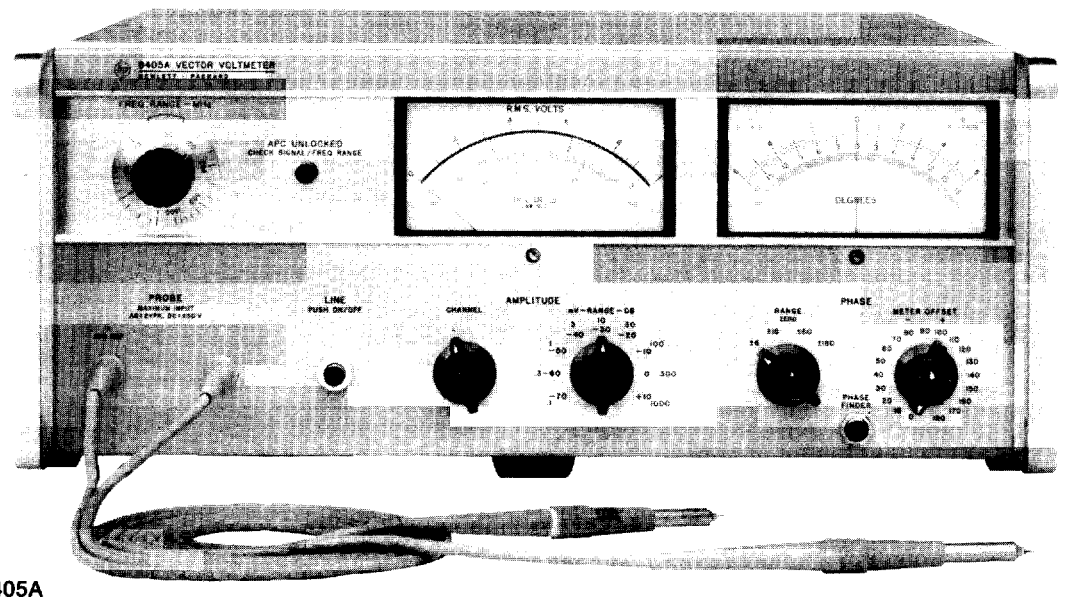
- Accurate voltage and phase measurement
- 1 to 1000 MHz
- 50/75 Ω coaxial measurements



HP 8405A

The HP 8405A Vector Voltmeter measures voltage vectors described by both magnitude and phase. This capability makes the HP 8405A a unique instrument for about any design and test application in the frequency range 1 to 1000 MHz.

In addition to absolute voltage measurements, capabilities include insertion loss and computed group delay of bandpass filters and other transmission devices, gain and phase margin of amplifiers, complex impedance of mixers, antennas, matching the electrical lengths of cables, s-parameters of transistors, amplitude modulation index, RF distortion measurements and in-circuit probing. Simultaneous 50/75 ohm coaxial transmission and reflection measurements can be made using the HP 8502A/B transmission/reflection test set, and 50/75 ohm coaxial high resolution transmission comparison measurements can be made using the HP 11850A/B three-way power splitter. The HP 11852A 50-to-75 ohm minimum loss pad can be used to adapt the HP 11536A 50 ohm tee to a 75 ohm environment.

The HP 8405A achieves this measurement versatility through its two-channel capability enabling voltage magnitude measurements in either channel, thus allowing ratio measurements and phase difference measurements between the two channels. Gain or loss in excess of 90 dB and phase measurements with 0.1° resolution over a 360° phase range are possible.

Accuracy is achieved through the 1 kHz bandwidth entailing response only to the fundamental frequency of the input signal. Also, phase-locked coherent sampling to translate 1 to 1000 MHz RF signals to 20 kHz IF signals enables accurate detection of voltage magnitude and phase. Automatic phase-locked tuning makes it possible to select the one of 21 overlapping octave ranges which contains the input signal frequency by simply rotating a switch.

Specifications

Frequency range: 1 MHz to 1 GHz in 21 overlapping octave bands; tuning automatic within each band.

Isolation between channels: 1 to 300 MHz, >100 dB; 300 to 1,000 MHz >80 dB.

Maximum input: ac, 2 V peak; dc, ±50 V.
Input impedance (nominal): 0.1 MΩ shunted by 2.5 pF; 1 MΩ shunted by 2 pF when HP 11576A 10:1 Divider is used; 0.1 MΩ shunted by 5 pF when HP 10216A Isolator is used. AC coupled.

Voltage Range (rms)

Channel	1 - 10 MHz	10 - 500 MHz	500 - 1000 MHz
A	1.5 mV - 1.0 V	300 μV - 1.0 V	500 μV - 1.0 V
B	<100 μV - 1.0 V	<100 μV - 1.0 V	<100 μV - 1.0 V

Voltmeter ranges: 100 μV to 1 V rms full scale in 10 dB steps.
Voltage ratio accuracy: 1–200 MHz, 0.2 dB for −60 to 0 dB ranges and 0.5 dB for −70 dB and +10 dB ranges; 200–1000 MHz, 0.2 dB for −60 to −10 dB ranges, 0.5 dB for −70 dB and 0 dB ranges and 1.5 dB for +10 dB range.
Phase range: 360° indicated on zero-center meter with end-scale ranges of ±180°, ±60°, ±18°, and ±6°.
Phase resolution: 0.1° at any phase angle.
Phase meter offset: ±180° in 10° steps.
Phase accuracy: ±1.5° (equal voltage Channel A and B).
Accessories furnished: two HP 11576A 10:1 Dividers, two HP 10216A Isolators, two HP 10218A BNC Adapters, six ground clips for HP 11576A or 10216A; six replacement probe tips.
Bandwidth: 1 kHz.
Power: 115 or 230 V ±10%, 50 to 60 Hz, 35 W.
Weight: net, 13.9 kg (31 lb); shipping, 16.3 kg (36 lb).
Size: 177 H x 425 W x 467 mm D (7.0″ x 16.75″ x 18.38″).

HP 11570A Accessory Kit

50 Ω Tee: HP 11536A: for monitoring signals on 50 Ω transmission lines without terminating line. Kit contains two with type N RF fittings.
50 Ω Power splitter: HP 11549A: all connectors Type N female.
50 Ω Termination: HP 908A: for terminating 50 Ω coaxial systems in their characteristic impedance.
Shorting plug: HP 11512A: Shorting Plug, Type N male.

Ordering Information	Price
HP 8405A Vector Voltmeter	$5,690
Opt 002: linear dB scale	add $25
HP 11570A Accessory Kit (measurement in 50 Ω systems only)	$955