

Features

- 1-channel isolated barrier
- 24 V DC supply (bus powered)
- Dry contact, mag pickup, NAMUR or current/voltage inputs
- Configurable by **PACTware** or DIP switches
- Current or voltage output
- Sink and source mode output
- Relay contact output
- Line fault detection (LFD)

Function

This isolated barrier is used for intrinsic safety applications. It changes a digital input (NAMUR sensor/mechanical contact, magnetic pick-up sensors) into a proportional analog output (current source, current sink, or voltage source). It also functions as a switch isolator and trip alarm.

The input from the hazardous area is transferred to the safe area via a passive transistor output.

One relay output can be programmed to actuate at desired frequencies for min/max control or during a fault condition.

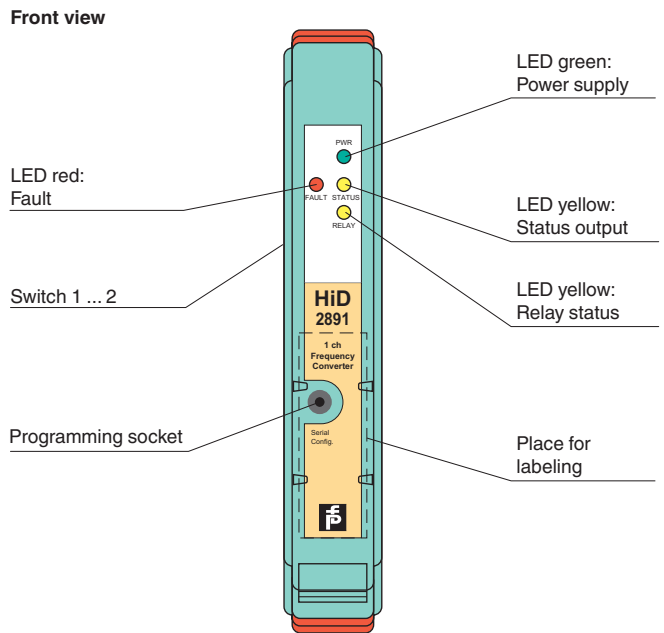
The unit is easily programmed by the use of a DIP switches on the side of the unit or with the **PACTware™** configuration software.

Line fault detection of the field circuit is indicated by a red LED.

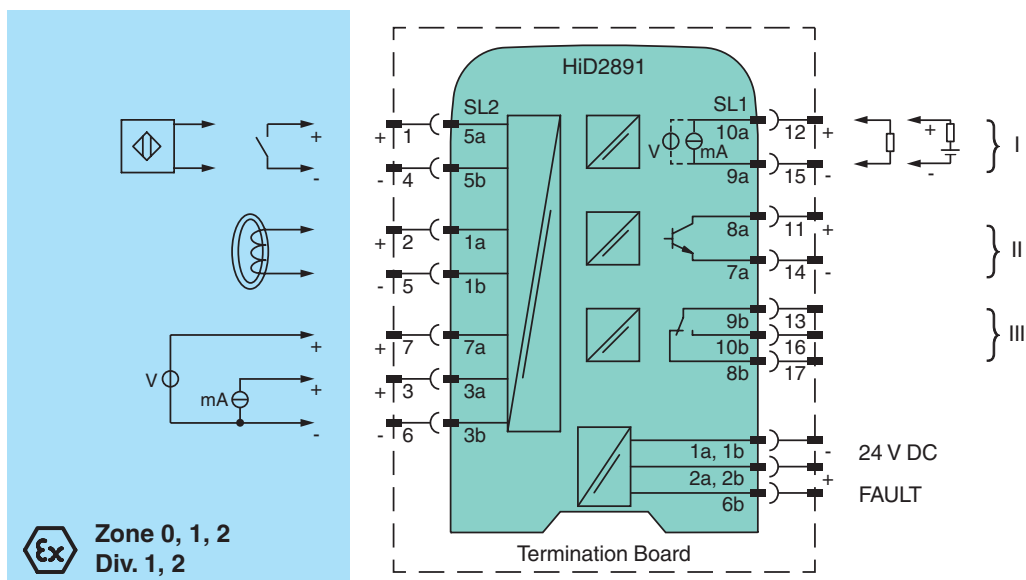
This module mounts on a HiD Termination Board.

For additional information, refer to the manual and www.pepperl-fuchs.com.

Assembly



Connection



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

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General specifications	
Signal type	Digital Input
Supply	
Connection	SL1: 1a(-), 1b(-); 2a(+), 2b(+)
Rated voltage	20.4 ... 30 V DC
Rated current	typ. 65 mA , max. 80 mA at output 20 mA
Power loss	typ. 1.5 W, max. 1.9 W
Input	
Connection	SL2: 5a(+), 5b(-); 1a(+), 1b(-); 3a(+), 3b(-), 7a(+)
Rated values	potential free contact or proximity sensor acc. to EN 60947-5-6 (NAMUR) magnetic pick-up: 100 mV _{pp} ... 20 V _{pp} , base threshold selectable as 50 mV or 500 mV current logic level: low level < 7 mA, high level > 9 mA voltage logic level: low level < 1.5 V, high level > 3.5 V, max. 28 V
Connectable sensor types	potential free contact or proximity sensor , magnetic pick-up, voltage or current level
Input resistance	magnetic pick-up: 10 kΩ current logic level: 50 Ω voltage logic level: 30 kΩ
Input frequency	max. 10 kHz
Pulse duration	min. 40 μs
Output	
Connection	SL1: 10a(+), 9a(-); 8a(+), 7a(-); 8b, 9b, 10b
Output	analog output: proportional to input frequency digital output: optocoupled transistor relay output: SPDT
Output signal	analog output: - current source 0/4 ... 20mA, load 0 ... 550 Ω - current sink 0/4 ... 20mA, working voltage 3 ... 30 V - voltage 0/1 ... 5 V on internal shunt 250 Ω - voltage 0/2 ... 10 V on internal shunt 500 Ω
Ripple	typ. 15 mV _{eff}
Contact loading	relay output: 50 V DC , 0.5 A non-inductive digital output: 30 V DC, 50 mA zener protected for inductive load
Leakage current	digital output typ. 5 μA , max. 50 μA
Saturation voltage	digital output 1.2 V at 50 mA
Error message output	
Connection	SL1: 6b
Output type	relay output: high/low alarm, input repeater (max. 5 Hz), error message fault bus signal: open collector transistor on common bus
Transfer characteristics	
Calibrated accuracy	< ± 0.1 % of full-scale value (current output)
Resolution	< 10 μA
Measuring time	≥ 100 ms
Influence of temperature	< ± 0.01 %/ K , typ. ± 0.005%/K
Frequency range	0.001 ... 10000 Hz
Influence of load	< 0.1 % of full-scale value from 0 ... 550 Ω
Response delay	≤ 200 ms
Electrical 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}
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
Conformity	
Electrical isolation	EN 50178
Electromagnetic compatibility	NE 21:2006 For further information see system description.
Degree of protection	IEC 60529
Input	EN 60947-5-6
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 in)
Mounting	on Termination Board

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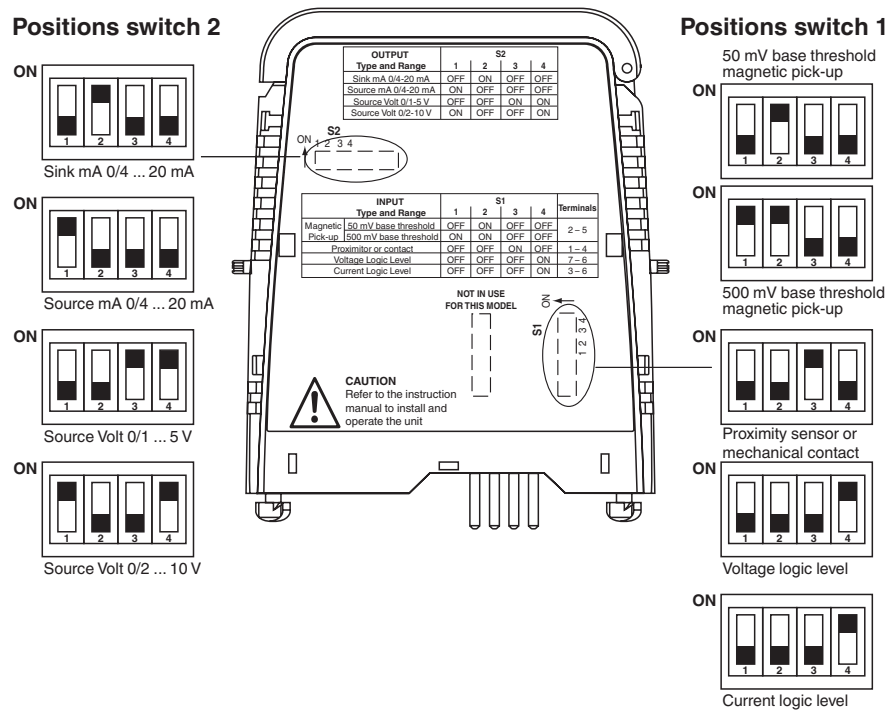
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Coding	pin 1, 2 and 4 trimmed For further information see system description.	
Data for application in connection with Ex-areas		
EC-Type Examination Certificate	CESI 02 ATEX 086 , for additional certificates see www.pepperl-fuchs.com	
Group, category, type of protection	⊕ II (1)G [Ex ia Ga] IIC , ⊕ II (1)D [Ex ia Da] IIIC	
Input	Ex ia, Ex iaD	
Voltage	U _o	5a(+), 5b(-): 10 V 1a(+), 1b(-): 10 V 3a(+), 3b(-): 1.5 V 7a(+), 3b(-): 1.5 V
Voltage	U _i	1a(+), 1b(-): 30 V 3a(+), 3b(-): 29 V 7a(+), 3b(-): 30 V
Current	I _o	5a(+), 5b(-): 10 mA 1a(+), 1b(-): 1 mA 3a(+), 3b(-): 1 mA 7a(+), 3b(-): 1 mA
Current	I _i	3a(+), 3b(-): 110 mA
Power	P _o	5a(+), 5b(-): 25 mW 1a(+), 1b(-): 2.5 mW 3a(+), 3b(-): 0.4 mW 7a(+), 3b(-): 0.4 mW
Power	P _i	3a(+), 3b(-): 666 mW
Supply		
Maximum safe voltage	U _m	250 V AC (Attention! U _m is no rated voltage.)
Statement of conformity	PF 11 CERT 2109 X , observe statement of conformity	
Group, category, type of protection, temperature class	⊕ II 3G Ex nA nC IIC T4 Gc	
Electrical isolation		
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 94/9/EC	EN 60079-0:2009, EN 60079-11:2007, EN60079-15:2005 , EN 60079-26:2007 , EN 61241-11:2006	
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 .	

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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.