

- 20  $\mu\Omega$  resolution on 1 m $\Omega$  range
- Four terminal measurement
- Low test voltage



4328 (with 16005A Probes included)



16006A Probe (2 each included)



16007A/B Test leads (1 each included)

## Description

HP's 4328A Milliohmmeter is a portable instrument for measurement of low resistances. It uses a Kelvin Bridge method to obtain its high sensitivity but has incorporated both the current and voltage drives into one probe, so that only two probes are needed in actual measurement.

The range of the 4328A extends from one milliohm to 100 ohms full scale. Maximum sensitivity is 20 micro-ohms, making it ideal for measuring contact resistance of switches, relays, and connectors.

A unique phase discriminator in the meter circuit permits accurate resistive measurements on samples with a series reactance up to twice full scale resistance.

The milliohmmeter is internally driven by a one kilohertz signal. With an ac drive signal, dc bias up to 150 volts can be superimposed without affecting accuracy of measurement. Hence, HP's 4328A can make dynamic resistance measurements on forward-biased diodes.

Maximum voltage across any sample with proper range selection is less than 200 microvolts peak. In case of incorrect range setting, a maximum voltage of 20 millivolts peak will never be exceeded, so that explosive devices such as fuses and squibs can be safely checked.

The basic 4328A is line operated. With Opt 001, it can be operated from four rechargeable batteries for 15 continuous hours. A recorder output provides an output proportional to meter deflection.

## Specifications

**Range:** 0.001 to 100 ohms full scale in a 1, 3 sequence.

**Accuracy:**  $\pm 2\%$  of full scale. No additional error is caused by series reactance of samples up to two times full scale.

**Measuring frequency:** 1000 Hz  $\pm 100$  Hz.

**Voltage across sample:** 200  $\mu$ V peak at full scale.

**Maximum voltage across sample:** 20 mV peak in any case.

**Superimposed dc:** 150 V dc maximum may be superimposed on samples from an external source.

**Recorder output:** 0.1 V dc output at full scale meter deflection, output resistance approx. 1k $\Omega$ .

Range (ohms)	Applied Current (mA)	Maximum Dissipation in Samples ( $\mu$ W)
0.001	150	23
0.003	50	8
0.01	15	2.3
0.03	5	0.8
0.1	1.5	0.23
0.3	0.5	0.08
1	0.15	0.023
3	0.05	0.008
10	0.015	0.0023
30	0.005	0.0008
100	0.0015	0.00023

## General

**Power requirements:** 115/230 V switch selectable  $\pm 10\%$ , 50 to 60 Hz, 1.5 VA.

**Weight:** 3.2 kg (7 lb).

**Size:** 155 mm H x 130 mm W x 279 mm D ( $6\frac{3}{32}$ " x  $5\frac{1}{8}$ " x 11").

**Accessories furnished:** Model 16005A Probe, 16006A Probe and 16007A/B Test Leads. 16143A Probe Cable. Detachable Power Cord.

## Ordering Information

4328A Milliohmmeter

Opt 001: Rechargeable battery operation

Opt 910: extra manual

## Price

\$1405

\$90

\$12.50