



# SMART Transmitter Power Supply HiD2022

- 2-channel isolated barrier
- 24 V DC supply (bus powered)
- Input 2-wire and 3-wire SMART transmitters and 2-wire SMART current sources
- Output 0/4 mA ... 20 mA current source
- SIL 2 (SC 3) acc. to IEC/EN 61508



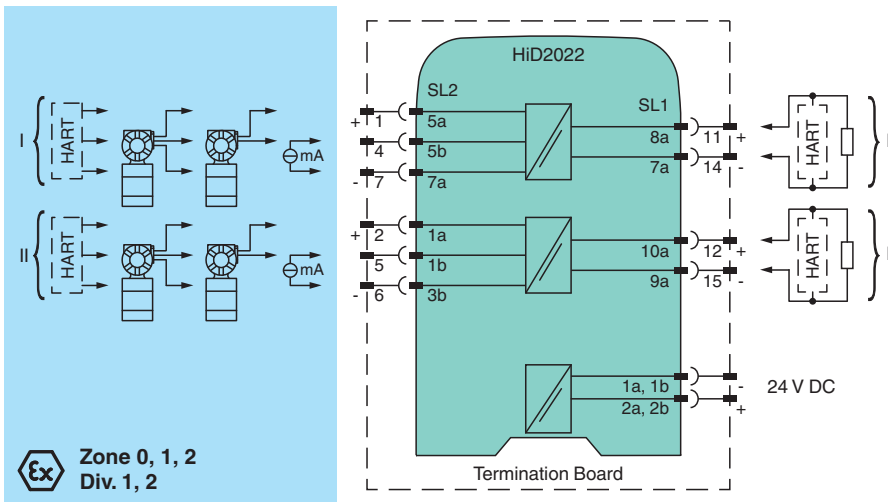
SIL 2



## Function

This isolated barrier is used for intrinsic safety applications. The device supplies 2-wire and 3-wire SMART transmitters, and can also be used with 2-wire SMART current sources. It transfers the analog input signal to the safe area as an isolated current value. Digital signals may be superimposed on the input signal in the hazardous or non-hazardous area and are transferred bi-directionally. The device provides a source mode output on the safe area terminals. This device mounts on a HiD Termination Board.

## Connection



## Technical Data

### General specifications

Signal type Analog input

### Functional safety related parameters

Safety Integrity Level (SIL) SIL 2  
Systematic capability (SC) SC 3

### Supply

Connection SL1: 1a(-), 1b(-); 2a(+), 2b(+)  
Rated voltage  $U_r$  18 ... 30 V DC bus powered via Termination Board  
Ripple within the supply tolerance  
Power dissipation  $\leq 1.4$  W

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## Technical Data

Power consumption		≤ 2.6 W
<b>Input</b>		
Connection side		field side
Connection		SL2: 5a(+), 5b, 7a(-); 1a(+), 1b, 3b(-)
Input signal		0/4 ... 20 mA , current limit 27 mA
Input resistance		max. 265 Ω SL2: 5b, 7a; 1b, 3b ; max. 330 Ω SL2: 5a, 7a; 1a, 3b
Available voltage		≥ 16 V at 20 mA , SL2: 5a(+), 5b(-); 1a(+), 1b(-)
<b>Output</b>		
Connection side		control side
Connection		SL1: 8a(+), 7a(-); 10a(+), 9a(-)
Load		0 ... 650 Ω
Output signal		0/4 ... 20 mA (overload > 25 mA)
Ripple		max. 50 μA <sub>rms</sub>
<b>Transfer characteristics</b>		
Deviation		at 20 °C (68 °F), 0/4 ... 20 mA ≤ 10 μA incl. calibration, linearity, hysteresis, loads and fluctuations of supply voltage
Influence of ambient temperature		≤ 0.25 μA/K
Frequency range		field side into the control side: band width with 1 V <sub>pp</sub> signal 0 ... 7.5 kHz (-3 dB) safe area to hazardous area: band width with 1 V <sub>SS</sub> signal 0.3 ... 7.5 kHz (-3 dB)
Settling time		200 μs
Rise time/fall time		100 μs
<b>Galvanic isolation</b>		
Output/power supply		functional insulation, rated insulation voltage 50 V AC
Output/Output		functional insulation, rated insulation voltage 50 V AC
<b>Indicators/settings</b>		
Display elements		LED
Labeling		space for labeling at the front
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
<b>Conformity</b>		
Electromagnetic compatibility		NE 21:2012 EN 61326-3-2:2008
Degree of protection		IEC 60529:2001
<b>Ambient conditions</b>		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Relative humidity		5 ... 90 %, non-condensing up to 35 °C (95 °F)
<b>Mechanical specifications</b>		
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.
<b>Data for application in connection with hazardous areas</b>		
EU-type examination certificate		CML 17 ATEX 2143X
Marking		⊕ II (1)G [Ex ia Ga] IIC ⊕ II (1)D [Ex ia Da] IIIC ⊕ I (M1) [Ex ia Ma] I
Input		[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I
Supply		
Maximum safe voltage	U <sub>m</sub>	250 V (Attention! The rated voltage can be lower.)
Equipment		SL2: 5a(+), 5b(-); 1a(+), 1b(-)
Voltage U <sub>o</sub>		26.2 V
Voltage U <sub>q</sub>		27.25 V

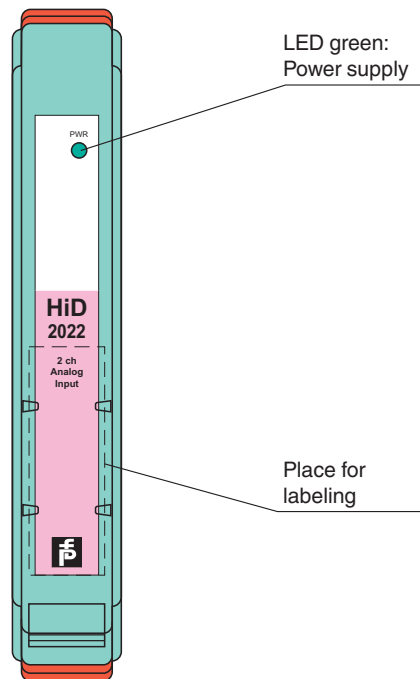
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**Technical Data**

Current $I_o$	93 mA
Power $P_o$	634 mW
Equipment	SL2: 5b(+), 7a(-); 1b(+), 3b(-)
Voltage $U_i$	30 V
Current $I_i$	115 mA
Power $P_i$	max 1 W
Voltage $U_o$	2 V
Current $I_o$	8.5 mA
Power $P_o$	4.3 mW
Equipment	SL2: 5a(+), 5b, 7a(-); 1a(+), 1b, 3b(-)
Voltage $U_o$	26.2 V
Voltage $U_q$	27.25 V
Current $I_o$	115 mA
Power $P_o$	784 mW
Certificate	CML 17 ATEX 3144X
Marking	Ⓜ II 3G Ex ec IIC T4 Gc
Galvanic isolation	
Input/Output	safe electrical isolation acc. to IEC/EN 60079-11:2007, voltage peak value 375 V
Input/power supply	safe electrical isolation acc. to IEC/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 60079-7:2015
<b>International approvals</b>	
IECEX approval	
IECEX certificate	IECEX CML 17.0072X
IECEX marking	[Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I
<b>General information</b>	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

**Assembly**

Front view



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## Application

The device supports the following SMART protocols:

- HART
- BRAIN
- Foxboro