



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
- 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.

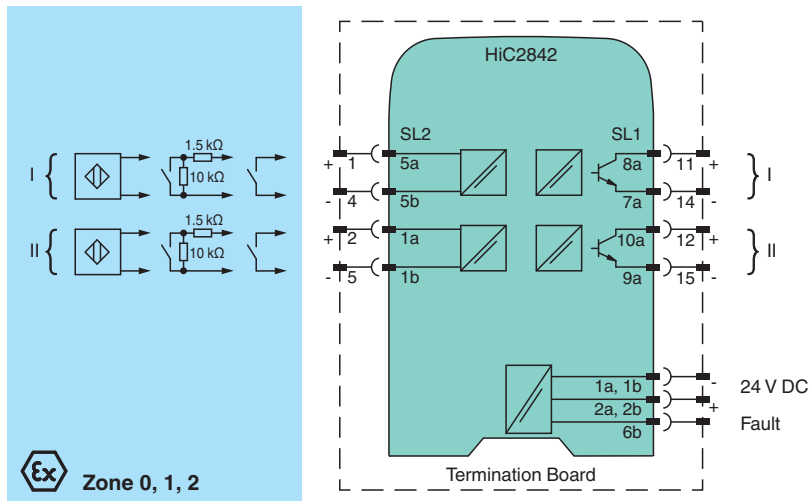
Each input controls a passive transistor for the non-explosion-hazardous area load.

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

Release date: 2022-09-15 Date of issue: 2022-09-15 Filename: 214234_eng.pdf

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

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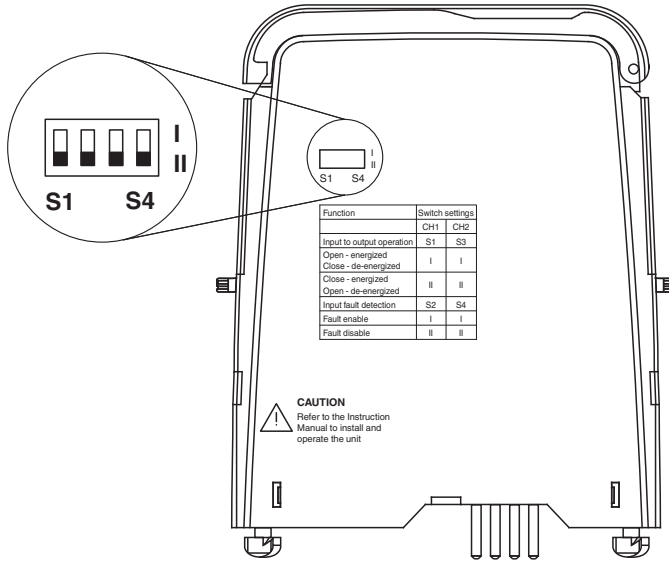
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Configuration



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	≤ 10 %	
Rated current	I_r	≤ 30 mA
Power dissipation	≤ 600 mW	
Power consumption	≤ 700 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 $I \leq 0.1$ mA , short-circuit $I \geq 6.5$ mA	
Pulse/Pause ratio	min. 100 μ s / min. 100 μ s	
Output		
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 μ 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 μ A)	
Output I	signal ; Transistor	

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Technical Data

Output II		signal ; Transistor
Fault indication output		
Connection		SL1: 6b
Output type		open collector transistor (internal fault bus)
Transfer characteristics		
Switching frequency		≤ 5 kHz
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 21:2012 For further information see system description.
Degree of protection		IEC 60529
Protection against electrical shock		IEC 61140
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F)
Relative humidity		≤ 90 % , non-condensing
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		BVS 09 ATEX E 157
Marking		Ⓜ II (1)G [Ex ia Ga] IIC Ⓜ II (1)D [Ex ia Da] IIC Ⓜ 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)
Supply		
Maximum safe voltage	U _m	253 V AC (Attention! U _m is no rated voltage.)
Output		
Maximum safe voltage	U _m	253 V AC (Attention! The rated voltage can be lower.)
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 50303:2000
International approvals		
UL approval		E106378
Control drawing		116-0331

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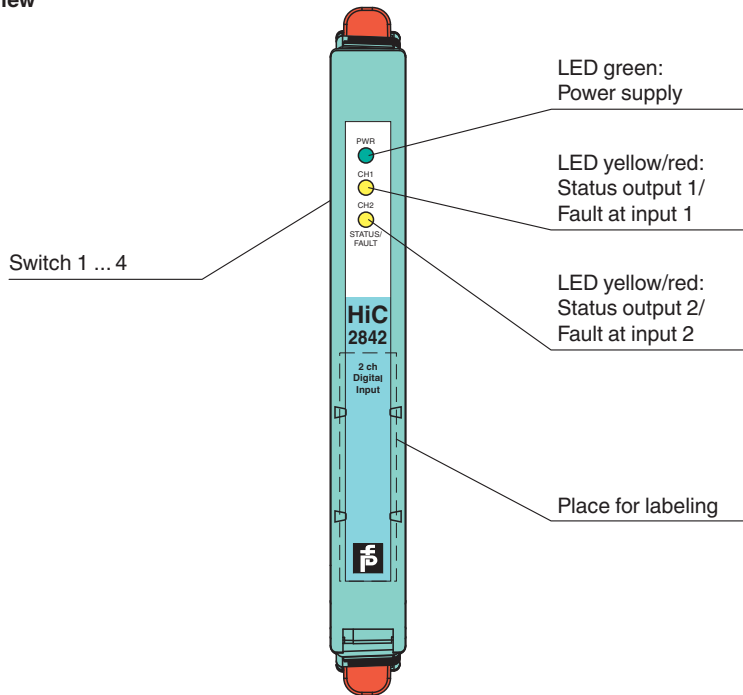
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Technical Data

IECEX approval		
IECEX certificate		IECEX BVS 09.0060
IECEX marking		[Ex ia Ga] IIC , [Ex ia Da] IIIC , [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.*