

Features

- 1-channel isolated barrier
- 24 V DC supply (bus powered)
- 2-wire SMART transmitters or current sources
- Output 4 mA ... 20 mA, current sink
- Line fault detection (LFD)
- Up to SIL 2 acc. to IEC 61508

Function

This isolated barrier is used for intrinsic safety applications. It provides a fully floating supply to power 2-wire SMART transmitters in the hazardous area, and repeats the current to drive a safe area load. It is also used with 2-wire current sources. It is designed to provide a sink mode output on the safe area terminals

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

A separate fault output on the bus is signaled if the input signal is outside the range 0.2 mA ... 24 mA. The fault conditions can be monitored via a Fault Indication Board.

This module mounts on a HiD Termination Board.

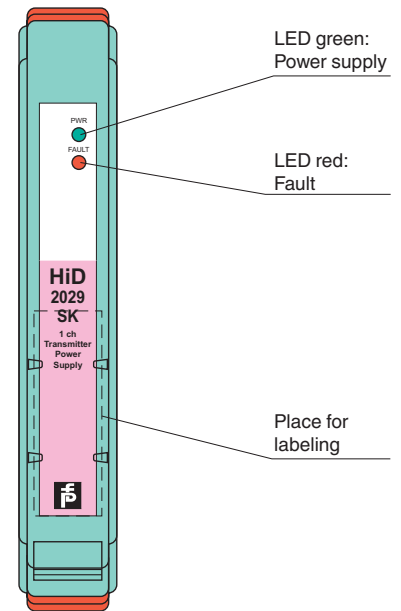
Application

The device supports the following SMART protocols:

- HART
- BRAIN
- Bailey (only STT02 communication, e. g. BCN series)
- Foxboro

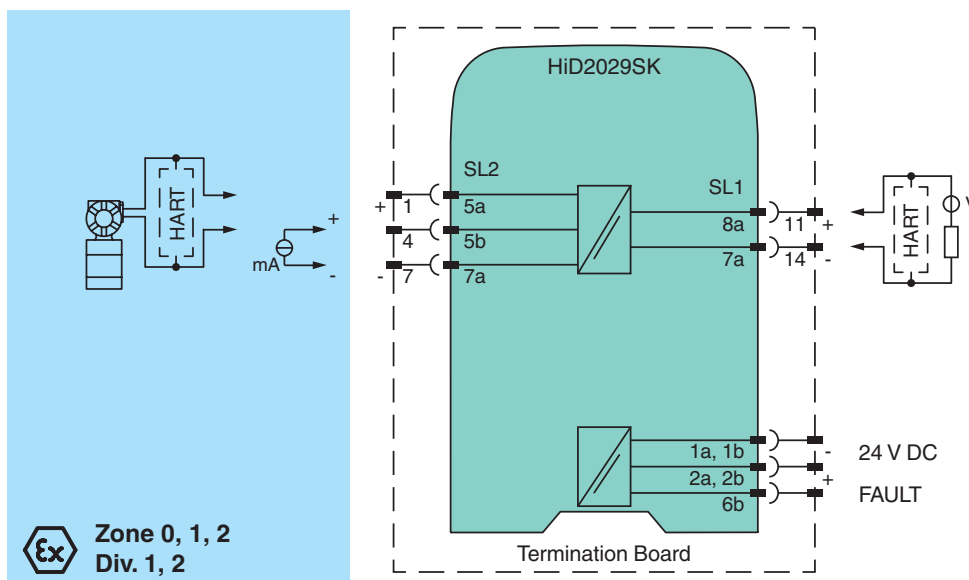
Assembly

Front view





SIL 2

Connection



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

General specifications		
Signal type		Analog 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	40 mA at 24 V, 20 mA output
Power dissipation		1.05 W at 20 mA and 24 V external from PCS or PLC
Input		
Connection side		field side
Connection		SL2: 5a(+), 5b, 7a(-)
Input current		4 ... 20 mA , current limit 26 mA
Input resistance		40 Ω , for current source
Ripple		10 mV _{eff}
Voltage		min. 15.5 V at 20 mA
Communication		pass-through of HART signal to safe area The current sink terminals 4 and 7 do not pass the HART signal to safe area.
Output		
Connection side		control side
Connection		SL1: 8a(+), 7a(-)
Output		sink mode from external supply
Output signal		4 ... 20 mA , current limit 24 mA
Voltage		working voltage 7 ... 30 V
Response time		70 ms , 10 ... 90 % step change
Signal level		no fault: 1 mA ... 23.5 mA input current fault detection: < 0.2 mA or > 24 mA input current
Fault indication output		
Connection		SL1: 6b
Output type		open collector transistor fault bus signal
Transfer characteristics		
Calibrated accuracy		< \pm 0.1 % of full-scale value
Influence of temperature		< \pm 0.01 %/ K
Frequency range		communication channel: 0.5 ... 40 kHz within 3 db, (-6 db at 100 kHz), Tx to output and output to Tx, suitable for use with SMART transmitters using HART or similar protocol
Linearity		< \pm 0.05 % of full-scale value
Galvanic isolation		
Output/power supply		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		 II (1)G [Ex ia Ga] IIC ,  II (1)D [Ex ia Da] IIIC
Input		Ex ia, Ex iaD
Voltage	U_o	26 V
Current	I_o	93 mA

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Power	P _o	605 mW
Supply		
Maximum safe voltage	U _m	250 V AC (Attention! U _m is no rated voltage.)
Certificate		
Marking		PF 11 CERT 2109 X
Galvanic isolation		⊕ II 3G Ex nA IIC T4 Gc [device in zone 2]
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		
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.*