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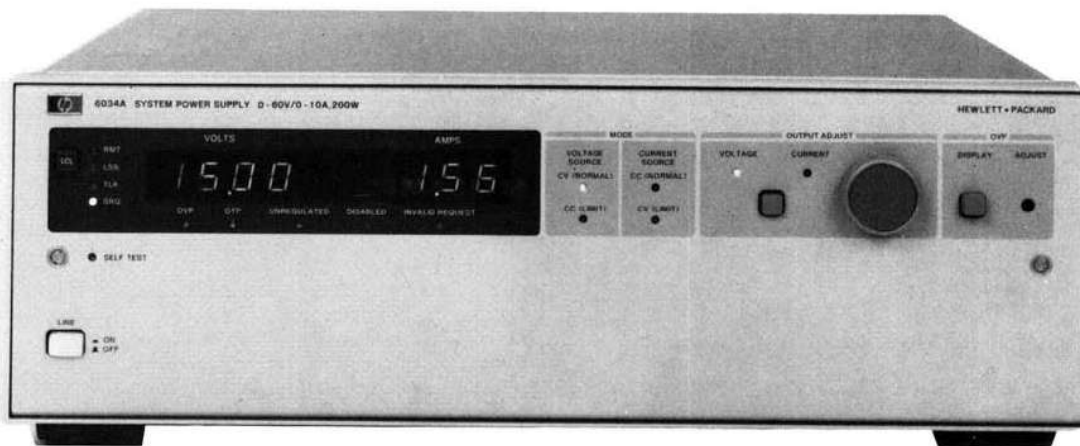


# POWER SUPPLIES

## 200 Watt System Power Supply

### Model 6034A

- HP-IB programming of voltage, current and OVP
- HP-IB measurement of voltage and current
- Full operating status readback
- Autoranging output
- Service request capability
- Self-test and diagnostics



### Description

The 6034A DC power supply has a combination of features and specifications that characterize it as a comprehensive solution to HP-IB system power supply applications. The 6034A combines FET switching technology with an internal microprocessor-based HP-IB programmer to achieve the first bidirectional programmable autoranging dc power supply.

FET switching technology provides laboratory-grade performance specifications and autoranging capability in a compact lightweight package. The high electrical efficiency, obtained through the use of flyback switching, reduces your overall system cooling requirements. The microprocessor-based HP-IB interface provides a friendly programming format. Output voltage and current can be programmed directly in volts and amperes with 12-bit resolution. Information regarding the output and load is available through remote metering over the HP-IB.

As an autoranging power supply, the 6034A can provide maximum rated power over a wide range of voltage and current without the operator having to program the proper range.

Eight status parameters can be read back via the HP-IB to enhance system versatility. These status parameters permit identification of the operational mode and fault conditions of the 6034A. They also can be used to initiate corrective action for fault conditions without operator intervention. The overvoltage trip point can be programmed directly in volts with 8-bit resolution, or set with a front panel adjustment. Other protection oriented features include soft voltage and current limits, and overtemperature protection. Soft limit protection allows the user to program limits such that only voltage and current values within these limits will be accepted by the power supply.

### System Applications

The 6034A incorporates many system features that can significantly reduce the time needed for hardware and software development. These features include friendly programming of voltage, current, and overvoltage protection, readback of voltage or current, full service request interrupt capability and operating status readback. The following two applications illustrate the power and flexibility of the 6034A.

### Automatic PC Board Test

The interactive nature of the 6034A is of particular value in a PC board test system. For example, voltage can be programmed along with a current limit to protect board tracks. Either a constant voltage or constant current can be programmed as the normal operating mode via the HP-IB. If the board under test has a rail to rail short as a result of a defective component or bridged tracks, the current limit setting will prevent damage to the PC board's power distribution system and components. Utilizing the status readback capabilities of the 6034A when constant voltage (CV) has been defined as the normal operating mode of the supply, the shorted component or bridged track can cause the 6034A to initiate a service request (SRQ). The mode crossover condition can then be relayed to the controller through a serial poll. A remote voltage reading can also be taken across the load and sent back to the controller. If the voltage is close to zero, the controller can display the "shorted load" condition to the system operator. Conversely, if a remote measurement is taken and the supply is found to be in normal mode with a current value of zero the controller can reveal the "open load" condition to the operator. Software can also set up an operating power region for a particular board, and the 6034A coupled with that software can determine whether the board under test is drawing power within the anticipated boundaries.

### Incoming Inspection of Electronic Components

The forward characteristics of a rectifier diode can be evaluated by the 6034A for incoming inspection.

The controller compares characteristics tested by the 6034A with established standards and rejects out-of-spec units. The system can then plot individual device E-I characteristics, or reduce the data on an entire lot of devices to graphical or statistical form.

Without the 6034A, a current shunt and an HP-IB voltmeter would be required to implement this test system. However, with the 6034A, both stimulus and response are effected through a single system component, thereby reducing your system hardware costs and rack space requirements. Also, the microprocessor-based architecture of the 6034A offers an easy programming format.



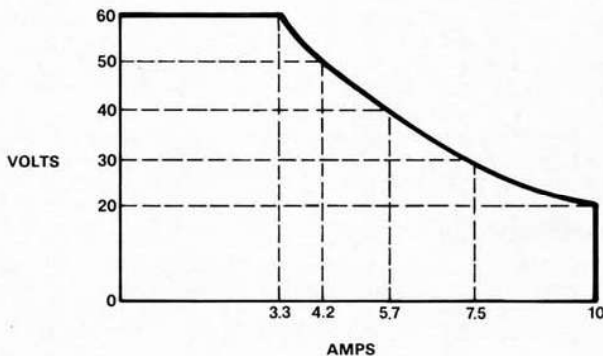
## Specifications

All performance specifications are measured at the rear terminals with a resistive load and at 25°C ± 5°C.

**DC output:** voltage and current output can be programmed with the HP-IB or the front panel control over the following ranges:

**voltage:** 0-60 V **current:** 0-10 A

Maximum available output power from 20 V to 60 V is indicated below.



### Load effect: (load regulation)

**Voltage:** ± 0.01% ± 3 mV

**Current:** 0.01% ± 3 mA

### Source Effect

**Voltage:** 0.01% ± 2 mV

**Current:** 0.01% ± 2 mA

**PARD:** (Ripple and Noise) RMS/p-p, 20 Hz to 20 MHz:

**Voltage:** 3 mV/30 mV

**Current:** 5 mA RMS

**Temperature coefficient:** Δ/°C after 30 minute warmup:

**Voltage:** ± 0.009% ± 0.7 mV

**Current:** ± 0.009% ± 0.8 mA

**Load transient recovery time:** less than 1 ms is required for output voltage recovery (in constant voltage operation) to within 75 mV of the nominal output following a change in output current from 90% to 100% or 100% to 90% of maximum current.

### Programming Resolution

**Voltage:** 15 mV (12 bits)

**Current:** 2.5 mA (12 bits)

### Programming Accuracy (25 ± 5°C)

**Constant voltage:** ± 0.07% ± 28 mV

**Constant current:** ± 0.085 ± 12.5 mA

**Output impedance:** typical value is 1 mΩ in series with 30 μH, but less than 1 Ω for all frequencies less than 1 MHz.

**Drift:** (stability) change in output over an 8 hour interval with fixed conditions after 30 minute warmup.

**Voltage:** ± 0.03% ± 3 mV

**Current:** ± 0.03% ± 3 mA

### Programmable Time Delay

**Range:** 0-65,535 ms

**Resolution:** 1 ms

**Accuracy:** ± 5% nominal

**Amplified current monitor:** scale Factor 0-5 V monitor output for 0-10 A output current:

**Accuracy:** 0.1% ± 7 mV typical

**Output impedance:** 10 kΩ nominal

**RFI specifications:** meets VDE 0871/6.78 Level A

**Programming response time:** maximum time for output voltage to change from 0 V to 60 V or 60 V to 2 V and settle within a 60 mV band (0.1% of maximum rated output):

		Band	60 mV(*)	15 mV(**)
Up:	Full Load	(18 Ω)	200 ms	225 ms
	No Load		200 ms	225 ms
Down:	Full Load	(18 Ω)	300 ms	450 ms
	No Load		600 ms	750 ms

\*Max, \*\* (Typical)

## Front Panel Meters

**Output voltage:** Low Range: ± 20.00 V

High Range: ± 200.0 V

**Range switch points:** Up: above 19.99 V ± 0 V

Down: below 17.5 V nominal

**Resolution:** Low Range: 10 mV

High Range: 100 mV

**Accuracy:** Low Range: ± 20 mV ± 0.07%

High Range: ± 200 mV ± 0.09%

**Temperature coefficient:** ± .01%/°C

### Output Current

**Range:** ± 19.99 A

**Resolution:** 10 mA

**Accuracy:** ± 17 mA ± 0.1%

**Temperature coefficient:** ± 0.01%/°C ± 0.7 mA/°C

### OVP setting: (with reference to A2, not to -S)

**Range:** 200.0 V

**Resolution:** 100 mV

**Accuracy:** 0.5% + 150 mV (at 0.0 A load current)

## Remote Meters

### Output Voltage

**Range:** 0-60 V

**Resolution:** 15 mV

**Accuracy:** ± 0.08% ± 35 mV

**Temperature coefficient:** ± 0.007%/°C ± 0.35 mV/°C

### Output Current

**Range:** 0-10 A

**Resolution:** 2.5 mA

**Accuracy:** ± 0.125% ± 8.5 mA

**Temperature coefficient:** ± 0.006%/°C ± 0.6 mA/°C

**Settling time:** < 200 ms

## Overvoltage Protection

**Local OVP adjustment:** the lower of the two OVP trip points will dominate.

**Range:** 1.7 V to 64.5 V

**Resolution:** 0.2 V

### Remote OVP Adjustment

**Range:** 2.0 V to 64.5 V (the OVP trip point = 2 V + 1.04 × soft voltage limit)

**Resolution:** 0.25 V

**Accuracy:** ± 0.7 V. The OVP circuit will trip when the voltage between the + output and the outboard side of the current monitoring resistor equals the set voltage. This could be as much as 1.35 V above the voltage between the ±S terminals.

**Temperature coefficient:** 250 PPM/°C

## DC output isolation: ± 240 Vdc from ground.

## Temperature rating: operating 0-55°C

**Storage:** -40 to 75°C, Fan cooled

## AC input: 87 to 106 Vac Option 100

104 to 127 Vac Option 120

191 to 233 Vac Option 220

208 to 250 Vac Option 240

All are 48 to 63 Hz

(Two internal switches and one internal jumper permit line voltage selection except for Option 100)

325 watts @ 200 watts output

600 VA @ 200 watts output

**Weight:** Net 9.9 kg (20 lbs). Shipping: 10.4 kg (23 lbs)

## Ordering Information

**6034A System Power Supply**

**Opt 100 (100 Vac input. Max 50 V, 150 W output)**

**Opt 120, 220 and 240**

**Opt 907:** front handle kit (part No. 5061-0089)

**Opt 908:** rack flange kit (part No. 5061-0077)

**Opt 909:** Opt. 907, 908 combined (part No. 5061-0083)

**Opt 910:** additional operating and service manual

## Price

\$2,740

N/C

N/C

add \$55

add \$33

add \$80

add \$15