



Switch Amplifier HiD2824

SIL 2



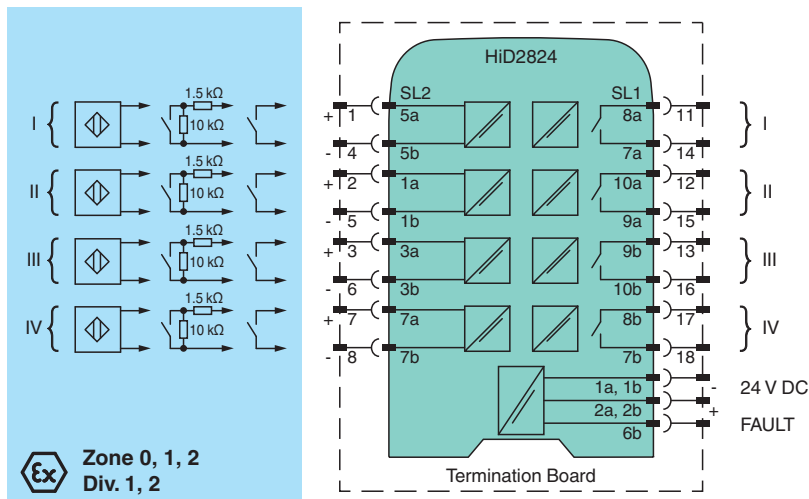
- 4-channel isolated barrier
- 24 V DC supply (bus powered)
- Dry contact or NAMUR inputs
- 4 relay contact outputs
- Line fault detection (LFD)
- Up to SIL 2 acc. to IEC 61508



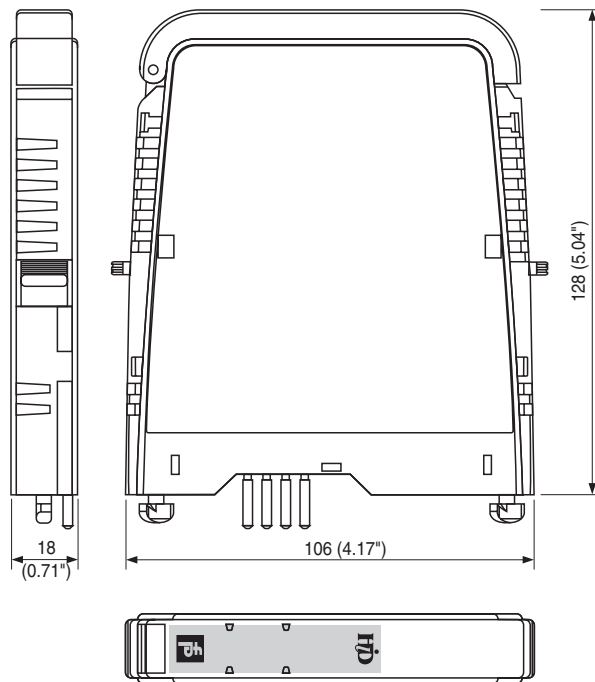
Function

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 two form A normally open relay outputs 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 relay 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



Dimensions



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 20.4 ... 30 V DC bus powered via Termination Board
Rated current	I_r 15 mA at 24 V, relay energized (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; 10a, 9a; 10b, 9b; 8b, 7b
Output	signal: relay SPST per channel, phase selectable
Response time	20 ms
Contact loading	50 V DC / 0.5 A non-inductive
Mechanical life	10^7 switching cycles

Fault indication output

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

Transfer characteristics

Switching frequency	< 10 Hz
---------------------	---------

Galvanic isolation

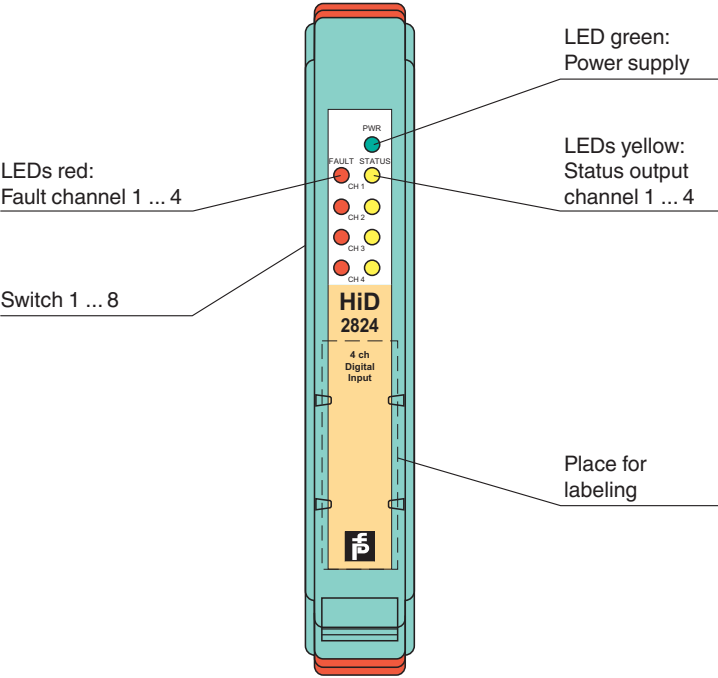
Technical Data

Output/power supply		functional insulation acc. to DIN EN 50178, rated insulation voltage 50 V _{eff}
Output/Output		functional insulation acc. to DIN EN 50178, rated insulation voltage 50 V _{eff}
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 21:2006 For further information see system description.
Degree of protection		IEC 60529:2001
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Relative humidity		5 ... 90 %, non-condensing up to 35 °C (95 °F)
Mechanical specifications		
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.
Data for application in connection with hazardous areas		
EU-type examination certificate		CESI 02 ATEX 086
Marking		Ⓔ II (1)G [Ex ia Ga] IIC , Ⓔ II (1)D [Ex ia Da] IIIC
Input		Ex ia, Ex iaD
Voltage		U _o 13.2 V
Current		I _o 20 mA
Power		P _o 66 mW
Supply		
Maximum safe voltage		U _m 250 V AC (Attention! U _m is no rated voltage.)
Certificate		PF 11 CERT 2109 X
Marking		Ⓔ II 3G Ex nA nC IIC T4 Gc
Galvanic isolation		
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
International approvals		
CSA approval		
Control drawing		366-005CS-12B (cCSAus)
IECEX approval		IECEX TUN 04.0012
Approved for		[Ex ia] IIC
General information		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .

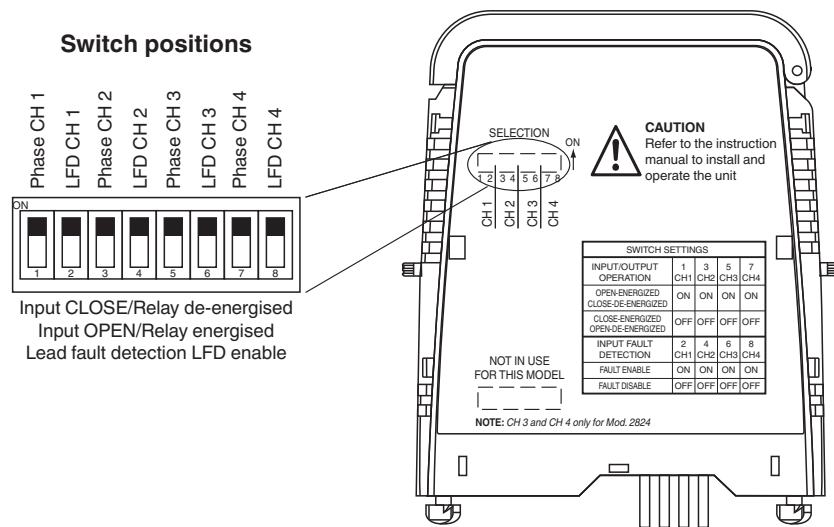
Release date: 2020-07-31 Date of issue: 2020-07-31 Filename: 121451_eng.pdf

Assembly

Front view



Configuration



Channel 3 and 4 (switch 5 ... 8) only for HiD2824.

Configuration

Configure the device in the following way:

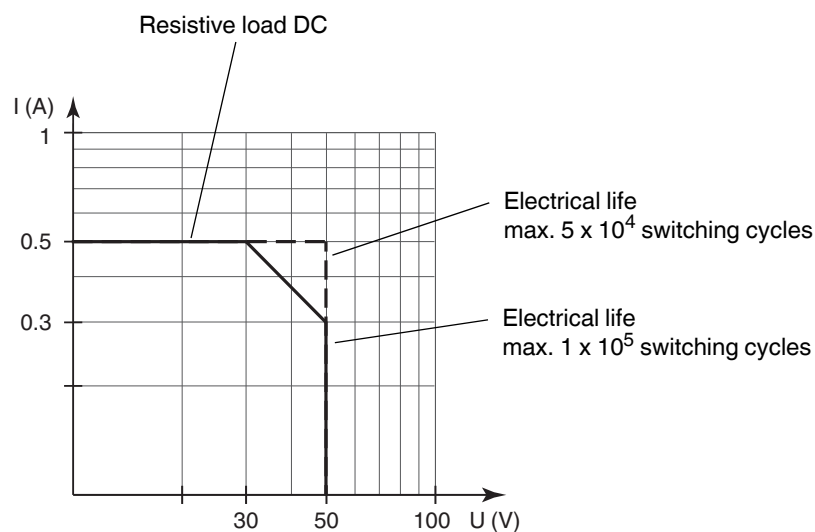
- Push the red Quick Lok Bars on each side of the device in the upper position.
- Remove the device from Termination Board.
- Set the DIP switches according to the figure.



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.