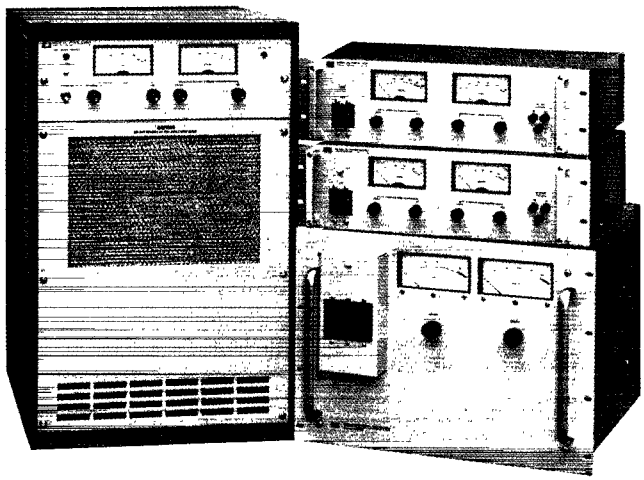
POWER SUPPLIES

General Purpose: 300 to 11,000 W Output

HP 6434B–6483C

- Outstanding value—low cost/watt
- Up to 75% efficiency at full output
- Constant voltage/constant current operation



HP 6434B–6483C

Description

This series of SCR-regulated power supplies is designed for medium- to high-power applications requiring a fixed or variable dc source with moderate regulation and ripple. For supplies with better regulation, faster response time, and lower ripple, see Models HP 6571A–6575A on page 544.

Operating Features

All supplies in this series are of the constant voltage/constant current type. Large easy-to-read panel meters continuously monitor output voltage current.

Input and output power; remote sensing; remote programming; and auto-series, -parallel, and -tracking connections are made to bus bars and terminal blocks on the rear panel.

Protective Features

In addition to the overload protection inherent in constant voltage/constant current operation, there are many other built-in protective features included in these supplies. The features vary within the three model classifications as follows:

HP 6434B–6448B: (1) Reverse voltage protection. (2) Fused ac input.

HP 6453A, 6456B, 6459A: (1) ac line loss protection circuit monitors 3-phase input and cuts off SCR's and opens output bus if a phase drops out; operation resumes when ac input returns to normal. (2) three-phase input circuit breaker. (3) Optional internal crowbar (Option 006) protects load from overvoltage condition.

HP 6464C–6483C: (1) High-temperature protection thermostat opens input to power transformer and lights front-panel indicator if supply overheats. (2) Prolonged overload protection circuit is activated and lights front-panel indicator if output current exceeds approximately 115 percent of maximum rating. (3) Optional internal crowbar (except on HP 6464C) protects load from overvoltage condition. (4) Turn-on circuit limits peak line current during startup into low impedance loads. (5) Phase-balance circuit permits operation with line-to-line input voltage imbalance up to 8 percent. (6) Overcurrent and overvoltage circuits of master-slave supplies used in auto-series, -parallel, or -tracking operation can be interlocked.

Auto-Series, -Parallel, -Tracking Operation

Supplies may be connected in auto-series or auto-tracking (except HP 6448B and 6483C, which cannot be connected in auto-series).

Up to three lower-power models (HP 6434B–6448B) may be connected in any of the above configurations. Higher-power model (HP 6453A/6483C) interconnection should ordinarily include no more than two supplies.

Remote Programming

The voltage and current outputs of the supplies can be programmed by a remote resistance, or for most models, a remote voltage source. Programming speeds and coefficients are detailed in the specifications table.

AC Power Requirements

The ac power requirements vary with the three model classifications (see Options listing). When powered from a 50-Hz source (possible with Option 005), the rms ripple and transient response specifications increase by 50 percent. The peak-to-peak ripple specification is unchanged by line frequency.

Line Cords

Line cords are not supplied with Models 6434B, 6448B and 6453A–6483C.

Specifications

RATINGS			PERFORMANCE						
DC Output			Load Effect		Source Effect		PARDΔ	Temperature	
Volts§	Amperes§	HP Model	Voltage	Current	Voltage	Current	rms/p-p	Coefficient	Drift
0 to 8	0 to 1000	HP 6464C	0.05% + 5 mV	0.1% + 1 A	0.05% + 5 mV	0.1% + 1 A	80 mV/1 V	0.03% + 100 μV	0.03% + 1 mV
0 to 15	0 to 200	HP 6453A	0.2% + 10 mV†	1% or 2 A†	0.2% + 10 mV†	1% or 2 A†	150 mV rms	0.05% + 2 mV	0.25% + 10 mV
0 to 16 or 18	0 to 600 or 500*	HP 6466C	0.05% + 5 mV	0.1% + 0.6 A	0.05% + 5 mV	0.1% + 0.6 A	180 mV/1 V	0.03% + 200 μV	0.2% + 1 mV
0 to 36	0 to 100	HP 6456B	0.2% + 10 mV†	1 % or 1 A†	0.2% + 10 mV†	1% or 1 A†	180 mV rms	0.05% + 2 mV	0.25% + 10 mV
0 to 36	0 to 300	HP 6469C	0.05% + 5 mV	0.1% + 0.3 A	0.05% + 5 mV	0.1% + 0.3 A	180 mV/1 V	0.03% + 400 μV	0.15% + 1 mV
0 to 40	0 to 25	HP 6434B	40 mV	200 mA	18 mV	200 mA	40 mV/500 mV	0.03% + 5 mV	0.1% + 20 mV
0 to 64	0 to 50	HP 6459A	0.2% + 10 mV†	1% or 0.5 A†	0.2% + 10 mV†	1% or 0.5 A†	160 mV rms	0.05% + 2 mV	0.25% + 10 mV
0 to 64	0 to 150	HP 6472C	0.05% + 100 mV	0.1% + 0.15 A	0.05% + 100 mV	0.1% + 0.15 A	160 mV/2 V	0.03% + 4 mV	0.15% + 16 mV
0 to 110	0 to 100	HP 6475C	0.05% + 100 mV	0.1% + 0.1 A	0.05% + 100 mV	0.1% + 0.1 A	200 mV/2 V	0.03% + 5 mV	0.15% + 20 mV
0 to 220	0 to 50	HP 6477C	0.05% + 100 mV	0.1% + 50 mA	0.05% + 100 mV	0.1% + 50 mA	330 mV/2 V	0.03% + 8 mV	0.15% + 35 mV
0 to 300	0 to 35	HP 6479C	0.05% + 100 mV	0.1% + 35 mA	0.05% + 100 mV	0.1% + 35 mA	330 mV/3 V	0.03% + 11 mV	0.15% + 45 mV
0 to 440, 500 or 600	0 to 25, 20, 15*	HP 6483C	0.05% + 100 mV	0.1% + 35 mA	0.5% + 100 mV	0.1% + 35 mA	600 mV/5 V	0.03% + 20 mV	0.15% + 80 mV
1 to 600	5 mA to 1.5 A	HP 6448B	1 V	40 mA	600 mV	15 mA	600 mV/2 V	0.03% + 100 mV	0.1% + 300 mV

† Specified for combined line and load regulation.

Δ For operation with a 50-Hz input (possible only with Option 005), the rms ripple and transient response specifications are increased by 50%.

* The output current rating is given in the same order corresponding with the voltage rating.

§ Under light loading conditions, power supply may not meet all published specifications. The graph on the next page defines the permissible operating regions for CV and CC modes of operation.
For operation with a 50-Hz input (possible only with Option 005), output current is linearly derated from 100% at 40° C to 80% at 50° C.