

Features

- 2-channel isolated barrier
- 24 V DC supply (bus powered)
- Current and voltage input
- Analog current and voltage output
- Sink and source mode outputs
- SMART pass-through

Function

This isolated barrier is used for intrinsic safety applications. It accepts current or voltage input signals from a hazardous area and converts them to a proportional, analog value in the safe area.

The outputs can be selected as current source, current sink, or voltage source.

The passive current input configuration supports a pass through for SMART communication signals.

This unit has field programmable zero/span trimmers and input/output configuration by means of DIP switches. This feature allows simple field reconfiguration.

This module mounts on a HiD Termination Board.

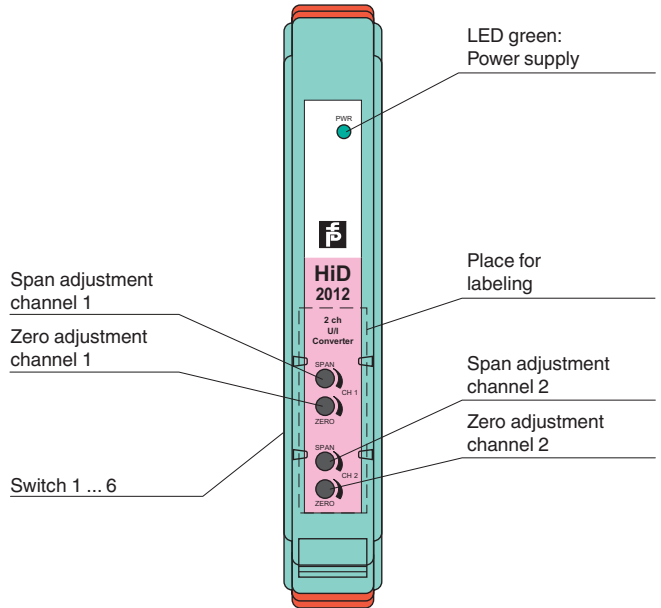
Application

The device supports the following SMART protocols:

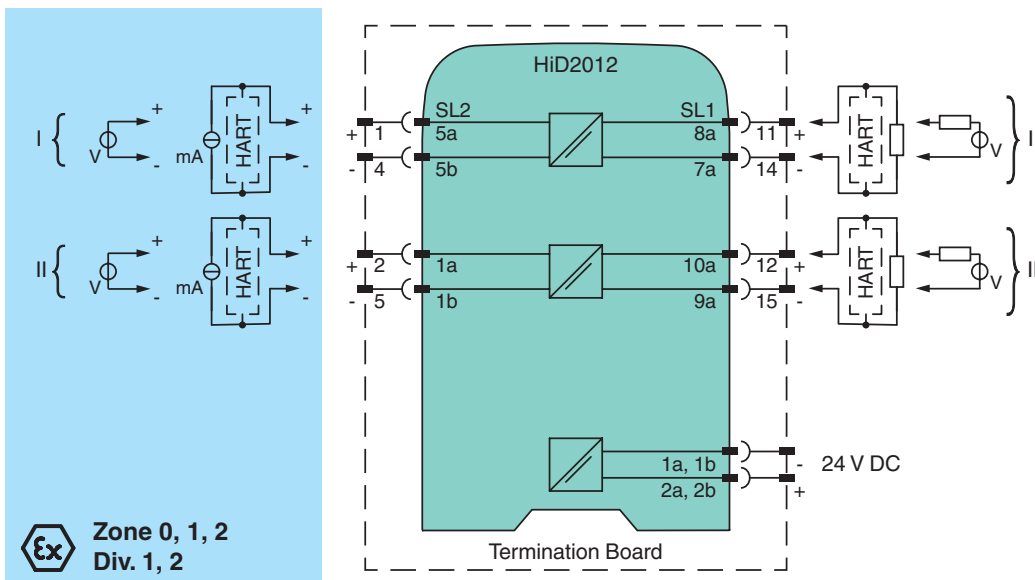
- HART
- BRAIN
- Bailey (only STT02 communication, e. g. BCN series)
- Foxboro

Assembly

Front view



Connection



**Zone 0, 1, 2
Div. 1, 2**

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

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

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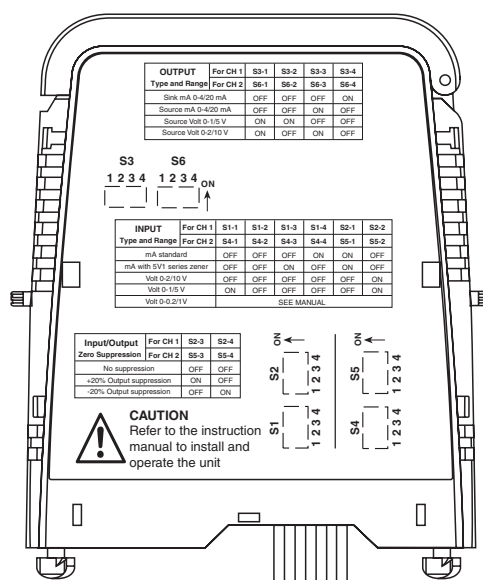
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General specifications		
Signal type		Analog input
Supply		
Connection		SL1: 1a(-), 1b(-); 2a(+), 2b(+)
Rated voltage	U_r	20.4 ... 30 V DC bus powered via Termination Board
Rated current	I_r	25 mA at 24 V (per channel)
Power dissipation		typ. 0.5 W (per channel)
Input		
Connection side		field side
Connection		SL2: 5a(+), 5b(-); 1a(+), 1b(-)
Input current		0/4 ... 20 mA
Current range		0/4 ... 20 mA , with field selectable DC offset suppression
Voltage range		0/0.2 ... 1 V 0/1 ... 5 V 0/2 ... 10 V
Impedance		current input: 50 Ω (overcurrent protected) with field selectable 5 V level shift voltage input: 100 k Ω / U_{in}
Output		
Connection side		control side
Connection		SL1: 8a(+), 7a(-); 10a(+), 9a(-)
Current range		0/4 ... 20 mA , (source or sink mode)
Voltage range		0 ... 5 V/1 ... 5 V (on 250 Ω internal shunt) 0 ... 10 V/2 ... 10 V (on 500 Ω internal shunt)
Ripple		≤ 15 mV _{rms}
Operating range		3 ... 30 V , sink mode
Output compliance		13 V (load 650 Ω at 20 mA) , source mode
Transfer characteristics		
Accuracy		0.1 % of full-scale value (current output)
Influence of temperature		$< \pm 0.01$ %/K of full-scale value
Frequency range		communication channel: 0.5 ... 40 kHz within 3 db, (-6 db at 100 kHz), Tx to output and output to Tx, suitable for use with SMART transmitters using HART or similar protocol , not available with voltage input
Linearity		$< \pm 0.1$ % of full-scale value
Galvanic isolation		
Output/power supply		functional insulation acc. to DIN EN 50178, rated insulation voltage 50 V _{eff}
Output/Output		functional insulation acc. to DIN EN 50178, rated insulation voltage 50 V _{eff}
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 2004/108/EC		EN 61326-1:2006
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, 2 and 3 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	1.7 V
Current	I_o	45 mA

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Current	I_i	< 130 mA
Power	P_o	20 mW
Power	P_i	< 666 mW
Supply		
Maximum safe voltage	U_m	250 V AC (Attention! U_m is no rated voltage.)
Type of protection [EEEx ia]		
Certificate		PF 11 CERT 2109 X , observe statement of conformity
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 94/9/EC		EN 60079-0:2009, EN 60079-11:2007, EN60079-15:2005 , EN 60079-26:2007 , EN 61241-11:2006
International approvals		
CSA approval		
Control drawing		366-022CS-12B (cCSAus)
General information		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .

Configuration



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.