

- 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 4339A

HP 4339A High-Resistance Meter

The HP 4339A high-resistance meter is HP'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 4339A 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.

Ease of Use

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. Surface resistivity (ρ_s) and volume resistivity (ρ_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 HP-IB/handler interfaces deliver high-speed test throughput for production environments.

Specifications

(Refer to data sheet for complete specifications.)

Measurement Parameters: R (dc resistance), I (dc current), ρ_s (surface resistivity), ρ_v (volume resistivity)

Mathematical Functions: Deviation and percent deviation

Ranging: Auto and manual

Trigger: Internal, external, manual, and HP-IB

Delay Time: 0 to 9999 ms in 1 ms steps

Test Cable Lengths: 2 m maximum

Measurement Time: Short, medium, and long

Averaging: 1 to 256

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) @ ≤ 200 V,
(0.16% + 500 mV) @ > 200 V

Maximum Current: 10 mA @ ≤ 100 V, 5 mA @ ≤ 250 V,
2 mA @ ≤ 500 V, 1 mA @ ≤ 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: $1 \text{ k}\Omega \pm 10\%$

Measurement Range/Accuracy

Parameter	Measurement range	Basic accuracy
I	60 fA to 100 μ A	$\pm 0.4\%$
R (Ω)	1×10^3 to 1.6×10^{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

Display: 5 digits (max)

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 internal 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 DUT's only

DUT capacitance: $\geq 0.5 \text{ pF} + 5\%$ 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 (≥ 72 hours at $23 \pm 5^\circ \text{C}$).

HP-IB 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 maximum

Operating Temperature: 0 to 55°C

Size: 320 mm W \times 100 mm H \times 450 mm D (12.6 in \times 3.94 in \times 17.72 in)

Weight: 6.5 kg (14.3 lb)

Furnished Accessories

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

Ordering Information

	Price
HP 16339A Component Test Fixture	\$1,960
HP 16008B Resistivity Cell (50 mm Diameter Electrode)	\$2,280
Opt 001 Add 26/76 mm Diameter Electrodes	+ \$540
Opt 002 Add 26 mm Diameter Electrode	+ \$250
Opt 003 Add 76 mm Diameter Electrode	+ \$420
HP 16117B Low-Noise Test Leads (1 m, 2 clips)	\$460
HP 16117C Low-Noise Test Leads (1 m, connectors)	\$390
HP 16064B LED Display/Trigger Box	\$330
HP 4339A High-Resistance Meter	\$4,500
Opt 009 Delete Operation Manual	- \$60
Opt W30 Extended Repair Service (see page 636)	+ \$105