

Isolating Amplifier

S1SD-1AI-1U.2

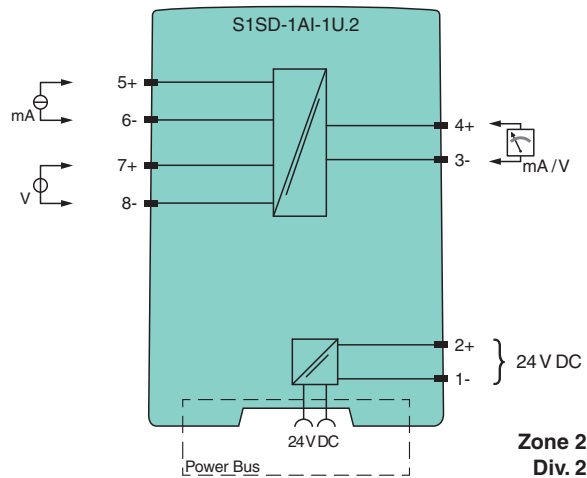
- 1-channel signal conditioner
- 24 V DC supply
- Input bipolar current and voltage sources
- Output bipolar current and voltage sources
- Accuracy 0.1 %
- Configurable via DIP switches and potentiometer
- Connection via screw terminals



Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits. The device has an input for bipolar current and voltage 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: 490 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
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical Data

Transmission range	linearity range: unipolar -1 ... 110 % bipolar -110 ... 110 %
Input I	
Connection	terminals 5+, 6-
Input signal	0/4 ... 20 mA , 0/2 ... 10 mA , ± 10 mA , ± 20 mA , max. 50 mA
Input resistance	≤ 25 Ω
Input II	
Connection	terminals 7+, 8-
Input signal	0/1 ... 5 V , 0/2 ... 10 V , ± 5 V , ± 10 V , max. 30 V
Input resistance	> 1 MΩ
Output	
Connection side	control side
Connection	terminals 3-, 4+
Analog voltage output	0/1 ... 5 V , 0/2 ... 10 V , ± 5 V , ± 10 V , load ≥ 2 kΩ
Analog current output	0/4 ... 20 mA , ± 10 mA , ± 20 mA , load ≤ 600 Ω
Ripple	≤ 10 mV _{eff}
Transfer characteristics	
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 , 100 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

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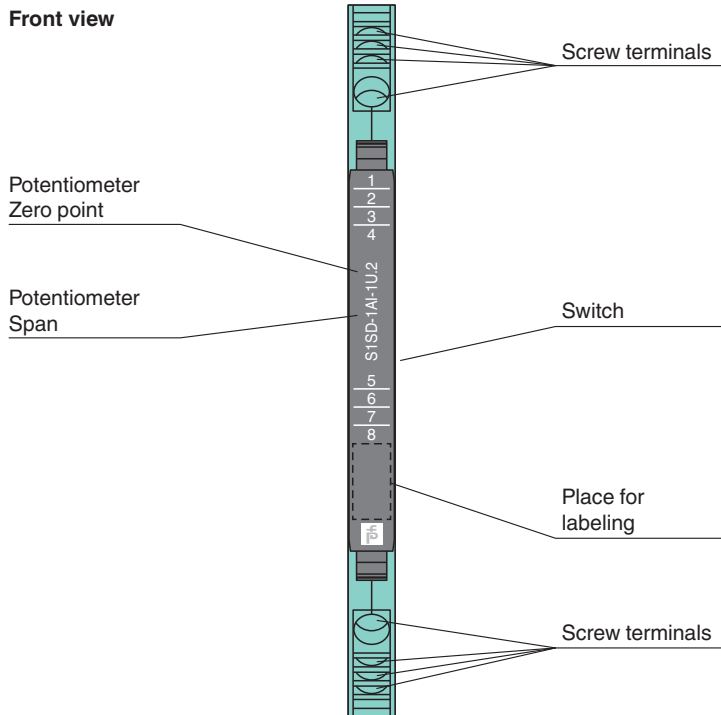
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Technical Data

International approvals	
UL approval	E106378
IECEX approval	
IECEX certificate	IECEX UL 16.0116X
IECEX marking	Ex nA IIC T4 Gc
General information	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .

Assembly



Matching System Components

	POWERBUS-SETL5.250	Power bus for 35 mm DIN mounting rail, height: 7.5 mm, length: 250 mm
	POWERBUS-SETH5.250	Power bus for 35 mm DIN mounting rail, height: 15 mm, length: 250 mm
	POWERBUS-COV.250	Cover for 35 mm DIN mounting rail, length: 250 mm
	POWERBUS-CAP	End Cap for Power Bus

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Configuration

Switch settings

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

Factory settings: all switches in position OFF

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