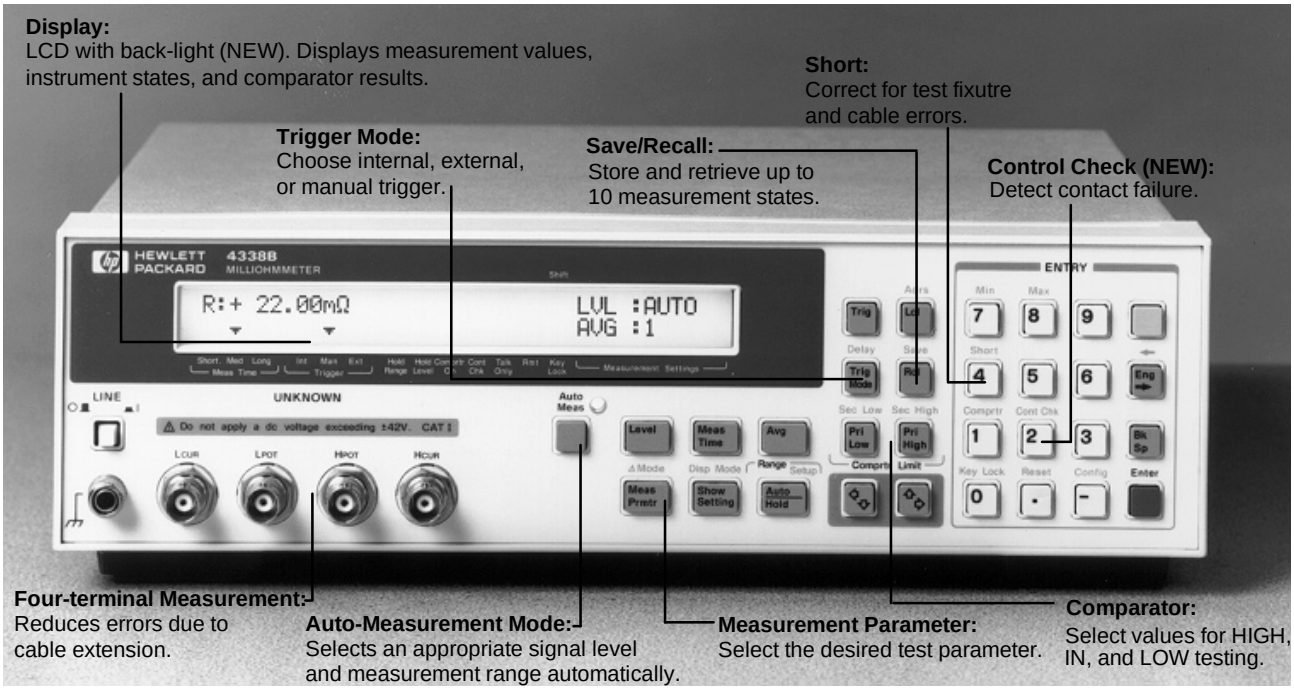
HP 4338B Milliohm Meter
10 μΩ to 100 kΩ

Product Overview

Within Budget.
Without Compromise.

Introducing the HP 4338B Milliohm Meter

For precise measurements of extremely low resistances using an ac test signal. It is ideal for bench-top applications requiring flexible testing and reliable results. The HP 4338B satisfies system throughput demands for fast, high quality measurements.



Satisfy Your Needs For ...

High quality testing

- Remove parasitics with error correction
- Consistent results with 0.4% basic accuracy
- Verify test connections with contact check function
- Stabilize data with selectable measurement times and averaging
- Eliminate trigger timing errors with trigger delay

Operating versatility

- Select from 5 impedance parameters
- Pick from 7 probes, test fixtures and accessories
- Configure the instrument quickly with Save/Recall
- Reduce test complexity with auto-measurement function

Fast test throughput

- 34 ms/measurement
- Pass/Fail testing with comparator function
- HP-IB interface standard
- Built-in handler interface

Key Parameters and Specifications

Test frequency:
1 kHz

Impedance parameter sets:
R, |Z|-θ, R-L, R-X

Basic accuracy:
0.4%

Test current levels:
1μA, 10μA, 100μA, 1mA, 10mA

Error correction:
Short compensation

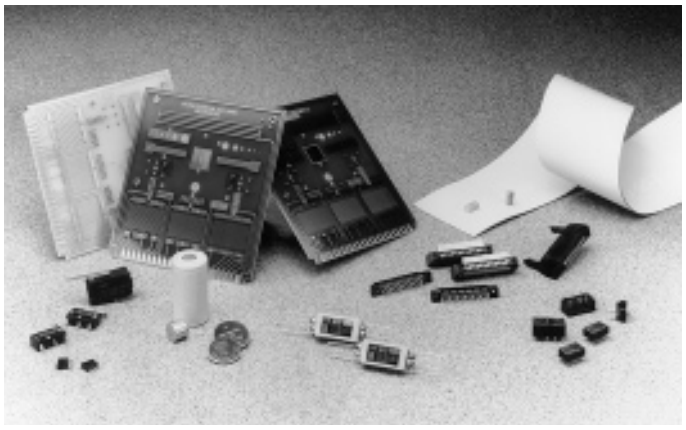
Display digits:
3, 4, or 5 digits (selectable)

Save/recall:
10 instrument states

Interfaces:
HP-IB and handler interfaces

Satisfy your need for high quality testing

- Resolve data to 5 digits
- Make precise measurements with 0.4% basic accuracy
- No impedance calculations; select the parameter you need; R, |Z|, θ, L, X
- Verify DUT performance under simulated operating conditions
- Dry contact testing with minimal test signal (≤20 mV)
- High confidence testing with contact check function



Precise ultra-low resistance measurements.

Test electromechanical devices

- Dry contact testing with low level test signals
- Variety of probes and test fixtures to fit your application
- Resolve measurements to 10 μΩ
- Test switches, cables, connectors, relays, pc board traces

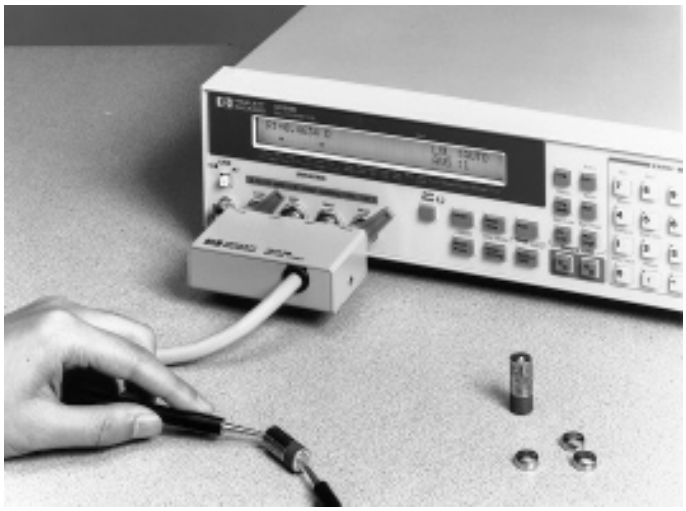
Electromechanical contact testing

Evaluate battery internal resistance

- Protect your investment with voltage protection on terminals (Max. 42 Vdc)
- Perform non-invasive testing with no effects on charge/discharge cycles
- Avoid polarization effects with an AC test signal

System features for automation in manufacturing

- Maximize accuracy with error correction
- Automate testing with HP-IB interface for computer control
- Reduce ground-loops with isolated handler interface
- Continue testing after ac power loss with non-volatile memory
- Pass/fail testing with comparator function (HIGH, IN, LOW)



Battery evaluation

Specifications

Measurement Accuracy

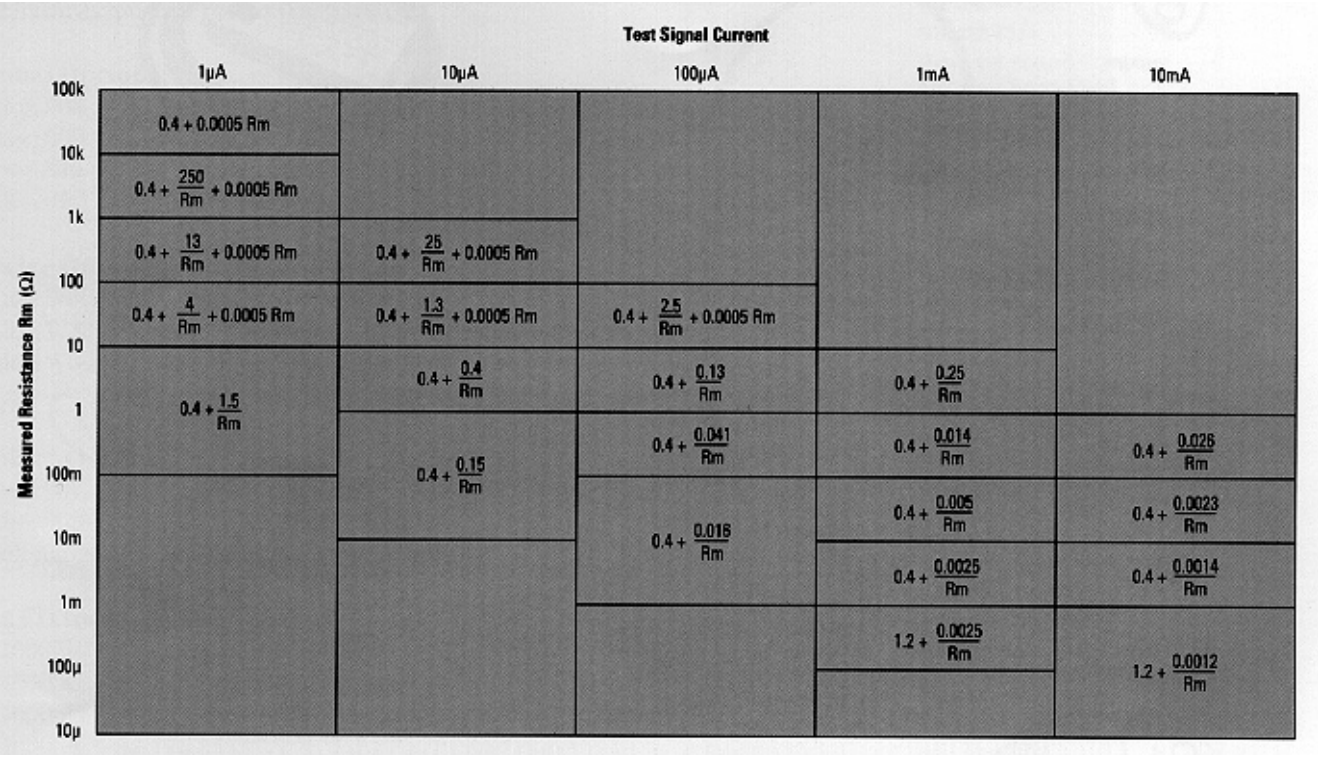


Table 1. Measurement Accuracy (± % of reading)

Measurement Conditions

The following test conditions apply:
(Other test condition data available in the operation manual)

1. Warm up time: ≥ 30 minutes
2. Ambient temperature: 23 ± 5°C
3. Test cable length: 0 meter
4. Short error correction performed.
5. Measurement time: LONG

Measurement Parameters/Ranges

Parameter	Range
R	10μΩ to 100kΩ
X, |Z|	10μΩ to 100kΩ (typical)
L	10nH to 10H (typical)
θ	-180° to +180°

Measurement Conditions and Functions

Test Frequency: 1 kHz ± 0.1%

AC Test Signal Level (rms current): 1µA, 10µA, 100µA, 1mA, 10mA

Maximum Applied AC Voltage: 20mV peak

Maximum DC Voltage to BNC terminals: 42V

Ranging: Auto and Hold

Maximum Cable Length: 2 meters

Trigger: Internal. Manual and External

Delay time: 0 to 9999 ms in 1 ms steps

Averaging: 1 to 256

Measurement time (typical):

SHORT	MEDIUM	LONG
34 ms	70 ms	900 ms

Other instrument Functions

Math Functions: Deviation (Δ) and Percent Deviation (%Δ)

Short Error Correction: Eliminates measurement errors due to parasitic impedances in cables and test fixtures.

Comparator: HIGH, IN, and LOW for primary and secondary parameters.

Continuous Memory: All instrument settings are automatically saved up to 72 hours when power is lost or instrument is turned off.

Save/Recall: 10 instrument states from non-volatile memory.

Contact Check: Detects contact failure.

HP-IB: HP's implementation of IEEE 488 for control and data.

Handler Interface: Negative logic and optically isolated. Output signals: HIGH/IN/LOW, End-Of-Measurement, Index and Alarm. Input signals are Keylock and External Trigger.

Physical Characteristics

Power: 90-132 Vac or 198–264 Vac. 47–66 Hz. 45 VA typical.

Operating Temperature: 0–45°C

Dimensions: 320(W) x 100(H) x 300(D) mm

Weight: 4.5 kg

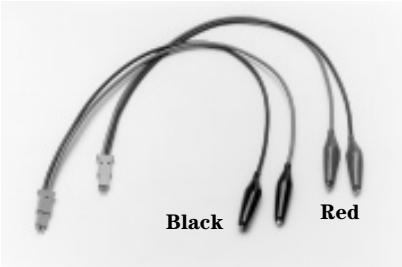
Test Fixtures/Accessories

HP 16005B Kelvin Clip Lead
Large Kelvin Clip Lead. Cable length 0.4 meter. Jaws mate with large terminal devices. 1 lead supplied only.

HP 16006A Pin-type Probe Lead
Pin-type Probe Lead. Cable length 0.4 meter. Spring-loaded probe tips for firm contact. Useful for manual contact measurements. 1 lead supplied only.

HP 16064B LED Display/Trigger Box
LED Display/Trigger Box. Displays comparator status. Cable length 1.5 meters. External trigger.

HP 16005C Kelvin IC Clip Lead (red clip)
HP 16005D Kelvin IC Clip Lead (black clip)
Kelvin IC Package Clip Lead. Cable length 0.4 meter. Small contacts for devices with fine leads. 1 lead supplied only.



HP 16007A Alligator Clip Lead (red clip)
HP 16007B Alligator Clip Lead (black clip)
Alligator Clip Lead. Cable length 0.4 meters. Each test lead has a separate alligator clip voltage and current terminal. 1 lead supplied only.

HP 16143B Mating Cable
Mating Cable. Interface between test leads and HP 4338B. Cable length 0.5 meter.

HP 16338A Test Lead Kit
Test Lead Kit. Contains 1 each of the following: HP 16143B, HP 16005C, HP 16005D, HP 16007A, HP 16007B, carrying case. Contains 2 each of the following: HP 16005B and HP 16006A.

Ordering Information

HP 4338B Milliohm Meter

Furnished accessories:
Operation manual, power cable.

(Must specify the manual language using the manual option ABA or ABJ.)

Test fixtures must be ordered separately.

Manual Options:

ABA English Operation manual
ABJ Japanese Operation manual
0B0 Delete Operation Manual
0B1 Extra Operation Manual

Service Options:

W30 Three Year Customer Return Repair
W32 Three Year Customer Return Calibration

Cabinet Options:

1CM Rack Mount Kit
1CN Front Handle Kit
(Rack flange and handle kit is not compatible)

Cal. Certificate Option:

UK6 Commercial Cal. Certificate w/ Test Data

Test Fixtures and Accessories:

HP 16005B Kelvin Clip Lead (1 lead only)

HP 16005C Kelvin IC Clip Lead, red clip (1 lead only)

HP 16005D Kelvin IC Clip Lead, black clip (1 lead only)

HP 16006A Pin-type Probe Lead (1 lead only)

HP 16007A Alligator Clip Lead, red (1 lead only)

HP 16007B Alligator Clip Lead, black (1 lead only)

HP 16143B Mating Cable (Requires 2 leads)

HP 16338A Test Lead Kit. Includes HP 16005B/5C/5D/ 6A/7A/7B Leads, HP 16143B Mating Cable and carrying case.

HP 16064B LED Display/Trigger Box

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Printed in U.S.A. 4/96
5964-6183E