Features

- 2-channel isolated barrier
- 24 V DC supply (bus powered)
- Current output up to 750 Ω load
- SMART I/P and valve positioners
- Line fault detection (LFD)
- Up to SIL 2 acc. to IEC 61508

Function

This isolated barrier is used for intrinsic safety applications. It repeats a 4 mA ... 20 mA input signal from a control system to drive SMART I/P converters, valve actuators, and displays located in a hazardous area.

Digital signals may be superimposed on the analog values in the hazardous or safe area, which are transferred bi-directionally.

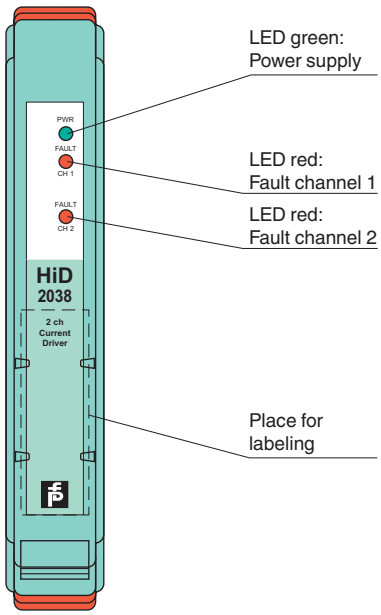
An open field circuit presents a high impedance to the control side to allow alarm conditions to be monitored by control systems.

Line fault detection of the field circuit is indicated by a red LED and an output on the fault bus. The fault conditions can be monitored via a Fault Indication Board.

This module mounts on a HiD Termination Board.

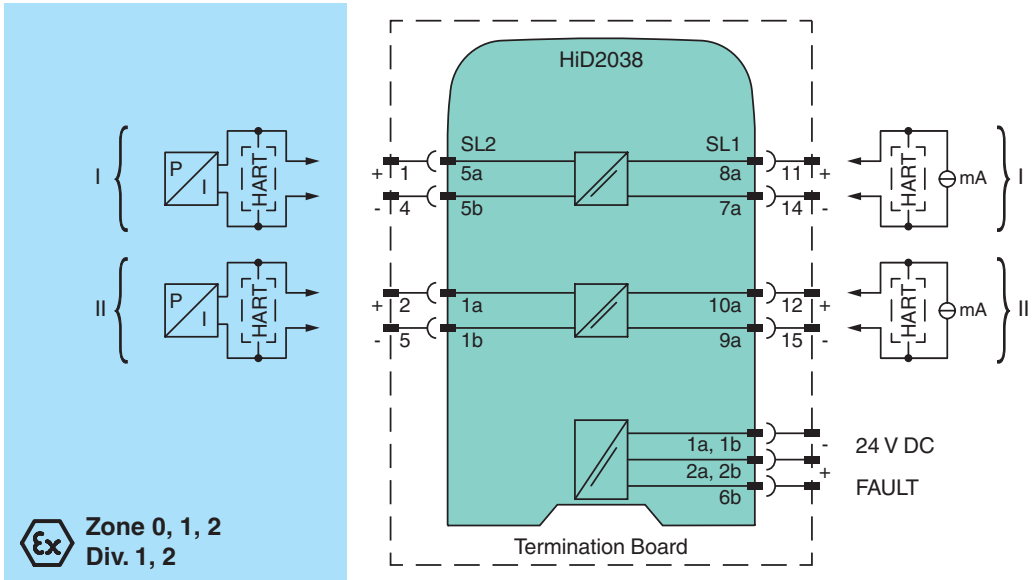
Assembly

Front view



SIL 2

Connection



Release date 2017-08-09 14:48 Date of issue 2017-08-10 121484_eng.xml

General specifications		
Signal type		Analog output
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	40 mA at 24 V, 20 mA output (per channel)
Power dissipation		0.85 W at 24 V (per channel)
Input		
Connection side		control side
Connection		SL1: 8a(+), 7a(-); 10a(+), 9a(-)
Input current		4 ... 20 mA , reverse polarity protected
Signal level		input voltage drop < 4 V with field wiring intact input current < 1.2 mA with field wiring open
Output		
Connection side		field side
Connection		SL2: 5a(+), 5b(-); 1a(+), 1b(-)
Load		0 ... 750 Ω
Output signal		4 ... 20 mA
Ripple		15 mV_{eff}
Response time		50 ms , 10 ... 90 % step change
Line fault detection		breakage, load > 100 kΩ, short-circuit, load < 70 Ω
Fault indication output		
Connection		SL1: 6b
Output type		open collector transistor (internal fault bus)
Transfer characteristics		
Accuracy		< ± 0.1 % of full-scale value
Influence of temperature		< ± 0.01 %/K
Frequency range		0.5 ... 40 kHz within 3 db, (-6 db at 100 kHz) for use with SMART positioners using HART protocol
Influence of load		< ± 0.1 % of full-scale value from 0 ... 750 Ω
Linearity		< ± 0.1 % of full-scale value
Galvanic isolation		
Input/power supply		functional insulation acc. to DIN EN 50178, rated insulation voltage 50 V_{eff}
Input/input		functional insulation acc. to DIN EN 50178, rated insulation voltage 50 V_{eff}
Indicators/settings		
Display elements		LEDs
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 21:2006 For further information see system description.
Degree of protection		IEC 60529
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 3 trimmed For further information see system description.
Data for application in connection with hazardous areas		
EU-Type Examination Certificate		CESI 02 ATEX 086
Marking		⟨Ex⟩ II (1)G [Ex ia Ga] IIC , ⟨Ex⟩ II (1)D [Ex ia Da] IIIC
Output		Ex ia, Ex iaD
Voltage	U_o	26 V
Current	I_o	93 mA
Power	P_o	605 mW
Supply		
Maximum safe voltage	U_m	250 V AC (Attention! U_m is no rated voltage.)

Release date 2017-08-09 14:48 Date of issue 2017-08-10 121484_eng.xml

Certificate	PF 11 CERT 2109 X
Marking	Ex II 3G Ex nA IIC T4 Gc [device in zone 2]
Galvanic isolation	
Input/Output	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 375 V
Output/power supply	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 375 V
Output/Output	safe electrical isolation acc. to EN 60079-11:2007, voltage peak value 60 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.

Configuration

No user configuration available for this device.

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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