



# SMART Current Driver HiC2031HC

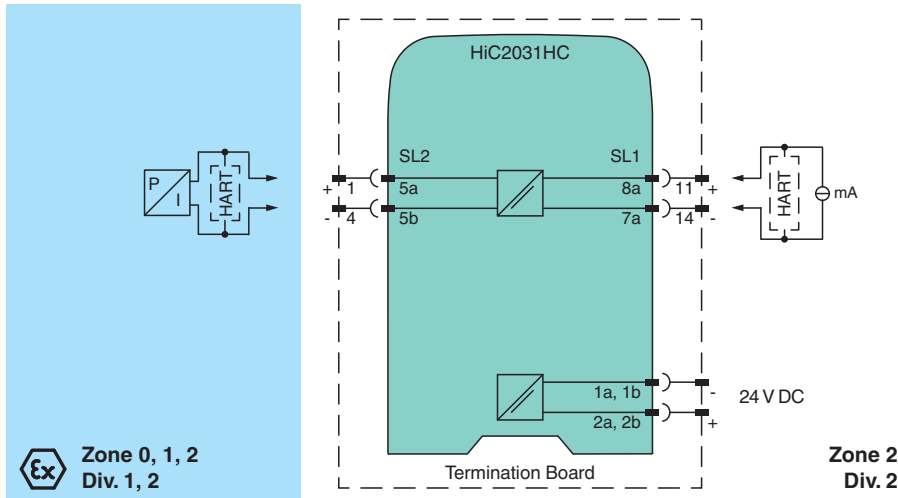
- 1-channel isolated barrier
- 24 V DC supply (bus powered)
- Current output up to 625  $\Omega$  load
- HART-IP and valve positioner
- Low power dissipation
- Suitable for long field cables (> 1000 m)
- Up to SIL 2 (SC 3) acc. to IEC/EN 61508



## Function

This isolated barrier is used for intrinsic safety applications. It repeats the input signal from a control system to drive HART I/P converters, valve actuators, and displays located in a hazardous area. Bi-directional communication is supported for HART devices. An open field circuit presents a high impedance to the control side to allow alarm conditions to be monitored by control systems. This device mounts on a HiC Termination Board.

## Connection



## Technical Data

### General specifications

Signal type Analog output

### 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  $I_r$   $\leq 35$  mA

Power dissipation  $\leq 600$  mW

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## Technical Data

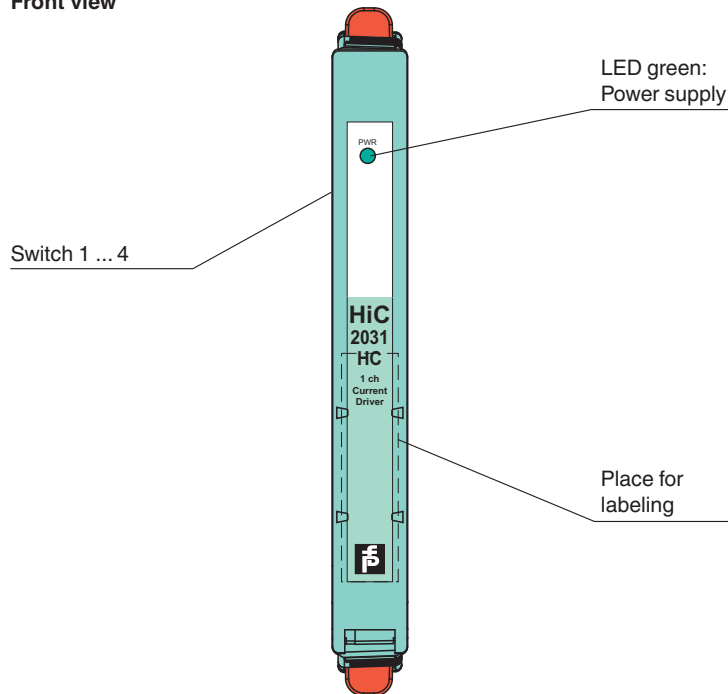
Power consumption	≤ 700 mW	
<b>Input</b>		
Connection side	control side	
Connection	SL1: 8a(+), 7a(-)	
Input signal	4 ... 20 mA , limited to approx. 27 mA	
Input voltage	depending on switch configuration open loop voltage of the control system < 19 V open loop voltage of the control system < 26 V	
Voltage drop	depending on switch configuration open loop voltage of the control system < 19 V: approx. 5 V at 20 mA open loop voltage of the control system < 26 V: approx. 12 V at 20 mA	
Input resistance	> 100 kΩ, with field wiring open	
<b>Output</b>		
Connection side	field side	
Connection	SL2: 5a(+), 5b(-)	
Voltage	≥ 12.5 V at 20 mA	
Current	4 ... 20 mA	
Load	0 ... 625 Ω	
Ripple	20 mV rms	
<b>Transfer characteristics</b>		
Deviation	at 20 °C (68 °F), 4 ... 20 mA ≤ ± 0.1 % incl. non-linearity and hysteresis	
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 0.5 V <sub>pp</sub> signal 0 ... 3 kHz (-3 dB) control side into the field side: bandwidth with 1 mA <sub>pp</sub> signal 0 ... 3 kHz (-3 dB)	
Rise time	10 to 90 % ≤ 100 ms	
<b>Indicators/settings</b>		
Display elements	LED	
Control elements	DIP switch	
Configuration	via DIP switches	
Labeling	space for labeling at the front	
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)	
<b>Conformity</b>		
Electromagnetic compatibility	NE 21:2012 For further information see system description.	
Degree of protection	IEC 60529	
<b>Ambient conditions</b>		
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)	
<b>Mechanical specifications</b>		
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 and 4 trimmed For further information see system description.	
<b>Data for application in connection with hazardous areas</b>		
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	
Output	Ex ia	
Supply		
Maximum safe voltage	U <sub>m</sub>	253 V AC (Attention! U <sub>m</sub> is no rated voltage.)
Equipment	SL2: 5a(+), 5b(-)	
Voltage	U <sub>o</sub>	20 V

## Technical Data

Current	$I_o$	100 mA
Power	$P_o$	500 mW
Internal capacitance	$C_i$	5.7 nF
Internal inductance	$L_i$	negligible
<b>Output</b>		
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
<b>Galvanic isolation</b>		
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
<b>Directive conformity</b>		
Directive 2014/34/EU		EN IEC 60079-0:2018+AC:2020 , EN 60079-7:2015+A1:2018 , EN 60079-11:2012
<b>International approvals</b>		
UL approval		E106378
Control drawing		116-0393 (cULus)
<b>IECEx approval</b>		
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
<b>General information</b>		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

## Assembly

### Front view



## Configuration

Configure the device in the following way:

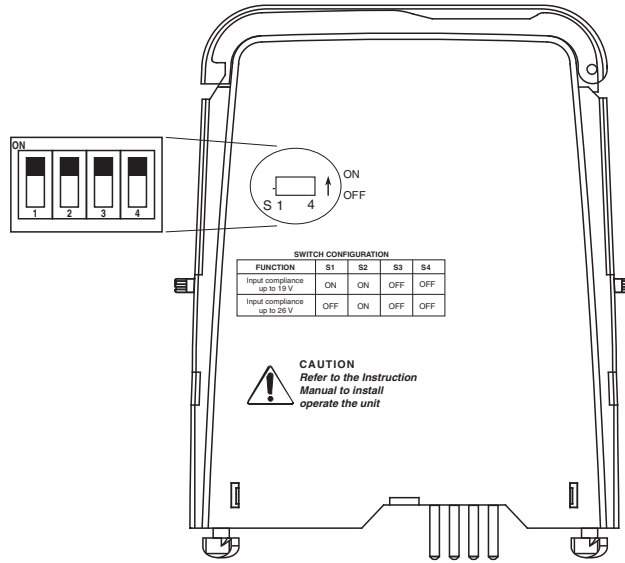
- Push the red Quick Lok Bars on each side of the device in the upper position.
- Remove the device from termination board.
- Set the switches according to the figure in the **Configuration** section.

### Note

## Configuration

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.

**Configuration**



**Switch position**

Function	S1	S2	S3	S4
Open loop voltage of the control system < 19 V	ON	ON	OFF	OFF
Open loop voltage of the control system < 26 V	OFF	ON	OFF	OFF

Factory setting: open loop voltage of the control system < 19 V

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