

Features

- 2-channel isolated barrier
- 24 V DC supply (bus powered)
- 2-wire SMART transmitters or current sources
- Usable as signal splitter (1 input and 2 outputs)
- Dual output 4 mA ... 20 mA, current sink
- Line fault detection (LFD)
- Up to SIL 2 acc. to IEC 61508

Function

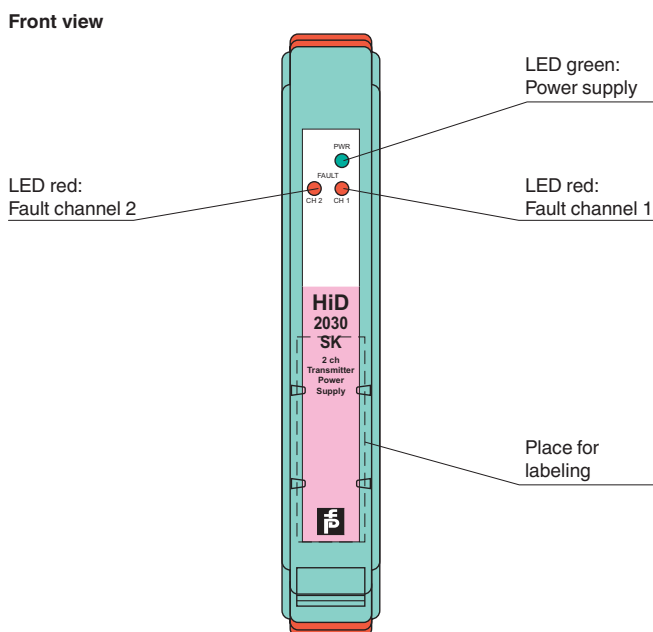
This isolated barrier is used for intrinsic safety applications. It provides a fully floating supply to power 2-wire SMART transmitters in the hazardous area, and repeats the current to drive a safe area load. It is also used with 2-wire current sources. It is designed to provide a sink mode output on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

Assembly



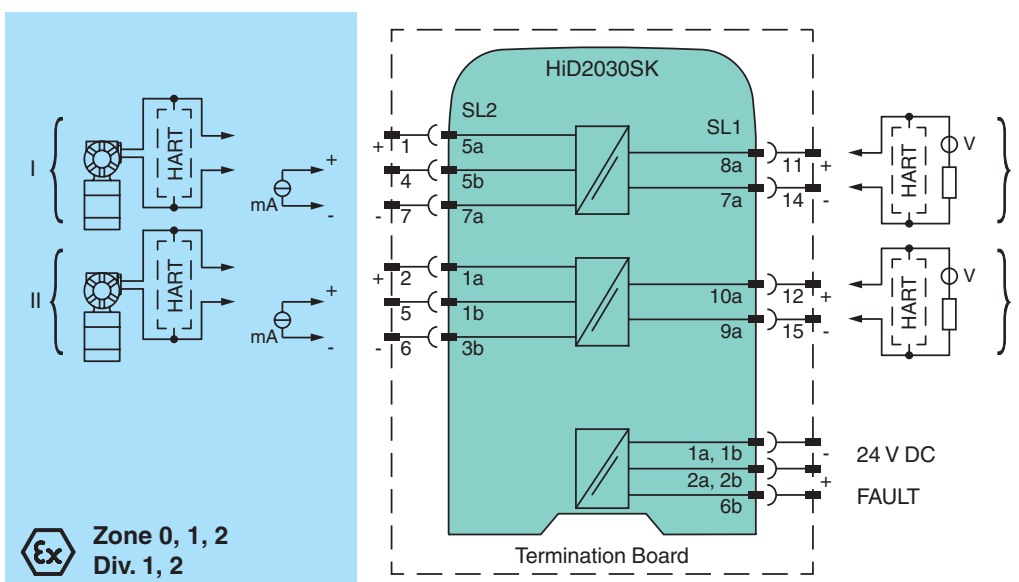
Application

The device supports the following SMART protocols:

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





Connection



Release date 2017-08-09 14:51 Date of issue 2017-08-10 12:1500_eng.xml

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 (per channel)
Power dissipation	1.05 W at 20 mA and 24 V external from PCS or PLC (per channel)
Input	
Connection side	field side
Connection	SL2: 5a(+), 5b, 7a(-); 1a(+), 1b, 3b(-)
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, 7 and 5, 6 do not pass the HART signal to safe area.
Output	
Connection side	control side
Connection	SL1: 8a(+), 7a(-); 10a(+), 9a(-)
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 (common to both channels) fault bus signal, collective error message
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}
Output/Output	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

Release date 2017-08-09 14:51 Date of issue 2017-08-10 12:1500_eng.xml


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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0002
pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222
pa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
pa-info@sg.pepperl-fuchs.com

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

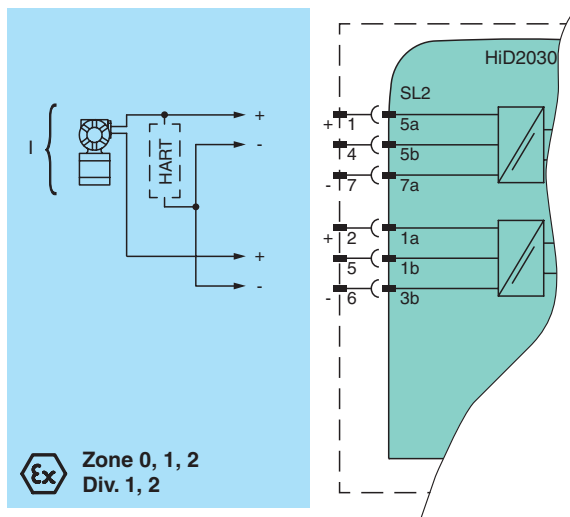
Configuration

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.*

Connection for signal splitter function: 1 input → 2 outputs



Note:

- Communication for SMART transmitter is provided only on output channel 1.
- Minimum supply voltage available for field transmitters is 14.7 V at 20 mA.
- Safety parameters are now:
 - $U_o = 27.2\text{ V}$
 - $I_o = 93\text{ mA}$
 - $P_o = 633\text{ mW}$
- See operating instructions for other connection options and for more details.

Release date 2017-08-09 14:51 Date of issue 2017-08-10 121500_eng.xml

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