



Voltage Repeater

HiC2065

- 1-channel isolated barrier
- 24 V DC supply (bus powered)
- Voltage input 0 mV ... ± 50 mV
- Voltage output 0 mV ... ± 50 mV
- Selectable up/downscale sensor breakage detection
- Fault output signal

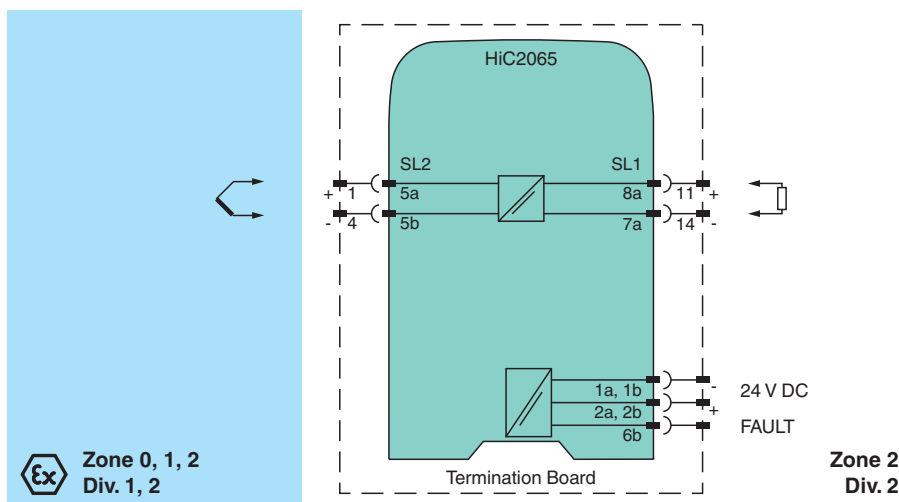


Function

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



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
Rated current	I _r	≤ 22 mA
Power dissipation/power consumption		0.7 W max.
Lockout voltage		> 11 V DC
Input		
Connection side		field side

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

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Technical Data

Connection	SL2: 5a(+), 5b(-)
Input resistance	$\geq 16 \text{ M}\Omega$
Transmission range	0 ... $\pm 50 \text{ mV}$
Offset voltage/current	$\leq 5 \text{ }\mu\text{V} / \leq 5 \text{ nA}$
Output	
Connection side	control side
Connection	SL1: 8a(+), 7a(-)
Voltage	0 ... $\pm 50 \text{ mV}$
Load	Accuracy figures for infinite load impedance. Additional 0.03 % of span for a load resistance of 10 k Ω
Output resistance	max. 3 Ω
Line fault detection	input: $\pm 100 \text{ mV}$ output: +200 mV, -115 mV
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): $\pm 3 \text{ }\mu\text{V}$ up to $\pm 10 \text{ mV} / \pm 0.05 \text{ %}$ of the span up to +50 mV / $\pm 0.05 \text{ %}$ of the span up to -50 mV
Influence of ambient temperature	$\pm 1 \text{ }\mu\text{V/K}$ (typical $\pm 0.25 \text{ }\mu\text{V/K}$)
Absolute	$< 0.25 \text{ K}$ at 30 V voltage supply
Bandwidth	DC to $> 350 \text{ Hz}$ (-3 dB)
Settling time	$< 2 \text{ ms}$
Rise time/fall time	$\leq 1 \text{ ms}$
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 106 x 128 mm (0.5 x 4.2 x 5.1 inch) (W x H x D)
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 $\leq T_{amb} \leq 60 \text{ }^{\circ}\text{C}$) [circuit(s) in zone 0/1/2]
Voltage	U_o 5.5 V DC

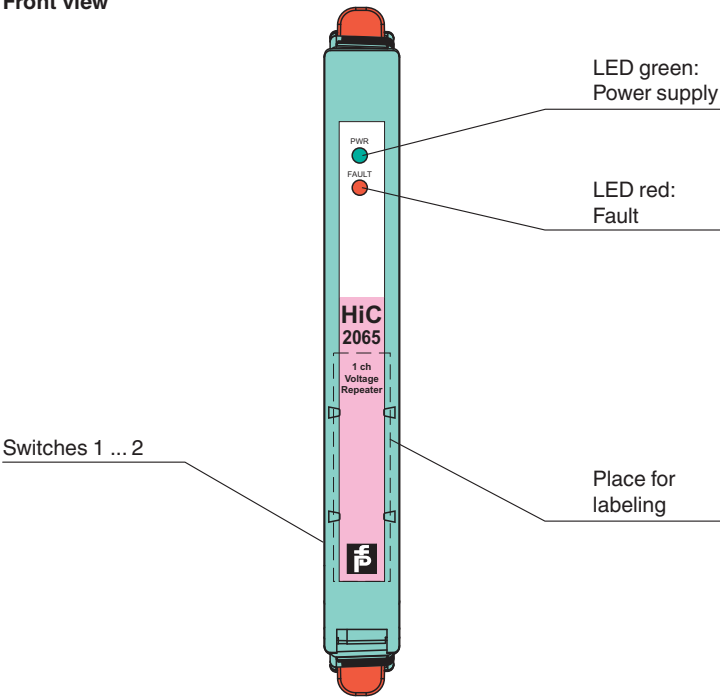
Release date: 2023-06-05 Date of issue: 2023-06-05 Filename: 204304_eng.pdf

Technical Data

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 certificate		IECEX BAS 10.0012X IECEX BAS 10.0013X
IECEX marking		[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 .

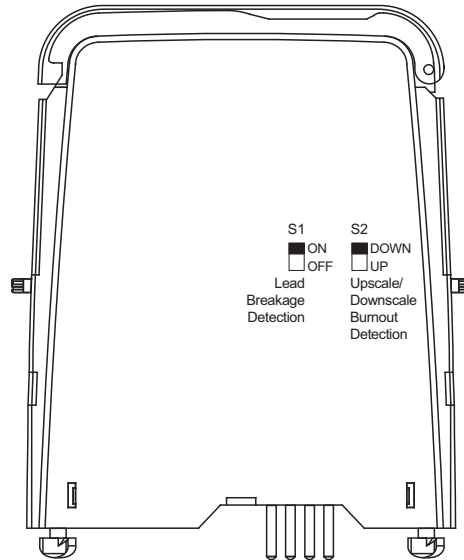
Assembly

Front view



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Configuration



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 switches according to the figure in the **Configuration** section.

Note

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