SECTION I
GENERAL INFORMATION

1-1 INTRODUCTION

1-2 This manual covers two triple output power supply models, the 6236A and the 6237A. Both models are compact general-purpose bench supplies that are particularly useful for powering developmental IC circuits, both linear and digital. Unless one model or the other is specifically identified, all information in this manual applies to both the 6236A and the 6237A.

CAUTION

Carefully read Sections II and III of this manual before attempting to operate the power supply.

1-3 DESCRIPTION

1-4 Both models have a dual output of 0 to ±20 volts at 0 to 0.5amps. The voltages of the two 20-volt outputs are adjusted by a single front-panel control and track one another within 1%. The +20V and −20V outputs can also be used in series for a single 0 to 40V 0.5A output. The third output differs in the two models and is 0 to +6 volts at up to 2.5amps in the 6236A and 0 to +18 volts at 0 to 1amp in the 6237A.

1-5 All controls, meters, and output terminals are located on the front panel. Two single-turn potentiometers control the +6V (or +18V) and ±20V outputs. A three-position meter switch selects one of the supplies for display of its voltage and current on two dual-range meters. The +6V (or +18V) and ±20V outputs share a common output terminal which is isolated from chassis ground.

1-6 All outputs are protected against overload or short-circuit damage. The +18V output in the 6237A and the ±20V outputs in both models are protected by circuits which limit output current to 110% of its nominal maximum. The overload protection circuit for the +6V output in the 6236A has a current foldback characteristic which reduces the output current as an overload increases until only 1A flows through a short circuit. For this output, the current limit depends on the output terminal voltage and varies linearly between 2.75A at 6V and 1A at zero volts.

1-7 The instrument is available in three line voltage options in addition to the standard 104-127Vac 47-63Hz unit and is furnished with a permanently attached 6-foot 3-wire grounding-type line cord.

1-8 SPECIFICATIONS

1-9 Table 1-1 lists detailed specifications for the power supply.

1-10 OPTIONS

1-11 Options are factory modifications of a standard instrument that are requested by the customer. The following options are available for the instrument covered by this manual.

OPTION NO.	DESCRIPTION
100	Input Power: 87-106Vac, 47-63Hz, single-phase.
220	Input Power: 191-233Vac, 47-63Hz, single-phase.
240	Input Power: 208-250Vac, 47-63Hz, single-phase.

1-12 Before the supply is shipped from the factory, an internal line voltage selector switch is set and the proper fuse installed for the line voltage specified on the order. A label on the rear heat sink identifies the line voltage option.

CAUTION

Before applying power to the supply, make certain that its line voltage selector switch (S3) is set for the line voltage to be used. (See CAUTION notice in Paragraph 3-2 for additional information on S3).

The user can convert an instrument from one line voltage option to another by following the instructions in Paragraph 3-4.

1-13 ACCESSORIES

1-14 The accessories listed below may be ordered from your local Hewlett-Packard field sales office either

with the power supply or separately. (Refer to the list at the rear of the manual for addresses.)

HP PART NO.	DESCRIPTION
14513A	Rack Mounting Kit for mounting one 3 1/2" high supply in a standard 19" relay rack.
14523A	Rack Mounting Kit for mounting two 3 1/2" high supplies side by side in a standard 19" relay rack.

1-15 INSTRUMENT AND MANUAL IDENTIFICATION

1-16 Hewlett-Packard power supplies are identified by a two part serial number. The first part is the serial number prefix, a number-letter combination that denotes the date of a significant design change and the country of manufacture. The first two digits indicate the year (10 = 1970, 11 = 1971, etc.) the second two digits indicate the week, and the letter "A" designates the U.S.A. as the country of manufacture. The second part is the power supply serial number; a different sequential number is assigned to each power supply, starting with 00101.

1-17 If the serial number on your instrument does not agree with those on the title page of the manual, Change Sheets supplied with the manual or Manual Backdating Changes define the difference between your instrument and the instrument described by this manual.

1-18 ORDERING ADDITIONAL MANUALS

1-19 One manual is shipped with each power supply. Additional manuals may be purchased from your local Hewlett-Packard field office (see the list at the rear of this manual for addresses). Specify the model number, serial number prefix, and the HP Part number provided on the title page.

Table 1-1. Specifications, Models 6236A and 6237A

NOTE

Specifications apply to both models unless otherwise indicated.

INPUT POWER:

Standard Option: 104-127Vac (120Vac nominal), 47-63Hz, single-phase, 112W, 140VA (Other line voltage options are listed in Paragraph 1-11.)

DC OUTPUT AND OVERLOAD PROTECTION:

0 to ±20V Outputs: Maximum rated output current is 0.5A. Short circuit output current is 0.55A ±5% and a fixed current limit circuit limits the output of each supply to this maximum at any output voltage setting. Unbalanced loads within current rating are permitted.

Model 6236A

0 to +6V Output: Maximum rated output current is 2.5A at 6V. The maximum available output current decreases with the output voltage setting. A current foldback current limits the output to 2.75A ±5% at 6 volts and, with decreasing voltage, reduces the current limit linearly to 1A ±15% at zero volts (short circuited).

Model 6237A

0 to +18V Output: Maximum rated output current is 1.0A. Short circuit output current is 1.1A ±5% and a fixed current limit circuit limits the output to this maximum at any output voltage setting.

TRACKING:

The +20V and −20V outputs track within 1%.

LOAD EFFECT (Load Regulation):

All Outputs: Less than 0.01% plus 2mV for a full load to no load change in output current.

SOURCE EFFECT (Line Regulation):

All Outputs: Less than 0.01% plus 2mV for any line voltage change within rating.

PARD (Ripple and Noise):

All Outputs: Less than 0.35mV rms and 1.5mV p-p (20 Hz to 20 MHz).

DRIFT (Stability):

All Outputs: Less than 0.1% plus 5mV (0 to 20 Hz) during 8 hours at constant line, load, and ambient after an initial warm-up time of 30 minutes.

LOAD TRANSIENT RECOVERY TIME:

All Outputs: Less than 50μsec for output recovery to within 15mV of nominal output voltage following a load change from full load to half load (or vice versa).

OUTPUT VOLTAGE OVERSHOOT:

All Outputs: During turn-on or turn-off of ac power, output plus overshoot will not exceed 1V if the output control is set for less than 1V. If the control is set for 1V or higher, there is no overshoot.

Table 1-1. Specifications, Models 6236A and 6237A (Continued)

TEMPERATURE COEFFICIENT:
All Outputs: Less than 0.02% plus 1mV voltage change per degree Celsius over the operating range from 0 to 40°C after 30 minutes warm-up.

OUTPUT IMPEDANCE (typical)*
0 to +20V Output: 0.6mΩ plus 1.6μH
0 to −20V Output: 0.6mΩ plus 1.6μH

Model 6236A
0 to +6V Output: 0.3mΩ plus 1μH

Model 6237A
0 to +18V Output: 0.3Ω plus 1.6μH

* Operating characteristics listed as typical are provided for the user's information only and are not warranteed specifications.

RESOLUTION:
(Minimum output voltage change obtainable using front panel voltage control)
0 to +20V Outputs: 70mV,
Model 6236A
0 to +6V Output: 20mV

Model 6237A
0 to +18V Output: 70mV

TEMPERATURE RANGES:
Operating: 0 to +40°C ambient. At higher temperatures, output current is derated linearly to 50% at 55°C.
Storage: −40°C to +75°C.

METER RANGES:

0 to +20V Output: 0-26V, 0-0.6A
0 to −20V Output: 0-26V, 0-0.6A

Model 6236A
0 to +6V Output: 0-7V, 0-3A

Model 6237A
0 to +18V Output: 0-21V, 0-1.2A

METER ACCURACY:
±4% of full scale

DIMENSIONS:
3 15/32 H x 8 7/32 W x 12 9/16 D
(88mm H x 208mm W x 319mm D)

WEIGHT:
9.5 lb (4.3kg)