

# 8 SYSTEM dc POWER SUPPLIES

## Dynamic Measurement dc Sources-40 W and 100 W

Ideal for wireless/portable product test  
 Dynamic pulse measurement  
 Precision low current measurement  
 Low-output noise  
 High-speed programming  
 SCPI (Standard Commands for Programmable Instruments)  
 HP-IB and RS-232 interface



DESIGNED FOR  
**HP-IB**  
 SYSTEMS



### SPECIFICATIONS

(at 0° to 55° C unless otherwise specified)

#### Single Output System

HP 66312A			HP 66332A	
Output ratings	Voltage/Current		0 to 20 V/0 to 2 A	0 to 20 V/0 to 5 A
Programming accuracy at 25° C ±5° C	Voltage/+Current	0.05%+	10 mV/1 mA	10 mV/2 mA
Ripple and noise (20 Hz to 20 MHz, with outputs ungrounded or with either terminal grounded)	Voltage	Normal mode (rms/p-p)	0.5 mV/3 mV	0.3 mV/3 mV
		Fast mode (rms/p-p)	NA	1 mV/10 mV
	Current	(rms)	1 mA	2 mA
DC measurement accuracy via HP-IB or front-panel meters with respect to actual output at 25° C ± 5° C	Voltage	0.03% +	3 mV	3 mV
	Low current range –20 mA to +20 mA	0.1% +	2.5 µA	2.5 µA
	High current range +20 mA to + rated I	0.2% +	0.25 mA	0.5 mA
	–20 mA to – rated I	0.2% +	0.85 mA	1.1 mA
Load regulation	Voltage/Current		2 mV/0.5 mA	2 mV/1 mA
Line regulation	Voltage/Current		0.5 mV/0.5 mA	0.5 mV/ 0.5 mA
Transient response time	Less than 100 µs (50 µs in the fast mode) for the output voltage to recover to its previous level (within 0.1% of the voltage rating of the supply) following any step change in load current of up to 50% of the output current rating of the supply			
Supplemental Characteristics (Non-warranted characteristics determined by design and useful in applying the product)				
Average programming resolution	Voltage		5 mV	5 mV
	Current		0.5 mA	1.25 mA
OVP accuracy	2.4% +		240 mV	240 mV
Sink current*			1 A	5 A

\* For the HP 66332A, the sink current tracks the programmed current to within 2 mA for programmed currents greater than 5 mA. Below 5 mA, the sink current remains at 5 mA. The sink current does not track the programmed current for the 66312A. Sink current is fixed at 1 A.

**Dynamic Measurements:** Accuracy of the instantaneous voltage measurement is 0.03% + 5 mV. Accuracy of the instantaneous current measurement is 0.6% + 1 mA (2 mA for HP 66332A). The dc, rms, maximum, minimum, high-level and low-level voltage and current measurements are calculated from the instantaneous voltage and current readings. Up to 4096 data points can be acquired. The sampling interval can be varied from 15.6 µs to 31,200 s. The instantaneous data points can also be read back from the storage buffer. Dynamic measurements on current waveforms with frequency content up to 10 kHz can be made on the low- or high-current range. Above 10 kHz, accurate current measurements can only be made in the high range.

**dc Floating Voltage:** Output terminals can be floated up to ±240 Vdc maximum from chassis ground (50 volts for HP 66312A)

**Remote Sensing:** Up to two volts dropped in each load lead. Add 2 mV to the voltage load regulation specification for each one volt change in the negative output lead (positive output lead for the HP 66312A) due to load current change.

**Command-Processing Time:** Average time required for the output voltage to begin to change following receipt of digital data is 4 ms for the power supplies connected directly to the HP-IB. (Display disabled.)

**Output-Programming Response Time:** The rise and fall time (10/90% and 90/10%) of the output voltage is less than 2 ms (400 µs for the HP 66332A in the fast mode). The output voltage change settles within 1 LSB (0.025% x rated voltage) of final value in less than 6 ms (2 ms in the fast mode).

**Measurement Time:** Average time to process query, calculate measurement parameter and return data is 20 ms. The buffer data acquisition time which is user-programmable must be added. For the default condition, (2048 data points and 15 µs sampling interval) this time is 30.7 ms.

**HP-IB Interface Capabilities:** IEEE-488.2, SCPI command set, and 6630x Series programming capability.

**Input Power (full load):** HP 66312A: 160 VA, 100 W; HP 66332A: 350 VA, 250 W

**Regulatory Compliance:** Listing pending to UL3111-1; certified to CSA22.2. No. 1010-1, conforms to IEC1010-1, complies with EMC directive 89/336/EEC (ISM Group 1, Class B).

**Warranty Period:** Three years

**Size:** HP 66312A: 212.8 mm W x 88.1 mm H x 368.3 mm D (8.4 in x 3.5 in x 14.5 in); HP 66332A: 425.5 mm W x 88.1 mm H x 364.4 mm D (16.75 in x 3.5 in x 14.3 in) See pages 44 and 45 for more details

**Weight:** HP 66312A: 8.85 kg (19.5 lb) net; 11.1 kg (24.5 lb) shipping; HP 66332A: 12.7 kg (28 lb) net, 15.0 kg (33 lb) shipping

### Ordering Information

**STANDARD:** 104 to 127 Vac, 47 to 63 Hz

**Opt 100** 87 to 106 Vac, 47 to 63 Hz

**Opt 220** 191 to 233 Vac, 47 to 63 Hz

**Opt 230** 207 to 253 Vac, 47 to 63 Hz

**Opt 020** Front-panel Binding Posts (HP 66332A only)

**Opt 760** Isolation and Reversal Relays (HP 66332A only)

**Opt 1CM** Rack-mount Kit,

HP 66312A: HP p/n 5062-3972

HP 66332A: HP p/n 5062-3974

**Opt 1CP** Rack-mount Kit with Handles,

HP p/n 5062-3975 (HP 66332A only)

**Opt AXS** Rack-mount Kit for side-by-side mounting, (66312A only)

Locking Kit HP p/n 5061-9694;

Flange Kit HP p/n 5062-3974

**Opt OBN** Service Manual, Extra Programming Guide and Operating Guide

### ACCESSORIES

**HP p/n 1494-0060**

Rack Slide Kit

(HP 66332A only)

HP 66312A

HP 66332A

Visit our web site  
<http://www.hp.com/go/power>