

Switch Amplifier

HiC2821



- 1-channel isolated barrier
- 24 V DC supply (bus powered)
- Dry contact or NAMUR inputs
- Usable as signal splitter (1 input and 2 outputs)
- Relay contact output
- Fault relay contact output
- Line fault detection (LFD)
- SIL 2 (SC 3) acc. to IEC/EN 61508



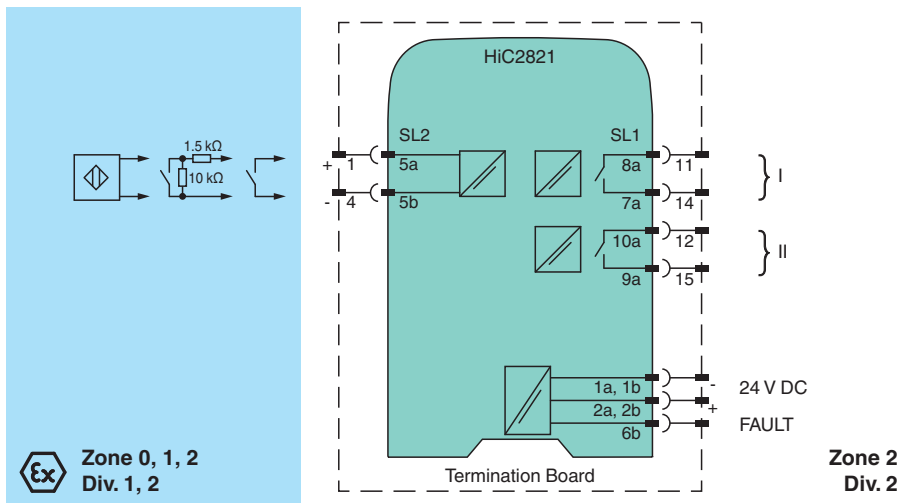
SIL 2



Function

This isolated barrier is used for intrinsic safety applications. It transfers digital signals (NAMUR sensors/mechanical contacts) from a hazardous area to a safe area. The proximity sensor or switch controls the normally open relay output for the safe area load. The device output changes the state when the input signal changes the state. The mode of operation can be reversed with switch S1 of the device. One additional relay is available for the fault output. Line fault detection (LFD) can be selected or disabled via switch S2. During an error condition, the relay reverts to its de-energized state and the LEDs indicate the fault. A separate output bus is available. The fault conditions can be monitored via a Fault Indication Board. This module mounts on a HiC Termination Board.

Connection



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

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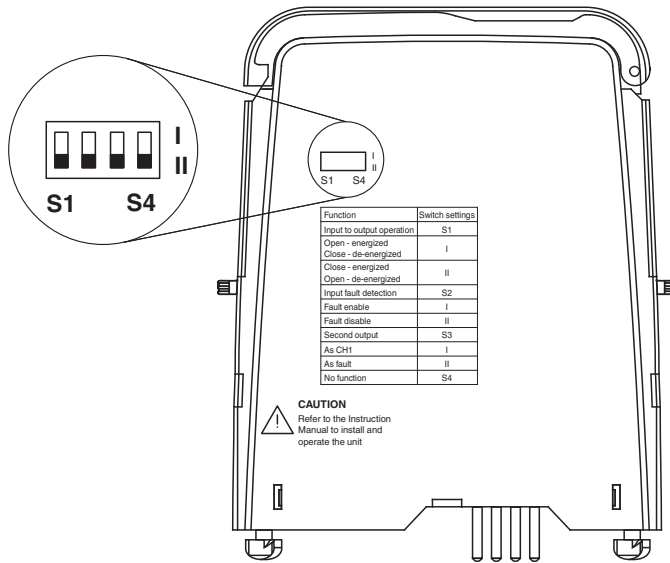
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Configuration



Technical Data

General specifications

Signal type Digital Input

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 ≤ 30 mA
Power dissipation ≤ 500 mW
Power consumption ≤ 500 mW

Input

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 $I \geq 6.5$ mA
Pulse/Pause ratio min. 20 ms / min. 20 ms

Output

Connection side control side
Connection SL1: 8a, 7a; 10a, 9a
Output I signal ; relay
Output II signal or error 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 10^7 switching cycles

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Technical Data

Fault indication output		
Connection		SL1: 6b
Output type		open collector transistor (internal fault bus)
Transfer characteristics		
Switching frequency		≤ 10 Hz
Galvanic isolation		
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
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		
Galvanic isolation		EN 50178:1997
Electromagnetic compatibility		NE 21:2006 For further information see system description.
Degree of protection		IEC 60529:2001
Input		EN 60947-5-6:2000
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 1 and 2 trimmed For further information see system description.
Data for application in connection with hazardous areas		
EU-type examination certificate		
Marking		BASEEFA 06 ATEX 0093 X ⊕ 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		
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 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010
International approvals		
FM approval		

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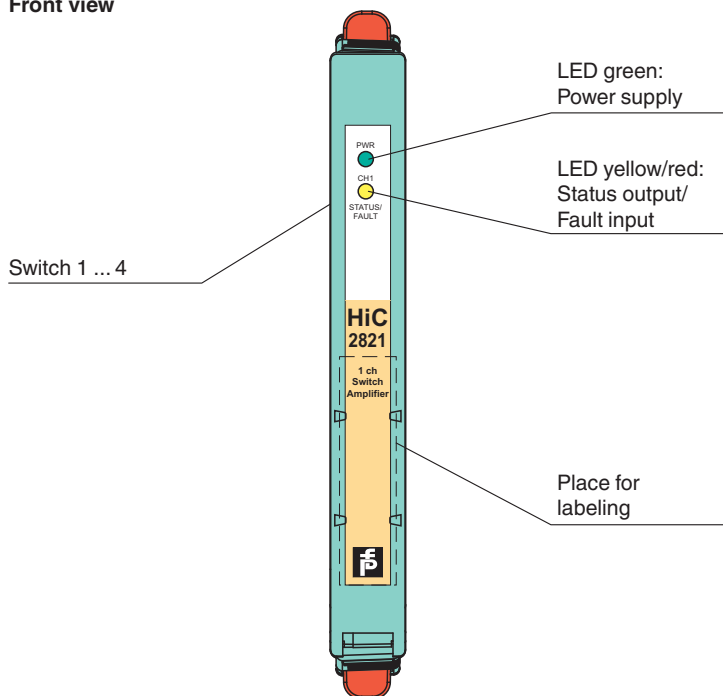
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Technical Data

Control drawing	16-534FM-12 (cFMus)
UL approval	
Control drawing	116-0434
IECEEx approval	
IECEEx certificate	IECEEx BAS 06.0026X
IECEEx marking	[Ex ia Ga] IIC [Ex ia Da] IIC [Ex ia Ma] I
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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Configure the device in the following way:

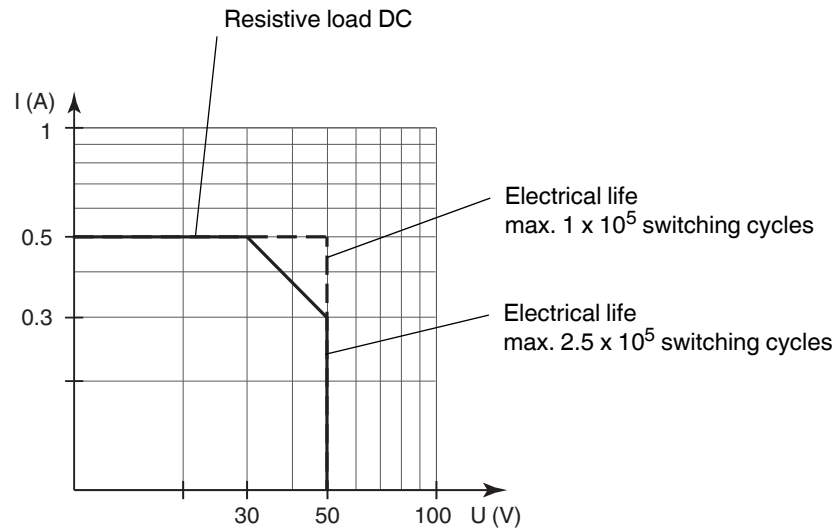
- Push the red Quick Lok Bars on each side of the device in the upper position.
- Remove the device from Termination Board.
- Set the DIP switches according to the figure.



*The pins for this device are trimmed to polarize it according to its safety parameter. Do not change!
For further information see system description.*

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.