



# Isolating Amplifier S1SD-1AI-1U.1

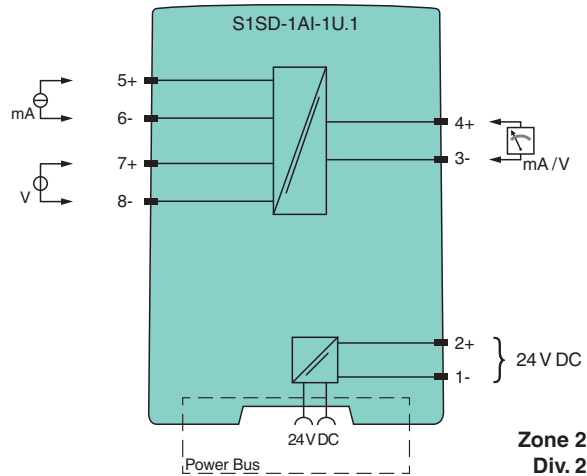
- 1-channel signal conditioner
- 24 V DC supply
- Input current and voltage sources
- Current and voltage output
- Accuracy 0.1 %
- Configurable by DIP switches
- Connection via screw terminals



## Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits.  
The device has an input for the following signals:  
- 0/4 mA ... 20 mA signal  
- 0/2 V ... 10 V signal  
The device provides the following standard signals at the output:  
- 0/4 mA ... 20 mA signal  
- 0/2 V ... 10 V signal  
The device is easily configured by the use of DIP switches.  
The device can be powered via terminals or Power Bus.

## Connection



## Technical Data

General specifications		
Signal type		Analog input
Operation time		MTBF: 536 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 <sub>r</sub>	16.8 ... 31.2 V DC
Power dissipation		0.6 W
Power consumption		0.7 W

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

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## Technical Data

<b>Input</b>		
Connection side		field side
Transmission range		linearity range: -1 ... 110 %
<b>Input I</b>		
Connection		terminals 5+, 6-
Input signal		0/4 ... 20 mA , max. 50 mA
Input resistance		≤ 25 Ω
<b>Input II</b>		
Connection		terminals 7+, 8-
Input signal		0/2 ... 10 V , max. 30 V
Input resistance		> 100 kΩ
<b>Output</b>		
Connection side		control side
Connection		terminals 3-, 4+
Analog voltage output		0/2 ... 10 V , load ≥ 2 kΩ
Analog current output		0/4 ... 20 mA , load ≤ 600 Ω
Ripple		≤ 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 ... 10 Hz , 0 ... 100 Hz , 0 ... 5 kHz
Settling time		70 ms , 7 ms , 150 μs
<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
Configuration		via DIP switches
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>		
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) (W x H x D) , 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
<b>Directive conformity</b>		
Directive 2014/34/EU		EN 60079-0:2012+A11:2013 , EN 60079-15:2010

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Technical Data

International approvals

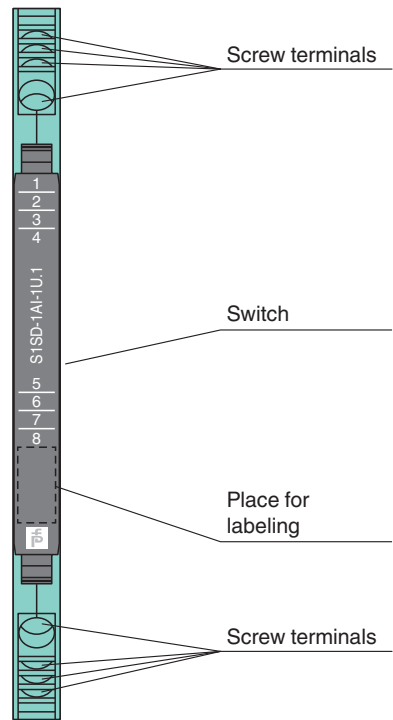
UL approval	E106378
IECEX approval	
IECEX certificate	IECEX UL 16.0116X
IECEX marking	Ex nA IIC T4 Gc

General information

Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .
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Assembly

Front view



Configuration

Switch Settings

Input	Output	Switch					
		S1	S2	S3	S4	S5	S6
0 ... 20 mA	0 ... 20 mA						
4 ... 20 mA					ON		
0 ... 10 V							
2 ... 10 V					ON		
0 ... 20 mA	4 ... 20 mA			ON			
4 ... 20 mA							
0 ... 10 V				ON			
2 ... 10 V							
0 ... 20 mA	0 ... 10 V	ON	ON				
4 ... 20 mA		ON	ON		ON		
0 ... 10 V		ON	ON				
2 ... 10 V		ON	ON		ON		
0 ... 20 mA	2 ... 10 V	ON	ON	ON			
4 ... 20 mA		ON	ON				
0 ... 10 V		ON	ON	ON			
2 ... 10 V		ON	ON				
Filter 5 kHz							
Filter 100 Hz						ON	
Filter 10 Hz							ON

Factory settings: all switches in position OFF

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## Matching System Components

	<b>S1SD-2PF</b>	Power Feed Module
	<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