



**Output 4 mA ... 20 mA**

- 1-channel
  - Input EEx ia IIC;  $U_0 = 25.5\text{ V}$
  - 24 V DC nominal supply voltage
  - SMART capable up to 12 kHz (-1 dB)
  - EMC acc. to NAMUR NE 21
- Successor KFD2-STC4-Ex1

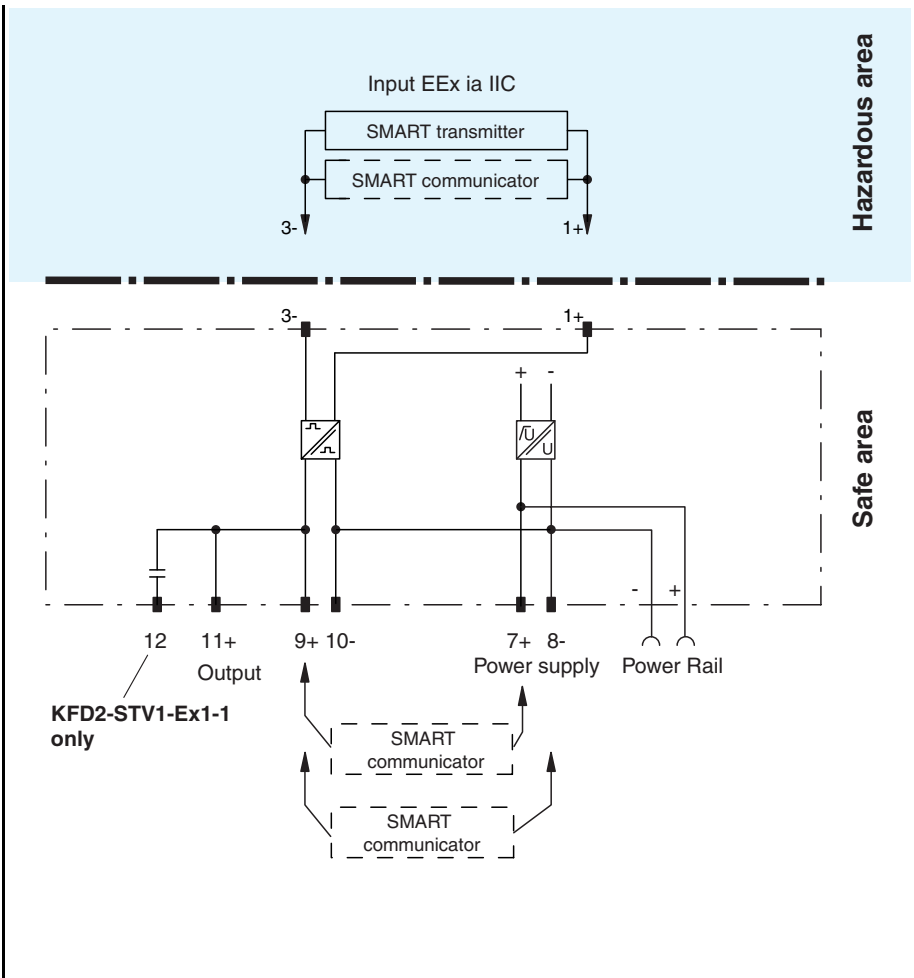
**Function**

SMART transmitter power supplies provide SMART transmitters with power in hazardous areas and transfer the 4 mA ... 20 mA analogue values to output terminals 9+ and 10-. The output signal for the KFD2-STC1-Ex1 is 4 mA ... 20 mA and the KFD2-STV1-Ex1-1 delivers 1 V ... 5 V. Digital signals may be superimposed on the analogue values in the hazardous or safe area, which may be transferred bidirectionally. Handheld terminals should be connected as shown in the block diagram. A series circuit, i. e. for the Bailey STT01, is also possible. SMART transmitter power supplies are delivered standard with terminals KF-STP-BU and KF-STP-GN. Jacks are integrated in these terminals for the connection of the handheld units.

**Application**

- The supply of power to SMART transmitters and the transfer of the measurement current to the output
- suited for the following SMART systems:
 

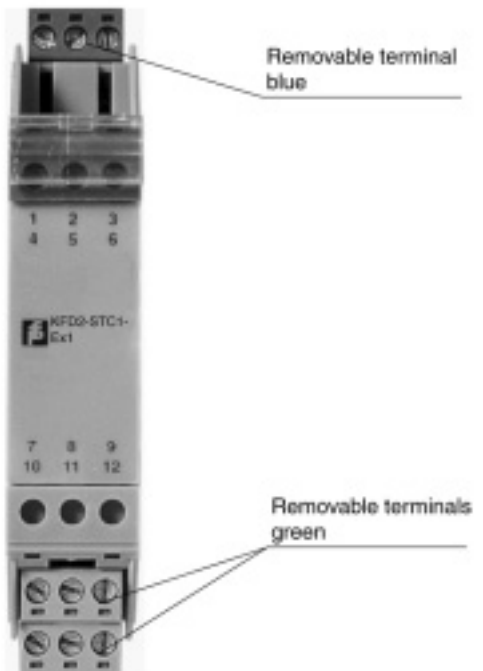
ABB	Chessel
Eckhardt-Foxboro	Endress+Hauser
Emerson	Fuji
Honeywell	Smar
Yokogawa	Siemens




**Composition**

Front View

Housing type A4  
(see system description)



<b>Supply</b>			
Connection	Power Rail or terminals 7+, 8-		
Rated voltage	20 ... 35 V DC		
Ripple	within the supply tolerance		
Power loss	0,8 W		
Power consumption	≤ 1,2 W		
<b>Input</b>			
Connection	terminals 1+, 3-		
Input signal	4 ... 20 mA		
Available voltage	at 20 mA: approx. 16,5 V at 200 Ohm output load dependent on output load: $U = 19.65 - (16.5 \times 10^{-3} \times R_B)$ ; with $R_B =$ output load in Ohm		
<b>Output</b>			
Connection	terminals 8-, 9+, 10-, 11+		
Output signal	4 ... 20 mA , max. load 500 Ohm, with HART ≥ 230 Ohm		
Ripple	≤ 75 $\mu$ A <sub>SS</sub>		
<b>Transfer characteristics</b>			
Deviation	≤ 10 $\mu$ A incl. calibration, linearity, hysteresis, loads and fluctuations of supply voltage		
Temperature	≤ 20 p.p.m / K		
Frequency range	hazardous area to safe area: bandwidth with 1 mA <sub>SS</sub> signal 0 ... 40 kHz (-1 dB); 0 ... 100 kHz (-6 dB) safe area to hazardous area: bandwidth with 1 V <sub>SS</sub> -signal 0 ... 40 kHz (-1 dB); 0 ... 100 kHz (-6 dB)		
Rise time	40 $\mu$ s		
De-energised delay	40 $\mu$ s		
<b>Electrical isolation</b>			
Output/Power supply	not isolated		
<b>Standard conformity</b>			
Climatic conditions	acc. to DIN IEC 721		
<b>Directive conformity</b>			
Electromagnetic compatibility	standards		
Directive 89/336/EG	EN 61326, EN 50081-2, NE 21		
<b>Ambient conditions</b>			
Ambient temperature	-20 ... 60 °C (253 ... 333 K)		
<b>Mechanical specifications</b>			
Protection degree	IP20		
Mass	approx. 150 g		
<b>Data for application in conjunction with hazardous areas</b>			
EC-Type Examination Certificate	BAS 00 ATEX 7127 , for additional certificates see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a>		
Group, category, type of protection	 II (1) G D [Ex ia] IIC (T <sub>amb</sub> = -20 °C to +60 °C) [circuit(s) in zone 0/1/2]		
Input	EEx ia IIC		
Voltage U <sub>0</sub>	25,5 V DC		
Current I <sub>0</sub>	93 mA		
Power P <sub>0</sub>	586 mW		
Type of protection [EEx ia]			
Explosion group	IIA	IIB	IIC
External capacitance	2,87 $\mu$ F	0,79 $\mu$ F	0,082 $\mu$ F
External inductance	35 mH	17 mH	4,3 mH
<b>Supply</b>			
Safety maximum voltage U <sub>m</sub>	250 V (Attention! The rated voltage can be lower)		
<b>Electrical isolation</b>			
Input/Output	safe electrical isolation acc. to EN 50020, voltage peak value 375 V		
Input/Power supply	safe electrical isolation acc. to EN 50020, voltage peak value 375 V		
Directive conformity	standards		
Directive 94/9 EU	EN 50014, EN 50020		
<b>Entity parameter</b>			
Certification number	4Z6A5.AX		
FM control drawing	No. 116-0129		
Suitable for installation in division 2	yes		
Connection	terminals 1, 3		
<b>Input I</b>			
Voltage V <sub>OC</sub>	28 V		
Current I <sub>t</sub>	93 mA		
Explosion group	A&B	C&E	D, F&G
Max. external capacitance C <sub>a</sub>	0,14 $\mu$ F	0,43 $\mu$ F	1,14 $\mu$ F

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Max. external inductance $L_a$	4,18 mH	16,83 mH	34,21 mH
<b>Safety parameter</b>			
UL control drawing	E 106378		
CSA control drawing	LR 65756-13		
Control drawing	No. 116-0132		
Connection	terminals 1, 3		
Input I			
Safety parameter	28 V / 300 Ohm		
Voltage $V_{OC}$	28 V		
Current $I_{SC}$	93 mA		
Explosion group	A&B	C&E	D, F&G
Max. external capacitance $C_a$	0,14 $\mu$ F	0,42 $\mu$ F	1,14 $\mu$ F
Max. external inductance $L_a$	3,1 mH	16,7 mH	34 mH

## Notes

Terminal 12 is placed across an internally applied capacitance.  
Active input cards such as Foxboro FMB 18, can be operated with this.

## Supplementary information

EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed.  
This information can be found under [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

## Accessories

### PR-03 Power Rail

### UPR-03 Power Rail

### KFD2-EB2 power feed module

The devices are supplied with 24 V DC through the KFD2-EB2 power feed module and the PR-03 or the UPR-03 Power Rail. Each power feed module monitors and provides protection for groups of as many as 100 individual devices. The PR-03 Power Rail is an insert component for the DIN rail. The UPR-03 Power Rail is a complete unit consisting of an electrical insert and an aluminium DIN rail measuring 35 mm x 15 mm x 2000 mm. The devices are simply snapped in place to make electrical contact.

If a Power Rail is not being used, power can be supplied to the devices directly through the device terminals.