# TEMPERATURE SENSORS WITH CORRECTION OF THE REQUESTED VALUE SAU 1000 AND SAU 1500

067.12en



## DESCRIPTION AND APPLICATION

CE

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. 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 designed to be operated in a chemically non-aggressive environment.


## DECLARATION, CERTIFICATES, CALIBRATION

Manufacturer provides **EU Declaration of Conformity.**

**Calibration** – The final metrological inspection – comparison with standards or working instruments – is carried out for all the products. Continuity of the standards and working measuring instruments is ensured within the meaning of the Section 5 of Act no.505/1990 on metrology. The manufacturer offers a possibility to supply the sensors calibrated in SENSIT s.r.o.'s laboratory (according to requirements of the EN ISO/IEC 17025 standard, as amended) or in an Accredited laboratory.

## SPECIFICATIONS

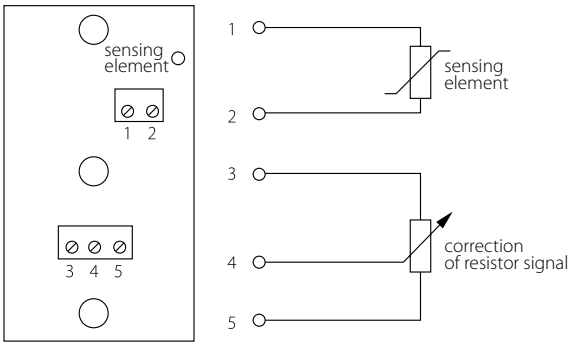
| | |
|---|---|
| Sensor type | SAU 1000 |
| Type of sensing element | Ni 1000/5000, Ni 1000/6180, Ni 891, Ni 10000/5000, Ni 10000/6180,<br>Pt 100, Pt 500, Pt 1000, NTC 20 kΩ etc. |
| Accuracy class | Ni sensing elements: B class, $t = \pm (0.4 + 0.007t)$, for $t \geq 0$; $t = \pm (0.4 + 0.028\|t\|)$, for $t \leq 0$ in °C;<br>Pt sensing elements: B class according to dle EN 60751, $t = \pm (0.3 + 0.005\|t\|)$ in °C<br>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; T1 = 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<br>Possible options: 0 to 10 Ω<br>0 to 100 Ω<br>0 to 22 kΩ/G<br>0 to 2.5 kΩ |
| Sensor connection | according to the wiring diagram |
| Time response | $\tau_{0.5} < 15$ s (in flowing 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 in accordance with EN 60529, as amended |
| 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<br>relative humidity: max. 85 % (at the ambient temperature 25 °C)<br>atmospheric pressure: 87 to 107 kPa |
| Weight | approximately 0.15 kg |

## OTHER PARAMETERS

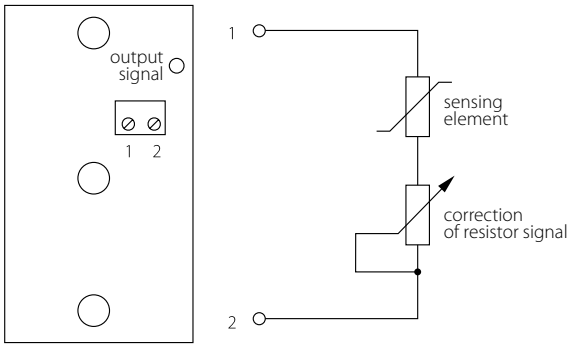
| | | | | |
|---|---|---|---|---|
| Sensor type | SAU 1500 | | | |
| Type of sensing element | Ni 1000/5000, Ni 1000/6180, Pt 1000 | | | |
| Accuracy class | Ni sensing elements: B class, $t = \pm (0.4 + 0.007t)$, for $t \geq 0$; $t = \pm (0.4 + 0.028\|t\|)$, for $t \leq 0$ in °C;<br>Pt sensing elements: B class according to EN 60751, $t = \pm (0.3 + 0.005\|t\|)$ in °C | | | |
| Maximum measuring DC current | Pt 1000, Ni 1000 – 1 mA | | | |
| Correction potentiometer | | 0 to 10 Ω | 0 to 25 Ω | 0 to 50 Ω |
| Correction range | Ni 1000/5000<br>Ni 1000/6180<br>Pt 1000/3850 | 0 to 2.2 °C<br>0 to 1.8 °C<br>0 to 2.6 °C | 0 to 5.5 °C<br>0 to 4.5 °C<br>0 to 6.5 °C | 0 to 11 °C<br>0 to 10 °C<br>0 to 13 °C |
| Sensor connection | according to the wiring diagram | | | |
| Time response | $\tau_{0.5} < 15$ s (in flowing 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 in accordance with EN 60529, as amended | | | |
| 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<br>relative humidity: max. 85 % (at the ambient temperature 25 °C)<br>atmospheric pressure: 87 to 107 kPa | | | |
| Weight approximately | 0.15 kg | | | |

## WIRING DIAGRAM

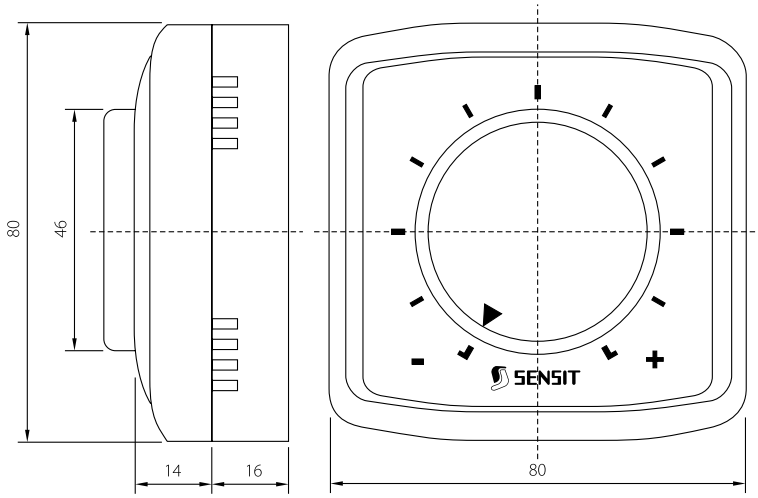
SAU 1000




SAU 1500




## DIMENSIONAL DRAFT




## MODIFICATION AND CUSTOMIZATION

- A class precision (with the exception of sensors Ni 10000/5000, Ni 10000/6180, T1 = Ni 2226, termistor NTC 20 kΩ)
- 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

SENSIT s.r.o., Skolni 2610, 756 61 Roznov pod Radhostem, Czech Republic
**T** +420 571 625 571 **F** +420 571 625 572 **E** obchod@sensit.cz