

**Features**

- 1-channel isolated barrier
- 24 V DC supply (loop powered)
- Current input/output 4 mA ... 20 mA
- HART I/P or transmitter power supply
- Low voltage drop
- Line fault detection (LFD)
- Up to SIL 2 acc. to IEC 61508

**Function**

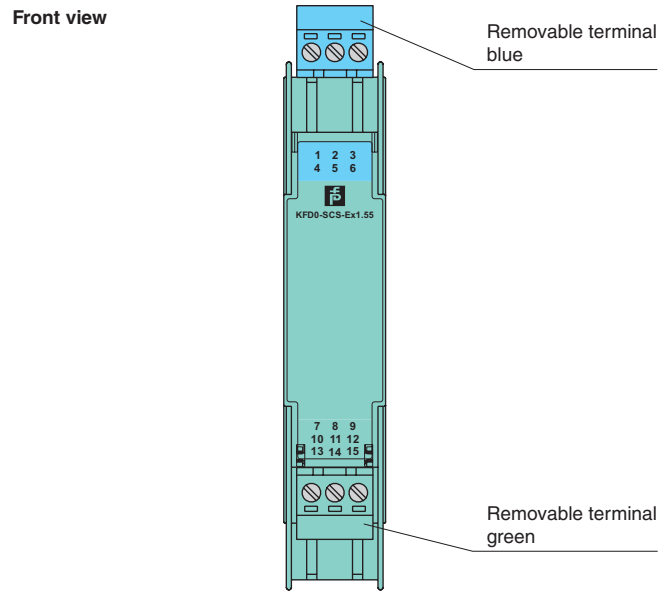
This isolated barrier is used for intrinsic safety applications. It is loop powered and isolates a 4 mA ... 20 mA signal for transmitters and positioners and is HART compatible.

With a noticeably lower power loss compared to active isolator modules, the barriers 5 V drop makes it suitable for transmitter applications with unstable power sources between 20 V DC ... 30 V DC.

Line fault detection of the field circuit is possible if the control loop in the safe area is monitored for overscale or underscale conditions of the 4 mA ... 20 mA range.

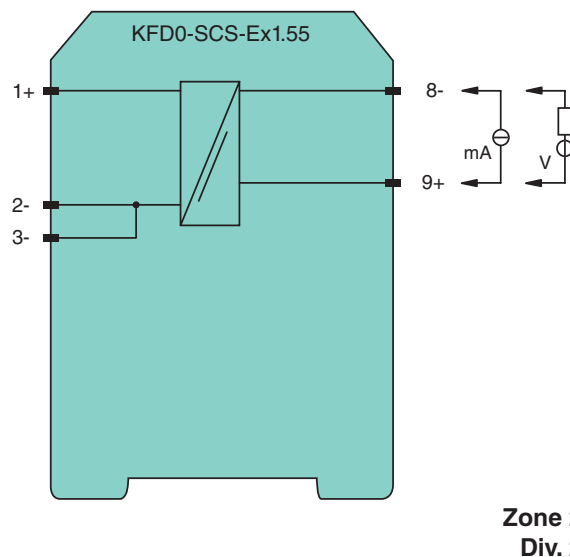
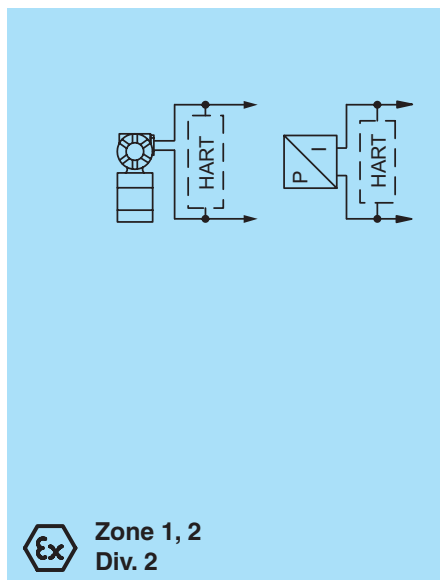
The module can also be used for controlling solenoid valves and discrete outputs, such as LEDs. In this case, terminals 8- and 9+ are driven with a 24 V signal.

**Assembly**





**SIL 2**

**Connection**



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|  |       |  |
|--|-------|--|
| <b>General specifications</b>                                  |       |  |
| Signal type  |       | Analog input/analog output   |
| <b>Functional safety related parameters</b>                    |       |  |
| Safety Integrity Level (SIL)                                   |       | SIL 2  |
| <b>Supply</b>  |       |  |
| Rated voltage  | $U_r$ | loop powered   |
| Power dissipation  |       | 0.2 W  |
| <b>Control circuit</b>   |       |  |
| Connection   |       | terminals 8-, 9+   |
| Voltage  |       | $\leq 30$ V DC   |
| Current  |       | 4 ... 20 mA (quiescent current $< 0.5$ mA)   |
| Power dissipation  |       | 150 mW at 20 mA and $U_{in} < 24$ V  |
| <b>Field circuit</b>   |       |  |
| Connection   |       | terminals 1+, 2 / 3-   |
| Voltage  |       | $\geq 16$ V for supply voltage $> 21$ V  |
| Current  |       | 4 ... 20 mA (linear transmission 1 ... 22 mA)  |
| Load   |       | $\leq 800 \Omega$ (at 20 mA)   |
| <b>Transfer characteristics</b>                                |       |  |
| Voltage drop   |       | see note   |
| Deviation  |       |  |
| After calibration  |       | $\leq \pm 80 \mu\text{A}$ linearity, load and voltage dependence at 20 °C (68 °F)  |
| Influence of ambient temperature                               |       | $< 0.5 \mu\text{A/K}$  |
| Damping  |       | approx. 3 dB   |
| Rise time  |       | $\leq 20 \mu\text{s}$ at 0 $\Omega$ , $\leq 600 \mu\text{s}$ with 800 $\Omega$ load  |
| <b>Galvanic isolation</b>                                      |       |  |
| Input/Output   |       | safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V  |
| <b>Indicators/settings</b>                                     |       |  |
| 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 21:2007   |
| Degree of protection   |       | IEC 60529:2001   |
| <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. 120 g  |
| Dimensions   |       | 20 x 124 x 115 mm (0.8 x 4.9 x 4.5 inch) , 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                                |       | PTB 02 ATEX 2064   |
| Marking  |       |  II (2)G [Ex ib] IIC                      |
| Voltage  | $U_o$ | 23.1 V DC  |
| Current  | $I_o$ | 28 mA  |
| Power  | $P_o$ | 0.647 W  |
| <b>Supply</b>  |       |  |
| Maximum safe voltage   | $U_m$ | 253 V (Attention! The rated voltage can be lower.)   |
| Certificate  |       | PF 11 CERT 0902 X  |
| Marking  |       |  II 3G Ex nA IIC T4 Gc                    |
| <b>Galvanic isolation</b>                                      |       |  |
| Input/Output   |       | safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V  |
| <b>Directive conformity</b>                                    |       |  |
| Directive 2014/34/EU   |       | EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010   |
| <b>International approvals</b>                                 |       |  |
| FM approval  |       | device with FM approval on request   |
| <b>General information</b>                                     |       |  |
| Supplementary information                                      |       | Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see |

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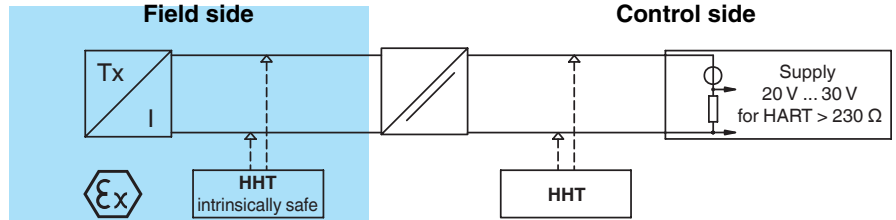
**Additional information**

In addition, the voltage drop across the resistance (load) of the active measurement input must be considered when calculating the field voltage (terminals 1+ and 2-).

Lead breakage monitoring is possible by means of the reaction of the field current signal to the control side, which means the control system must monitor whether the 4 mA ... 20 mA range was exceeded or fallen short of.

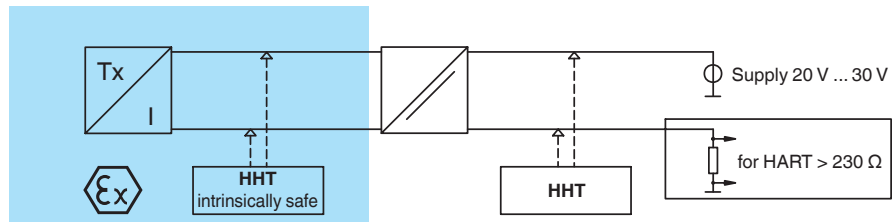
SMART repeater supply isolator for **active** interfaces  
Transmitters with or without HART

Voltage drop in case of 20 mA:  
max. 5 V



SMART repeater for **passive** interfaces  
Transmitters with or without HART

Voltage drop in case of 20 mA:  
max. 5 V



Current driver for positioners, I/P converters  
Positioners with or without HART

Voltage drop in case of 20 mA:  
5 V, 500 Ω ... 800 Ω load  
6 V, 250 Ω load  
8 V, 50 Ω load

