

## TEMPERATURE SENSOR FOR OUTDOOR USE WITH DISPLAY



### DESCRIPTION AND APPLICATION

These resistance temperature sensors with display are designed for contact temperature measurement of gaseous substances in outdoor or industrial areas. The temperature sensing element is located in a stainless steel stem of length of 25–50 mm. The plastic head of the temperature sensor with display is equipped with a cable grommet or a connector; the measured temperature is indicated on the 4-digit display located under the transparent cap of the head. The temperature sensors with display can be used for any control systems compatible with output signals listed in the table of technical parameters.

The maximum temperature range for current loop setting of the temperature sensors with display is –50 to 150 °C. Within this range, the required operating temperature ranges may be programmed, while the minimum difference between the lower and upper limit of the temperature range is 10 °C. The temperature range of measurement with the temperature sensor with display and, at the same time, the maximum temperature around the head is –30 to 70 °C and must not be exceeded even for a brief period. The temperature sensors with display meet ingress protection IP 65 according to EN 60 529. The temperature sensors with display are easy to be installed thanks to the unique design of “S-head” made by SENSIT s.r.o.

The sensors are designed to be operated in a chemically non-aggressive environment, the use must be chosen with regard to temperature resistance of the head and the metal cases.



### ACCESSORIES

- for the version with connector: led-in connector ELKA 4012
- connection cables with the direct RKT connector or rectangular RKWT

### DECLARATION, CERTIFICATION, CALIBRATION

**EU Declaration of Conformity** – according to Act 22/1997 Coll. on technical requirements on products as amended.

**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) or in an Accredited laboratory.

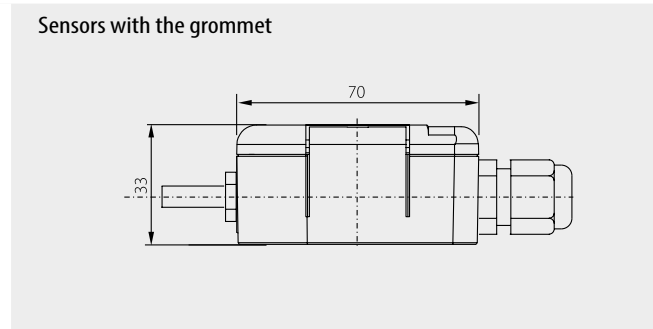
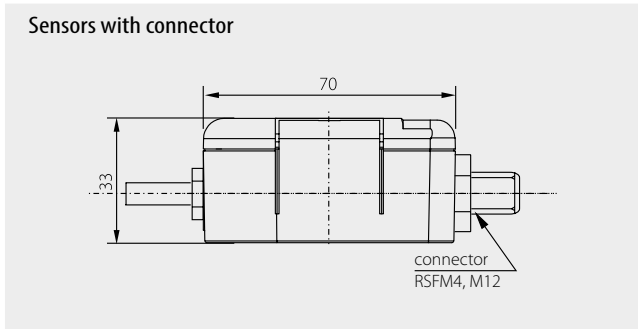
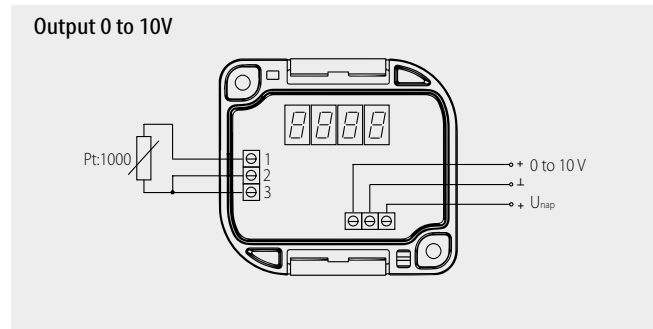
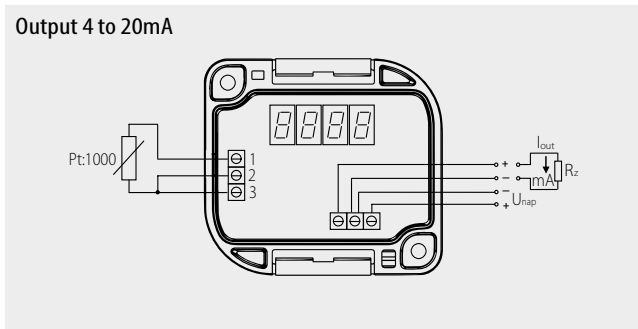
### SPECIFICATIONS

Sensor type (K – with a connector)	NSD 510A NSD 510AK	NSD 710A NSD 710AK
Output signal	4 to 20 mA	0 to 10 V
Type of sensing element	Pt 1000/3850, accuracy class. B ( $\pm 0,3 + 0,005 \times  t $ ) in °C	
Measuring range	adjustable	
Maximum temperature range	–50 to 150 °C	
Measuring error	0,8 % from the range, at least 0,5 °C	
Display screen	4-digit LED, character dimension 7,62 x 4,22 mm	
Supply voltage U	15 to 30 V DC	
Nominal voltage U <sub>n</sub>	24 V	
Load resistance	> 50(U - 14)Ω	> 50 kΩ
Current / voltage when the sensor is interrupted	> 24 mA	> 12 V
Current / voltage when the sensor is short-circuited	< 3 mA	~ 0 V
Material of the head	POLYAMIDE	
Dimension of the head	70 x 63 x 34 mm	
Wire cross-section	0,35 to 1,5 mm <sup>2</sup>	
Ingress protection	IP 65 in accordance with EN 60 529	
Cable connection	through the grommet M 16 x 1,5 / through the connector LUMBERG M12	
Ambient temperature around the head	–30 to 70 °C	
Electric strength	500 V / 50 Hz in accordance with EN 60 730-1	

### OTHER PARAMETERS

Length of the stem	50 mm for NSD 510A and NSD 514AK 25 mm for NSD 710A and NSD 710AK
Diameter of the stem	6 <sup>+0,2</sup> mm
Material of the stem	stainless steel DIN 1.4301
Insulation resistance	> 200 MΩ at 500 V DC, 25° ± 3°C, relative humidity < 85 %
Max measurement range	–30 to 70 °C

## TEMPERATURE SENSOR FOR OUTDOOR USE WITH DISPLAY

**DIMENSIONAL DRAFT**

**WIRING DIAGRAM**

**SENSOR INSTALLATION AND SERVICING**

Before connecting the supply lead-in cable, lift off the lid of the plastic connection head by means of a flat screwdriver, which will be gradually engaged in to the one's and second groove in the lid and its misalignment will release the lid. The lead-in cable is connected according to the wiring diagram through the loosened grommet. **Tighten the gland to ensure the tightness after connecting power cable.** Temperature sensor according to its variant install into measured place. Install temperature sensor according to its variant into measured place:

**NSD 510A** – fasten the sensors on a horizontal surface with two mounting bolts or screws of diameter of 4 mm placed in the inner hole of the sensor head. The holes are accessible after removing the head lid. The length of mounting bolts or screws for fastening has to be chosen with respect to the depth of inner holes of the plastic head – 13 mm

**NSD 710A** – fasten the sensors on a horizontal surface with two mounting bolts or screws of diameter of 4 mm placed in the inner hole of the sensor head. The holes are accessible after removing the head lid. The length of mounting bolts or screws for fastening has to be chosen with respect to the depth of inner holes of the plastic head – 13 mm

After installing the sensor, close the head by placing the cap. **The holds on the plastic head must to click into the original position.** After installing and connecting the sensor to the appropriate evaluating electrical equipment, the sensor is ready to use. The sensor does not require any special attendance or maintenance. **The work position is adjustable; however, the bushing is recommended not to direct up, the supply cable is recommended to guide to the bushing from the bottom.**