

- 200-watt extended range
- Constant-voltage/constant-current operation
- HP-IB programming option

- Built-in overvoltage protection crowbar
- CV/CC operating status indicators
- Remote analog programming and sensing



6002A

### Description

The Model 6002A offers a new level of performance and usefulness in laboratory power supplies. It employs a unique regulation control concept that automatically yields a continuous span of voltage and current ratings within the basic 200-watt power rating boundary. This is beneficial in that more current is available at lower voltages, and higher voltages are available at a given current level than can be obtained from conventional 200-watt supplies.

Conventional 200-watt power supplies, rated for 50 volts or 20 volts can operate only within the shaded regions shown in Figure 1. The 6002A not only provides the outputs of the two conventional supplies, but also delivers the extra output capability shown between 20 and 50 volts.

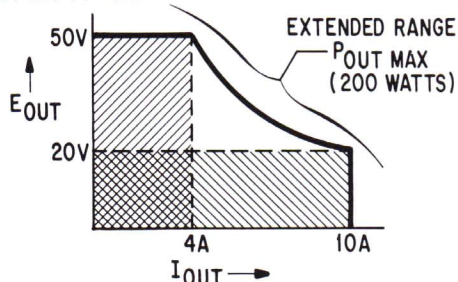


Figure 1.

This "extended range" capability of the 6002A provides the user with a single power supply that can cover a wide variety of applications in the lab or as a system component without his having to specify both the output voltage and current.

### System features/remote control

Analog programming of output voltages and current can be accomplished through the use of remotely controlled resistance or voltage applied to rear panel terminals. Additional control terminals are provided for remote load voltage sensing, auto-series or parallel operation, and for remotely activating the crowbar circuit. A pulse pulse output from the crowbar terminal indicates the overvoltage circuit has been self-activated. A voltage step change appearing on terminal indicates a changeover to or from constant-current operation.

### HP-IB option

Digital programming via Opt 001 permits control of output voltage or current by the Hewlett-Packard Interface Bus (HP-IB). Two programmable ranges allow better resolution below 10 volts or 2 amps. The selection of HP-IB control of either voltage or current is done by rear panel switches.

### Specifications

**DC output:** voltage and current output can be adjusted over the ranges indicated by front panel controls, analog programming, or an optional HP-IB interface.

**Voltage:** 0–50 V. **Current:** 0–10 A.

Maximum 200 Watts output from 20 V to 50 V.

**Load effect:** constant-voltage, 0.01% +1 mV. Constant-current, 0.01% +1 mA.

**Source effect:** CV, 0.01% +1 mV; CC, 0.01% +1 mA.

**PARD (ripple and noise):** rms/p-p, 20 Hz to 20 MHz; CV, 1 mV/10 mV; CC, 5 mA rms.

**Temperature coefficient:** CV, 0.02% +200  $\mu$ V/°C; CC 0.02% +5 mA/°C.

**Drift:** CV, 0.05% +1 mV/8 hrs; CC, 0.05% +5 mA/8 hrs.

**Resolution:** front panel controls; CV, 10 mV; CC, 10 mA.

**Output impedance:** approximately 0.5 m $\Omega$  in series with 1  $\mu$ H.

**Load transient recovery:** 100  $\mu$ s for output voltage to recover within 15 mV of nominal voltage setting following a load current change of 50% to 100% or 100% to 50% of full load current.

**Remote control coefficients:** resistance programming: CV, 1 k $\Omega$ /V  $\pm$ 7%. CC, 100 $\Omega$ /A  $\pm$ 7%. Voltage programming: CV 1 V/V  $\pm$ 20 mV. CC, 50 mV/A  $\pm$ 10%.

**Response time:** maximum time for output voltage to change between 0 to 99.9% or 100% to 0.1% of maximum rated output voltage. Up Programming: no load, 100 ms; full load, 100 ms. Down - Programming: no load, 400 ms; full load, 200 ms.

**Overvoltage protection:** trip voltage adjustable from 2.5 V to 60 V.

**DC output isolation:** 150 V dc.

**Power:** 100, 120, 220, or 240 V ac (–13%, +6%), 48–63 Hz.

**Temperature rating:** 0°C to 55°C operating, –40°C to +75°C storage. Supply is cooled by built-in fan.

**Size:** 180 H  $\times$  212 W  $\times$  422 mm D (6.97"  $\times$  8.36"  $\times$  16.6").

**Weight:** net, 14.5 kg (32 lb). Shipping, 15.9 kg (35 lb).

### HP-IB Option

**Programmable ranges:** high (0–50 V or 0–10 A), low (0–10 V or 0–2 A).

**Programming speed:** same as response time.

**Accuracy:** Hi range: CV, 0.2% +25 mV; CC, 0.2% +25 mA.

Lo range: CV, 0.2% +10 mV; CC, 0.2% +25 mA.

**Resolution:** Hi range: CV, 50 mV; CC, 10 mA.

Lo range: CV, 10 mV; CC, 2 mA.

**Isolation:** 250 Volts dc from bus data lines to power supply.

### Options

**001:** HP-IB Interface

**Price**  
add \$350

**6002A Extended Range DC Power Supply**

**\$800**