



# Switch Amplifier

## HiC2842

- 2-channel isolated barrier
- 24 V DC supply (bus powered)
- Dry contact or NAMUR inputs
- 2 passive transistor outputs
- Line fault detection (LFD)
- Reversible mode of operation
- Up to SIL 2 (SC 3) 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.

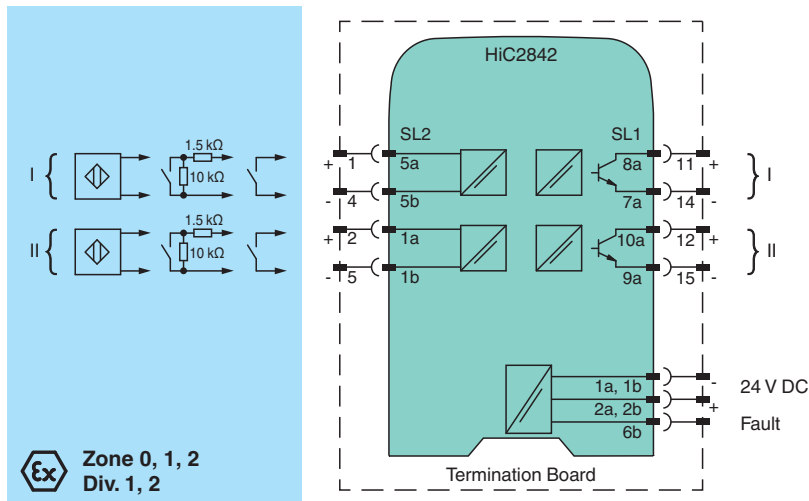
Each input controls a passive transistor for the non-explosion-hazardous area load.

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

During a fault state, the transistors revert to their 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



**Ex** Zone 0, 1, 2  
Div. 1, 2

### 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	$I_r$ $\leq 30$ mA

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

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## Technical Data

Power dissipation		≤ 600 mW
Power consumption		≤ 700 mW
<b>Input</b>		
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 $I \leq 0.1$ mA , short-circuit $I \geq 6.5$ mA
Pulse/Pause ratio		min. 100 $\mu$ s / min. 100 $\mu$ s
<b>Output</b>		
Connection side		control side
Connection		SL1: 8a(+), 7a(-); 10a(+), 9a(-)
Rated voltage	$U_r$	30 V DC
Rated current	$I_r$	50 mA
Response time		≤ 200 $\mu$ s
Signal level		1-signal: (external voltage) - 1 V max. for 50 mA ( $T_{amb} = 25$ °C (77 °F)) 0-signal: blocked output (off-state current ≤ 10 $\mu$ A)
Output I		signal ; Transistor
Output II		signal ; Transistor
<b>Fault indication output</b>		
Connection		SL1: 6b
Output type		open collector transistor (internal fault bus)
<b>Transfer characteristics</b>		
Switching frequency		≤ 5 kHz
<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
Factory setting		input close, transistor closed, lead fault detection enabled
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		NE 21:2012 For further information see system description.
Degree of protection		IEC 60529:2001
Protection against electrical shock		IEC 61140
<b>Ambient conditions</b>		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F)
Relative humidity		≤ 90 % , non-condensing
<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>		

Release date: 2025-03-12 Date of issue: 2025-03-12 Filename: 214234\_eng.pdf

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

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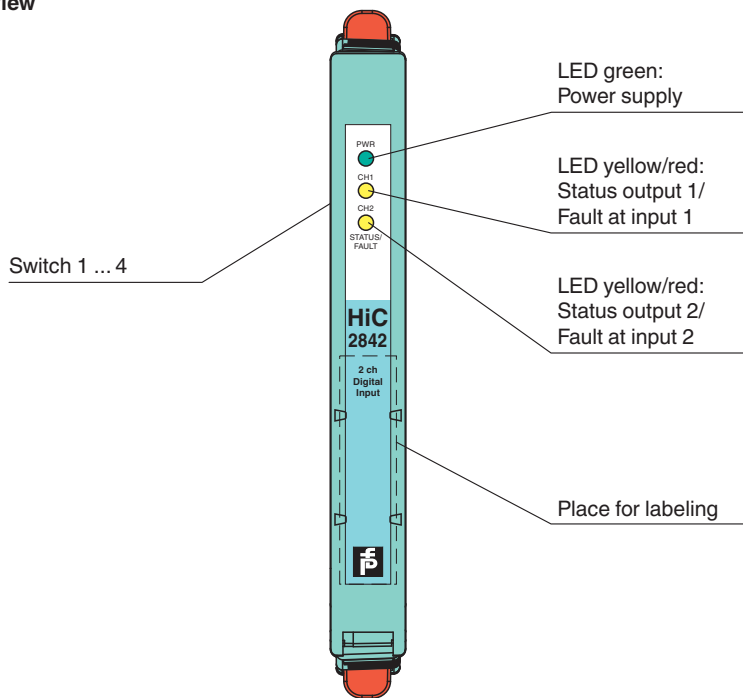
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**Technical Data**

EU-type examination certificate		BVS 09 ATEX E 157	
Marking		Ⓜ II (1)G [Ex ia Ga] IIC Ⓜ II (1)D [Ex ia Da] IIIC Ⓜ I (M1) [Ex ia Ma] I	
Input		Ex ia, Ex iaD	
Voltage	$U_o$	10.5 V	
Current	$I_o$	17.1 mA	
Power	$P_o$	45 mW (linear characteristic)	
<b>Supply</b>			
Maximum safe voltage	$U_m$	253 V AC (Attention! $U_m$ is no rated voltage.)	
<b>Output</b>			
Maximum safe voltage	$U_m$	253 V AC (Attention! The rated voltage can be lower.)	
<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 50303:2000	
<b>International approvals</b>			
UL approval		E106378	
Control drawing		116-0331	
<b>IECEX approval</b>			
IECEX certificate		IECEX BVS 09.0060	
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**

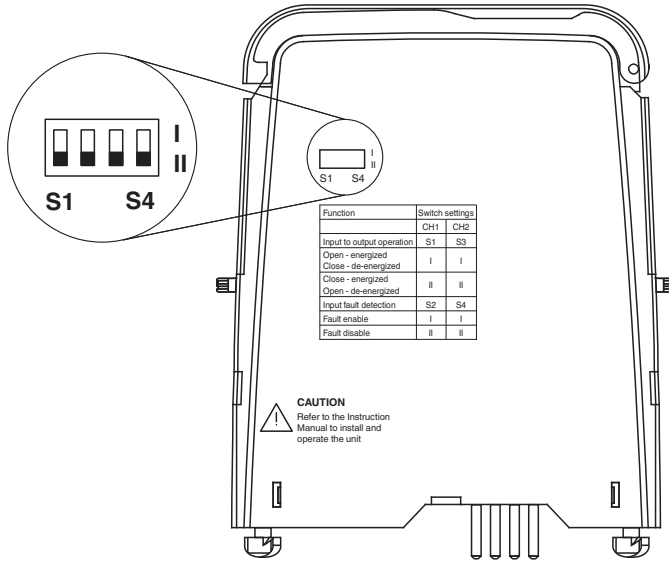
Front view



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**Configuration**



**Safety Information**

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

**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.

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