

TEMPERATURE PROBE CT2B-121, CT2A-121, CT2S-121

The temperature probes are designed for temperature measurements in liquid and semi-solid substances and also for air and gases measurements. They may be used during the laboratory, field and industrial measurements. The sensors have an acid-resistant stainless steel body which in most cases protects the measuring element against mechanical damage and against damage caused by aggressive solutions. As standard the sensors are equipped with 1m silicone cable and Chinch (RCA) connector. Silicone cable is resistant to temperatures up to 250 °C, it may be also equipped with a steel braid to protect it against mechanical damage.



The **CT2B-121** sensor is delivered in standard sets of most of the meters offered by the ELMETRON company.

The **CT2A-121**, sensor, with higher accuracy, may be ordered as an optional equipment. It co-operates with all meters made by our company.

The **CT2S-121**, sensor, selected, is the most accurate of this series, it is delivered with the **PT-411** thermometers and the meters of **461**, **601** and **705** series.

The measuring elements are the Pt-1000 resistors made by the Heraeus company.

The **CT2B-121** sensor is offered with the **Pt-1000B** resistor, in the range 0 ÷ 100 °C its error is not higher than **±0.8 °C**.

The **CT2A-121** sensor is offered with the **Pt-1000A** resistor, in the range 0 ÷ 100 °C its error is not higher than **±0.35 °C**.

The **CT2S-121** sensor is offered with the **Pt-1000S** resistor, in the range 0 ÷ 100 °C its error is not higher than **±0.27 °C**.

The errors of the **Pt-1000** resistors are changing with the temperature. In 0 °C are the lowest.

The maximal error of the sensor of the B class is determined according to the formula: **dtmax = ±(0.30 °C + 0.005t)**, where: t – displayed temperature in °C.

The maximal error of the sensor of the A class is determined according to the formula: **dtmax = ±(0.15 °C + 0.002t)**, where: t – displayed temperature in °C.

The selected resistor **Pt-1000S** has a guaranteed accuracy in the range 0 ÷ 100 °C = **±0.27 °C**. Beyond this range the error is determined with the formula for the B class sensor.

In practice the selected resistor has a higher accuracy also beyond the guaranteed range.

The total error of the measurement is a sum of the meter's and probe's errors.

Technical Data

Measuring Range	-70 ÷ 400 °C
Measuring element	Pt-1000B
Error in the 0 °C	0.3 °C
Error in the range 0 ÷ 100 °C	< 0.8 °C
Body diameter	3 mm
Body length (without cable socket)	115 mm ± 5 mm
Minimal immersion depth	10 mm
Reaction time t₉₉ od 20 do 100 °C	11 s
Body material	acid-resistant stainless steel type 0H18N9
Cable material	silicone (resistant to 250 °C)
Handle material	polyamide, (resistant to 200 °C)
Connector	chinch (RCA)
Cable length	about 1 m