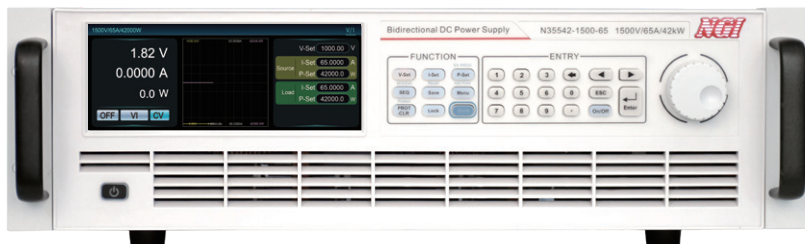


N35500 Series High Performance High Power Bidirectional Programmable DC Power Supply



Product Introduction

The N35500 series is a high power bidirectional programmable DC power supply with dual quadrant, integrating bidirectional power supply and regenerative load to supply and absorb current. With the design of wide range and high power density, voltage range 0~1500V, output power up to 42kW in 3U chassis, it covers a wide range of DUT test applications. N35500 series are equipped with fast dynamic response, high accuracy output and measurement functions, and can also be configured with photovoltaic simulation, battery simulation and other software to help users realize accurate and efficient testing in multiple scenarios.

Application Fields

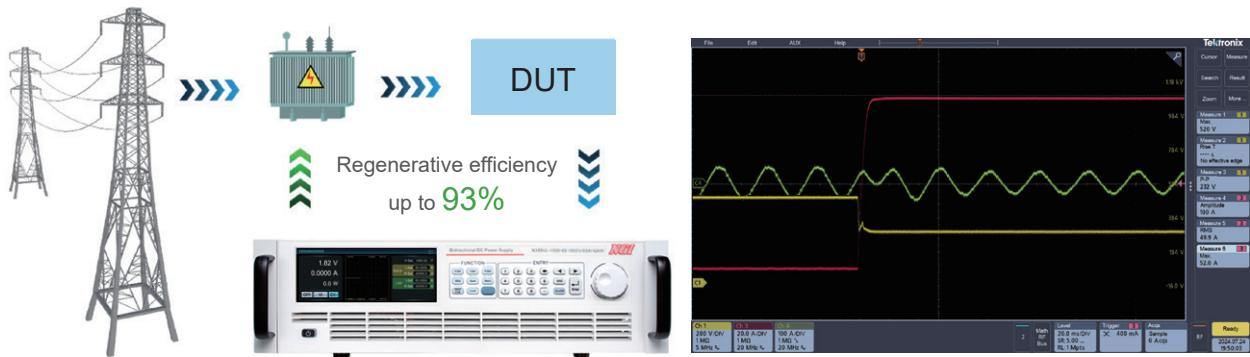
- ▶ Laboratory, production line ATE automatic test system
- ▶ Photovoltaic inverter, hydrogen fuel cell, solar cell matrix and other new energy fields
- ▶ Energy storage converter, UPS, photovoltaic storage machine and other energy storage fields
- ▶ BOBC, DC-DC, motor drive, charging pile and other automotive fields
- ▶ Charge/discharge test for power batteries, lead batteries, supercapacitors, etc.
- ▶ Test for aerospace electronics, high-power communications equipment, drones, etc.

Main Features

- ▶ High power density, up to 42kW output in 3U chassis
- ▶ Wide output range, one can be used as multiple
- ▶ High-speed dynamic response, voltage rise and fall time $\leq 5\text{ms}$
- ▶ Voltage accuracy: $0.02\%+0.02\%\text{F.S.}$; Current accuracy: $0.1\%+0.1\%\text{F.S.}$
- ▶ CC&CV Priority suitable for all types of test item
- ▶ Master/Master parallel up to MW level
- ▶ Source mode support CC/CV/CP/CR function
- ▶ Battery simulation, charge/discharge test, sequence test, waveform function etc.
- ▶ PV array I-V curve simulation function (optional)
- ▶ 6.8 inch LCD screen for clear test information
- ▶ Standard with LAN/RS232/RS485/CAN communication
- ▶ Modbus-RTU, SCPI, CANopen protocol supportable

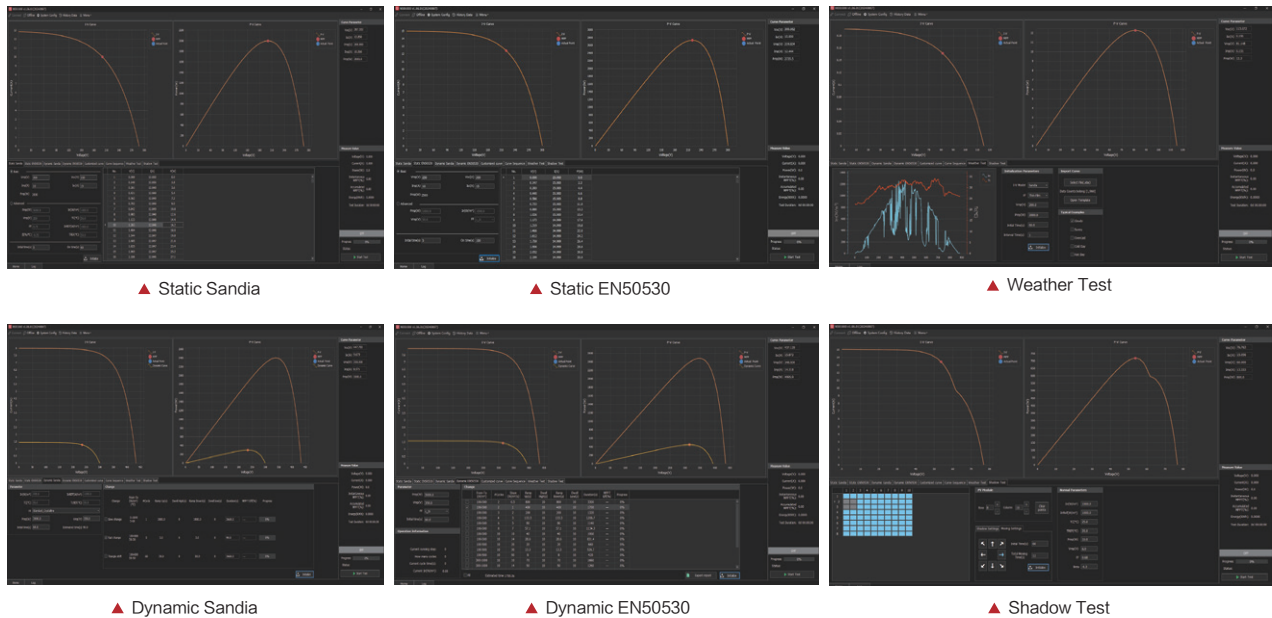
Seamless switch between source and load to regenerate energy

With the integration of power supply and regenerative load, N35500 series bidirectional power supply can be converted continuously seamlessly between the output and absorbed current, effectively avoiding voltage or current overshoot. Under load mode, N35500 series can not only provide external power, but also absorb power, and return electric energy to the grid cleanly, the regenerative efficiency up to 93%. It is widely used in lithium battery, UPS, BOBC and other equipment testing.



PV Cell Simulation (Optional)

With the characteristics of accurate measurement, high stability, fast response speed, N35500 series DC power supply with NS91000 can accurately simulate the I-V, P-V curve of the solar cell matrix. After setting V_{mp} , P_{mp} and other parameters, it can generate reports in compliance with regulations, which is used to test the static and dynamic maximum power tracking efficiency of PV inverters, and also can provide support for system simulation and core equipment testing of microgrids, distributed photovoltaic and other power systems.



Battery Simulation

N35500 series with NS81000 battery simulator software to meet the user's needs for different types of battery simulation, and improve the test efficiency. NS81000 has 7 standard battery model libraries, users only need to select the corresponding battery type, configure the basic capacity and protection parameters, the software can quickly generate the corresponding type of battery characteristic curve; And there are 2 types of custom battery characteristic curve, engineers can be based on the actual measurement of the battery curve data, import the data into the software and carry out simulation.

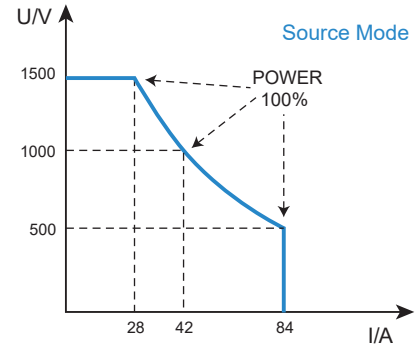


▲ Master Computer Interface

▲ Battery Type

Wide range, high power density for saving cost and space

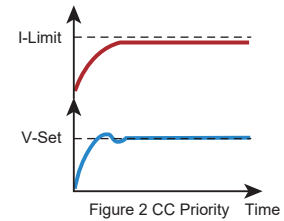
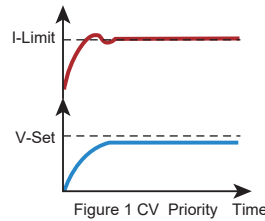
N35500 series DC power supply adopts systematic heat dissipation design, optimised device selection, main circuit topology, system heat dissipation, to achieve 42kW power output in 3U chassis, and adopts wide range output design, voltage up to 1500V, current up to 65A. With wide range and high power density design, N35500 series satisfy engineers' test application scenarios for products of various voltage/current levels, and greatly reducing purchase cost and space occupancy in laboratory or automated test systems.



CC&CV priority function

N35500 series has the function of setting voltage-control priority or current-control loop priority, it can adopt the optimal working mode for testing according to the characteristics of DUT, so as to better protect DUT.

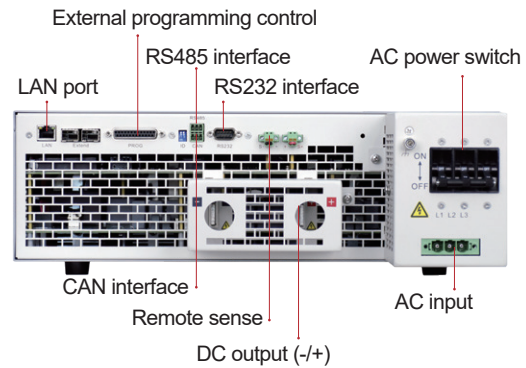
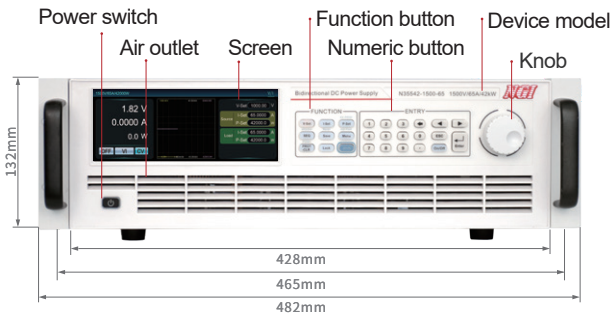
As shown in Figure 1, when it needs to reduce voltage overshoot during testing, such as powering a DC-DC power module, the voltage priority mode should be used to obtain a fast and smooth rising voltage.



As shown in Figure 2, when it needs to reduce current overshoot during testing or the component to be measured is low impedance such as in the battery charging scenario, the current priority mode should be used to obtain a fast and smooth rising current.

— Voltage Waveform — Current Waveform

Product Dimension



Technical Data Sheet(1)

Model		N35514-500-65		N35542-500-195	
Rated	Voltage	0~500V			
	Current	-65A~+65A		-195A~+195A	
	Power	-14kW~+14kW		-42kW~+42kW	
CV Mode					
Range		0~500V			
Setting Resolution		1mV			
Setting Accuracy(23±5°C)		≤0.02%+0.02%F.S.			
Voltage Ripple(20Hz-20MHz)		≤3Vp-p			
		≤0.4Vrms			
Max. Voltage Slew Rate		300V/ms			
CC Mode					
Range		-65A~+65A		-195A~+195A	
Setting Resolution		0.1mA		1mA	
Setting Accuracy(23±5°C)		≤0.1%+0.1%F.S.			
Current Ripple(20Hz-20MHz)		≤1.4Ap-p		≤2Ap-p	
		≤200mArms			
CP Mode					
Range		-14kW~+14kW		-42kW~+42kW	
Setting Resolution		0.1W			
Setting Accuracy(23±5°C)		≤0.1%+0.1%F.S.			
Voltage Measurement					
Range		0~500V			
Readback Resolution		1mV			
Readback Accuracy(23±5°C)		≤0.02%+0.02%F.S.			
Temperature Coefficient		≤15ppm/°C			
Current Measurement					
Range		-65A~+65A		-195A~+195A	
Readback Resolution		0.1mA		1mA	
Readback Accuracy(23±5°C)		≤0.1%+0.1%F.S.			
Temperature Coefficient		≤30ppm/°C			
Dynamic Characteristics					
Voltage Rise Time (no load 10%~90%)		≤5ms			
Voltage Rise Time (full load 10%~90%)		≤5ms			
Voltage Fall Time (no load 10%~90%)		≤300ms			
Voltage Fall Time (full load 10%~90%)		≤5ms			
Transient Response Time		The recovery time of load varying from 10% to 60% and output voltage recovering within 0.75% of rated voltage is less than 500μs.			
Line Regulation					
Voltage		<0.01%F.S.			
Current		<0.02%F.S.			
Load Regulation					
Voltage		<0.01%F.S.			
Current		<0.05%F.S.			
Others					
Isolation (Output to ground)		1000V DC			
Max. Efficiency		93%			
Power Factor		0.99			
Protection		OVP/OCP/OPP/UVF/UCP			
Interface		LAN/RS232/RS485/CAN			
Communication Response Time		5ms			
AC Input		Three phase 340VAC~480VAV,47Hz~63Hz,≤25A		Three phase 340VAC~480VAV,47Hz~63Hz,≤70A	
Temperature		Operating temperature: 0°C~50°C (>35°C derating output); Storage temperature: -10°C~70°C			
Operating Environment		Altitude <2000m; relative humidity:5%~90%RH(non-condensing); atmospheric pressure: 80~110kPa			
Dimension		132.0mm(H)*482.0mm(W)*755.0(D)(with shield)			
Net Weight		Approx. 34kg		Approx. 42kg	

Note 1: For other specifications, please contact NGI.

Note 2: All specifications are subject to change without notice.

Technical Data Sheet(2)

Model		N35528-1000-65
Rated	Voltage	0~1000V
	Current	-65A~+65A
	Power	-28kW~+28kW
CV Mode		
Range		0~1000V
Setting Resolution		10mV
Setting Accuracy(23±5°C)		≤0.02%+0.02%F.S.
Voltage Ripple(20Hz-20MHz)		≤3Vp-p
		≤0.4Vrms
Max. Voltage Slew Rate		300V/ms
CC Mode		
Range		-65A~+65A
Setting Resolution		0.1mA
Setting Accuracy(23±5°C)		≤0.1%+0.1%F.S.
Current Ripple(20Hz-20MHz)		≤1.4Ap-p
		≤200mArms
CP Mode		
Range		-28kW~+28kW
Setting Resolution		0.1W
Setting Accuracy(23±5°C)		≤0.1%+0.1%F.S.
Voltage Measurement		
Range		0~1000V
Readback Resolution		10mV
Readback Accuracy(23±5°C)		≤0.02%+0.02%F.S.
Temperature Coefficient		≤15ppm/°C
Current Measurement		
Range		-65A~+65A
Readback Resolution		0.1mA
Readback Accuracy(23±5°C)		≤0.1%+0.1%F.S.
Temperature Coefficient		≤30ppm/°C
Dynamic Characteristics		
Voltage Rise Time (no load 10%~90%)		≤5ms
Voltage Rise Time (full load 10%~90%)		≤5ms
Voltage Fall Time (no load 10%~90%)		≤300ms
Voltage Fall Time (full load 10%~90%)		≤5ms
Transient Response Time		The recovery time of load varying from 10% to 60% and output voltage recovering within 0.75% of rated voltage is less than 500μs.
Line Regulation		
Voltage		<0.01%F.S.
Current		<0.02%F.S.
Load Regulation		
Voltage		<0.01%F.S.
Current		<0.05%F.S.
Others		
Isolation (Output to ground)		1500V DC
Max. Efficiency		93%
Power Factor		0.99
Protection		OVP/OCP/OPP/UVF/UCP
Interface		LAN/RS232/RS485/CAN
Communication Response Time		5ms
AC Input		Three phase 340VAC~480VAV,47Hz~63Hz,≤50A
Temperature		Operating temperature: 0°C~50°C(>35°C derating output); Storage temperature: -10°C~70°C
Operating Environment		Altitude <2000m; relative humidity: 5%~90%RH(non-condensing); atmospheric pressure: 80~110kPa
Dimension		132.0mm(H)*482.0mm(W)*755.0(D)(with shield)
Net Weight		Approx. 38kg

Note 1: For other specifications, please contact NGI.

Note 2: All specifications are subject to change without notice.

Technical Data Sheet(3)

Model		N35522-1500-60		N35532-1500-60		N35542-1500-65	
Rated	Voltage	0~1500V					
	Current	-60A~-+60A				-65A~-+65A	
	Power	-22kW~-+22kW		-32kW~-+32kW		-42kW~-+42kW	
CV Mode							
Range		0~1500V					
Setting Resolution		10mV					
Setting Accuracy(23±5°C)		≤0.02%+0.02%F.S.					
Voltage Ripple(20Hz-20MHz)		≤3Vp-p ≤0.4Vrms					
Max. Voltage Slew Rate		300V/ms					
CC Mode							
Range		-60A~-+60A				-65A~-+65A	
Setting Resolution		0.1mA					
Setting Accuracy(23±5°C)		≤0.1%+0.1%F.S.					
Current Ripple(20Hz-20MHz)		≤1.4Ap-p ≤200mA _{rms}					
CP Mode							
Range		-22kW~-+22kW		-32kW~-+32kW		-42kW~-+42kW	
Setting Resolution		0.1W					
Setting Accuracy(23±5°C)		≤0.1%+0.1%F.S.					
Voltage Measurement							
Range		0~1500V					
Readback Resolution		10mV					
Readback Accuracy(23±5°C)		≤0.02%+0.02%F.S.					
Temperature Coefficient		≤15ppm/°C					
Current Measurement							
Range		-60A~-+60A				-65A~-+65A	
Readback Resolution		0.1mA					
Readback Accuracy(23±5°C)		≤0.1%+0.1%F.S.					
Temperature Coefficient		≤30ppm/°C					
Dynamic Characteristics							
Voltage Rise Time (no load 10%~90%)		≤5ms					
Voltage Rise Time (full load 10%~90%)		≤5ms					
Voltage Fall Time (no load 10%~90%)		≤300ms					
Voltage Fall Time (full load 10%~90%)		≤5ms					
Transient Response Time		The recovery time of load varying from 10% to 60% and output voltage recovering within 0.75% of rated voltage is less than 500μs.					
Line Regulation							
Voltage		<0.01%F.S.					
Current		<0.02%F.S.					
Load Regulation							
Voltage		<0.01%F.S.					
Current		<0.05%F.S.					
Others							
Isolation (Output to ground)		2250V DC					
Max. Efficiency		93%					
Power Factor		0.99					
Protection		OVP/OCP/OPP/UVP/UCP					
Interface		LAN/RS232/RS485/CAN					
Communication Response Time		5ms					
AC Input		Three phase 340VAC~480VAV,47Hz~63Hz,≤40A		Three phase 340VAC~480VAV,47Hz~63Hz,≤55A		Three phase 340VAC~480VAV,47Hz~63Hz,≤70A	
Temperature		Operating temperature: 0°C~50°C(>35°C derating output); Storage temperature: -10°C~70°C					
Operating Environment		Altitude <2000m; relative humidity: 5%~90%RH(non-condensing); atmospheric pressure: 80~110kPa					
Dimension		132.0mm(H)*482.0mm(W)*755.0(D)(with shield)					
Net Weight		Approx. 42kg					

Note 1: For other specifications, please contact NGI.

Note 2: All specifications are subject to change without notice.