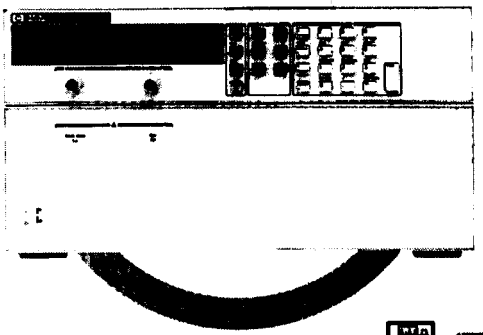
## Single-Output System - 5,000 W



"One Box" solution: includes V and I read-back
Low ripple and noise
Fast up-and down-programming
High-accuracy current programming and read back
Standard Commands for Programmable Instruments (SCPI)
Selectable compensation for inductive loads



### SPECIFICATIONS

(at 0° to 55° C unless otherwise specified)

| | | | HP 6680A | HP 6681A | HP 6682A | HP 6683A | HP 6684A |
|---|---|---|---|---|---|---|---|
| **Output ratings** | Voltage | | 0 to 5 V | 0 to 8 V | 0 to 21 V | 0 to 32 V | 0 to 40 V |
| | Current (derated linearly 1%/° C from 40° to 55° C) | | 0 to 875 A | 0 to 580 A | 0 to 240 A | 0 to 160 A | 0 to 128 A |
| **Programming accuracy at 25° C ±5° C** | Voltage | 0.04% + | 5 mV | 8 mV | 21 mV | 32 mV | 40 mV |
| | Current | 0.1% + | 450 mA | 300 mA | 125 mA | 85 mA | 65 mA |
| **Ripple and noise from 20 Hz to 20 MHz** | Constant voltage | rms | 1.5 mV | 1.5 mV | 1.0 mV | 1.0 mV | 1.0 mV |
| | | peak-to-peak | 10 mV | 10 mV | 10 mV | 10 mV | 10 mV |
| | Constant current | rms | 290 mA | 190 mA | 40 mA | 28 mA | 23 mA |
| **Readback accuracy at 25° C ±5° C (percent of reading plus fixed)** | Voltage | 0.05% + | 7.5 mV | 12 mV | 32 mV | 48 mV | 60 mV |
| | Current | 0.1% + | 600 mA | 400 mA | 165 mA | 110 mA | 90 mA |
| **Load and line regulation** | Voltage | 0.002% + | 190 µV | 300 µV | 650 µV | 1.1 mV | 1.5 mV |
| | Current | 0.005% + | 65 mA | 40 mA | 17 mA | 12 mA | 9 mA |
| **Transient response time** | Less than 900 µs for the output voltage to recover within 150 mV following a change in load from 100% to 50%, or 50% to 100% of the output current rating of the supply | | | | | | |

### Supplemental Characteristics

(Non-warranted characteristics determined by design that are useful in applying this product)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Average programming resolution** | Voltage | | 1.35 mV | 2.15 mV | 5.7 mV | 8.6 mV | 10.8 mV |
| | Current | | 235 mA | 155 mA | 64 mA | 43 mA | 34 mA |
| | OVP | | 30 mV | 45 mV | 120 mV | 180 mV | 225 mV |
| **Output voltage programming response time (excludes command-processing time)** | Full-load programming rise or fall time (10 to 90% or 90 to 10%, resistive load) | | 9 ms | 12 ms | 45 ms | 60 ms | 60 ms |
| **Output common-mode noise current (to signal-ground binding post)** | rms | | 1.5 mA | 1.5 mA | 3 mA | 3 mA | 3 mA |
| | peak-to-peak | | 10 mA | 10 mA | 20 mA | 20 mA | 20 mA |

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**dc Floating Voltage:** Output terminals can be floated up to ±60 Vdc maximum from chassis ground

**Remote Sensing:** Up to half the rated output voltage can be dropped in each load lead. The drop in the load leads subtracts from the voltage available for the load.

**Command Processing Time:** Average time required for the output voltage to begin to change following receipt of digital data is 20 ms for power supplies connected directly to the HP-IB

**Modulation:** (analog programming of output voltage and current):
**Input Signal:** 0 to –5 V for voltage, 0 to +5 V for current
**Input Impedance:** 30 kΩ or greater

**ac Input (47 to 63 Hz):** 180 to 235 Vac (line-to-line, 3 phase), 27.7 A rms maximum; 360 to 440 Vac, 14.3 A rms maximum (maximum line current includes 5% unbalanced phase voltage condition.) Output voltage derated up to 95% at 50 Hz and below 200 Vac.

**Input Power:** 7350 VA and 6000 W maximum; 160 W at no load

**HP-IB Interface Capabilities:** SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT1, E1, and C0. IEEE-488.2 and SCPI command set.

**Regulatory Compliance:** Listed to UL 1244; certified to CSA 22.2 No. 231; conforms to IEC 1010; carries the CE mark

**RFI Suppression:** Complies with CISPR-11 Group 1 Class A

**Size:** 425.5 mm W x 220 mm H x 675.6 mm D (16.75 in x 8.75 in x 26.6 in)

**Weight:** Net, 51.3 kg (113 lb); shipping, 63.6 kg (140 lb)
See page 45 for more details

**Warranty Period:** Three years

### Ordering Information

**Opt 400** 360 to 440 Vac, 3 phase, 47 to 63 Hz

**Opt 601** Output bus bar, cover and spacer kit for bench applications where leads must be oriented vertically. (Order separately as HP p/n 5060-3515).

**Opt 602** Two Bus Bar Spacers for paralleling power supplies (HP p/n 5060-3514)

**Opt 908** Rack-mount Kit (HP p/n 5062-3977 and p/n 5062-3974)

**Opt 909** Rack-mount Kit with Handles (HP p/n 5062-3983 and p/n 5062-3975).
**Support rails required for Option 908 and 909 HP Rack: E3663A, Rack Slides p/n 1494-0058, third party rack: E3664A**

**Opt 910** Service Manual, extra Operating Guide and Programming Guide

**ACCESSORIES**

**HP p/n 5060-3513** Three 30-A Replacement Fuses for 180 to 235 Vac line

**HP p/n 5060-3512** Three 16-A Replacement Fuses for 360 to 440 Vac line