



Voltage Repeater

HiC2068

- 1-channel isolated barrier
- 24 V DC supply (bus powered)
- Voltage input 0 mV ... ± 500 mV
- Voltage output 0 mV ... ± 500 mV
- Selectable up/downscale sensor breakage detection
- Fault output signal

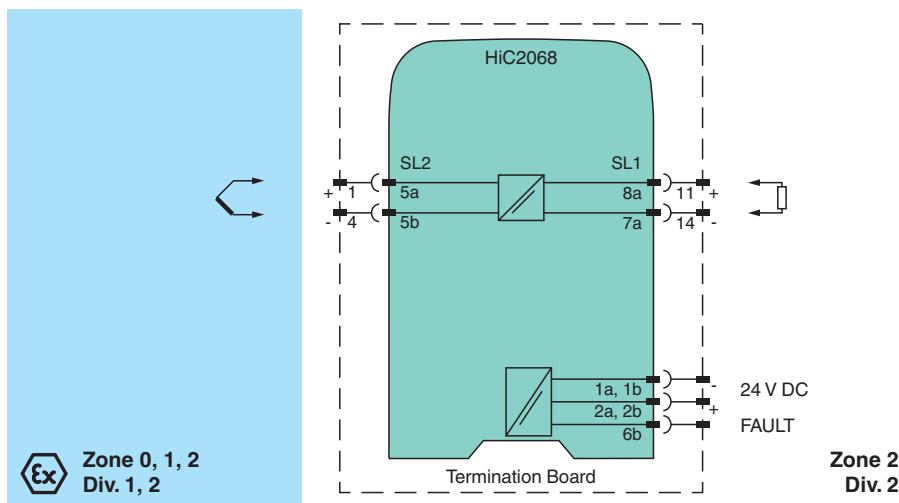


Function

This isolated barrier is used for intrinsic safety applications. It transfers low voltage signals from thermocouples, load cells, strain gauges, operational amplifiers, and inductive oscillation sensors located in hazardous areas to safe areas. The input voltage of the terminals 5a and 5b is transferred to the terminals 7a and 8a. The input, output, and power supply are galvanically isolated from each other. Upscale or downscale lead breakage monitoring is selectable via switches located on the front panel of the device.

Note: This unit requires three minutes after power-up to reach the accuracy cited in the technical data.

Connection



Release date: 2020-07-31 Date of issue: 2020-07-31 Filename: 208113_eng.pdf

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

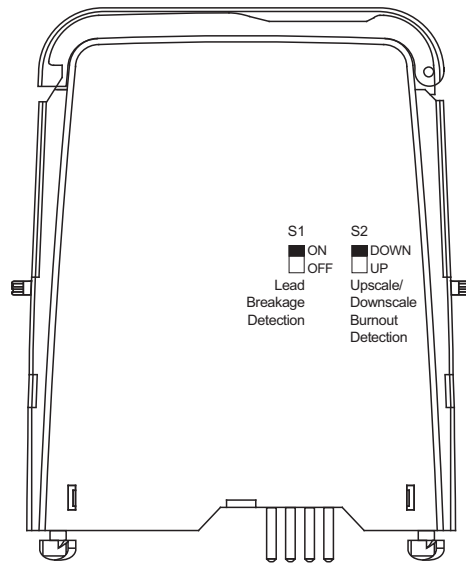
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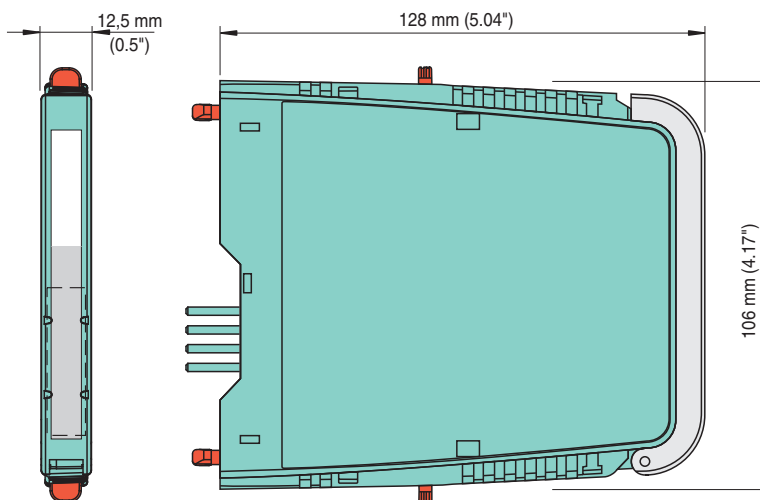
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Configuration



Dimensions



Technical Data

General specifications

Signal type Analog input

Supply

Connection SL1: 1a(-), 1b(-); 2a(+), 2b(+)

Rated voltage U_r 20 ... 30 V DC bus powered via Termination Board

Ripple within the supply tolerance

Technical Data

Rated current	I_r	$\leq 22 \text{ mA}$
Power dissipation/power consumption		0.7 W max.
Lockout voltage		$> 11 \text{ V DC}$
Input		
Connection side		field side
Connection		SL2: 5a(+), 5b(-)
Input resistance		$\geq 1.4 \text{ M}\Omega$
Transmission range		$0 \dots \pm 500 \text{ mV}$
Offset voltage/current		$\leq 5 \mu\text{V} / \leq 5 \text{ nA}$
Output		
Connection side		control side
Connection		SL1: 8a(+), 7a(-)
Voltage		$0 \dots \pm 500 \text{ mV}$
Load		Accuracy figures for infinite load impedance. Additional 0.03 % of span for a load resistance of $10 \text{ k}\Omega$
Output resistance		max. 3Ω
Line fault detection		input: $\pm 700 \text{ mV}$ output: $\pm 1 \text{ V}$
Fault indication output		
Connection		SL1: 6b
Output type		open collector transistor (internal fault bus)
Fault voltage		$< V_{cc}/2$ (when connected to V_{cc} via $10 \text{ k}\Omega$ pull up resistor)
Transfer characteristics		
Deviation		
After calibration		at $20 \text{ }^\circ\text{C}$ ($68 \text{ }^\circ\text{F}$): $\pm 30 \mu\text{V}$ up to $\pm 100 \text{ mV} \pm 0.03 \%$ of the span up to $+500 \text{ mV} \pm 0.03 \%$ of the span up to -500 mV
Influence of ambient temperature		$\pm 10 \mu\text{V/K}$ (typical $\pm 2.5 \mu\text{V/K}$)
Absolute		$< 0.25 \text{ K}$ at 30 V voltage supply
Bandwidth		DC to $> 350 \text{ Hz}$ (-3 dB)
Settling time		$< 1 \text{ ms}$
Rise time/fall time		$< 100 \mu\text{s}$
Galvanic isolation		
Output/power supply		functional insulation, rated insulation voltage 50 V AC
Indicators/settings		
Display elements		LEDs
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
Protection against electrical shock		UL 61010-1
Ambient conditions		
Ambient temperature		$-20 \dots 60 \text{ }^\circ\text{C}$ ($-4 \dots 140 \text{ }^\circ\text{F}$)
Mechanical specifications		
Degree of protection		IP20
Mass		approx. 100 g
Dimensions		$12.5 \times 128 \times 106 \text{ mm}$ ($0.5 \times 5.1 \times 4.2 \text{ inch}$)
Mounting		on Termination Board

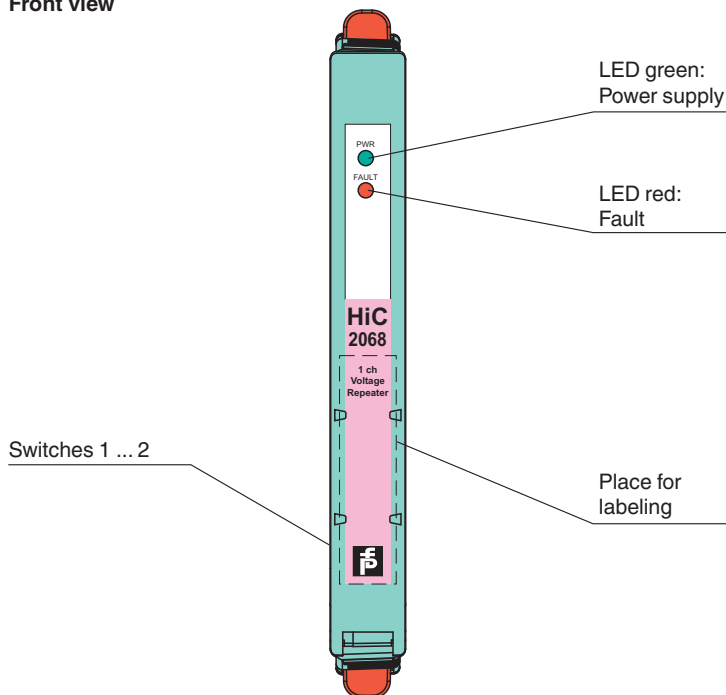
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Technical Data

Coding	pin 2, 3 and 4 trimmed For further information see system description.		
Data for application in connection with hazardous areas			
EU-type examination certificate	BASEEFA 10 ATEX 0031X		
Marking	Ⓔ II (1)GD, I (M1), [Ex ia] IIC, [Ex iaD], [Ex ia] I (-20 °C ≤ T _{amb} ≤ 60 °C) [circuit(s) in zone 0/1/2]		
Voltage	U _o	5.5 V DC	
Current	I _o	2.4 mA	
Power	P _o	3.3 mW	
Supply			
Maximum safe voltage	U _m	253 V (Attention! The rated voltage can be lower.)	
Certificate	BASEEFA 10 ATEX 0032X		
Marking	Ⓔ II 3G Ex nA II T4		
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		
International approvals			
UL approval			
Control drawing	116-0317 (cULus)		
IECEx approval	IECEx BAS 10.0012X IECEx BAS 10.0013X		
Approved for	[Zone 0] [Ex ia] IIC, [Ex iaD], [Ex ia] I Ex nA II T4		
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



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.*