

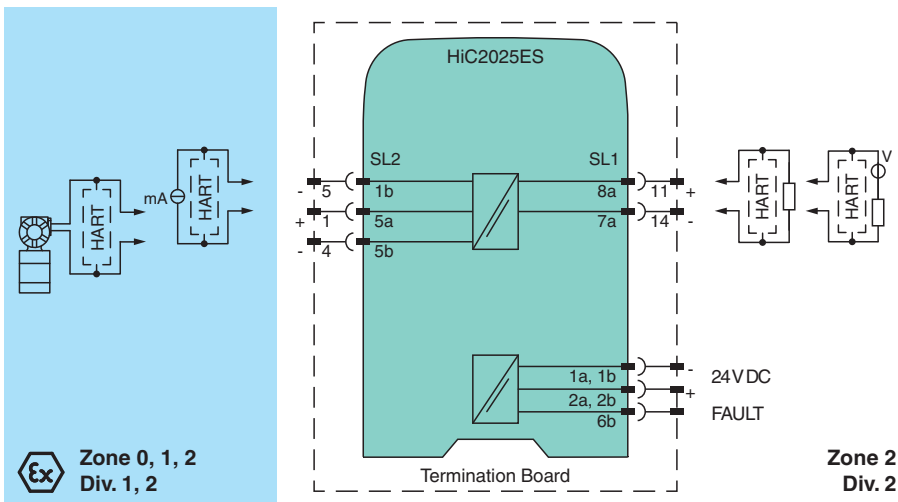


SMART Transmitter Power Supply HiC2025ES

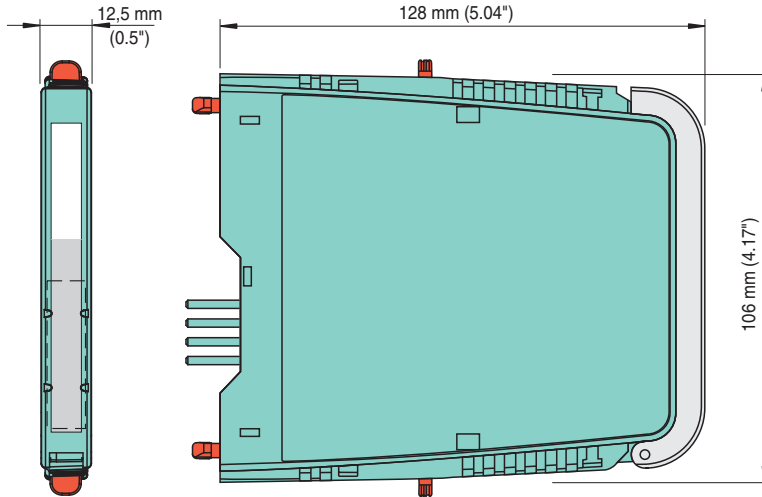
- 1-channel isolated barrier
- 24 V DC supply (bus powered)
- Input for 2-wire SMART transmitters and current sources
- Output for 4 mA ... 20 mA or 1 V ... 5 V
- Low power dissipation
- Line fault detection (LFD)
- Up to SIL 3 acc. to IEC/EN 61508

CE  **SIL 3**

Connection



Dimensions



Technical Data

General specifications		
Signal type	Analog input	
Supply		
Connection	SL1: 1a(-), 1b(-); 2a(+), 2b(+)	
Rated voltage	U_r	19 ... 30 V DC via Termination Board
Ripple	$\leq 10 \%$	
Rated current	I_r	$\leq 50 \text{ mA}$
Power dissipation	$\leq 800 \text{ mW}$	
Power consumption	$\leq 1.2 \text{ W}$	
Input		
Connection	SL2: 5a(+), 1b(-); 5a(+), 5b(-)	
Input signal	4 ... 20 mA, limited to approx. 27 mA reverse polarity protected	
Line fault detection	downscaling $\leq 3 \text{ mA}$; upscaling $\geq 22 \text{ mA}$	
Voltage drop	approx. 5 V on SL2: 5a(+), 1b(-)	
Available voltage	$\geq 15 \text{ V}$ at 20 mA on SL2: 5a(+), 5b(-)	
Output		
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 16 ... 28 V	
Ripple	20 mV _{rms}	
Fault indication output		
Connection	SL1: 6b	
Output type	open collector transistor (internal fault bus)	
Transfer characteristics		
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)	

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Technical Data

Influence of ambient temperature	< 2 $\mu\text{A/K}$ (0 ... 70 °C (32 ... 158 °F)); < 4 $\mu\text{A/K}$ (-20 ... 0 °C (-4 ... 32 °F)) (source mode and sink mode 4 ... 20 mA) < 0.5 mV/K (0 ... 70 °C (32 ... 158 °F)); < 1 mV/K (-20 ... 0 °C (-4 ... 32 °F)) (source mode 1 ... 5 V)	
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	
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	
Output/power supply	Basic isolation acc. to EN 61010-1 rated insulation voltage ≤ 50 V	
Indicators/settings		
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 ... 70 °C (-4 ... 158 °F)	
Mechanical specifications		
Degree of protection	IP20	
Mass	approx. 100 g	
Dimensions	12.5 x 106 x 128 mm (0.5 x 4.2 x 5.1 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 063	
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	
Supply		
Maximum safe voltage	U _m	253 V AC (Attention! U _m is no rated voltage.)
Equipment	SL2: 5a(+), 5b(-)	
Voltage	U _o	25.2 V
Current	I _o	100 mA
Power	P _o	630 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
Certificate	PF 10 CERT 1748 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, EN 50303:2000	
International approvals		

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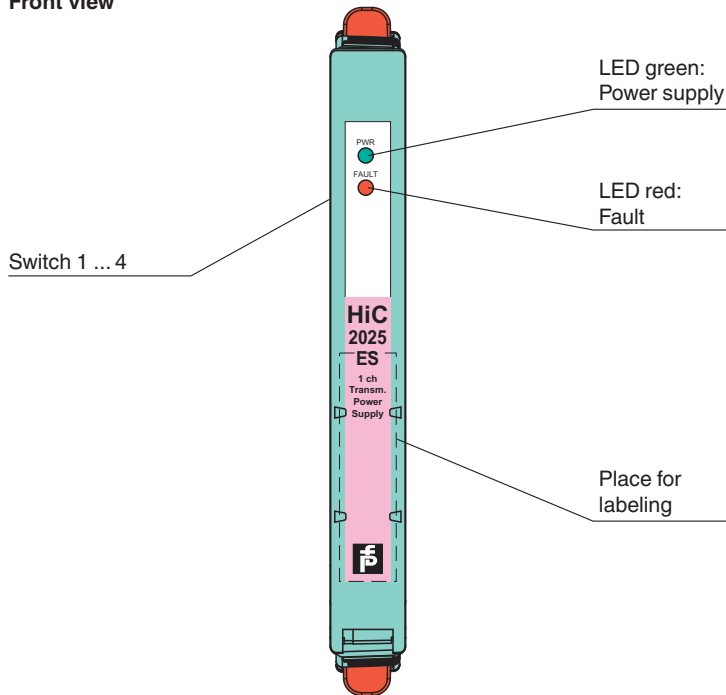
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Technical Data

IECEX approval	IECEX CES 10.0021
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com .

Assembly

Front view



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Function

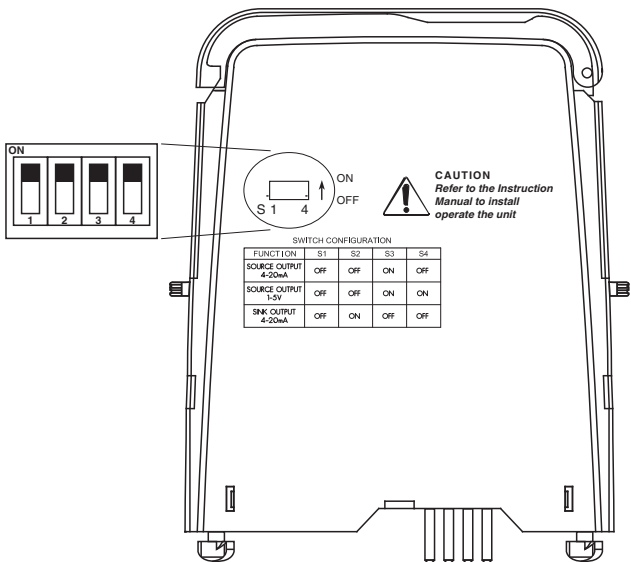
This isolated barrier is used for intrinsic safety applications. The device supplies 2-wire transmitters in the hazardous area, and can also be used with current sources. It transfers the analog input signal to the safe area as an isolated current value. Bi-directional communication is supported for 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. A separate fault output on the bus is signaled, if the input signal is outside the range of 3 mA ... 22 mA. This device mounts on a HiC Termination Board.

Application

The device supports the following SMART protocol:

- HART

Configuration



Switch position

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

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

Configuration

Configure the device in the following way:

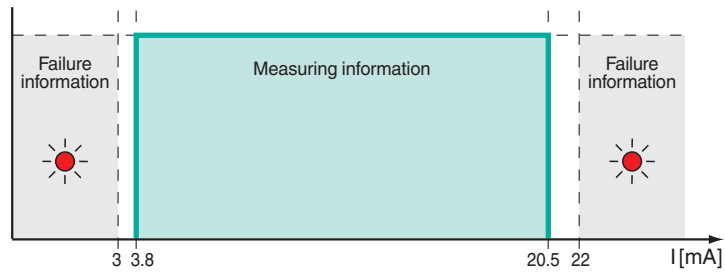
- Push the red Quick Lok Bars on each side of the device in the upper position.
- Remove the device from Termination Board.
- Set the DIP switches according to the figure.



The pins for this device are trimmed to polarize it according to its safety parameter. Do not change! For further information see system description.

Transfer characteristic

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