

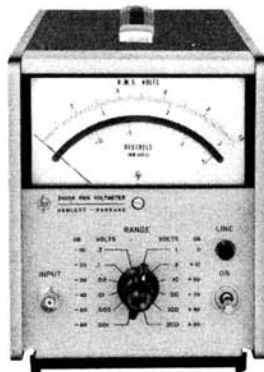
# DIGITAL MULTIMETERS

## Bench, General Purpose and Wide Bandwidth

### HP Model 3466A and HP Model 3400A



HP 3466A



HP 3400A

### Description

The HP 3466A is a 4½ digit Multimeter with autoranging volts and ohms. Functional capability includes ACV, DCV, (ac + dc) V, ACI, DCI, (ac + dc) I, Ω, and diode test. AC measurements are true rms with selectable ac or dc coupling. Available with rechargeable batteries or ac power only, it has 1 μV dc and 1 mΩ sensitivity with zero adjustment on lowest ranges to compensate for external offsets.

### Specifications

#### DC Voltmeter

Voltage Range	Maximum Display	Accuracy: (1 yr., 18 to 28°C) ±(% of reading + # of counts)
20 mV	± 19.999 mV	(.05 + 3)
200 mV	± 199.99 mV	(.04 + 2)
2 V	± 1.9999 V	(.03 + 1)
20 V	± 19.999 V	(.03 + 1)
200 V	± 199.99 V	(.035 + 1), <700 V input
1200 V	± 1199.9 V	(.055 + 1), >700 V input

#### AC Voltmeter

**AC converter:** true-rms responding, true-rms calibrated

**Maximum input:** (ac + dc): ± 1200 V dc; ± 1700 V (dc + peak ac), ac: ± 600 V dc; 1700 V (peak ac + dc), 10<sup>7</sup> V · Hz.

**Crest factor:** 4:1 at full scale.

**Accuracy** (with display of ≥ 10% of range): 1 yr., 18 to 28°C sinusoid waveform.

**AC TRMS: (20 Hz to 100 kHz)**

Frequency Range	±(% of reading + # of counts)
20 Hz to 30 Hz	(2 + 50)
30 Hz to 50 Hz	(1 + 30)
50 Hz to 10 kHz	(0.3 + 20)
10 kHz to 20 kHz	(1 + 40)
20 kHz to 100 kHz	(2 + 150)

**DC + AC TRMS:** dc + (20 Hz to 100 kHz).

#### Ohmmeter

Ohms Range	Maximum Display	Current Through Unknown	Accuracy: 1 yr., 18 to 28°C ±(% of reading + # of counts)
20 Ω	19.999 Ω	5 mA	.08 + 2
200 Ω	199.99 Ω	5 mA	.08 + 2
2 kΩ	1.9999 kΩ	1 mA	.03 + 1
20 kΩ	19.999 kΩ	100 μA	.03 + 1
200 kΩ	199.99 kΩ	10 μA	.03 + 1
2000 kΩ	1999.9 kΩ	1 μA	.04 + 1
20 MΩ	19.999 MΩ	100 nA	.15 + 1

**Input protection:** 250 V rms or 350 V (dc + peak ac).

#### DC Current and True RMS AC Current

Current Range	DC Current ± (% reading + # of counts)
200 μA, 2mA, 20 MA	(.07 + 2)
200 mA	(0.15 + 2)
2000 mA	(0.5 + 2)

#### AC Current Accuracy:

Range	Frequency	±(% of reading + # of counts)
200 μA–200 mA	20 Hz–30 Hz	2 + 50
	30 Hz–10 kHz	0.9 + 35
2000 mA	20 Hz–30 Hz	2 + 50
	30 Hz–10 kHz	1.2 + 20

#### Ordering Information

**HP 3466A Digital Multimeter.** Standard configuration in a streamlined portable case with handle, ac line power, batteries and charger, and test leads.

**HP 3466A Opt. 001,** streamlined portable case, ac line power only. less \$75

**HP 3466A Opt. 002,** rack and stack case, ac line power only. (Rack mount kit not included.) less \$10

**Price**  
\$1200

### Description

The Hewlett-Packard Model 3400A is a true root-mean-square (rms) voltmeter, providing a meter indication proportional to the heating power of the input waveform.

Six-decade frequency coverage makes the HP 3400A extremely flexible for all audio and most RF measurements and permits the measurement of broadband noise and fast-rise pulses.

Pulses or other non-sinusoids with crest factors (ratio of peak to rms) up to 10:1 can be measured full scale. Crest factor is inversely proportional to meter deflection, permitting up to 100:1 crest factor at 10% of full scale.

Permanent plots of measured data and higher resolution measurements can be obtained by connecting an X-Y plotter, strip chart recorder or digital voltmeter to the convenient rear-panel dc output. The dc output provides a linear 0 to 1 volt drive proportional to meter deflection.

### Specifications

**Voltage range:** 1 mV to 300 V full scale, 12 ranges.

**dB range:** –72 to +52 dBm (0 dBm = 1 mW into 600Ω).

**Frequency range:** 10 Hz to 10 MHz.

**Response:** responds to rms value (heating value) of the input signal for all waveforms.

**Meter accuracy:** % of full scale (20°C to 30°C)\*

10Hz	50Hz	1MHz	2MHz	3MHz	10MHz
±5%	±1%	±2%	±3%	±5%	

**AC-to-DC converter accuracy:** % of full scale (20°C to 30°C)\*

10Hz	50Hz	1MHz	2MHz	3MHz	10MHz
±5%	±0.75%	±2%	±3%	±5%	

\* TC: ±0.1% from 0°C to 20°C and 30°C to 55°C.

**Crest factor:** (ratio of peak to rms amplitude of input signal): 10 to 1 at full scale (except where limited by maximum input) inversely proportional to meter deflection (e.g., 20 to 1 at half-scale, 100 to 1 at tenth scale).

**Input impedance:** from 0.001 V to 0.3 V range: 10 MΩ shunted by <50 pF. From 1.0 V to 300 V range: 10 MΩ shunted by <20 pF. ac coupled input.

**Output:** negative 1 V dc into open circuit at full-scale deflection, proportional to meter deflection from 10–100% of full scale. 1 mA maximum; nominal source impedance is 1000Ω. Output noise <1 mV rms.

**Accessories furnished:** 10110A Adapter, BNC to dual banana jack.

#### Ordering Information

**HP 3400A Opt 001** spreads out the dB scale by making it the top scale of the meter. add \$40

Rear terminals in parallel with front panel terminals and linear log scale uppermost on the meter face are available on special order.

#### HP 3400A RMS Voltmeter

Fast ship product - see page 766.

**\$1750**