

Features

- 2-channel isolated barrier
- 24 V DC supply (bus powered)
- 2-, 3-, and 4-wire RTDs or potentiometer
- Linearized output 4 mA ... 20 mA
- Sensor breakage detection
- Simple span and zero selection

Function

This isolated barrier is used for intrinsic safety applications. It is a temperature converter that accepts inputs from resistance temperature detectors (RTD) or potentiometers from a hazardous area and converts them to an isolated analog current signal in the safe area.

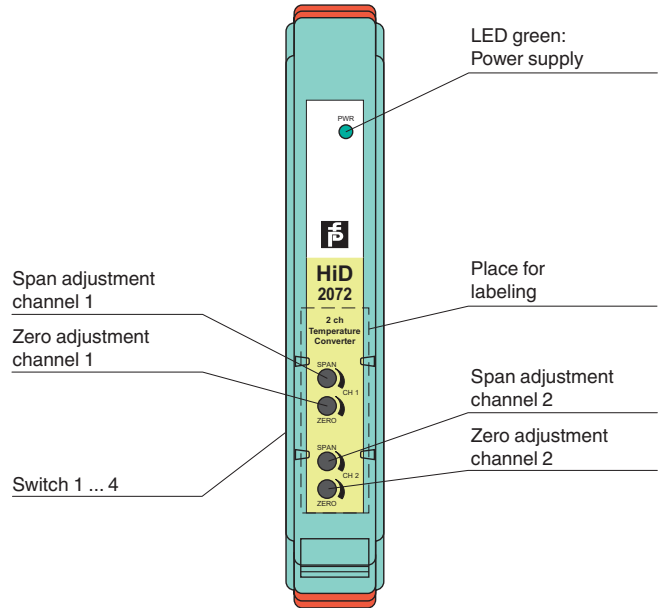
Input type, range, and error handling parameters are configurable by DIP switches and potentiometers.

The outputs are isolated from the inputs and are referenced to the power supply common.

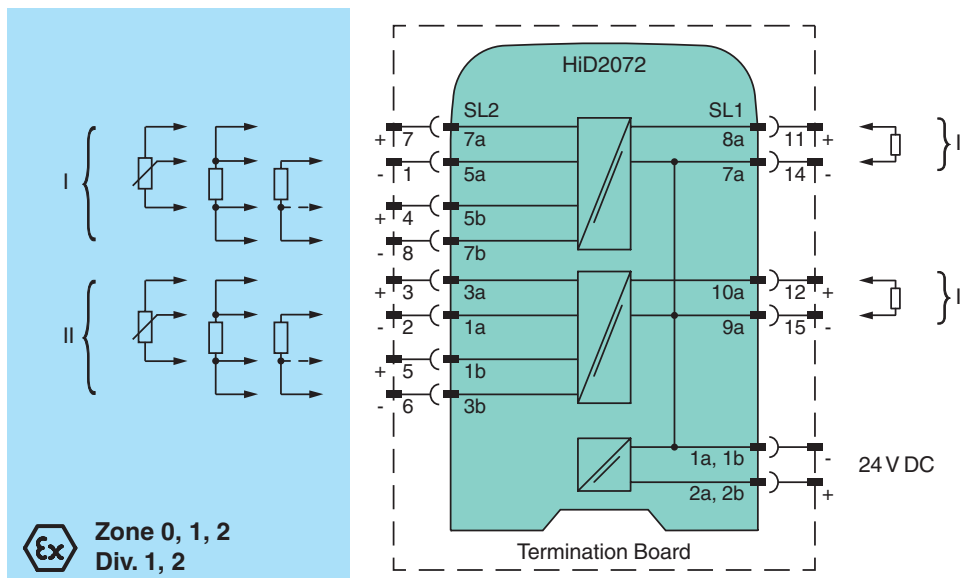
This module mounts on a HiD Termination Board.

Assembly

Front view



Connection



Release date 2017-08-09 14:50 Date of issue 2017-08-10 12:1445_eng.xml



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

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| | | |
|--|-------|---|
| General specifications | | |
| Signal type | | Analog input |
| Supply | | |
| Connection | | SL1: 1a(-), 1b(-); 2a(+), 2b(+) |
| Rated voltage | U_r | 20.4 ... 30 V DC bus powered via Termination Board |
| Rated current | I_r | 30 mA at 24 V, 20 mA output (per channel) |
| Power dissipation | | 0.6 W at 24 V (per channel) |
| Input | | |
| Connection side | | field side |
| Connection | | SL2: 7a(+), 5a(-), 5b(+), 7b(-); 3a(+), 1a(-), 1b(+), 3b(-) |
| RTD | | 2-, 3- or 4-wire Pt100 acc. to DIN 43760 |
| Measuring current | | max. 0.4 mA |
| Measurement range | | -200 ... 850 °C (-328 ... 1562 °F) |
| Span limits | | 40 ... 850 °C (104 ... 1562 °F) |
| Zero suppression | | ± 500 % of span |
| Potentiometer | | 3-wire |
| Measurement range | | 100 ... 300 Ω or 0.3 ... 100 kΩ with external shunt |
| Line fault detection | | sensor burnout, upscale or downscale (selectable) (not on potentiometer and 4-wire RTD) |
| Output | | |
| Connection side | | control side |
| Connection | | SL1: 8a(+), 7a(-); 10a(+), 9a(-) |
| Load | | 0 ... 650 Ω |
| Output signal | | 4 ... 20 mA or 1 ... 5 V (on 250 Ω, 0.1 % internal shunt) Output signal is linear with temperature for Pt100. |
| Ripple | | 10 mV _{rms} (at load 250 Ω) |
| Transfer characteristics | | |
| Accuracy | | < ± 0.1 % of full-scale value (current output) |
| Influence of temperature | | < ± 0.01 %/K on zero and span |
| Influence of load | | < ± 0.1 % of full-scale value from 0 ... 650 Ω |
| Rise time/fall time | | typ. 150 ms |
| Linearity | | < ± 0.1 % of full-scale value (terminal based °C or °F input to mA out for Pt100) |
| Galvanic isolation | | |
| Output/power supply | | none |
| Indicators/settings | | |
| Display elements | | LED |
| Control elements | | DIP-switch potentiometer |
| Configuration | | via DIP switches via potentiometer |
| Labeling | | space for labeling at the front |
| Directive conformity | | |
| Electromagnetic compatibility | | |
| Directive 2014/30/EU | | EN 61326-1:2013 (industrial locations) |
| Conformity | | |
| Electromagnetic compatibility | | NE 21:2006 For further information see system description. |
| Degree of protection | | IEC 60529 |
| Ambient conditions | | |
| Ambient temperature | | -20 ... 60 °C (-4 ... 140 °F) |
| Relative humidity | | 5 ... 90 %, non-condensing up to 35 °C (95 °F) |
| Mechanical specifications | | |
| Degree of protection | | IP20 |
| Mass | | approx. 140 g |
| Dimensions | | 18 x 106 x 128 mm (0.7 x 4.2 x 5 inch) |
| Mounting | | on Termination Board |
| Coding | | pin 1 and 2 trimmed For further information see system description. |
| Data for application in connection with hazardous areas | | |
| EU-Type Examination Certificate | | CESI 02 ATEX 086 |
| Marking | |  II (1)G [Ex ia Ga] IIC  II (1)D [Ex ia Da] IIIC |
| Input | | Ex ia, Ex iaD |
| Voltage | U_o | 13.2 V |
| Current | I_o | 20 mA |
| Power | P_o | 66 mW |

Release date 2017-08-09 14:50 Date of issue 2017-08-10 12:1445_eng.xml

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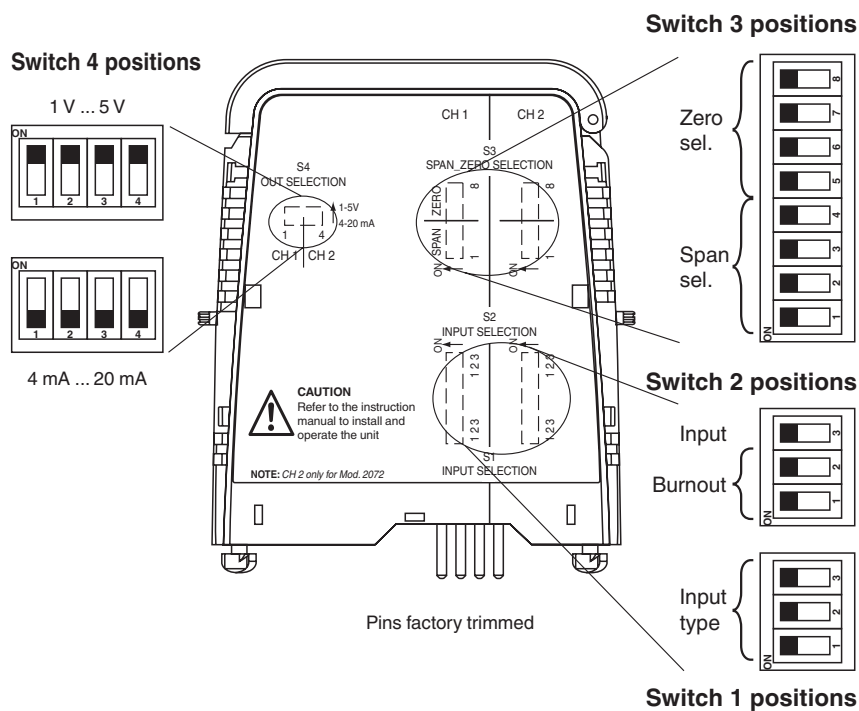
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| | | |
|--------------------------------|-------|---|
| Supply | | |
| Maximum safe voltage | U_m | 250 V AC (Attention! U_m is no rated voltage.) |
| Certificate | | PF 11 CERT 2109 X |
| Marking | | II 3G Ex nA IIC T4 Gc [device in zone 2] |
| Galvanic isolation | | |
| Input/input | | safe electrical isolation acc. to EN 60079-11:2007, voltage peak value 60 V |
| Input/Output | | safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 375 V |
| Input/power supply | | safe electrical isolation acc. to EN 60079-11: 2007, 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 |
| International approvals | | |
| CSA approval | | |
| Control drawing | | 366-005CS-12B (cCSAus) |
| IECEX approval | | |
| Approved for | | [Ex ia] IIC |
| General information | | |
| Supplementary information | | Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com . |

Configuration



The inputs can be configured as:

- RTD (2-, 3- or 4-wire) or POT
- Input zero and span value
- Burnout detection upscale (UP) or downscale (DOWN) (only for 2-, 3-wire)



For information for input range setting and the tables with the values for zero and span of the thermocouples refer to operating instructions.

The outputs can be configured as:

- Current output 4 mA ... 20 mA
- Voltage output 1 V ... 5 V

| Input | S1-1 | S1-2 | S1-3 | S2-3 |
|---------|------|------|------|------|
| RTD 2 W | ON | ON | ON | ON |
| RTD 3 W | ON | ON | ON | ON |
| RTD 4 W | ON | OFF | OFF | ON |
| POT | OFF | OFF | OFF | OFF |

| Burnout | S2-1 | S2-2 |
|-----------|------|------|
| UP | ON | OFF |
| DOWN | OFF | ON |
| POT Input | OFF | OFF |

| Output | CH 1 | | CH 2 (only for HiD2072) | |
|----------------|------|------|----------------------------|------|
| | S4-1 | S4-2 | S4-3 | S4-4 |
| 4 mA ... 20 mA | OFF | OFF | OFF | OFF |
| 1 V ... 5 V | ON | ON | ON | ON |

Release date 2017-08-09 14:50 Date of issue 2017-08-10 121445_eng.xml



Channel 2 only for HiD2072.

Configure the device in the following way:

- Push the red Quick Lok Bars on each side of the device in the upper position.
- Remove the device from Termination Board.
- Set the DIP switches according to the figure.



*The pins for this device are trimmed to polarize it according to its safety parameter. Do not change!
For further information see system description.*