

Features

- 1-channel
- Galvanically isolated input EEx ia IIC
- Galvanically isolated output
- Suitable for HART communication
- Output as current source, current sink or voltage source
- EMC acc. to NAMUR NE 21
- Up to SIL2 acc. to IEC 61508

Function

To the SMART transmitter power supply 2-wire HART transmitter and HART current sources can be connected.

HART signals may be superimposed on the analogue 4 mA ... 20 mA value, which will be transferred between input and output bidirectionally.

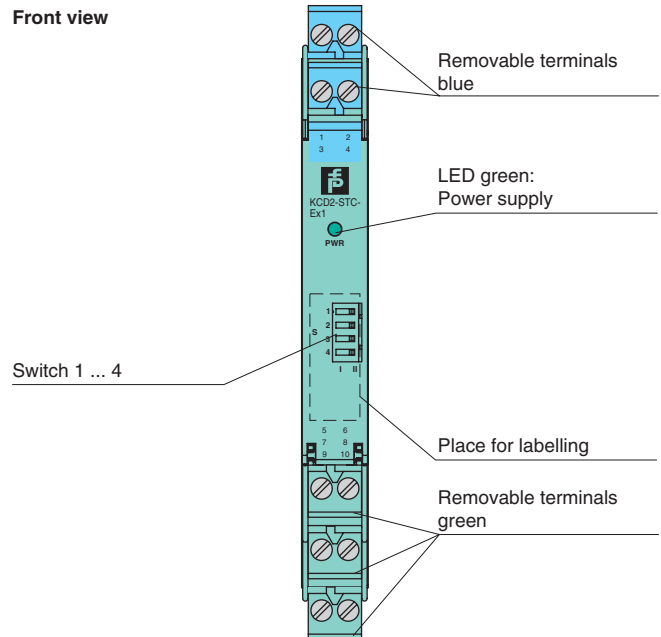
The HART communicators should be connected as shown in the block diagram. In the connection terminals of the device sockets for the connection of the HART communicator are integrated.

The output operating mode can be selected as current source, current sink or voltage source by switches on front panel.

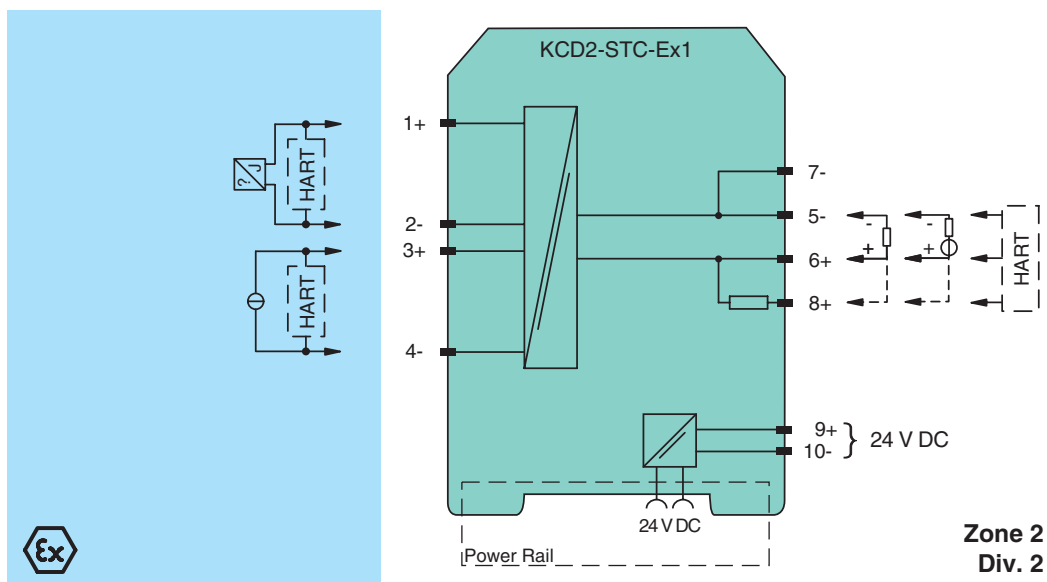
Application

- Power supply for HART transmitters and transfer of the measurement signal to the output
- Transfer of a current source to the safe area

Composition



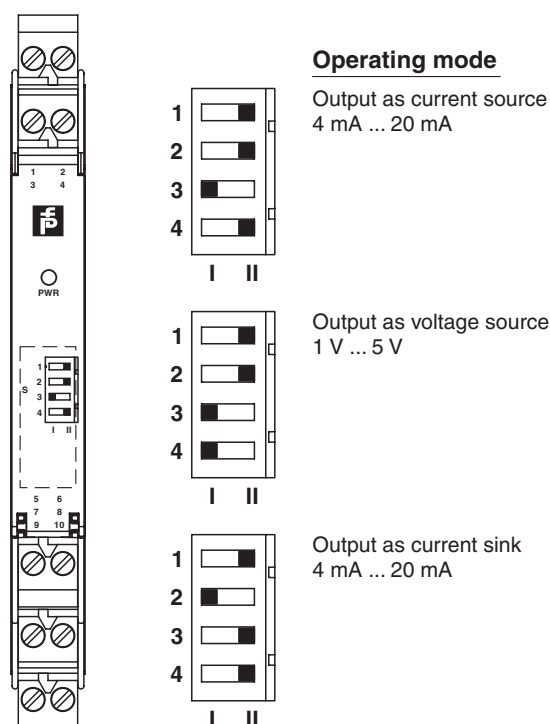
Connection



Supply	
Connection	Power Rail or terminals 9+, 10-
Rated voltage	19 ... 30 V DC
Ripple	≤ 10 %
Rated current	≤ 45 mA
Power loss	≤ 800 mW
Power consumption	≤ 1.1 W
Input	
Connection	terminals 1+, 2-; 3+, 4-
Input signal	4 ... 20 mA limited to approx. 30 mA
Voltage drop U_d	approx. 5 V on terminals 3+, 4-
Available voltage	≥ 15 V at 20 mA terminals 1+, 2-
Output	
Connection	terminals 5-, 6+
Load	0 ... 300 Ω (source mode)
Output signal	4 ... 20 mA or 1 ... 5 V (on 250 Ω, 0.1 % internal shunt) 4 ... 20 mA (sink mode), operating voltage 15.5 ... 26 V
Ripple	20 mV _{rms}
Transfer characteristics	
Deviation	at 20 °C (293 K) ≤ ± 0.1 % incl. non-linearity and hysteresis (source mode 4 ... 20 mA) ≤ ± 0.2 % incl. non-linearity and hysteresis (sink mode 4 ... 20 mA) ≤ ± 0.2 % incl. non-linearity and hysteresis (source mode 1 ... 5 V)
Influence of ambient temperature	< 2 µA/°C (0 ... +60 °C); < 4 µA/°C (-20 ... 0 °C) (source mode 4 ... 20 mA) < 4 µA/°C (0 ... +60 °C); < 8 µA/°C (-20 ... 0 °C) (sink mode 4 ... 20 mA) < 1 mV/°C (0 ... +60 °C); < 2 mV/°C (-20 ... 0 °C) (source mode 1 ... 5 V)
Frequency range	hazardous area into the safe area: bandwidth with 0.5 V _{pp} -signal 0 ... 3 kHz (-3 dB) safe area into the hazardous area: bandwidth with 0.5 V _{pp} -signal 0 ... 3 kHz (-3 dB)
Rise time	10 to 90 % ≤ 20 ms
Electrical isolation	
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
Output/power supply	reinforced insulation acc. to IEC 61140, rated insulation voltage 300 V _{eff}
Indicators/settings	
LED PWR	green
DIP-switch	selection of operating mode: current source, current sink or voltage source
Factory setting	output: current source
Labelling	place for labelling on the front side
Directive conformity	
Electromagnetic compatibility	
Directive 89/336/EC	EN 61326, NE 21
Conformity	
Electromagnetic compatibility	NE 21
Protection degree	EN 60529
Ambient conditions	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Mechanical specifications	
Protection degree	IP20
Mass	approx. 100 g
Dimensions	12.5 x 114 x 122 mm (0.5 x 4.5 x 4.8 in) , housing type A2
Data for application in conjunction with hazardous areas	
EC-Type Examination Certificate	CESI 06 ATEX 021 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	Ⓔ II (1)GD [EEEx ia] IIC, [Ex ia D] [circuit(s) in zone 0/1/2/20/21/22]
Input	Ex ia IIC, Ex iaD
Supply	
Safety maximum voltage U_m	253 V AC (Attention! U_m is no rated voltage.)
Equipment	terminals 1+, 2-
Voltage U_o	25.2 V
Current I_o	100 mA
Power P_o	630 mW
Internal capacitance C_i	5.7 nF
Internal inductance L_i	negligible
Equipment	terminals 3+, 4-
Voltage U_i	< 30 V
Current I_i	< 128 mA

Voltage	U _o	7.2 V
Current	I _o	100 mA
Power	P _o	25 mW
Internal capacitance	C _i	5.7 nF
Internal inductance	L _i	negligible
Statement of conformity	Pepperl+Fuchs	
Group, category, type of protection, temperature classification	Ⓔ II 3G Ex nA II T4 X	
Directive conformity		
Directive 94/9 EC	EN 50014, EN 50020, pr EN 61241-11, EN 50284, EN 60079-15	
General information		
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com .	

Configuration



Factory settings: output as current source 4 mA ... 20 mA

Accessories

Power feed modules KFD2-EB2...

The power feed module is used to supply the devices with 24 V DC via the Power Rail. The fuse-protected power feed module can supply up to 100 individual devices depending on the power consumption of the devices. A galvanically isolated mechanical contact uses the Power Rail to transmit collective error messages.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical inset and an aluminium profile rail 35 mm x 15 mm. To make electrical contact, the devices are simply engaged.

The Power Rail must not be fed via the device terminals of the individual devices!