

Using an ohmmeter to directly read volume resistivity

The RM3544 Resistance Meter includes temperature correction and scaling functions that enable direct reading of volume resistivity after entering the length and cross-section of a test piece.

Increased miniaturization and low power efficiency in the many electronic applications of today are driving resistivity measurements so that customers can verify that the specifications provided by suppliers are indeed valid and meet their precise resistance specifications. For example, customers can measure the bulk or volume resistivity of a known insulator at a number of random locations as part of sampling tests. When volume resistivity is used instead of mere resistance values to evaluate metallic and other electrically conductive materials, usually more time than usual is required in order to calculate volume resistivity from the resistance value measured by an ohmmeter.

The Hioki RM3544 and RM3545 Resistance Meters streamline the process by offering a scaling function and capability to display a variety of measurement units so that volume resistivity can be read directly with the meters. In addition, customers can use the built-in temperature compensation function to adjust for the actual environmental temperature so that the physical effects of temperature on resistance can be safely ignored.

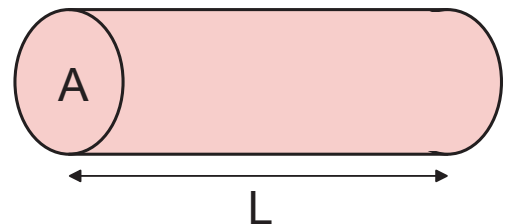
Use the Hioki RM3544 or RM3545 Resistance Meters to directly read volume resistivity



RESISTANCE METER RM3544



RESISTANCE METER RM3545



$$P_{23} = R_{23} \times A / L \quad : \quad \text{Resistivity Calculation Formula}$$

P_{23} : Volume Resistivity at 23[°C] [$\mu\Omega\text{m}$]

R_{23} : Actual test piece resistance value converted to its equivalent value at 23[°C]

L : Test Piece Length

A : Test Piece Cross-Sectional Area

For test piece measurement, use 4-terminal Lead L2104.

Products used

RESISTANCE METER RM3544

RESISTANCE METER RM3545

4-TERMINAL LEAD L2104

TEMPERATURE SENSOR Z2001
