A

Specifications

Specifications

Table A-1 lists the specifications of the dc source. Unless otherwise noted, specifications are warranted over the ambient temperature range of 0 to 55 °C. Specifications apply with typical cellular phone capacitive loads from 0µF to 12,000µF. Sensing is at the rear terminals of the power supply after a 30-minute warm-up period. Sense terminals are externally jumpered to their respective output terminals.

Table A-1. Performance Specifications

Parameter		HP 66311A
Output Ratings	Voltage: Current: Peak Current:	0 – 15 V 0 – 3 A[1] 5 A[2]
Programming Accuracy (@ 25°C ±5°C)	Voltage: 0.05% + +Current: 0.05% +	10 mV 1.33 mA
DC Measurement Accuracy (via HP-IB or front panel meters with respect to actual output @ 25°C ±5°C)	Voltage: 0.03% + Low Current range –20 mA to +20 mA: 0.1% + High Current range +20 mA to +rated I: 0.2% + –20 mA to – rated I: 0.2% +	5 mV[3] 2.5 µA 0.5mA 1.1mA
Ripple and Noise (in the range of 20 Hz to 20 MHz with outputs ungrounded or with either terminal grounded)	Voltage (rms/p-p): Current (rms):	1 mV/6 mV[4] 2 mA
Load Regulation (change in output voltage or current for any load change within ratings)	Voltage: Current:	2 mV 0.75 mA
Line Regulation (change in output voltage or current for any line change within ratings)	Voltage: Current:	0.5 mV 0.75 mA
Transient Response Time (for the output voltage to recover to within 20 mV of its final value following a 0.1 to 1.5 A load change in the high capacitance compensation range)		< 35 µs

[1] From 45° to 55° average current derates linearly from 3 A to 2.5 A. All other specifications are unaffected.
[2] Peak current for up to a 7 millisecond time period. Average current over 11.7 milliseconds cannot exceed 3 A.
[3] Specification applies for output voltages greater than 10mV.
[4] Specification is for phone capacitance greater than 5µF.

Supplemental Characteristics

Table A-2 lists the supplemental characteristics, which are not warranted but are descriptions of typical performance determined either by design or type testing.

Table A-2. Supplemental Characteristics

Parameter		HP 66311A
Input Rating: (at full load from 47 – 63 Hz)	100 Vac mains (87-106 Vac): 115 Vac mains (104-127 Vac): 220 Vac mains (191-233 Vac): 230 Vac mains (207-253 Vac):	1.6 A, 100 W 1.4 A, 100 W 0.8 A, 100 W 0.75A, 100 W
Output Programming Range	Voltage: Current: OVP:	0 – 15.535 V 0 – 3.0712 A 22 V
Average Programming Resolution	Voltage: Current: OVP:	3.75 mV 0.67 mA 100 mV
OVP Accuracy	2.4 % +	240 mV
Maximum Current Measurement		7 A
Average Current Measurement Resolution	Hight Range: Low Range:	213 µA 0.6 µA
Sink Current		- 2 A @ 7.5 V[1]
Programming Accuracy Temperature Coefficient (change/C°)	Voltage: 0.01% + Current: 0.01% + OVP: 0.015% +	0.5 mV 15 µA 4 mV
Readback Accuracy Temperature Coefficient (change/C°)	Voltage: 0.01% + Current (DC): 0.02% + Current (ACDC): 0.05% + Current (Low Range): 0.01% +	300 µV 15 µA 120 µA 0.3 µA
Drift[2]	Voltage: 0.01% + Current: 0.01% +	1 mV 30 µA
Output Voltage Rise/Fall Time (for a change from 10% to 90% or 90% to 10% of the total excursion)		< 200 µs
Output Voltage Settling Time (to settle within 1 LSB or 0.025% times the rated voltage of the final value)		2 ms
Dynamic Measurement Accuracy	Instantaneous Voltage: Instantaneous Current:	0.03% + 5 mV 0.6% + 2 mA[3]
Dynamic Measurement System	Buffer Length: Sampling Rate Range:	4096 points 15.6µs–31,200s

[1]The sink current decreases linearly from 2.8A @ 0 V to 1.2 A @ 15 V. The sink current does not track the programmed current.

[2]Following a 30 minute warm-up, the change in output over 8 hours, under constant ambient, load and line operating conditions.

[3]For full scale current changes with a risetime of 20 µs, an additional 0.5% error exists in the first data point in the buffer after the change. The error percentage increases proportionally with the decrease in risetime.

Table A-2. Supplemental Characteristics (continued)

Parameter		HP 66311A
Measurement Time (voltage or current)		50 ms average (includes the default time of 30 ms[1] for acquiring data, and a 20 ms data processing overhead)
Command Processing Time		4 ms average (for output to begin to change following receipt of digital data)
Remote Sense Capability		Up to 4 V can be dropped across each load lead. (add 2 mV to the voltage load regulation specification for each 1 V change in the positive output lead due to load current change.)
Savable Instrument States (applies only in SCPI mode)		4 (in locations 0 to 3)
RS-232 Interface Capabilities	Baud rates: Data formats: Language:	300 600 1200 2400 4800 9600 7 bits even or odd parity; 8 bits without parity SCPI or COMPatibility[2]
HP-IB Interface Capabilities	Language: Interface:	SCPI or COMPatibility[2] AH1, C0, DC1, DT1, E1, L4, PP0, RL1, SH1, SR1, T6
INH/FLT Characteristics	Maximum ratings: FLT Terminals: INH Terminals:	16.5 Vdc between terminals 1 and 2; 3 and 4; and from terminals 1 or 2 to chassis ground Low-level output current = 1.25 mA max. Low-level output voltage = 0.5 V max. Low-level input voltage = 0.8 V max. High-level input voltage = 2 V min. Low-level input current = 1 mA Pulse width = 100 µs min. Time delay = 4 ms typical
Digital I/O Characteristics	Maximum ratings: Digital OUT Port 0,1,2 (open collector)	same as INH/FLT Characteristics Output leakage @ 16V = 0.1 mA (ports 0,1) = 12.5 mA (port 2) Output leakage @ 5V = 0.1 mA (ports 0,1) = 0.25 mA (port 2) Low-level output sink current @ 0.5 V = 4 mA Low-level output sink current @ 1 V = 50 mA

[1]Time may be reduced by changing the default conditions of 2048 data points, however, measurement uncertainty due to noise will increase.

[2]COMPatibility language is used to program the HP 663xA Series power supplies. Not all HP 66311A capabilities are available when using the COMPatibility language.

Table A-2. Supplemental Characteristics (continued)

Parameter		HP 66311A
Digital I/O Characteristics (continued)	Digital IN Port 2: (internal pull-up)	Low-level input current @ 0.4 V = 1.25 mA High-level input current @ 5 V = 0.25 mA Low-level input voltage = 0.8 V max. High level input voltage = 2.0 V min.
Isolation to Ground (Maximum from either output terminal to chassis)		50 Vdc
Recommended Calibration Interval		1 year (from the date the unit is put into service)
Regulatory Compliance	Listing pending: Certified to: Conforms to: Complies with:	UL 3111-1 CSA 22.2 No. 1010.1 IEC 1010-1, EN 61010-1 EMC directive 89/336/EEC (ISM Group1 Class B)
Dimensions (see figure 3-1)	Height: Width: Depth:	88.1 mm (3.5in.) 212.8 mm (8.4in.) 444.4 mm (17.5 in.)
Net weight		8.85 kg (19.5 lbs.)
Shipping weight		11.1 kg (24.5 lbs.)