

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



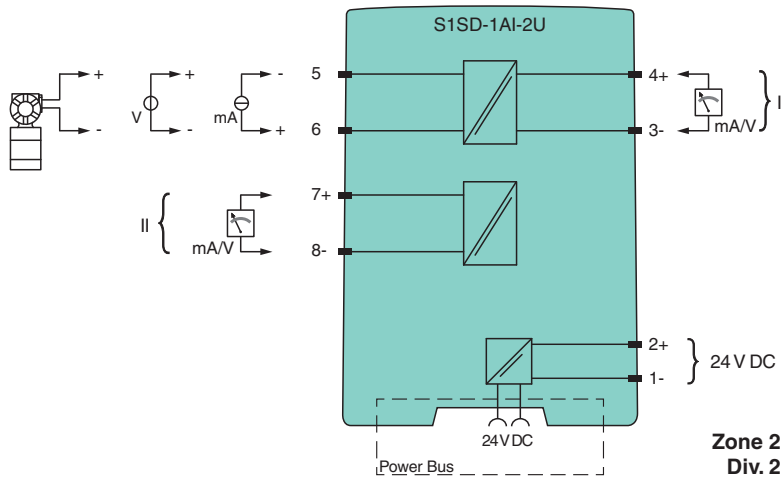
Function

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

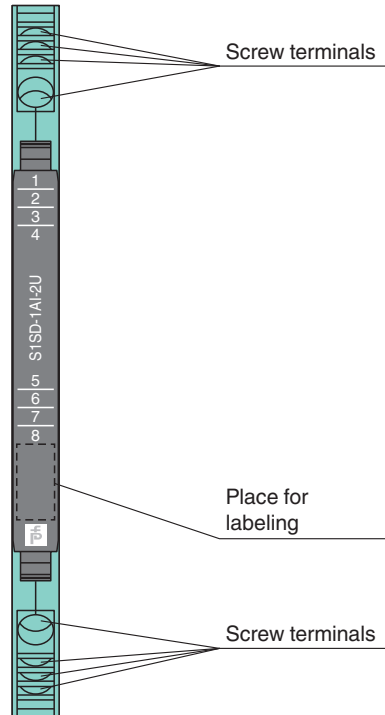
Connection	terminals 5+, 6-
Input signal	0/4 ... 20 mA 0/2 ... 10 V
Open circuit voltage/short-circuit current	≤ 22 V / 35 mA
Input resistance	≤ 25 Ω
Transmission range	linearity range: -1 ... 110 %
Available voltage	16 V at 20 mA
Output	
Connection side	control side
Ripple	≤ 10 mV _{eff}
Output I	
Connection	terminals 3-, 4+
Output signal	0/1 ... 5 V, 0/2 ... 10 V, load ≥ 5 kΩ 0/4 ... 20 mA, load ≤ 300 Ω
Output II	
Connection	terminals 7+, 8-
Output signal	0/1 ... 5 V, 0/2 ... 10 V, load ≥ 5 kΩ 0/4 ... 20 mA, load ≤ 300 Ω
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
Rise time/fall time	≤ 3.5 ms
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
Output I/II	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	
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

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

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

	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

	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