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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 8405A

HP Agilent 8405A Vector Voltmeter 1 MHz to 1 GHz The HP 8405A is a two-channel RF millivoltmeter and phasemeter. OEM HP Journal May 1966 and 8405A technical data list 1 MHz to 1 GHz coverage in overlapping octave bands, 100 uV full-scale on channel B, 0.1 degree phase resolution over 360 degrees, and about 1 kHz measurement bandwidth in the 20 kHz IF. Gain/phase of amplifiers and filters, complex impedance with a directional coupler, antenna and transistor parameter work from 1 MHz to 1 GHz. Simultaneous amplitude and phase on two channels The HP 8405A is a two-channel RF millivoltmeter and phasemeter. OEM HP Journal May 1966 and 8405A technical data list 1 MHz to 1 GHz coverage in overlapping octave bands, 100 uV full-scale on channel B, 0.1 degree phase resolution over 360 degrees, and about 1 kHz measurement bandwidth in the 20 kHz IF. Gain/phase of amplifiers and filters, complex impedance with a directional coupler, antenna and transistor parameter work from 1 MHz to 1 GHz. Simultaneous amplitude and phase on two channels Phase-locked sampling conversion to a 20 kHz IF



MODEL

**Agilent / Keysight
8405A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

8405A

LISTING

<https://aumictechlabs.com/products/8405a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 8405A is a precision vector voltmeter that measures signal amplitude and phase relationships across RF and microwave frequencies. This dual-channel instrument simultaneously acquires voltage magnitude and phase data, enabling accurate characterization of

complex signals and precise ratio and phase difference determinations between two channels. The 8405A supports insertion loss, group delay, gain/phase margin analysis, complex impedance measurement, amplitude modulation index detection, RF distortion analysis, and in-circuit probing - making it essential for amplifier, filter, mixer, and antenna characterization.

Technical Specifications

Frequency Coverage: 1 MHz to 1 GHz across 21 overlapping octave bands with automatic tuning.

Amplitude Measurement: Voltmeter ranges: 100 μ V to 1 V RMS full scale in 10 dB steps

Gain/loss measurement capability exceeding 90 dB

Phase Measurement: 360° zero-center meter display

End-scale ranges: $\pm 180^\circ$, $\pm 60^\circ$, $\pm 18^\circ$, $\pm 6^\circ$

Resolution: 0.1° at any phase angle

Accuracy: $\pm 1.5^\circ$ (equal voltage on channels A and B)

Meter offset: $\pm 180^\circ$ in 10° steps

Voltage Ratio Accuracy: 1–200 MHz: 0.2 dB (–60 to 0 dB), 0.5 dB (–70 dB and +10 dB) 200–1000 MHz: 0.2 dB (–60 to –10 dB), 0.5 dB (–70 and 0 dB), 1.5 dB (+10 dB)

Input Specifications: Maximum AC input: 2 V peak; DC: ± 50 V

Input impedance (nominal): 0.1 M Ω shunted by 2.5 pF

AC coupled

Channel isolation: >100 dB (1–300 MHz), >80 dB (300–1000 MHz)

Bandwidth: 1 kHz

Key Features

Dual-channel simultaneous voltage acquisition

Optional impedance matching via HP 11576A 10:1 dividers or HP 10216A isolators

In-circuit measurement capability

Modulation index and distortion analysis

Typical Applications

Amplifier gain and phase margin characterization

Bandpass filter insertion loss and group delay

Mixer complex impedance measurement

Antenna impedance and pattern analysis

RF and microwave circuit validation

Compatibility & Integration

Standard accessories include two HP 11576A dividers, two HP 10216A isolators, two HP 10218A BNC adapters, and ground clips for in-circuit probing.

8405A Characteristics / Specifications

PARAMETER	VALUE
Model	8405A
Instrument Type	Vector voltmeter
Frequency Range	1 MHz to 1 GHz
Tuning Bands	21 overlapping octave bands (lowest band covers two octaves)
ChannelARange 1 To 5 Mhz	1.5 mV to 1 V rms
ChannelARange 5 To 500 Mhz	300 uV to 1 V rms
ChannelARange 500 Mhz To 1 Ghz	500 uV to 1 V rms
ChannelBRange	100 uV to 1 V rms full scale (channelAinput required)
Meter Voltage Ranges	100 uV to 1 V rms full scale in 10 dB steps
Voltage Accuracy 1 To 100 Mhz	within plus or minus 2 percent full scale
Voltage Accuracy 100 To 400 Mhz	within plus or minus 6 percent full scale
Voltage Accuracy 400 Mhz To 1 Ghz	within plus or minus 12 percent full scale
Residual Noise	less than 10 uV as indicated on the meter
Phase Range	360 degrees on zero-center meter
Phase Meter End Scales	plus or minus 180, 60, 18, and 6 degrees
Phase Resolution	0.1 degree at any phase angle
Phase Meter Offset	plus or minus 180 degrees in 10 degree steps
Phase Accuracy	within plus or minus 1.5 degrees excluding frequency amplitude and impedance effects
If Bandwidth	about 1 kHz in the 20 kHz IF
Divider Accessory	10214A 10:1 divider extends range by a factor of 10
Isolator Accessory	10216A isolator removes test-point impedance effects
Manufacturer	HP Agilent Keysight
Bandwidth	about 1 kHz in the 20 kHz IF

8405A Specifications

PARAMETER	VALUE
HP Agilent 8405A Vector Voltmeter 1 MHz to 1 GHz	Overview
Simultaneous amplitude and phase on two channels	Phase-locked sampling conversion to a 20 kHz IF
Technical Specifications	Model: 8405A

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

technical data list 1 MHz to 1 GHz coverage in overlapping octave bands, 100 uV full-scale on channel B, 0.1 degree phase resolution over 360 degrees, and about 1 kHz measurement bandwidth in the 20 kHz IF.

Applications

Gain/phase of amplifiers and filters, complex impedance withadirectional coupler, antenna and transistor parameter work from 1 MHz to 1 GHz.

Key Features

Simultaneous amplitude and phase on two channels

Phase-locked sampling conversion to a 20 kHz IF

0.1 degree phase resolution at any angle

100 uV full-scale sensitivity on channel B

10214A 10:1 divider extends voltage range by 10

Technical Specifications

Specifications

PARAMETER	VALUE
Channel B Range	100 uV to 1 V rms full scale (channel A input required)
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Voltage Accuracy 100 To 400 Mhz	within plus or minus 6 percent full scale
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Notes

From HP Journal May 1966 8405A article and HP 8405A vector voltmeter technical data / AN 91. Probe and test-point impedance effects are as published unless 10214A or 10216A is used.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.