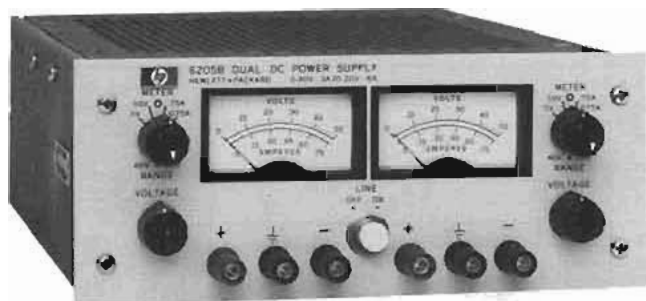


POWER SUPPLIES

Low cost lab: General bench applications

Models 6200B-6209B, and 6384A

- Short-circuit proof
- Floating output (up to 300V above ground)
—Can be used as a positive or negative source
- Remote sensing
- Bench or rack mounting
- Multi-function meter



6205B



6204B, 6206B



6200B-6203B, 6207B, 6209B



6384A

Description

Models 6200B-6209B

This series of low-cost bench supplies includes nine models covering an output voltage range from 0-7.5 V to 0-320 V. All models are equipped with coarse and fine output voltage controls (except Models 6207B and 6209B, which have 10-turn voltage controls), volt/ampere meter, meter function/range switch, and front and rear output terminals. In addition, on the dual-range models (6204B-6205B), an output range switch permits the selection of either a high or a low output voltage range.

Model 6205B combines the versatility of a dual power supply with the flexibility of auto-parallel and auto-series operation to extend the output ratings of this supply to 20 V/1.2 A, 40 V/0.6 A, and 80 V/0.3 A. In addition, using the supply's auto-tracking capability, opposite polarity voltages (± 20 V, ± 40 V) can conveniently be obtained from this one supply.

The Constant Voltage/Current Limiting supplies (6204B-6205B), are short-circuit protected by a fixed current limiting circuit which is activated at approximately 110% of rated load current. The current-limit point can be reduced by changing the value of a single internal resistor. For the Constant Voltage/Constant Current supplies, concentric coarse and fine current controls allow the current-limit point to be set to any value within the current rating. Using these controls, the CV/CC supplies can also be operated as constant current sources.

Units may be bench operated or rack mounted individually or in pairs using accessory rack mounting hardware.

Model 6384A

This low-cost bench supply is designed specifically for use with digital logic integrated circuits. Its output ratings and superior performance, combined with the protection of built-in overvoltage crowbar and current limiting circuits, make it an excellent IC supply for both laboratory and systems use.

Voltage-sensitive loads are protected by the overvoltage crowbar circuit. Following detection of an overvoltage condition, the crowbar is activated and shorts the output. The crowbar threshold is factory-set to 6.25 V, but is field-adjustable down to 5 V.

The power supply will not be damaged by an overload condition. If the load current exceeds 8.5 ± 0.2 A, the cutback current limit circuit is activated and reduces the output current to a safe level.



POWER SUPPLIES

Models 6200B-6208B & 6384A (cont.)

Specifications†

DC Output	Volts	4-5.5 V	0-7.5 V	0-20 V	Dual Range		2 Dual Range	
	Amps	0.5 A	0-3 A	0-1.5 A	0-20 V 0.5 A	0-40 V 0.3 A	0-20 V 0.5 A	0-40 V 0.3 A
Model		6384A	6200B	6201B	6204B		6205B	

Load Effect* (Load Regulation):	V	2 mV	5 mV	0.01% + 4 mV	0.01% + 4 mV		0.01% + 4 mV	
	C	NA	0.03% + 250 μ A	0.03% + 250 μ A	NA		NA	
Source Effect (Line Regulation):	V	2 mV	3 mV	0.01% + 4 mV	0.01% + 4 mV		0.01% + 4 mV	
	C	NA	0.01% + 250 μ A	0.01% + 250 μ A	NA		NA	
PARO rms/p-p: (Ripple and Noise):	V	1 mV/5 mV	200 μ V/1 mV	200 μ V/1 mV	200 μ V/1 mV		200 μ V/1 mV	
	C	NA	500 μ A	500 μ A	NA		NA	
Temperature Coefficient:	V	3 mV	0.02% + 1 mV	0.02% + 1 mV	0.02% + 1 mV		0.02% + 1 mV	
	C	NA	0.02% + 2 mA	0.02% + 1 mA	NA		NA	
Drift (Stability):	V	0.3% + 10 mV	0.1% + 5 mV	0.1% + 5 mV	0.1% + 5 mV		0.1% + 5 mV	
	C	NA	0.01% + 10 mA	0.01% + 5 mA	NA		NA	
Resolution:	V	15 mV	5 mV	5 mV	10 mV		10 mV	
	C	NA	2 mA	1 mA	NA		NA	
Output Impedance (Typical):		1 m Ω , 1 μ H	2 m Ω , 1 μ H	20 m Ω , 1 μ H	25 m Ω , 1 μ H		25 m Ω , 1 μ H	
Load Effect Transient Recovery:	Time	50 μ s	50 μ s	50 μ s	50 μ s		50 μ s	
	Level	40 mV	10 mV	10 mV	10 mV		10 mV	

Output Mode:		CV/CL	CV/CC	CV/CC	CV/CL	CV/CL
R E G U L A T I O N	Res	V	NA	200 Ω /V \pm 1%	200 Ω /V \pm 1%	200 Ω /V \pm 1%
	Coef	C	NA	500 Ω /A \pm 10%	1 k Ω /A \pm 10%	NA
	Volt	V	NA	1 V/V \pm 1%	1 V/V \pm 1%	1 V/V \pm 1%
	Coef	C	NA	0.5 V/A \pm 10%	1 V/A \pm 1%	NA
C O N T R O L	Up	HL	NA	2 ms	1 ms	2 ms
		FL	NA	4 ms	3 ms	7.5 ms
	Down	HL	NA	10 ms	15 ms	60 ms
		FL	NA	5 ms	4 ms	20 ms
Overvoltage Protection Crowbar:	Range	5-6.25 (STD)	2.5-16 V	2.5-23 V	2.5-44 V	2.5-44 V
	Margin	0.75%	4% of output + 2 V	4% of output + 2 V	4% of output + 2 V	4% of output + 2 V
Meter Ranges:		6 V \pm 3% 10 A \pm 3%	0.9 V, 9 V \pm 3% 0.4 A, 4 A \pm 3%	2.4 V, 24 V \pm 3% 0.18 A, 1.8 A \pm 3%	5 V, 50 V \pm 3% 0.075 A, 0.75 A \pm 3%	5 V, 50 V \pm 3% 0.075 A, 0.75 A \pm 3%

Power:		115 Vac \pm 10% 48-73 Hz 1.4 A, 120 W	115 Vac \pm 10% 48-440 Hz 0.9 A, 70 W	115 Vac \pm 10% 48-440 Hz 0.8 A, 66 W	115 Vac \pm 10% 48-440 Hz 0.4 A, 24 W	115 Vac \pm 10% 48-440 Hz 0.5 A, 50 W
Temperature Ratings:		Cool	Convection	Convection	Convection	Convection
Dimensions:		216 mm \times 89 mm \times 317 mm (8 1/2" \times 3 1/2" \times 12 1/2" D)	216 mm \times 89 mm \times 317 mm (8 1/2" \times 3 1/2" \times 12 1/2" D)	216 mm \times 89 mm \times 317 mm (8 1/2" \times 3 1/2" \times 12 1/2" D)	216 mm \times 89 mm \times 317 mm (8 1/2" \times 3 1/2" \times 12 1/2" D)	216 mm \times 89 mm \times 317 mm (8 1/2" \times 3 1/2" \times 12 1/2" D)
Weight:	Nel	5.4 kg (12 lb)	4.5 kg (10 lb)	4.5 kg (10 lb)	3.6 kg (8 lb)	4.5 kg (10 lb)
	Shp	6.8 kg (15 lb)	5.4 kg (12 lb)	5.4 kg (12 lb)	4.5 kg (10 lb)	5.4 kg (12 lb)
Options Available:		28	7, 8, 9, 11, 13, 14, 28	7, 8, 9, 11, 13, 14, 28	7, 11, 13, 28	7, 11, 13, 28, 40

*CV load regulation given for rear terminals only. At front terminals, CV load regulation is 0.5 mV per amp greater due to front terminal resistance.
†Refer to page 174 for complete specification definitions.

Dual Range		Dual Range				
0-20 V	0-40 V	0-30 V	0-60 V	0-40 V	0-160 V	0-320 V
0-1.5 A	0-0.75 A	1 A	0.5 A	0-0.75 A	0-0.2 A	0-0.1 A
6200B		6206B		6202B	6207B	6209B

0.01% + 4 mV	0.01% + 4 mV	0.01% + 4 mV	0.02% + 2 mV	0.02% + 2 mV
0.03% + 250 μ A	NA	0.03% + 250 μ A	200 μ A	200 μ A
0.01% + 4 mV	0.01% + 4 mV	0.01% + 4 mV	0.02% + 2 mV	0.02% + 2 mV
0.01% + 250 μ A	NA	0.01% + 250 μ A	200 μ A	200 μ A
200 μ V/1 mV	200 μ V/1 mV	200 μ V/1 mV	500 μ V/40 mV	1 mV/40 mV
500 μ A rms	NA	500 μ A rms	200 μ A rms	200 μ A
0.02% + 1 mV	0.02% + 1 mV	0.02% + 1 mV	0.02% + 1 mV	0.02% + 1 mV
0.02% + 1 mA	NA	0.02% + 0.5 mA	0.02% + 150 μ A	0.02% + 75 μ A
0.1% + 5 mV	0.1% + 5 mV	0.1% + 5 mV	0.1% + 5 mV	0.1% + 5 mV
0.1% + 5 mA	NA	0.1% + 2.5 mA	0.1% + 750 μ A	0.1% + 350 μ A
10 mV	10 mV	10 mV	25 mV	40 mV
2 mA	NA	1 mA	500 μ A	200 μ A
20 m Ω , 1 μ H	40 m Ω , 2 μ H	20 m Ω , 1 μ H	20 m Ω , 1 μ H	20 m Ω , 1 μ H
50 μ s	50 μ s	50 μ s	50 μ s	50 μ s
10 mV	10 mV	10 mV	10 mV	10 mV

CV/CC	CV/CL	CV/CC	CV/CC	CV/CC
200 Ω /V \pm 1%	300 Ω /V \pm 1%	200 Ω /V \pm 1%	300 Ω /V \pm 1%	300 Ω /V \pm 1%
0.5 k Ω /A \pm 10%	1 k Ω /A \pm 10%	NA	1 k Ω /A \pm 10%	7.5 k Ω /0.1 A \pm 10%
1 V/V \pm 1%	1 V/V \pm 1%	1 V/V \pm 1%	1 V/V \pm 1%	1 V/V \pm 1%
1 V/A \pm 10%	2 V/A \pm 10%	NA	2 V/A \pm 10%	0.75 V/0.1 A \pm 10%
1 ms	4 ms	12 ms	50 ms	4 ms
3 ms	12 ms	30 ms	120 ms	12 ms
15 ms	30 ms	360 ms	600 ms	30 ms
4 ms	10 ms	140 ms	50 ms	30 ms
2.5-44 V	2.5-65 V	2.5-44 V	NA	NA
4% of output + 2 V	4% of output + 2 V	4% of output + 2 V	NA	NA
5 V, 50 V \pm 3%	7 V, 70 V \pm 3%	5 V, 50 V \pm 3%	20 V, 200 V \pm 3%	40 V, 400 V \pm 3%
0.18 A, 1.8 A \pm 3%	0.12 A, 1.2 A \pm 3%	0.09 A, 0.9 A \pm 3%	24 mA, 240 mA \pm 3%	12 mA, 120 mA \pm 3%

115 V ac \pm 10%	115 V ac \pm 10%	115 V ac \pm 10%	115 V ac \pm 10%	115 V ac \pm 10%
48-440 Hz	48-440 Hz	48-440 Hz	48-63 Hz	48-63 Hz
0.9 A, 70 W	1 A, 66 W	0.8 A, 66 W	1 A, 60 W	1 A, 60 W
Convection	Convection	Convection	Convection	Convection
210 mm \times 89 mm \times 317 mm (8 1/4" W \times 3 3/4" H \times 12 1/4" D)	216 mm \times 89 mm \times 317 mm (8 1/2" W \times 3 3/4" H \times 12 1/4" D)	216 mm \times 89 mm \times 317 mm (8 1/2" W \times 3 3/4" H \times 12 1/4" D)	216 mm \times 89 mm \times 317 mm (8 1/2" W \times 3 3/4" H \times 12 1/4" D)	216 mm \times 89 mm \times 317 mm (8 1/2" W \times 3 3/4" H \times 12 1/4" D)
4.5 kg (10 lb)	4.5 kg (10 lb)	4.5 kg (10 lb)	4.5 kg (10 lb)	4.5 kg (10 lb)
5.4 kg (12 lb)	5.4 kg (12 lb)	5.4 kg (12 lb)	5.4 kg (12 lb)	5.4 kg (12 lb)
7, 8, 9, 11, 13, 14, 28	7, 11, 13, 28	7, 8, 9, 11, 13, 14, 28	8, 13, 14, 28	8, 13, 14, 28

Accessories available

14523A Rack Kit for two supplies	\$15
14513A Rack Kit for one supply	\$25

Options

007: ten-turn output voltage control. Replaces concentric coarse and fine voltage controls for improved mechanical stability and convenience (except 6205B). \$30

Model 6205B \$60

008: ten-turn output current control. Replaces concentric coarse and fine current controls for improved mechanical stability and convenience. \$30

009: ten-turn output voltage and current controls. Consists of Options 007 and 008 on same instrument. \$60

011: internal overvoltage protection crowbar. Protects delicate loads against power supply failure or operator error. Monitors the output voltage and places a virtual short circuit (conducting SCR) across load after preset trip voltage is exceeded. On all models except 6205B, the crowbar adjustment potentiometer is accessible from the front panel. On Model 6205B, dual crowbar controls are accessible from the top of the unit. \$65

Model 6205B \$110

013: three-digit graduated decadal voltage control. Includes single ten-turn control replacing coarse and fine voltage controls. Provides improved resettability of output voltage.

Models 6200B, 6201B, 6204B, 6206B \$75

Models 6207B, 6209B \$45

Model 6205B \$150

014: three-digit graduated decadal current control. Includes single ten-turn control replacing coarse and fine current controls. Provides improved resettability of output current. \$75

028: 230 V ac \pm 10%, single phase input. Factory modification consists of reconnecting the multitap input power transformer for 230 V operation. N/C

040: interfacing for Multiprogrammer Operation. Prepares standard HP power supplies for resistance programming by the 6940B Multiprogrammer or 6941B Multiprogrammer Extender. Operation with either of these instruments requires that the power supply be subjected to (1) Special Calibration, and (2) Protection Checkout. The former procedure insures that the power supply will not be damaged by the rapid, repetitive programming possible with the Multiprogrammer.

Model 6205B \$70

C05: eight-inch black handle attached to side of power supply. \$20

Model number and name

6200B Dual Range CV/CC Bench Supply	\$250
6201B Single Range CV/CC Bench Supply	\$230
6202B Single Range CV/CC Bench Supply	\$225
6203B Single Range CV/CC Bench Supply	\$250
6204B Dual Range CV/CL Bench Supply	\$215
6205B Independent Dual Range, Dual Output CV/CL Bench Supply	\$310
6206B Dual Range CV/CL Bench Supply	\$230
6207B Single Range CV/CC Bench Supply	\$285
6209B Single Range CV/CC Bench Supply	\$295
6384A Digital Logic Bench Supply	\$300