SENSIT extend your senses

INSTRUCTION MANUAL

TEMPERATURE SENSOR NSD 710A
0 to 10 V

Temperature sensor with transmitter Pt 1000/0 to 10V, with a plastic head for temperature measurement in outdoor or indoor areas ranging from -30 to 70 ° C and displaying the measured temperature on the display

3915.2	07.23
Nahrazuje	3915.1

Legal regulations and standards:

- Electrical connection of the detector may only be carried out by a competent person with electrician qualification who is familiarized with the "Instruction Manual" in detail.
- The Instruction Manual is part of the product and it is necessary to keep it for the entire service life of the product.
- The Instruction Manual must be transferred to any other owner or user of the product.
- The disposal must be performed in compliance with the Directive 2008/98/EC of the European Parliament and of the Council - on waste and the Directive 2012/19/EU of the European Parliament and of the Council – on waste electrical and electronic equipment (WEEE), as amended.
- The sensors are delivered in packages, which guarantee resistance to mechanical influences and that meet the conditions with the European Parliament and Council Directive 94/62/EC on packaging and packaging waste), as amended.
- 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. laboratory (according to EN ISO/IEC 17025 standard) or in an Accredited laboratory.

Application:

The temperature sensors NSD 710A are designed for temperature measurements of gaseous substances in outdoor on the wall of buildings and in rooms, offices, or even production halls. The measured temperature is indicated on the 4-digit display. The sensor can be used for all control systems that are compatible with the 0 to 10 V output. The standard temperature range for application of the sensor is -30 to 70°C. In this range, the required operating temperature ranges can be programmed for the output signal 0 to 10V. The minor difference between the lower and upper limits of the temperature range is 20 ° C. The maximum temperature around the sensor head is 70 °C and it must not be exceeded even for a short time. The plastic head meet the ingress protection IP65 according to the EN 60 529 standard. The sensors can be supplied with a connected cable sensor or without a sensor. The sensors are suitable for temperature measurement in chemically non-aggressive environments and the using must be chosen with regard to temperature and chemical resistant of the sensor head, contact housing and cable.

Recommended use and location of sensors:

- The temperature measuring in outdoor
  - the recommended location of the sensor is on the coldest side of the building (north or northwest), without direct sunlight, in 2/3 the height of the building wall
- The temperature measuring in rooms, offices, or even production halls
- - the recommended location of the sensor is on the inner wall at a height of 1.5 m, in place with the movement of the people, out of place with sunshine influence and out of places with the influence of temperature radiators or lighting

Warnings and restrictions:

The sensors must not be used for measuring in locations

- Where the specified technical parameters and operating conditions are not adhered
- Where the sensor is exposed to mechanical action
- With explosion hazard
- With chemically aggressive environment that does not correspond the used metal materials
- Where the sensor is exposed to prolonged immersion in liquid or intense jetting liquid

It is not suitable to use the sensors for measuring temperature in locations:

- Where exposure to direct heat radiation from surroundings or to sunlight may occur
- Where there is not free access of air and where there are some barrier of flow (area under the windows, niches in the wall space close to furniture, etc.)
- where regarding to warm air from the interior space there could be occur a measurement error (the space above the windows, doors and ventilation openings)
- on the facade with the large thermal capacity, on the wall in which is placed for example chimney
- Where the sensor might be exposed to effects of strong organic and inorganic acids with medium and strong concentrations at high temperatures, weak organic acids with high concentrations and high temperatures, chlorinated hydrocarbons, and undiluted alkaline substances.

Failure to follow the said recommendations will negatively affect measurement accuracy, reliability and service life of the temperature sensor.

Safety:

Product safety and technical parameters were evaluated according to the following standards and norms, as amended:

- EN 60730-1, EN 60730-2-9, EN 60770-1, EN 60751 and EN 60 529, EN 61326-1, EN 55011

Declaration of conformity:

SENSIT s.r.o. provides the product with the **EU Declaration of Conformity** issued according to Act No. 90/2016 Coll. and Act No. 22/1997 Coll., as subsequently amended. The product is in accordance with the following directives:

- Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, as amended (current version 1.3.2023)
- European Parliament and Council Directive 2014/30/EU of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility

Sensor description:

The sensor consists of a plastic head with the convertor to output signal 0 to 10 V inside and of the metal stem with diameter 6 mm and the length 50 mm. The part of the plastic head is 4-digit display for displaying a temperature. In the metal stem is placed the temperature sensor. The material of the metal stem is stainless steel DIN 1.4301. The lead-in cable is connected to the terminals through the loosened grommet. The material of the plastic head is POLYAMID.

Sensor installation:

1. Before connecting the power supply cable open the plastic head. To open gradually slide a flat screwdriver into the first and the second lid grooves and release the lid by deflecting the handles.
2. Connect the lead-in cable to the terminals according to the wiring diagram through the loosened grommet. **To insure the ingress protection value of IP 65, the grommet has to be tightened.**
3. Place the sensor directly on flat surface using two screws Ø 4 mm placed in the inner hole in head corners. The holes are available after opening the plastic head. The length of the screws must be chosen regarding to depth of the internal holes of plastic head – the minimum length is 13mm
4. The lid has to be put on after connecting the lead-in cable. **The holds on the plastic head must to click into the original position.**
5. After installation and connection to the consequential electrical measuring device, the sensor is ready for operation. The sensor does not require any special manipulation or maintenance. **Operating position is arbitrary, it is recommended to lead the power cable to the grommet from the bottom and the grommet must not be directed upwards.**

Wiring diagram:
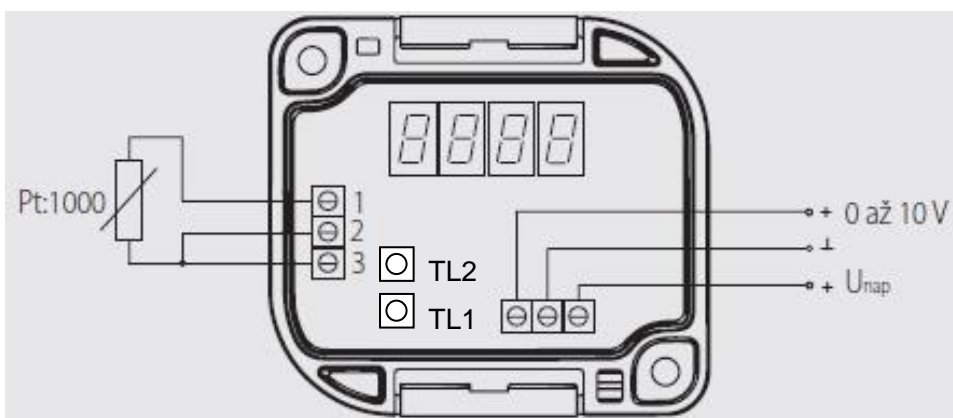
Technical parameters:

Type of element / element wiring	Pt 1000/3850 / Two-wire
Internal wire resistance	0.254 Ω/m for 20 °C
Output signal	0 to 10 V
Display	4 digits LED, character dimension 7.62 x 4.22mm
Measurement error (Output signal)	< 0,8 % from the range, minimum 0.5°C
Measurement error (first reading at least 30 minutes after connecting the power supply)	± 1°C depending on air flow speed the optimal flow value is 0.4 m/s
Maximum measuring range	-30 to 70 ° C
Power supply (SELV or PELV)	15 to 30 VDC, recommended value 24 VDC
Maximum load resistance Rz	250 Ω
Sensor IP code	IP 65 according to EN 60 529
Recommended wire	cross section: 0.35 to 1 mm² / out diameter: 4 to 8 mm
The diameter / Material of the stem	6 ± 0,1 mm / Stainless steel DIN 1.4301
The length of the stem	50 mm

| Insulation resistance	$> 200\ \text{M}\Omega$ at 500VDC, $25 \pm 3\ °C$
Electric strength	500 V / 50 Hz in accordance with EN 60730-1
Type / material of the head	70 x 63 x 34 mm / POLYAMID
Weight (without the sensor)	130g for length 120mm

Operating conditions:

- temperature round the plastic head: -30 °C to 70 °C
- relative humidity of the surroundings: 10 to 100 %
- atmospheric pressure: 70 to 106 kPa

Procedure for converter range setting:

The converter enables user setting of a temperature for the upper and lower limit of the converter. The lower limit corresponds to the current of 4 mA and the upper limit corresponds to the current of 20 mA. The difference between the lower and upper limit must be higher than 20°C. The default setting is from 0°C to 100°C.

When the TL1 key is pushed, the display starts flashing and displaying the temperature value the lower limit of the converter is set to. Push TL2 to switch the display into displaying the converter upper limit. Repeated pushing of TL1 opens the temperature setting for the lower limit. Gradually, values can be set for tenths of a degree, degrees, tens of degrees and hundreds of °C. The order being set is flashing, use TL2 to set a requested value. When TL1 is pushed, the order being set shifts to the next one. After setting the order of hundreds of °C, return to displaying of the lower limit. Push TL2 to switch into displaying the upper temperature limit Push TL1 to open the cycle for setting of the upper temperature limit. Push TL2 to return to the basic display mode of the current temperature.

The capital letter is used to display the flashing segment.
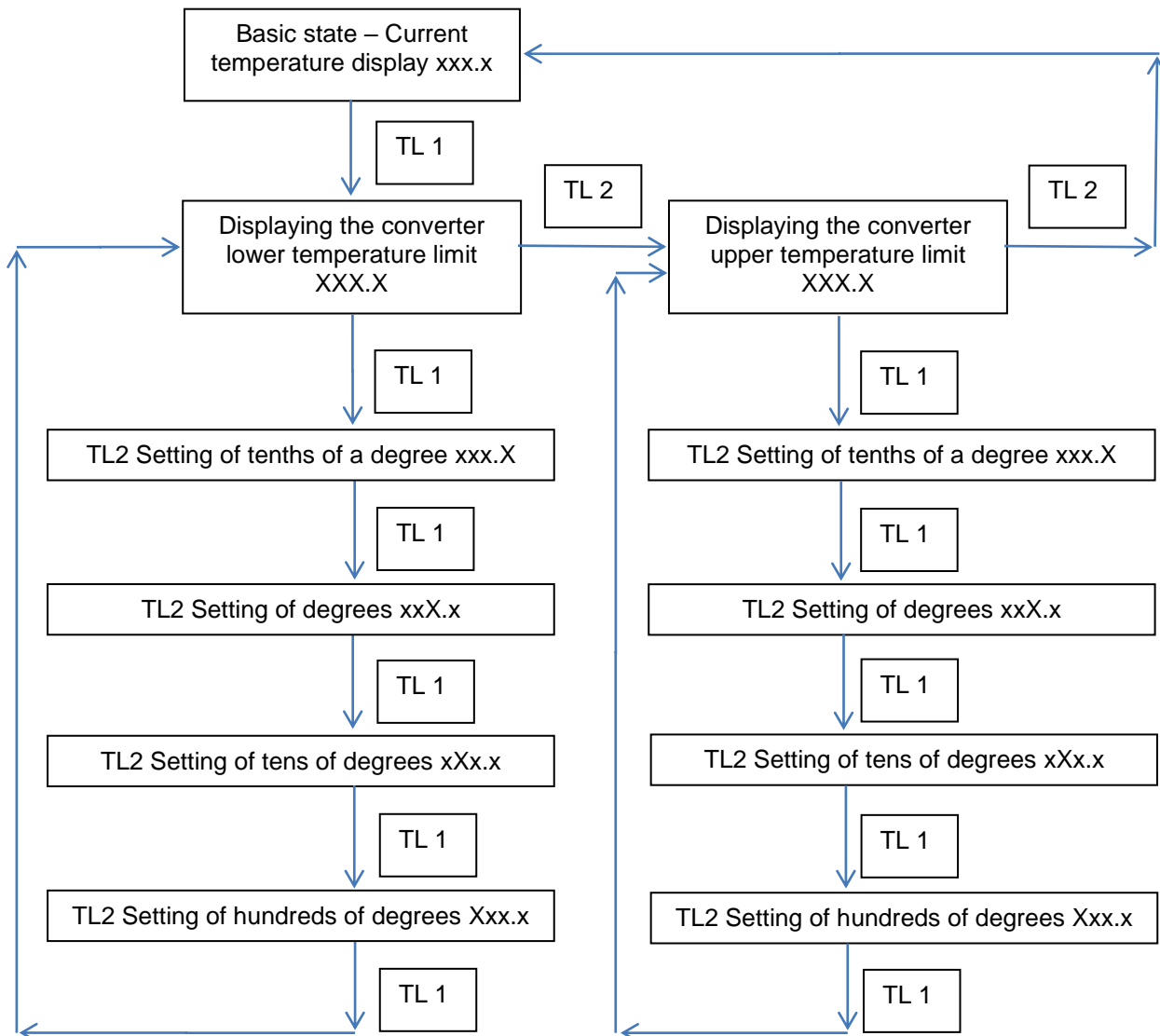
Disposal:

SENSIT s.r.o. has signed an agreement with the Company RETELA s.r.o., on the collective performance by §37h - paragraph1, letter c) of the Act No.185 / 2001 Sb. on waste, as amended.

Storage, delivery, complaints and repairs:

The sensors can be stored at place with ambient temperature 5 to 40 °C and relative humidity 5 to 85%

Each delivery contains the following unless otherwise agreed by the customer sensor according to purchase order, Instruction Manual, including Guarantee Certificate and Delivery Note

Guarantee and after-guarantee repairs of sensors are ensured by the manufacturer. The product must be delivered including a copy of the Guarantee Certificate, duly packed and fit to shipment so as not to get damaged during transportation.

GUARANTEE CERTIFICATE
The product is covered by guarantee for 24 months from the date of purchase.

In this period, the manufacturer will remove all material or manufacturing defects arisen demonstrably during the applicable warranty period. The manufacturer is liable for the technical and operational parameters of the product given in the user manual. Any identified defects will be claimed by the buyer without undue delay after their identification or, as appropriate, after the buyer was able to identify them during his routine care. A completed Warranty Certificate with a brief description of the defect plus the product must be submitted with the claim.

Warranty does not cover a product:
- That was damaged during transport and inappropriate storage, improper commissioning and/or that has been used for a purpose other than specified
- That has been used in an improper manner, inconsistent with the user manual and/or generally applicable technical standards or safety regulations
- That is worn or damaged as a result of normal use of the product, without loss of its operational characteristics and guaranteed technical parameters
- Into which unskilled intervention, unauthorized structural or other changes (reprogramming, resetting of set parameters, etc.) have been made
- That is mechanically damaged, e.g. by fall, being hit by a hard object, cleaning with unsuitable agents, power cord tearing/breaking, breaking or other damage of individual product parts
- That has been exposed to adverse external influence, e.g. object intrusion, wrong supply voltage, influence of chemical processes, electrical surge (obviously burnt components or printed circuits), dusty, dirty, aggressive or otherwise unsuitable environment, except normal variation
- That has been damaged by an incidental or natural disaster or as a result of natural or external phenomena, such as storm, fire, water, excessive heat
- That is claimed without the Warranty Certificate or nameplate.

Rights and obligations regarding the rights arising from defective performance will be governed by the applicable legislations and the applicable Business Terms and Conditions of SENSIT s.r.o. and this Warranty Certificate**.**

Date of sale confirmation:

Serial number: