

Features

- 2-channel isolated barrier
- 24 V DC supply (bus powered)
- Thermocouple or mV inputs
- 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 thermocouple or mV input signals 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.

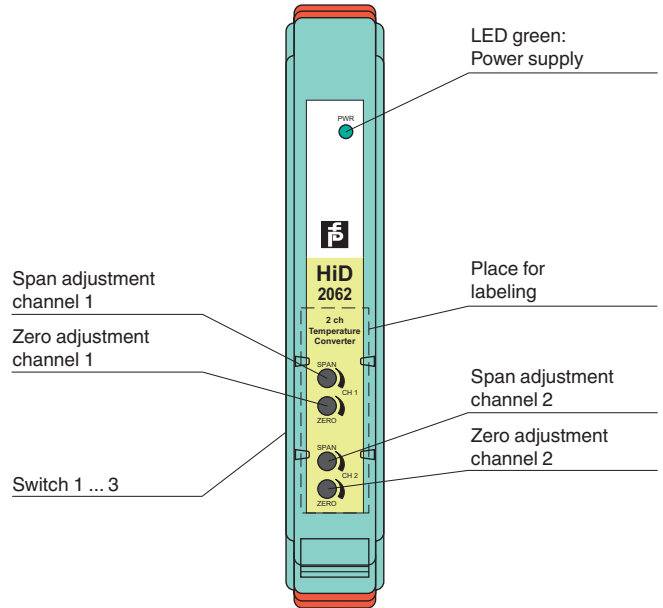
Each module is supplied with a cold junction compensator (CJC), which is mounted on the screw terminals of the Termination Board.

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

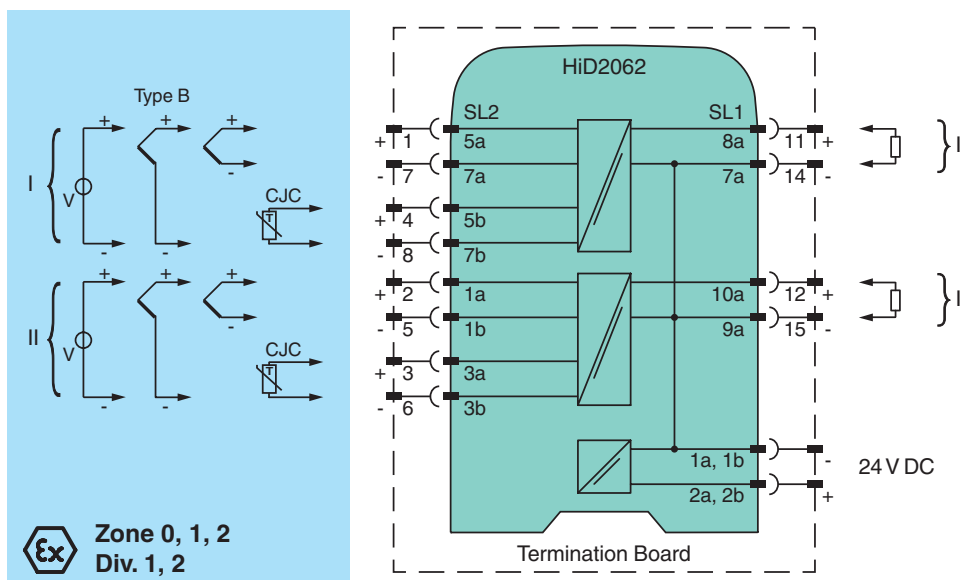
This module mounts on a HiD Termination Board.

Assembly

Front view



Connection



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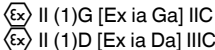
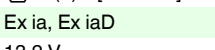
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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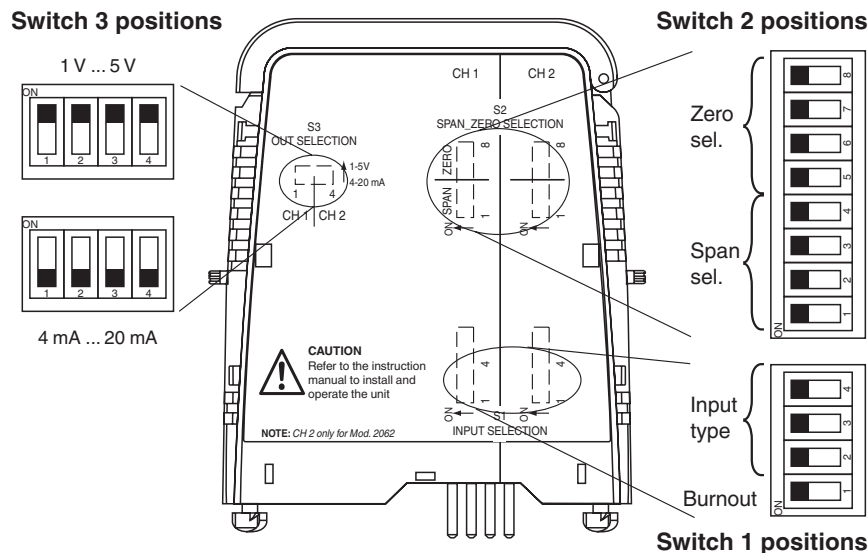
General specifications		
Signal type		Analog input
Supply		
Connection		SL1: 1a(-), 1b(-); 2a(+), 2b(+)
Rated voltage	U_r	20.4 ... 30 V DC bus powered via Termination Board
Rated current	I_r	30 mA at 24 V, 20 mA output (per channel)
Power dissipation		0.6 W at 24 V (per channel)
Input		
Connection side		field side
Connection		SL2: 5a(+), 7a(-); 1a(+), 1b(-): thermocouples type E, J, K, N, R, S, T 5a(+), 7b(-); 1a(+), 3b(-): thermocouple type B and mV input 5b(+), 7b(-); 3a(+), 3b(-): cold junction compensation (CJC)
Thermocouples		type B, E, J, K, N, R, S, T (IEC 584-1), type L (GOST)
Cold junction compensation		at field terminals
Measurement range		-10 ... 100 mV
Span		2.6 ... 100 mV
Zero suppression		± 500 % of span
Line fault detection		sensor burnout 25 nA, upscale or downscale (selectable)
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)
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 mV input to mA output of thermocouples)
Compensation error		± 0.5 K ± 0.05 K deviation from reference of 20 °C (68 °F)
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		 
Input		Ex ia, Ex iaD
Voltage	U_o	13.2 V
Current	I_o	20 mA

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

Power	P _O	66 mW
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		IECEX TUN 04.0012
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:

- Thermocouple (type B, E, J, K, N, R, S, T, L) or mV
- Input zero and span value
- Burnout detection upscale (UP) or downscale (DOWN)



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

Input	S1-2	S1-3	S1-4
mV	OFF	OFF	OFF
TC "B"	OFF	OFF	OFF
TC "E"	OFF	ON	ON
TC "J"	OFF	OFF	ON
TC "K"	OFF	ON	OFF
TC "N"	ON	OFF	OFF
TC "R"	OFF	OFF	OFF
TC "S"	OFF	OFF	OFF
TC "T"	OFF	ON	OFF
TC "L"	ON	ON	ON

Burnout	S1-1
UP	OFF
DOWN	ON

The outputs can be configured as:

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

Output	CH 1		CH 2 (only for HiD2062)	
	S3-1	S3-2	S3-3	S3-4
4 mA ... 20 mA	OFF	OFF	OFF	OFF
1 V ... 5 V	ON	ON	ON	ON

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Channel 2 only for HiD2062.

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.*