

## 6630B Series Single-Output, 80-100 W GPIB Power Supplies

Data Sheet

Speed and accuracy for test optimization



- Fast, low-noise outputs
- Programmable active down-programmer sinks the full rated current
- Dual-range, precision low current measurement
- Optional isolation and polarity reversal relays
- Built-in measurements and advanced programmable features
- Protection features to ensure DUT safety

This series of linear-regulated 80-100 W DC power supplies is designed to maximize the throughput of DUTs through the manufacturing test process. Both programming and measurement are optimized for speed. The active downprogrammer can sink up to the full rated current of the power supply, which quickly brings the power supply output to zero volts. The 6630B series offers many advanced programmable features including stored states and status reporting. Programming is done using industry standard SCPI

commands via the GPIB or RS-232. Test system integration is further simplified by using the *VXIplug&play* drivers. The optional relays simplify system design and troubleshooting.

The optional front panel binding posts make the 6630B series convenient on the R&D lab bench. The built-in microamp measurement system helps the engineer to easily and accurately monitor the output voltage and current without a complicated test setup.



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## Specifications

<b>Specifications</b> <i>(at 0 ° to 55 °C unless otherwise specified)</i>		<b>6631B</b>	<b>6632B</b>	<b>6633B</b>	<b>6634B</b>
<b>Number of outputs</b>		1	1	1	1
<b> GPIB</b>		Yes	Yes	Yes	Yes
<b>Output ratings</b>					
Voltage		0 to 8 V	0 to 20 V	0 to 50 V	0 to 100 V
Current		0 to 10 A	0 to 5 A	0 to 2 A	0 to 1 A
<b>Programming accuracy</b>	at 25 °C ± 5 °C				
Voltage		5 mV	10 mV	20 mV	50 mV
+Current	0.05% +	4 mA	2 mA	1 mA	0.5 mA
<b>Ripple and noise</b>	20 Hz to 20 MHz, with outputs ungrounded or with either terminal grounded				
Voltage normal mode	rms	0.3 mV	0.3 mV	0.5 mV	0.5 mV
	peak-to-peak	3 mV	3 mV	3 mV	3 mV
Fast mode	rms	1 mV	1 mV	1 mV	2 mV
	peak-to-peak	10 mV	10 mV	15 mV	25 mV
Current	rms	3 mA	2 mA	2 mA	2 mA
<b>DC measurement accuracy</b>	via GPIB or front-panel meters with respect to actual output at 25 °C ± 5 °C				
<b>Voltage</b>	0.03% +	2 mV	3 mV	6 mV	12 mV
Low current range					
-20 mA to +20 mA	0.1% +	2.5 µA	2.5 µA	2.5 µA	2.5 µA
High current range					
+20 mA to + rated I	0.2% +	1 mA	0.5 mA	0.25 mA	0.25 mA
-20 mA to - rated I	0.2% +	1.6 mA	1.1 mA	0.85 mA	0.85 mA
<b>Load regulation</b>					
Voltage		2 mV	2 mV	4 mV	5 mV
Current		2 mA	1 mA	1 mA	1 mA
<b>Line regulation</b>					
Voltage		0.5 mV	0.5 mV	1 mV	1 mV
Current		1 mA	0.5 mA	0.25 mA	0.25 mA

### Transient response time

Less than 100 µs (50 µs in the fast mode) for the output voltage to recover to its previous level (within 0.1% of the voltage rating of the supply or 20 mV) following any step change in load current of up to 50% of the output current rating of the supply.

<b>Supplemental characteristics</b> <i>(Non-warranted characteristics determined by design and useful in applying the product)</i>		<b>6631B</b>	<b>6632B</b>	<b>6633B</b>	<b>6634B</b>
<b>Average programming resolution</b>					
Voltage		2 mV	5 mV	12.5 mV	25 mV
Current		2.5 mA	1.25 mA	0.5 mA	0.25 mA
<b>Sink current</b>		10 A	5 A	2 A	1 A
<b>Sink current tracking</b>					
SCPI mode		0.4% + 4 mA	0.4% + 2 mA	0.4% + 1 mA	0.4% + 5 mA
Compatibility mode		-500 mA	-250 mA	-100 mA	-50 mA
<b>Minimum current in constant current mode*</b>		40 mA	20 mA	8 mA	4 mA

\* When programming in the 6630A Series language compatibility mode

**Supplemental characteristics for all model numbers**

**DC floating voltage:** Output terminals can be floated up to ± 240 VDC maximum from chassis ground

**Remote sensing:** Up to two volts dropped in each load lead. Add 2 mV to the voltage load regulation specification for each one volt change in the positive output lead due to load current change.

**Command processing time:** Average time required for the output voltage to begin to change following receipt of digital data is 4 ms for the power supplies connected directly to the GPIB. (Display disabled).

**Output programming response time:**

The rise and fall time (10/90% and 90/10%) of the output voltage is less than 2 ms (400 µs in fast mode). The output voltage change settles within 1 LSB (0.025% x rated voltage) of final value in less than 6 ms (2 ms in the fast mode).

**GPIB interface capabilities:**

IEEE-488.2, SCPI command set, and 6630A Series programming compatibility

**Software driver:** *VXIplug&play*

**Measurement time:** Average time to make a voltage or current measurement is 50 ms.

**Input power (full load):** 3.5 A, 250 W

**Regulatory compliance:** Complies with EMC directive 89/336/EEC (ISM 1B).

**Size:**

425.5 mm W x 88.1 mm H x 364.4 mm D (16.8 in x 3.5 in x 14.3 in)

**Weight:** Net, 12.7 kg (28 lb) net; 15.0 kg (33 lb) shipping

**Warranty:** One year

Agilent Models: 6631B, 6632B 6633B, 6634B

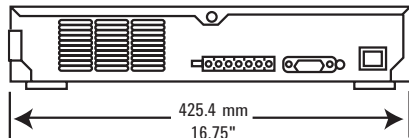
**Terminal Strip Detail**

**Output 2 & 3**

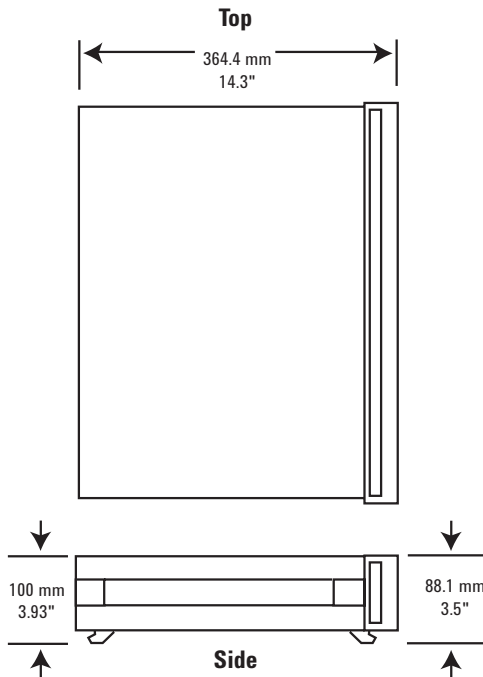
+S + - -S ⊥



Screw Size:  
M35 x 0.6



**Rear**



**Side**

## 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 230** 207 to 253 VAC, 47 to 63 Hz  
**Opt 020** Front-panel binding posts (N/A on 6631B)  
**Opt 760** Isolation and reversal relays, only available at time of order (not available on the 6631B)  
**Opt 8ZJ** Removes feet for use in a racked system  
**Opt 0L1** Full documentation on CD-ROM, and printed standard documentation package. CD-ROM includes User's Guide, Programming Guide, Service Manual and Quick Start Guide  
**Opt 0B3** Service manual

## Accessories

- p/n 1494-0060** Rack slide kit  
**E3663AC** Support rails for Agilent rack cabinets  
**1CM002A\*** Rack mount flange kit 88.1mm H (2U), two flange brackets: 1.75 inch hole spacing  
**1CP001A\*** Rack mount flange and handle kit 88.1 mm H (2U), two brackets and front handles

## 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

\* Support rails required



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