

Features

- 1-channel isolated barrier
- 24 V DC supply (bus powered)
- 2-wire SMART transmitter
- Output for 4 mA ... 20 mA or 1 V ... 5 V
- Low power dissipation
- Up to SIL 2 acc. to IEC 61508

Function

This isolated barrier is used for intrinsic safety applications. It provides 2-wire SMART transmitters with power in the hazardous area, and repeats the current to drive a safe area load.

Bi-directional communication is supported for SMART transmitters that use current modulation to transmit data and voltage modulation to receive data.

The output is isolated from the input and are referenced to the power supply common.

This module mounts on a HiD Termination Board.

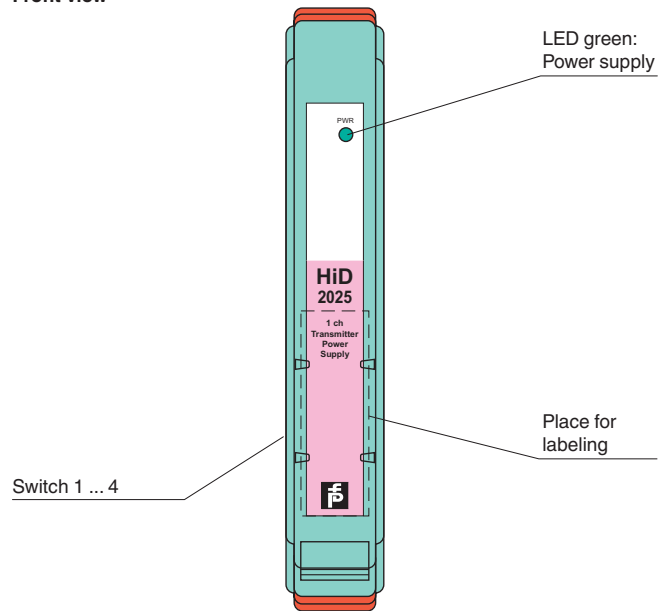
Application

The device supports the following SMART protocols:

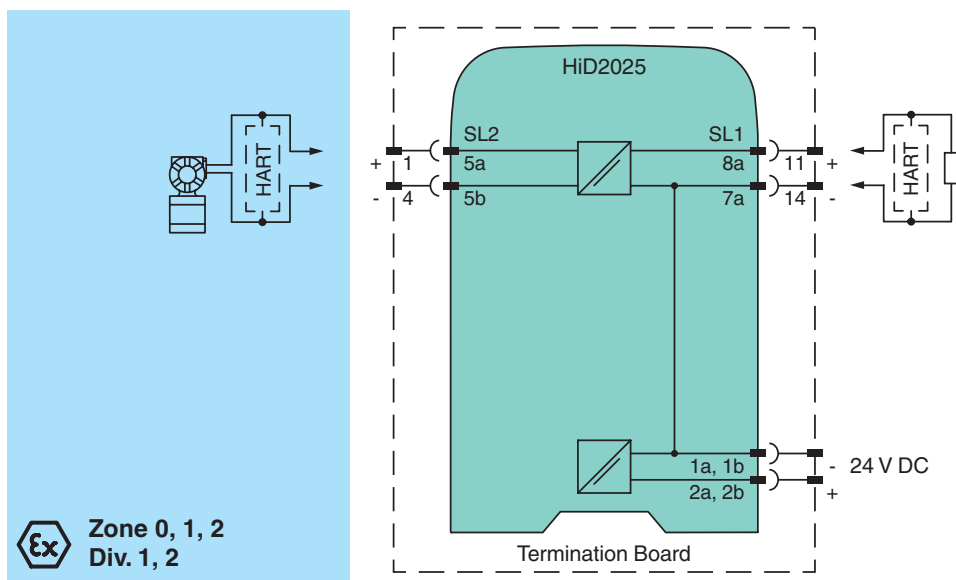
- HART
- BRAIN
- Bailey (only STT02 communication, e. g. BCN series)
- Foxboro

Assembly

Front view




Connection



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

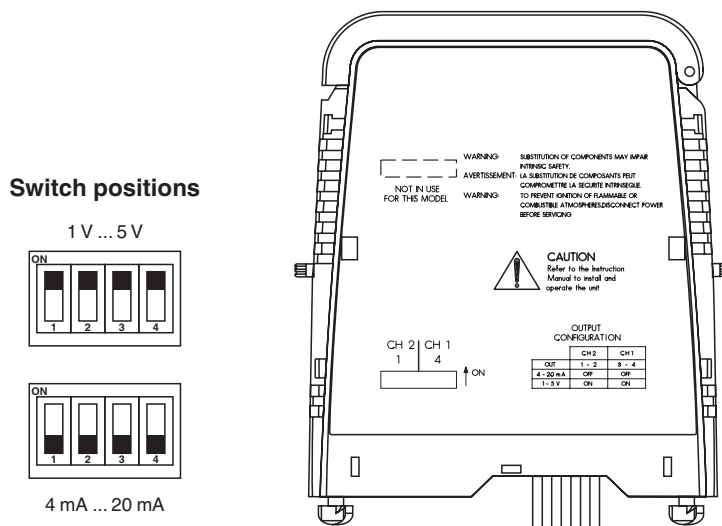
General specifications		
Signal type		Analog input
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 2
Supply		
Connection		SL1: 1a(-), 1b(-); 2a(+), 2b(+)
Rated voltage	U_r	20.4 ... 30 V DC bus powered via Termination Board
Rated current	I_r	50 mA at 24 V, 20 mA output
Power dissipation		0.8 W at 24 V
Input		
Connection side		field side
Connection		SL2: 5a(+), 5b(-)
Input current		4 ... 20 mA , current limit 26 mA typ.
Ripple		10 mV _{eff}
Voltage		min. 15.5 V at 20 mA
Output		
Connection side		control side
Connection		SL1: 8a(+), 7a(-)
Load		0 ... 650 Ω
Output signal		4 ... 20 mA or 1 ... 5 V (on 250 Ω, 0.1 % internal shunt)
Ripple		10 mV _{eff} on a load of 250 Ω
Response time		40 ms , 10 ... 90 % step change
Transfer characteristics		
Calibrated accuracy		< ± 0.1 % of full-scale value (current output)
Influence of temperature		< 2 μA/K (0 ... 60 °C (32 ... 140 °F)); < 4 μA/K (-20 ... 0 °C (-4 ... 32 °F)) 0.01 %/ K
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
Influence of load		< 0.1 % of full-scale value from 0 ... 650 Ω
Linearity		< ± 0.1 % of full-scale value
Galvanic isolation		
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
Output/power supply		none
Indicators/settings		
Display elements		LED
Control elements		DIP-switch
Configuration		via DIP switches
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 60529:2001
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 3 trimmed For further information see system description.
Data for application in connection with hazardous areas		
EU-Type Examination Certificate		CESI 10 ATEX 025
Marking		 II (1)GD [Ex ia] IIC, [Ex iaD] [circuit(s) in zone 0/1/2/20/21/22]
Input		Ex ia, Ex iaD
Voltage	U_o	26 V
Current	I_o	93 mA
Power	P_o	605 mW
Supply		
Maximum safe voltage	U_m	253 V AC (Attention! U_m is no rated voltage.)

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

Certificate	PF 10 CERT 1609 X
Marking	II 3G Ex nA IIC T4 Gc
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 CES 10.0011
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 outputs can be configured as:

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

Output	CH 1		CH 2 (only for HiD2026)	
	S4	S3	S2	S1
4 mA ... 20 mA	OFF	OFF	OFF	OFF
1 V ... 5 V	ON	ON	ON	ON



Channel 2 only for HiD2026.

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.