

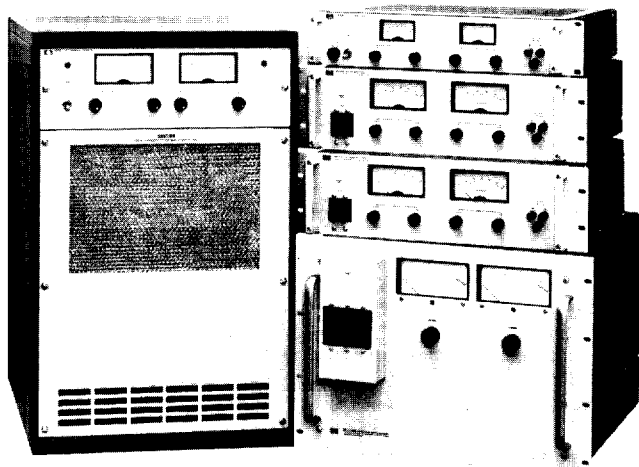


# POWER SUPPLIES

## General Purpose: 300—11,000 W Output

### Models 6434B—6483C

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



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 6259B—6274B and 895A, on page 240.

### 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:

**6434B—6448B:** (1) Reverse voltage protection. (2) Fused ac input.

**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) 3-phase input circuit breaker. (3) Optional internal crowbar (Option 006) protects load from overvoltage condition.

**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% of maximum rating. (3) Optional internal crowbar (except on 6464C) protects load from overvoltage condition. (4) Turn-on circuit limits peak line current during start-up into low impedance loads. (5) Phase-balance circuit permits operation with line-to-line input voltage imbalance up to 8%. (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 6448B and 6483C, which cannot be connected in auto-series.)

Up to three lower power models (6434B—6448B) may be connected in any of the above configurations. Higher-power model (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 option listings). When powered from a 50 Hz source (possible with option 005), the rms ripple and transient response specifications increase by 50%. The p-p ripple specification is unchanged by line frequency.

### Specifications†

RATINGS			PERFORMANCE						
DC Output		Model	Load Effect		Source Effect		PARD $\Delta$ rms/p-p	Temperature Coefficient	Drift
Volts§	Amps§		Voltage	Current	Voltage	Current			
0-8	0-1000	6464C	0.05% + 5 mV	0.1% + 1 A	0.05% + 5 mV	0.1% + 1 A	80 mV/1 V	0.03% + 100 $\mu$ V	0.03% + 1 mV
0-15	0-200	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
0-16 or 18	0-600 or 500*	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 $\mu$ V	0.2% + 1 mV
0-36	0-100	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
0-36	0-300	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 $\mu$ V	0.15% + 1 mV
0-40	0-25	6434B	40 mV	200 mA	18 mV	200 mA	40 mV/500 mV	0.03% + 5 mV	0.1% + 20 mV
0-60	0-5	6438B	60 mV	50 mA	30 mV	50 mA	120 mV/400 mV	0.03% + 10 mV	0.1% + 30 mV
0-64	0-50	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
0-64	0-150	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
0-110	0-100	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
0-120	0-2.5	6443B	120 mV	25 mA	60 mV	25 mA	240 mV/400 mV	0.03% + 20 mV	0.1% + 60 mV
0-220	0-50	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
0-300	0-35	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
0-440, 500 or 600	0-25, 20, 15*	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
1-600	5 mA-1.5 A	6448B	1 V	40 mA	600 mV	15 mA	600 mV/2 V	0.03% + 100 mV	0.1% + 300 mV

†Refer to page 232 for complete specification definitions.

††Specified for combined line and load regulation.

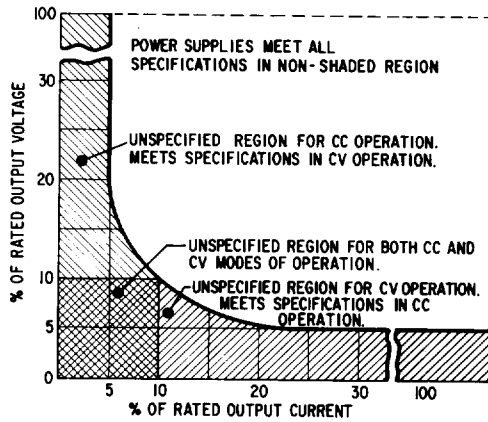
$\Delta$  For operation with a 50 Hz input (possible only with Option 005), the rms ripple and transient response specifications are increased by 50%.

\* 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.

POWER SUPPLY OUTPUT RESTRICTIONS AS A FUNCTION OF LOADING



An ac input option must be specified when ordering.

**Line Cords**

Line cords are not supplied with models 6453A-6483C.

**Size**

**Models 6438B and 6443B:** 89 H x 483 W x 445 mm D (3.5" x 19" x 17.5").

**Models 6434B, & 6448B:** 133 H x 483 W x 432 mm D (5.25" x 19" x 17").

**Models 6453A, 6456B, & 6459A:** 356 H x 483 W x 500 mm D (14" x 19" x 19.7").

**Models 6464C, 6466C, 6469C, 6472C, 6475C, 6477C, 6479C, & 6483C:** 705 H x 483 W x 715 mm D (27.75" x 19" x 28.12").

**Option Descriptions**

**6434B-6448B**

**Std:** 115 V ac,  $\pm 10\%$ , single phase, 57-63 Hz

**005:** realignment for 50 Hz operation

**010:** chassis slides

**027:** 208 V ac,  $\pm 10\%$ , single phase, 57-63 Hz

**028:** 230 V ac,  $\pm 10\%$ , single phase, 57-63 Hz

**910:** one extra operating and service manual shipped with each power supply

**Price**

N/C

N/C

add \$160

N/C

N/C

add \$7.50

**6453A, 6456B, 6459A**

An ac input option must be specified when ordering.

AC input connections are by means of a 4-conductor connector at rear of unit. A matching Hubbell No. 7413G plug (HP part number 1251-1570) is furnished.

**001:** 208 V ac,  $\pm 10\%$ , 3-phase, 15.5 A/phase, 57-63 Hz N/C

**002:** 230 V ac,  $\pm 10\%$ , 3-phase, 14 A/phase, 57-63 Hz N/C

**003:** 460 V ac,  $\pm 10\%$ , 3-phase, 7 A/phase, 57-63 Hz add \$100

**005:** realignment for 50 Hz operation N/C

**006:** internal overvoltage protection crowbar add \$490

**010:** chassis slides add \$250

**031:** 380 V ac,  $\pm 10\%$ , 3-phase, 8.5 A/phase, 57-63 Hz add \$150

**032:** 400 V ac,  $\pm 10\%$ , 3-phase- 8.0 A/phase, 57-63 Hz \$5

**910:** one extra operating and service manual shipped with each power supply \$10

**6464C-6483C**

An ac input option must be specified when ordering.

AC input connections are by means of enclosed 4-wire terminal block

**001:** 208 V ac,  $\pm 10\%$ , 3-phase, 55 A/phase, 57-63 Hz N/C

**002:** 230 V ac,  $\pm 10\%$ , 3-phase, 50 A/phase, 57-63 Hz N/C

**003:** 460 V ac,  $\pm 10\%$ , 3-phase, 25 A/phase, 57-63 Hz add \$250

**005:** realignment for 50 Hz operation N/C

**006:** internal overvoltage protection crowbar

6477C, 6479C, 6483C add \$395

6466C add \$570

6469C add \$510

6472C, 6475C add \$460

**023:** rack mounting attachments for standard 19" rack add \$130

**031:** 380 V ac,  $\pm 10\%$ , 3-phase, 30 A/phase, 57-63 Hz add \$250

**032:** 400 V ac,  $\pm 10\%$ , 3-phase, 28.5 A/phase, 57-63 Hz add \$250

**040:** prepares power supply to be programmed with resistance by a 6940B or 6942A. add \$100

**910:** one extra operating and service manual shipped with each power supply add \$15

**Accessory**

**14545A:** casters for 6464C-6483C—set of four \$85

**Specifications, continued**

Resolution		Load Transient Recovery <sup>Δ</sup>	REMOTE CONTROL								GENERAL			
			Resistance Coefficient		Voltage Coefficient†		Up		Down		Net Weight		Options	Price
			Voltage	Current	Voltage	Current	NL	FL	NL	FL	Kg	lb		
V	C													
8 mV	1 A	100 ms, 500 mV	200 $\Omega$ /V $\pm 2\%$	1 $\Omega$ /A $\pm 2\%$	1 V/V $\pm 1\%$	6.2 mV/A $\pm 7\%$	1.6 s	0.6 s	6 s	0.1 s	235	518	1, 2, 3, 5, 23, 31, 32, 40	\$8000*
65 mV	1 A	50 ms, 150 mV	200 $\Omega$ /V $\pm 2\%$	1 $\Omega$ /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	\$3600*
18 mV	0.5 A	100 ms, 500 mV	200 $\Omega$ /V $\pm 2\%$	1.66 $\Omega$ /A $\pm 2\%$	1 V/V $\pm 1\%$	10.3 mV/A $\pm 7\%$	1.6 s	0.6 s	15 s	0.2 s	226	500	1, 2, 3, 5, 6, 23, 31, 32, 40	\$7000*
90 mV	0.5 A	50 ms, 300 mV	200 $\Omega$ /V $\pm 2\%$	2 $\Omega$ /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	\$3400*
36 mV	0.3 A	100 ms, 500 mV	200 $\Omega$ /V $\pm 2\%$	3.33 $\Omega$ /A $\pm 2\%$	1 V/V	20.6 mV/A $\pm 7\%$	1.6 s	3 s	20 s	0.5 s	226	500	1, 2, 3, 5, 6, 23, 31, 32, 40	\$6800*
10 mV	12.5 mA	200 ms, 200 mV	200 $\Omega$ /V $\pm 2\%$	12 $\Omega$ /A	1 V/V	**	0.3 s	1.2 s	75 s	1.2 s	30.4	67	5, 10, 27, 28	\$1600
9 mV	2.5 mA	200 ms, 300 mV	300 $\Omega$ /V $\pm 2\%$	60 $\Omega$ /A	1 V/V	**	0.5 s	2.5 s	200 s	2.5 s	14	31	5, 10, 27, 28	\$1200
100 mV	0.25 A	50 ms, 600 mV	300 $\Omega$ /V $\pm 2\%$	4 $\Omega$ /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	\$3300*
64 mV	0.15 mA	100 ms, 750 mV	300 $\Omega$ /V $\pm 2\%$	6.7 $\Omega$ /A $\pm 2\%$	1 V/V $\pm 3\%$	41.2 mV/A $\pm 7\%$	1.4 s	2.5 s	55 s	0.7 s	226	500	1, 2, 3, 5, 6, 23, 31, 32, 40	\$6800*
22 mV	0.1 A	100 ms, 1 V	300 $\Omega$ /V $\pm 2\%$	10 $\Omega$ /A $\pm 2\%$	1 V/V $\pm 3\%$	62 mV/A $\pm 7\%$	1.5 s	2 s	80 s	0.7 s	226	500	1, 2, 3, 5, 6, 23, 31, 32	\$6800*
30 mV	1.3 mA	200 ms, 600 mV	300 $\Omega$ /V $\pm 2\%$	120 $\Omega$ /A	1 V/V	**	0.5 s	2 s	210 s	2 s	14	31	5, 10, 27, 28	\$1100
44 mV	50 mA	100 ms, 2 V	300 $\Omega$ /V $\pm 2\%$	20 $\Omega$ /V $\pm 2\%$	1 V/V $\pm 3\%$	124 mV/A $\pm 7\%$	1.5 s	2 s	95 s	1 s	226	500	1, 2, 3, 5, 6, 23, 31, 32	\$6800*
60 mV	35 mA	100 ms, 3 V	300 $\Omega$ /V $\pm 2\%$	28.6 $\Omega$ /A $\pm 2\%$	1 V/V $\pm 3\%$	177 mV/A $\pm 7\%$	1.5 s	2 s	75 s	1.6 s	226	500	1, 2, 3, 5, 6, 23, 31, 32	\$6800*
60 mV	25 mA	100 ms, 5 V	300 $\Omega$ /V $\pm 2\%$	40 $\Omega$ /A $\pm 2\%$	1 V/V $\pm 3\%$	0.25 V/A $\pm 7\%$	1.5 s	2 s	120 s	2 s	226	500	1, 2, 3, 5, 6, 23, 31, 32	\$7200*
60 mV	0.75 mA	200 ms, 3 V	300 $\Omega$ /V $\pm 2\%$	600 $\Omega$ /A	1 V/V	**	0.2 s	1 s	45 s	2 s	27.6	61	5, 10, 27, 28	\$1450

<sup>Δ</sup>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 a 59501A Power Supply Programmer. Contact your local HP Field Engineer for ordering instructions.