DC VOLTAGE

Accuracy: ±(% of reading + volts) rear terminal, one hour warmup, specified over time since last calibration, and operating temperature.

90 Days, 18°C to 28°C, Autozero On

Range	Integration T:	ime in Number	of Power Line	e Cycles (NPLC)
<u></u>	1	0.1	0.005	0.0005
30 mV 300 mV 3 V 30 V 300 V	0.008%+6µV 0.008%+8µV	0.02%+8µV 0.008%+10µV 0.008%+40µV 0.008%+700µV 0.008%+4mV	0.008%+40µV 0.008%+400µV	0.02%+60µV 0.008%+400µV 0.008%+4mV 0.008%+40mV 0.008%+400mV

1 Year: Add 0.01% of reading to the 90 Days Specifications

Temperature Coefficient:

Add as an additional accuracy error using \pm (% of reading + volts) per °C change outside 18° to 28°C, as long as the operating temperature is maintained between 0 to 18° or 28° to 55°C.

For 30 mV Range add 0.001% + 30 nV For 300 mV and 3 V Ranges add 0.0006% + 300 nV For 30 V and 300 V Ranges add 0.0006% + 30 µV

Auto-zero Off:

Add as an additional accuracy error if autozero is turned off. Assumes stable environment, ±1°C, for 24 hours.

For 30 mV, 300 mV, and 3 V Ranges add 10 μV For 30 V Range add 100 μV

For 300 V Range add 1 mV

Resolution:

Range	Integration T	ime in Number	of Power Line	Cycles (NPLC)
	1	0.1	0.005	0.0005
30 mV	10nV	100nV	lμV	10µV
300 mV	100nV	lμV	10µV	100µV
3 V	lμV	10µV	100μV	1mV
30 V	10μV	100μV	1mV	10mV
300 V	100μV	lmV	lOmV	100mV

Over-ranging: 1% of full scale

Table 6-2 HP 44701A Specifications (Cont.)

Reading Rate/Noise Rejection:

		of Power	ion Time i Line Cycl	les (NPLC)
Integration Time: 60 Hz 50 Hz	16.7mS 20.0mS	i		10MS 10MS
Number of Converted Digits	6 1/2	5 1/2	4 1/2	3 1/2
Reading Rate (reading/sec) with autozero and auto- range off: 60 Hz 50 Hz	57 48	415 360	1350 1350	1600 1600
Min. Noise Rejection (dB) Normal Mode Rejection at 50 or 60 Hz ±0.09%	60	0	0	0
DC Commom Mode Rejection with 1 $k\Omega$ in low lead	120	120	120	120
Effective Common Mode Rejection, DC to 60 Hz with 1 k Ω in low lead	150	90	90	90

RESISTANCE

Accuracy:

 \pm (% of reading + ohms), 4-wire or 2-wire ohms, offset compensation on or off, rear terminal inputs, one hour warmup, specified over time since last calibration, and operating temperature. (Current source compliance voltage is at least 6 V).

90 Days, 18°C to 28°C, Autozero On

Range	Integration T	1	i i	e Cycles (NPLC)
	1	0.1	0.005	0.0005
30 Ω	0.02%+6mΩ	0.02%+20mΩ	0.02%+40mΩ	0.02%+75mΩ
300 Ω	$0.015\%+6$ m Ω	0.015%+20mΩ	- · · · · · · · · · · · · · · · · ·	0.015 % $+400$ m Ω
3 kΩ	$0.015\%+60$ m Ω	0.015%+200mΩ	0.015%+650mΩ	0.015%+4Ω
30 kΩ	0.015%+80mΩ	0.015%+400mΩ	0.015%+5Ω	0.015%+80Ω
300 kΩ	$0.015 \% + 1 \Omega$	1	0.015%+50Ω	0.015%+800Ω
3 MΩ	0.1%+17Ω	0.1%+70Ω	0.1%+500Ω	0.1%+6kΩ

1 Year: Add 0.01% of reading to the 90 Days Specifications

Table 6-2 HP 44701A Specifications (Cont.)

Ohms Current Source Output:

30 Ω and 300 Ω Ranges: 1 mA 3 k Ω and 30 k Ω Ranges: 100 μ A

300 k Ω Range: 10 μ A 3 M Ω Range: 1 μ A

Temperature Coefficient:

Add as an additional accuracy error using \pm (% of reading + ohms) per °C change outside 18° to 28°C, as long as the operating temperature is maintained between 0 to 18°C or 28° to 55°C.

For 30 Ω , 300 Ω , and 3 $k\Omega$ Ranges add 0.0006% + 500 $\mu\Omega$ For 30 $k\Omega$ Range add 0.0006% + 5 m Ω For 300 $k\Omega$ Range add 0.001% + 50 m Ω For 3 M Ω Range add 0.001% + 500 m Ω

Reading Rate:

		of Power		in les (NPLC) 0.0005
Reading Rate (reading/sec) with autozero and auto-	25	100	155	160
range off: 60 Hz 50 Hz	20	95	155	160

AC VOLTAGE

Accuracy:

±(% of reading + volts), 1 NPLC integration time, one hour warmup, specified over time since last calibration, and operating temperature. AC measurements are made with an average detector calibrated in RMS, and are intended to measure sine waves between 45 Hz to 500 Hz (AC coupled). The voltmeter accuracy is specified only when the input voltage is greater than 10% of full scale.

Range	90 Days, 18°C to 28°C	1 Year, 18°C to 28°C
200 mV	0.5% + 600 µV	0.75% + 900 µV
2 V	0.5% + 6 mV	0.75% + 9 mV
20 V	0.5% + 60 mV	0.75% + 90 mV
200 V	0.5% + 600 mV	0.75% + 900 mV

Table 6-2 HP 44701A Specifications (Cont.)

Temperature Coefficient:

Add as an additional accuracy error using \pm (% of reading + volts per °C change outside 18° to 28°C, as long as the operating temperature is maintained between 0 to 18°C or 28° to 55°C.

For 200 mV Range add 0.01% + 7 μ V For 2 V Range add 0.01% + 70 μ V For 20 V Range add 0.01% + 700 μ V For 200 V Range add 0.01% + 7 mV

Reading Rate: 1.5 seconds/reading; changing to the AC Volts

function requires approximately 4 seconds.

INPUT CHARACTERISTICS

Maximum Input Voltage: 350 V peak or 250 V DC between any two

points (terminals or chassis).

Warning: This voltage is higher than the ratings for multiplexers or high-speed voltmeters that can share the analog

backplane.

Input Impedance:

Ranges	High to Low		Guard to Chassis
Resistance (Ω): 30 mV to 3 V Ranges 30 V, 300 V Ranges	>10° 10° ±5%	>108 >108	>108 >108
Max. Capacitance (pF) at 1 MHz, all Ranges	120	2700	2500

Maximum Bias Current: Current sourced by high to low into rear

input terminals or backplane.

±1 nA DC