



POWER SUPPLIES

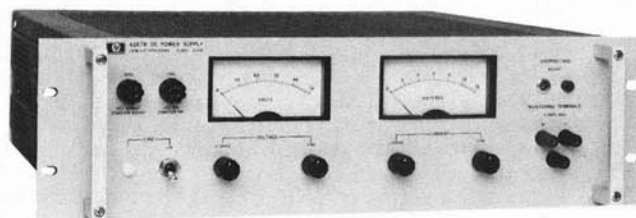
General Purpose: 120–2000 W Output
 Models 6259B-6274B

- Built-in overvoltage protection
- Constant voltage/constant current operation
- Remote programming and sensing

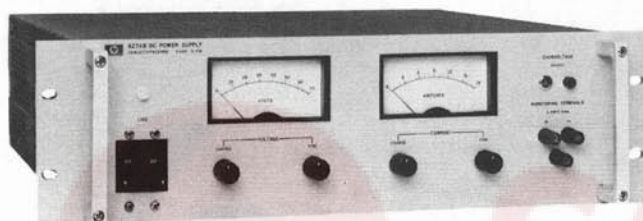
- Remote sensing
- Auto-series, -parallel, and -tracking operation
- $\leq 50 \mu\text{s}$ load transient recovery



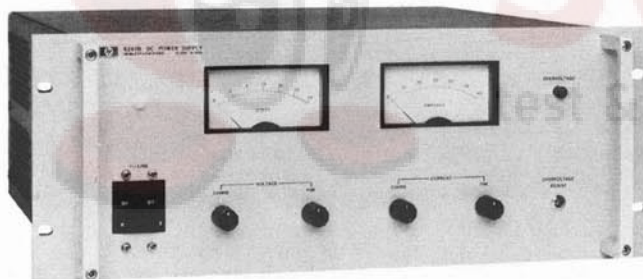
HP 6263B, 6266B, 6271B



HP 6264B, 6267B



HP 6274B



HP 6259B, 6260B, 6261B, 6268B, 6269B

Description

Models 6259B-6274B

This series of high-performance constant voltage/constant current supplies includes twelve models with output rating from 10 to 60 V. All models employ a transistor series-regulator/triac-preregulator circuit to achieve high efficiency, excellent regulation, low ripple and noise, and moderate programming speeds in a compact full-rack width package.

Separate coarse and fine voltage and current controls allow the voltage and current outputs to be varied from zero to the maximum rated value, crossover from constant voltage to constant current operation occurs automatically when the load current exceeds the value established by the current control settings.

Additional features include built-in overvoltage crowbar protection; remote error sensing; and auto-series, auto-parallel, and auto-tracking operation. The crowbar trip point adjustment and associated overvoltage indicator are conveniently located on the front panel.

Specifications†

RATINGS			PERFORMANCE							
DC Output		HP Model	Load Effect		Source Effect		PARD (rms/p-p)		Drift (stability)	
Volts	Amperes		Voltage	Current	Voltage	Current	Voltage	Current	Voltage	Current
0-10	0-50	6259B	0.01% + 200 μV	0.02% + 1 mA	0.01% + 200 μV	0.02% + 1 mA	500 $\mu\text{V}/5 \text{ mV}$	25 mA rms	0.03% + 2 mV	0.03% + 10 mA
0-10	0-100	6260B	0.01% + 200 μV	0.02% + 2 mA	0.01% + 200 μV	0.02% + 2 mA	500 $\mu\text{V}/5 \text{ mV}$	50 mA rms	0.03% + 2 mV	0.03% + 20 mA
0-20	0-10	6263B	0.01% + 200 μV	0.02% + 500 μA	0.01% + 200 μV	0.02% + 500 μA	200 $\mu\text{V}/10 \text{ mV}$	3 mA rms	0.03% + 500 μV	0.03% + 6 mA
0-20	0-20	6264B	0.01% + 200 μV	0.02% + 500 μA	0.01% + 200 μV	0.02% + 500 μA	200 $\mu\text{V}/10 \text{ mV}$	5 mA rms	0.03% + 500 μV	0.03% + 6 mA
0-20	0-50	6261B	0.01% + 200 μV	0.02% + 1 mA	0.01% + 200 μV	0.02% + 1 mA	500 $\mu\text{V}/5 \text{ mV}$	25 mA rms	0.03% + 2 mV	0.03% + 10 mA
0-40	0-5	6266B	0.01% + 200 μV	0.02% + 500 μA	0.01% + 200 μV	0.02% + 500 μA	200 $\mu\text{V}/10 \text{ mV}$	3 mA rms	0.03% + 500 μV	0.03% + 3 mA
0-40	0-10	6267B	0.01% + 200 μV	0.02% + 500 μA	0.01% + 200 μV	0.02% + 500 μA	200 $\mu\text{V}/10 \text{ mV}$	3 mA rms	0.03% + 2mV	0.03% + 3 mA
0-40	0-30	6268B	0.01% + 200 μV	0.02% + 2 mA	0.01% + 200 μV	0.02% + 2 mA	1 mV/5 mV	20 mA rms	0.03% + 2 mV	0.03% + 5 mA
0-40	0-50	6269B	0.01% + 200 μV	0.02% + 2 mA	0.01% + 200 μV	0.02% + 2 mA	1 mV/5 mV	25 mA rms	0.03% + 2 mV	0.03% + 10 mA
0-60	0-15	6274B	0.01% + 200 μV	0.02% + 500 μA	0.01% + 200 μV	0.02% + 500 μA	200 $\mu\text{V}/20 \text{ mV}$	5 mA rms	0.03% + 2 mV	0.03% + 5 mA

†Refer to page 260 for complete specification definitions.



Auto-series, auto-parallel, and auto-tracking connections should ordinarily include no more than three supplies. If a specific application requires the use of more than three supplies in any of the three connections, consult your local HP Field Engineer for additional information.

All dc output, ac input, sensing, control, and programming connections are made to rear-panel terminals. Either the positive or negative output terminal may be grounded or the supplies may be operated floating at up to 300 volts above ground. Models 6263B, 6264B, 6266B and 6267B are convection cooled. All other models in this series employ cooling fans. Models which output more than 200 watts are equipped with terminal blocks for ac input and are not shipped with line cords.

Specification—General

Load effect transient recovery: time, 50 μ s; Level, 10 mV.

Resolution: voltage control, less than 0.02%; current control, less than 0.15%.

Temperature coefficient per °C: 0.01% of output plus 200 μ V.

Temperature ratings: operating, 0 to 55°C; storage, -40 to 75°C.

Remote control programming: these power supplies are capable of being programmed in constant voltage and constant current operation by using an external resistance or dc voltage with coefficients as shown in the table below.

Rear terminal wiring configurations for remote control operation are specified in the operating and service manual supplied with the power supply. For remote control programming procedures and timing considerations, contact your local HP field engineer.

Power: input voltage tolerance is \pm 10%, 57-63 Hz. For other input voltage and frequency options available, see option listing in the specifications table below. Standard input voltage, maximum input current, and maximum power are:

HP 6259B, 230 V ac, 6 A, 850 W;
HP 6260B, 230 V ac, 12 A, 1600 W;
HP 6263B, 115 V ac, 4.5 A, 350 W;
HP 6266B, 115 V ac, 4 A, 325 W;
HP 6268B, 230 V ac, 12 A, 1600 W;
HP 6261B, 230 V ac, 12 A, 1500 W;
HP 6264B, 115 V ac, 8 A, 600 W;
HP 6267B, 115 V ac, 8 A, 550 W;
HP 6269B, 230 V ac, 18 A, 2500 W;
HP 6274B, 115 V ac, 15 A, 1200 W;

AC line connections: three wire, five foot ac power cord included—HP 6263B and 6266B.

Three-terminal barrier strip provided on power supply for ac power connections—HP 6259B, 6260B, 6261B, 6264B, 6267B, 6268B, 6269B and 6274B.

Size

HP 6263B, 6266B: 83.7 H x 483 W x 479.4 mm D (3.296" x 19" x 18.875").

HP 6264B, 6267B, 6274B: 127 H x 483 W x 479.4 mm D (5.00" x 19" x 18.875").

HP 6259B, 6260B, 6261B, 6268B, 6269B: 173 H x 483 W x 479.4 mm D; (6.812" x 19" x 18.875").

Option Descriptions

005: 50 Hz ac input: optimizes power supplies that require adjustment/modification for 50 Hz operation.

010: chassis slides. For access to rack mounted power supplies: HP 6263B, 6264B, 6266B, 6267B
HP 6274B, 6259B, 6260B, 6261B, 6268B, 6269B

016: Model 6260B only. 115 Vac \pm 10% single phase input. Consists of replacing power transformer and circuit breaker, and reconnecting bias transformer, RFI choke and fans.

022: voltage and current programming adjust. Allows the V and I programming coefficients and zero output to be conveniently adjusted to 0.1% accuracy via access holes in the rear panel. Consists of four potentiometers and resistors located inside the rear panel.

026: 115 Vac \pm 10%, single phase input. Consists of replacing the input circuit breaker and reconnecting the power transformer, bias transformer, RFI choke, and fans. Models 6259B, 6261B and 6268B only.

027: 208 Vac, \pm 10%, single phase input. Consists of reconnecting power transformer taps, and other components where necessary.

028: 230 Vac \pm 10%, single phase input. Consists of reconnecting power transformer taps, and other components where necessary.

040: Multiprogrammer interface. Prepares standard HP power supplies for resistance programming by the HP 6942A or 6940B Multiprogrammers. This option includes Option 022, special calibration, and protection check-out procedures (where required).

910: one additional operating and service manual shipped with each power supply. HP 6259B-6274B

Price

N/C

add \$86

add \$160

add \$120

add \$61

N/C

N/C

N/C

add \$76

add \$7.50

Specifications, Continued

REMOTE CONTROL FEATURES								GENERAL					
Resistance Coeff.		Voltage Coeff.		Speed Up*		Speed Down*		Overvoltage		Weight		Options	Price
Voltage	Current	Voltage	Current	NL	FL	NL	FL	Range	Margin	Net	Shipping		
200 Ω /V \pm 1%	4 Ω /A \pm 10%	1 V/V \pm 1%	10 mV/A \pm 10%	70 ms	70 ms	200 ms	100 ms	2-12 V	5% + 2V	31.3 kg/69 lb	35.3 kg/78 lb	5, 10, 22, 26, 27, 40	\$1775
200 Ω /V \pm 1%	2 Ω /A \pm 10%	1 V/V \pm 1%	5 mV/A \pm 10%	70 ms	70 ms	200 ms	75 ms	2-12 V	5% + 2 V	43.9 kg/97 lb	48 kg/106 lb	5, 10, 16, 22, 27, 40	\$2105
200 Ω /V \pm 1%	100 Ω /A \pm 10%	1 V/V \pm 1%	50 mV/A \pm 10%	150 ms	150 ms	7 s	350 ms	2-23 V	5% + 1 V	15.4 kg/34 lb	18.6 kg/41 lb	5, 10, 22, 27, 28, 40	\$1450
200 Ω /V \pm 1%	10 Ω /A \pm 10%	1 V/V \pm 1%	25 mV/A \pm 10%	140 ms	140 ms	10 s	150 ms	2.5-23V	5% + 1 V	21.3 kg/47 lb	24.5 kg/54 lb	5, 10, 22, 27, 28, 40	\$1500
200 Ω /V \pm 1%	4 Ω /A \pm 10%	1 V/V \pm 1%	10 mV/A \pm 10%	150 ms	150 ms	250 ms	250 ms	2-23 V	5% + 2 V	35.3 kg/78 lb	39.4 kg/87 lb	5, 10, 22, 26, 27, 40	\$1880
200 Ω /V \pm 1%	200 Ω /A \pm 10%	1 V/V \pm 1%	100 mV/A \pm 10%	275 ms	275 ms	13 s	1.5 s	2.5-45 V	5% + 1 V	15.4 kg/34 lb	18.6 kg/41 lb	5, 10, 22, 27, 28, 40	\$1400
200 Ω /V \pm 1%	100 Ω /A \pm 10%	1 V/V \pm 1%	50 mV/A \pm 10%	275 ms	275 ms	13 s	750 ms	2.5-45 V	5% + 1 V	17.7 kg/39 lb	20.8 kg/46 lb	5, 10, 22, 27, 28, 40	\$1450
200 Ω /V \pm 1%	6 Ω /A \pm 10%	1 V/V \pm 1%	16.7 mV/A \pm 10%	300 ms	300 ms	1 s	650 ms	4-45 V	5% + 1 V	34.4 kg/76 lb	38.1 kg/84 lb	5, 10, 22, 26, 27, 40	\$1830
200 Ω /V \pm 1%	4 Ω /A \pm 10%	1 V/V \pm 1%	10 mV/A \pm 10%	350 ms	350 ms	1 s	600 ms	4-45 V	5% + 1 V	40.3 kg/89 lb	44 kg/98 lb	5, 10, 22, 27, 40	\$2000
300 Ω /V \pm 1%	67 Ω /A \pm 10%	1 V/V \pm 1%	33.3 mV/A \pm 10%	600 ms	600 ms	40 s	800 ms	6-66 V	5% + 1 V	21.7 kg/48 lb	24.5 kg/54 lb	5, 10, 22, 27, 28, 40	\$1600

*Up = increasing output voltage. NL = No output load current. FL = Full rated output load current

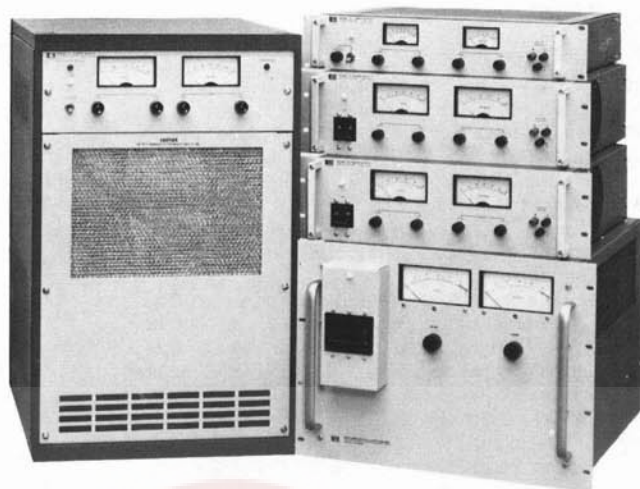


POWER SUPPLIES

General Purpose: 300—11,000 W Output

Models 6434B—6483C

- Outstanding value—low cost/watt
- Up to 75% efficiency at full output
- Constant voltage/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 6259B—6274B on page 268.

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.

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			
0-8	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 μ 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 μ 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 μ 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
0-64	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 260 for complete specification definitions.

†† Specified for combined line and load regulation.

‡ 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.

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) 3-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% 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 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 over-voltage 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 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.

§ 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.