

**Features**

- 1-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input for 2-wire SMART transmitters and current sources
- Signal splitter (1 input and 2 outputs)
- Dual output 0/4 mA ... 20 mA or 0/1 V ... 5 V
- Terminal blocks with test sockets
- Up to SIL 2 acc. to IEC 61508

**Function**

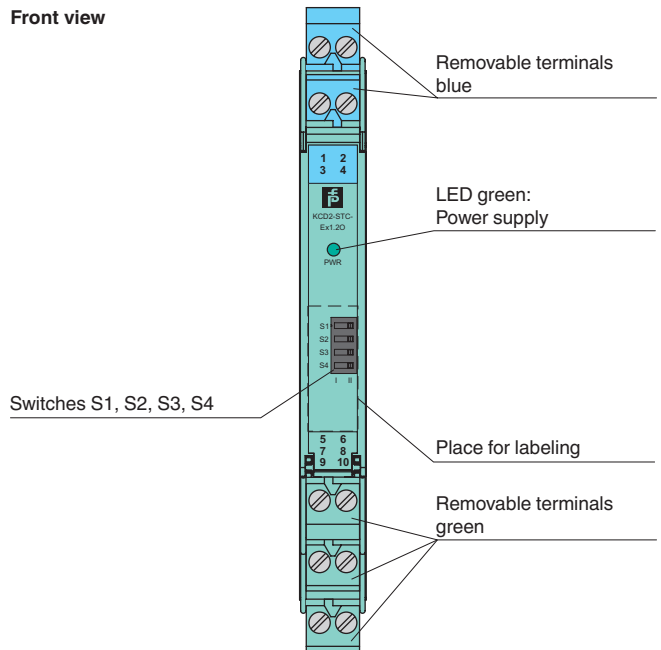
This isolated barrier is used for intrinsic safety applications. The device supplies 2-wire transmitters in the hazardous area, and can also be used with current sources. It transfers the analog input signal to the safe area as two isolated output signals. Bi-directional communication is supported for SMART transmitters that use current modulation to transmit data and voltage modulation to receive data. The output is selected as a current source, current sink, or voltage source via switches. Test sockets for the connection of HART communicators are integrated into the terminals of the device.

**Application**

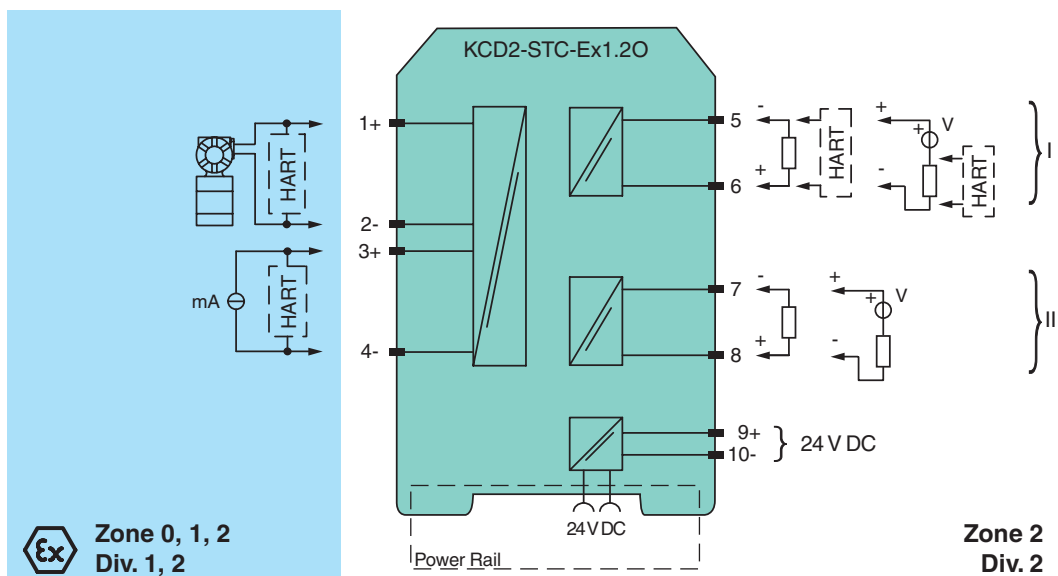
The device supports the following SMART protocols:

- HART
- BRAIN

**Assembly**



**Connection**



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


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

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
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|  |  |
|--|--|
| <b>General specifications</b>                                  |  |
| Signal type  | Analog input   |
| <b>Functional safety related parameters</b>                    |  |
| Safety Integrity Level (SIL)                                   | SIL 2  |
| <b>Supply</b>  |  |
| Connection   | Power Rail or terminals 9+, 10-  |
| Rated voltage $U_r$  | 18 ... 30 V DC   |
| Ripple   | within the supply tolerance  |
| Power dissipation  | approx. 1.4 W at 20 mA transfer current, 250 $\Omega$ in both outputs  |
| Power consumption  | 2 W  |
| <b>Input</b>   |  |
| Connection side  | field side   |
| Connection   | terminals 1+, 2- (sink); 3+, 4- (source)   |
| Input signal   | 0/4 ... 20 mA  |
| Voltage drop   | terminals 3, 4: $\leq 6.1$ V at 20 mA  |
| Short-circuit current  | terminals 1+, 2-: 25 mA  |
| Input resistance   | terminals 1+, 2-: $\leq 500 \Omega$<br>(250 $\Omega$ load)   |
| Available voltage  | terminals 1+, 2-: $\geq 16$ V at 20 mA , $\geq 18.5$ V at 4 mA   |
| <b>Output</b>  |  |
| Connection side  | control side   |
| Connection   | source: terminals 5-, 6+; 7-, 8+<br>sink: terminals 5+, 6-, 7+, 8-   |
| Load   | channel 1: 0 ... 500 $\Omega$ (20 mA)/ $> 1$ M $\Omega$ (5 V)<br>channel 2: 0 ... 500 $\Omega$ (20 mA)/ $> 1$ M $\Omega$ (5 V)   |
| Output signal  | 0/4 ... 20 mA or 0/1 ... 5 V   |
| Ripple   | $\leq 50 \mu\text{A}_{\text{rms}}$   |
| <b>Transfer characteristics</b>                                |  |
| Deviation  | $I_{\text{out}} < 20 \mu\text{A}$ (0.1 %); $V_{\text{out}} < 10$ mV (0.2 %) incl. calibration, linearity, hysteresis and fluctuation of supply voltage, at 20 °C (68 °F), 0/4 ... 20 mA, 0/1 ... 5 V   |
| Influence of ambient temperature                               | current output: 0.25 $\mu\text{A/K}$<br>voltage output: 80 $\mu\text{V/K}$   |
| Frequency range  | field side into the control side: bandwidth with 0.5 $V_{\text{pp}}$ signal 0 ... 6 kHz (-3 dB)<br>control side into the field side: bandwidth with 0.5 $V_{\text{pp}}$ signal 0.3 ... 6 kHz (-3 dB)   |
| Settling time  | 6 ms   |
| Rise time/fall time  | 2 ms   |
| <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  |
| Control elements   | DIP-switch   |
| Configuration  | via DIP switches   |
| 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 21:2012<br>EN 61326-3-2:2008  |
| 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. 100 g  |
| Dimensions   | 12.5 x 114 x 122 mm (0.5 x 4.5 x 4.8 inch) , housing type A2   |
| 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                                | BASEEFA 13 ATEX 0077 X   |
| Marking  |  II (1)G [Ex ia Ga] IIC<br> II (1)D [Ex ia Da] IIIC<br> I (M1) [Ex ia Ma] I |

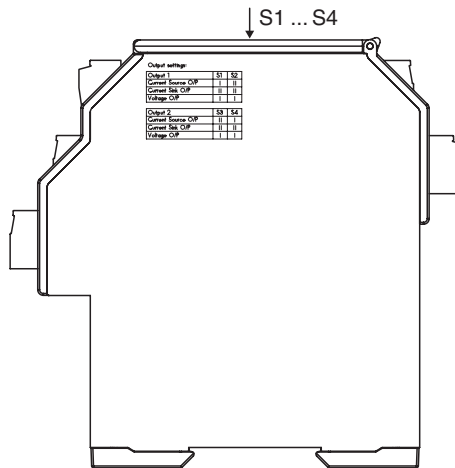
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

|                                |       |   |
|--------------------------------|-------|---|
| Input                          |       | [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I   |
| Supply                         |       |   |
| Maximum safe voltage           | $U_m$ | 250 V (Attention! The rated voltage can be lower.)  |
| Equipment                      |       | terminals 1+, 2-  |
| Voltage                        | $U_o$ | 25.2 V  |
| Voltage                        | $U_q$ | 28.2 V  |
| Current                        | $I_o$ | 93 mA   |
| Power                          | $P_o$ | 656 mW  |
| Equipment                      |       | terminals 3+, 4-  |
| Voltage                        | $U_i$ | 30 V  |
| Current                        | $I_i$ | 115 mA  |
| Power                          | $P_i$ | 700 mW  |
| Voltage                        | $U_o$ | 5 V   |
| Current                        | $I_o$ | 6.8 mA  |
| Power                          | $P_o$ | 1.6 mW  |
| Output                         |       |   |
| Maximum safe voltage           | $U_m$ | 250 V (Attention! The rated voltage can be lower.)  |
| Certificate                    |       | BASEEFA 13 ATEX 0078 X  |
| Marking                        |       |  II 3G Ex nA II T4 Gc [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  |
| <b>International approvals</b> |       |   |
| UL approval                    |       |   |
| Control drawing                |       | 116-0380 (cULus)  |
| IECEX approval                 |       | IECEX BAS 13.0043X  |
| Approved for                   |       | [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I   |
| <b>General information</b>     |       |   |
| Note                           |       | Both output loads must be connected to ensure complete and correct operation within the technical specification.  |
| 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> . |
| <b>Accessories</b>             |       |   |
| Optional accessories           |       | - power feed module KFD2-EB2(.R4A.B)(.SP)<br>- universal power rail UPR-03(-M)(-S)<br>- profile rail K-DUCT-BU(-UPR-03)   |

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**Configuration**



**Output switch settings**

| Output 1              | S1 | S2 |
|-----------------------|----|----|
| Current source output | I  | II |
| Current sink output   | II | II |
| Voltage output        | I  | I  |
| Not valid             | II | I  |

| Output 2              | S3 | S4 |
|-----------------------|----|----|
| Current source output | II | I  |
| Current sink output   | II | II |
| Voltage output        | I  | I  |
| Not valid             | I  | II |

Factory settings: current source output, for both channels.