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Single-Output
200 W GPIB



6641A - 6645A

- Fast, low-noise outputs
- Analog control of output voltage and current
- Fan-speed control to minimize acoustic noise
- Parallel and series connections of multiple units
- Built-in measurements and advanced programmable features
- Protection features to ensure DUT safety

This series of 200 W linear-regulated DC power supplies is designed to maximize the throughput of DUTs through the manufacturing test process with fast up and down programming time.

Valuable assemblies can be destroyed by a minor component failure that can allow a surge of voltage or current to flow to the DUT. Fast protection features, including fast crowbar, mode crossover protection, and the ability to connect the protection circuitry of multiple power supplies can increase production yield.

Programming of the DC output and the protection features can be done either from the front panel or using industry standard SCPI commands, via the GPIB. Using the serial link, up to 16 power supplies can be connected through one GPIB address. Test system integration can be further simplified be using the VXI*Plug&Play* drivers. The output voltage and current can also be controlled with analog signals. This is helpful for certain types of noisy environments, and also immediate reactions to process changes.

Lab bench use is enhanced by the fan speed control, which helps to minimize the acoustic noise.

Specifications (at 0° to 55°C unless otherwise specified)		6641A	6642A	6643A	6644A	6645A
Number of outputs		1	1	1	1	1
GPIB		Yes	Yes	Yes	Yes	Yes
Output ratings						
Output voltage		0 to 8 V	0 to 20 V	0 to 35 V	0 to 60 V	0 to 120 V
Output current (40° C)		0 to 20 A	0 to 10 A	0 to 6 A	0 to 3.5 A	0 to 1.5 A
Maximum current (50° C/55° C)		18 A/17 A	9 A/8.5 A	5.4 A/5.1 A	3.2 A/3 A	1.4 A/1.3 A
Programming accuracy at 25°C ±5°C						
Voltage	0.06% +	5 mV	10 mV	15 mV	26 mV	51 mV
Current	0.15% +	26 mA	13 mA	6.7 mA	4.1 mA	1.7 mA
Ripple and noise from 20 Hz to 20 MHz						
Voltage	rms	300 µV	300 µV	400 µV	500 µV	700 µV
	peak-peak	3 mV	3 mV	4 mV	5 mV	7 mV
Current	rms	10 mA	5 mA	3 mA	1.5 mA	1 mA
Readback accuracy at 25°C ±5°C (percent of reading plus fixed)						
Voltage	0.07% +	6 mV	15 mV	25 mV	40 mV	80 mV
+Current	0.15% +	18 mA	9.1 mA	5 mA	3 mA	1.3 mA
-Current	0.35% +	40 mA	20 mA	12 mA	6.8 mA	2.9 mA
Load regulation						
Voltage		1 mV	2 mV	3 mV	4 mV	5 mV
Current		1 mA	0.5 mA	0.25 mA	0.25 mA	0.25 mA
Line regualtion						
Voltage		0.5 mV	0.5 mV	1 mV	1mV	2 mV
Current		1 mA	0.5 mA	0.25 mA	0.25 mA	0.25 mA

Transient response time Less than 100 µs for the output voltage to recover to its previous level (within 0.1% of the voltage rating of the supply or 20 mV, whichever is greater) following any step change in load current of up to 50% of rated current

Supplemental Characteristics	(Non-warranted characteristics determined by design and useful in applying the product)				
Average resolution					
Voltage	2 mV	5 mV	10 mV	15 mV	30 mV
Current	6 mA	3 mA	2 mA	1.2 mA	0.5 mA
OVP	13 mV	30 mV	54 mV	93 mV	190 mV
OVP accuracy	160 mV	400 mV	700 mV	1.2 V	2.4 V

More detailed specifications at **www.agilent.com/find/6640**

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Single-Output: 200 W GPIB (Continued)

Application Notes:

10 Practical Tips You Need to Know About Your Power Products
5965-8239E

10 Hints for Using Your Power Supply to Decrease Test Time
5968-6359E

Understanding Linear Power Supply Operation (AN1554)
5989-2291EN

Modern Connectivity - Using USB and LAN I/O Converters (AN 1475-1)
5989-0123EN

Supplemental Characteristics for all model numbers

DC Floating Voltage: Output terminals can be floated up to ±240 Vdc 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 the power supplies connected directly to the GPIB

Output Programming Response Time: The rise and fall time (10/90% and 90/10%) of the output voltage is less than 15 ms. The output voltage change settles within 1 LSB (0.025% x rated voltage) of final value in less than 60 ms.

Down Programming: An active down programmer sinks approximately 20% of the rated output current

Modulation: (Analog programming of output voltage and current)
Input Signal: 0 to –5 V
Input Impedance: 10 k Ohm nominal

Specifications (at 0˚ to 55˚C unless otherwise specified)		**6641A-J04** Special Order Option	**6643A-J11** Special Order Option	**6644A-J09** Special Order Option	**6645A-J05** Special Order Option	**6645A-J06** Special Order Option
Number of Outputs		1	1	1	1	1
GPIB		Yes	Yes	Yes	Yes	Yes
Output ratings						
Output voltage		13 V	40 V	70 V	150 V	170 V
Output current (40˚C)		15.3 A	5 A	3 A	1.2 A	1 A
Maximum current (50˚C/55˚C)		13.77 A/13 A	4.5 A/4.25 A	2.7 A/2.55 A	1.08 A/1.02 A	0.9 A/0.85 A
Programming accuracy at 25˚C ±5˚C						
Voltage	0.06% +	8.5 mV	17.5 mV	31 mV	65 mV	74 mV
Current	0.15% +	21 mA	6.7 mA	4.1 mA	1.7 mA	1.7 mA
Ripple and noise						
from 20 Hz to 20 MHz						
Voltage	rms	300 µV	450 µV	600 µV	900 µV	1 mV
	peak-peak	3 mV	3.5 mV	6 mV	9 mV	10 mV
	Current rms	8 mA	3 mA	1.5 mA	1 mA	1 mA
Readback accuracy at 25˚C ±5˚C (percent of reading plus fixed)						
Voltage	0.07% +	10 mV	30 mV	47 mV	100 mV	140 mV
+Current	0.15% +	15 mA	5 mA	3 mA	1.3 mA	1.3 mA
–Current	0.35% +	40 mA	12 mA	6.8 mA	2.9 mA	2.9 mA
Load regulation						
Voltage		1 mV	3 mV	4.5 mV	7 mV	8 mV
Current		1 mA	0.25 mA	0.25 mA	0.25 mA	0.25 mA
Line regulation						
Voltage		0.5 mV	1 mV	1.5 mV	2.5 mV	3 mV
Current		1 mA	0.25 mA	0.25 mA	0.25 mA	0.25 mA

Transient response time Less than 100 µs for the output voltage to recover to its previous level (within 0.1% of the voltage rating of the supply or 20 mV, whichever is greater) following any step change in load current of up to 50% of rated current

Supplemental Characteristics (Non-warranted characteristics determined by design and useful in applying the product)						
Average resolution						
Voltage		3.5 mV	12 mV	1.4 mV	37.5 mV	42.5 mV
Current		5 mA	2 mA	1.2 mA	0.5 mA	0.5 mA
OVP		23 mV	62 mV	110 mV	250 mV	285 mV
OVP accuracy		260 mV	800 mV	1.5 mV	3 V	3.4 V

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Single-Output: 200 W GPIB (Continued)

AC Input: (AC input frequency 47 to 63 Hz)

Voltage	100 Vac	120 Vac	220 Vac	240 Vac
Current	4.4 A	3.8 A	2.2 A	2.0 A

Input Power 480 VA, 400 W at full load; 60 W at no load

GPIB Interface Capabilities SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT1, E1, and C0. IEEE-488.2 and SCPI-compatible command set

Software Driver:
- IVI-COM
- VXI*Plug&Play*

Regulatory Compliance: Complies with UL 3111-1, IEC 61010-1.

Size: 425.5 mm W x 88.1 mm H x 439 mm D (16.75 in x 3.5 in x 17.3 in)

Weight: Net, 14.2 kg (31.4 lb); shipping, 16.3 kg (36 lb)

Warranty Period: One year

Ordering Information

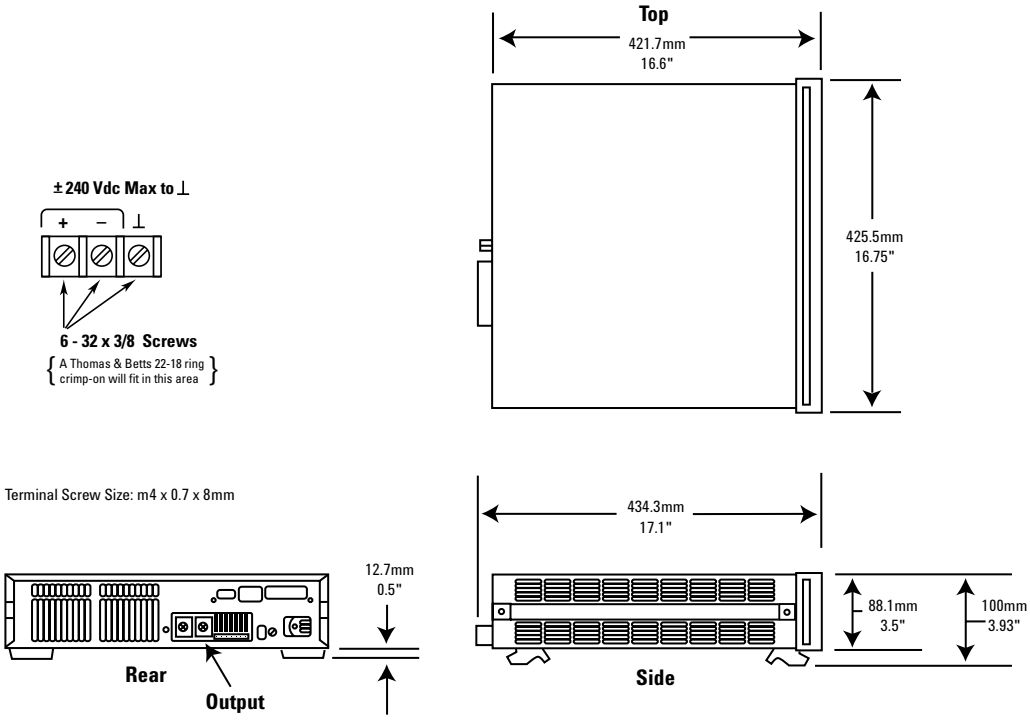
Opt 100 87 to 106 Vac, 47 to 63 Hz
Opt 120 104 to 127 Vac, 47 to 63 Hz
Opt 220 191 to 233 Vac, 47 to 63 Hz
Opt 240 209 to 250 Vac, 47 to 63 Hz
* **Opt 908** Rack-mount Kit (p/n 5063-9212)
* **Opt 909** Rack-mount Kit w/ Handles (p/n 5063-9219)
* **Opt 1CP** Rack-mount Kit with Handles, p/n 5063-9219
Opt 0L1 Full documentation on CD-ROM, and printed standard documentation package
Opt 0L2 Extra copy of standard printed documentation package
Opt 0B0 Full documentation on CD-ROM only
Opt 0B3 Service Manual

* Support rails required

Accessories

p/n 1494-0060 Accessory Slide Kit
p/n 1252-3698 7-pin Analog Plug
p/n 1252-1488 4-pin Digital Plug
p/n 5080-2148 Serial Link Cable 2 m (6.6 ft)
E3663AC Support rails for Agilent rack cabinets

Agilent Models: 6641A, 6642A, 6643A, 6644A, 6645A



More detailed specifications at **www.agilent.com/find/6640**

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Your Requested Excerpt from the
Agilent System and Bench Instruments Catalog 2006
The preceding page(s) are an excerpt from the 2006 System and Bench Instruments Catalog. We hope that these pages supply the information that you currently need. If you would like to have further information about the extensive selection of Agilent DC power supplies, please visit **www.agilent.com/find/power** to print a copy of the complete catalog, or to request that a copy be sent to you. You will also find a lot of other useful information on this Web site.

In the full System and Bench Instruments Catalog, you will find that Agilent offers much more than DC power supplies. This catalog contains detailed technical and application information on digital multimeters, DC power supplies, arbitrary waveform generators, and many more instruments. If you need basic, clean, power for your lab bench, it's there. In each power product category we have also integrated the capabilities you need for a complete power solution, including extensive measurement and analysis capabilities.

Please give us a call at your local Agilent Technologies sales office, or call a regional office listed, for assistance in choosing or using Agilent power products.

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