INTERIOR TEMPERATURE SENSORS

007.17en

DESCRIPTION AND APPLICATION

These resistance sensors are designed for temperature measurement of gaseous substances in water-protected areas – e.g. for temperature measurement in rooms (schools, theatres, lecture halls, etc.), offices, interiors of residential houses or even production floors. Suitable design and high-quality material ensure that the sensors do not feel disturbing even in the interiors with high aesthetic requirements.

The temperature range of the sensors is -30 to 100 °C. The sensors meet ingress protection IP 30 according to EN 60529, as amended. Installation is recommended on an inner wall at the height of 1.5 m, in areas of movement of persons, at places not exposed to direct sunlight and not influenced by heat from walls, heating radiators or lighting.

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	NS 100	NS 101	NS 102	NS 300	NS 301
Type of sensing element	Ni 1000/5000	Ni 1000/6180	Ni 891	Ni 10000/5000	Ni 10000/6180
Measuring range	-30 to 100 °C LEXAN				
Maximum measuring DC current	1 mA	1 mA	1 mA	0.3 mA	0.3 mA

Sensor type	NS 103	PTS 100	PTS 200	PTS 300	HS 100
Type of sensing element	T1 = Ni 2226	Pt 100/3850	Pt 500/3850	Pt 1000/3850	termistor NTC 20 kΩ
Measuring range	-30 to 100 °C LEXAN				
Maximum measuring DC current	0.7 mA	2 mA	1.2 mA	0.8 mA	1 mW *)

**) maximum power consumption*

Sensor type	NS 500	NS 700	Note
Type of sensing element	Pt 1000/3850	Pt 1000/3850	
Output signal	4 to 20 mA	0 to 10 V	
Measuring ranges	-30 to 60 °C 0 to 35 °C 0 to 100 °C 0 to 150 °C	-30 to 60 °C 0 to 35 °C 0 to 100 °C 0 to 150 °C	ambient temperature around the connection head: -30 to 70 °C
Power supply Ucc	12 to 30 V_{DC}	15 to 30 V_{DC}	recommended value NS 500: 12 V_{DC} NS 700: 15 V_{DC}
Max. load resistance Rs	150 Ω for Ucc = 12 V 700 Ω for Ucc = 24 V	> 10 k Ω	
Sensing element break	> 23 mA	> 10.5 V	
Sensing element short	< 3.5 mA	~ 0 V	

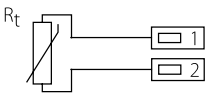
***) According to the customer's requirement, it is possible to provide a customized measuring range from -40 to 150 °C; the minimum span of the range must be 35 °C (e.g. -20 to 15 °C; -30 to 80 °C)*

OTHER PARAMETERS

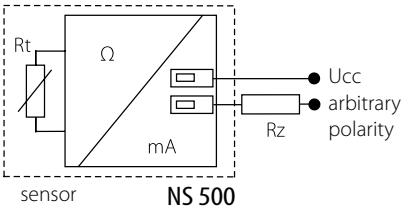
Accuracy class	Ni sensing elements: B class, t = ± (0.4 + 0.007t), for t ≥ 0; t = ± (0.4 + 0.028|t|), for t ≤ 0 in °C; Pt sensing elements: B class according to EN 60 571, t = ± (0.3 + 0.005|t|) in °C NTC 20 kΩ: ± 1 °C for the range 0 to 70 °C
Measuring error for NS 500 (range -30 to 70 °C)	power supply = 12 V: ±(0.5 °C + 0.2% from range) power supply = 24 V: (-0.2 to 0.80 °C) ± 0.2% from range
Measuring error for NS 700 (range -30 to 70 °C)	power supply = 15 V: ±(0.5 °C + 0.2% from range) power supply = 24 V: (-0.2 to 0.80 °C) ± 0.2% from range
Sensor connection	according to the wiring diagram
Time response	$\tau_{0.5}$ < 8 s (in air flow 0.4 m.s^{-1})
Recommended wire cross section	0.35 to 1.5 mm^2
Ingress protection	IP 30 in accordance with EN 60529, as amended
Material of the connection head	LEXAN
Dimensions of connection head	71.9 x 59 x 27 mm
Operating conditions	ambient temperature: -30 to 100 °C without converter -30 to 70 °C with a converter relative humidity: max 85 % (at the ambient temperature 25 °C) atmospheric pressure: 87 to 107 kPa
Weight approximately	0.05 kg

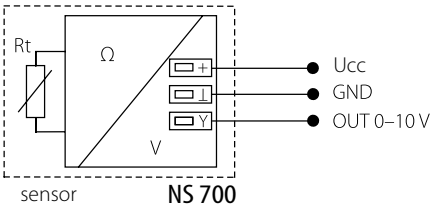
WIRING DIAGRAM

Resistance temperature sensor

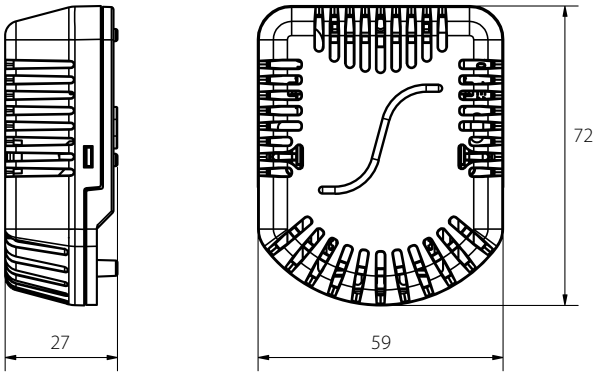


Sensors with converter

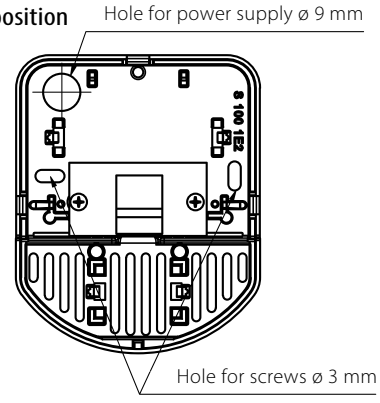




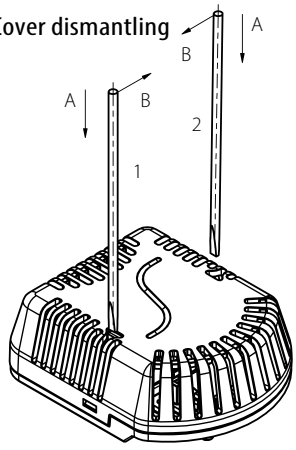
DIMENSIONAL DRAFT



Operating position



Cover dismantling



MODIFICATION AND CUSTOMIZATION

- possibility of encasing two sensing elements
- possibility of encasing non-standard sensing elements (DALLAS, TSic, SMT, etc.) A class precision (with the exception Ni 10000/5000, Ni 10000/6180, T1 = Ni 2226, termistor NTC 20 k>10 k Ω)
- possibility of 3wire or 4wire connection
- possibility of providing custom temperature ranges for temperature sensors with converter