

**Features**

- 1-channel isolated barrier
- 24 V DC supply (bus powered)
- Input for 2-wire SMART transmitters and current sources
- Output for 4 mA ... 20 mA or 1 V ... 5 V
- Low power dissipation
- Suitable for long field cables (> 1000 m)
- Up to SIL 2 acc. to IEC 61508

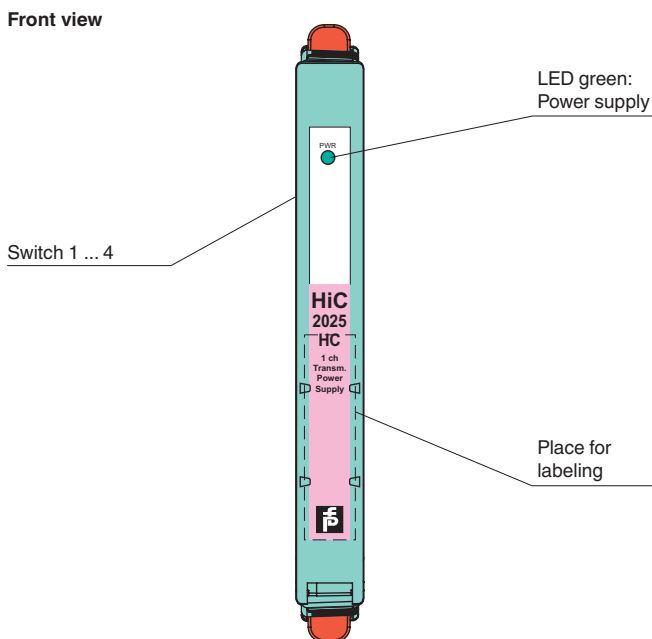
**Function**

This isolated barrier is used for intrinsic safety applications. The device supplies 2-wire transmitters in the hazardous area, and can also be used with current sources. It transfers the analog input signal to the safe area as an isolated current value. Bi-directional communication is supported for SMART transmitters that use current modulation to transmit data and voltage modulation to receive data. The output is selected as a current source, current sink, or voltage source via DIP switches. This device mounts on a HiC Termination Board.

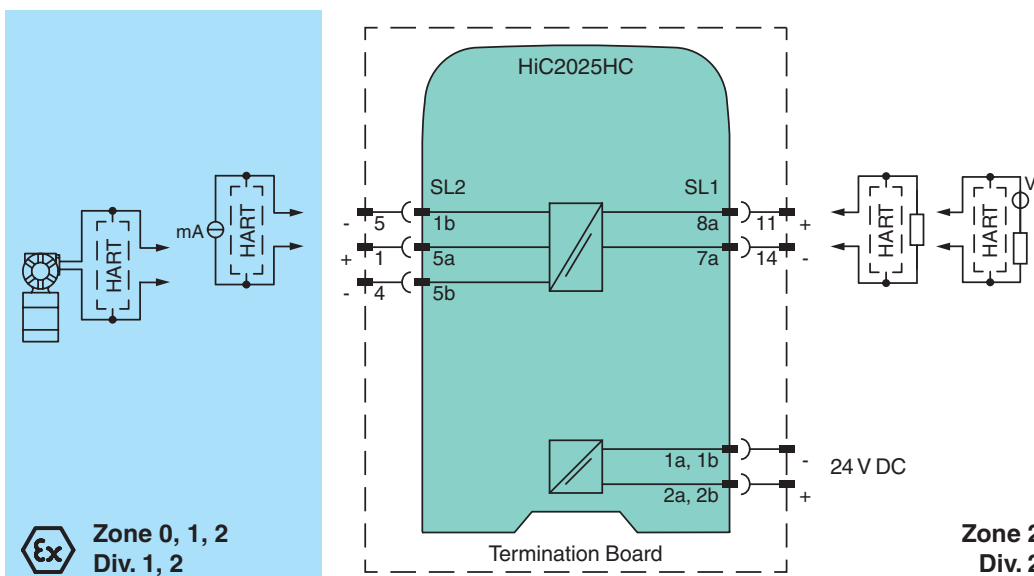
**Application**

- The device supports the following SMART protocols:
- HART
  - BRAIN

**Assembly**





**Connection**



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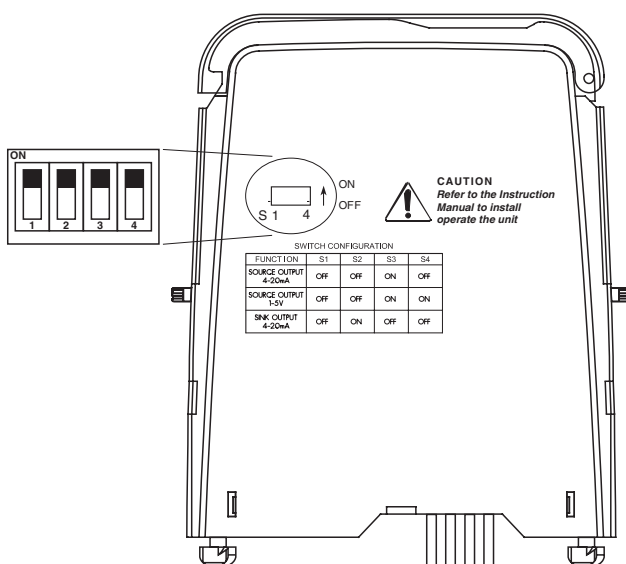
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

<b>General specifications</b>		
Signal type		Analog input
<b>Functional safety related parameters</b>		
Safety Integrity Level (SIL)		SIL 2
<b>Supply</b>		
Connection		SL1: 1a(-), 1b(-); 2a(+), 2b(+)
Rated voltage	$U_r$	19 ... 30 V DC bus powered via Termination Board
Ripple		$\leq 10 \%$
Rated current	$I_r$	$\leq 45 \text{ mA}$
Power dissipation		$\leq 800 \text{ mW}$
Power consumption		$\leq 1.1 \text{ W}$
<b>Input</b>		
Connection side		field side
Connection		SL2: 5a(+), 1b(-); 5a(+), 5b(-)
Input signal		4 ... 20 mA , limited to approx. 27 mA
Voltage drop		approx. 3 V on SL2: 5a(+), 1b(-) ; reverse polarity protected
Available voltage		$\geq 15 \text{ V}$ at 20 mA on SL2: 5a(+), 5b(-)
<b>Output</b>		
Connection side		control side
Connection		SL1: 8a(+), 7a(-)
Load		0 ... 300 $\Omega$ (source mode)
Output signal		4 ... 20 mA or 1 ... 5 V (on 250 $\Omega$ , 0.1 % internal shunt) 4 ... 20 mA (sink mode), operating voltage 14 ... 25 V
Ripple		20 mV <sub>rms</sub>
<b>Transfer characteristics</b>		
Deviation		at 20 °C (68 °F) $\leq \pm 20 \mu\text{A}$ incl. calibration, linearity, hysteresis, loads and supply voltage fluctuations (source mode and sink mode 4 ... 20 mA) $\leq 10 \text{ mV}$ incl. calibration, linearity, hysteresis and fluctuations of supply voltage (source mode 1 ... 5 V)
Influence of ambient temperature		$< 2 \mu\text{A/K}$ (0 ... 60 °C (32 ... 140 °F)); $< 4 \mu\text{A/K}$ (-20 ... 0 °C (-4 ... 32 °F))
Frequency range		field side into the control side: bandwidth with 1 mA <sub>pp</sub> signal 0 ... 3 kHz (-3 dB) control side into the field side: bandwidth with 0.5 V <sub>pp</sub> signal 0 ... 3 kHz (-3 dB)
Settling time		$\leq 200 \text{ ms}$
Rise time/fall time		$\leq 20 \text{ ms}$
<b>Indicators/settings</b>		
Display elements		LED
Control elements		DIP-switch
Configuration		via DIP switches
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 21:2012 For further information see system description.
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
Mass		approx. 100 g
Dimensions		12.5 x 128 x 106 mm (0.5 x 5.1 x 4.2 inch)
Mounting		on Termination Board
Coding		pin 4 trimmed For further information see system description.
<b>Data for application in connection with hazardous areas</b>		
EU-Type Examination Certificate		CESI 11 ATEX 012
Marking		 II (1)GD [Ex ia] IIC, [Ex iaD] [circuit(s) in zone 0/1/2/20/21/22]  I (M1) [Ex ia] I
Input		Ex ia, Ex iaD
<b>Supply</b>		
Maximum safe voltage	$U_m$	253 V AC (Attention! $U_m$ is no rated voltage.)
<b>Equipment</b>		
Voltage	$U_o$	20 V
Current	$I_o$	158 mA
Power	$P_o$	790 mW

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Equipment	SL2: 5a(+), 1b(-)	
Voltage	$U_i$	< 30 V
Current	$I_i$	< 128 mA
Voltage	$U_o$	7.2 V
Current	$I_o$	100 mA
Power	$P_o$	25 mW
Output		
Maximum safe voltage	$U_m$	253 V AC (Attention! The rated voltage can be lower.)
Certificate	PF 11 CERT 1845 X	
Marking	⊕ II 3G Ex nA IIC T4 Gc	
Galvanic isolation		
Input/Output	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V	
Input/power supply	safe electrical isolation acc. to IEC/EN 60079-11, 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	
<b>International approvals</b>		
UL approval		
Control drawing	116-0392 (cULus)	
IECEX approval	IECEX CES 11.0010	
<b>General information</b>		
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .	

## Configuration



### Switch position

Function	S1	S2	S3	S4
Current source 4 mA ... 20 mA	OFF	OFF	ON	OFF
Voltage source 1 V ... 5 V	OFF	OFF	ON	ON
Current sink 4 mA ... 20 mA	OFF	ON	OFF	OFF

Factory settings: current source 4 mA ... 20 mA

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.