



Switch Amplifier

HiD2824

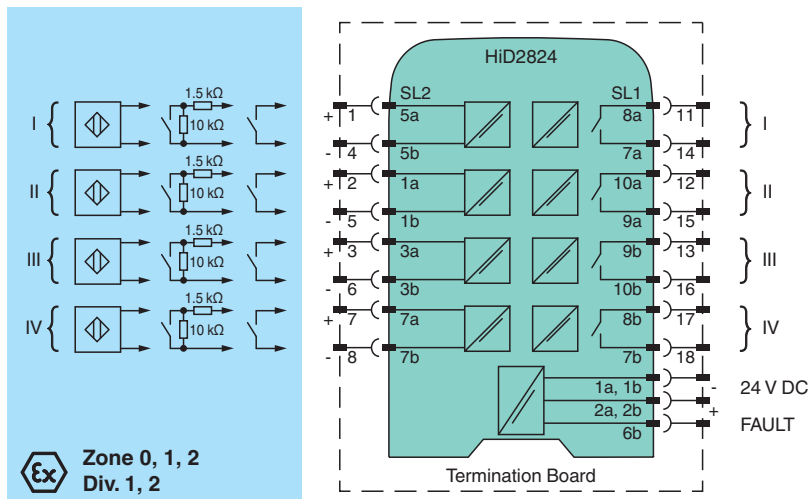
- 4-channel isolated barrier
- 24 V DC supply (bus powered)
- Dry contact or NAMUR inputs
- 4 relay contact outputs
- Line fault detection (LFD)
- Up to SIL 2 acc. to IEC/EN 61508



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



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)

Release date: 2022-01-05 Date of issue: 2022-01-05 Filename: 121451_eng.pdf

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

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Technical Data

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			
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 114 x 130 mm (0.7 x 4.5 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		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.)

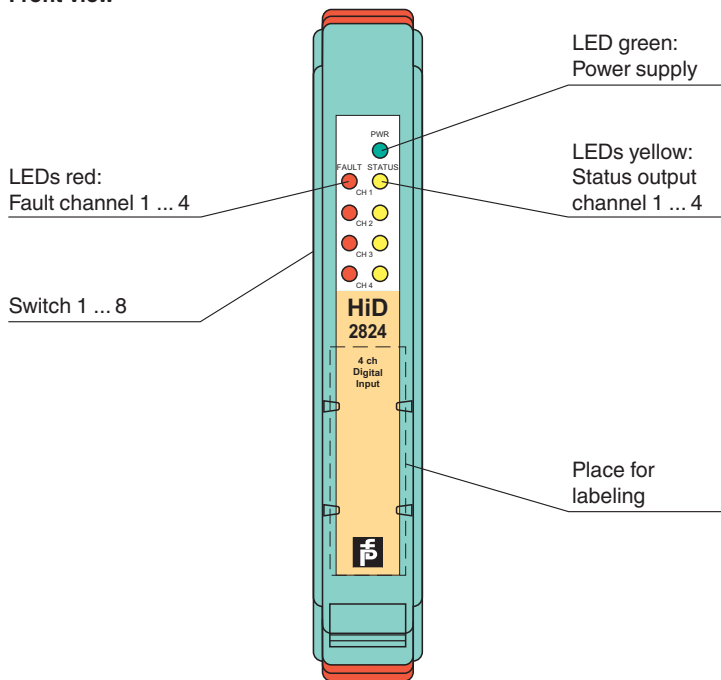
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Technical Data

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 certificate	IECEX TUN 04.0012
IECEX marking	[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 .

Assembly

Front view



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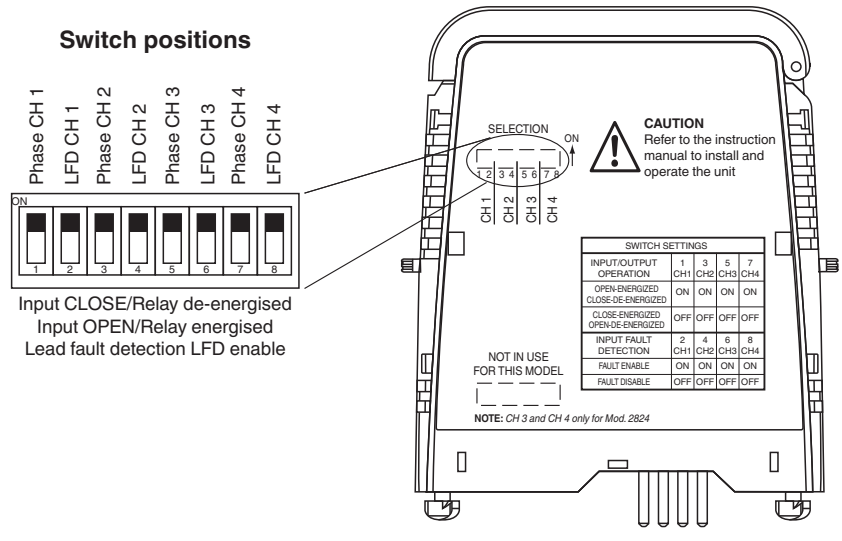
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Configuration




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

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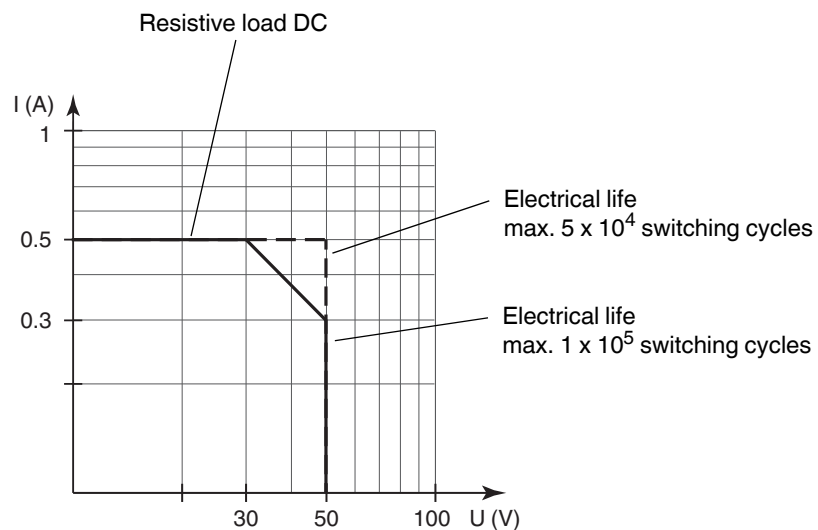
Configure the device in the following way:

- 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.

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