

# Isolating Amplifier/Splitter

## S1SD-1AI-2U

- 1-channel signal conditioner
- 24 V DC supply
- Input 2-wire transmitters
- Input current and voltage sources
- Dual output 0/4 mA ... 20 mA, 0/1 V ... 5 V or 0/2 V ... 10 V
- Signal splitter (1 input and 2 outputs)
- Accuracy 0.1 %
- Connection via screw terminals



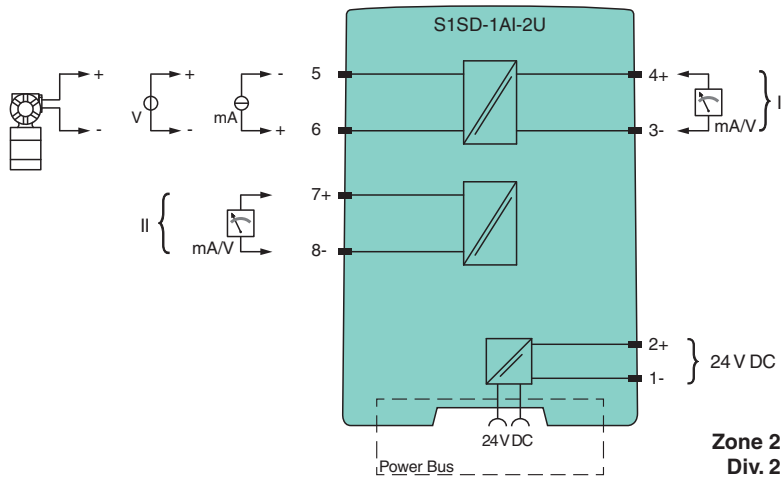
### Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits. The device supplies 2-wire transmitters, and can also be used with current and voltage sources. The device provides the following standard signals at the output:

- 0/4 mA ... 20 mA signal
- 0/1 V ... 5 V signal
- 0/2 V ... 10 V signal

The device can be powered via terminals or Power Bus.

### Connection



### Technical Data

General specifications	
Signal type	Analog input
Operation time	MTBF: 272 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	0.8 W
Power consumption	1.4 W
Input	
Connection side	field side

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## Technical Data

Connection	terminals 5+, 6-
Input signal	0/4 ... 20 mA 0/2 ... 10 V
Open circuit voltage/short-circuit current	≤ 22 V / 35 mA
Input resistance	≤ 25 Ω
Transmission range	linearity range: -1 ... 110 %
Available voltage	16 V at 20 mA
<b>Output</b>	
Connection side	control side
Ripple	≤ 10 mV <sub>eff</sub>
<b>Output I</b>	
Connection	terminals 3-, 4+
Output signal	0/1 ... 5 V, 0/2 ... 10 V, load ≥ 5 kΩ 0/4 ... 20 mA, load ≤ 300 Ω
<b>Output II</b>	
Connection	terminals 7+, 8-
Output signal	0/1 ... 5 V, 0/2 ... 10 V, load ≥ 5 kΩ 0/4 ... 20 mA, load ≤ 300 Ω
<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
Rise time/fall time	≤ 3.5 ms
<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
Output I/II	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>	
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
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2012+A11:2013, EN 60079-15:2010

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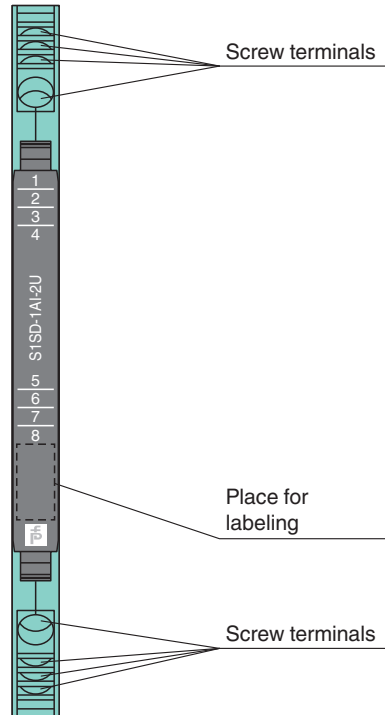
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## Technical Data

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 <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .

## Assembly

Front view





## Configuration

### Switch settings

Signal	Input				Output 1			Output 2		
	1	2	3	4	5	6	7	8	9	10
0 ... 20 mA										
4 ... 20 mA				ON			ON			ON
0 ... 10 V		ON	ON		ON			ON		
2 ... 10 V		ON	ON	ON	ON		ON	ON		ON
0 ... 5 V		ON			ON	ON		ON	ON	
1 ... 5 V		ON		ON	ON	ON	ON	ON	ON	ON
Circuit supply	0 ... 20 mA	ON								
	4 ... 20 mA	ON			ON					




Factory settings: all switches in position OFF

## 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

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**Matching System Components**

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

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