

## Millivolt Converter S1SD-1AI-1U.3

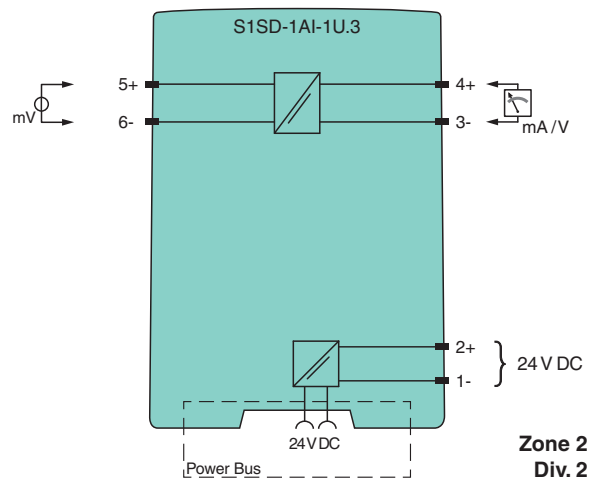
- 1-channel signal conditioner
- 24 V DC supply
- Input bipolar millivolt sources
- Output bipolar current and voltage sources
- Accuracy 0.1 %
- Configurable via DIP switches and potentiometer
- Connection via screw terminals



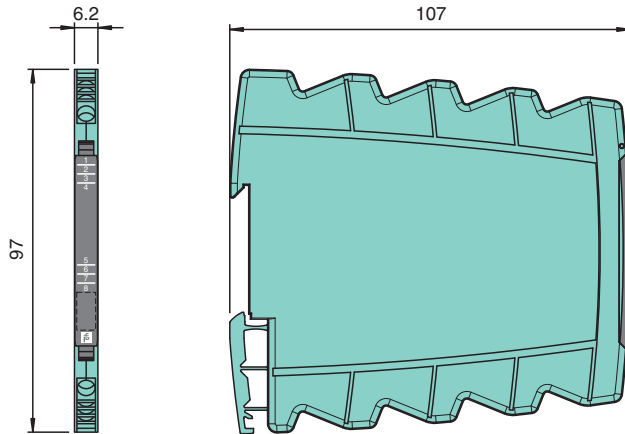
### Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits. The device has an input for bipolar millivolt sources. At the output the signals are available as bipolar current and voltage sources. The device is easily configured by the use of DIP switches and potentiometers. The device can be powered via terminals or Power Bus.

### Connection



**Dimensions**



**Technical Data**

<b>General specifications</b>	
Signal type	Analog input
Operation time	MTBF: 495 a acc. to SN 29500 stationary continuous operating, average ambient temperature 40 °C (104 °F)
<b>Supply</b>	
Connection	Power Bus or terminals 1-, 2+
Rated voltage	$U_r$ 16.8 ... 31.2 V DC
Power dissipation	0.6 W
Power consumption	0.8 W
<b>Input</b>	
Connection side	field side
Connection	terminals 5+, 6-
Input signal	$\pm 60$ mV, $\pm 100$ mV, $\pm 150$ mV, $\pm 250$ mV, $\pm 300$ mV, $\pm 500$ mV
Input resistance	$\geq 100$ k $\Omega$
Transmission range	linearity range: unipolar -1 ... 110 % bipolar -110 ... 110 %
<b>Output</b>	
Connection side	control side
Connection	terminals 3-, 4+
Analog voltage output	0/1 ... 5 V, 0/2 ... 10 V, $\pm 5$ V, $\pm 10$ V, load $\geq 2$ k $\Omega$
Analog current output	0/4 ... 20 mA, $\pm 10$ mA, $\pm 20$ mA, load $\leq 600$ $\Omega$
Ripple	$\leq 10$ mV <sub>eff</sub>
<b>Transfer characteristics</b>	
Accuracy	max. 0.1 % of full-scale value
Influence of ambient temperature	< 100 ppm/K of full-scale value
Frequency range	0 ... 100 Hz, 0 ... 8 kHz
Settling time	7 ms, 150 $\mu$ s
<b>Galvanic isolation</b>	
Output/power supply	safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> test voltage 3 kV, 50 Hz, 1 min
Input/Other circuits	safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V <sub>eff</sub> test voltage 3 kV, 50 Hz, 1 min
<b>Indicators/settings</b>	
Control elements	DIP-switch potentiometer
Configuration	via DIP switches via potentiometer
Labeling	space for labeling at the front

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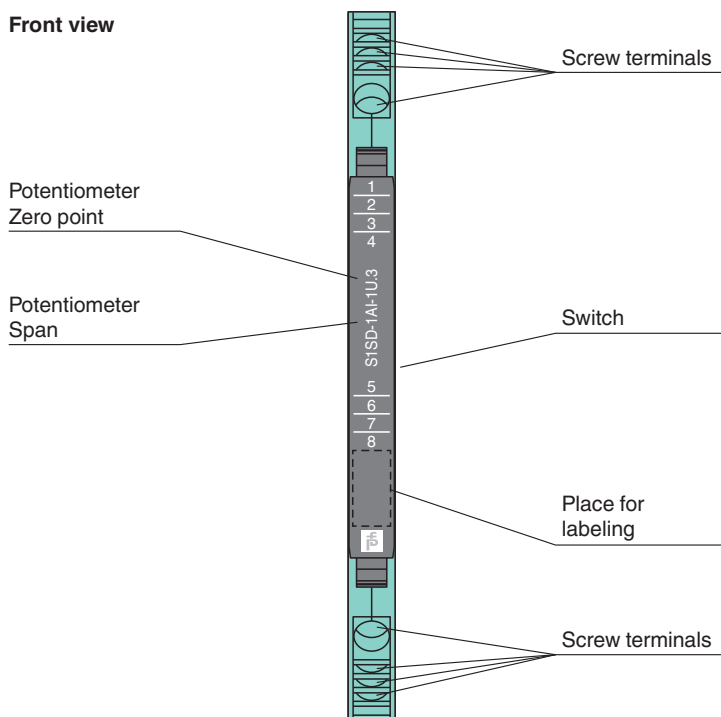
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

## Technical Data

<b>Directive conformity</b>	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
<b>Conformity</b>	
Degree of protection	IEC 60529:2001
Protection against electrical shock	EN 61010-1:2010
<b>Ambient conditions</b>	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Damaging gas	designed for operation in environmental conditions acc. to ISA-S71.04-1985, severity level G3
<b>Mechanical specifications</b>	
Degree of protection	IP20
Connection	screw terminals
Core cross-section	0.5 ... 2.5 mm <sup>2</sup> (20 ... 14 AWG)
Mass	approx. 70 g
Dimensions	6.2 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) , housing type S1
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
<b>Data for application in connection with hazardous areas</b>	
Certificate	DEMKO 16 ATEX 1750X
Marking	Ⓜ II 3G Ex nA IIC T4 Gc
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-15:2010
<b>International approvals</b>	
UL approval	E106378
IECEX approval	IECEX UL 16.0116X
Approved for	Ex nA IIC T4 Gc
<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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


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## Accessories

	<b>S1SD-2PF</b>	Power feed module with screw terminals
	<b>POWERBUS-SETL5.250</b>	Power bus for 35 mm DIN mounting rail, height: 7.5 mm, length: 250 mm
	<b>POWERBUS-SETH5.250</b>	Power bus for 35 mm DIN mounting rail, height: 15 mm, length: 250 mm
	<b>POWERBUS-COV.250</b>	Cover for 35 mm DIN mounting rail, length: 250 mm
	<b>POWERBUS-CAP</b>	End Cap for Power Bus

## Configuration

### Switch settings

Input	S1						Output	S2					
	1	2	3	4	5	6		1	2	3	4	5	6
± 60 mV	ON		ON				± 10 V	ON	ON		ON		
0 mV ... 60 mV			ON				0 V ... 10 V	ON	ON				
± 100 mV	ON		ON	ON			2 V ... 10 V	ON	ON			ON	
0 mV ... 100 mV			ON	ON			± 5 V	ON	ON	ON	ON		
± 150 mV	ON	ON					0 V ... 5 V	ON	ON	ON			
0 mV ... 150 mV		ON					1 V ... 5 V	ON	ON	ON		ON	
± 250 mV	ON	ON		ON			± 20 mA				ON		
0 mV ... 250 mV		ON		ON			0 mA ... 20 mA						
± 300 mV	ON						4 mA ... 20 mA					ON	
0 mV ... 300 mV							± 10 mA			ON	ON		
± 500 mV	ON			ON			0 mA ... 10 mA			ON			
0 mV ... 500 mV				ON			2 mA ... 10 mA			ON		ON	
Zero potentiometer active					ON		Filter 8 kHz						
Span potentiometer active						ON	Filter 100 Hz					ON	

Factory settings: all switches in position OFF