

Trip amplifier S1SD-1AI-1R

- 1-channel signal conditioner
- 24 V DC supply
- Input bipolar current and voltage sources
- Input 2-wire and 3-wire transmitters
- Relay contact output
- Restart inhibit
- One-shot function
- Configurable by DIP switches and software
- Connection via screw terminals



Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits.

The device supplies 2-wire and 3-wire transmitters

The device has an input for bipolar current and voltage sources.

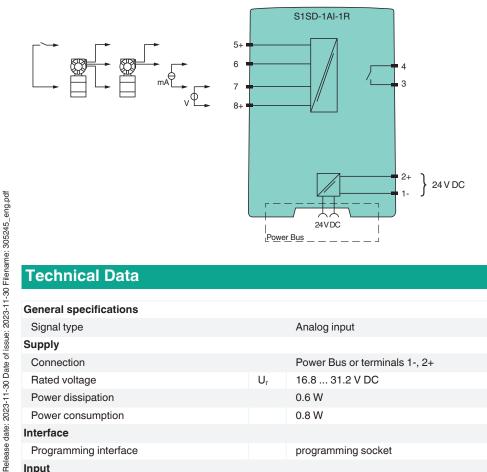
The device actuates a relay contact output when it reaches the adjusted limit value.

The device is easily configured by the use of DIP switches or software.

The device has an adjustable on delay, an off delay, or an one-shot function for the relay contact output. The teach-in function can be used to teach in the limit value.

The device can be powered via terminals or Power Bus.

Connection



Technical Data

	Analog input
	Power Bus or terminals 1-, 2+
Ur	16.8 31.2 V DC
	0.6 W
	0.8 W
	programming socket
	Ur

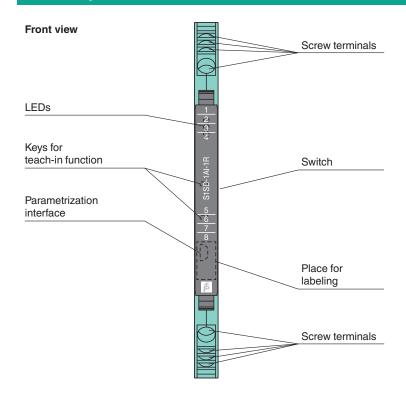




Accuracy max. 0.1 % of full-scale value Influence of ambient temperature Galvanic isolation Output/power supply safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min Input/Other circuits safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min 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 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 Input/Other circuits safe electrical shock safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 3 kV, 50 Hz, 1 min Input/Other circuits safe electrical shock safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 3 kV, 50 Hz, 1 min Input/Other circuits safe electrical shock safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 3 kV, 50 Hz, 1 min Input/Other circuits safe electrical shock safe electrical solution voltage 3	Technical Data	
Input Inp	Connection side	field side
Input Connection terminals 5, 6, 7- Input signal Ou4 20 mA, v2 10 mA, ± 10 mA, ± 20 mA, max, 50 mA Input resistance s25 Ω Input resistance Input resistance SV, v2 10 V, ± 5 V, ± 10 V, max, 30 V Input resistance Input resistance SV, v2 10 V, ± 5 V, ± 10 V, max, 30 V Input resistance SV, v2 10 V, ± 5 V, ± 10 V, max, 30 V Input resistance Input resistance SV, v2 10 V, ± 5 V, ± 10 V, max, 30 V Input signal Ov4 20 mA Input resistance SV, v2 10 V, ± 5 V, ± 10 V, max, 30 V Input signal Ov4 20 mA Input resistance SV, v2 10 V, ± 5 V, ± 10 V, max, 30 V Input signal Ov4 20 mA Input resistance Input signal Ov4 20 mA Input V Input signal relay Ov4 20 mA Input Signal relay Ov4 .		linearity range: unipolar -1 110 %
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Input III		
Connection terminals 5+, 6- Input signal	·	> 1 max
Input signal		terminals 5+, 6-
Available voltage		
Open circuit voltage/short-circuit current		
Input IV	_	
Connection Input type terminals 5, 7 Output type reset restart inhibit Connection side control side Connection terminals 3, 4: Output signal, relay Contact loading 253 V AC/2 Acos φ > 0.7; 126.5 V AC/2 Acos φ > 0.7; 30 V DC/2 A resistive load in minimum switch current 2 mA / 24 V DC Energized/De-energized delay ≤ 20 ms / ≤ 20 ms Mechanical life 10² switching cycles Transfer characteristics Transfer characteristics Accuracy max. 0.1 % of full-scale value Influence of ambient temperature q 100 pm/K of full-scale value Galvanic isolation Transfer characteristics Upput/Other circuits safe electrical isolation by reinforced insultation 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 insultation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min Indicators/settings LEDs Control elements LEDs Control elements LEDs Control elements Upper witches voltage in the front Directive conformity <td>-</td> <td></td>	-	
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	Storage temperature	-40 85 °C (-40 185 °F)

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

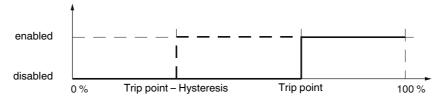
Assembly



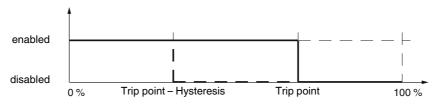
Operation

Modes of operation

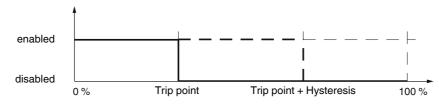
Trip mode MAX alarm, mode of operation active



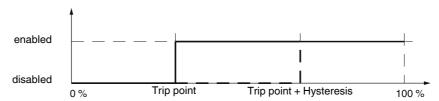
Trip mode MAX alarm, mode of operation passive



Trip mode MIN alarm, mode of operation active



Trip mode MIN alarm, mode of operation passive

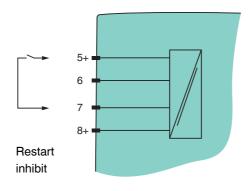


Connection

Function Input

The function input has the following function: resetting the restart inhibit. The restart inhibit only works if you have connected active current and voltage sources. The restart inhibit does not work if transmitters are connected.

Connect the function as shown in the diagram. The input is edge triggered. The signal must be present for a minimum of 100 ms.



Restart inhibit

The restart inhibit is used to prevent the momentary exceedance of a switch point or faults from not being noticed by operating personnel. Faults can be caused by a lead breakage, lead short circuit, or insufficient supply voltage.

If the restart inhibit is active, the new status is retained after an output has been switched until one of the following events occurs.

- The device is restarted
- There is a reset signal on terminals 5 and 7

If one of these events occurs, the output is reset. The status is retained only in the following exceptional cases:

- The switch point continues to be exceeded.
- The fault continues to be present.

If you have chosen the restart inhibit for an output with a trip mode MIN alarm, the restart inhibit is inevitably triggered when the device starts, as the device starts with a measured value of 0. This means a MIN alarm is triggered immediately. Without the start-up override, the output would then be blocked by the restart inhibit.