SAU 1000, SAU 1500 TEMPERATURE SENSORS WITH SET POINT ADJUSTMENT 67.6a

DESCRIPTION AND APPLICATION

The SAU 1000, SAU 1500 control modules are intended to measure air temperature in water protected rooms. In addition to measuring temperature they enable to correct the requested value. These sensors are encapsulated in a plastic case, in which the temperature sensing element and a potentiometer are situated. Based on the measured temperature information an adjustment in the control system can be done, resulting in temperature increase or decrease. In the SAU 1000 version the signal created on the potentiometer resistance is lead out to be connected to the terminal board, in the SAU 1500 version the potentiometer is connected in series with the resistance type sensing element. The plastic case is made of the ABS material. These sensors meet the requirements of the IP 30 ingress protection according to the EN 60 529 standard.

The pleasing design and the high-quality material guarantee that these sensors do not disturb even in inner rooms where high aesthetic demands are dictated. Both control module types are enclosed in TANGO boxes made by ABB Elektro, and as such they are a suitable supplement to wall switches, sockets, sensors and further elements of this series.

The sensors are meant for operation in a chemically non-aggressive environment.

SPECIFICATIONS

SAU 1000

Type of sensing element	Ni 1000/5000, Ni 1000/6180, Ni 891, Ni 10000/5000, Ni 10000/6180, Pt 100, Pt 500, Pt 1000, NTC 20 kΩ etc.	
Accuracy class	Ni sensing elements: B class, $\Delta t = \pm (0{,}4 + 0{,}007t)$, for $t \geq 0$; $\Delta t = \pm (0{,}4 + 0{,}028\|t\|)$, for $t \leq 0$ in °C; Pt sensing elements: B class according to dle IEC 751, $\Delta t = \pm (0{,}3 + 0{,}005\|t\|)$ in °C NTC 20 kΩ: ± 1 °C for the range 0 to 70 °C	
Maximum measuring DC current	Pt 100 – 3 mA; Pt 500 – 1,5 mA; Pt 1000, Ni 1000, Ni 891 – 1 mA; Ni 2226 – 0,7 mA; Ni 10000 – 0,3 mA; NTC 20 kΩ – maximum power dissipation 1 mW	
Correction range	Basic version:	0 to 250 Ω
	Possible options:	0 to 10 Ω
		0 to 100 Ω
		0 to 22 kΩ/G
		0 to 2,5 kΩ
Sensor connection	according to the wiring diagram	
Time response	$\tau_{0,5} < 15$ s (in streaming air at 1m.s^{-1})	
Type of terminal board	MEB 02001, ARK 500/3 – wire cross section 0,35 to 1,5 mm^2	
Ingress protection	IP 30 according to EN 60 529	
Temperature range	–30 to 70 °C	
Dimensions of the box	81 x 81 x 28 mm	
Material of the box	ABS	
Working conditions	ambient temperature: -30 to 70 °C	
	relative humidity: max. 85 % (at the ambient temperature 25 °C)	
	atmospheric pressure: 87 to 107 kPa	
Mass	approximately 0,15 kg	

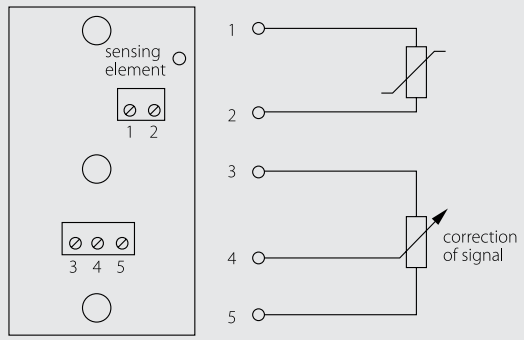
SPECIFICATIONS

SAU 1500

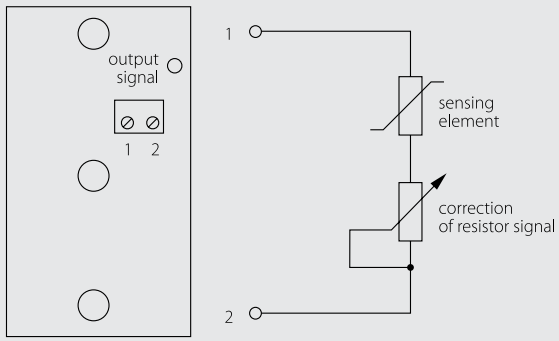
Type of sensing element	Ni 1000/5000, Ni 1000/6180, Pt 100, Pt 1000
Accuracy class	Ni sensing elements: B class, $\Delta t = \pm (0{,}4 + 0{,}007t)$, for $t \geq 0$; $\Delta t = \pm (0{,}4 + 0{,}028\|t\|)$, for $t \leq 0$ in °C; Pt sensing elements: B class according to IEC 751, $\Delta t = \pm (0{,}3 + 0{,}005\|t\|)$ in °C
Maximum measuring DC current	Pt 100 – 3 mA; Pt 1000, Ni 1000 – 1 mA
Correction range	0 – 25 kΩ, it means: Ni 1000/5000: 0 to 5 °C
	Ni 1000/6180: 0 to 4 °C
	Pt 100/3850: 0 to 2,6 °C
	Pt 1000/3850: 0 to 2,6 °C
Sensor connection	according to the wiring diagram
Time response	$\tau_{0,5} < 15$ s (in streaming air at 1m.s^{-1})
Type of terminal board	MEB 02001 – wire cross section 0,35 to 1,5 mm^2
Ingress protection	IP 30 according to EN 60 529
Temperature range	–30 to 70 °C
Dimmensions of the box	81 x 81 x 28 mm
Material of the box	ABS
Working conditions	ambient temperature: -30 to 70 °C
	relative humidity: max. 85 % (at the ambient temperature 25 °C)
	atmospheric pressure: 87 to 107 kPa
Mass	approximately 0,15 kg

WIRING DIAGRAM

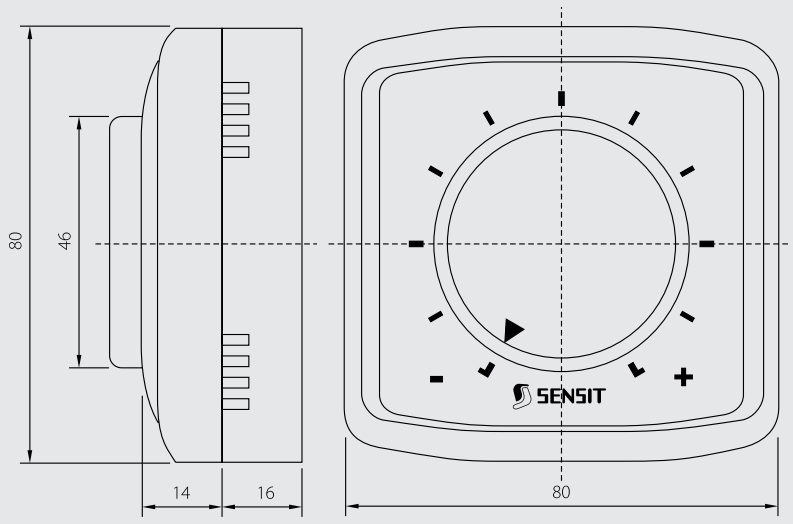
SAU 1000



SAU 1500



DIMENSIONAL DRAFT



SENSOR INSTALLATION AND SERVICING

Before connecting the lead-in cable the control wheel with an arrow and the case lid carrying a dial have to be removed. **Use caution when doing this not to damage these parts mechanically**. The control module is fixed to the wall by means of two screws, for which two openings are provided in the case bottom. The case construction makes it possible to screw the case by means of an accumulator driven screwdriver to the wall without the necessity of taking off the peripheral frame carrying vent holes.
Another two openings are intended for the lead-in cable. The recommended wire cross section is 0,35 to 1,5 mm^2. In case the lead-in cable is laid in the vicinity of high voltage conductors or those supplying equipment creating disturbing electromagnetic field (e.g. inductive load equipment), a shielded cable should be used. After installation and connection to the cooperating electric measuring device the sensors is ready for operation. The sensor does not require any special attendance or maintenance.

CUSTOMER SPECIFIC MODIFICATIONS

REGARDING TO SENSORS MANUFACTURED IN A STANDARD VERSION THE FOLLOWING PARAMETERS CAN BE MODIFIED:

- A class of accuracy (except for the Ni 10000/5000, Ni 10000/6180 and the thermistor NTC 20 kΩ sensing elements)
- Other resistance type elements for temperature measurement, like the KTY or the NTC thermistors etc. can be encapsulated
- Another correction (temperature set point) value can be implemented

HOW TO ORDER

SAU 1000, SAU 1500 temp. sensors with the set point adjustment	7	0	B	C	C	D	D	0	0	0	0	0

Type	SAU 1000	0		
	SAU 1500	1		
no sensor, no input			0	0
Ni 1000/5000 (N1),	class B		0	1
Ni 1000/6180 (N1A),	class B		0	3
Pt 100/3850,	class B		0	6
Pt 500/3850,	class B		0	9
Pt 1000/3850,	class B		1	1
Ni 891			1	4
NTC 20 kΩ			1	5
Ni 10000/5000 (N10),	class B		1	7
Ni 10000/6180 (N10A),	class B		1	8

Correction range	0 to 100 Ω	0	4
	0 to 250 Ω	0	5
	0 to 1 kΩ	0	6
	0 to 2,5 kΩ	0	7
	0 to 10 kΩ	0	8
	0 to 25 kΩ	0	9
	0 to 100 kΩ	1	0
	0 to 250 kΩ	1	1

WHEN ORDERING GOODS, THE FOLLOWING DATA ARE REQUIRED:

Required data	Example
Product type	SAU 1000
Type of sensing element	Ni 1000/6180
Correction range	0 to 10 kΩ

The accuracy class is the B class if not stated otherwise.

DELIVERY

The sensors are packed in the box by 1 piece.