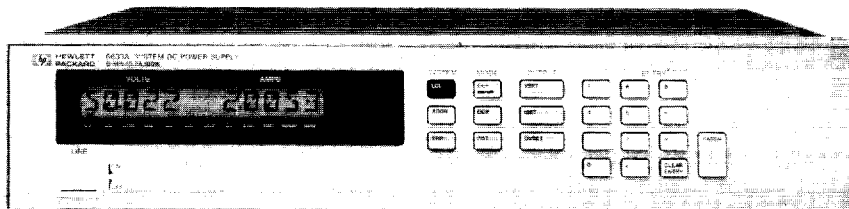


# POWER SUPPLIES

## Single Output Linear System Power Supplies

Models 6632A, 6633A and 6634A

- 100 Watt Linear Output
- Current Sinking Capability
- Built-in HP-IB Interface
- Overvoltage & Overcurrent Protection
- Readback Measured Voltage and Current Output Via HP-IB



HP 6633A



### Description

#### HP Models 6632A-6634A

HP Models 6632A-6634A are 100 Watt, single output, series pass regulated power supplies optimized for systems applications. They provide a high performance output with a full set of programmable features.

The following voltage and current combinations are available:

HP 6632A: 0-20 V	0-±5 A
HP 6633A: 0-50 V	0-±2 A
HP 6634A: 0-100 V	0-±1 A

Most importantly, these models are one-box solutions for system power supply requirements. Both the voltage and current output can be programmed for either CV or CC operation. A built-in DVM and precision current shunt measure (readback) the actual power supply output. The internal HP-IB interface allows for complete programmability, including status reporting and interrupt generation with user designated fault conditions. In addition, programming commands (such as VSET for voltage programming) are easy-to-use and self-documenting.

#### Current Sinking

HP Models 6632A-6634A sink as well as source current. This provides very fast down programming times and speeds throughput in production test applications. The negative current setting tracks the user-programmed positive current (CC) setting.

#### Remote Sensing

Remote sense terminals allow for precise voltage regulation at the load. This feature will compensate for load lead IR drops of up to 2 volts per lead.

#### Protection Features

HP Models 6632A-6634A have Overvoltage and Overcurrent protection. Both features are programmable via the front panel keypad and HP-IB. The Overvoltage protection includes an SCR crowbar.

#### Selftest

HP Models 6632A-6634A have a built-in selftest capability. This feature verifies the function of all HP-IB circuitry, D/A's, and A/D's at power on and upon HP-IB command.

#### Software Calibration

Software calibration eliminates shock sensitive potentiometers normally used for calibration of power supplies and programmers. This

feature enables calibration of these models via the HP-IB while mounted in the rack. An internal jumper is provided which, when removed, prevents recalibration of the power supply.

#### Fast/Normal Mode Operation

A rear-panel switch designates one of two operating modes. In Fast Mode, the output capacitors are disconnected to speed up the output response time. Normal Mode is optimized for minimal output PARD. See specifications for more information.

#### Front Panel Binding Posts (Option 020)

Option 020 adds a front panel output in parallel with the rear panel output terminal strip. These front panel binding posts provide flexibility in accessing the power supply output, and are very useful in bench applications and system development.

#### Isolation, Polarity Reversal Relay and DFI/RI (Option 760)

Optional built-in relays provide output connect/disconnect and polarity reversal. Discrete Fault Indicator and Remote Inhibit lines are included along with a quick disconnect DC output terminal connector. See page 465 for more detail.

#### HP-IB Functions

The following functions can be programmed via the HP-IB:

Programmable Functions	Readback Functions
— Voltage Output	— Actual Measured Voltage Output
— Current Output	— Actual Measured Current Output
— Overvoltage Protection	— Present Status
— Overcurrent Protection	— Accumulated Status
— Output Enable/Disable	— Programming Error Codes
— Fault Interrupt	— Fault Codes
— Software Calibration	— Service Request
— Selftest	

#### Specifications (Data Subject to Change)

**HP-IB Interface Functions:** The following HP-IB functions are implemented:

SH1, AH1 T6, L4, SR1, RL1, PP1, DC1, DT0 and E1.

**Safety Agency Compliance:** HP Models 6632A-6634A power supplies are designed to comply with the following regulatory standards:

IEC 348, VDE 0411, UL 1244 and CSA Electrical Bulletin 556B.

**Weight kg (lb) (all models):** Net 10.5 (23), Shipping 12.3 (27)

**Input Current:** 100 VAC 120 VAC 220 VAC 240 VAC  
(Max. rms all models) 3.3 A 2.9 A 1.7 A 1.6 A

**Input requirements:** 350 VA max.  
250 watts max.

**Specifications (Data Subject to Change)**

Note: Specifications are worst case unless otherwise noted.

	Volts	0-20 V	0-50 V	0-100 V	
	Amps	0-5 A	0-2 A	0-1 A	
	Watts	100 W	100 W	100 W	
<b>Hewlett-Packard Model</b> Specified over an operating temperature range of 0-55°C.		<b>6632A</b>	<b>6633A</b>	<b>6634A</b>	
<b>Load Effect (Load Regulation):</b> For a load change from zero to maximum rated voltage or current of the supply.**	Voltage	2 mV	4 mV	5 mV	
	Current	1 mA	1 mA	1 mA	
<b>Source Effect (Line Regulation):</b> Given for any change within the rated line voltage for any output within the rated output voltage, current, and power of the supply.	Voltage	0.5 mV	1 mV	1 mV	
	Current	0.5 mA	0.25 mA	0.25 mA	
<b>PARD (Ripple and Noise):</b> rms/peak-peak (20 Hz - 20 MHz).	Voltage(Normal)	0.3 mV/3 mV	0.5 mV/3 mV	0.5 mV/3 mV	
	Voltage(Fast)	1 mV/10 mV	1 mV/15 mV	2 mV/25 mV	
	Current(rms)	2 mA	2 mA	2 mA	
<b>Drift (Stability):</b> Change in output over 8-hour interval under constant line, load, and ambient temperature following 30-minute warm-up.	Voltage	0.01%+0.5 mV	0.01%+1 mV	0.01%+1 mV	
	Current	0.01%+1 mA	0.01%+0.5 mA	0.01%+0.3 mA	
<b>Load Effect Transient Recovery:</b> Maximum time required for output voltage to recover within a band of 0.1% of rated voltage around the nominal voltage following a 50% change in load current.	Normal	100 μs	100 μs	100 μs	
	Fast	50 μs	50 μs	50 μs	
<b>Programming:</b> (25±5°C) Given for control of the output over the HP-IB or with front panel controls.	Voltage	Resolution	5 mV	12.5 mV	25 mV
		Accuracy	0.05%+10 mV	0.06%+20 mV	0.05%+50 mV
	+Current	Resolution	1.25 mA	0.5 mA	0.25 mA
		Accuracy	0.15%+7 mA	0.15%+2 mA	0.15%+1 mA
Minimum CC programming current.		20 mA	8 mA	4 mA	
<b>Temperature Coefficient:</b> Output change per degree Celsius change in ambient following 30-minute warm-up.	Voltage	70ppm+0.25 mV	70ppm+0.5 mV	70ppm+1 mV	
	+Current	150ppm+500 μA	150ppm+150 μA	150ppm+75μA	
<b>Output Response:</b> Maximum time for output voltage to change within ±0.025% of final value (LSB), and from 10% to 90%, or 90% to 10% of voltage excursion (Tr/Tf).	Normal	Tr/Tf	15 ms	15 ms	15 ms
		LSB	60 ms	60 ms	60 ms
	Fast	Tr/Tf	400 μs	400 μs	400 μs
		LSB	2 ms	2 ms	2 ms
<b>HP-IB Programming Command Processing Time:</b> (Display disabled)	Typical	10 ms	10 ms	10 ms	
<b>Voltmeter:</b> (25±5°C) Refers to data read back to the controller from the HP-IB and as viewed via the front panel display.	Resolution	5 mV	12.5 mV	25 mV	
	Accuracy	0.07%+15 mV	0.07%+30 mV	0.06%+70 mV	
<b>Ammeter:</b> (25±5°C) Refers to data read back to the controller from the HP-IB and as viewed via the front panel display.	Resolution	1.25 mA	0.5 mA	0.25 mA	
	Accuracy	0.18%+9 mA	0.17%+3 mA	0.15%+2 mA	
<b>DC Output Isolation:</b> Maximum voltage either output terminal (±) may be from chassis ground.		±240 VDC	±240 VDC	±240 VDC	
<b>Remote Sensing:</b> Maximum allowable voltage drop per load lead.		2 VDC	2 VDC	2 VDC	

\*\*Specification under Local Sensing.

**Ordering Information**

<b>6632A:</b> 20 volts, 5 amperes	<b>Price*</b>	\$1600
<b>6633A:</b> 50 volts, 2 amperes		\$1600
<b>6634A:</b> 100 volts, 1 amperes		\$1600

(NOTE: Line voltage Option (100, 120, 220 or 240) must be specified)

<b>100:</b> 87-106 Vac, 48-63 Hz, (for Japan only)	N/C
<b>120:</b> 104-127 Vac, 48-63 Hz.	N/C
<b>220:</b> 191-233 Vac, 48-63 Hz.	N/C
<b>240:</b> 209-250 Vac, 48-63 Hz.	N/C
<b>020:</b> Front Output Binding Posts	\$77
<b>760:</b> Isolation and Polarity Reversal Relay	\$395
<b>908:</b> Rack Mount Kit for one unit. (HP P/N 5061-9674)	add \$31
<b>909:</b> Rack Mount Kit with Handles (HP P/N 5061-9675)	\$74
Accessory: Rack Slide Kit (HP P/N 1494-0059)	\$100
<b>910:</b> One each extra operating and service manuals. (Operating manual only is shipped with standard unit.)	add \$31
<b>W30:</b> 2 Year Additional Hardware Service	\$50

\*Prices apply for domestic U.S.A. customers only.

**Dimensions**

