



# Switch Amplifier

## HiD2844

**SIL 2**

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

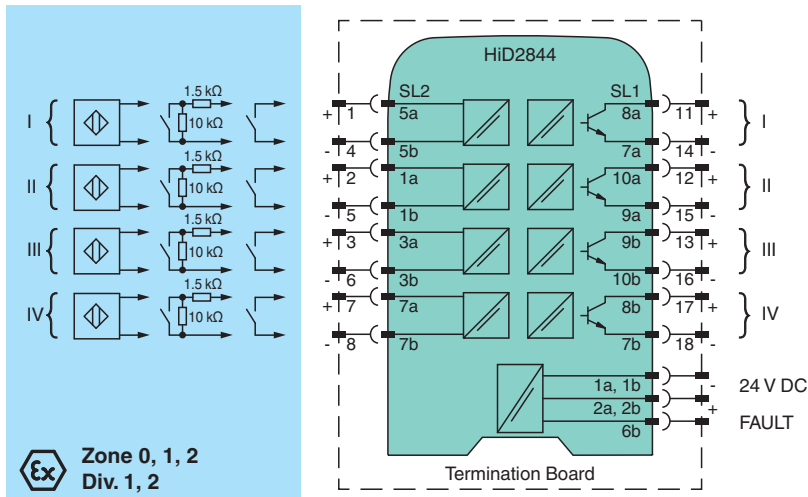
The proximity sensor or switch controls a passive transistor for the safe area load. The module output changes state when the input signal changes state. The normal output state can be reversed with the selector switches on the side of the unit.

Line fault detection (LFD) can be selected or disabled via a selector switch.

During an error condition, the transistor reverts to its de-energized state and the LEDs indicate the fault. A separate fault output bus is available. The fault conditions can be monitored via a Fault Indication Board.

This module mounts on a HiD Termination Board.

### Connection



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

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

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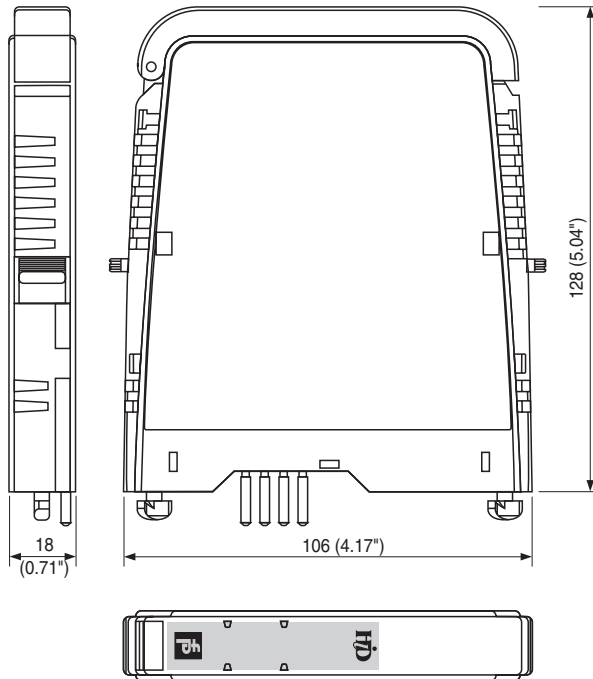
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**PF** PEPPERL+FUCHS

## Dimensions



## Technical Data

### General specifications

Signal type	Digital Input
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### Functional safety related parameters

Safety Integrity Level (SIL)	SIL 2
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### Supply

Connection	SL1: 1a(-), 1b(-); 2a(+), 2b(+)
Rated voltage	$U_r$ 20.4 ... 30 V DC bus powered via Termination Board
Rated current	$I_r$ 15 mA at 24 V (per channel)
Power dissipation	0.35 W at 24 V (per channel)

### Input

Connection side	field side
Connection	SL2: 5a(+), 5b(-); 1a(+), 1b(-); 3a(+), 3b(-); 7a(+), 7b(-)
Rated values	acc. to EN 60947-5-6 (NAMUR)
Connectable sensor types	potential free contact or proximity sensor
Switching point	contact open 0.2 ... 1.2 mA, contact closed 2.1 ... 6.5 mA
Line fault detection	breakage 0 ... 0.2 mA, short-circuit 6.5 mA ... maximum value

### Output

Connection side	control side
Connection	SL1: 8a(+), 7a(-); 8b(+), 7b(-); 10a(+), 9a(-); 9b(+), 10b(-)
Rated voltage	$U_r$ 30 V
Rated current	$I_r$ 50 mA
Output	one optocoupled transistor per channel
Signal level	1-signal: (external voltage) -1 V 0-signal: blocked output (off-state current max. 50 $\mu$ A, typical 5 $\mu$ A)

### Fault indication output

Connection	SL1: 6b
Output type	open collector transistor (internal fault bus)

### Transfer characteristics

Switching frequency	< 2 kHz
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### Galvanic isolation

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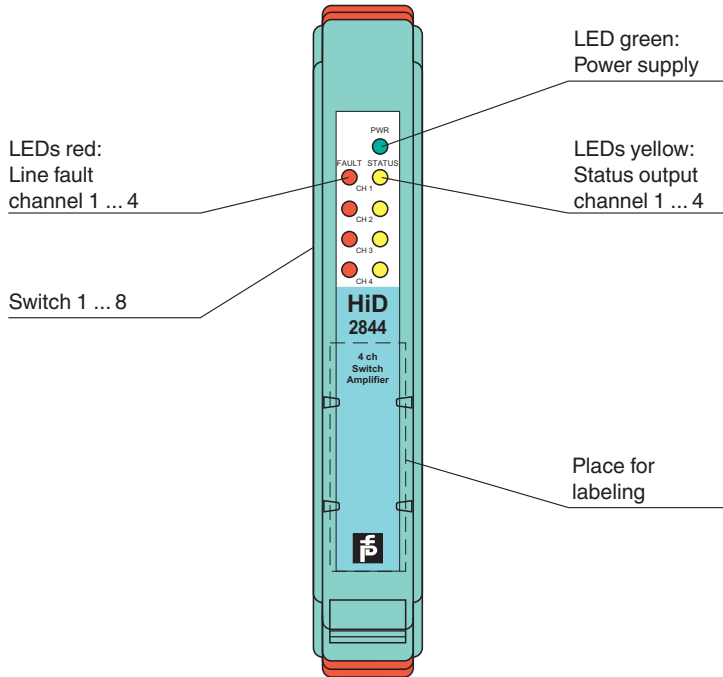
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## Technical Data

Output/power supply	functional insulation acc. to DIN EN 50178, rated insulation voltage 50 V <sub>eff</sub>	
Output/Output	functional insulation acc. to DIN EN 50178, rated insulation voltage 50 V <sub>eff</sub>	
<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	
Electromagnetic compatibility	NE 21:2006 For further information see system description.	
Degree of protection	IEC 60529	
<b>Ambient conditions</b>		
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)	
Relative humidity	5 ... 90 %, non-condensing up to 35 °C (95 °F)	
<b>Mechanical specifications</b>		
Degree of protection	IP20	
Mass	approx. 140 g	
Dimensions	18 x 106 x 128 mm (0.7 x 4.2 x 5 inch)	
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		
Marking	CESI 02 ATEX 086	
Input	Ex ia, Ex iaD	
Voltage	U <sub>o</sub>	13.2 V
Current	I <sub>o</sub>	20 mA
Power	P <sub>o</sub>	66 mW
Supply		
Maximum safe voltage	U <sub>m</sub>	250 V AC (Attention! U <sub>m</sub> is no rated voltage.)
Certificate		
Marking	PF 11 CERT 2109 X	
Galvanic isolation	Ex ia, Ex iaD	
Input/input	safe electrical isolation acc. to EN 60079-11:2007, voltage peak value 60 V	
Input/Output	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 375 V	
Input/power supply	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 375 V	
Directive conformity		
Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-11:2012 , EN 60079-15:2010	
<b>International approvals</b>		
CSA approval		
Control drawing	366-005CS-12B (cCSAus)	
IECEx approval		
Approved for	[Ex ia] IIC	
<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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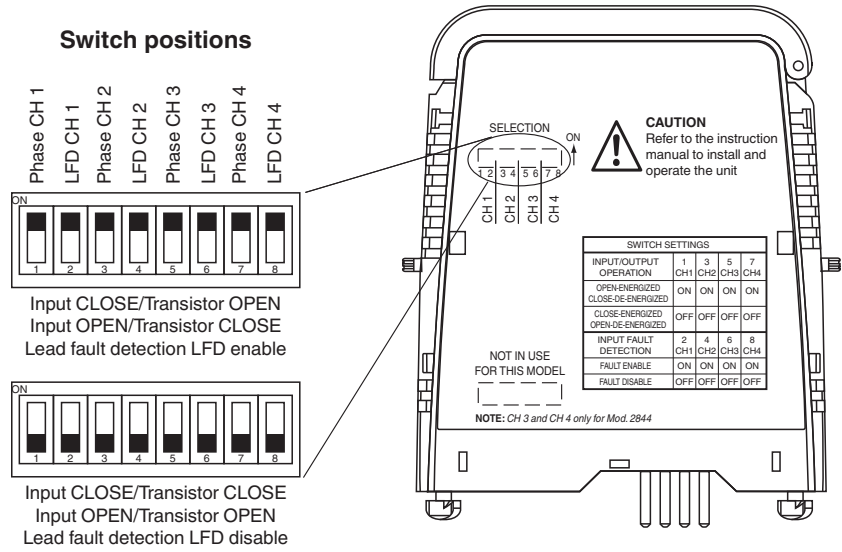
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**Configuration**



Channel 3 and 4 (switch 5 ... 8) only for HiD2844.

**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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