



## RESISTANCE THERMOCOUPLE NT-10k-A-NTC

### OPERATING MANUAL

*Quality control system on the development and production complies with requirements  
ISO 9001:2015*

**Dear customer,**

Company NOVATEK-ELECTRO LTD thanks you for purchasing our devices.  
You will be able to use properly the device after carefully studying the Operating Manual.  
Keep the Operating Manual throughout the service life of the device.

## 1 BASIC DETAILS ON THE DEVICE AND TECHNICAL SPECIFICATIONS

### 1.1 Designation

The Resistance thermocouple NT-10k-A-NTC (hereinafter the device, NT-10k-A-NTC) is designed to measure temperature of liquid, gaseous and granular media, has sharp completion, due to what can be used for taking temperature in the technological processes of food industry.

### 1.2 Basic technical specifications

Table 1 shows the main technical specifications.

**Table 1** - Basic technical specifications

Description	Values
Operating range of temperatures to measure	from -10 to +80 °C
Nominal static characteristic at 25 °C	10 kΩ NTC
B25/85	3970K
Class of tolerance	1 %
Connection Diagram	2
Length of the cable	1500 mm
Length of the installation section	15 mm
Max. power dissipation	≤ 0.4 mW
Thermal inertia index	15...16 s
Insulation resistance at (25 ± 10) °C and relative humidity up to 80%	≥ 100 MΩ
Material of protective fittings	Steel AISI 321
Stability to mechanical influences	Group N 2
Degree of protection of the installation section	IP 68
Degree of protection of the outer part	IP 40
Working pressure of assembling part	0.4 MPa

## 2 WARRANTY OF THE MANUFACTURER (SUPPLIER)

**2.1** The lifetime of the device is 10 years.

**2.2** Shelf life is 3 years.

**2.3** Warranty period of the device operation is 1 year from the date of sale.

During the warranty period of operation (in the case of failure of the NT-10k-A-NTC) the manufacturer is responsible for free repair of the device.

**ATTENTION! IF THE NT-10k-A-NTC HAS BEEN OPERATED IN VIOLATION OF THE REQUIREMENTS OF THIS MANUAL, THE USER WILL LOSE THE RIGHT TO WARRANTY MAINTENANCE.**

**2.4** Warranty service is performed at the place of purchase or by the manufacturer of the device.

**2.5** Post-warranty service of the device is performed by the manufacturer at current rates.

**2.6** Before sending for repair, the device should be packed in the original or other packing excluding mechanical damage.

*You are kindly requested, in case of return of the device and transfer it to the warranty (post-warranty) service, in the field of the claims data, list the detailed reason for return.*

## 3 CONSTRUCTION AND OPERATION

**3.1** The operating principle of the NT-10k-A-NTC is based on the property of a semiconductor of the sensing element to change electrical resistance depending on temperature. The change in resistance is recorded by a secondary device, in the measuring circuit of which the NT-10k-A-NTC is connected.

**3.2** The sensing element is a thermistor placed in protective fittings. The terminals of the sensor are lead through a cable for connection to the measuring circuit of the secondary device.

The connection diagram is shown in Figure 1.

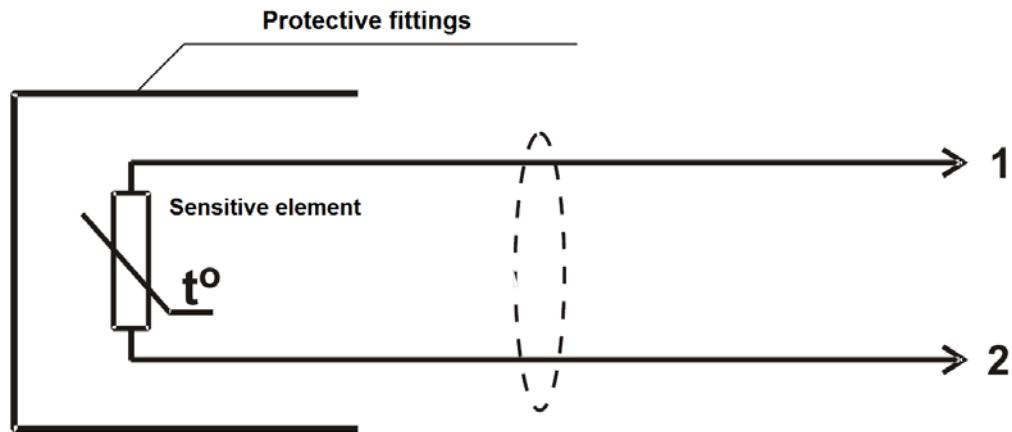


Fig. 1 – Connection diagram

#### 4 STORAGE AND TRANSPORTATION RULES

**4.1** NT-10k-A-NTC in the manufacturer's packaging should be stored indoors at air temperature from minus 40 °C to 70 °C and relative humidity up to  $(95 \pm 3)\%$  at a temperature of 40 °C (without moisture condensation).

**4.2** NT-10k-A-NTC in the manufacturer's packaging can be transported by all types of transportation, at any distance, at any speed allowed by this mode of transport in accordance with the rules of goods transportation which are in force on this type of transport.

#### 5 INSTRUCTIONS FOR USE

**5.1** The basic condition for NT-10k-A-NTC is that the measured ambient temperature is within the operating temperature range. During operation, do not allow moisture to enter the outside part of NT-10k-A-NTC.

**5.2** To increase interference resistance, it is recommended to connect NT-10k-A-NTC with a shielded wire and the screen on the side of the secondary device must be earthed or connected to the common wire through a 0.1 ... 1.0  $\mu\text{F}$  capacitor with voltage of at least 630 V. A cable with an uninsulated shield must be insulated from metal and live parts.

**5.3** For setting of NT-10k-A-NTC on the object of exploitation the sleeves protective, counted on conditional pressure to 50 MPa, can be used additionally.

**5.4** Elimination of defects, replacement, routine inspection, connection and disconnection from the lines leading the medium to be measured shall be carried out with complete absence of pressure in the lines.

**5.5 WARNING! DURING NT-10k-A-NTC OPERATION, THE WIRE TEMPERATURE SHOULD NOT EXCEED 100 °C!**

**5.6** The appearance and overall dimensions are shown in Figure 2.

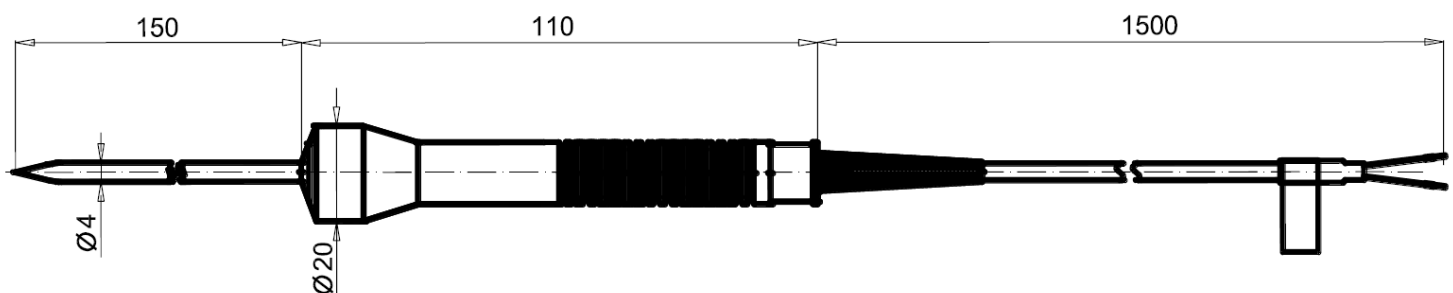


Fig. 2 – The appearance and overall dimensions

**5.6** NT-10k-A-NTC is subject to the periodic verification.

#### 6 INFORMATION ABOUT UTILIZATION

After the end of the service life, contact the manufacturer.

Date of issue

## 8 INFORMATION ON CLAIMS

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

◆ ◆ ◆ ◆ ◆

**VN250303**