Features

- 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 passive transistor outputs
- Line fault detection (LFD)
- Reversible mode of operation
- Up to SIL2 acc. to IEC 61508

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 two passive transistors for the safe area load. Both transistor outputs are isolated from each other and isolated from the power supply.

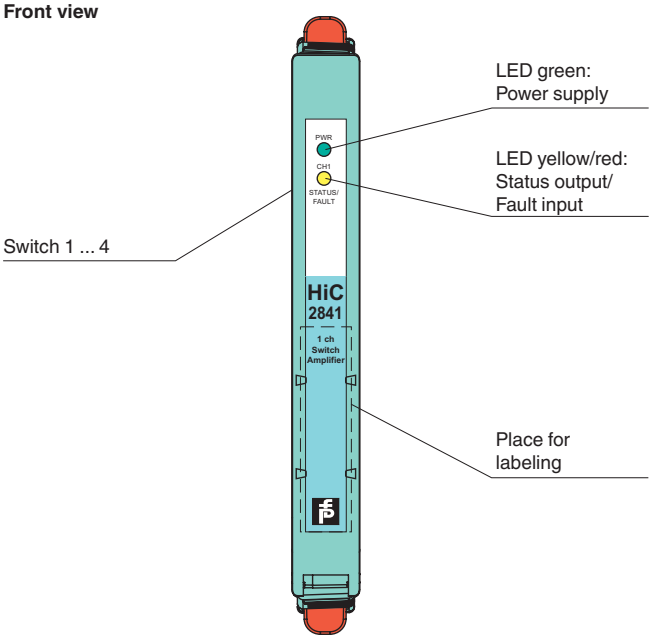
The mode of operation can be reversed using switch S1. Switch S3 allows output II to be switched between a signal output and an error message output. Switch S2 enables or disables line fault detection of the field circuit.

During an error condition, the transistors revert to their de-energized state and LEDs indicate the fault according to NAMUR NE44. 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.

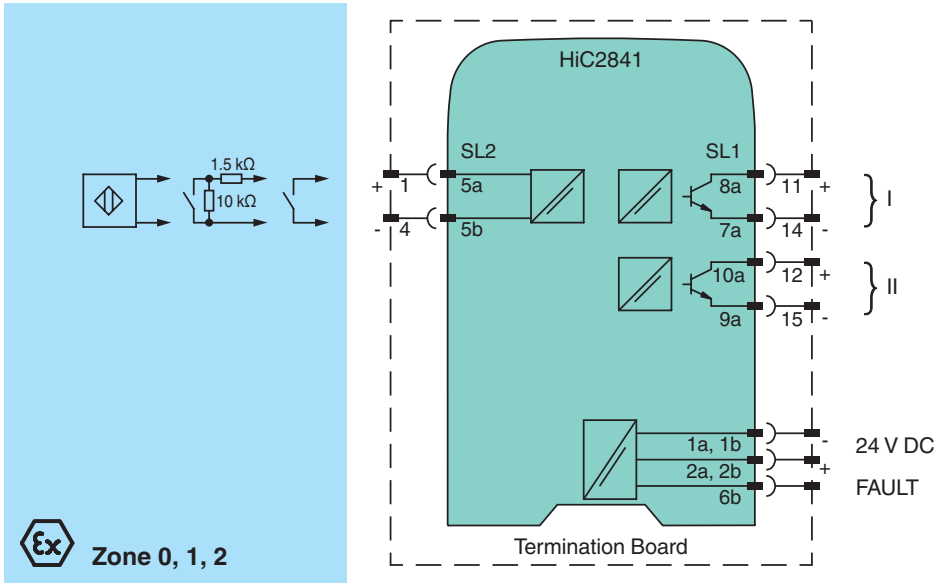
Assembly

Front view



SIL2

Connection



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General specifications		
Signal type		Digital Input
Supply		
Connection		SL1: 1a(-), 1b(-); 2a(+), 2b(+)
Rated voltage		19 ... 30 V DC via Termination Board
Ripple		≤ 10 %
Rated current		≤ 25 mA
Power loss		≤ 500 mW
Power consumption		≤ 600 mW
Input		
Connection		SL2: 5a(+), 5b(-)
Rated values		acc. to EN 60947-5-6 (NAMUR), see system description 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 ≤ 0.1 mA , short-circuit I ≥ 6.5 mA
Pulse/Pause ratio		≥ 100 µs / ≥ 100 µs
Output		
Connection		SL1: 8a(+), 7a(-); 10a(+), 9a(-)
Rated voltage		30 V DC
Rated current		50 mA
Response time		≤ 200 µs
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 µA)
Output I		signal ; Transistor
Output II		signal or error message ; Transistor
Error message output		
Connection		SL1: 6b
Output type		open collector transistor (internal fault bus)
Transfer characteristics		
Switching frequency		≤ 5 kHz
Electrical 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
Directive conformity		
Electromagnetic compatibility		
Directive 2004/108/EC		EN 61326-1:2006
Conformity		
Electrical isolation		EN 50178:1997
Electromagnetic compatibility		NE 21:2006 For further information see system description.
Degree of protection		IEC 60529
Protection against electrical shock		IEC 61140
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Relative humidity		≤ 90 % , non-condensing
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 in)
Mounting		on Termination Board
Coding		pin 1 and 2 trimmed For further information see system description.
Data for application in connection with Ex-areas		
EC-Type Examination Certificate		BVS 09 ATEX E 157 , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection		⟨Ex⟩ II (1)GD [Ex ia] IIC, [Ex iaD] [circuit(s) in zone 0/1/2/20/21/22] ⟨Ex⟩ I (M1) [Ex ia] 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.)

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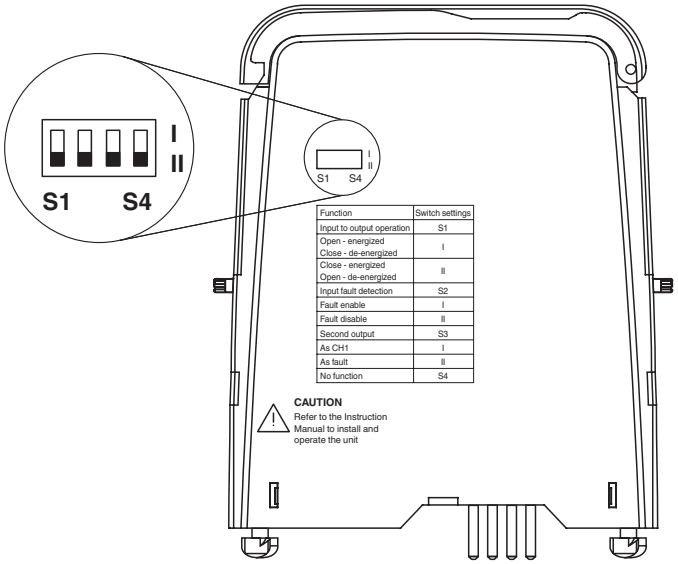
Electrical isolation	
Input/Output	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Input/power supply	safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Directive conformity	
Directive 94/9/EC	EN 60079-0:2006, EN 60079-11:2007 , EN 61241-11:2006, EN 61241-0:2006 , EN 60079-26:2007
International approvals	
UL approval	
Control drawing	116-0331
IECEx approval	IECEx BVS 09.0060
Approved for	[Ex ia Ga] IIC, [Ex ia] I , [Ex iaD]
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com.

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.

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