



Switch Amplifier

HiD2822

- 2-channel isolated barrier
- 24 V DC supply (bus powered)
- Dry contact or NAMUR inputs
- Usable as signal splitter (1 input and 2 outputs)
- 2 relay contact outputs per channel
- 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.

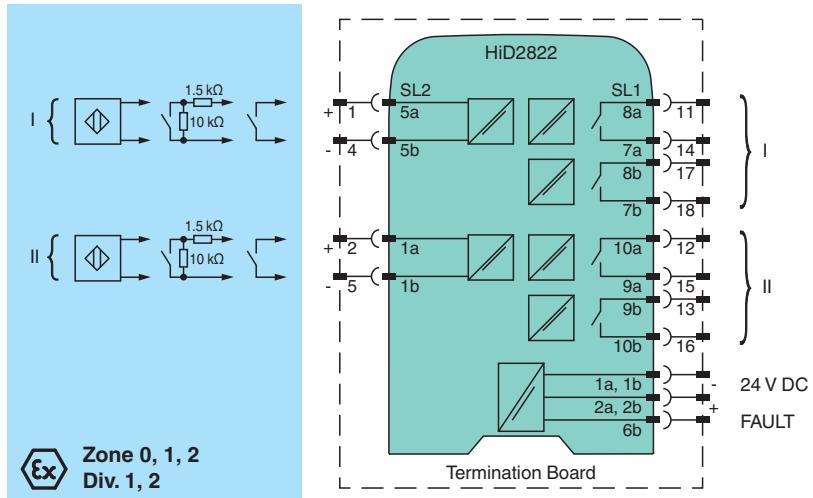
The proximity sensor or switch controls two form A normally open relay outputs for the safe area load. The module output changes state when the input signal changes state. The normal output state can be reversed with the selector switches on the side of the unit.

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	
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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(+)	
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Rated voltage	U_r	19 ... 30 V DC bus powered via Termination Board
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Rated current	I_r	45 mA at 24 V, relay energized
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Power dissipation		1.1 W at 24 V
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Input

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

Technical Data

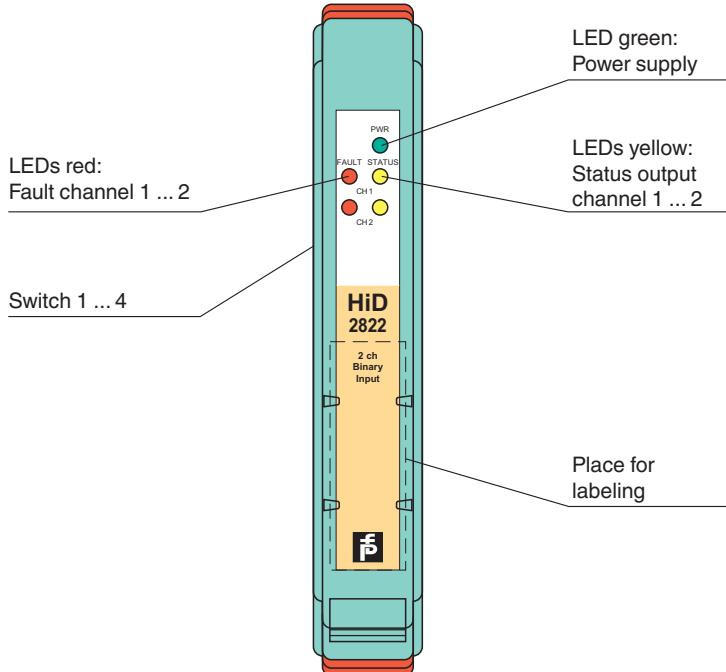
Connection side	field side	
Connection	SL2: 5a(+), 5b(-); 1a(+), 1b(-)	
Rated values	acc. to EN 60947-5-6 (NAMUR)	
Open circuit voltage/short-circuit current	approx. 10 V DC / approx. 8 mA	
Switching point/switching hysteresis	1.2 ... 2.1 mA / approx. 0.2 mA	
Line fault detection	breakage $I \leq 0.1$ mA, short-circuit $I \geq 6.5$ mA	
Pulse/Pause ratio	min. 20 ms / min. 20 ms	
Output		
Connection side	control side	
Connection	SL1: 8a, 7a, 8b, 7b; 10a, 9a, 10b, 9b	
Output	signal: 2 relays 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		
Input/Output	basic insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}	
Input/power supply	basic insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff}	
Output/power supply	basic insulation according to IEC/EN 61010-1, rated insulation voltage 50 V _{eff}	
Output/Output	basic insulation according to IEC/EN 61010-1, 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		
Electromagnetic compatibility	NE 21:2017 EN 61326-3-2:2018 For further information see system description.	
Degree of protection	IEC 60529:2001	
Protection against electrical shock	UL 61010-1:2012	
Ambient conditions		
Ambient temperature	-20 ... 60 °C (-4 ... 140 °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 21 ATEX 017	
Marking	Ex II (1)G [Ex ia Ga] IIC Ex II (1)D [Ex ia Da] IIC Ex I (M1) [Ex ia Ma] I	
Input	Ex ia	
Voltage	U _o	13.2 V
Current	I _o	20 mA

Technical Data

Power Supply	P_o	66 mW
Maximum safe voltage	U_m	250 V AC (Attention! U_m is no rated voltage.)
Galvanic isolation		
Input/input		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 60 V
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 , EN 60079-11:2012
International approvals		
CSA approval		CoC 80097459 (cCSAus)
Control drawing		116-0487 (cCSAus)
IECEx approval		
IECEx certificate		IECEx CES 21.0011
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



Configuration

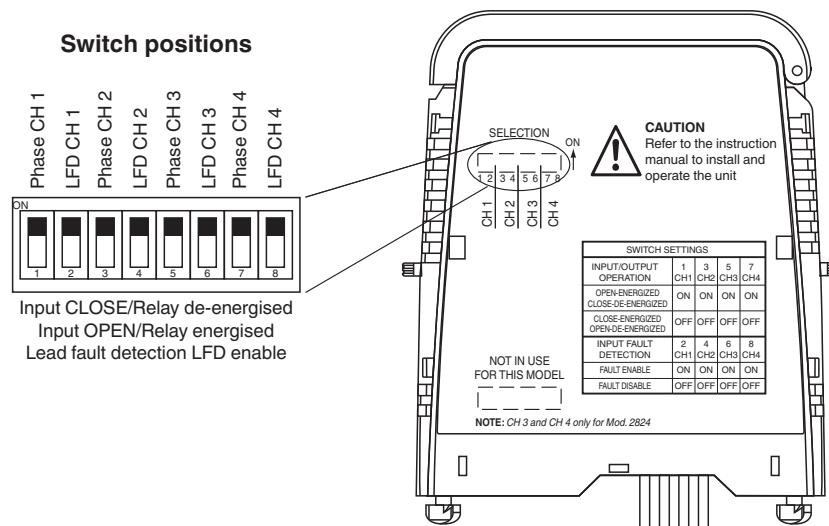
Configure the device in the following way:

- Push the red Quick Lok Bars on each side of the device in the upper position.
- Remove the device from termination board.
- Set the switches according to the figure in the **Configuration** section.

Note

The pins for this device are trimmed to polarize it according to its safety parameters. Do not change the setting. For further information see system description.

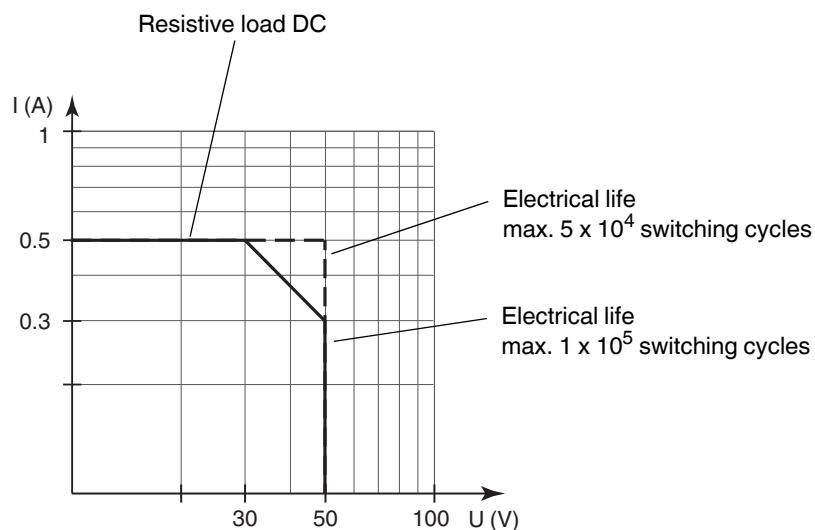
Configuration



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

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.