

# Agilent N5700 Series System DC Power Supplies

Models: N5741A-49A, N5750A-52A, N5761A-69A, N5770A-72A

## Data Sheet

- 24 Models: 750 W and 1500 W output power
- Up to 600 V and up to 180 A
- · Small high density 1 U package
- · Built-in voltage and current measurement
- · Full protection from over-voltage and over-current
- 85-265 Vac Universal AC input
- · LAN, USB, and GPIB interfaces standard

## Family of Affordable Basic System DC Power Supplies

The Agilent N5700 Series system DC power supplies give you just the right performance - at just the right price – in a compact (1 U) package. This family of affordable 750 W and 1500 W single-output programmable DC power supplies consists of 24 models for simple DC power applications. They provide stable output power, built-in voltage and current measurement, and output voltage and current from 6 V to 600 V and 1.3 A to 180 A.



These economical supplies offer many system-ready features like multiple standard I/O interfaces to simplify and accelerate test-system development for R&D, design validation, and manufacturing engineers in the aerospace/defense, automotive, component and communications industries.

## Small, High-Density Package Saves You Rack Space

The N5700 provides up to 1500 W in a small space-saving 1 U-high, 19-inch-wide package. Its air vents are in the front, side and rear (not on the top or bottom), so you can stack other instruments directly above or below it to save valuable rack space.



## **Easy Front-Panel Operation**

You can quickly and easily operate the power supply with its rotary knobs and buttons. Using the front-panel controls, you can make coarse or fine adjustments of output voltage and current, protection settings, and set power-on states (last setting memory or factory default setting). The output voltage and current are displayed simultaneously, and LED indicators show power supply status and operating modes. You can lock the front panel controls to protect against accidental power-supply parameter changes.

#### **Extensive Device Protection**

To safeguard your device from damage, the N5700 Series power supplies provide overtemperature, over-current and over-voltage protection (OVP) to shut down the power supply output when a fault condition occurs. They also offer an under-voltage limit (UVL) that prevents adjustment of the output voltage below a certain limit. The combination of UVL and OVP capabilities lets you create a protection window for sensitive load circuitry.



Figure 1. Front-panel control knobs and buttons make it easy to use N5700 power supplies.



Figure 2. Built-in Ethernet, USB 2.0, and GPIB interfaces enable easy system connections

## **Simplify System Connections**

The N5700 Series power supplies comes standard with GPIB, Ethernet/LAN, and USB 2.0 interfaces giving you the flexibility to use your I/O interface of choice today and in the future.

When used in a system running GPIB, the LAN and/or USB interfaces can be disabled for extra security.

## **Remote Access and Control**

The built-in Web server provides remote access and control of the instrument via a standard browser such as Microsoft® Internet Explorer. Using the Web browser, you can set up, monitor and operate the N5700 remotely.

## Easy System Integration and Configuration

To simplify system development, the N5700 comes standard with IVI-COM drivers. The N5700 supports the easy-to-use SCPI (Standard Commands for Programmable Instruments). Plus it includes a compatibility command set for the Xantrex XFR series power supplies, the Sorensen DLM series power supplies and the Agilent 603x series power supplies.

## Flexible configuration: Connect Multiple Units in Parallel and Series

Should you need greater output power, the N5700 series power supplies give you the flexibility to connect in parallel up to four similarly rated units for greater output current and

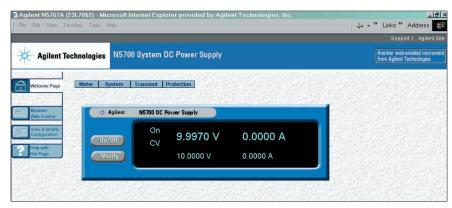


Figure 3. N5700 series web graphical user interface for remote access and control of the power supply

connect two similarly rated units in series for greater output voltage (see output terminal isolation information).

## Analog Programming and Monitoring

The output voltage and current can be programmed from zero to full scale by either an analog voltage 0 to 5 V or 0 to 10 V or by resistances of 0 to 5 k $\Omega$  or 0 to 10 k $\Omega$ .

#### Universal AC input

All N5700 models have universal AC input so they can be automatically operated from any AC mains input voltage worldwide. They can be operated from line voltages of 85 – 265 Vac, 47 to 63 Hz, with no switch to set or fuses

to change when you switch from one voltage standard to another. They also provide power factor correction.

## **Rack Mounting**

The rack mount ears and handles are provided standard with every unit. In addition the N5740A rack mount slide kit makes it easy to integrate an N5700 into a test rack by providing all the necessary hardware to rack mount an N5700 series power supply in only 1 U of rack space.

		N5741A	N5742A	N5743A	N5744A	N5745A	
DC Output ratings	Voltage	6 V	8 V	12.5 V	20 V	30 V	40 V
	Current	100 A	90 A	60 A	38 A	25 A	19 A
	Power	600 W	720 W	750 W	760 W	750 W	760 W
Output Ripple and Noise	CV p-p <sup>1</sup>	60 mV	60 mV	60 mV	60 mV	60 mV	60 mV
	CV rms <sup>2</sup>	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV
Load Effect (change from no load to full load)	Voltage	2.6 mV	2.8 mV	3.25 mV	4 mV	5 mV	6 mV
	Current	25 mA	23 mA	17 mA	12.6 mA	10 mA	8.8 mA
Source Effect	Voltage	2.6 mV	2.8 mV	3.25 mV	4 mV	5 mV	6 mV
change from 85-132 VAC nput or 170-265 VAC input)	Current	12 mA	11 mA	8 mA	5.8 mA	4.5 mA	3.9 mA
Programming Accuracy	Voltage 0.05%+	3 mV	4 mV	6.25 mV	10 mV	15 mV	20 mV
	Current 0.1%+	100 mA	90 mA	60 mA	38 mA	25 mA	19 mA
Measurement Accuracy	Voltage 0.1%+	6 mV	8 mV	12.5 mV	20 mV	30 mV	40 mV
	0 0 10/	300 mA	270 mA	180 mA	114 mA	75 mA	57 mA
	Current 0.1%+	300 IIIA	270 IIIA				
Load Transient Recovery Time <sup>3</sup> Supplemental Character	Time	≤1.2 ms	≤1.2 ms	≤1.2 ms	≤1 ms typical performance	≤1 ms determined either	≤1 ms
Supplemental Character	Time istics Supplemental ch	≤1.2 ms aracteristics are	≤1.2 ms	≤1.2 ms are descriptions of	typical performance	determined either	by design or type
Supplemental Character  Output Response Time (to settle to within 0.5%	Time  istics Supplemental ch	≤1.2 ms  aracteristics are  0.08 s	≤1.2 ms  not warranted but  0.08 s	≤1.2 ms	typical performance	determined either	by design or type
Supplemental Character Output Response Time	Time istics Supplemental ch	≤1.2 ms aracteristics are	≤1.2 ms	$\leq \! 1.2 \; ms$ are descriptions of $0.08 \; s$	typical performance	determined either	by design or type
Supplemental Character  Output Response Time (to settle to within 0.5% of the rated output, with	Time  istics Supplemental character  Up, full load  Down, full load	≤1.2 ms  aracteristics are  0.08 s  0.01 s	≤1.2 ms  not warranted but  0.08 s  0.05 s	≤1.2 ms  are descriptions of  0.08 s  0.05 s	typical performance 0.08 s 0.05 s	determined either  0.08 s  0.08 s	by design or type 0.08 s
Supplemental Character  Output Response Time (to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time	Time  istics Supplemental ch  Up, full load  Down, full load  Down, no load	≤1.2 ms  aracteristics are  0.08 s  0.01 s	≤1.2 ms  not warranted but  0.08 s  0.05 s	≤1.2 ms  are descriptions of  0.08 s  0.05 s  0.7 s	typical performance 0.08 s 0.05 s	determined either  0.08 s  0.08 s	by design or type 0.08 s
Supplemental Character  Output Response Time (to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time <sup>4</sup> Remote Sense Compensation	Time  istics Supplemental ch  Up, full load  Down, full load  Down, no load	≤1.2 ms  aracteristics are  0.08 s  0.01 s  0.5 s	≤1.2 ms  not warranted but  0.08 s  0.05 s  0.6 s	≤1.2 ms  are descriptions of  0.08 s  0.05 s  0.7 s	0.08 s 0.05 s 0.8 s	0.08 s 0.08 s 0.08 s	0.08 s 0.08 s 1.0 s
Supplemental Character  Output Response Time (to settle to within 0.5% of the rated output, with a resistive load)	Time  istics Supplemental ch  Up, full load  Down, full load  Down, no load  Volts/load lead	≤1.2 ms  aracteristics are  0.08 s  0.01 s  0.5 s	≤1.2 ms  not warranted but  0.08 s  0.05 s  0.6 s	≤1.2 ms  are descriptions of  0.08 s  0.05 s  0.7 s  55 ms	0.08 s 0.05 s 0.8 s	0.08 s 0.08 s 0.9 s	0.08 s 0.08 s 1.0 s
Supplemental Character  Output Response Time (to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time <sup>4</sup> Remote Sense Compensation	Time  istics Supplemental characteristics  Up, full load  Down, full load  Down, no load  Volts/load lead  Range  Accuracy	≤1.2 ms  aracteristics are  0.08 s  0.01 s  0.5 s	≤1.2 ms  not warranted but  0.08 s  0.05 s  0.6 s	≤1.2 ms  are descriptions of  0.08 s  0.05 s  0.7 s  55 ms  1 V  1-15 V	0.08 s 0.05 s 0.8 s	0.08 s 0.08 s 0.9 s	0.08 s 0.08 s 1.0 s
Supplemental Character  Output Response Time (to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time  Remote Sense Compensation  Over-voltage Protection  Output Ripple and Noise  Programming Resolution	Time  istics Supplemental ch  Up, full load  Down, full load  Down, no load  Volts/load lead  Range  Accuracy	≤1.2 ms  aracteristics are  0.08 s  0.01 s  0.5 s  1 V  0.5-7.5 V  0.06 V	≤1.2 ms  not warranted but  0.08 s  0.05 s  0.6 s  1 V  0.5-10 V  0.08 V	≤1.2 ms  are descriptions of  0.08 s  0.05 s  0.7 s  55 ms  1 V  1-15 V  0.125 V	0.08 s 0.05 s 0.8 s	0.08 s 0.08 s 0.9 s 1.5 V 2-36 V 0.30 V	0.08 s 0.08 s 1.0 s 2 V 2-44 V 0.40 V
Supplemental Character  Output Response Time (to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time  Remote Sense Compensation  Over-voltage Protection  Output Ripple and Noise  Output Ripple and Noise	Time  istics Supplemental ch  Up, full load  Down, full load  Down, no load  Volts/load lead  Range  Accuracy  CC rms	≤1.2 ms  aracteristics are  0.08 s  0.01 s  0.5 s  1 V  0.5-7.5 V  0.06 V  200 mA	≤1.2 ms  not warranted but  0.08 s  0.05 s  0.6 s  1 V  0.5-10 V  0.08 V  180 mA	≤1.2 ms  are descriptions of  0.08 s  0.05 s  0.7 s  55 ms  1 V  1-15 V  0.125 V  120 mA	0.08 s 0.05 s 0.8 s 1 V 1-24 V 0.20 V 76 mA	0.08 s 0.08 s 0.9 s  1.5 V 2-36 V 0.30 V	0.08 s 0.08 s 1.0 s 2 V 2-44 V 0.40 V 48 m
Supplemental Character  Output Response Time (to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time  Remote Sense Compensation  Over-voltage Protection  Output Ripple and Noise  Programming Resolution	Time  istics Supplemental ch  Up, full load  Down, full load  Down, no load  Volts/load lead  Range  Accuracy  CC rms  Voltage	≤1.2 ms  aracteristics are  0.08 s  0.01 s  0.5 s  1 V  0.5-7.5 V  0.06 V  200 mA  0.72 mV	≤1.2 ms  not warranted but  0.08 s  0.05 s  0.6 s  1 V  0.5-10 V  0.08 V  180 mA  0.96 mV	≤1.2 ms  are descriptions of  0.08 s  0.05 s  0.7 s  55 ms  1 V  1-15 V  0.125 V  120 mA  1.5 mV	0.08 s 0.05 s 0.8 s 1 V 1-24 V 0.20 V 76 mA 2.4 mV	0.08 s 0.08 s 0.9 s  1.5 V  2-36 V 0.30 V  63 mA  3.6 mV	0.08 s 0.08 s 1.0 s 2 V 2-44 V 0.40 V 48 m 4.8 mV

<sup>&</sup>lt;sup>1</sup> Up to 20 MHz

 $<sup>^2</sup>$  From 5 Hz - 1 MHz

 $<sup>^3</sup>$  Time for output voltage to recover within 0.5% of its rated output for a load change from 10 to 90% of its rated output current. Voltage set point from 10% to 100% of rated output

 $<sup>^{\</sup>rm 4}$  Add this to the output reponse time to obtain the total programming time

From 5 Hz – 1 MHz, at 10% to 100% of output voltage at full load (for 6 V units from 33% to 100% of output voltage)

			N5747A	N5748A	N5749A	N5750A	N5751A	N5752A
DC Output ratings	Voltage		60 V	80 V	100 V	150 V	300 V	600 V
	Current		12.5 A	9.5 A	7.5 A	5 A	2.5 A	1.3 A
	Power		750 W	760 W	750 W	750 W	750 W	780 W
Output Ripple and Noise	CV p-p <sup>1</sup>		60 mV	80 mV	80 mV	100 mV	150 mV	300 mV
	CV rms <sup>2</sup>		8 mV	8 mV	8 mV	12 mV	20 mV	60 mV
Load Effect	Voltage		8 mV	10 mV	12 mV	17 mV	32 mV	62 mV
change from no load to full load)	Current		7.5 mA	6.9 mA	6.5 mA	6 mA	5.5 mA	5.26 mA
Source Effect	Voltage		8 mV	10 mV	12 mV	17 mV	32 mV	62 mV
change from 85-132 VAC nput or 170-265 VAC input)	Current		3.25 mA	2.95 mA	2.75 mA	2.5 mA	2.25 mA	2.13 mA
Programming Accuracy	Voltage 0	0.05%+	30 mV	40 mV	50 mV	75 mV	150 mV	300 mV
	Current	0.1%+	12.5 mA	9.5 mA	7.5 mA	5 mA	2.5 mA	1.3 mA
Measurement Accuracy	Voltage	0.1%+	60 mV	80 mV	100 mV	150 mV	300 mV	600 mV
	Current	0.1%+	37.5 mA	28.5 mA	22.5 mA	15 mA	7.5 mA	3.9 mA
Load Transient Recovery Time <sup>3</sup>	Time		≤ 1 ms	≤1 ms	≤ 1 ms	≤ 2 ms	≤ 2 ms	≤ 2 ms
		ental cha						
Output Response Time	Up, full load		0.08 s	0.15 s	0.15 s	0.15 s	0.15 s	0.25 s
Output Response Time (to settle to within 0.5% of the rated output, with	Up, full load  Down, full load		0.08 s 0.08 s	0.15 s 0.15 s	0.15 s 0.15 s	0.15 s 0.15 s	0.15 s 0.15 s	0.25 s 0.30 s
Output Response Time (to settle to within 0.5% of the rated output, with	Up, full load		0.08 s	0.15 s	0.15 s	0.15 s	0.15 s	0.25 s
Output Response Time (to settle to within 0.5% of the rated output, with a resistive load)	Up, full load  Down, full load		0.08 s 0.08 s	0.15 s 0.15 s	0.15 s 0.15 s	0.15 s 0.15 s	0.15 s 0.15 s	0.25 s 0.30 s
Output Response Time to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time <sup>4</sup>	Up, full load  Down, full load  Down, no load		0.08 s 0.08 s	0.15 s 0.15 s	0.15 s 0.15 s 1.5 s	0.15 s 0.15 s	0.15 s 0.15 s	0.25 s 0.30 s
Output Response Time to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time <sup>4</sup> Remote Sense Compensation	Up, full load  Down, full load  Down, no load		0.08 s 0.08 s 1.1 s	0.15 s 0.15 s 1.2 s	0.15 s 0.15 s 1.5 s	0.15 s 0.15 s 2.0 s	0.15 s 0.15 s 2.5 s	0.25 s 0.30 s 4.0 s
Output Response Time to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time <sup>4</sup> Remote Sense Compensation	Up, full load  Down, full load  Down, no load  Volts/load lead		0.08 s 0.08 s 1.1 s	0.15 s 0.15 s 1.2 s	0.15 s 0.15 s 1.5 s 55 ms	0.15 s 0.15 s 2.0 s	0.15 s 0.15 s 2.5 s	0.25 s 0.30 s 4.0 s
Output Response Time (to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time <sup>4</sup> Remote Sense Compensation  Over-voltage Protection	Up, full load  Down, full load  Down, no load  Volts/load lead  Range		0.08 s 0.08 s 1.1 s	0.15 s 0.15 s 1.2 s	0.15 s 0.15 s 1.5 s 55 ms 5 V	0.15 s 0.15 s 2.0 s	0.15 s 0.15 s 2.5 s	0.25 s 0.30 s 4.0 s
Output Response Time to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time <sup>4</sup> Remote Sense Compensation  Over-voltage Protection  Output Ripple and Noise <sup>5</sup>	Up, full load  Down, full load  Down, no load  Volts/load lead  Range  Accuracy		0.08 s 0.08 s 1.1 s 3 V 5-66 V 0.60 V	0.15 s 0.15 s 1.2 s 4 V 5-88 V 0.80 V	0.15 s 0.15 s 1.5 s 55 ms 5 V 5-110 V 1 V	0.15 s 0.15 s 2.0 s 5 V 5-165 V 1.5 V	0.15 s 0.15 s 2.5 s 5 V 5-330 V	0.25 s 0.30 s 4.0 s 5 V 5-660 V 6 V
Output Response Time to settle to within 0.5% of the rated output, with a resistive load)  Command Response Time <sup>4</sup> Remote Sense Compensation  Over-voltage Protection  Output Ripple and Noise <sup>5</sup>	Up, full load  Down, full load  Down, no load  Volts/load lead  Range  Accuracy  CC rms		0.08 s 0.08 s 1.1 s 3 V 5-66 V 0.60 V	0.15 s 0.15 s 1.2 s 4 V 5-88 V 0.80 V	0.15 s 0.15 s 1.5 s 55 ms 5 V 5-110 V 1 V 23 mA	0.15 s 0.15 s 2.0 s 5 V 5-165 V 1.5 V	0.15 s 0.15 s 2.5 s 5 V 5-330 V 3 V	0.25 s 0.30 s 4.0 s 5 V 5-660 V 6 V
Output Response Time (to settle to within 0.5%	Up, full load Down, full load Down, no load  Volts/load lead Range Accuracy  CC rms  Voltage		0.08 s 0.08 s 1.1 s 3 V 5-66 V 0.60 V 38 mA 7.2 mV	0.15 s 0.15 s 1.2 s 4 V 5-88 V 0.80 V 29 mA 9.6 mV	0.15 s 0.15 s 1.5 s 55 ms 5 V 5-110 V 1 V 23 mA	0.15 s 0.15 s 2.0 s  5 V 5-165 V 1.5 V 18 mA	0.15 s 0.15 s 2.5 s  5 V 5-330 V 3 V 13 mA 36 mV	0.25 s 0.30 s 4.0 s  5 V 5-660 V 6 V 8 mA 72 mV

<sup>&</sup>lt;sup>1</sup> Up to 20 MHz

<sup>&</sup>lt;sup>2</sup> From 5 Hz – 1 MHz

 $<sup>^3</sup>$  Time for output voltage to recover within 0.5% of its rated output for a load change from 10 to 90% of its rated output current. Voltage set point from 10% to 100% of rated output

 $<sup>^{\</sup>rm 4}$  Add this to the output reponse time to obtain the total programming time

<sup>&</sup>lt;sup>5</sup> From 5 Hz – 1 MHz, at 10% to 100% of output voltage at full load (for 6 V units from 33% to 100% of output voltage)

		N5761A	N5762A	N5763A	N5764A	N5765A	N5766A
200		0.1/	0.1/	10.5.1/	00.1/	00.1/	40.14
DC Output ratings	Voltage	6 V	8 V	12.5 V	20 V	30 V	40 V
	Current	180 A	165 A	120 A	76 A	50 A	38 A
	Power	1080 W	1320 W	1500 W	1520 W	1500 W	1520 W
Output Ripple and Noise	CV p-p <sup>1</sup>	60 mV	60 mV	60 mV	60 mV	60 mV	60 mV
	CV rms <sup>2</sup>	8 mV	8 mV	8 mV	8 mV	8 mV	8 mV
Load Effect	Voltage	2.6 mV	2.8 mV	3.25 mV	4 mV	5 mV	6 mV
(change from no load to full load)	Current	41 mA	38 mA	29 mA	20.2 mA	15 mA	12.6 mA
Source Effect	Voltage	2.6 mV	2.8 mV	3.25 mV	4 mV	5 mV	6 mV
(change from 85-132 VAC input or 170-265 VAC input)	Current	20 mA	18.5 mA	14 mA	9.6 mA	7 mA	5.8 mA
Programming Accuracy	Voltage 0.05%+	3 mV	4 mV	6.25 mV	10 mV	15 mV	20 mV
	Current 0.1%+	180 mA	165 mA	120 mA	76 mA	50 mA	38 mA
Measurement Accuracy	Voltage 0.1%+	6 mV	8 mV	12.5 mV	20 mV	30 mV	40 mV
	Current 0.1%+	540 mA	495 mA	360 mA	228 mA	150 mA	114 mA
Load Transient Recovery Time <sup>3</sup>	Time	≤1.2 ms	≤1.2 ms	≤1.2 ms	≤1 ms	≤1 ms	≤1 ms
Supplemental Character	ristics Supplemental ch	aracteristics are no	ot warranted but ar	e descriptions of typ	ical performance de	termined either by	design or type testin
Output Response Time	Up, full load	0.08 s	0.08 s	0.08 s	0.08 s	0.08 s	0.08 s
(to settle to within 0.5% of the rated output, with	Down, full load	0.01 -	0.05	0.05	0.05 s	0.00	
a resistive load)	Down, Iun Ioau	0.01 s	0.05 s	0.05 s	0.00 3	0.08 s	0.08 s
	Down, no load	0.5 s	0.05 s 0.6 s	0.05 s 0.7 s	0.8 s	0.08 s 0.9 s	0.08 s 1.0 s
Command Response Time <sup>4</sup>							
·	Down, no load			0.7 s			
Command Response Time <sup>4</sup>	Down, no load	0.5 s	0.6 s	0.7 s 55 ms	0.8 s	0.9 s	1.0 s
Command Response Time <sup>4</sup> Remote Sense Compensation	Down, no load  Volts/load lead	0.5 s	0.6 s	0.7 s 55 ms	0.8 s	0.9 s	1.0 s
Command Response Time <sup>4</sup> Remote Sense Compensation	Down, no load  Volts/load lead  Range	0.5 s 1 V 0.5-7.5 V	0.6 s	0.7 s 55 ms 1 V	0.8 s	0.9 s 1.5 V 2-36 V	1.0 s
Command Response Time <sup>4</sup> Remote Sense Compensation  Over-voltage Protection  Output Ripple and Noise <sup>5</sup> Programming Resolution	Volts/load lead Range Accuracy	0.5 s 1 V 0.5-7.5 V 0.06 V	0.6 s  1 V  0.5-10 V  0.08 V	0.7 s 55 ms 1 V 1-15 V 0.125 V	0.8 s  1 V  1-24 V  0.20 V	0.9 s 1.5 V 2-36 V 0.30 V	1.0 s 2 V 2-44 V 0.40 V
Command Response Time <sup>4</sup> Remote Sense Compensation  Over-voltage Protection  Output Ripple and Noise <sup>5</sup>	Down, no load  Volts/load lead  Range  Accuracy  CC rms	0.5 s 1 V 0.5-7.5 V 0.06 V 360 mA	0.6 s  1 V  0.5-10 V  0.08 V  330 mA	0.7 s 55 ms 1 V 1-15 V 0.125 V 240 mA	0.8 s  1 V  1-24 V  0.20 V  152 mA	0.9 s 1.5 V 2-36 V 0.30 V	1.0 s 2 V 2-44 V 0.40 V 95 mA
Command Response Time <sup>4</sup> Remote Sense Compensation  Over-voltage Protection  Output Ripple and Noise <sup>5</sup> Programming Resolution	Down, no load  Volts/load lead  Range  Accuracy  CC rms  Voltage	0.5 s  1 V  0.5-7.5 V  0.06 V  360 mA  0.72 mV	0.6 s  1 V  0.5-10 V  0.08 V  330 mA  0.96 mV	0.7 s 55 ms 1 V 1-15 V 0.125 V 240 mA	0.8 s  1 V  1-24 V  0.20 V  152 mA  2.4 mV	1.5 V 2-36 V 0.30 V 125 mA	1.0 s  2 V  2-44 V  0.40 V  95 mA  4.8 mV

<sup>&</sup>lt;sup>1</sup> Up to 20 MHz

 $<sup>^2</sup>$  From 5 Hz - 1 MHz

<sup>&</sup>lt;sup>3</sup> Time for output voltage to recover within 0.5% of its rated output for a load change from 10 to 90% of its rated output current. Voltage set point from 10% to 100% of rated output

 $<sup>^{\</sup>rm 4}$  Add this to the output reponse time to obtain the total programming time

 $<sup>^5</sup>$  From 5 Hz - 1 MHz, at 10% to 100% of output voltage at full load (for 6 V units from 33% to 100% of output voltage)

		N5767A	N5768A	N5769A	N5770A	N5771A	N5772A
DC Output ratings	Voltage	60 V	80 V	100 V	150 V	300 V	600 V
	Current	25 A	19 A	15 A	10 A	5 A	2.6 A
	Power	1500 W	1520 W	1500 W	1500 W	1500 W	1560 W
Output Ripple and Noise	CV p-p <sup>1</sup>	60 mV	80 mV	80 mV	100 mV	150 mV	300 mV
	CV rms <sup>2</sup>	8 mV	8 mV	8 mV	12 mV	20 mV	60 mV
Load Effect	Voltage	8 mV	10 mV	12 mV	17 mV	32 mV	62 mV
(change from no load to full load)	Current	10 mA	8.8 mA	8 mA	7 mA	6 mA	5.5 mA
Source Effect	Voltage	8 mV	10 mV	12 mV	17 mV	32 mV	62 mV
(change from 85-132 VAC input or 170-265 VAC input)	Current	4.5 mA	3.9 mA	3.5 mA	3 mA	2.5 mA	2.26 mA
Programming Accuracy	Voltage 0.05%+	30 mV	40 mV	50 mV	75 mV	150 mV	300 mV
	Current 0.1%+	25 mA	19 mA	15 mA	10 mA	5 mA	2.6 mA
Measurement Accuracy	Voltage 0.1%+	60 mV	80 mV	100 mV	150 mV	300 mV	600 mV
	Current 0.1%+	75 mA	57 mA	45 mA	30 mA	15 mA	7.8 mA
Load Transient Recovery Time <sup>3</sup>	Time	≤1 ms	≤ 1 ms	≤ 1 ms	≤ 2 ms	≤ 2 ms	≤ 2 ms
Supplemental Character	ristics Supplemental cha	aracteristics are n	ot warranted but a	re descriptions of t	ypical performance	determined either b	y design or type testi
Output Response Time	Up, full load	0.08 s	0.15 s	0.15 s	0.15 s	0.15 s	0.25 s
(to settle to within 0.5% of the rated output, with							
	Down, full load	0.08 s	0.15 s	0.15 s	0.15 s	0.15 s	0.30 s
a resistive load)	Down, full load  Down, no load	0.08 s 1.1 s	0.15 s 1.2 s	0.15 s 1.5 s	0.15 s 2.0 s	0.15 s 2.5 s	
a resistive load)  Command Response Time <sup>4</sup>	·						0.30 s
Command Response Time <sup>4</sup>	Down, no load			1.5 s			0.30 s
Command Response Time <sup>4</sup> Remote Sense Compensation	Down, no load	1.1 s	1.2 s	1.5 s 55 ms	2.0 s	2.5 s	0.30 s 4.0 s
Command Response Time <sup>4</sup> Remote Sense Compensation	Down, no load  Volts/load lead	1.1 s	1.2 s	1.5 s 55 ms 5 V	2.0 s	2.5 s	0.30 s 4.0 s
<u> </u>	Down, no load  Volts/load lead  Range	1.1 s 3 V 5-66 V	1.2 s 4 V 5-88 V	1.5 s 55 ms 5 V 5-110 V	2.0 s 5 V 5-165 V	2.5 s 5 V 5-330 V	0.30 s 4.0 s 5 V 5-660 V
Command Response Time <sup>4</sup> Remote Sense Compensation  Over-voltage Protection  Output Ripple and Noise <sup>5</sup> Programming Resolution	Volts/load lead Range Accuracy	1.1 s 3 V 5-66 V 0.60 V	1.2 s 4 V 5-88 V 0.80 V	1.5 s 55 ms 5 V 5-110 V 1 V	2.0 s 5 V 5-165 V 1.5 V	2.5 s 5 V 5-330 V 3 V	0.30 s 4.0 s 5 V 5-660 V 6 V
Command Response Time <sup>4</sup> Remote Sense Compensation  Over-voltage Protection  Output Ripple and Noise <sup>5</sup>	Down, no load  Volts/load lead  Range  Accuracy  CC rms	1.1 s 3 V 5-66 V 0.60 V 75 mA	1.2 s 4 V 5-88 V 0.80 V 57 mA	1.5 s 55 ms 5 V 5-110 V 1 V 45 mA	2.0 s  5 V  5-165 V  1.5 V  35 mA	2.5 s  5 V  5-330 V 3 V  25 mA	0.30 s 4.0 s 5 V 5-660 V 6 V
Command Response Time <sup>4</sup> Remote Sense Compensation  Over-voltage Protection  Output Ripple and Noise <sup>5</sup> Programming Resolution	Down, no load  Volts/load lead  Range  Accuracy  CC rms  Voltage	1.1 s  3 V  5-66 V  0.60 V  75 mA	1.2 s 4 V 5-88 V 0.80 V 57 mA 9.6 mV	1.5 s 55 ms 5 V 5-110 V 1 V 45 mA	2.0 s  5 V  5-165 V  1.5 V  35 mA	2.5 s  5 V  5-330 V  3 V  25 mA  36 mV	0.30 s 4.0 s 5 V 5-660 V 6 V 12 mA

<sup>&</sup>lt;sup>1</sup> Up to 20 MHz

 $<sup>^2</sup>$  From 5 Hz - 1 MHz

<sup>&</sup>lt;sup>3</sup> Time for output voltage to recover within 0.5% of its rated output for a load change from 10 to 90% of its rated output current. Voltage set point from 10% to 100% of rated output

 $<sup>^{\</sup>rm 4}$  Add this to the output reponse time to obtain the total programming time

 $<sup>^5</sup>$  From 5 Hz -1 MHz, at 10% to 100% of output voltage at full load (for 6 V units from 33% to 100% of output voltage)

## **Supplemental Characteristics for All Model Numbers**

## Series and Parallel Capability

#### Parallel operation

Up to 4 units can be connected in master/slave mode

## Series operation

Up to 2 units can be connected in series

#### **Output Terminal Isolation**

## 6 V to 60 V units

No output terminal may be more than ±60 VDC from any other terminal or chassis ground

#### 80 V to 600 V units

No output terminal may be more than ±600 VDC from any other terminal or chassis ground

### Store-recall States

Volatile memory locations: 16

## **Analog Programming**

(of output voltage and current)

## **Input Signal**

selectable;

0 to 5 V/0 to 10 V full scale

#### Input Impedance

selectable;

0 to  $5k\Omega/0$  to 10  $k\Omega$  full scale

## **Interface Capabilities**

#### GPIB

SCPI - 1993, IEEE 488.2 compliant interface

#### USB 2.0

Requires Agilent I/O Library version L.01.01

## 10/100 LAN

Requires Agilent I/O library version L.01.01

#### Web Server

Built-in Web server requires Internet Explorer 5+ or Netscape 6.2+

#### **Environmental Conditions**

#### **Environment**

Indoor use, installation category II (AC input), pollution degree 2

## Operating temperature

 $0^{\circ}$ C to  $40^{\circ}$ C @ 100% load

## Storage temperature

-20°C to 70°C

## Operating humidity

30% to 90% relative humidity (no condensation)

## Storage humidity

10% to 95% relative humidity (no condensation)

#### Altitude

- Up to 3000 meters.

  Derate the output current by 2%/100 m above 2000 m.
- Derate the maximum ambient temperature by 1°C/100 m above 2000 m.

## **Regulatory Compliance**

#### **EMC**

- European EMC directive 89/336/EEC for Class A products
- Australian C- Tick mark
- This ISM device complies with Canadian ICES-001. Cet appareil ISM est conforme à la norme NMB-001 du Canada.

## Safety

- European Low Voltage Directive 73/23/EEC
- US and Canadian safety standards

• Any LEDs used in this product are Class 1 as per IEC 825-1

## **Acoustic Noise Declaration**

**Emission Directive:** 

- Sound Pressure Lp <70 dB(A), At Operator Position, \*Normal Operation, \*According to EN 27779 (Type Test).
- Schalldruckpegel Lp
   dB(A) \*Am Arbeitsplatz,
   \*Normaler Betrieb, \*Nach EN 27779 (Typprüfung).

## **AC** Input

## **Nominal Input**

100 - 240 VAC; 50/60 Hz

## Input Current 750 W

10.5 A @ 100 VAC nominal; 5 A @ 200 VAC nominal

#### Input Current 1500 W

21 A @ 100 VAC nominal; 11 A @ 200 VAC nominal

## **Input Range**

85 - 265 VAC; 47 - 63 Hz.

## **Power Factor**

0.99 at nominal input and rated output power

#### **Efficiency**

76% – 87% for 750 W units; 77% – 88% for 1500 W units

## **Inrush Current**

<25 A for 750 W units; <50 A for 1500 W units

#### **Dimensions**

(excluding connectors, and handles)

**Height** 43.6 mm (1.72 in)

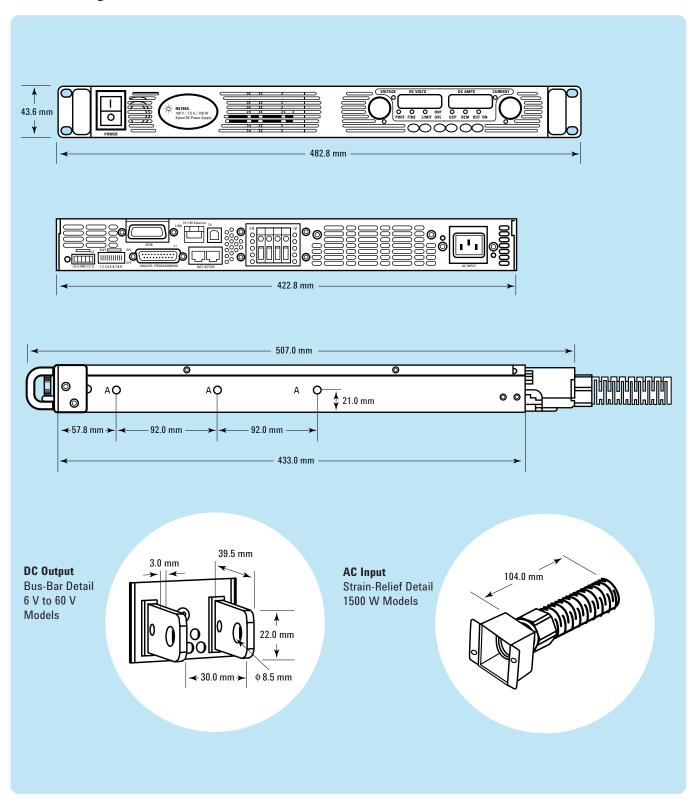
Width 422.8 mm (16.65 in)

**Depth** 432.8 mm (17.04 in)

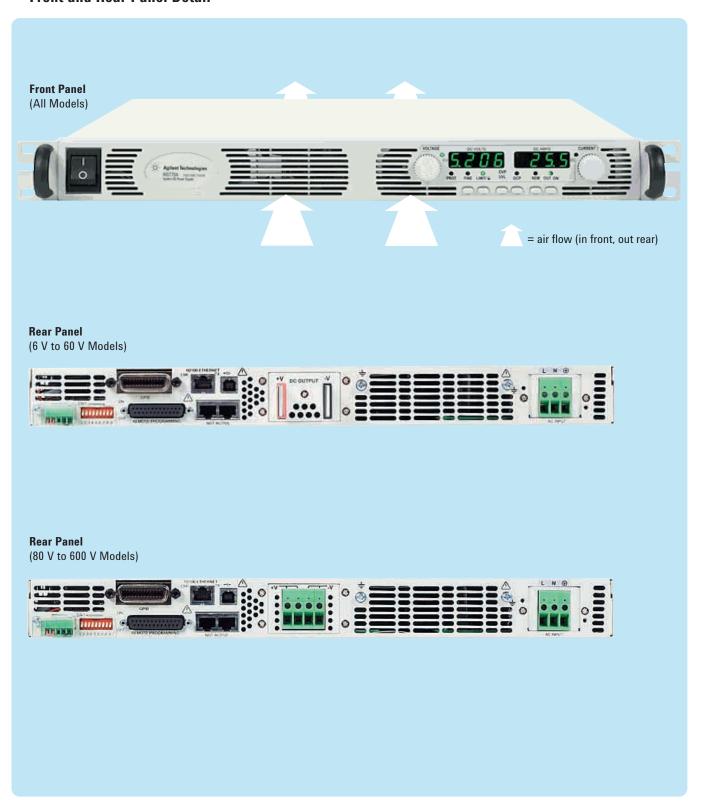
## Weight

**750 W** 7 Kg (15.4 lbs.) **1500 W** 8.5 Kg (18.7 lbs.)

## **Outline Diagram**



## Front and Rear Panel Detail



## **Ordering Information**

## **Available Models**

750 W Models		
N5741A	System DC Power Supply	6 V, 100 A, 600 W
N5742A	System DC Power Supply	8 V, 90 A, 720 W
N5743A	System DC Power Supply	12.5 V, 60 A, 750 W
N5744A	System DC Power Supply	20 V, 38 A, 760 W
N5745A	System DC Power Supply	30 V, 25 A, 750 W
N5746A	System DC Power Supply	40 V, 19 A, 760 W
N5747A	System DC Power Supply	60 V, 12.5 A, 750 W
N5748A	System DC Power Supply	80 V, 9.5 A, 760 W
N5749A	System DC Power Supply	100 V, 7.5 A, 750 W
N5750A	System DC Power Supply	150 V, 5 A, 750 W
N5751A	System DC Power Supply	300 V, 2.5 A, 750 W
N5752A	System DC Power Supply	600 V, 1.3 A, 780 W

1500 W Models		
N5761A	System DC Power Supply	6 V, 180 A, 1080 W
N5762A	System DC Power Supply	8 V, 165 A, 1320 W
N5763A	System DC Power Supply	12.5 V, 120 A, 1500 W
N5764A	System DC Power Supply	20 V, 76 A, 1520 W
N5765A	System DC Power Supply	30 V, 50 A, 1500 W
N5766A	System DC Power Supply	40 V, 38 A, 1520 W
N5767A	System DC Power Supply	60 V, 25 A, 1500 W
N5768A	System DC Power Supply	80 V, 19 A, 1520 W
N5769A	System DC Power Supply	100 V, 15 A, 1500 W
N5770A	System DC Power Supply	150 V, 10 A, 1500 W
N5771A	System DC Power Supply	300 V, 5 A, 1500 W
N5772A	System DC Power Supply	600 V, 2.6 A, 1560 W

## **Options**

## 1500 W Models

Opt 861

Unterminated Power Cord, USA, Canada

Opt 862

Harmonized Unterminated Power Cord, Europe

## 750 W Models

Opt 900

Power Cord, United Kingdom

Opt 902

Power Cord, Europe

Opt 903

Power Cord, USA, Canada

Ont 918

Power Cord, Japan

Opt 922

Power Cord, China

## **Accessories**

N5740A

Rack Mount Slide Kit (required for rack mounting; standard system 11 rack-mounting hardware will not work)

## **Agilent Technologies' Test and Measurement** Support, Services, and Assistance

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Product specifications and descriptions in this document subject to change without notice.

For the latest and complete specifications, refer to the N5700 User's Guide, Agilent part number 5969-2917. The web contains the most up-to-date version of the User's Guide. Go to http://www.agilent.com/find/N5700

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