

Features

- 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.

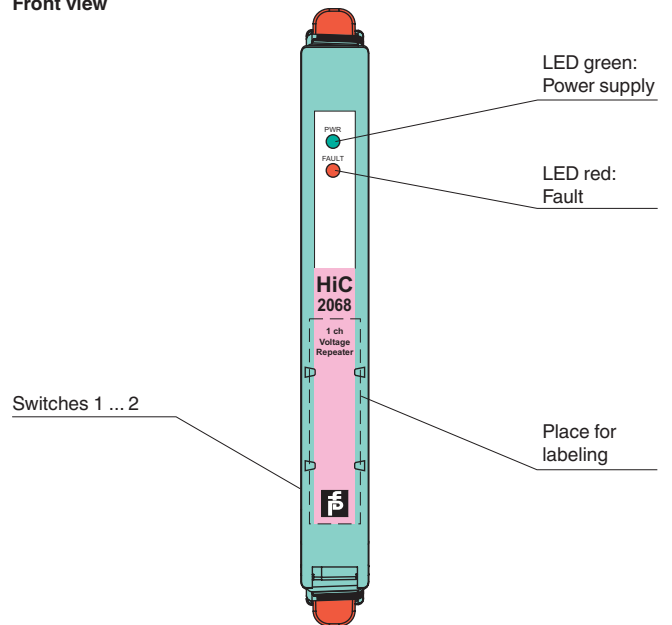
The input voltage of the terminals 5a and 5b is transferred to the terminals 7a and 8a.

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.

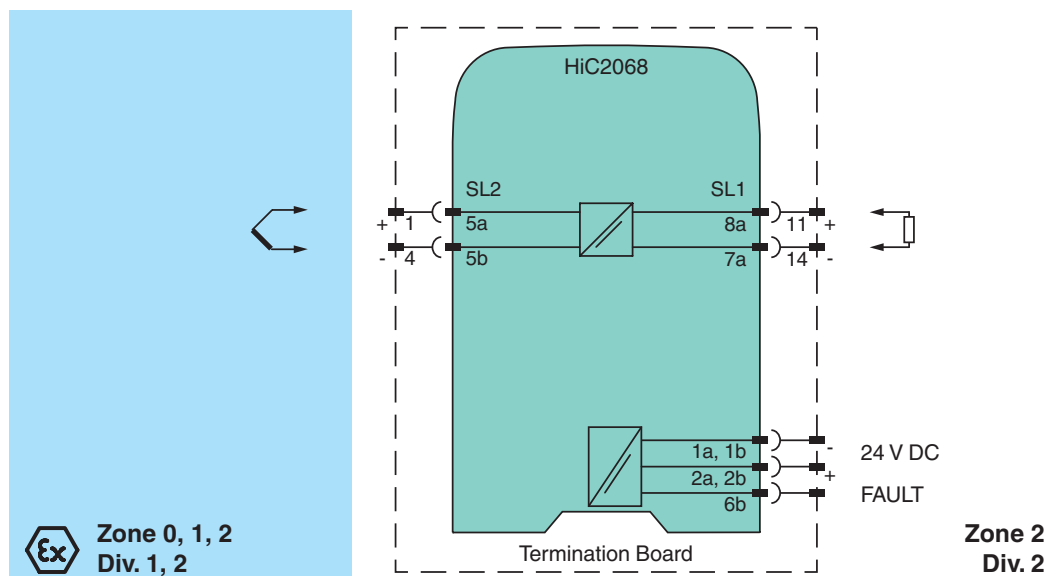
Note: This unit requires three minutes after power-up to reach the accuracy cited in the technical data.

Assembly

Front view



Connection



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


Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0002
pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222
pa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
pa-info@sg.pepperl-fuchs.com

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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
Rated current I_r	≤ 22 mA
Power dissipation/power consumption	0.7 W max.
Lockout voltage	> 11 V DC
Input	
Connection side	field side
Connection	SL2: 5a(+), 5b(-)
Input resistance	≥ 1.4 M Ω
Transmission range	0 ... ± 500 mV
Offset voltage/current	≤ 5 μ V / ≤ 5 nA
Output	
Connection side	control side
Connection	SL1: 8a(+), 7a(-)
Load	Accuracy figures for infinite load impedance. Additional 0.03 % of span for a load resistance of 10 k Ω
Voltage	0 ... ± 500 mV
Output resistance	≤ 3 Ω
Line fault detection	input: ± 700 mV output: ± 1 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 k Ω pull up resistor)
Transfer characteristics	
Deviation	
After calibration	at 20 °C (68 °F): ± 30 μ V up to ± 100 mV/ ± 0.03 % of the span up to +500 mV/ ± 0.03 % of the span up to -500 mV
Influence of ambient temperature	± 10 μ V/K (typical ± 2.5 μ V/K)
Absolute	< 0.25 K at 30 V voltage supply
Bandwidth	DC to > 350 Hz (-3 dB)
Settling time	< 1 ms
Rise time/fall time	< 100 μ 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 ... 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 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 $\leq T_{amb}$ ≤ 60 °C) [circuit(s) in zone 0/1/2]
Voltage U_o	5.5 V DC

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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 .

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