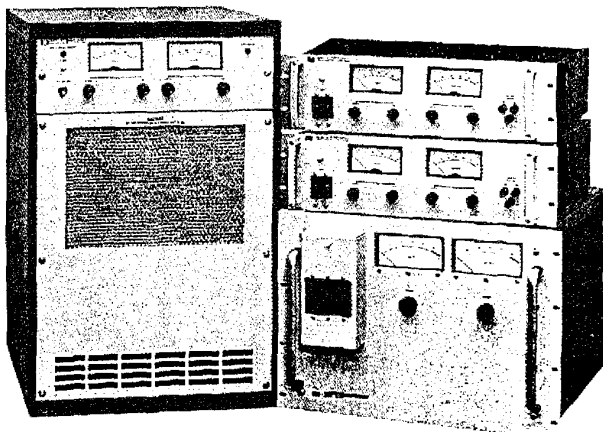




POWER SUPPLIES

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		HP Model	Load Effect		Source Effect		PARD ^Δ rms p-p	Temperature Coefficient	Drift	
Volts [‡]	Amperes [‡]		Voltage	Current	Voltage	Current				
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	

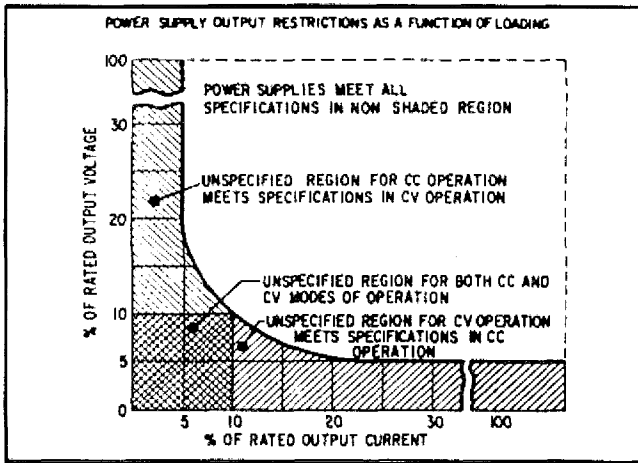
† Specified for combined line and load regulation.

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.



Site Evaluation

Higher power units (HP Models 6464C-6483C) most likely will require installation of a dedicated electrical branch service. It is suggested that a site evaluation be conducted by a qualified electrician or engineer prior to ordering. At that time, the electrician can help determine the correct line voltage option to order.

Size

Models 6434B 6448B: 133 mm H × 483 mm W × 432 mm D (5.25 in × 19 in × 17 in)

Models 6453A, 6456B, 6459A: 356 mm H × 483 mm W × 500 mm D (14 in × 19 in × 19.7 in)

Models 6464C, 6466C, 6469C, 6472C, 6475C, 6477C, 6479C, 6483C: 705 mm H × 483 mm W × 715 mm D (27.75 in × 19 in × 28.12 in)

Option Descriptions

HP 6434B-448B

Standard: 115 Vac, ± 10%, single phase, 57 to 63 Hz

Opt 005: Realignment for 50-Hz operation

Opt 010: Chassis slides

Opt 027: 208 Vac, ± 10%, single phase, 57 to 63 Hz

Opt 028: 230 Vac, ± 10%, single phase, 57 to 63 Hz

Opt 910: One extra operating and service manual shipped with each power supply

Price

\$0

\$0

+ \$168

\$0

\$0

- \$10

HP 6453A, 6456B, 6459A

An ac input option must be specified when ordering.

Three-phase voltages are phase-to-phase.

AC input connections are by means of a 4-conductor connector at rear of unit. Low voltage (208 V, 230 V) models are furnished with an Arrow Hart and Hageman plug (HP 1251-6896). High voltage (380 V, 400 V, 460 V) models are furnished with an Arrow Hart and Hageman plug (HP 1251-6897).

Opt 001 208 Vac, ± 10%, 3-phase, 15.5 A/phase, 57 to 63 Hz \$0

Opt 002 230 Vac, ± 10%, 3-phase, 14 A/phase, 57 to 63 Hz \$0

Opt 003 460 Vac, ± 10%, 3-phase, 7 A/phase, 57 to 63 Hz + \$105

005: Realignment for 50-Hz operation \$0

Opt 006 Overvoltage protection crowbar for HP 6453A, 6459A + \$520
HP 6456B + \$685

Opt 010 Chassis slides + \$270

Opt 031 380 Vac, ± 10%, 3-phase, 8.5 A/phase, 57 to 63 Hz + \$158

Opt 032 400 Vac, ± 10%, 3-phase-8.0 A/phase, 57 to 63 Hz + \$158

Opt 910 One extra operating and service manual shipped with each power supply. + \$10

HP 6464C-6483C

An ac input option must be specified when ordering.

Three phase voltages are phase-to-phase.

ac input connections are by means of an enclosed 4-wire terminal block.

Opt 001 208 Vac, ± 10%, 3-phase, 55 A/phase, 57 to 63 Hz \$0

Opt 002 230 Vac, ± 10%, 3-phase, 50 A/phase, 57 to 63 Hz \$0

Opt 003 460 Vac, ± 10%, 3-phase, 25 A/phase, 57 to 63 Hz + \$270

Opt 005 Realignment for 50 Hz operation \$0

Opt 006 Internal overvoltage protection crowbar for HP 6477C, 6479C, 6483C + \$420
HP 6466C + \$605
HP 6469C + \$540
HP 6472C, 6475C + \$490

Opt 023 Rack mounting attachments for standard 19-in rack + \$137

Opt 031 380 Vac, ± 10%, 3-phase, 30 A/phase, 57 to 63 Hz + \$270

Opt 032 400 Vac, ± 10%, 3-phase, 28.5 A/phase, 57 to 63 Hz + \$270

Opt 040 Prepares power supply to be programmed with resistance by an HP 6942A, 6944A, or 6954A + \$105

Opt 910 One extra operating and service manual shipped with each power supply. + \$15

Accessory

HP 14545B: Casters for HP 6464C-6483C—set of four \$103

Specifications (continued)

REMOTE CONTROL												GENERAL			
Resolution		Load Transient Recovery ^Δ	Resistance Coefficient		Voltage Coefficient†		Up		Down		Net Weight		Options	Price	
V	C		Voltage	Current	Voltage	Current	NL	FL	NL	FL	Kg	lb			
8 mV	1 A	100 ms, 500 mV	200 Ω/V ± 2%	1 Ω/A ± 2%	1 V/V ± 1%	8.2 mV/A ± 7%	1.6 s	0.6 s	6 s	0.1 s	235	518	1, 2, 3, 5, 23, 31, 32, 40	\$16,500	
85 mV	1 A	50 ms, 150 mV	200 Ω/V ± 2%	1 Ω/A	0.4 V/V	30 mV/A	1 s	0.5 s	20 s	0.2 s	108	238	1, 2, 3, 5, 6, 10, 31, 32	\$7,600	
18 mV	0.5 A	100 ms, 500 mV	200 Ω/V ± 2%	1.66 Ω/A ± 2%	1 V/V ± 1%	10.3 mV/A ± 7%	1.6 s	0.6 s	15 s	0.2 s	226	500	1, 2, 3, 5, 6, 23, 31, 32, 40	\$15,500	
90 mV	0.5 A	50 ms, 300 mV	200 Ω/V ± 2%	2 Ω/A	166 mV/V	60 mV/A	1 s	0.5 s	60 s	0.5 s	108	238	1, 2, 3, 5, 6, 10, 31, 32	\$7,600	
36 mV	0.3 A	100 ms, 500 mV	200 Ω/V ± 2%	3.33 Ω/A ± 2%	1 V/V	20.8 mV/A ± 7%	1.6 s	3 s	20 s	0.6 s	226	500	1, 2, 3, 5, 6, 23, 31, 32, 40	\$15,000	
10 mV	12.5 mA	200 ms, 200 mV	200 Ω/V ± 2%	12 Ω/A	1 V/V	**	0.3 s	1.2 s	75 s	1.2 s	30.4	67	5, 10, 27, 28	\$2,900	
100 mV	0.25 A	50 ms, 600 mV	300 Ω/V ± 2%	4 Ω/A	94 mV/V	120 mV/A	1 s	0.5 s	45 s	0.7 s	108	238	1, 2, 3, 5, 6, 10, 31, 32	\$7,600	
64 mV	0.15 A	100 ms, 750 mV	300 Ω/V ± 2%	6.7 Ω/A ± 2%	1 V/V ± 3%	41.2 mV/A ± 7%	1.4 s	2.5 s	55 s	0.7 s	226	500	1, 2, 3, 5, 6, 23, 31, 32, 40	\$15,000	
22 mV	0.1 A	100 ms, 1 V	300 Ω/V ± 2%	10 Ω/A ± 2%	1 V/V ± 3%	62 mV/A ± 7%	1.5 s	2 s	80 s	0.7 s	226	500	1, 2, 3, 5, 6, 23, 31, 32	\$15,000	
44 mV	50 mA	100 ms, 2 V	300 Ω/V ± 2%	20 Ω/V ± 2%	1 V/V ± 3%	124 mV/A ± 7%	1.5 s	2 s	95 s	1 s	226	500	1, 2, 3, 5, 6, 23, 31, 32	\$15,000	
60 mV	35 mA	100 ms, 3 V	300 Ω/V ± 2%	28.6 Ω/A ± 2%	1 V/V ± 3%	177 mV/A ± 7%	1.5 s	2 s	75 s	1.6 s	228	500	1, 2, 3, 5, 6, 23, 31, 32	\$15,000	
60 mV	25 mA	100 ms, 5 V	300 Ω/V ± 2%	40 Ω/A ± 2%	1 V/V ± 3%	0.25 V/A ± 7%	1.5 s	2 s	120 s	2 s	226	500	1, 2, 3, 5, 6, 23, 31, 32	\$15,500	
80 mV	0.75 mA	200 ms, 3 V	300 Ω/V ± 2%	600 Ω/A	1 V/V	**	0.2 s	1 s	45 s	2 s	27.6	61	5, 10, 27, 28	\$2,900	

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

**This feature is not available.

* An ac input option must be specified when ordering these 3-phase models.

† Special Option J30 must be ordered with Models 6434B-6448B and 6466C-6483C to be programmed with an HP 59501B Power Supply Programmer. Contact your local HP Field Engineer for ordering instructions.