A

Specifications

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Table A-1 lists the specifications of the dc source. Specifications are warranted over the ambient temperature range of 0 to 55 °C. Unless otherwise noted, specifications apply after a 30-minute warmup period.

Table A-1. Performance Specifications

Parameter		HP 66312A and HP 6612B
Output Ratings	**Voltage:** **Current:**	0–20 V 0–2
Programming Accuracy (@ 25°C ±5°C)	**Voltage:** **+Current:**	0.05% + 10 mV 0.05% + 1 mA
DC Measurement Accuracy (via HP-IB or front panel meters with respect to actual output at 25°C ±5°C)	**Voltage:** **Low Current range** **−20 mA to +20 mA:** **High Current range** **+20 mA to +rated I:** **−20 mA to −rated I:**	0.03% + 3 mV 0.1% + 2.5 μA[1] 0.2% + 0.25 mA[2] 0.2% + 0.85 mA
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):**	0.5 mV/3 mV 1 mA
Load Regulation[3] (change in output voltage or current for any load change within ratings)	**Voltage:** **Current:**	2 mV 0.5 mA
Line Regulation (change in output voltage or current for any line change within ratings)	**Voltage:** **Current:**	0.5 mV 0.5 mA
Transient Response Time (for the output voltage to recover to its previous level within 0.1% of the voltage rating of the unit following a change in load current of up to 50% of the output current rating)		< 100 μs

1 This specification may degrade slightly when the unit is subjected to an RF field ≥ 3 V/meter.

2 Applies with current detector set to DC. With current detector set to ACDC, accuracy is 0.2% + 1 mA

3 Applies at rear terminals with unit set to remote sensing and with sense terminals externally jumpered to their respective output terminals.

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 66312A	HP 6612B
Input Ratings (at full load)	100 Vac mains:	87–106 Vac, 47–63 Hz, 1.6 A, 100 W	
	115 Vac mains:	104–127 Vac, 47–63 Hz, 1.4 A, 100 W	
	220 Vac mains:	191–233 Vac, 47–63 Hz, 0.8 A, 100 W	
	230 Vac mains:	207–253 Vac, 47–63 Hz, 0.75 A, 100 W	
Output Programming Range	Voltage:	0–20.475 V	
	Current:	0–2.0475 A	
	OVP:	0–22 V	
Average Programming Resolution	Voltage:	5 mV	
	Current:	0.5 mA	
	OVP:	100 mV	
OVP Accuracy		2.4% + 240 mV	
Maximum Current Measurement		2.43 A	
Average Current Measurement Resolution	High Range:	74 μA	
	Low Range:	0.6 μA	
Sink Current[1]		−1 A	
Programming Accuracy Temp. Coefficient (change/°C)	Voltage:	0.01% + 0.25 mV	
	Current:	0.01% + 12 μA	
	OVP:	0.015% + 4 mV	
Readback Accuracy Temp. Coefficient (change/°C)	Voltage:	0.01% + 150 μV	
	Current (ACDC):	0.05% + 80 μA	
	Current (DC):	0.02% + 10 μA	
	Current (Low range):	0.01% + 0.3 μA	
Drift[2]	Voltage:	0.01% + 0.5 mV	
	Current:	0.01% + 20 μA	
Output Voltage Rise/Fall Time		2 ms (for a change from 10% to 90% or 90% to 10% of the total excursion)	
Output Voltage Settling Time		6 ms (to settle within 1 LSB or 0.025% times the rated voltage of the final value)	

1 The sink current does not track the programmed current.

2 Following a 30 minute warmup, the change in output over 8 hours, under ambient temperature, constant load, and line operating conditions.

Table A-2. Supplemental Characteristics (continued)

Parameter		HP 66312A	HP 6612B
Dynamic Measurement Accuracy	Instantaneous Voltage: Instantaneous Current:	0.03% + 5 mV 0.6% + 1 mA[1]	not applicable
Dynamic Measurement System	Buffer Length: Sampling Rate Range:	4096 points 15.6–390 μs	not applicable
Measurement Time (voltage or current)		50 ms average (includes the default time of 30 ms[2] 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 data)	
Remote Sense Capability		Up to 2 volts 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		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[3]	
HP-IB Interface Capabilities	Language: Interface:	SCPI or COMPatibility[3] AH1, C0, DC1, DT1, E1, L4, PP0, RL1, SH1, SR1, T6	
INH/FLT Characteristics	Maximum ratings: INH Terminals: FLT 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)	

1 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.

2 This time may be reduced by changing the default conditions of 2048 data points, however, measurement accuracy will be reduced.

3 Compatibility language is used to program the HP 663xA Series power supplies.

Table A-2. Supplemental Characteristics (continued)

Parameter		HP 66312A	HP 6612B
Digital I/O Characteristics (continued)	**Digital IN Port 2:** (internal pullup)	Low-level output sink current @ 0.5 V = 4 mA Low-level output sink current @ 1 V = 50 mA 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		50 Vdc maximum from chassis ground	
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 EMC directive 89/336/EEC (ISM Group1 Class B)	
Dimensions (see figure 3-1)		Height 88.1mm (3.5in.) Width 212.8mm (8.4in.) Depth 444.4mm (17.5in.)	
Net weight		8.85 kg (19.5 lbs.)	
Shipping weight		11.1 kg (24.5 lbs.)	