

Millivolt Converter

S1SD-1AI-1U.3

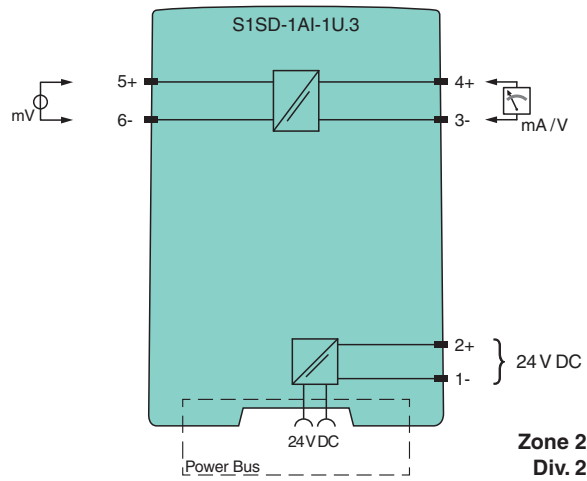
- 1-channel signal conditioner
- 24 V DC supply
- Input bipolar millivolt sources
- Output bipolar current and voltage sources
- Accuracy 0.1 %
- Configurable via DIP switches and potentiometer
- Connection via screw terminals



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



Technical Data

General specifications

Signal type	Analog input	
Operation time	MTBF: 495 a acc. to SN 29500 stationary continuous operating, average ambient temperature 40 °C (104 °F)	
Supply		
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	
Input		
Connection side	field side	
Connection	terminals 5+, 6-	

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

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Technical Data

Input signal	$\pm 60 \text{ mV}$, $\pm 100 \text{ mV}$, $\pm 150 \text{ mV}$, $\pm 250 \text{ mV}$, $\pm 300 \text{ mV}$, $\pm 500 \text{ mV}$
Input resistance	$\geq 100 \text{ k}\Omega$
Transmission range	linearity range: unipolar -1 ... 110 % bipolar -110 ... 110 %
Output	
Connection side	control side
Connection	terminals 3-, 4+
Analog voltage output	0/1 ... 5 V, 0/2 ... 10 V, $\pm 5 \text{ V}$, $\pm 10 \text{ V}$, load $\geq 2 \text{ k}\Omega$
Analog current output	0/4 ... 20 mA, $\pm 10 \text{ mA}$, $\pm 20 \text{ mA}$, load $\leq 600 \Omega$
Ripple	$\leq 10 \text{ mV}_{\text{eff}}$
Transfer characteristics	
Accuracy	max. 0.1 % of full-scale value
Influence of ambient temperature	$< 100 \text{ ppm/K}$ of full-scale value
Frequency range	0 ... 100 Hz, 0 ... 8 kHz
Settling time	7 ms, 150 μs
Galvanic isolation	
Output/power supply	safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff} 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 _{eff} test voltage 3 kV, 50 Hz, 1 min
Indicators/settings	
Control elements	DIP switch potentiometer
Configuration	via DIP switches via potentiometer
Labeling	space for labeling at the front
Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
Conformity	
Degree of protection	IEC 60529:2001
Protection against electrical shock	EN 61010-1:2010
Ambient conditions	
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
Mechanical specifications	
Degree of protection	IP20
Connection	screw terminals
Core cross section	0.5 ... 2.5 mm ² (20 ... 14 AWG)
Mass	approx. 70 g
Dimensions	6.2 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D), housing type S1
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas	
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
International approvals	
UL approval	E106378
IECEX approval	
IECEX certificate	IECEX UL 16.0116X
IECEX marking	Ex nA IIC T4 Gc

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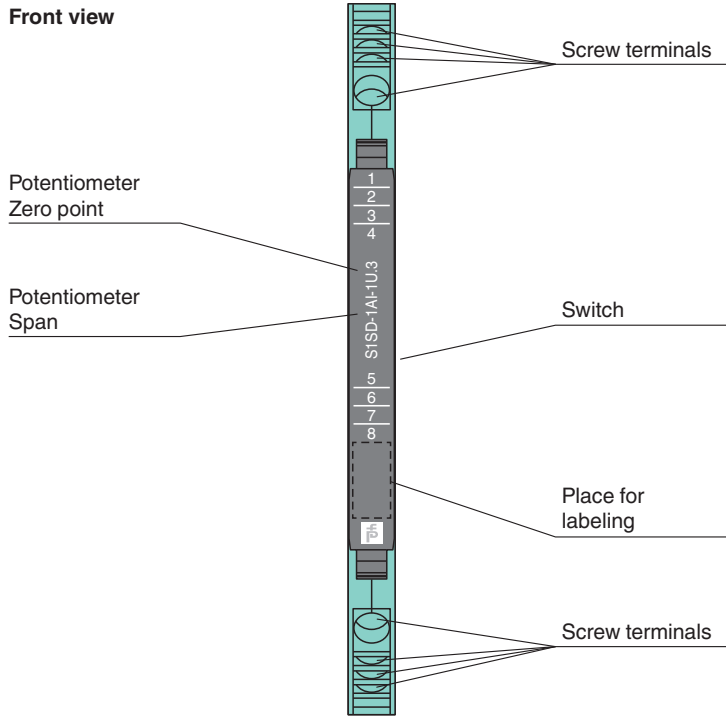
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Technical Data

General information	Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .
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Assembly





Configuration

Switch settings

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




Factory settings: all switches in position OFF

Matching System Components

	S1SD-2PF	Power Feed Module
	POWERBUS-SETL5.250	Power bus for 35 mm DIN mounting rail, height: 7.5 mm, length: 250 mm

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Matching System Components

	<p>POWERBUS-SETH5.250</p>	<p>Power bus for 35 mm DIN mounting rail, height: 15 mm, length: 250 mm</p>
	<p>POWERBUS-COV.250</p>	<p>Cover for 35 mm DIN mounting rail, length: 250 mm</p>
	<p>POWERBUS-CAP</p>	<p>End Cap for Power Bus</p>

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