

POWER SUPPLIES

Precision Voltage and Current Sources

HP 6114A, 6115A, 6177C, 6181C, 6186C

- Manually operated voltage sources
- 0.025% output voltage accuracy
- Continuously variable current control



HP 6114A,
6115A

HP 6114A and 6115A Voltage Sources

These highly accurate, stable, and easy-to-use voltage sources are intended for use as low-cost calibrators, working voltage standards, system reference supplies, and high-performance lab supplies. The supplies automatically switch between their two voltage ranges. They can be remotely programmed using analog techniques.

The 4-digit push-button voltage control, with a fine-adjust knob, provides voltage resolution of $200\ \mu\text{V}$. The front-panel current control provides 2-mA resolution.

A built-in overvoltage protection circuit (SCR crowbar) monitors the output and reduces output voltage and current to zero whenever the preset voltage limit is exceeded. Using the front-panel control, the overvoltage limit is adjustable from 0.5 V to 10% over the output rating of the power supply.

Specifications

DC Output

HP 6114A: 0 to 20 V, 0 to 2 A

20 to 40 V, 0 to 1 A

HP 6115A: 0 to 50 V, 0 to 0.8 A

50 to 100 V, 0 to 0.4 A

Load Regulation: CV: 0.0005% + $100\ \mu\text{V}$

CC: 0.01% + $500\ \mu\text{A}$

Line Regulation: CV: 0.0005% + $100\ \mu\text{V}$

CC: 0.005% + $40\ \mu\text{A}$

Ripple and Noise: rms/peak-to-peak 20 Hz to 20 MHz

CV: $100\ \mu\text{V}/200\ \mu\text{V}$

CC: $200\ \mu\text{A}/1\ \text{mA}$

Supplemental Characteristics

AC Input: 104 to 127 or 208 to 254 Vac (switchable), 48 to 440 Hz

Regulatory Compliance: Listed to UL 1244, IEC-348.

Size: 155 mm H \times 197 mm W \times 317 mm D (6.1 in \times 7.8 in \times 12.5 in)

Weight: Net 7.7 kg (17 lbs), shipping 9.5 kg (21 lbs)

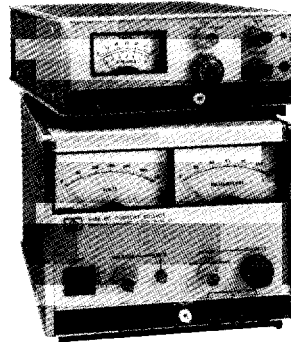
HP 6177C, 6181C, and 6186C Current Sources

These constant current- and voltage-limit power supplies offer exceptional regulation and stability. Typical applications include resistivity measurements, semiconductor characterization, and applications in electrochemistry and electromagnetics.

The output current is continuously variable from zero to full scale with the 10-turn control, while the decadal counts turns. Each model has three current ranges, providing resolution of 0.03% of range full scale. These sources can be remote-programmed using analog techniques.

- Manually operated current sources
- Useful to μA region
- High output impedance—no output capacitor

HP 6177C,
6181C



HP 6186C

Specifications

DC Output

	Full-scale current	Max. voltage compliance
HP 6177C	0 to 500 mA	0 to 50 V
HP 6181C	0 to 250 mA	0 to 100 V
HP 6186C	0 to 100 mA	0 to 300 V

Range A: 1% full-scale current

Range B: 10% full-scale current

Range C: 100% full-scale current

Load Regulation: $0.0025\% + (5 \times 10^{-6} \times \text{range full-scale current})$

Line Regulation: $0.0025\% + (5 \times 10^{-6} \times \text{range full-scale current})$

Ripple and Noise

HP 6177C and 6181C

rms: $0.00032 \times \text{range full-scale current}$

peak-to-peak: $0.008 \times \text{range full-scale current}$

HP 6186C

rms: $0.0002 \times \text{range full-scale current}$

peak-to-peak: $0.005 \times \text{range full-scale current}$

Supplemental Characteristics

AC Input: $115 \pm 10\%$ Vac, 48 to 63 Hz (for 230 Vac, see Option 028)

Regulatory Compliance: Listed to UL 1244, IEC-348.

Size: HP 6177C, 6181C: 87.3 mm H \times 197.6 mm W \times 298.5 mm D

(3.4 in \times 7.8 in \times 11.8 in)

6186C: 154.7 mm H \times 197.6 mm W \times 298.5 mm D

(6.1 in \times 7.8 in \times 11.8 in)

Weight: HP 6177C, 6181C: Net 4.5 kg (10 lb); shipping 5.9 kg (13 lb)

HP 6186C: Net 5.9 kg (13 lb); shipping 7.7 kg (17 lb)

Key Literature

1994/95 Power Products Catalog, p/n 5091-9593.

Ordering Information

	Price
HP 6114A, 6115A Precision Voltage Source	\$3,060
HP 6177C, 6181C Precision Current Source	\$2,960
HP 6186C Precision Current Source	\$3,980
Opt 028 230 \pm 10% Vac Input (6177C, 6181C, 6186C)	\$0
Opt 910 Extra Operating and Service Manual	\$15
HP 6177C, 6181C: HP p/n 5950-1749	
HP 6186C: HP p/n 06186-90005	
HP 6114A, 6115A: HP p/n 5950-5976	\$10
HP 5060-8764 Rack Adapter for rack-mounting one or two HP 6177/81C Sources	\$180
HP 5060-8530 Blank Filler Panel to be used with HP 5060-8764 for one power supply	\$115
HP 5060-8762 Rack Adapter for rack-mounting one or two HP 6186C, 6114A, or 6115A units	\$180
HP 5060-8760 Blank Filler Panel to be used with 5060-8762	\$75