Преобразователи сигналов SC-System

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Switch Amplifier S1SD-1DI-1R

- 1-channel signal conditioner
- 24 V DC supply
- Input for 2- or 3-wire sensors or AC/DC voltage sources
- Relay contact output
- Timer function
- Configurable by DIP switches
- Connection via screw terminals



Function

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

The device transmits the status of 2- and 3-wire sensors to the relay output.

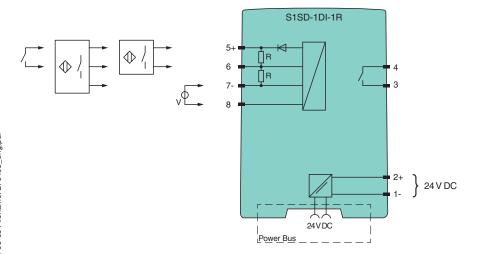
The device has an input for the following digital signals:

- Mechanical contacts
- 2-wire sensors (NAMUR, SN, DC, S0)
- 3-wire sensors (NPN, PNP, push-pull)
- · AC/DC voltage sources

The input is reverse polarity protected and short-circuit proofed.
The connected sensors can also be supplied externally.
The device has an adjustable on delay, an off delay, or an one-shot function for the relay contact output.
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		Digital Input
Supply		
Connection		Power Bus or terminals 1-, 2+
Rated voltage	U_{r}	16.8 31.2 V DC
Power dissipation		0.6 W

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Power consumption	1.1 W
nput	
Connection side	field side
NAMUR sensor	
Туре	2-wire
Connection	terminals 5+, 6
Signal	acc. to EN 60947-5-6 (NAMUR)
Sensor supply	8 V
Open-circuit	< 0.1 mA
Switching point	1.2 2.1 mA
Short-circuit	> 6 mA
Input impedance	1 kΩ
Mechanical contact	
Type	2-wire
Connection	terminals 5+, 6
Sensor supply	15 V
External supply	≤32 V
Switching point	8 10 V / 1.2 2.1 mA
Input impedance	4 kΩ
SN sensor	0.15
Type	2-wire
Connection	terminals 5+, 6
Sensor supply	8 V
Open-circuit	< 0.1 mA 1.2 2.1 mA
Switching point Short-circuit	
	> 6 mA 1 kΩ
Input impedance 2-wire DC sensor	1 K12
	2-wire
Type Connection	
Signal	terminals 5+, 6 acc. to EN 60947-5-2
Sensor supply	16 V / 25 mA , short-circuit protected
External supply	≤ 32 V
Switching point	2 5 mA
Input impedance	1 kΩ
S0 sensor	1 / 1/2
Type	2-wire
Connection	terminals 5+, 6
Signal	acc. to EN 62053-31 , Type B
Sensor supply	15 V
Switching point	0.15 2 mA
Input impedance	4 kΩ
NPN sensor	
Type	3-wire
Connection	terminals 5+, 6, 7-
Signal	acc. to EN 60947-5-2
Sensor supply	16 V / 25 mA , short-circuit protected
External supply	≤32 V
Switching point	35 V
Input impedance	4 kΩ
PNP sensor	
Type	3-wire
Connection	terminals 5+, 6, 7-

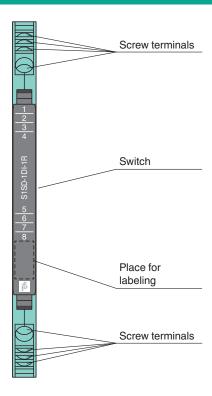
Signal	acc. to EN 60947-5-2
Sensor supply	16 V / 25 mA , short-circuit protected
External supply	≤ 32 V
Switching point	8 10 V
Input impedance	4 kΩ
AC/DC voltage source	
Connection	terminals 7, 8
Signal	24 V AC/DC
Switching point	10 15 V
Input impedance	> 680 kΩ
AC/DC voltage source	> 000 lui
Connection	terminals 7, 8
Signal	115 V AC/DC
Switching point	40 60 V
Input impedance	> 680 kΩ
AC/DC voltage source	> 000 K12
o .	terminals 7, 9
Connection	terminals 7, 8
Signal	230 V AC/DC 80 115 V
Switching point	
Input impedance	> 680 kΩ
Output	
Connection side	control side
Connection	terminals 3, 4:
Output	signal, relay
Contact loading	253 V AC/2 A/cos φ > 0.7; 126.5 V AC/2 A/cos φ > 0.7; 30 V DC/2 A resistive load
Minimum switch current	2 mA / 24 V DC
Energized/De-energized delay	≤ 20 ms / ≤ 20 ms
Mechanical life	10 ⁷ switching cycles
Transfer characteristics	
Switching frequency	≤ 10 Hz
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
Configuration	via DIP switches
Labeling	space for labeling at the front
Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
Low voltage	
Directive 2014/35/EU	EN 61010-1:2010
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

Switch Amplifier S1SD-1DI-1R

Technical Data	
Connection	screw terminals
Core cross section	0.5 2.5 mm ² (20 14 AWG)
Mass	approx. 60 g
Dimensions	6.2x97x107 mm (0.24 x $3.82x4.21$ inch) (W x H x D) , housing type S1
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
General information	

Assembly

Front view



Configuration

Switch settings

Function	Switch									
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Sensor							•			
NAMUR/SN sensor										
PNP sensor/mechanical contact/push-pull	ON									
2-wire DC sensor		ON								
NPN sensor	ON	ON								
S0 sensor			ON							
AC sources	•	•		•						
24 V	ON		ON							
120 V		ON	ON							
230 V	ON	ON	ON							
Output	•	•								
Not inverted										
Inverted				ON						
Timer					•					
Timer off										
On delay						ON				
Off delay					ON					
One-shot					ON	ON				
Time T					•		•			
0.5 s										

ON

ON

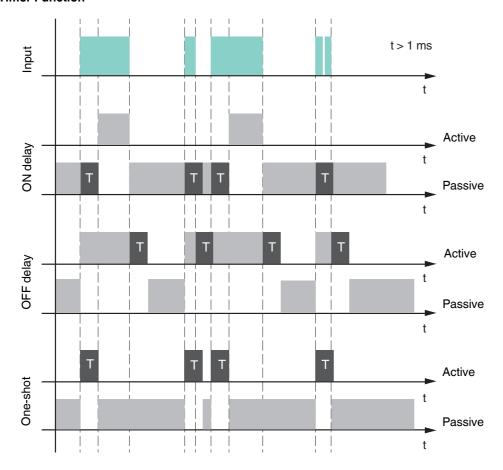
S10

	S1SD-2PF	Power Feed Module
	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

Switch Amplifier S1SD-1DI-1R

Characteristic Curve

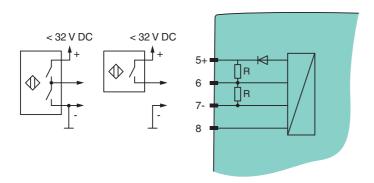
Timer Function



Connection

External Supply

For mechanical contacts, 2-wire DC sensors and 3-wire sensors





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 supplies 2-whe transmitters, and can also be used with The device provides the following standard signals at the output:

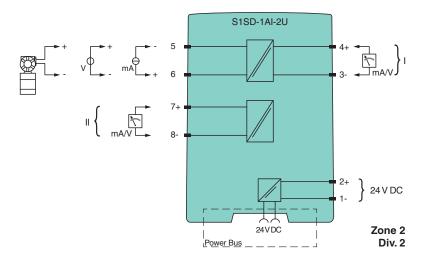
- 0/4 mA ... 20 mA signal

- 0/1 V ... 5 V signal

- 0/2 V ... 10 V signal

The device can be powered via terminals or Power Bus.

Connection



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

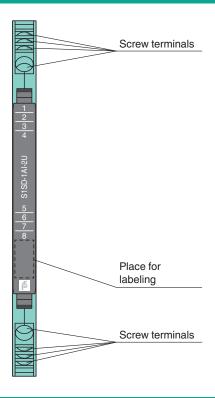
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Release

Connection side Ripple S 10 mV eff Output I Connection Output signal Off 1 5 V, 0/2 10 V , load ≥ 5 kΩ 0/4 20 mA , load ≤ 300 Ω Output signal Output signal Off 1 5 V, 0/2 10 V , load ≥ 5 kΩ 0/4 20 mA , load ≤ 300 Ω Output signal Off 1 5 V, 0/2 10 V , load ≥ 5 kΩ 0/4 20 mA , load ≤ 300 Ω Fransfer characteristics Accuracy max. 0.1 % of full-scale value Influence of ambient temperature Frequency range 0 100 Hz Rise time/fall time ≤ 3.5 ms Salvanic isolation Output/Other circuits Input/Other circuits 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/I 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/I 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/I 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/I 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/I 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/I 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/I 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/I 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/I safe electrica	Technical Data	
Imput signal 0,4	Connection	terminals 5+, 6-
0/2 _ 10 V Open circuit voltage/ehort-circuit current 5 × 22 V / 38 mA Input resistance 22 5 Ω Transmission range Insentify range: 1 110 % Available voltage 16 V at 20 mA Output Connection side 210 mW Slipple ≤ 10 mW Cotnoction side 210 mW Connection 10 mW Connection 10 mW Output signal 071 _ 5 V / 02 _ 10 V , lead ≥ 5 kΩ		
Injust resistance \$2.5 Ω Inearity range: -1 110 % Available voltage 18 V at 20 mA Available voltage 18 V at 20 mA Available voltage 210 mV ur		0/2 10 V
Transmission range	Open circuit voltage/short-circuit current	≤ 22 V / 35 mA
Available voltage 16 V at 20 mA Dutput	Input resistance	≤ 25 Ω
Cutput Connection side control side Ripple ≤ 10 mV ⋅ ar Output I Connection Iterminals 3*, 4+ Output signal 0*15 V, 0/2 10 V, load ≤ 5 kΩ Output signal 0*15 V, 0/2 10 V, load ≥ 5 kΩ Output signal 0*15 V, 0/2 10 V, load ≥ 5 kΩ Output signal 0*15 V, 0/2 10 V, load ≥ 5 kΩ Output signal 0*15 V, 0/2 10 V, load ≥ 5 kΩ **Couracy max. 0.1 % of full-scale value Influence of ambient temperature < 100 ppm/K of full-scale value	Transmission range	linearity range: -1 110 %
Connection side control side Ripple ≤ 10 mV ar Competion terminals 3, 4+ Connection terminals 3, 4+ Output signal 01 5 V, 02 10 V, load ≤ 5 kΩ Output signal 01 5 V, 02 10 V, load ≤ 5 kΩ Connection terminals 7+, 8- Connection terminals 7+, 8- Councing of the control of the con	Available voltage	16 V at 20 mA
Ripple ≤ 10 mV _{off} Output I Connection 1 terminals 3·. 4+ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Output signal 0"1 · 5 V, 0? · 10 V, load ≥ 5 kΩ Influence of ambient temperature < 100 pm/K of full-scale value	Output	
Output I Connection Iterminals 3·, 4+ Output signal 01 5 V, 02 10 V, load ≥ 5 kΩ Output II 01 5 V, 02 10 V, load ≥ 5 kΩ Compaction terminals 7+, 8- Output signal 01 5 V, 02 10 V, load ≥ 5 kΩ Output signal 01 5 V, 02 10 V, load ≥ 5 kΩ Accuracy max. 0.1 % of full-scale value Influence of ambient temperature < 100 ppm/K of full-scale value	Connection side	control side
Connection terminals 3, 4+ Output signal 01 · 5 ∨, 02 · 10 ∨ , load ≥ 5 kΩ 0 / 4 · 20 mA, load ≤ 300 Ω Couput II 01 · 5 ∨, 02 · 10 ∨ , load ≥ 5 kΩ 0 / 4 · 20 mA, load ≤ 300 Ω Connection terminals 7 +, 8- Output signal 01 · 5 ∨, 02 · 10 ∨ , load ≥ 5 kΩ 0 / 4 · 20 mA, load ≤ 300 Ω Fransfer characteristics Accuracy Accuracy max. 0.1 % of full-scale value Influence of ambient temperature < 100 pm/K of full-scale value	Ripple	≤ 10 mV _{eff}
Output I II Output III II Councetion terminals 7+, 8- Output signal 0/1 5 V, 0/2 10 V, load ≤ 5 kΩ Output signal 0/1 5 V, 0/2 10 V, load ≤ 5 kΩ Fransfer characteristics Fransfer characteristics Accuracy max. 0.1 % of full-scale value Influence of ambient temperature < 100 ppm/K of full-scale value	Output I	
Output III Out	Connection	terminals 3-, 4+
Connection terminals 7+, 8- Output signal 0 /1 5 V, 0/2 10 V, load ≥ 5 kΩ of values and continues of ambient temperature 0 /1 5 V, 0/2 10 V, load ≥ 5 kΩ of values and continues of ambient temperature x 0.0 max. 0.1 % of full-scale value Frequency range 0 100 Hz Rise time/fall time x 3.5 ms advancine foliation x 0 100 Hz x 100 ppm/K of full-scale value Output/power supply safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{erf} test voltage 3 kV, 50 Hz, 1 min Imput/Other circuits safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{erf} 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 _{erf} test voltage 3 kV, 50 Hz, 1 min disciplinary safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{erf} test voltage 3 kV, 50 Hz, 1 min disciplinary safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{erf} test voltage 3 kV, 50 Hz, 1 min disciplinary safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{erf} test voltage 3 kV, 50 Hz, 1 min Directive conformity Electromagn	Output signal	
Output signal 0/1 5 V, 0/2 10 V, load ≥ 5 kΩ 0/4 20 mA, load ≤ 300 Ω 0.4 20 mA, load ≤ 300 Q 0.4 20 mA, load	Output II	
	Connection	terminals 7+, 8-
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 Calvanic 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 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 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 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 to preinforced 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	Output signal	
Influence of ambient temperature < 100 ppm/K of full-scale value Frequency range 0 100 Hz Rise time/fall time ≤ 3.5 ms 3alvanic 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 put/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 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 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 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 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 resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min 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 resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min safe electrical solation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min resultation voltage 300 V _{eff} test voltage 3 kV, 50 Hz	Transfer characteristics	
Frequency range 0 100 Hz Rise time/fall time ≤ 3.5 ms Salavanic 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 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 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 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 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 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 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 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 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 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 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 Industrial insulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min Industrial insulation voltage 300 V _{eff} test voltage 3 kV, 5	Accuracy	max. 0.1 % of full-scale value
Rise time/fall time	Influence of ambient temperature	< 100 ppm/K of full-scale value
Salvanic 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 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 sulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 3 kV, 50 Hz, 1 min sulation xoltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min sulation xoltage 3 k	Frequency range	0 100 Hz
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 Electromagnetic compatibility Directive 2014/30/EU EN 61326-1:2013 (industrial locations) Conformity Electromagnetic entral protection Degree of protection IEC 60529:2001 Protection against electrical shock EN 61010-1:2010 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 IP20 Connection 0.5 2.5 mm² (20 14 AWG)	Rise time/fall time	≤ 3.5 ms
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	Galvanic isolation	
insulation voltage 300 V _{elt} 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 _{elt} 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 _{elt} test voltage 3 kV, 50 Hz, 1 min output I/II safe electrical solation voltage 300 V _{elt} test voltage 3 kV, 50 Hz, 1 min output I/II safe electrical solation voltage 300 V _{elt} test voltage 3 kV, 50 Hz, 1 min output I/II safe electrical solation voltage 300 V _{elt} test voltage 3 kV, 50 Hz, 1 min output I/II safe electrical solation voltage 300 V _{elt} test voltage 3 kV, 50 Hz, 1 min output I/II safe electrical solation voltage 300 V _{elt} test voltage 3 kV, 50 Hz, 1 min output I/II safe electrical solations Degree of protection	Output/power supply	
insulation voltage 3 00 V _{eff} test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 V _{eff} test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 V _{eff} test voltage 3 kV, 50 Hz, 1 min insulation vertical shock above the front voltage and voltage 3 kV, 50 Hz, 1 min insulation vertical shock and voltage 3 kV, 50 Hz, 1 min insulation vertical shock and vertical shock an	Input/Other circuits	
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 Protection against electrical shock EN 61010-1:2010 Ambient conditions 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 Core cross section 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 DEMKO 16 ATEX 1750X Marking Directive conformity	Output I/II	
Electromagnetic compatibility Directive 2014/30/EU EN 61326-1:2013 (industrial locations) Conformity Degree of protection 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 Core cross section 0.5 2.5 mm² (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 Marking Directive conformity	Indicators/settings	
Electromagnetic compatibility Directive 2014/30/EU Degree of protection Protection against electrical shock Ambient conditions Ambient temperature Degree of protection Degree of protection Ambient temperature Degree of protection Degree of protection against electrical shock Degree of protection against electrical shock Degree of protection De	Labeling	space for labeling at the front
Directive 2014/30/EU Conformity Degree of protection Protection against electrical shock Ambient conditions Ambient temperature Pamaging gas Ambient specifications Degree of protection Ambient temperature -25 70 °C (-13 158 °F) 4-0 85 °C (-40 185 °F) designed for operation in environmental conditions acc. to ISA-S71.04-1985, severity level G3 Mechanical specifications Degree of protection Protection Degree of protection Connection Connection Core cross section Amss Dimensions Acc. 25 70 °C (-13 158 °F) designed for operation in environmental conditions acc. to ISA-S71.04-1985, severity level G3 Dimensions Core cross section Dimensions Core cross section Dimensions Core cross section Dimensions Degree of protection Dimensions	Directive conformity	
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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 mm² (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 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 2014/30/EU	EN 61326-1:2013 (industrial locations)
Protection against electrical shock Ambient conditions Ambient temperature Ambient temperature -25 70 °C (-13 158 °F) -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 Core cross section 0.5 2.5 mm² (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 Outa for application in connection with hazardous areas Certificate DEMKO 16 ATEX 1750X Marking Directive conformity	Conformity	
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 mm² (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	Degree of protection	IEC 60529:2001
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 mm² (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	Protection against electrical shock	EN 61010-1:2010
Storage temperature -40 85 °C (-40 185 °F) designed for operation in environmental conditions acc. to ISA-S71.04-1985, severity level G3 Mechanical specifications Degree of protection IP20 Connection Core cross section 0.5 2.5 mm² (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 Marking DEMKO 16 ATEX 1750X Marking DIRECTIVE CONFORMITY	Ambient conditions	
designed for operation in environmental conditions acc. to ISA-S71.04-1985, severity level G3 Mechanical specifications Degree of protection Degree of protection Connection Screw terminals Core cross section 0.5 2.5 mm² (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 Oata for application in connection with hazardous areas Certificate DEMKO 16 ATEX 1750X Marking Directive conformity	Ambient temperature	-25 70 °C (-13 158 °F)
level G3 Mechanical specifications	Storage temperature	-40 85 °C (-40 185 °F)
Degree of protection IP20 Connection screw terminals Core cross section 0.5 2.5 mm² (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	Damaging gas	designed for operation in environmental conditions acc. to ISA-S71.04-1985, severity level ${\sf G3}$
Connection screw terminals Core cross section 0.5 2.5 mm² (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 Cortificate DEMKO 16 ATEX 1750X Marking © II 3G Ex nA IIC T4 Gc Directive conformity	Mechanical specifications	
Core cross section 0.5 2.5 mm² (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 Oata for application in connection with hazardous areas Certificate DEMKO 16 ATEX 1750X Marking © II 3G Ex nA IIC T4 Gc	Degree of protection	IP20
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	Connection	screw terminals
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 Bill 3G Ex nA IIC T4 Gc Directive conformity	Core cross section	0.5 2.5 mm ² (20 14 AWG)
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	Mass	approx. 70 g
Data for application in connection with hazardous areas Certificate DEMKO 16 ATEX 1750X Marking © II 3G Ex nA IIC T4 Gc Directive conformity	Dimensions	6.2x97x107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D) , housing type S1
Certificate DEMKO 16 ATEX 1750X Marking © II 3G Ex nA IIC T4 Gc Directive conformity	Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
Marking © II 3G Ex nA IIC T4 Gc Directive conformity	Data for application in connection with hazard	dous areas
Directive conformity	Certificate	DEMKO 16 ATEX 1750X
•	Marking	
Directive 2014/34/EU EN 60079-0:2012+A11:2013 , EN 60079-15:2010	Directive conformity	
	Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-15:2010

International approvals		
UL approval	E106378	
IECEx approval		
IECEx certificate	IECEx UL 16.0116X	
IECEx marking	Ex nA IIC T4 Gc	
General information		

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

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S1SD-2PF Power Feed Module

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



Millivolt Converter S1SD-1AI-1U.3

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









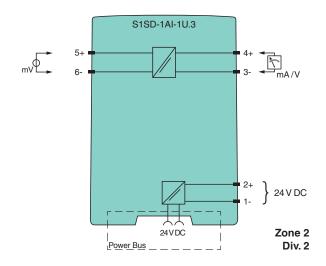


Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits. The device has an input for bipolar millivolt 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

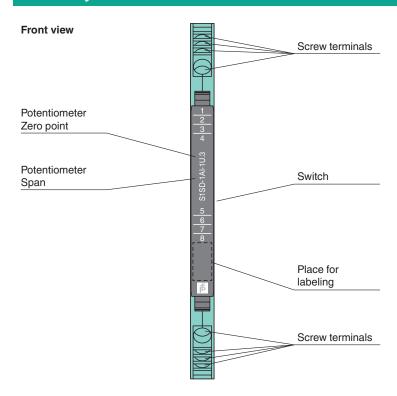
General specifications		
Signal type		Analog input
Operation time		MTBF: 495 a acc. to SN 29500 stationary continuous operating, average ambient temperature 40 °C (104 °F)
Supply		
Connection		Power Bus or terminals 1-, 2+
Rated voltage	Ur	16.8 31.2 V DC
Power dissipation		0.6 W
Power consumption		0.8 W
Input		
Connection side		field side
Connection		terminals 5+, 6-

Release date: 2023-06-05 Date of issue: 2023-06-05 Filename: 274370_eng.pdf

Input cianal	+60 mV +100 mV +150 mV +250 mV +200 mV +500 mV
Input signal	±60 mV, ±100 mV, ±150 mV, ±250 mV, ±300 mV, ±500 mV
Input resistance	≥ 100 kΩ
Transmission range	linearity range: unipolar -1 110 % bipolar -110 110 %
Dutput	
Connection side	control side
Connection	terminals 3-, 4+
Analog voltage output	$0/1 5 V , 0/2 10 V , \pm 5 V, \pm 10 V , load \geq 2 k \Omega$
Analog current output	$0/4 \dots 20 \text{ mA}, \pm 10 \text{ mA}, \pm 20 \text{ mA}, \text{ load} \leq 600 \Omega$
Ripple	≤ 10 mV _{eff}
ransfer 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	$7~\text{ms}$, 150 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 $V_{\rm eff}$ test voltage 3 kV, 50 Hz, 1 min
ndicators/settings	DID. 11 I
Control elements	DIP switch potentiometer
Configuration	via DIP switches via potentiometer
Labeling Directive conformity	space for labeling at the front
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
Conformity	EN CTOES 1.2010 (Industrial locations)
Degree of protection	IEC 60529:2001
Protection against electrical shock	EN 61010-1:2010
Ambient conditions	Entototo n.Eoto
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, several 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	6.2x97x107 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 haza	ardous 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
nternational approvals	
UL approval	E106378
IECEx approval	
IECEx certificate	IECEx UL 16.0116X
IECEx marking	Ex nA IIC T4 Gc

General information

Assembly



Configuration

Switch settings

Input		Switch S1						Output Switch S2					
	1	2	3	4	5	6		1	2	3	4	5	6
± 60 mV	ON		ON				± 10 V	ON	ON		ON		
0 60 mV			ON				0 10 V	ON	ON				
± 100 mV	ON		ON	ON			2 10 V	ON	ON			ON	
0 100 mV			ON	ON			± 5 V	ON	ON	ON	ON		
± 150 mV	ON	ON					0 5 V	ON	ON	ON			
0 150 mV		ON					1 5 V	ON	ON	ON		ON	
± 250 mV	ON	ON		ON			± 20 mA				ON		
0 250 mV		ON		ON			0 20 mA						
± 300 mV	ON						4 20 mA					ON	
0 300 mV							± 10 mA			ON	ON		
± 500 mV	ON			ON			0 10 mA			ON			
0 500 mV				ON			2 10 mA			ON		ON	
Zero potentiome	ter active		•	•	ON		Filter 8 kHz	•			•		
Span potentiom	eter active					ON	Filter 100 kHz						ON

Factory settings: all switches in position OFF

Matching System Components



S1SD-2PF Power Feed Module



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



SMART Transmitter Power Supply S1SD-1AI-1C.H

- 1-channel signal conditioner
- 24 V DC supply
- Input 2-wire and 3-wire SMART transmitters and current sources
- Output 0/4 mA ... 20 mA
- Accuracy 0.1 %
- Connection via screw terminals











Function

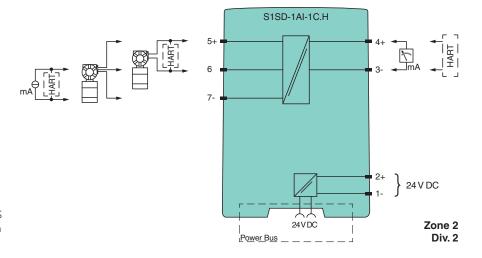
This signal conditioner provides the galvanic isolation between field circuits and control circuits.

The device supplies 2-wire and 3-wire SMART transmitters, and can also be used with current sources. At the output the signal is available as active 0/4 mA ... 20 mA signal.

The device has no internal resistor for HART communication.

Digital signals may be superimposed on the input signal and are transferred bi-directionally. The device can be powered via terminals or Power Bus.

Connection



Technical Data

General specifications		
Signal type		Analog input
Operation time		MTBF: 339 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		0.9 W
Power consumption		1.3 W
Input		
Connection side		field side

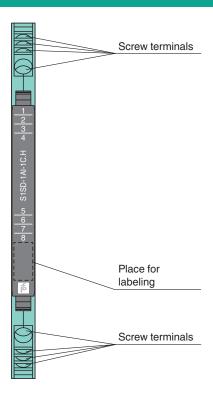
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Release

Connection side control side Connection terminals 3, 4+ Analog current output (34 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV _{eff} Transfer characteristics Accuracy max. 0.1 % of full-scale value Rise time/fall time < 3.5 ms	Technical Data	
Open circuit voltage/short-circuit current Input resistance x22 V / 30 mA Input resistance max : 50 Ω Transmission range linearity range: 1 : 110 % Available voltage 16 V at 20 mA Output Connection Connection terminals 3., 4+ Analog current output 04 - 20 mA, load ≤ 600 Ω Pipple ≤ 10 mV _{et} Accuracy max. 0.1 % of full-scale value Influence of ambient temperature < 100 ppm/K of full-scale value	Connection	terminals 5+, 6, 7-
Input resistance max. 50 Ω Transmission range (inearity range: -1 110 % Available voltage 0 V at 20 mA Output Connection side Connection (enthol side) Connection (max. 0.1 % of full-scale value) Ripple ≤ 10 mV , at Transfer characteristics Transfer characteristics Accuracy max. 0.1 % of full-scale value Influence of ambient temperature < 100 ppm/K of full-scale value	Input signal	0/4 20 mA
Input resistance max. 50 Ω Transmission range (inearity range: -1 110 % Available voltage 0 V at 20 mA Output Connection side Connection (enthol side) Connection (max. 0.1 % of full-scale value) Ripple ≤ 10 mV , at Transfer characteristics Transfer characteristics Accuracy max. 0.1 % of full-scale value Influence of ambient temperature < 100 ppm/K of full-scale value	Open circuit voltage/short-circuit current	≤ 22 V / 30 mA
Available voltage 16 V at 20 mA Output Connection Connection terminals 3-, 4+ Analog current output 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 m² w² Accuracy max 0.1 % of full-scale value Influence of ambient temperature < 100 ppm/K of full-scale value	-	max. 50 Ω
Output Connection side control side Connection terminals 3-, 4+ Analog current output 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV ⋅ ∞ Transfer characteristics Transfer characteristics Accuracy max. 0.1 % of full-scale value Influence of ambient temperature < 100 ppm/K of full-scale value	Transmission range	linearity range: -1 110 %
Connection control side Connection terminals 3, 4+ Analog current output 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV en Transfer characteristics max. 0.1 % of full-scale value Accuracy max. 0.1 % of full-scale value Rise timefall time ≤ 35 ms Galvanic Isolation scale electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{en} test voltage 3 kV, 50 Hz, 1 min Imput/Other circuits safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{en} test voltage 3 kV, 50 Hz, 1 min Imput/Other circuits safe electrical solation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{en} test voltage 3 kV, 50 Hz, 1 min Imput/Other circuits safe electrical solation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{en} test voltage 3 kV, 50 Hz, 1 min Imput/Other circuits safe electrical solation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{en} test voltage 3 kV, 50 Hz, 1 min Imput/Other circuits safe electrical solation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{en} test voltage 3 kV, 50 Hz, 1 min Imput/Other circuits safe electrical solation by reinforced insulation	Available voltage	16 V at 20 mA
Connection terminals 3·, 4+ Analog current output 0.4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV et Transfer characteristics x 0.1 % of full-scale value Accuracy max. 0.1 % of full-scale value Influence of ambient temperature < 100 ppm/K of full-scale value Rise time/fall time ≤ 3.5 ms Galvanic isolation safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{air} test voltage 3 kV, 50 Hz, 1 min Imput/Other circuits safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{air} 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 _{air} 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 _{air} 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 _{air} test voltage 3 kV, 50 Hz, 1 min Input/Other circuits Expense of rate value v	Output	
Analog current output 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV eff Transfer characteristics max. 0.1 % of full-scale value Influence of ambient temperature < 100 ppm/K of full-scale value	Connection side	control side
Flipple	Connection	terminals 3-, 4+
Transfer characteristics Accuracy mxx 0.1 % of full-scale value Influence of ambient temperature < 100 ppm/K of full-scale value	Analog current output	0/4 20 mA, load ≤ 600 Ω
Accuracy max. 0.1 % of full-scale value Influence of ambient temperature	Ripple	≤ 10 mV _{eff}
Influence of ambient temperature < 100 ppm/K of full-scale value Rise time/fall time	Transfer characteristics	
Rise time/fall time ≤ 3.5 ms Galvanic isolation 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 Labeling space for labeling at the front Directive conformity Electromagnetic compatibility Directive 2014/30/EU EN 61326-1:2013 (industrial locations) Conformity Electromagnetic compatibility Degree of protection IEC 60529:2001 Protection against electrical shock EN 61010-1:2010 Ambient conditions -40 85 °C (-40 185 °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 IP20 Connection Screw terminals Core cross section 0,5 2,5 mm² (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 On 35 mm DIN mount	Accuracy	max. 0.1 % of full-scale value
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 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 [EC 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 leaded for operation in environmental conditions acc. to ISA-S71.04-1985, severity level 63 Mechanical specifications Degree of protection P20 Connection screw terminals Core cross section 9.5 2.5 mm² (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 on Smm DIM mounting rail acc. to EN 60715:2001 Data for application in connection with hazardous areas Certificate DEMKO 16 ATEX 1750X Marking 9 ISA Smm DIM mounting rail acc. to EN 60715:2001 Directive conformity EICEX provol IECEX provol	Influence of ambient temperature	< 100 ppm/K of full-scale value
Untput/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 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 63 Mechanical specifications Degree of protection IP20 Connection Sorew terminals Core cross section 0.5 2.5 mm² (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 Dimensions 0.5 2.5 mm² (20 14 AWG) Mass approx. 70 g Dimensions 0.6 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D) , housing type S1 Mounting Dimensions 0.6 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D) , housing type S1 Mounting Dimensions 0.6 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D) , housing type S1 Dimensions 0.6 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D) , housing type S1 Dimensions 0.6 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D) , housing type S1 Dimensions 0.6 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D) , housing type S1 Dimensions 0.6 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D) , housing type S1 Dimensions 0.6 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D) , housing type S1 Dimensions 0.6 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D) , housing type S1 Dimensions 0.6 x 97 x 107 mm (0.24 x 3.82 x 4.21 inch) (W x H x D) ,	Rise time/fall time	≤ 3.5 ms
Input/Other circuits	Galvanic isolation	
Insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 00 Vefit test voltage 3 kV, 50 Hz, 1 min insulation voltage 3 kV, 50 Hz, 2 min insulation voltag	Output/power supply	safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 $V_{\rm eff}$ test voltage 3 kV, 50 Hz, 1 min
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 EC 60529:2001 Protection against electrical shock EN 61010-1:2010 Ambient conditions Ambient emperature	Input/Other circuits	safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 $V_{\rm eff}$ test voltage 3 kV, 50 Hz, 1 min
Directive conformity	Indicators/settings	
Directive 2014/30/EU	Labeling	space for labeling at the front
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 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 IP20 Connection IP20 Connection screw terminals Core cross section 0.5 2.5 mm² (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 ECertificate DEMIKO 16 ATEX 1750X Marking © II 3G Ex nA IIC T4 Gc Directive conformity EN 60079-0:2012+A11:2013, EN 60079-15:2010 Directive 2014/34/EU EN 60079-0:2012+A11:2013, EN 60079-15:2010 IL approval EN 60079-0:2012+A11:2013, EN 60079-15:2010 <td>Directive conformity</td> <td></td>	Directive conformity	
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 mm² (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 ⊕ II 606779-0:2012+A11:2013, EN 60079-15:2010 Directive 2014/34/EU EN 60079-0:2012+A11:2013, EN 60079-15:2010 International approval E106378 IECEx approval IECEx UL 16.0116X	Electromagnetic compatibility	
Degree of protection IEC 60529:2001 Protection against electrical shock EN 61010-1:2010 Ambient conditions Fer of C (-13 158 °F) Ambient temperature -25 70 °C (-40 185 °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 IP20 Connection screw terminals Core cross section 0.5 2.5 mm² (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 Certificate DEMKO 16 ATEX 1750X Marking II 3G Ex nA IIC T4 Gc Directive 2014/34/EU EN 60079-0:2012+A11:2013 , EN 60079-15:2010 International approvals E106378 UL approval E106278 IECEx certificate IECEx UL 16.0116X	Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
Protection against electrical shock Ambient conditions Ambient temperature -25 70 °C (-13 158 °F) Storage temperature -40 85 °C (-40 185 °F) Damaging gas electrications Mechanical specifications Degree of protection IP20 Connection screw terminals Core cross section 0.5 2.5 mm² (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 ares Certificate DEMKO 16 ATEX 1750X Marking II 3G Ex n A IIC T 4 Gc Directive 2014/34/EU EN 60079-0:2012+A11:2013 , EN 60079-15:2010 International approvals UL approval E106378 IECEx approval IECEx approval IECEx certificate IECEX certificate IECEX UL 16.0116X	Conformity	
Ambient conditions Ambient temperature	Degree of protection	IEC 60529:2001
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 mm² (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 EN 60079-0:2012+A11:2013 , EN 60079-15:2010 International approvals E106378 UL approval E106378 IECEx approval IECEx UL 16.0116X	Protection against electrical shock	EN 61010-1:2010
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 mm² (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 I 3G Ex nA IIC T4 Gc Directive conformity Directive 2014/34/EU EN 60079-0:2012+A11:2013, EN 60079-15:2010 International approvals UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	Ambient conditions	
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 mm² (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 DEMIKO 16 ATEX 1750X Marking Directive conformity Directive 2014/34/EU EN 60079-0:2012+A11:2013 , EN 60079-15:2010 International approvals UL approval ECEx approval IECEx certificate IECEx UL 16.0116X	Ambient temperature	-25 70 °C (-13 158 °F)
Mechanical specifications Degree of protection IP20 Connection screw terminals Core cross section 0.5 2.5 mm² (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 Directive conformity Directive 2014/34/EU EN 60079-0:2012+A11:2013 , EN 60079-15:2010 International approvals UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	Storage temperature	-40 85 °C (-40 185 °F)
Degree of protection IP20 Connection screw terminals Core cross section 0.5 2.5 mm² (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 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 DIrective conformity Directive conformity Directive 2014/34/EU EN 60079-0:2012+A11:2013 , EN 60079-15:2010 International approvals UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	Damaging gas	designed for operation in environmental conditions acc. to ISA-S71.04-1985, severity level G3
Connection screw terminals Core cross section 0.5 2.5 mm² (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 Certificate DEMKO 16 ATEX 1750X Marking © II 3G Ex nA IIC T4 Gc Directive conformity EN 60079-0:2012+A11:2013 , EN 60079-15:2010 International approvals E106378 UL approval E106378 IECEx approval IECEx UL 16.0116X	Mechanical specifications	
Core cross section 0.5 2.5 mm² (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 Certificate DEMKO 16 ATEX 1750X Marking ⑤ II 3G Ex nA IIC T4 Gc Directive conformity EN 60079-0:2012+A11:2013 , EN 60079-15:2010 International approvals UL approval UL approval E106378 IECEx approval IECEx UL 16.0116X	Degree of protection	IP20
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 Directive conformity Directive conformity Directive 2014/34/EU EN 60079-0:2012+A11:2013, EN 60079-15:2010 International approvals UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	Connection	screw terminals
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 International approvals UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	Core cross section	0.5 2.5 mm ² (20 14 AWG)
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 International approvals UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	Mass	approx. 70 g
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 International approvals UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	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
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 International approvals UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
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 International approvals UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	_	areas
Directive conformity Directive 2014/34/EU EN 60079-0:2012+A11:2013 , EN 60079-15:2010 International approvals UL approval IECEx approval IECEx certificate IECEx UL 16.0116X		
Directive conformity Directive 2014/34/EU EN 60079-0:2012+A11:2013 , EN 60079-15:2010 International approvals UL approval IECEx approval IECEx certificate IECEx UL 16.0116X	Marking	
UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	-	
UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-15:2010
UL approval E106378 IECEx approval IECEx certificate IECEx UL 16.0116X	International approvals	
IECEx approval IECEx certificate IECEx UL 16.0116X		E106378
IECEx certificate IECEx UL 16.0116X		
		IECEx UL 16.0116X
3		
General information	General information	

Assembly

Front view



	S1SD-2PF	Power feed module with screw terminals
1	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



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











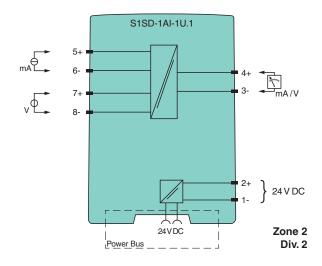
Function

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

- 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



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_{r}	16.8 31.2 V DC
Power dissipation		0.6 W
Power consumption		0.7 W

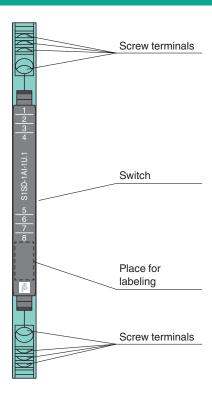
Input	
Connection side	field side
Transmission range	linearity range: -1 110 %
Input I	
Connection	terminals 5+, 6-
Input signal	0/4 20 mA , max. 50 mA
Input resistance	≤ 25 Ω
Input II	
Connection	terminals 7+, 8-
Input signal	0/2 10 V , max. 30 V
Input resistance	> 100 kΩ
Output	
Connection side	control side
Connection	terminals 3-, 4+
Analog voltage output	$0/2 \dots 10 \text{ V}$, load $\geq 2 \text{ k}\Omega$
Analog current output	0/4 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 10 Hz , 0 100 Hz , 0 5 kHz
Settling time	70 ms , 7 ms , 150 μ s
Galvanic isolation	
Output/power supply	safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 $V_{\rm eff}$ 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
Configuration	via DIP switches
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 hazar	dous areas
Certificate	DEMKO 16 ATEX 1750X
Marking	
Directive conformity	
Birodivo comorniny	

Release date: 2023-06-05 Date of issue: 2023-06-05 Filename: 276397_eng.pdf

International approvals						
UL approval	E106378					
IECEx approval						
IECEx certificate	IECEx UL 16.0116X					
IECEx marking	Ex nA IIC T4 Gc					
General information						

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

	S1SD-2PF	Power Feed Module
	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



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









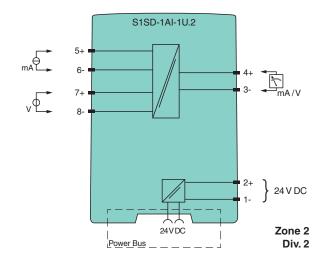


Function

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

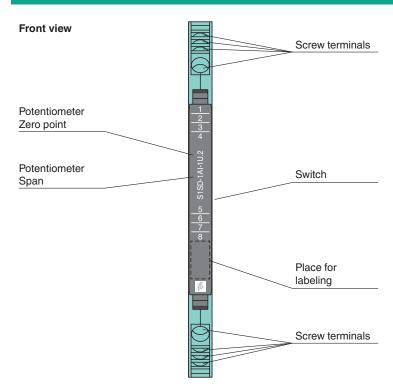
General specifications		
Signal type		Analog input
Operation time		MTBF: 490 a acc. to SN 29500 stationary continuous operating, average ambient temperature 40 °C (104 °F)
Supply		
Connection		Power Bus or terminals 1-, 2+
Rated voltage	Ur	16.8 31.2 V DC
Power dissipation		0.6 W
Power consumption		0.8 W
Input		
Connection side		field side

Release date: 2023-04-11 Date of issue: 2023-04-11 Filename: 276398_eng.pdf

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	$0/1 \dots 5 \text{ V}$, $0/2 \dots 10 \text{ V}$, $\pm 5 \text{ V}$, $\pm 10 \text{ V}$, load $\geq 2 \text{ k}\Omega$
Analog current output	$0/4 \dots 20 \text{ mA}, \pm 10 \text{ mA}, \pm 20 \text{ mA}, \text{ load} \leq 600 \Omega$
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 $V_{\rm eff}$ 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 Directive conformity	space for labeling at the front
Directive conformity	
Electromagnetic compatibility Directive 2014/30/EU	EN 61206 1:2012 (industrial locations)
Conformity	EN 61326-1:2013 (industrial locations)
	IEC 60529:2001
Degree of protection	EN 61010-1:2010
Protection against electrical shock Ambient conditions	EN 01010-1.2010
Ambient temperature	25 70 °C (12 159 °E)
Storage temperature	-25 70 °C (-13 158 °F) -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 mm² (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 hazar	-
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

International approvals	
UL approval	E106378
IECEx approval	
IECEx certificate	IECEx UL 16.0116X
IECEx marking	Ex nA IIC T4 Gc
General information	

Assembly



Configuration

Switch settings

Input – switch S1			Signal	Output – switch S2								
1	2	3	4	5	6		1	2	3	4	5	6
ON						± 10 V	ON	ON		ON		
						0 10 V	ON	ON				
		ON				2 10 V	ON	ON			ON	
ON	ON					± 5 V	ON	ON	ON	ON		
	ON					0 5 V	ON	ON	ON			
	ON	ON				1 5 V	ON	ON	ON		ON	
ON						± 20 mA				ON		
						0 20 mA						
		ON				4 20 mA					ON	
ON	ON					± 10 mA			ON	ON		
	ON					0 10 mA			ON			
	ON	ON				2 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

7.15	S1SD-2PF	Power Feed Module
1	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



Transmitter Power Supply/Signal Splitter

S1SD-1AI-2C

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











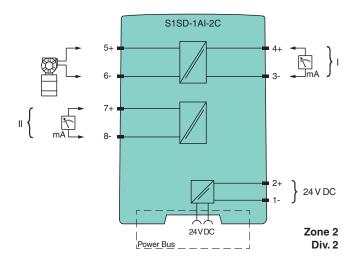
Function

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

The device supplies 2-wire transmitter.

At the output the signal is available as two 0/4 mA ... 20 mA signals. The device can be powered via terminals or Power Bus.

Connection



Technical Data

General specifications		
Signal type		Analog input
Operation time		MTBF: 313 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
Connection		terminals 5+, 6-

Release date: 2022-01-10 Date of issue: 2022-01-10 Filename: 276399_eng.pdf

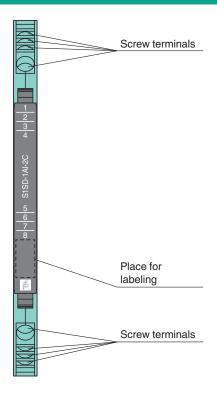
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Technical Data	
Input signal	0/4 20 mA
Open circuit voltage/short-circuit current	≤ 22 V / 35 mA
Input resistance	≤ 25 Ω
Transmission range	linearity range: 1 110.9/
Transmission range	linearity range: -1 110 %
Available voltage	16 V at 20 mA
Output Connection side	control side
Ripple Output I	≤ 10 mV _{eff}
Connection	terminals 3-, 4+
Output signal	0/4 20 mA, load ≤ 300 Ω
Output II	0/4 20 IIIA, 10au ≤ 300 t2
Connection	terminals 7+, 8-
Output signal	0/4 20 mA, load ≤ 300 Ω
Transfer characteristics	U/T 20 IIIA, 10au ≥ 000 12
	max. 0.1 % of full-scale value
Accuracy 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	20.0 21116
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 safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated
Input/Other circuits	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	6.2x97x107 mm (0.24 x $3.82x4.21$ 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 hazardou	is areas
Certificate	DEMKO 16 ATEX 1750X
Marking	
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-15:2010
International approvals	
International approvals UL approval	E106378

IECEx certificate	IECEx UL 16.0116X	
IECEx marking	Ex nA IIC T4 Gc	
General information		

Assembly

Front view



	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
11	POWERBUS-CAP	End Cap for Power Bus



Temperature Converter

S1SD-1TI-1U

- 1-channel signal conditioner
- 24 V DC supply
- Thermocouple, RTD, potentiometer or mV input
- Input for PTC thermistor
- Current and voltage output
- Line fault (LFD) and sensor burnout detection
- Accuracy 0.1 %
- Connection via screw terminals











Function

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

The device has an input for signals of the following field devices:

- resistance thermometers
- thermocouples
- PTC thermistors
- potentiometers
- voltage sources
- field device with its own characteristic

The device provides the following standard signals at the output:

- 0/2 mA ... 10 mA signal

- 0/4 mA ... 20 mA signal

- 0/1 V ... 5 V signal

- 0/2 V ... 10 V signal

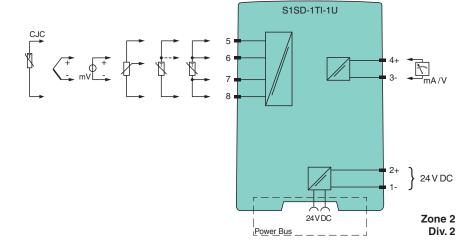
This device has an integrated cold junction compensation. You can also implement external cold junction compensation. A fault is signalized by LEDs.

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

The Teach-In function can be used to teach in the potentiometer start value and end value.

The device can be powered via terminals or Power Bus.

Connection



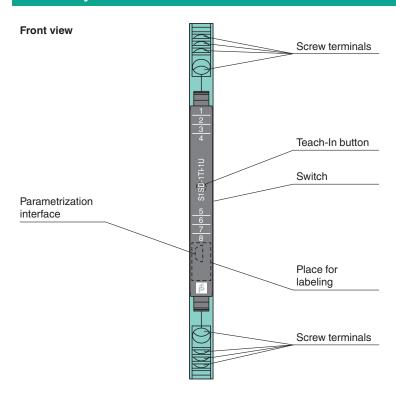
Technical Data

General specifications	
Signal type	Analog input
Operation time	MTBF: 353 a acc. to SN 29500 stationary continuous operating, average ambient temperature 40 °C (104 °F)

Release date: 2023-03-13 Date of issue: 2023-03-13 Filename: 276400_eng.pdf

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, ra	Supply		
Power dissipation 0.7 W	Connection		Power Bus or terminals 1-, 2+
Power consumption 0.8 W	Rated voltage	U_{r}	16.8 31.2 V DC
Programming interface programming socket programming socket programming interface programming socket programming programming socket progra	Power dissipation		0.7 W
Programming interface programming socket	Power consumption		0.8 W
Imput	Interface		
Connection side field side Connection terminals 5, 6, 7, 8 PTC type KT, KTY, ST Measuring current approx. 200 μA Types of measuring 2, 3, 4-wire connection Lead resistance ≤ 100 Ω per line Measurement loop monitoring sensor breakage, lead breakage, short circuit Types of measuring 2, 3, 4-wire connection Lead resistance approx. 200 µA Types of measuring 2, 3, 4-wire connection Lead resistance max. 100 Ω per line Measurement loop monitoring sensor breakage, lead breakage, short circuit Types of measuring yee B. E., K. N. S. T. (IEC 584-1:1995) Loo Oli Junction compensation external (Pt100) and internal , manually Lead resistance max. 10 kΩ Measurement loop monitoring sensor breakage, lead breakage Resistor max. 10 kΩ Measurement range 0 5 kΩ Potentiometer 0 2 50 kΩ Voltage -100 100 mV Input resistance ≥ 1 MΩ Output 2 1 MΩ Connection	Programming interface		programming socket
Connection terminals 5, 6, 7, 8 PTC type KT, KTY, ST Measuring current approx. 200 μA Types of measuring 2, 3, 4-wire connection Leaf resistance ≤ 100 Ω per line Measurement loop monitoring sensor breakage, lead breakage, short circuit RTD type P1100, P1200, P1200, P1200, P1200, P1200 (IN 43771995) Measuring current approx. 200 μA Types of measuring 2, 3, 4-wire connection Lead resistance max. 100 Ω per line Measurement loop monitoring sensor breakage, lead breakage, short circuit Type S, L., K. N. S, T. (IEC 584-1:1995) type L, U(IN 43710:1995) Type C, D (ASTM E988) type L, U(IN 43710:1995) Type C, D (ASTM E988) type L, U(IN 43710:1995) Type C, D (ASTM E988) type L, U(IN 43710:1995) Type C, D (MSTM E988) type L, U(IN 43710:1995) Type C, D (ASTM E988) type L, U(IN 43710:1995) Type C, D (ASTM E988) type L, U(IN 43710:1995) Type C, D (ASTM E988) type L, U(IN 43710:1995) Type C, D (ASTM E988) type L, U(IN 43710:1995) Type S, C (IN 43710:1995)	Input		
PTC App Macuring current approx. 200 μA appro	Connection side		field side
Measuring current	Connection		terminals 5, 6, 7, 8
Ead resistance	PTC		type KT, KTY, ST
Ead resistance	Measuring current		approx. 200 μA
Lead resistance	•		
Measurement loop monitoring sensor breakage, lead breakage, short circuit RTD type P1100, P1200, P1500, P1100 (EN 60751:1995) type Ni100, N1200, N1500, N1500, N1500) Measuring current approx. 200 µA Types of measuring 2, 3, 4-wire connection Lead resistance max. 100 Q per line Measurement loop monitoring sensor breakage, lead breakage, short circuit Thermocouples type B, E, J, K, N, S, T (IEC 584-1:1995) type L, U (IN 43710:1985) type C, D (ASTM E998) Cold junction compensation external (P100) and internal, manually Lead resistance max. 10 kΩ Measurement loop monitoring sensor breakage, lead breakage Resistor max. 10 kΩ Measurement range 0 5 kΩ Potentiometer 0.2 50 kΩ Types of measuring 3-wire connection Voltage -100 100 mV -1000 100 mV -1000 100 mV -1000 100 mV -1000 100 mV Input resistance ≥ 1 MΩ Output Connection side control side Connection side control side Connection side control			≤ 100 Ω per line
RTD type PH100, Pt200, Pt500, Pt100 (EN 60751:1995) type Ni100, Ni200, Ni500, Ni1000 (DIN 43760) Measuring current approx. 200 μA Types of measuring 2-, 3-, 4-wire connection Lead resistance max. 100 Ω per line Measurement loop monitoring sensor breakage, lead breakage, short circuit Thermocouples type B, E, J, K, N, S, T (IEC 584-1:1995) type L, U (DIN 43710:1985) Cold junction compensation external (Pt100) and internal , manually Lead resistance max. 10 kΩ Measurement loop monitoring sensor breakage, lead breakage Resistor max. 10 kΩ Measurement range 0 5 kΩ Potentiometer 0 2 50 kΩ Types of measuring 3-wire connection Voltage -100 100 mV Input resistance ≥ 1 MΩ Output Connection side Connection side control side Connection of terminals 3, 4+ Analog voltage output 0/1 5 V, 0/2 10 V, load ≥ 2 kΩ Analog current output 0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Fipiple ≤ 10 mV _{eff} Fault signal	Measurement loop monitoring		·
Measuring current approx. 200 μA Types of measuring 2-, 3-, 4-wire connection Lead resistance max. 100 Ω per line Measurement loop monitoring sensor breakage, lead breakage, short circuit Thermocouples type B. E. J. K. N. S. T (IEC 584-1:1995) type C. D (ASTM E988) Cold junction compensation external (P100) and internal , manually Lead resistance max. 10 kΩ Measurement loop monitoring sensor breakage, lead breakage Resistor wax. 10 kΩ Measurement range 0 5 kΩ Potentiometer 0.2 50 kΩ Types of measuring 3-wire connection Voltage -100 100 mV - 1000 mV Input resistance ≥ 1 MΩ Output connection Connection side control side Connection side control side Connection terminals 3-, 4+ Analog voltage output 0/1 5 V, 0/2 10 V, load ≥ 2 kΩ Analog current output 0/2 5 V, 0/2 10 V, load ≥ 2 kΩ Ripple ≤ 10 mV _{eff} Fault signal downscale or upscale	, ,		type Pt100, Pt200, Pt500, Pt1000 (EN 60751:1995)
Types of measuring 2, 3, 4-wire connection Lead resistance max. 10 Ω per line Measurement loop monitoring sensor breakage, lead breakage, short circuit Thermocouples type B, E, J, K, N, S, T (IEC 584-1:1995) type C, D (ASTM 16985) Cold junction compensation external (Pt100) and internal , manually Lead resistance max. 10 kΩ Measurement loop monitoring sensor breakage, lead breakage Resistor max. 10 kΩ Measurement range 0 5 kΩ Potentiometer 0.2 50 kΩ Types of measuring 3-wire connection Voltage -100 100 mV -1000 100 mV -1000 1000 mV -1000 1000 mV Input resistance ≥ 1 MΩ Outputu Connection side Connection side control side Connection side control side Connection totuput 0/1 5 V, 0/2 10 V, load ≥ 2 kΩ Analog voltage output 0/1 5 V, 0/2 10 V, load ≥ 2 kΩ Analog current output 0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV eff Fautt signal downscale or upscale	Measuring current		
Load resistance max. 100 Ω per line Measurement loop monitoring sensor breakage, lead breakage, short circuit Thermocouples type B, E, J, K, N, S, T (IEC 584-1:1995) type L, U (DIN 43710:1985) type L, U (DIN 43710:1985) type L, U (DIN 43710:1985) type L, U (DIN 43710:1985) type L, U (DIN 43710:1985) type L, U (DIN 43710:1985) type L, U (DIN 43710:1985) type L, U (DIN 43710:1985) type L, U (DIN 43710:1985) type L, U (DIN 43710:1985) Lead resistance max. 10 kΩ Measurement loop monitoring sensor breakage, lead breakage Resistor Measurement range Potentiometer 0.25 kΩ Voltage -100 100 mV Voltage -100 100 mV Input resistance ≥ 1 MΩ Output Doubtut Connection side control side Connection side control side Connection side control side Connection terminals 3-, 4+ Analog output Analog output 0/1 5 V, 0/2 10 V, load ≥ 2 kΩ Analog current output 0/2 10 M, 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV eff Fault signal downscale or upscale Transfer characteristics Accuracy max. 0.1 %	· ·		
Measurement loop monitoring sensor breakage, lead breakage, short circuit Thermocouples type B, E, J, K, N, S, T (IEC 584-1:1995) type C, D (ASTM E988) Cold junction compensation external (P100) and internal , manually Lead resistance max. 10 kΩ Measurement loop monitoring sensor breakage, lead breakage Resistor Measurement range Measurement range 0 5 kΩ Types of measuring 3-wire connection Voltage -100 100 mV -100 100 mV -1000 1000 mV Input resistance ≥ 1 MΩ Output 0 moverable Connection side control side Connection side control side Connection terminals 3-, 4+ Analog voltage output 0/1 5 V , 0/2 10 V , load ≥ 2 kΩ Analog current output 0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV _{eff} Fault signal downscale or upscale Transfer characteristics Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation			
Thermocouples $ \begin{array}{c} \text{type B, E, J, K, N, S, T, (IEC 584-1:1995)} \\ \text{type L, U (DIN 43710-1985)} \\ \text{type C, D (ASTM E988)} \\ \text{Cold junction compensation} \\ \text{external (P(100) and internal , manually} \\ \text{max. 10 kΩ} \\ \text{Measurement loop monitoring} \\ \text{sensor breakage, lead breakage} \\ \text{Resistor} \\ \text{Measurement range} \\ \text{0 5 kΩ} \\ \text{Potentiometer} \\ \text{0 .2 50 kΩ} \\ \text{Types of measuring} \\ \text{3 -wire connection} \\ \text{Voltage} \\ \text{-100 100 mV} \\ \text{-1000 100 mV} \\ \text{-1000 100 mV} \\ \text{-1000 100 mV} \\ \text{-1000 m.} \text{-1000 mV} \\ \text{Input resistance} \\ \text{2 -1 MΩ} \\ \text{Output} \\ \text{Connection side} \\ \text{Connection iside} \\ \text{Connection terminals 3 -, 4+} \\ \text{Analog voltage output} \\ \text{0/1 5 V , 0/2 10 V , load ≥ 2 kΩ} \\ \text{Analog current output} \\ \text{0/2 10 mA, 0/4 20 mA, load ≤ 600 } \Omega \\ \text{Sipple} \\ \text{≤ 10 mV }_{\text{eff}} \\ \text{Faut is ginal} \\ \text{downscale or upscale} \\ \text{Transfer characteristics} \\ \text{Accuracy} \\ \text{max. 0.1 % of full-scale value} \\ \text{Measuring time} \\ \text{≤ 300 ms} \\ \text{Deviation} \\ \text{RTD} \\ \text{RTD} \\ \text{Not give in temperature} \\ \text{< 0.1 % of the measured value} \\ \text{Voltage} \\ \text{< 0.1 % of the measured value} \\ \text{Influence of ambient temperature} \\ Safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 Veff test voltage 3 kV, 50 Hz, 1 min sinsulation according to IEC/EN 61010-1, rainsulation voltage 300 Veff test voltage 3 kV, 50 Hz, 1 min sinsulation according to IEC/EN 61010-1, rainsulation voltage 300 Veff test voltage 3 kV, 50 Hz, 1 min sinsulation according to IEC/EN 61010-1, rainsulation voltage 300 Veff test voltage 3 kV, 50 Hz, 1 min sinsulation according to IEC/EN 61010-1, rainsulation voltage 300 Veff test voltage 3 kV, 50 Hz, 1 min sinsulation according to IEC/EN 61010-1, rainsulation voltage 300 Veff test voltage 3 kV, 50 Hz, 1 min sinsulation according to IEC/EN 61010-$			·
Lead resistance max. 10 kΩ Measurement loop monitoring sensor breakage, lead breakage Resistor 0 5 kΩ Potentiometer 0.2 50 kΩ Types of measuring 3-wire connection Voltage -100 100 mV - 1000 mV Input resistance ≥ 1 MΩ Output 0.100 mV Connection side control side Connection side output 0/1 5 V , 0/2 10 V , load ≥ 2 kΩ Analog voltage output 0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV er Fault signal downscale or upscale Transfer characteristics Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation 0.1 K/0.05 % of the measured value RTD < 0.1 K/0.05 % of the measured value			type B, E, J, K, N, S, T (IEC 584-1:1995) type L, U (DIN 43710:1985)
Measurement loop monitoring sensor breakage, lead breakage Resistor Measurement range 0 5 kΩ Potentiometer 0.2 50 kΩ Types of measuring 3-wire connection Voltage -100 100 mV - 1000 mV Input resistance ≥ 1 MΩ Dutput 0.00 1000 mV Connection ide control side Connection terminals 3·, 4+ Analog voltage output 0/1 5 V , 0/2 10 V , load ≥ 2 kΩ Analog current output 0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV eff Fault signal downscale or upscale Transfer characteristics Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation < 0.1 K/0.05 % of the measured value	Cold junction compensation		external (Pt100) and internal , manually
Resistor Measurement range 0 5 kΩ Potentiometer 0.2 50 kΩ Types of measuring 3-wire connection Voltage -100 100 mV -1000 1000 mV Input resistance ≥ 1 MΩ Output 0.00 mc to to side Connection is de control side Connection terminals 3 · 4 + Analog voltage output 0/1 5 V , 0/2 10 V , load ≥ 2 kΩ Analog current output 0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV eff Fault signal downscale or upscale Transfer characteristics Accuracy Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation Safo the measured value Notage < 0.1 K/0.05 % of the measured value	Lead resistance		max. 10 kΩ
Resistor Measurement range 0 5 kΩ Potentiometer 0.2 50 kΩ Types of measuring 3-wire connection Voltage -100 100 mV -1000 1000 mV Input resistance ≥ 1 MΩ Output 0.00 mV Connection side control side Connection terminals 3 -, 4+ Analog voltage output 0/1 5 V , 0/2 10 V , load ≥ 2 kΩ Analog current output 0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV _{eff} Fault signal downscale or upscale Transfer characteristics Accuracy Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation Safo the measured value RTD < 0.1 K/0.05 % of the measured value	Measurement loop monitoring		sensor breakage, lead breakage
Potentiometer 0.250 kΩ Types of measuring 3-wire connection Voltage -100100 mV -1000 mV -10001000 mV Input resistance ≥ 1 MΩ Dutput Connection side control side Connection terminals 3-, 4+ Analog voltage output 0/15 V , 0/2 10 V , load ≥ 2 kΩ Analog current output 0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV eff Fault signal downscale or upscale Transfer characteristics Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation RTD < 0.1 K/0.05 % of the measured value Voltage < 0.1 % of the measured value Voltage < 0.1 % of the measured value Potentiometer < 0.02 % of the measured value Galvanic isolation Output/power supply safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test voltage 3 kV, 50 Hz, 1 min Input/Other circuits safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test voltage insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test voltage insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test voltage insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test voltage insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test voltage insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test voltage insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test voltage insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test voltage insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test voltage insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test voltage insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vet test	·		
Types of measuring 3-wire connection Voltage -100 100 mV -1000 mV Input resistance ≥ 1 MΩ Output Connection side control side Connection terminals 3-, 4+ Analog voltage output 0/1 5 V , 0/2 10 V , load ≥ 2 kΩ Analog current output 0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV eff Fault signal downscale or upscale Transfer characteristics Accuracy Measuring time ≤ 300 ms Deviation S RTD < 0.1 K/0.05 % of the measured value	Measurement range		0 5 kΩ
Voltage $ -100 \dots 100 \text{ mV} \\ -1000 \dots 1000 \text{ mV} \\ -1000 \dots 1000 \text{ mV} \\ \hline \text{Output} \\ \hline \text{Connection side} \\ \hline \text{Connection side} \\ \hline \text{Connection side} \\ \hline \text{Connection} \\ \hline \text{terminals 3-, 4+} \\ \hline \text{Analog voltage output} \\ \hline \text{Analog current output} \\ \hline \text{Sipple} \\ \hline \text{Sipple} \\ \hline \text{Singul} \\ \hline \text{downscale or upscale} \\ \hline \text{Transfer characteristics} \\ \hline \text{Accuracy} \\ \hline \text{Measuring time} \\ \hline \text{Deviation} \\ \hline \text{RTD} \\ \hline \text{Thermocouples} \\ \hline \text{Voltage} \\ \hline \text{Voltage} \\ \hline \text{Potentiometer} \\ \hline \text{Influence of ambient temperature} \\ \hline \text{Galvanic isolation} \\ \hline \text{Output/power supply} \\ \hline \text{Input/Other circuits} \\ \hline \text{safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vert test voltage 3 kV, 50 Hz, 1 min lnput/Other circuits } \\ \hline \text{safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vert test voltage 3 kV, 50 Hz, 1 min lnput/Other circuits } \\ \hline \text{safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vert test voltage 3 kV, 50 Hz, 1 min lnput/Other circuits } \\ \hline \text{Salvanic isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vert test voltage 3 kV, 50 Hz, 1 min lnput/Other circuits } \\ \hline \text{Salvanic isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vert test voltage 3 kV, 50 Hz, 1 min lnput/Other circuits } \\ \hline \text{Salvanic isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vert test voltage 3 kV, 50 Hz, 1 min lnput/Other circuits } \\ \hline \text{Salvanic isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vert test voltage 3 kV, 50 Hz, 1 min lnput/Other circuits } \\ \hline \text{Salvanic isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 Vert test voltage 3 kV, 50 Hz, 1 min lnput/Other circuits } \\ \hline S$	Potentiometer		0.2 50 kΩ
-1000 1000 mV Input resistance ≥ 1 MΩ Output Connection side Connection side Connection terminals 3-, 4+ Analog voltage output Analog current output 0/2 10 mA, 0/4 20 mA, load ≤ 2 kΩ Analog current output Analog current output 0/2 10 mV, eff Fault signal downscale or upscale Transfer characteristics Accuracy Measuring time Sa00 ms Deviation RTD <0.1 K/0.05 % of the measured value Voltage Voltage Potentiometer Influence of ambient temperature Galvanic isolation Output/power supply Insulation voltage 300 Vent test voltage 3 kV, 50 Hz, 1 min Input/Other circuits safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rat insulation voltage 300 Vent test voltage 3 kV, 50 Hz, 1 min Input/Other circuits	Types of measuring		3-wire connection
Output Connection side control side Connection terminals 3-, 4+ Analog voltage output 0/1 5 V , 0/2 10 V , load ≥ 2 kΩ Analog current output 0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV _{eff} Fault signal downscale or upscale Transfer characteristics Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation Thermocouples Voltage < 0.1 K/0.05 % of the measured value	Voltage		
Connection side control side Connection terminals 3-, 4+ Analog voltage output $0/1 5 V$, $0/2 10 V$, load ≥ 2 kΩ Analog current output $0/2 10 \text{ mA}$, $0/4 20 \text{ mA}$, load ≤ 600 Ω Ripple ≤ 10 mV eff Fault signal downscale or upscale Transfer characteristics Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation < 0.1 K/0.05 % of the measured value	Input resistance		≥ 1 MΩ
Connection terminals 3-, 4+ Analog voltage output 0/1 5 V , 0/2 10 V , load ≥ 2 kΩ Analog current output 0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Ripple ≤ 10 mV eff Fault signal downscale or upscale Transfer characteristics Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation < 0.1 K/0.05 % of the measured value	Output		
Analog voltage output $0/15 \text{ V}$, $0/210 \text{ V}$, $\log a \geq 2 \text{ k}\Omega$ Analog current output $0/210 \text{ mA}$, $0/420 \text{ mA}$, $\log a \leq 600 \Omega$ Ripple $\leq 10 \text{ mV}_{\text{eff}}$ Fault signal downscale or upscale Transfer characteristics Accuracy max. 0.1% of full-scale value Measuring time $\leq 300 \text{ ms}$ Deviation RTD $\leq 0.1 \text{ K}/0.05 \%$ of the measured value Thermocouples $\leq 0.1 \%$ of the measured value Voltage $\leq 0.1 \%$ of the measured value Potentiometer $\leq 0.02 \%$ of the measured value Influence of ambient temperature $\leq 100 \text{ ppm/K}$ of full-scale value Galvanic isolation Output/power supply $\leq 100 \text{ safe}$ electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation voltage $\leq 100 \text{ mpm/Cote}$ insulation according to IEC/EN 61010-1, rainsulation v	Connection side		control side
Analog current output O/2 10 mA, 0/4 20 mA, load ≤ 600 Ω Fipple ≤ 10 mV _{eff} Fault signal downscale or upscale Transfer characteristics Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation RTD <0.1 K/0.05 % of the measured value ✓ 0.3 K/0.1 % of the measured value Voltage Voltage Potentiometer √ 0.02 % of the measured value ⟨ 0.02 % of the measured value ⟨ 0.09 my of the measured value ⟨ 0.00 my of the mea	Connection		terminals 3-, 4+
Ripple ≤ 10 mV eff Fault signal downscale or upscale Transfer characteristics max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation 0.1 K/0.05 % of the measured value Thermocouples < 0.1 K/0.1 % of the measured value	Analog voltage output		$0/1 \dots 5 \text{ V}$, $0/2 \dots 10 \text{ V}$, load $\geq 2 \text{ k}\Omega$
Fault signal downscale or upscale Transfer characteristics Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation RTD < 0.1 K/0.05 % of the measured value Thermocouples < 0.3 K/0.1 % of the measured value Voltage < 0.1 % of the measured value Potentiometer < 0.02 % of the measured value Influence of ambient temperature < 100 ppm/K of full-scale value Galvanic isolation Output/power supply safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation 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, rainsulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min	Analog current output		0/2 10 mA, 0/4 20 mA, load ≤ 600 Ω
Transfer characteristics Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation RTD < 0.1 K/0.05 % of the measured value Thermocouples < 0.3 K/0.1 % of the measured value Voltage < 0.1 % of the measured value Potentiometer < 0.02 % of the measured value Influence of ambient temperature < 100 ppm/K of full-scale value Galvanic isolation Output/power supply safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation voltage 300 V _{eff} test voltage 3 kV, 50 Hz, 1 min	Ripple		\leq 10 mV $_{\rm eff}$
Accuracy max. 0.1 % of full-scale value Measuring time ≤ 300 ms Deviation			downscale or upscale
Measuring time ≤ 300 ms Deviation < 0.1 K/0.05 % of the measured value	Transfer characteristics		
Measuring time ≤ 300 ms Deviation Co.1 K/0.05 % of the measured value RTD < 0.1 K/0.05 % of the measured value	Accuracy		max. 0.1 % of full-scale value
Deviation RTD	·		≤ 300 ms
Thermocouples Voltage Voltage Potentiometer Voltage Potentiometer Voltage Potentiometer Voltage Voltag	•		
Thermocouples Voltage Voltage Potentiometer Voltage Potentiometer Voltage Potentiometer Voltage Voltag	RTD		< 0.1 K/0.05 % of the measured value
Voltage < 0.1 % of the measured value Potentiometer < 0.02 % of the measured value Influence of ambient temperature < 100 ppm/K of full-scale value Galvanic isolation Output/power supply safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation 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, rainsulation			
Potentiometer < 0.02 % of the measured value Influence of ambient temperature < 100 ppm/K of full-scale value Galvanic isolation Output/power supply safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation 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, rainsulation according to IEC/EN 61010-1, rainsulati	· ·		
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Galvanic isolation Output/power supply safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation 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, rainsulation according to IEC/EN 610			
Output/power supply safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rainsulation 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, rainsulation a			
Input/Other circuits safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, ra			safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage $300 V_{eff}$ test voltage $3 kV$, $50 Hz$, $1 min$
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 keys
Configuration	via DIP switches via keys via software
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 hazar	rdous 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
International approvals	
UL approval	E106378
IECEx approval	
IECEx certificate	IECEx UL 16.0116X
IECEx marking	Ex nA IIC T4 Gc
General information	



	S1SD-2PF	Power Feed Module
	SC-Config	Configuration software
	S-ADP-USB	Adapter with USB Interface
PACTware V	PACTware 5.0	FDT Framework
	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
11	POWERBUS-CAP	End Cap for Power Bus



Passive Isolator S1SL-1AI-1C

- 1-channel signal conditioner
- Field side loop powered
- Current input/output 0/4 mA ... 20 mA
- Accuracy 0.1 %
- Reverse polarity protection
- Connection via screw terminals







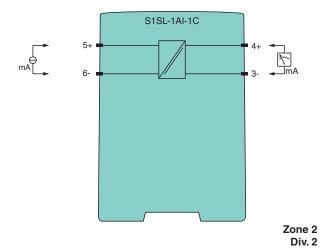




Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits. The device transfers a 0/4 mA ... 20 mA signal of a current source from the field side to the control side. This device is loop powered. No additional power supply has to be connected.

Connection



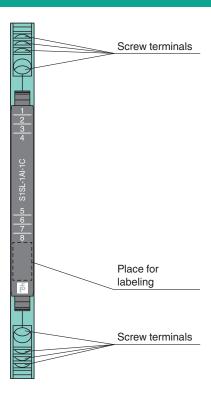
General specifications		
Signal type		Analog input
Operation time		MTBF: 2865 a acc. to SN 29500 stationary continuous operating, average ambient temperature 40 °C (104 °F)
Supply		
Rated voltage	U_{r}	2.2 30 V DC , loop powered
Power dissipation		0.05 W
Power consumption		0.3 W
Input		
Connection side		field side
Connection		terminals 5+, 6-
Input signal		0/4 20 mA , max. 50 mA

assive isolator	OTOL-TAI-TO
Technical Data	
Input voltage	≥ 2.3 V + I x load , max. 30 V
Voltage drop	≤ 2.3 V
Output	
Connection side	control side
Connection	terminals 3-, 4+
Analog current output	0/4 20 mA, load ≤ 600 Ω
Ripple	≤ 10 mV _{eff}
Fransfer characteristics	_ · UI
Accuracy	max. 0.1 % of full-scale value
Deviation	
Influence of load	0.05% of the measured value per 100 Ω
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	
Field circuit/control circuit	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, severit 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 haza	•
Certificate	DEMKO 16 ATEX 1750X
Marking	
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2012+A11:2013, EN 60079-15:2010
International approvals	
UL approval	E106378
IECEx approval	
IECEx certificate	IECEx UL 16.0116X
IECEx marking	Ex nA IIC T4 Gc
J _A manning	2

General information

Assembly

Front view



	S1SD-2PF	Power Feed Module
	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



Passive Isolator S1SL-2AI-2C

- 2-channel signal conditioner
- Field side loop powered
- Current input/output 0/4 mA ... 20 mA
- Accuracy 0.1 %
- Reverse polarity protection
- Connection via screw terminals





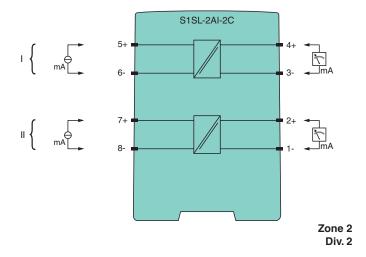




Function

This signal conditioner provides the galvanic isolation between field circuits and control circuits. The device transfers a $0/4 \text{ mA} \dots 20 \text{ mA}$ signal of a current source from the field side to the control side. This device is loop powered. No additional power supply has to be connected.

Connection



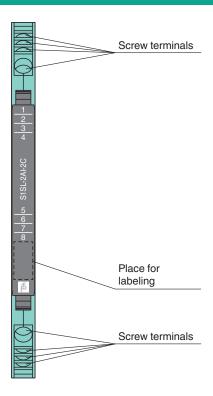
Technical Data

General specifications		
Signal type		Analog input
Operation time		MTBF: 1508 a acc. to SN 29500 stationary continuous operating, average ambient temperature 40 °C (104 °F)
Supply		
Rated voltage	Ur	2.2 30 V DC , loop powered
Power dissipation		0.1 W
Power consumption		0.6 W
Input		
Connection side		field side
Connection		terminals 5+, 6-; 7+, 8-
Input signal		0/4 20 mA , max. 50 mA
Input voltage		≥ 2.3 V + I x load , max. 30 V

Technical Data	
Voltage drop	≤2.3 V
Output	
Connection side	control side
Connection	terminals 1-, 2+; 3-, 4+
Analog current output	$0/4 \dots 20 \text{ mA}$, load $\leq 600 \Omega$
Ripple	≤ 10 mV _{eff}
Fransfer characteristics	
Accuracy	max. 0.1 % of full-scale value
Deviation	
Influence of load	0.05% of the measured value per 100Ω
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	
Field circuit/control circuit	safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 $V_{\rm eff}$ 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, severit 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 haz	ardous 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
nternational approvals	
UL approval	E106378
IECEx approval	
IECEx certificate	IECEx UL 16.0116X
IECEx marking	Ex nA IIC T4 Gc
General information	

Assembly

Front view



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
\	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



Rotation Speed Monitor S1SD-1FI-1R

- 1-channel signal conditioner
- 24 V DC supply
- Input for 2- or 3-wire sensors
- Input frequency 10 mHz ... 50 kHz
- Relay contact output
- Start-up override and restart inhibit
- 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 monitors the overspeed condition and the underspeed condition of a digital signal.

The device has an input for the following digital signals:

- Mechanical contacts
- 2-wire sensors (NAMUR, SN, DC, S0)
- 3-wire sensors (NPN, PNP)
- AC/DC voltage sources (magnetic sensors)
- · custom-specific setting

The input is reverse polarity protected and short-circuit proofed. The connected sensors can also be supplied externally.

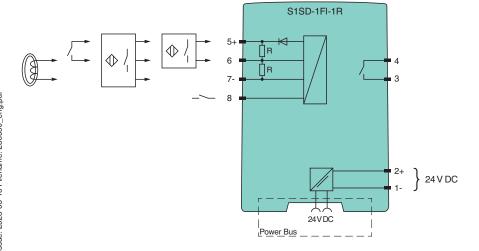
The device compares the input frequency with a user-specified reference frequency. An overspeed condition or an underspeed condition is signaled via the relay contact outputs.

A fault is indicated by a red LED.

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

The device can be powered via terminals or Power Bus.

Connection



Technical Data

General specifications	
Signal type	Digital Input
Supply	
Connection	Power Bus or terminals 1-, 2+

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Rated voltage	U _r	16.8 31.2 V DC
Power dissipation	O ₁	0.6 W
Power consumption		1.1 W
nterface		
Programming interface		programming socket
nput		F3
Connection side		field side
NAMUR sensor		
Туре		2-wire
Connection		terminals 5+, 6
Signal		acc. to EN 60947-5-6 (NAMUR)
Sensor supply		8 V
Open-circuit		< 0.1 mA
Switching point		1.2 2.1 mA
Short-circuit		> 6 mA
Input impedance		1 kΩ
Mechanical contact		
Туре		2-wire
Connection		terminals 5+, 6
Sensor supply		15 V
External supply		≤ 32 V
Switching point		8 10 V / 1.2 2.1 mA
Frequency		0 50 Hz , debounce filter
Input impedance		$4 \text{ k}\Omega$
SN sensor		T 1/22
Туре		2-wire
Connection		terminals 5+, 6
Sensor supply		8 V
Open-circuit		< 0.1 mA
Switching point		1.2 2.1 mA
Short-circuit		> 6 mA
		1 kΩ
Input impedance		I KZ2
2-wire DC sensor		O unitera
Type		2-wire
Connection		terminals 5+, 6
Signal		acc. to EN 60947-5-2
Sensor supply		16 V / 25 mA , short-circuit protected
External supply		≤ 32 V
Switching point		2 5 mA
Input impedance		1 kΩ
S0 sensor		O unive
Type		2-wire
Connection		terminals 5+, 6
Signal		acc. to EN 62053-31 , Type B
Sensor supply		15 V
Switching point		0.15 2 mA
Input impedance		4 kΩ
NPN sensor		
Type		3-wire
Connection		terminals 5+, 6, 7-
Signal		acc. to EN 60947-5-2
Sensor supply External supply		16 V / 25 mA , short-circuit protected ≤ 32 V

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Technical Data	
Switching point	3 5 V
Input impedance	4 kΩ
PNP sensor	
Туре	3-wire
Connection	terminals 5+, 6, 7-
Signal	acc. to EN 60947-5-2
Sensor supply	16 V / 25 mA , short-circuit protected
External supply	≤ 32 V
Switching point	8 10 V
Input impedance	$4 k\Omega$
AC/DC voltage source	
Connection	terminals 6, 7-
Signal	max. ± 30 V
Switching point	150 400 mV
Input impedance	4 kΩ
Function input	
Connection	terminal 8
Open loop voltage	7.5 V
Input impedance	approx. 50 k Ω
Function 1	activation start-up override
Switching point	< 3 V , edge triggered
Adjustment range	1 6500 s
Function 2	reset restart inhibit
Switching point	> 12 V , edge triggered
Output	> 12 v , euge mygereu
Connection side	control side
Connection	terminals 3, 4:
Output	signal, relay
Contact loading	253 V AC/2 A/cos ϕ > 0.7; 126.5 V AC/4 A/cos ϕ > 0.7; 30 V DC/2 A resistive load
Minimum switch current	2 mA / 24 V DC
	≤ 20 ms/≤ 20 ms
Energized/De-energized delay Mechanical life	10 ⁷ switching cycles
	10' switching cycles
ransfer characteristics	man, 0.4.0/ of the management value
Accuracy	max. 0.1 % of the measurement value
Measuring time	≤ 100 ms
Influence of ambient temperature	< 100 ppm/K of the measured value
Frequency range	0.01 50000 Hz
Control (control of control of co	and a plantifical insolution because if a solution between the solutions and the solution is a solution of the solution because it is a solution of the soluti
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
ndicators/settings	LEDo
Display elements	LEDs
Control elements	DIP switch
Configuration	via DIP switches via software
Labeling	space for labeling at the front
Directive conformity	
Electromagnetic compatibility	
Electromagnetic compatibility Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
Electromagnetic compatibility	EN 61326-1:2013 (industrial locations) EN 61010-1:2010

Technical Data	
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. 60 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	

Front view Screw terminals LEDS Parametrization interface Place for labeling Screw terminals

Matching System Components			
	S1SD-2PF	Power Feed Module	
	S-ADP-USB	Adapter with USB Interface	
\	POWERBUS-SETL5.250	Power bus for 35 mm DIN mounting rail, height: 7.5 mm, length: 250 mm	

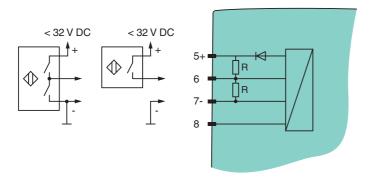
Matching System Components

\ \ \ \	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
	VAZ-CHAIN- BU/BN70MM/1,0-25	25-point wiring link for control cabinet modules with screw terminals

Connection

External Supply

For mechanical contacts, 2-wire DC sensors and 3-wire sensors

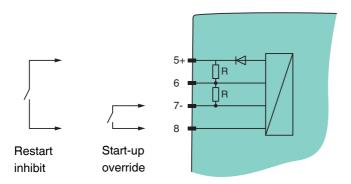


Connection

Function Input

The function input has two functions: resetting the restart inhibit and starting the start-up override.

Connect each function as shown in the diagram. Be aware that the functions can never be used at the same time. The input is edge triggered. The signal must be present for a minimum of 100 ms.



Start-up Override

The start-up override affects the trip mode MIN alarm. If the relay is in the active operating mode, it remains de-energized during the bridging delay. If the relay is in the passive operating mode, it is inevitably energized during the bridging delay. When the start-up override is bridged, the start-up override is activated once when the device is started. Do not use the restart inhibit function with a bridged input.

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 8 and 5

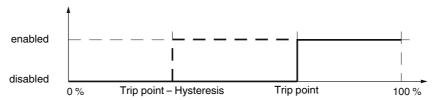
If one of these events occurs, the output is reset. The status is retained only in the following exceptional cases:

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

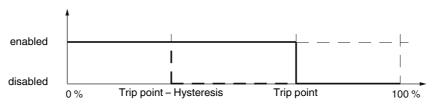
If you have chosen the restart inhibit for an output with a trip mode MIN alarm, the restart inhibit is inevitably triggered when the device starts, as the device starts with a measured value of 0. This means a MIN alarm is triggered immediately. Without the start-up override, the output would then be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

Release date: 2023-03-16 Date of issue: 2023-03-16 Filename: 286050_eng.pdf

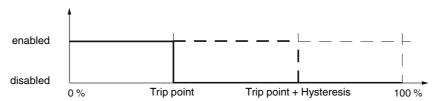
Trip mode MAX alarm, mode of operation active



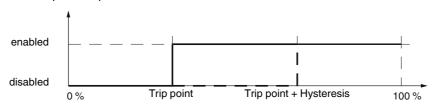
Trip mode MAX alarm, mode of operation passive



Trip mode MIN alarm, mode of operation active



Trip mode MIN alarm, mode of operation passive





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.

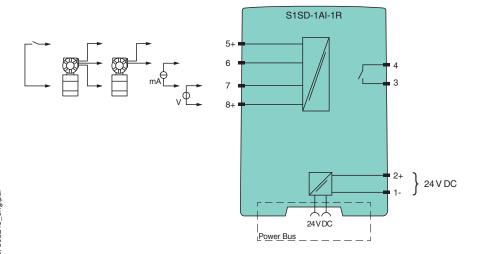
The device actuates a relay contact output when it reaches the adjusted limit value.

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

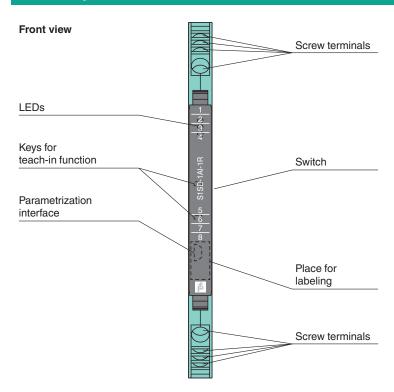
General specifications		
Signal type		Analog input
Supply		
Connection		Power Bus or terminals 1-, 2+
Rated voltage	Ur	16.8 31.2 V DC
Power dissipation		0.6 W
Power consumption		0.8 W
Interface		
Programming interface		programming socket
Input		

Release date: 2023-11-30 Date of issue: 2023-11-30 Filename: 305245_eng.pdf

Connection side	field side
Transmission range	linearity range: unipolar -1 110 % bipolar -110 110 %
Input I	
Connection	terminals 5, 6, 7-
Input signal	$0/4 \dots 20 \text{ mA}$, $0/2 \dots 10 \text{ mA}$, $\pm 10 \text{ mA}$, $\pm 20 \text{ mA}$, max. 50 mA
Input resistance	≤ 25 Ω
Input II	
Connection	terminals 7-, 8+
Input signal	$0/1 \dots 5 \text{ V}$, $0/2 \dots 10 \text{ V}$, $\pm 5 \text{ V}$, $\pm 10 \text{ V}$, max. 30 V
Input resistance	> 1 MΩ
Input III	
Connection	terminals 5+, 6-
Input signal	0/4 20 mA
Available voltage	16 V at 20 mA
Open circuit voltage/short-circuit current	≤ 22 V / 30 mA
Input IV	
Connection	terminals 5, 7
Input type	reset restart inhibit
Output	
Connection side	control side
Connection	terminals 3, 4:
Output	signal, relay
Contact loading	253 V AC/2 A/cos φ > 0.7; 126.5 V AC/2 A/cos φ > 0.7; 30 V DC/2 A resistive load
Minimum switch current	2 mA / 24 V DC
Energized/De-energized delay	≤ 20 ms / ≤ 20 ms
Mechanical life	10 ⁷ switching cycles
ransfer characteristics	<i>。</i>
Accuracy	max. 0.1 % of full-scale value
Influence of ambient temperature	< 100 ppm/K of full-scale value
Salvanic isolation	
Output/power supply	safe electrical isolation by reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 $V_{\rm eff}$ 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 $V_{\rm eff}$ test voltage 3 kV, 50 Hz, 1 min
ndicators/settings	
Display elements	LEDs
Control elements Configuration	DIP switch keys via DIP switches
Comgulation	via keys via software
Labeling	space for labeling at the front
Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
Low voltage	
Directive 2014/35/EU	EN 61010-1:2010
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)

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	Observe the certificates, declarations of conformity, instruction manuals, and manuals
Supplementary information	

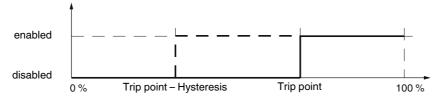
Assembly



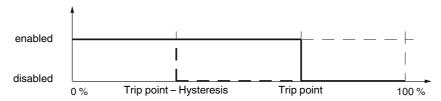
Operation

Modes of operation

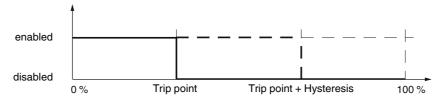
Trip mode MAX alarm, mode of operation active



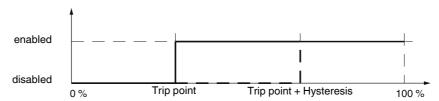
Trip mode MAX alarm, mode of operation passive



Trip mode MIN alarm, mode of operation active



Trip mode MIN alarm, mode of operation passive

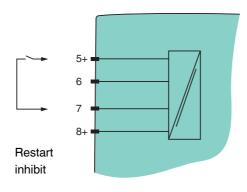


Connection

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.



Trip amplifier S1SD-1Al-1R

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.

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