



Agilent N8900 Series

Autoranging System DC Power Supplies

N8920A-N8924A (5 kW, 208 VAC)

N8925A-N8930A (10 kW, 208 VAC)

N8931A-N8937A (15 kW, 208 VAC)

N8940A-N8944A (5 kW, 400 VAC)

N8945A-N8950A (10 kW, 400 VAC)

N8951A-N8957A (15 kW, 400 VAC)

Data Sheet



- Autoranging output – does the job of multiple power supplies!
- 5, 10, and 15 kW maximum output power
- Up to 1500 V and up to 510 A
- 14 different voltage, current, and power combinations available in 208 or 400 VAC (28 total models)
- Just the right amount of performance at just the right price
- Easily parallel units to create “one” power supply with > 100 kW of power
- Built-in voltage and current measurement
- High power density, 15 kW in only 3U (5.25 inch/13.34 cm)
- Protection from over-voltage, over-current, and over-temperature
- LAN (LXI Core), USB, GPIB, and analog interfaces all standard

PRELIMINARY

Final specifications available 1 October 2013.

Family of affordable, autoranging system DC power supplies

The Agilent Technologies N8900 Series provides 5, 10, and 15 kW autoranging, single-output programmable DC power for ATE applications that require just the right amount of performance at just the right price. The N8900 Series power supplies' autoranging output characteristic enables unprecedented flexibility by offering a wide range of voltage and current combinations at full power. Power supplies with “rectangular,” or traditional, output characteristics provide full power at only one voltage and current combination. Just one N8900 does the job of multiple power supplies. It's like having many power supplies in one!

The N8900 Series provides stable output power, built-in voltage and current measurements, and autoranging output voltage and current from 80 to 1500 V and 10 to 510 A. These supplies offer many system-ready features like multiple standard I/O interfaces to simplify and accelerate test-system development and compact 3U design to save rack space. If more power is required, easily parallel multiple N8900 units to create “one” power supply with > 100 kW of total output power. The built-in master/slave control enables programming as if it's just one big power supply; no need to program each supply individually.



Preliminary look at a
new Agilent product.
More information to follow!

Autoranging Output – like having many power supplies in one!



Autoranging output – does the job of multiple power supplies

The N8900 power supplies' autoranging output characteristic makes it much more flexible than rectangular, or traditional, output characteristic power supplies because they expand the power curve, giving the user more voltage and current combinations in one power supply. It's like having many rectangular power supplies in one. For example, the 1000 V, 30 A, 10 kW model is capable of 1000 V and 10 A at 10 kW as well as 333.3 V and 30 A at 10 kW. If it were a rectangular output, the specifications would be 1000 V, 10 A, 10 kW. At 333.3 V it would only be able to output 3.3 kW, not the 10 kW of an autoranging output. Figures 1 and 2 show a graphical representation of this example.

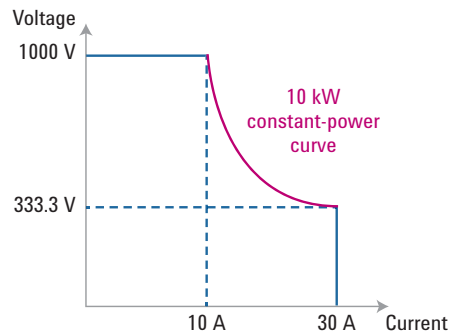


Figure 1. Autoranging output characteristic

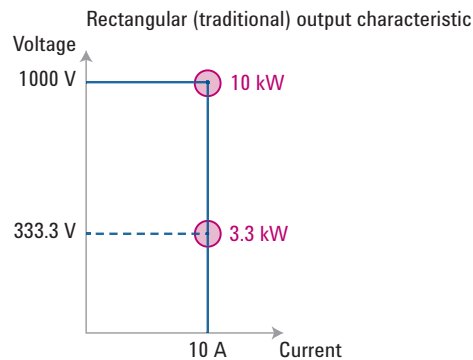


Figure 2. Rectangular output characteristic

Easy front-panel operation

Using the front panel controls, you have complete access to all of the N8900 features via the extensive menu system. You can either use the voltage and current knobs or enter your settings via the keypad. You can also set protection settings, power-on states, and other features. The output voltage, current, and power can be displayed simultaneously, and annunciators at the bottom of the display show power supply status and operating modes. You can lock the front panel controls to protect against accidental power-supply parameter changes.

Device protection

To safeguard your device, the N8900 Series power supplies provide over-temperature, over-current and over-voltage protection to shut down the power supply output when a fault condition occurs.

Simplify system connections

The N8900 Series power supplies come standard with GPIB, Ethernet/LAN, USB 2.0, and analog interfaces giving you the flexibility to use your I/O interface of choice today and safeguard your test setup for the future. There is no need to worry whether or not you are choosing the right interface when they all come standard. The N8900 is fully compliant with the LXI Core specification.

Remote access and control

The built-in Web server provides remote access and control of the instrument via a standard browser. This control goes above and beyond the LXI specification, giving users the ability to monitor and control the instrument from anywhere. Using the Web browser, you can set up, monitor and operate the N8900 remotely.



Figure 3. N8900 Series web graphical user interface for remote access and control of the power supply

Easy system integration and configuration

To simplify system development, the N8900 comes standard with IVI-COM drivers. The N8900 supports the easy-to-use SCPI (Standard Commands for Programmable Instruments).



Parallel operation for more power

Need more power, we've got you covered. Quickly create a master/slave setup for even more total output power. The N8900 Series power supplies give you the flexibility to easily connect in parallel up to seven identical units (same model number) for greater output current. The units can also be configured to look like "one" big power supply.

Analog programming and monitoring

The output voltage and current can be programmed from zero to full-scale by an analog voltage signal from 0 to 5 V or 0 to 10 V. Each corresponding to 0 to 100% of full-scale. The measured output voltage and current can also be monitored in the same way.

AC input

The N8900 has 28 total models. Fourteen have 208 VAC inputs and the remaining 14 have 400 VAC inputs. This gives the N8900 the ability to be used anywhere in the world. Choose 208 VAC for regions such as the Americas and Japan or choose 400 VAC for regions such as Europe and Asia.

Performance specifications

	N8920A / N8940A	N8921A / N8941A	N8923A / N8943A	N8924A / N8944A	N8925A / N8945A	N8926A / N8946A	N8928A / N8948A	N8929A / N8949A	N8930A / N8950A	N8931A / N8951A	N8932A / N8952A	N8934A / N8954A	N8935A / N8955A	N8937A / N8957A
DC Output ratings:														
Voltage	80 V	200 V	500 V	750 V	80 V	200 V	500 V	750 V	1000 V	80 V	200 V	500 V	750 V	1500 V
Current	170 A	70 A	30 A	20A	340 A	140 A	60 A	40 A	30 A	510 A	210 A	90 A	60 A	30 A
Power	5 kW	5 kW	5 kW	5 kW	10 kW	10 kW	10 kW	10 kW	10 kW	15 kW	15 kW	15 kW	15 kW	15 kW
Output Voltage Ripple and Noise:														
CV p-p Note ¹	100 mV	200 mV	250 mV	TBD	150 mV	200 mV	300 mV	TBD	800 mV	150 mV	250 mV	300 mV	TBD	1000 mV
CV rms Note ²	14 mV	40 mV	70 mV	TBD	10 mV	25 mV	70 mV	TBD	350 mV	10 mV	25 mV	70 mV	TBD	350 mV
Load Effect: (change from 0% to 100% of full load)														
Voltage 0.05%	40 mV	100 mV	250 mV	375 mV	40 mV	100 mV	250 mV	375 mV	500 mV	40 mV	100 mV	250 mV	375 mV	750 mV
Current 0.15%	255 mA	105 mA	45 mA	30 mA	510 mA	210 mA	90 mA	60 mA	45 mA	765 mA	315 mA	135 mA	90 mA	45 mA
Programming Accuracy:														
Voltage 0.1%	≤ 80 mV	≤ 200 mV	≤ 500 mV	≤ 750 mV	≤ 80 mV	≤ 200 mV	≤ 500 mV	≤ 750 mV	≤ 1.0 V	≤ 80 mV	≤ 200 mV	≤ 500 mV	≤ 750 mV	≤ 1.5 V
Current 0.2%	≤ 340 mA	≤ 140 mA	≤ 60 mA	≤ 40 mA	≤ 680 mA	≤ 280 mA	≤ 120 mA	≤ 80 mA	≤ 60 mA	≤ 1.1 A	≤ 420 mA	≤ 180 mA	≤ 120 mA	≤ 60 mA
Measurement Accuracy:														
Voltage 0.1%	≤ 80 mV	≤ 200 mV	≤ 500 mV	≤ 750 mV	≤ 80 mV	≤ 200 mV	≤ 500 mV	≤ 750 mV	≤ 1.0 V	≤ 80 mV	≤ 200 mV	≤ 500 mV	≤ 750 mV	≤ 1.5 V
Current 0.2%	≤ 340 mA	≤ 140 mA	≤ 60 mA	≤ 40 mA	≤ 680 mA	≤ 280 mA	≤ 120 mA	≤ 80 mA	≤ 60 mA	≤ 1.1 A	≤ 420 mA	≤ 180 mA	≤ 120 mA	≤ 60 mA
Load Transient Recovery Time: (time for output voltage to recover within 1% of its rated output for a load change from 10% to 90% of its rated output current)														
Time	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms	≤ 1.5 ms

Note 1. 20 MHz

Note 2. From 20 Hz to 300 kHz

Available models

Model #	Max Voltage (V)	Current (A) @Max Voltage ¹	Voltage (V) @Max Current*	Max Current (A)	Max Power (W)	AC Input Voltage (VAC)
N8920A	80	62.5	29.4	170	5000	208
N8921A	200	25.0	71.4	70	5000	208
N8923A	500	10.0	166.7	30	5000	208
N8924A	750	6.7	250.0	20	5000	208
N8925A	80	125.0	29.4	340	10000	208
N8926A	200	50.0	71.4	140	10000	208
N8928A	500	20.0	166.7	60	10000	208
N8929A	750	13.3	250.0	40	10000	208
N8930A	1000	10.0	333.3	30	10000	208
N8931A	80	187.5	29.4	510	15000	208
N8932A	200	75.0	71.4	210	15000	208
N8934A	500	30.0	166.7	90	15000	208
N8935A	750	20.0	250.0	60	15000	208
N8937A	1500	10.0	500.0	30	15000	208
N8940A	80	62.5	29.4	170	5000	400
N8941A	200	25.0	71.4	70	5000	400
N8943A	500	10.0	166.7	30	5000	400
N8944A	750	6.7	250.0	20	5000	400
N8945A	80	125.0	29.4	340	10000	400
N8946A	200	50.0	71.4	140	10000	400
N8948A	500	20.0	166.7	60	10000	400
N8949A	750	13.3	250.0	40	10000	400
N8950A	1000	10.0	333.3	30	10000	400
N8951A	80	187.5	29.4	510	15000	400
N8952A	200	75.0	71.4	210	15000	400
N8954A	500	30.0	166.7	90	15000	400
N8955A	750	20.0	250.0	60	15000	400
N8957A	1500	10.0	500.0	30	15000	400

The N8900 Series are autoranging power supplies. The "Current @ Max Voltage" and "Voltage @ Max Current" are listed to show the full range of voltage and current combinations possible due to the autoranging capability.

Options

None

AC Input Voltages

If the AC input voltage where the power supply will be used is:

- 187 to 240 VAC, please choose a 208 VAC model (N8920A-N8937A)
- 340 to 460 VAC, please choose a 400 VAC model (N8940A-N8957A)

Accessories

TBD

Line Cords and Terminations (Plugs)

Due to the number of different line cords and terminations around the world, the N8900 power supplies do not come with line cords or terminations. Users will need to supply their own dependent on the local laws and codes of the country/region where the power supply will be used.