

DOCUMENTATION SUR LE VOLTMÈTRE ANALOGIQUE HEWLETT-PACKARD HP 3400A

FICHE N° 3891

PRÉSERVER
SAUVEGARDER
VALORISER

Période de fabrication : 1975-1999
Fabricant : Hewlett-Packard Company
Domaines : Physique
Sous-domaines : Electronique, Electricité
Organisme : Université de Rennes
Ville : Rennes
Modèle : HP 3400A
Matériaux : Papier

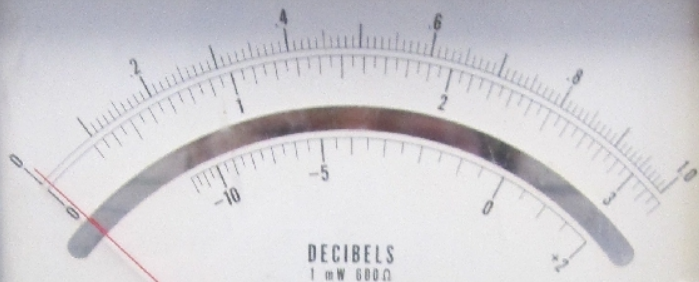
Description

Cette documentation en anglais est extraite du catalogue d'instruments édité par Hewlett-Packard en 1978 (page 41). Elle décrit les principales caractéristiques du voltmètre électronique analogique HP 3400A. Elle détaille ses caractéristiques techniques et des données générales ainsi que ses accessoires. Il existe aussi une notice en anglais décrivant en détail le fonctionnement de l'appareil.

Utilisation

Cet appareil était utilisé lors des travaux pratiques d'électronique par les étudiants de Licence ou de Maîtrise. Il permettait d'étudier par exemple la courbe de réponse d'un circuit avec la fréquence (amplitude en volts et atténuation en dB).

VOLTS



DECIBELS
1 mW 600Ω

R.M.S. RESPONDING



HEWLETT-PACKARD



3400A RMS VOLTMETER

INPUT



RANGE			
dB	VOLTS	VOLTS	dB
-10	.3	1	0
-20	.1	3	+10
-30	.03	10	+20
-40	.01	30	+30
-50	.003	100	+40
-60	.001	300	+50

LINE



ON



ANALOG VOLTMETERS

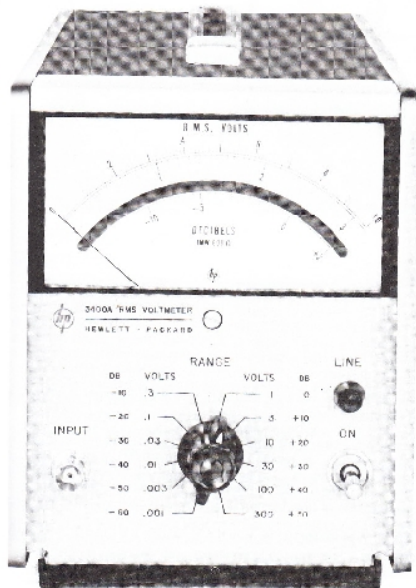
10 Hz to 10 MHz true RMS voltmeter

Model 3400A



- 10 MHz bandwidth
- High crest factor for accurate pulse measurements
- Stable, linear dc output

- 1 mV full-scale sensitivity
- 10 MΩ input impedance
- Taut-band individually calibrated meter



RMS current

True rms current measurements can be made conveniently by using the HP Model 456A Current Probe with the Model 3400A. See page 517.

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%	±1%	±3%	±5%	±5%

Ac-to-dc converter accuracy: % of full scale (20°C to 30°C)*

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

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).

Maximum continuous input voltage: 500 V ac peak at 1 kHz on all ranges; 600 V dc on all ranges.

Input impedance: from 0.001 V to 0.2 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.

Response time: for a step function, <5 s to final value.

AC overload: 30 dB above full scale or 800 V p, whichever is less, on each range.

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.

Power: 115 or 230 V ±10%, 48 to 66 Hz, 15 VA max.

Size: 159 H (without removable feet) × 130 W × 279 mm D (6 1/4" × 5 1/8" × 11"); 1/2 module.

Weight: net, 3.3 kg (7 3/4 lb). Shipping, 4.5 kg (10 lb).

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

Accessories available

11001A Cable, 45 in. long, male BNC to dual banana plug

10503A Cable, 4 ft long, male BNC connectors

11002A Test Lead, dual banana plug to alligator clips

11003A Test Leads, dual banana plug to probe and alligator clip

11076A Carrying Case

Ordering information

3400A Opt 001 spreads out the dB scale by making it the top scale of the meter. Rear terminals in parallel with front panel terminals and linear log scale uppermost on the meter face are available on special order.

3400A RMS voltmeter

* 10: ±3.1% from 20°C to 30°C and 30°C to 55°C.

Description

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

Six-decade frequency coverage makes the 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.

HP 3400A

OPERATING AND SERVICE MANUAL

RMS VOLTMETER

3400A



HEWLETT  PACKARD

HP 3400A



Pour nous citer :

Base de la Mission nationale de sauvegarde et de valorisation du patrimoine scientifique et technique contemporain, PATSTEC, Documentation sur le voltmètre analogique Hewlett-Packard HP 3400A (Hewlett-Packard Company), <https://www.patstec.fr/ressources/objets/detail?id=15909>, consulté le 2026-07-28