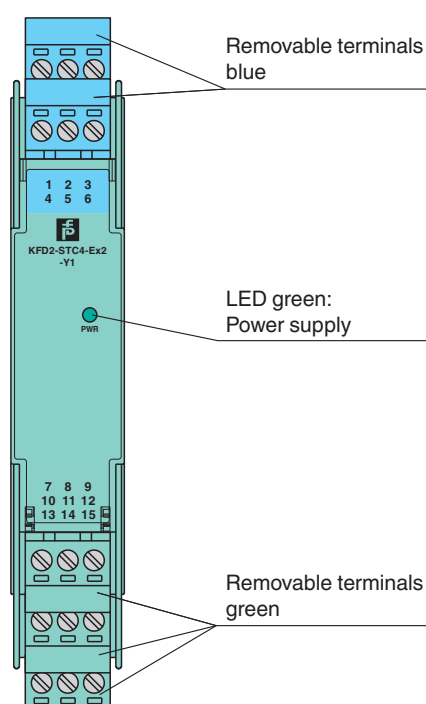
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## Technical Data






Directive conformity	
Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010
<b>International approvals</b>	
UL approval	
Control drawing	116-0428 (cULus)
IECEX approval	
IECEX certificate	IECEX BAS 04.0015X IECEX CML 15.0055X
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



## Matching System Components

	<b>KFD2-EB2</b>	Power Feed Module
	<b>UPR-03</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 2 m
	<b>UPR-03-M</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 1,6 m
	<b>UPR-03-S</b>	Universal Power Rail with end caps and cover, 3 conductors, length: 0.8 m
	<b>K-DUCT-BU</b>	Profile rail, wiring comb field side, blue

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



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## Matching System Components



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

## Accessories

	<b>KF-STP-5BU</b>	Terminal block for KF modules, 3-pin screw terminal, with test sockets, blue
	<b>KF-STP-5GN</b>	Terminal block for KF modules, 3-pin screw terminal, with test sockets, green
	<b>KF-ST-5GN</b>	Terminal block for KF modules, 3-pin screw terminal, green
	<b>KF-CP</b>	Red coding pins, packaging unit: 20 x 6

## Application

The device supports the following SMART protocols:

- HART
- BRAIN
- Foxboro