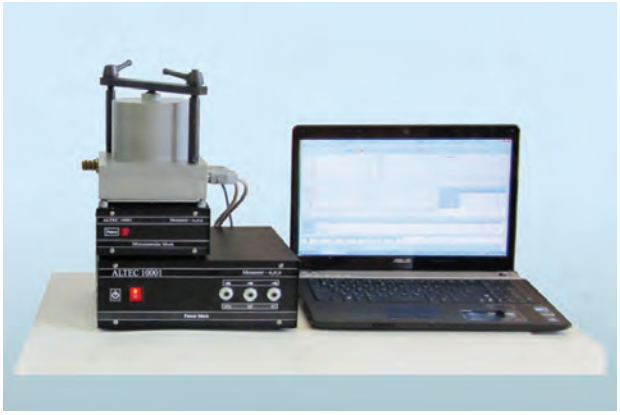
ALTEC 10001 AUTOMATED EQUIPMENT FOR MEASURING THERMOELECTRIC PROPERTIES OF MATERIALS



Areas of Application

The device is to be used for automatic integrated measurements of electric conductivity, thermopower, and thermal conductivity, as well as for determination of Q-factor of thermoelectric material samples in the temperature range from 30 to 500 °C. It can be used both for research and for industrial manufacture of thermoelectric materials

Specification

Temperature measurement range, °C	30—500
Duration of measurement of sample σ, α, κ, Z at one temperature point, min	45—60
Electric conductivity measurement range, $Ohm^{-1} \cdot cm^{-1}$	10—10000
Thermal conductivity measurement range, $W \cdot m^{-1} \cdot K^{-1}$	0.1—20
Seebeck coefficient measurement range, $\mu V \cdot K^{-1}$	±(10—500)
Sample dimensions, mm	
length	8—13
diameter (for round-section sample)	6—9
width/thickness (for square-section sample)	5—7
Error in determination of the sample thermoelectric properties (at 500 °C), at most, %:	
electric conductivity	<1
seebeck coefficient	<1
thermal conductivity	<3
Alternating current supply voltage 50 Hz, V	220
Electric power consumption, at most, W	500
Overall dimensions, mm:	
measurement unit	200 × 170 × 210
measurement control unit	300 × 110 × 245

Stage of Development. Suggestions for Commercialization

IRL6, TRL6
Manufacture, supply, warranty service, and staff training, upon request

IPR Protection

IPR3

Advantages

As compared with the world analogs, the designed device for integrated measurements of thermoelectric materials properties gives a 3—5 higher accuracy of thermoelectric Q-factor measurements

Contact Information

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