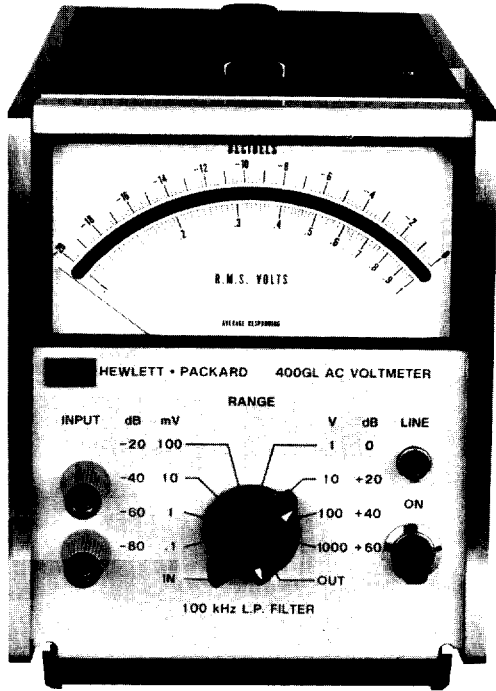


# MULTIMETERS

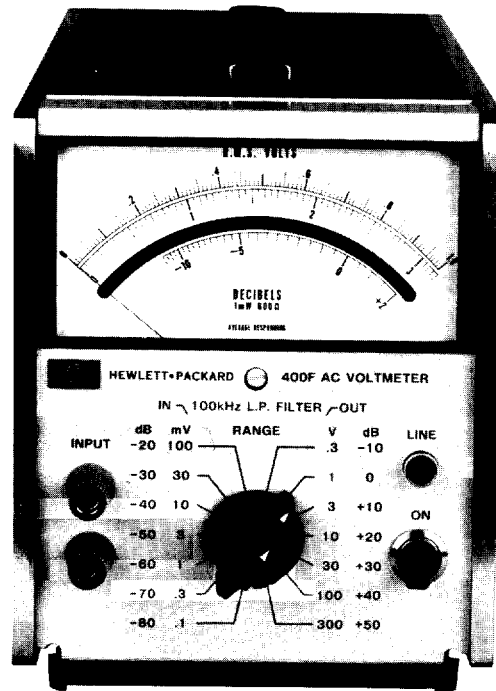
## AC Voltmeter, 10 Hz to 10 MHz

HP Models 400E, EL, F, FL, GL

221



HP 400GL



HP 400F

### Specifications

	HP 400E/EL*	HP 400F/FL*	HP 400 GL
Voltage range	1 mV to 300 V F.S. 12 ranges	100 $\mu$ V to 300 V F.S. 14 ranges	-80 dB to +60 dB F. S. 8 ranges
Frequency range	10 Hz-10 MHz	20 Hz-4MHz	20 Hz-4 MHz
Input impedance	10 M $\Omega$ on all ranges <25 pF to <12 pF depending on ranges	10 M $\Omega$ on all ranges <30 pF to <15 pF depending on ranges	10 M $\Omega$ on all ranges <30 pF to <15 pF depending on ranges
Accuracy*	$\pm$ (% reading + % range) <b>3 mV-300 V ranges</b> 10 Hz-40 Hz: $\pm(2.5 + 2.5)$ 40 Hz-2 MHz: $\pm(1 + 0)$ 2 MHz-4 MHz: $\pm(1.5 + 1.5)$  <b>4 MHz-10 MHz</b> 3 mV range: $\pm(2.5 + 2.5)$ 10 mV-3V range: $\pm(3.0 + 2.0)$ for 4 MHz to 6 MHz $\pm(3.75 + 3.75)$ for 6 MHz to 10 MHz 10 V-30 V: $\pm(3.5 + 3.5)$  <b>1 mV range</b> 10 Hz-40 Hz: $\pm(2.5 + 2.5)$ 40 Hz-500 kHz: $\pm(1 + 0)$ 500 kHz-4 MHz: $\pm(2.5 + 2.5)$	$\pm$ (% reading + % range) (% reading) <b>300 <math>\mu</math>V-300 V ranges</b> F FL 20 Hz-40 Hz: $\pm(2 + 2)$ $\pm 4$ 40 Hz-100 Hz: $\pm(1 + 1)$ $\pm 2$ 100 Hz-1 MHz: $\pm(\frac{1}{2} + \frac{1}{2})$ $\pm 1$ 1 MHz-2 MHz: $\pm(1 + 1)$ $\pm 2$ 2 MHz-4 MHz: $\pm(2 + 2)$ $\pm 4$  <b>100 <math>\mu</math>V range</b> 30 Hz-60 Hz: $\pm(2 + 2)$ $\pm 4$ 60 Hz-100 kHz: $\pm(1 + 1)$ $\pm 2$ 100 kHz-500 kHz: $\pm(1 + (+0, -7))$ $\pm 1, -8$	<b>+60 dB range</b> 20 Hz-40 Hz: $\pm 0.4$ dB 40 kHz-100 kHz: $\pm 0.2$ dB  <b>-60 dB thru +40 dB ranges</b> 20 Hz-40 Hz: $\pm 0.4$ dB 40 Hz-500 kHz: $\pm 0.2$ dB 500 kHz-2 MHz: $\pm 0.4$ dB 2 MHz-4 MHz: +0.2, -0.8 dB  <b>-80 dB range</b> 30 Hz-60 Hz: $\pm 0.4$ dB 60 Hz-100 kHz: $\pm 0.2$ dB 100 kHz-500 kHz: + 0.2, -0.8 dB
Recovery	<2 s for 80 dB overload		
Overload	**500 V rms ac, 300 V dc		**1200 V rms max. input; 1000 V dc max. input
Calibration	Responds to average value of input; calibrated in rms value of sine wave. Scale -10 to +2 dB between ranges, 100 divisions on 0 to 1 scale. The dB scale reads -10 to +2 dB; 10 dB between ranges.		Responds to average value of input; calibrated in rms value of sine wave. Linear -20 to 0 dB scale, 100 divisions. 20 dB per range. Log voltage scale.
Weight	Net, 2.7 kg (6 lb). Shipping, 4.1 kg (9 lb)		
Size	159 mm H (without removable feet) x 130 mm W x 297 mm D (6.25" x 5.13" x 11")		
Power	AC: 115 or 230 V +10%, 48 to 440 Hz, 6 VA max. DC: External batteries: + and - voltages between 35 V and 55 V		
Price:	HP 400E, \$1,090; HP 400 EL \$1,090	HP 400F, \$1,090; HP 400 FL, \$1,090	HP 400 GL, \$1,090

\* NOTE: HP 400 EL same as HP 400E, and HP 400FL same as HP 400F, except for calibration. Linear dB scale -10 dB to +2 dB, 10 dB between ranges. Log voltage scales 0.3 to 1 and 0.8 to 3, 120 divisions from -10 dB +2 dB. HP 400 FL accuracy is % of reading in dB only.

\*\* AC overload voltage decreases with increasing frequency.