



# Switch Amplifier

## HiC2822

- 2-channel isolated barrier
- 24 V DC supply (bus powered)
- Dry contact or NAMUR inputs
- 2 relay contact outputs
- 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.

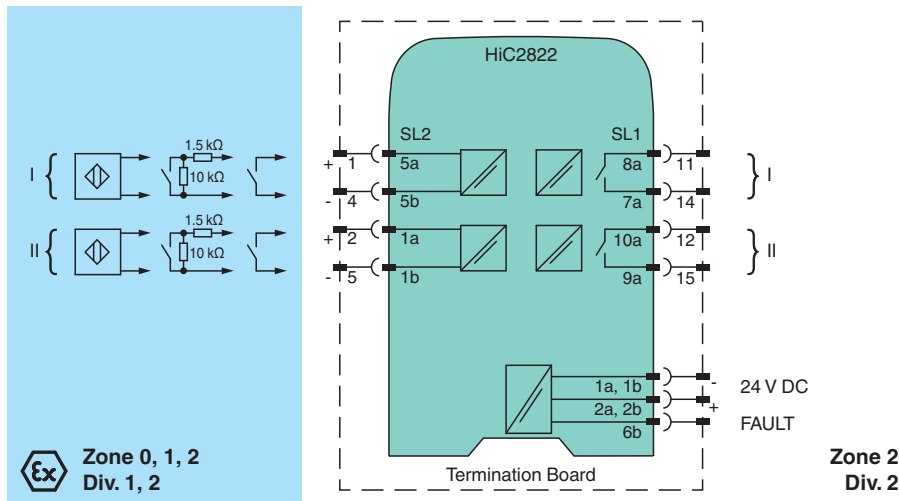
Each input controls a relay contact output for the non-explosion-hazardous area load.

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

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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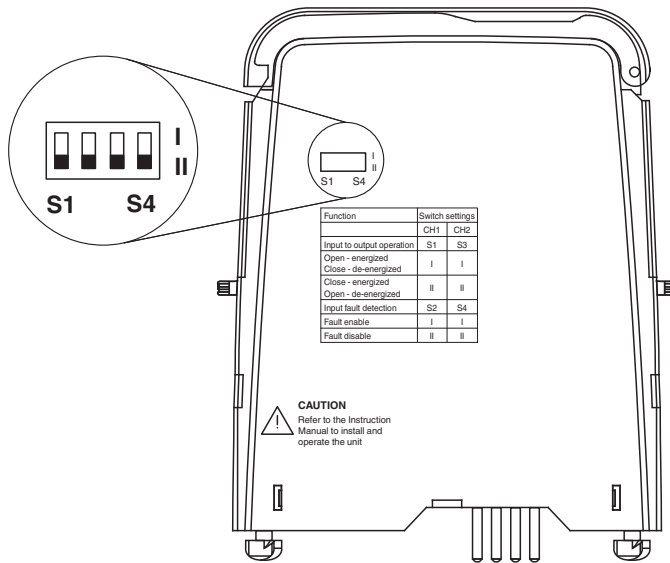
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**PF PEPPERL+FUCHS**

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	$I_r$	$\leq 30 \text{ mA}$
Power dissipation		$\leq 600 \text{ mW}$
Power consumption		$\leq 600 \text{ mW}$
Input		
Connection side		field side
Connection		SL2: 5a(+), 5b(-); 1a(+), 1b(-)
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 $I \leq 0.1 \text{ mA}$ , short-circuit $I \geq 6.7 \text{ mA}$
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 ; relay
Contact loading		50 V DC / 0.5 A
Minimum switch current		2 mA / 24 V DC
Energized/De-energized delay		$\leq 20 \text{ ms} / \leq 20 \text{ ms}$
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)	
<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. 110 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	
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 <sub>o</sub>	10.5 V
Current	I <sub>o</sub>	17.1 mA
Power	P <sub>o</sub>	45 mW (linear characteristic)
Supply		
Maximum safe voltage	U <sub>m</sub>	253 V AC (Attention! U <sub>m</sub> is no rated voltage.)
Output		
Contact loading	50 V DC / 0.5 A	
Maximum safe voltage	U <sub>m</sub>	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	
<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 60079-11:2012 , EN 60079-15:2010	
<b>International approvals</b>		
FM approval		
Control drawing	16-534FM-12 (cFMus)	

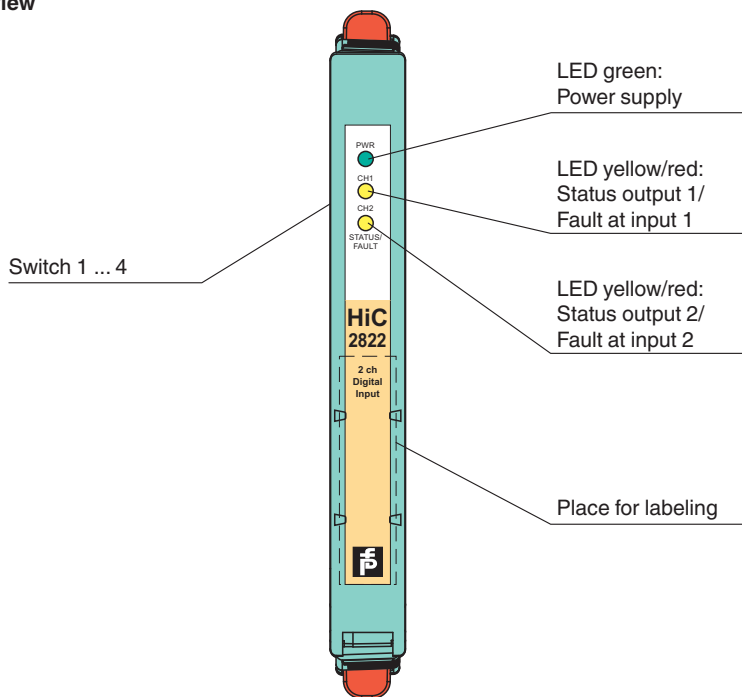
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**Technical Data**

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
<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**



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## Configuration

Configure the device in the following way:

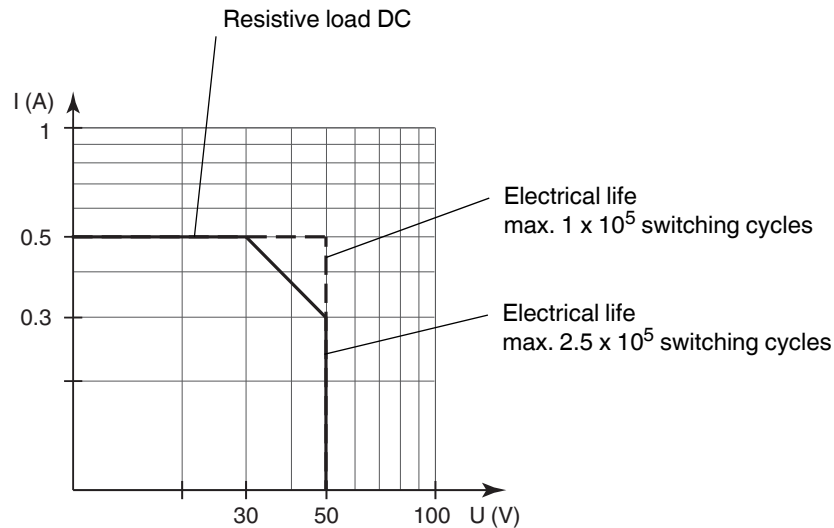
- Push the red Quick Lok Bars on each side of the device in the upper position.
- Remove the device from Termination Board.
- Set the DIP switches according to the figure.



*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.