



# Switch Amplifier

## HiC2821

- 1-channel isolated barrier
- 24 V DC supply (bus powered)
- Dry contact or NAMUR input
- Usable as signal splitter (1 input and 2 outputs)
- 2 relay contact outputs
- Fault relay contact output
- Line fault detection (LFD)
- Reversible mode of operation
- Up to SIL 2 acc. to IEC/EN 61508



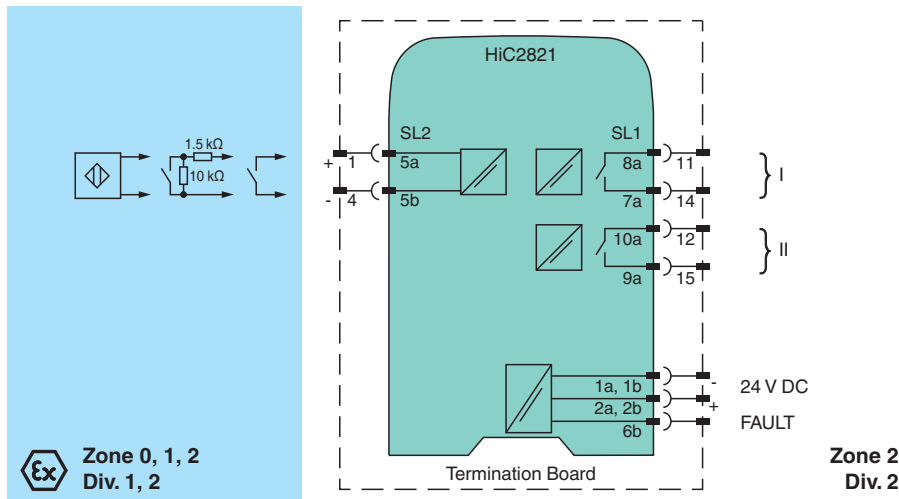
**SIL 2**



### Function

This isolated barrier is used for intrinsic safety applications. The device transfers digital signals (NAMUR sensors/mechanical contacts) from the explosion-hazardous area to the non-explosion-hazardous area. The input controls two relay contact outputs for the non-explosion-hazardous area load. Via switches the mode of operation can be reversed and the line fault detection can be switched off. Via switch the function of the second output can be defined as a signal output or a fault indication output. During a fault state, the relays revert to the de-energized state and LEDs indicate the fault according to NAMUR NE 44. A separate fault bus is available. This fault bus can be monitored if the termination board supports a module fault detection. This device mounts on a HiC termination board.

### Connection



### Technical Data

General specifications	
Signal type	Digital Input
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 2
Supply	
Connection	SL1: 1a(-), 1b(-); 2a(+), 2b(+)
Rated voltage	$U_r$ 19 ... 30 V DC bus powered via Termination Board
Ripple	≤ 10 %
Rated current	$I_r$ ≤ 30 mA

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

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## Technical Data

Power dissipation	≤ 500 mW
Power consumption	≤ 500 mW
<b>Input</b>	
Connection side	field side
Connection	SL2: 5a(+), 5b(-)
Rated values	acc. to EN 60947-5-6 (NAMUR), see manual for electrical data
Open circuit voltage/short-circuit current	approx. 10 V DC / approx. 8 mA
Switching point/switching hysteresis	1.2 ... 2.1 mA / approx. 0.2 mA
Line fault detection	breakage $I \leq 0.1$ mA , short-circuit $I \geq 6.7$ mA
Pulse/Pause ratio	min. 20 ms / min. 20 ms
<b>Output</b>	
Connection side	control side
Connection	SL1: 8a, 7a; 10a, 9a
Output I	signal ; relay
Output II	signal or fault message ; relay
Contact loading	50 V DC / 0.5 A
Minimum switch current	2 mA / 24 V DC
Energized/De-energized delay	≤ 20 ms / ≤ 20 ms
Mechanical life	10 <sup>7</sup> switching cycles
<b>Fault indication output</b>	
Connection	SL1: 6b
Output type	open collector transistor (internal fault bus)
<b>Transfer characteristics</b>	
Switching frequency	≤ 10 Hz
<b>Galvanic isolation</b>	
Output/power supply	basic insulation acc. to EN 50178, rated insulation voltage of 50 V AC
Output/Output	basic insulation acc. to EN 50178, rated insulation voltage of 50 V AC
<b>Indicators/settings</b>	
Display elements	LEDs
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>	
Galvanic isolation	EN 50178:1997
Electromagnetic compatibility	EN IEC 61326-3-2:2018 , NE 21:2012 For further information see system description.
Degree of protection	IEC 60529:2001
Input	EN 60947-5-6:2000
<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 1 and 2 trimmed For further information see system description.
<b>Data for application in connection with hazardous areas</b>	
EU-type examination certificate	BASEEFA 06 ATEX 0093 X

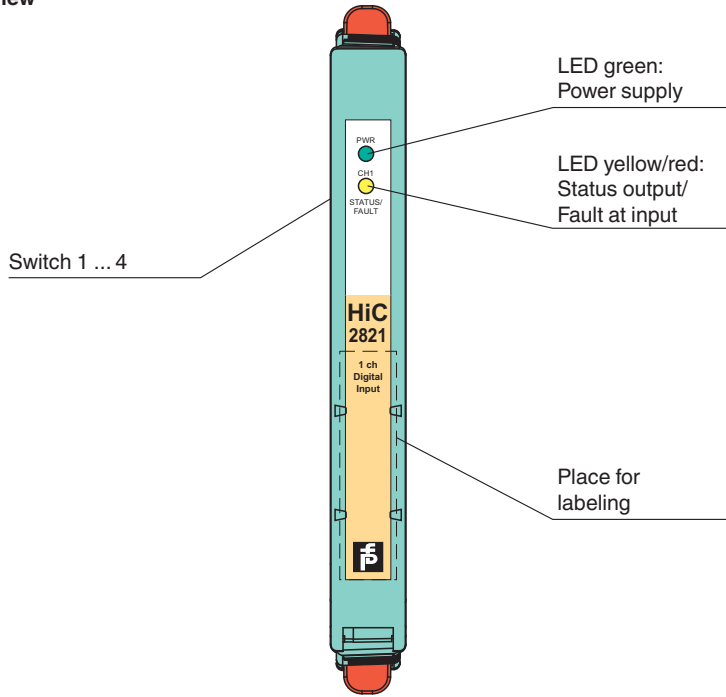
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## Technical Data

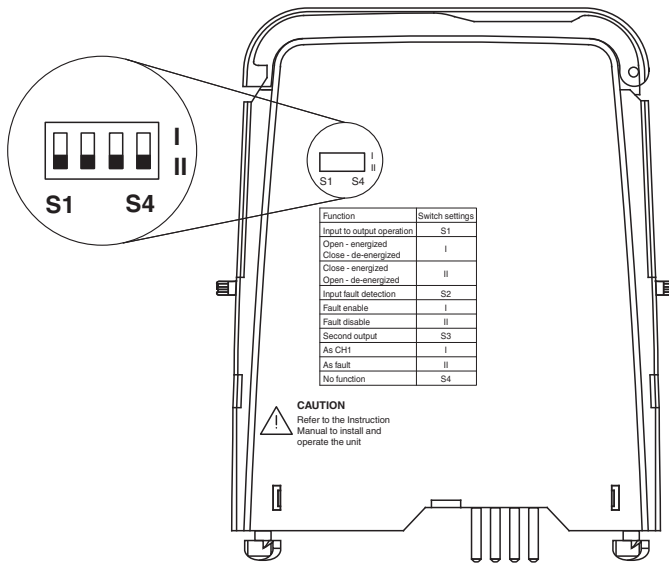
Marking		Ⓜ II (1)G [Ex ia Ga] IIC Ⓜ II (1)D [Ex ia Da] IIIC Ⓜ I (M1) [Ex ia Ma] I
Input		[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I
Voltage	$U_o$	10.5 V
Current	$I_o$	17.1 mA
Power	$P_o$	45 mW (linear characteristic)
Supply		
Maximum safe voltage	$U_m$	253 V AC (Attention! $U_m$ is no rated voltage.)
Output		
Contact loading		50 V DC / 0.5 A
Maximum safe voltage	$U_m$	253 V AC (Attention! The rated voltage can be lower.)
Certificate		PF 08 CERT 1047 X
Marking		Ⓜ II 3G Ex nA nC IIC T4 Gc
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 IEC 60079-0:2018+AC:2020 , EN 60079-11:2012 , EN 60079-15:2010
<b>International approvals</b>		
FM approval		
Control drawing		16-534FM-12 (cFMus)
UL approval		E106378
Control drawing		116-0434
IECEx approval		
IECEx certificate		IECEx BAS 06.0026X
IECEx marking		[Ex ia Ga] IIC [Ex ia Da] IIIC [Ex ia Ma] I
<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**



**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.

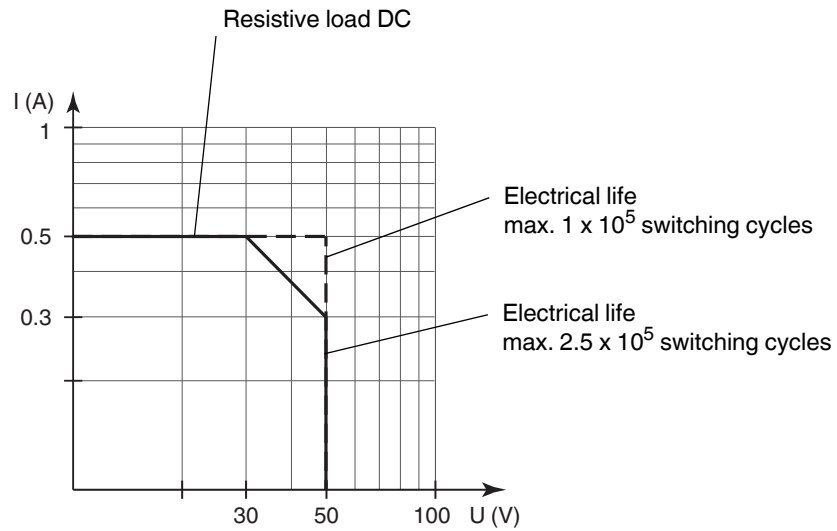
**Note**

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.

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**Characteristic Curve**

**Maximum switching power of output contacts**



The maximum number of switching cycles is depending on the electrical load and may be higher when reduced currents and voltages are applied.

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