Input 0/4 mA ... 20 mA
Output 0/4 mA ... 20 mA

- 1-channel
- Device installation permissible in zone 2
- Input EEx ia IIC; U_0 = 25.4 V
- Galvanically isolated output
- 24 V DC nominal supply voltage
- SMART-compatible up to 7.5 kHz (-3 dB)
- EMC acc. to NAMUR NE 21

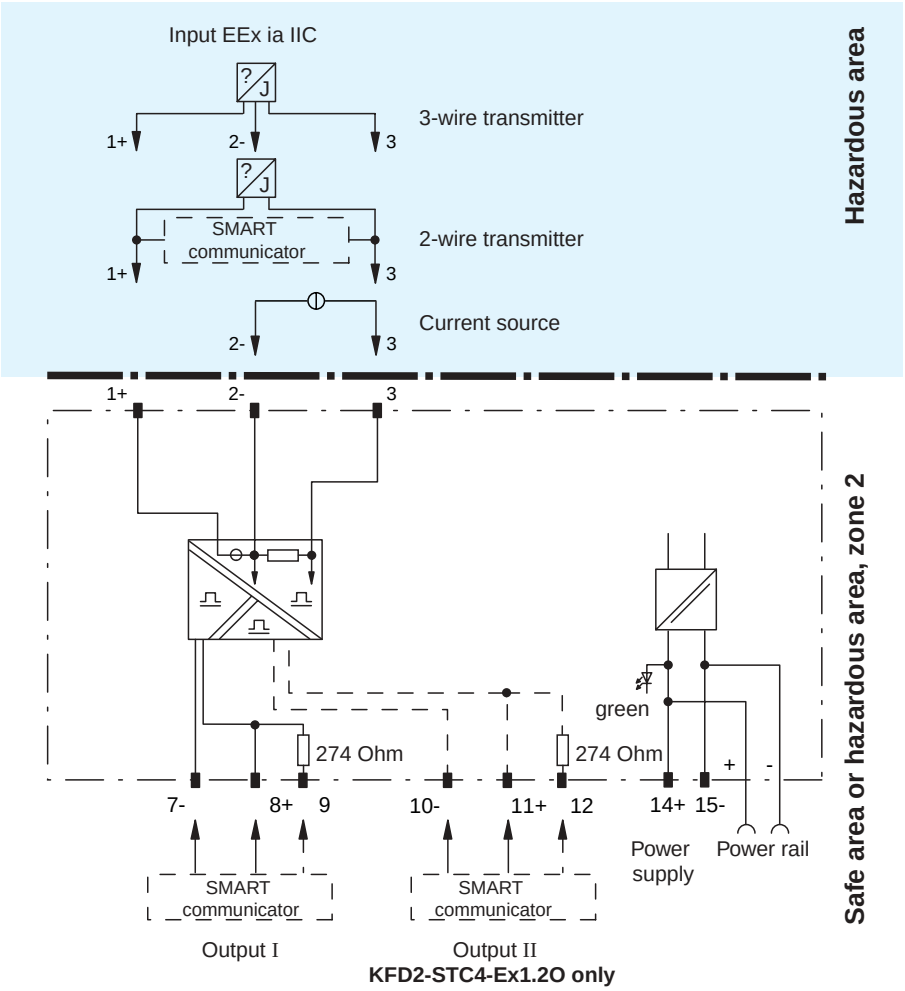
Function

SMART transmitter power supplies provide 2 or 3 wire SMART transmitters with power in hazardous areas and transfer the analog values from the hazardous to the safe area. 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 diagramm.
In case of a too low loop resistance, an internal resistance of approx. 274 Ohm between terminals 8 (11) and 9 (12) is available, which can be used as HART resistor.
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 the SMART transmitters and the transfer of the measurement current to the output
- for the transfer of a current source to the safe area
- suited for the following SMART systems:

ABB	Endress+Hauser
Fisher-Rosemount	Fuji
Smar	Yokogawa

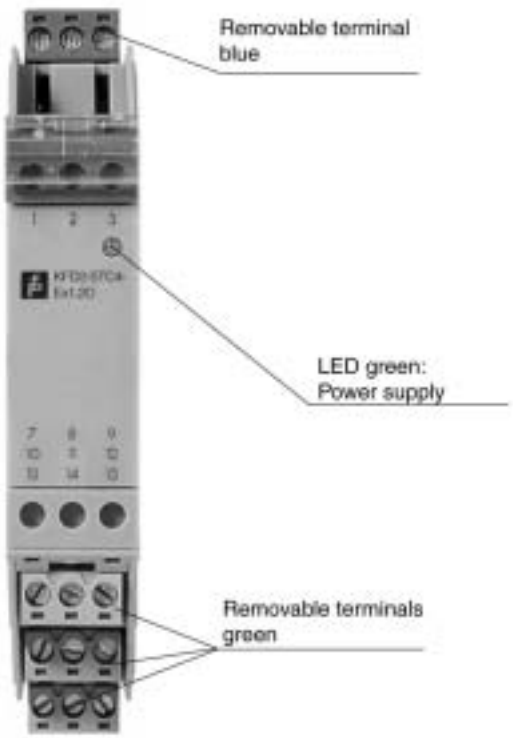


KFD2-STC4-Ex1.2O only

Construction

Front View

Housing type C
(see system description)



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Power supply			
Connection type	Power Rail or terminals 14+, 15-		
Rated operational voltage	20 ... 35 V DC		
Safety maximum voltage U_m	250 V		
Ripple	within the supply tolerance		
Power loss	1.6 W		
Power consumption	2.5 W		
Input (intrinsically safe)			
Connection type	terminals 1, 2, 3		
Input signal	0 ... 20 mA		
Available voltage	≥ 16 V at 20 mA terminals 1+, 3		
Input resistance	≤ 76 Ohm terminals 2-, 3		
Details of certificate of conformity			
Certification number	BAS 99 ATEX 7060 ; for additional certifications refer to the approval list		
Group, category, ignition protection method	⟨Ex⟩ II (1) G [EEx ia] IIC (-20°C ≤ T_{amb} ≤ 60°C)		
Apparatus	terminals 1+, 3-		
Voltage U_i	30 V		
Voltage U_o	25.4 V		
Current I_i	115 mA		
Current I_o	86.8 mA		
Power P_0	551 mW		
Internal capacitance C_i	12 nF		
Internal inductance L_i	0		
Permissible connection values [EEx ia]			
Explosion group	IIA	IIB	IIC
External capacitance	2.808 µF	0.798 µF	0.093 µF
External inductance	22 mH	11 mH	2.7 mH
Apparatus	terminals 2-, 3		
Voltage U_o	3.5 V		
Current I_o / Current I_i	74 mA / 115 mA		
Power P_0	64 mW		
Permissible connection values [EEx ia]			
Explosion group	IIA	IIB	IIC
External capacitance	< 100 µF	< 100 µF	< 100 µF
External inductance	50 mH	25 mH	6.4 mH
Apparatus	terminals 1+, 3 / 2-		
Voltage U_o	25.4 V		
Current I_o	115 mA		
Power P_0	584 mW		
Permissible connection values [EEx ia]			
Explosion group	IIA	IIB	IIC
External capacitance	2.808 µF	0.798 µF	0.093 µF
External inductance	22 mH	11 mH	2.7 mH
Approved for zone 2	TÜV 99 ATEX 1499 X (observe conformity statement) ⟨Ex⟩ II 3 G EEx n A II T4		
Output (not intrinsically safe)			
Connection type	terminals 7-, 8+; 10-, 11+		
Safety maximum voltage U_m	250 V		
Output signal	0/4 ... 20 mA; load 0 ... 550 Ohm		
Ripple	≤ 50 µA $_{rms}$		
Transfer characteristics			
Deviation	at 20 °C / 4 ... 20 mA ≤ 20 µA incl. calibration, linearity, hysteresis, loads and fluctuations of supply voltage		
Temperature	≤ 20 ppm / K		
Frequency range	hazardous area into the safe area: band width with 0.5 V_{SS} -signal 0 ... 7.5 kHz (-3 dB) Safe area into the hazardous area: Band width with 0.5 V_{SS} -Signal 0.3 ... 7.5 kHz (-3 dB)		
Galvanic isolation			
Input/Output	safe galvanic isolation acc. to EN 50020, voltage peak value 375 V		
Input/Power supply	safe galvanic isolation acc. to EN 50020, voltage peak value 375 V		
Output/Power supply	Basic insulation according to DIN EN 50178, design isolation voltage of AC 50 V		
Ambient conditions			
Ambient temperature	-20 ... 60 °C (253 ... 333 K)		

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Standard conformity	
Explosion protection	accord. to EN 50014 / EN 50020
Input	in accordance with IEC 60947-5-6 (NAMUR, DIN 19234); see system description for electrical data
Coordination of insulation	accord. to DIN EN 50178
Galvanic isolation	accord. to DIN EN 50178
Climatic conditions	accord. to DIN IEC 721
Electromagnetic compatibility	accord. to EN 50081-2 / EN 50082-2, NAMUR NE 21
Mechanical specifications	
Mass	approx. 100 g

Accessories:

Power Rail PR 02
Power Rail UPR 02
Power feed module KFD2-EB2
The devices are supplied with 24 V DC due to the power feed module KFD2-EB2 and via the Power Rail PR 02 or UPR 02.
Each power feed module serves the fusing and monitoring of groups with up to 100 single devices. The PR 02 Power Rail is an inset component for the DIN rail. The UPR 02 Power Rail is a complete unit consisting of the electrical insert and an aluminum 35 x 15 x 2000 mm DIN rail. Devices are simply snapped onto it for an electrical connection.
Without the use of a Power Rail, the power supply to the device is directly through the device terminals.

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