



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



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.

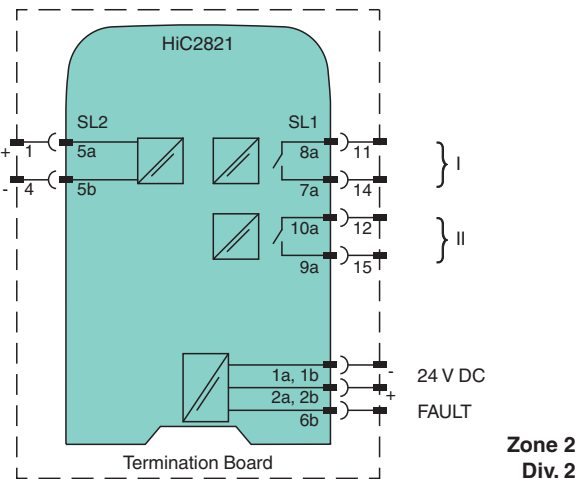
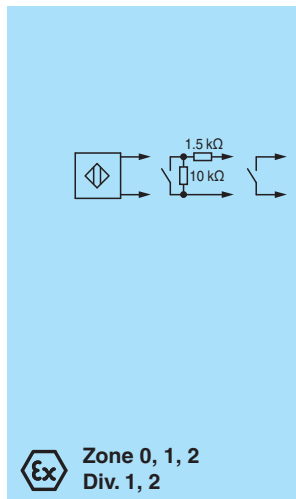
Via switches the mode of operation can be reversed and the line fault detection can be switched off.

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



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

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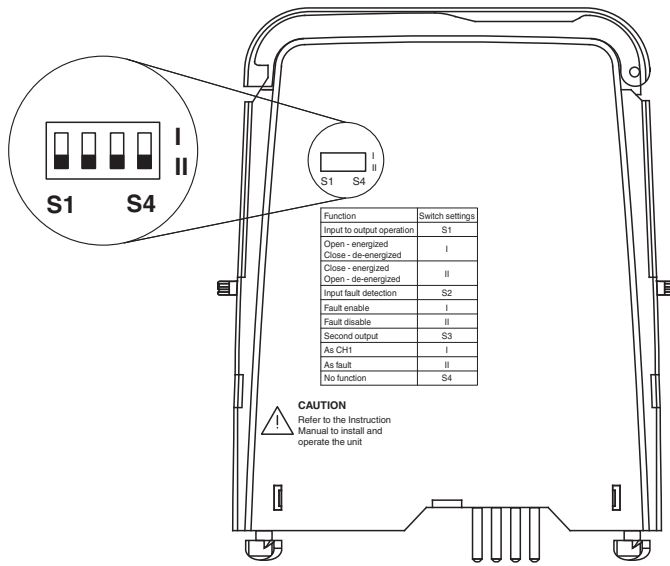
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Configuration



Technical Data

General specifications	
Signal type	Digital Input
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 2
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 $I \geq 6.7$ 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 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	10^7 switching cycles
Fault indication output	

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Technical Data

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	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	
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 1 and 2 trimmed For further information see system description.	
Data for application in connection with hazardous areas		
EU-type examination certificate	BASEEFA 06 ATEX 0093 X	
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	
International approvals		
FM approval		
Control drawing	16-534FM-12 (cFMus)	

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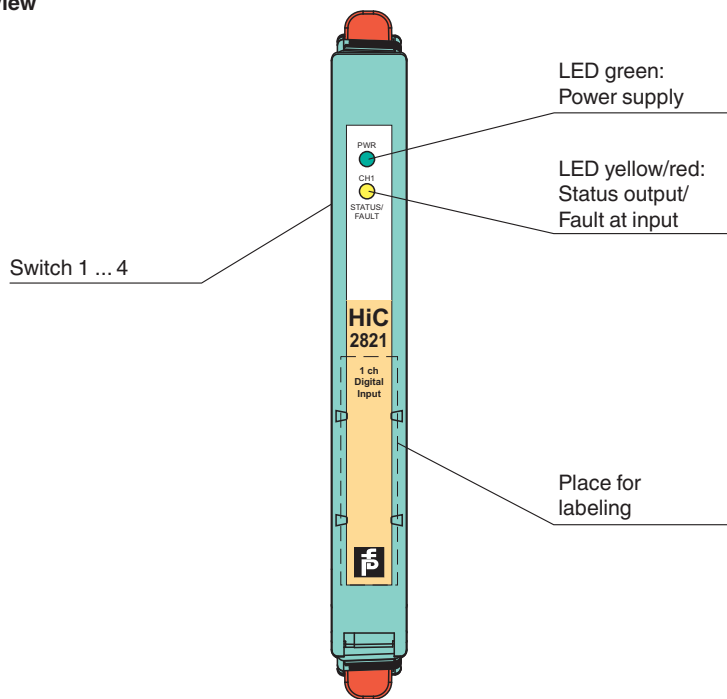
PEPPERL+FUCHS

Technical Data

UL approval	E106378
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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Configuration

Configure the device in the following way:

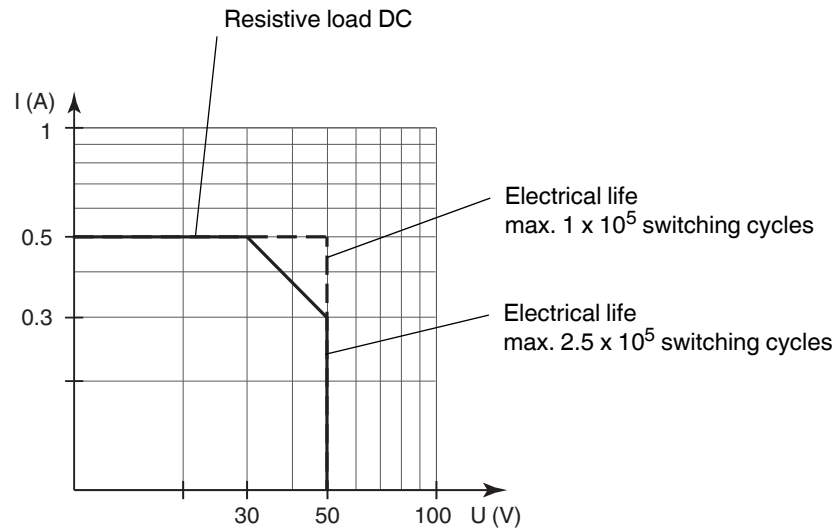
- Push the red Quick Lok Bars on each side of the device in the upper position.
- Remove the device from Termination Board.
- Set the DIP switches according to the figure.



*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.