

- Wide measurement range:  $1 \times 10^3 \Omega$  to  $1.6 \times 10^{16} \Omega$
- Stable test fixtures: resistivity cell, component test fixture
- High-speed measurement: 10 ms
- Test sequence programming
- Resistivity calculations
- Grounded DUT measurement



HP 4339B

### HP 4339B High-Resistance Meter



The HP 4339B high-resistance meter is Hewlett-Packard's most advanced tool for making precision high-resistance measurements.

#### Precise and Stable Measurement

The measurement range is from  $1 \times 10^3 \Omega$  to  $1.6 \times 10^{16} \Omega$ , with a basic accuracy of 0.6%. This wide range allows accurate, high-resistance measurement of capacitors, relays, switches, connectors, materials, cables, and PC boards. The grounded device-under-test (DUT) measurement capability of the HP 4339B gives you the ability to evaluate cables and transformers under grounded conditions. The HP 16008B resistivity cell and the HP 16339A component test fixture are designed for stable and safe measurements of materials or components.

#### Simple Operation

The test-sequence program function allows you to control a series of resistance measurements in a sequence (charge-measure-discharge). You can set the charge time, measurement interval time, and number of measurements in a sequence through the front panel. The remaining time can be displayed when executing the sequence measurements. Surface resistivity ( $\rho_s$ ) and volume resistivity ( $\rho_v$ ) functions can be called to act upon measurement data. Calculated results are then automatically displayed, saving you time and effort.

#### High-Test Throughput

The 10 ms measurement time, 2 ms high-speed contact check function, built-in comparator, and GPIB/handler interfaces deliver high-speed test throughput for production environments.

#### HP 4339B Specifications

(Refer to Product Overview for complete specifications.)

**Measurement Parameters:** R (dc resistance), I (dc current),  $\rho_s$  (surface resistivity),  $\rho_v$  (volume resistivity)

**Mathematical Functions:** Deviation and percent deviation

**Display Digits:** 3, 4, or 5 (selectable)

**Test Voltage:** 0.1 to 1000 Vdc, 0.1 V steps @ 0.1 to 200 V, 1 V steps @ 200 to 1000 V

**Voltage Accuracy:** (0.16% + 100 mV) @  $\leq 200$  V, (0.16% + 500 mV) @  $> 200$  V

**Maximum Current:** 10 mA @  $\leq 100$  V, 5 mA @  $\leq 250$  V, 2 mA @  $\leq 500$  V, 1 mA @  $\leq 1$  kV

**Current Compliance Setting:** 0.5 mA, 1 mA, 2 mA, 5 mA, 10 mA

**Output Resistance:**  $1 \text{ k}\Omega \pm 10\%$

**Input Resistance:**  $1 \text{ k}\Omega \pm 10\%$

**Test Cable Lengths:** 2 m maximum

#### Measurement Range/Accuracy

Parameter	Measurement range	Basic accuracy
I	60 fA to 100 $\mu$ A	$\pm 0.4\%$
R ( $\Omega$ )	$1 \times 10^3 \Omega$ to $1.6 \times 10^{16}$	$\pm 0.6\%$

**Measurement Time:** Time interval from a trigger command to the end of measurement (EOM) signal output at the handler interface port (range: hold, display, off)

Mode	Time (typical)
SHORT	10 ms
MEDIUM	30 ms
LONG	390 ms

#### Correction Function

**Zero OPEN:** Eliminates measurement errors due to stray parasitic resistance in the test fixtures

**Test Sequence Program:** Controls a series of resistance measurements. Charge time, measurement interval time, and measurement number can be programmed.

**Comparator Function:** HIGH/IN/LOW for the measurement parameter

#### Contact Check Function

Contact failure between the test fixture and device can be detected

**Available DUT Type:** Capacitive DUTs only

**DUT Capacitance:**  $\geq 1 \text{ pF} + 5\%$  of residual stray capacitance

**Residual Stray Capacitance of the Fixture:**  $\leq 50 \text{ pF}$

**Additional Measurement Time for Contact Check:** 2 ms

#### Other Functions

**Save/Recall:** Ten instrument setups can be saved/recalled from the internal nonvolatile memory

**Continuous Memory Capability:** If the instrument is turned off, or if a power failure occurs, instrument settings are automatically memorized ( $\leq 72$  hours at  $23^\circ \pm 5^\circ \text{ C}$ )

**GPIB Interface:** All control settings, measured values, and comparator information

**Handler Interface:** All output signals are negative-logic, optically isolated open collectors. Output signals include: HIGH/IN/LOW, no contact, index, end of measurement, and alarm. Input signals include: high voltage off, keylock, and external trigger.

#### General Specifications

**Power Requirements:** 90 to 132 V or 198 to 264 V, 47 to 66 Hz, 45 VA max.

**Operating Temperature:**  $0^\circ$  to  $45^\circ \text{ C}$

**Size:** 320 mm W x 100 mm H x 450 mm D (12.6 in x 3.94 in x 17.72 in)

**Weight:** 6.5 kg (14.3 lb)

Complies with 73/23/EEC and 92/68/EEC safety standard EN61010-1

#### Furnished Accessories

Operation manual, shunt connector, power cable (Test fixtures and/or test leads must be ordered separately.)

#### Key Literature

HP 4339B/HP 4349B High Resistance Meters Product Overview, p/n 5964-6182E

Insulation Resistance Measurement of Plate Type Materials, p/n 5968-3400E

Insulation Resistance Measurements of Electro-mechanical Components, p/n 5968-0325E

#### Ordering Information

**HP 4339B** High-Resistance Meter

**Opt ABA** US-English Localization

**Opt ABJ** Japan-Japanese Localization

**Opt OBO** Delete Operation Manual

**Opt W30** Extended Repair Service

**HP 16339A** Component Test Fixture

**HP 16008B** Resistivity Cell (50 mm Diameter Electrode)

**Opt 001** Add 26/76 mm Diameter Electrodes

**Opt 002** Add 26 mm Diameter Electrode

**Opt 003** Add 76 mm Diameter Electrode

**HP 16117B** Low-Noise Test Leads (1 m, 2 clips)

**Opt 001** Add Pin Probes

**Opt 002** Add Soldering Sockets

**Opt 009** Delete Alligator Clips

**HP 16117C** Low-Noise Test Leads (1 m, connectors)

**HP 16118A** Tweezer Test Fixture

**HP 16064B** LED Display/Trigger Box