

AUTOMATIC EQUIPMENT FOR MEASUREMENT OF THERMOELECTRIC MATERIAL PROPERTIES



ALTEC - 10001

- UKRAINE •
- Is assigned for automatic complex measurement of electrical conductivity, thermal onductivity, thermoelectric coefficient and definition of figure of merit of the samples of thermoelectric materials in temperature range 30°C 500°C.
- Principle of equipments work is based on the absolute method of measuring thermoelectrical properties of the material.
- High level of thermostabilization of the sample and limitation of its heat losses, during the measurement of its properties, are obtained by efficient multicircuit thermostat and programmable microcontroller thermoregulator.

Installation appearance



- Structurally, the installation comprises: measuring thermostat –1, electronic measuring unit 2, power unit 3, computer 4, vacuum system 5.
- The measurements are performed automatically, as well as the analysis of the measurements results, which excludes errors in operators work.
- The installation has flexible mode of measurements and algorithm setup.
- The results of the measurements are visualized in the form of graphs and tables.
- Results of the measurements can be used directly in reports and papers publications.
- The results of measurements can be exported to standard database file for other program products treatment.
- The price of the equipment is returned for 6-8 months of its operation.

Technical specifications and parameters of the installation

Nº	Name of characteristic, parameter, unit measure	Values
1	The operating temperature range of the sample, °C	30 – 500
2	Absolute error of voltage measurement, μV	1
3	Range of setting current through the sample, A	0 – 2
4	Time of continuous installation operation, not more, days	10
5	Time to reach measuring mode with a change in sample stabilization temperature, not more, min.	45 - 60
6	Measurement duration at specified temperature, not more, min	15-20
7	Measurement errors: - electrical conductivity - the Seebeck coefficient - thermal conductivity - thermoelectric figure of merit	1 1 3 5
8	Overall dimensions of the sample, mm length diameter	12 – 13 7 – 9
9	AC mains supply voltage, 50 Hz, V	220 ±10%
10	Overall dimensions of the installation (without computer), mm - measuring thermostat - power unit - electronic measuring unit - vacuum system (delivered separately)* * - equipment can be completed with exhaust cart, manufactured by other companies	200x170x210 300x110x245 165x80x230 675x1185x620
11	Weight (without vacuum post and computer), not more, kg	15

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