



SMART Transmitter Power Supply HiC2025HC

- 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)
- SIL 2 (SC 3) acc. to IEC/EN 61508



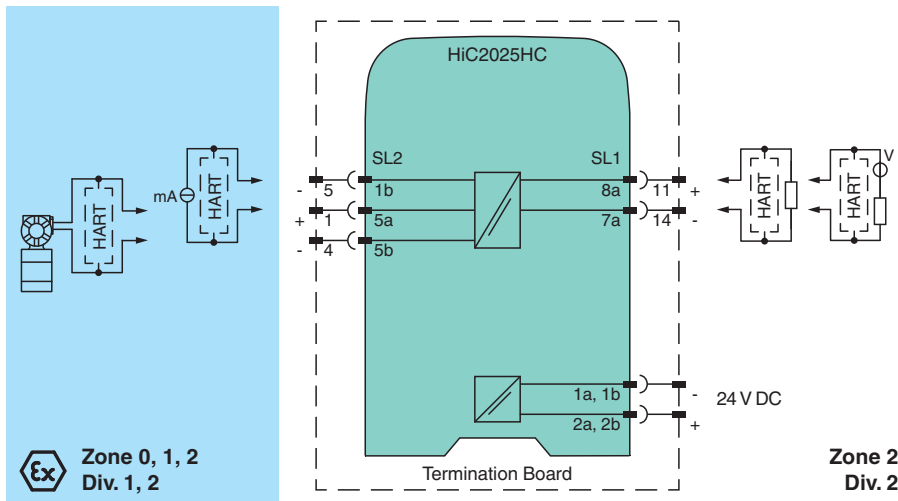
SIL 2



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.

Connection



Technical Data

General specifications

Signal type Analog input

Functional safety related parameters

Safety Integrity Level (SIL) SIL 2

Systematic capability (SC) SC 3

Supply

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 $\leq 45\text{ mA}$

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

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Technical Data

Power dissipation		≤ 800 mW
Power consumption		≤ 1.1 W
Input		
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		≥ 15 V at 20 mA on SL2: 5a(+), 5b(-)
Output		
Connection side		control side
Connection		SL1: 8a(+), 7a(-)
Load		0 ... 300 Ω (source mode)
Output signal		4 ... 20 mA or 1 ... 5 V (on 250 Ω, 0.1 % internal shunt) 4 ... 20 mA (sink mode), operating voltage 14 ... 25 V
Ripple		20 mV _{rms}
Transfer characteristics		
Deviation		at 20 °C (68 °F) ≤ ± 20 µA incl. calibration, linearity, hysteresis, loads and supply voltage fluctuations (source mode and sink mode 4 ... 20 mA) ≤ 10 mV incl. calibration, linearity, hysteresis and fluctuations of supply voltage (source mode 1 ... 5 V)
Influence of ambient temperature		< 2 µA/K (0 ... 60 °C (32 ... 140 °F)); < 4 µA/K (-20 ... 0 °C (-4 ... 32 °F))
Frequency range		field side into the control side: bandwidth with 1 mA _{pp} signal 0 ... 3 kHz (-3 dB) control side into the field side: bandwidth with 0.5 V _{pp} signal 0 ... 3 kHz (-3 dB)
Settling time		≤ 200 ms
Rise time/fall time		≤ 20 ms
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 21:2012 For further information see system description.
Degree of protection		IEC 60529:2001
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
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.
Data for application in connection with hazardous areas		
EU-type examination certificate		CESI 11 ATEX 012
Marking		Ⓢ II (1)G [Ex ia Ga] IIC Ⓢ II (1)D [Ex ia Da] IIIC Ⓢ I (M1) [Ex ia Ma] I
Input		Ex ia
Supply		
Maximum safe voltage	U _m	253 V AC (Attention! U _m is no rated voltage.)
Equipment		SL2: 5a(+), 5b(-)
Voltage U _o		20 V

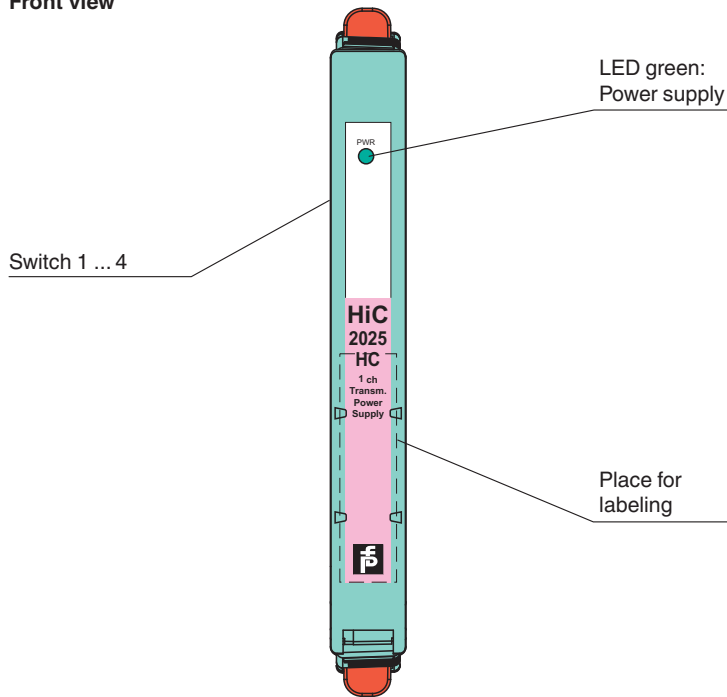
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Current I_o		158 mA
Power P_o		790 mW
Internal capacitance C_i		5.7 nF
Internal inductance L_i		negligible
Equipment		SL2: 5a(+), 1b(-)
Voltage U_i		< 30 V
Current I_i		< 128 mA
Voltage U_o		7.2 V
Current I_o		100 mA
Power P_o		25 mW
Internal capacitance C_i		5.7 nF
Internal inductance L_i		negligible
Output		
Maximum safe voltage	U_m	253 V AC (Attention! The rated voltage can be lower.)
Certificate		CESI 19 ATEX 050 X
Marking		Ⓜ II 3G Ex ec 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 IEC 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015
International approvals		
UL approval		E106378
Control drawing		116-0392 (cULus)
IECEx approval		
IECEx certificate		IECEx CES 11.0010X
IECEx marking		[Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I Ex ec IIC T4 Gc
General information		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .

Assembly

Front view



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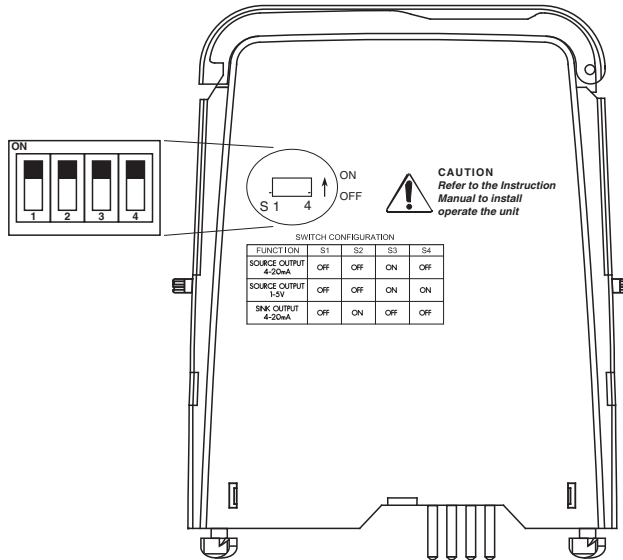
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Application

The device supports the following SMART protocols:

- HART
- BRAIN

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 setting: current source 4 mA ... 20 mA

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.

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