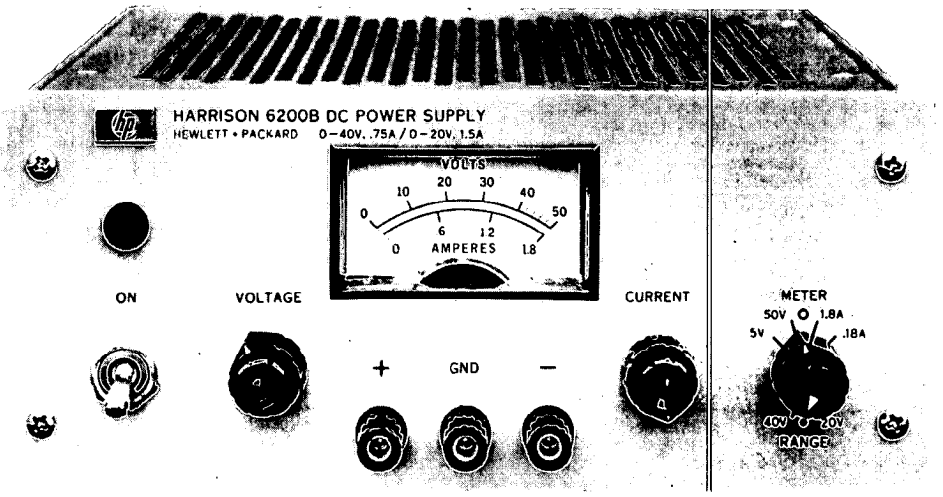

Figure 1-1. DC Power Supply, Model 6200B

SECTION I
GENERAL INFORMATION

1-1 DESCRIPTION

1-2 This power supply, Figure 1-1, is completely transistorized and suitable for either bench or relay rack operation. It is a dual range, compact, well-regulated, Constant Voltage/Constant Current, supply. The unit can furnish either a 0-20 volt, 1.5 ampere, output or a 0-40 volt, 0.75 ampere, output. The operating mode is selected by means of the front panel RANGE switch. The output can be continuously adjusted for both voltage and current throughout either output range. The front panel CURRENT controls can be used to establish the out-output current limit (overload or short circuit) when the supply is used as a constant voltage source and the VOLTAGE controls can be used to establish the voltage limit (ceiling) when the supply is used as a constant current source.

1-3 The power supply has both front and rear terminals. Either the positive or negative output terminal may be grounded or the power supply can be operated floating at up to a maximum of 300 volts off ground.

1-4 A single meter is used to measure either output voltage or output current in one of two ranges for each operating mode. The voltage or current range is selected by a METER switch on the front panel.

1-5 The programming terminals located at the rear of the unit allow ease in adapting to the many operational capabilities of the power supply. A brief description of these capabilities is given below:

a. Remote Programming

The power supply may be programmed from a remote location by means of an external voltage source or resistance.

b. Remote Sensing

The degradation in regulation which would occur at the load because of the voltage drop which takes place in the load leads can be reduced by using the power supply in the remote sensing mode of operation.

c. Series and Auto-Series Operation

Power supplies may be used in series when a higher output voltage is required in the voltage mode of operation or when greater voltage compliance is required in the constant current mode of operation. Auto-Series operation permits one knob control of the total output voltage from a "master" supply.

d. Parallel and Auto-Parallel Operation

The power supply may be operated in parallel with a similar unit when greater output current capability is required. Auto-Parallel operation permits one knob control of the total output current from a "master" supply.

e. Auto-Tracking

The power supply may be used as a "master" supply, having control over one (or more) "slave" supplies that furnish various voltages for a system.

1-6 Detailed Specifications for the power supply are given in Table 1-1.

1-7 INSTRUMENT IDENTIFICATION

1-8 Hewlett-Packard power supplies are identified by a three-part serial number tag. The first part is the power supply model number. The second part is the serial number prefix, which consists of a number-letter combination that denotes the date of a significant design change. The number designates the year, and the letter A through L designates the month, January through December respectively.

1-9 If the serial number prefix on your power supply does not agree with the prefix on the title page of this manual, change sheets are included to update the manual. Where applicable, backdating information is given in an appendix at the rear of the manual.

1-10 ORDERING ADDITIONAL MANUALS

1-11 One manual is shipped with each power supply. Additional manuals may be purchased from your local Hewlett-Packard field office (see list at rear of this manual for addresses). Specify the model number, serial number prefix, and HP stock number provided on the title page.

Table 1-1. Specifications

INPUT:
105-125/210-250VAC, single phase 50-400 cps.

OUTPUT:
0-40 volts @ 0.75 amp or 0-20 volts @ 1.5 amps.

LOAD REGULATION:
Constant Voltage -- Less than 0.01% plus 4 mv for a full load to no load change in output current.
Constant Current -- Less than 0.03% plus 250μa for a zero to maximum change in output voltage.

LINE REGULATION:
Constant Voltage -- Less than 0.01% plus 4 mv for any line voltage change within the input rating.
Constant Current -- Less than 0.01% plus 250μa for any line voltage change within the input rating.

RIPPLE AND NOISE:
Constant Voltage -- Less than 200μv rms.
Constant Current -- Less than 500μa rms.

TEMPERATURE RANGES:
Operating: 0-50°C. Storage: -40 to +85°C.

TEMPERATURE COEFFICIENT:
Constant Voltage -- Less than 0.02% plus 1 mv per degree Centigrade.
Constant Current -- Less than 0.02% plus 0.5 ma per degree Centigrade in the 40 V range and less than 0.02% plus 1 ma per degree Centigrade in the 20 V range.

STABILITY:
Constant Voltage -- Less than 0.10% plus 5 mv total drift for 8 hours after an initial warm-up time of 30 minutes at constant ambient, constant line voltage, and constant load.
Constant Current -- Less than 0.10% plus 2.5 ma (40 V range) or 5 ma (20 V range) total drift for 8 hours after an initial warm-up time of 30 minutes at constant ambient, constant line voltage, and constant load.

INTERNAL IMPEDANCE AS A CONSTANT VOLTAGE SOURCE:
Less than 0.02 ohms from DC to 1 Kc.
Less than 0.5 ohms from 1 Kc to 100 Kc.
Less than 3.0 ohms from 100 Kc to 1 Mc.

TRANSIENT RECOVERY TIME:
Less than 50μsec for output recovery to within 10 mv following a full load current change in the output.

OVERLOAD PROTECTION:
A continuously acting constant current circuit protects the power supply for all overloads including a direct short placed across the terminals in constant voltage operation. The constant voltage circuit limits the output voltage in the constant current mode of operation.

METER:
The front panel meter can be used as either a 0-50 V or 0-5 V voltmeter or as a 0-1.8 amp or 0-0.18 amp ammeter.

OUTPUT CONTROLS:
Range switch selects desired operating mode. Coarse and fine voltage controls and coarse and fine current controls.

OUTPUT TERMINALS:
Three "five-way" output posts are provided on the front panel and an output terminal strip is located on the rear of the chassis. All power supply output terminals are isolated from the chassis and either the positive or negative terminal may be connected to the chassis through a separate ground terminal located on the output terminal strip.

ERROR SENSING:
Error sensing is normally accomplished at the front terminals if the load is attached to the front or at the rear terminals if the load is attached to the rear terminals. Also, provision is included on the rear terminal strip for remote sensing.

REMOTE PROGRAMMING
Remote programming of the supply output at approximately 200 ohms per volt in constant voltage is made available at the rear terminals. In constant current mode of operation, the current can be remotely programmed at approximately 1000 ohms per ampere in the 40 V mode or at 500 ohms per ampere in the 20 V mode.

COOLING:
Convection cooling is employed. The supply has no moving parts.

SIZE:
3-1/2" H x 12-5/8" D x 8-1/2" W. Two of the units can be mounted side by side in a standard 19" relay rack.

WEIGHT:
14 lbs. net, 19 lbs. shipping.

FINISH:
Light gray front panel with dark gray case.

POWER CORD:
A three-wire, five-foot power cord is provided with each unit.