

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 SIL2 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.

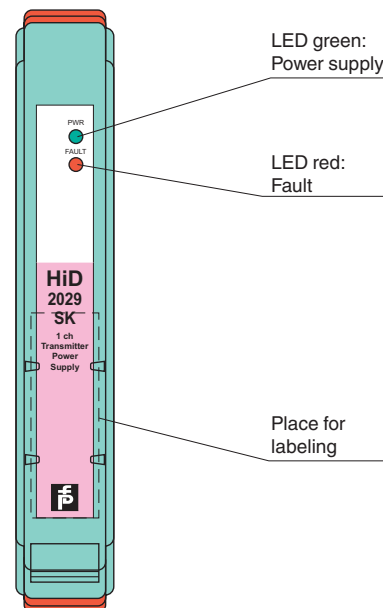
Application

The device supports the following SMART protocols:

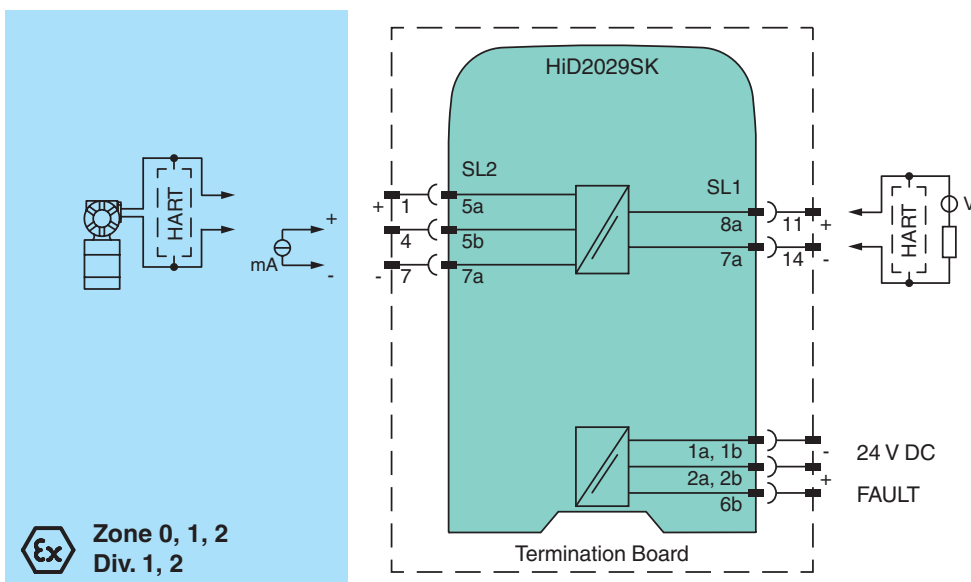
- HART
- BRAIN
- Baily (only SST-02 communication, e. g. BCN series)
- Foxboro

Assembly

Front view



Connection



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

General specifications		
Signal type	Analog input	
Supply		
Connection	SL1: 1a(-), 1b(-); 2a(+), 2b(+)	
Rated voltage	20.4 ... 30 V via Termination Board	
Rated current	40 mA at 24 V, 20 mA output	
Power loss	1.05 W at 20 mA and 24 V external from DCS or PLC	
Input		
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	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	
Error message output		
Connection	SL1: 6b	
Output type	open collector transistor fault bus signal	
Transfer characteristics		
Calibrated accuracy	< ± 0.1 % of full-scale value	
Influence of temperature	< ± 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	< ± 0.05 % of full-scale value	
Electrical isolation		
Output/power supply	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		
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 in)	
Mounting	on Termination Board	
Coding	pin 1 and 3 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	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.)
Statement of conformity	PF 11 CERT 2109 X , observe statement of conformity	
Group, category, type of protection, temperature class	⊕ II 3G Ex nA IIC T4 Gc [device in zone 2]	
Electrical isolation		

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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
International approvals	
CSA approval	
Control drawing	366-005CS-12B (cCSAus)
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 .

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.*