

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 ≤ 5ms
- Voltage accuracy: 0.02%+0.02%F.S.; Current accuracy: 0.1%+0.1%F.S.
- CC&CV Priority suitable for all types of test item
- Master/Master perallel 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

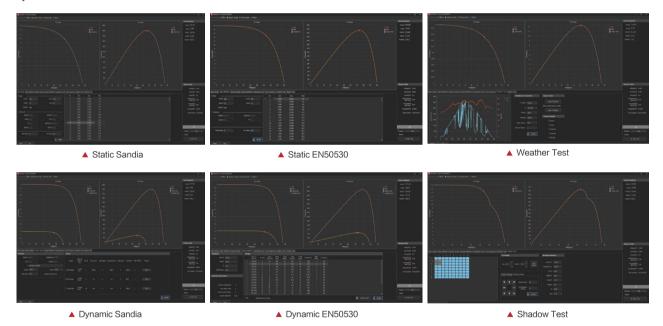
With the integration of power supply and regenerative load, N35500 series bidirectional power supply can be converted continuously seamlessly between the output and absorbed current, effectively avoiding voltage or current overshoot. Under load mode, N35500 series can not only provide external power, 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 Vmp, Pmp 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

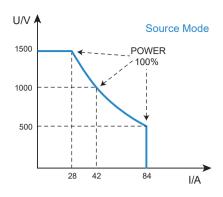
N35500 series with NS81000 battery simulator software to meet the user's needs for different types of battery simulation, and improve the test efficiency. NS81000 has 7 standard battery model libraries, users only need to select the corresponding battery type, configure the basic capacity and protection 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.





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.

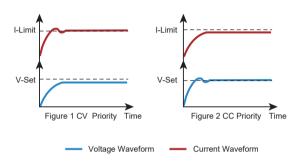


CC&CV priority function

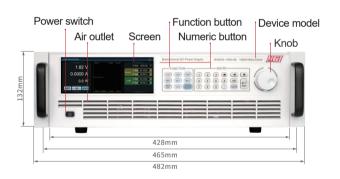
N35500 series has the function of setting voltage-control priority or current-control loop priority, it can adopt the optimal working mode for testing according to the characteristics of DUT, so as to better protect DUT.

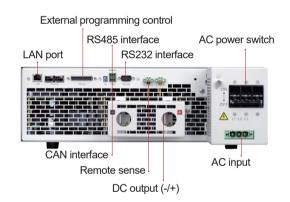
As shown in Figure 1, when it needs to reduce voltage overshoot during testing, such as powering a DC-DC power module, the voltage priority mode should be used to obtain a fast and smooth rising voltage.

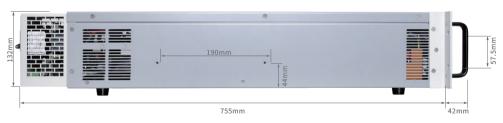
As shown in Figure 2, when it needs to reduce current overshoot during testing or the component to be measured is low impedance such as in the battery charging scenario, the current priority mode should be used to obtain a fast and smooth rising current.



Product Dimension









Technical Data Sheet(1)

Technical Bata Officet(1)							
Model		N35514-500-65	N35542-500-195				
	Voltage	0~50	V00V				
Rated	Current	-65A~+65A	-195A~+195A				
	Power	-14kW~+14kW	-42kW~+42kW				
		CV Mode					
Range		0~50	V00V				
Setting F	Resolution	1mV					
Setting A	Accuracy(23±5°C)	≤0.02%+0.02%F.S.					
Voltage F	Pinnle/20Hz_20MHz)	≤3Vp-p					
Voltage Ripple(20Hz-20MHz)		≤0.4Vrms					
Max. Vo	Itage Slew Rate	300V/ms					
_		CC Mode					
Range		-65A~+65A	-195A~+195A				
	Resolution	0.1mA	1mA				
Setting A	Accuracy(23±5°C)	≤0.1%+0					
Current F	Ripple(20Hz-20MHz)	≤1.4Ap-p	≤2Ap-p				
Garroner		≤200m	Arms				
		CP Mode					
Range		-14kW~+14kW	-42kW~+42kW				
	Resolution	0.1					
Setting A	Accuracy(23±5°C)	≤0.1%+0	.1%F.S.				
_		Voltage Measurement	2017				
Range	ale Danalistian	0~500V					
	ck Resolution	1mV					
	k Accuracy(23±5°C) ature Coefficient	≤0.02%+0.02%F.S. ≤15ppm/°C					
Tempera	ature Coemcient		III/ C				
Dongo		Current Measurement -65A~+65A	1054-11054				
Range	ok Bosolution	0.1mA	-195A~+195A 1mA				
Readback Resolution		0.1MA ≤0.1%+0					
Readback Accuracy(23±5°C) Temperature Coefficient							
Tempera	ature Coemcient	≤30ppm/°C					
Valta na Dia	Times (1.400/ 000/)	Dynamic Characteristics					
	e Time (no load 10%~90%)	≤5ms					
	se Time (full load 10%~90%) Il Time (no load 10%~90%)	≤5ms ≤300ms					
_	Il Time (full load 10%~90%)	≤5ms					
	nt 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.					
Transici	it response nine	Line Regulation	mage recovering within 0.75% or rated voltage is less than 500µs.				
Voltage		<0.01%F.S.					
Current		<0.02%F.S.					
Garrone		Load Regulation	701.0.				
Voltage		<0.019	%F.S.				
Current		<0.05%F.S.					
		Others					
Isolation (Output to ground)							
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,≤25A					
Temperature		Operating temperature: 0°C~50°C (>35°C derating output); Storage temperature: -10°C~70°C					
	ng Environment	Altitude <2000m; relative humidity:5%~90%RH(non-condensing); atmospheric pressure: 80~110kPa					
Dimensi		132.0mm(H)*482.0mm(W)*755.0(D)(with shield)					
Net Weight		Approx. 34kg	Approx. 42kg				
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Note 1: For other specifications, please contact NGI. Note 2: All specifications are subject to change without notice.



Technical Data Sheet(2)

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Model	V - 14	N35528-1000-65		
	Voltage	0~1000V		
Rated	Current	-65A~+65A		
	Power	-28kW~+28kW		
Danas		CV Mode		
Range	Population	0~1000V		
	Resolution	10mV		
Setting F	ccuracy(23±5°C)	≤0.02%+0.02%F.S.		
Voltage F	Ripple(20Hz-20MHz)	≤3Vp-p ≤0.4Vrms		
Max. Voltage Slew Rate		300V/ms		
Wax. Voi	tage ciew rate	CC Mode		
Range		-65A~+65A		
	Resolution	0.1mA		
	(23±5°C)	≤0.1%+0.1%F.S.		
		≤1.4Ap-p		
Current F	Ripple(20Hz-20MHz)	≤200mArms		
		CP Mode		
Range		-28kW~+28kW		
	Resolution	0.1W		
Setting A	ccuracy(23±5°C)	≤0.1%+0.1%F.S.		
		Voltage Measurement		
Range		0~1000V		
	ck Resolution	10mV		
	k Accuracy(23±5°C)	≤0.02%+0.02%F.S.		
Tempera	ture Coefficient	≤15ppm/°C		
D-11-11-		Current Measurement		
Range	ole Decalution	-65A~+65A		
	ck Resolution	0.1mA ≤0.1%+0.1%F.S.		
	k Accuracy(23±5°C)			
rempera	ture Coefficient	≤30ppm/°C		
Valta an Dia	- Time - (- 1 - 1400(-000()	Dynamic Characteristics ≤5ms		
	e Time (no load 10%~90%)	≤5ms		
	e Time (full load 10%~90%) Time (no load 10%~90%)	≤300ms		
	Time (full load 10%~90%)	≤5ms		
	t 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.		
Transier	t recponde mine	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/UVP/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. **05**



Technical Data Sheet(3)

Voltage		ai Data Officet(5)				
Rated Current	Model		N35522-1500-60	N35532-1500-60	N35542-1500-65	
Power		Voltage		0~1500V		
CV Mode	Rated	Current	-60A	~+60A	-65A~+65A	
Setting Accuracy(23±5°C)		Power	-22kW~+22kW	-32kW~+32kW	-42kW~+42kW	
Setting Resolution			CV N	Mode		
Setting Accuracy(23±5°C)	Range			0~1500V		
Salyp-p	Setting F	Resolution		10mV		
Max. Voltage Slew Rate	Setting A	Accuracy(23±5°C)	≤0.02%+0.02%F.S.			
Max. Voltage Slew Rate	Valtage F	Dinnlo(20H= 20MH=)	≤3Vp-p			
CC Mode	voltage F	(ippie(zunz-zuivinz)	≤0.4Vrms			
Range	Max. Voltage Slew Rate		300V/ms			
Setting Resolution Setting Accuracy(23±5°C) \$0.1%+0.1%F.S.			CC Mode			
Setting Accuracy(23±5°C)	Range		-60A	~+60A	-65A~+65A	
S1.4Ap-p \$200mArms \$200				0.1mA		
Setting Resolution	Setting A	Accuracy(23±5°C)				
Range	Current F	Rinnle(20Hz-20MHz)				
Range	Odificiti	(ippic(20112-20111112)				
Setting Resolution Setting Accuracy(23±5°C) ≤0.1%+0.1%F.S.						
Setting Accuracy(23±5°C)	Range		-22kW~+22kW		-42kW~+42kW	
Range						
Range	Setting A	Accuracy(23±5°C)				
Readback Resolution			Voltage M			
Seadback Accuracy(23±5°C)	Range					
State						
Current Measurement						
Range	Iempera	ature Coefficient	≤15ppm/°C			
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 Fall Time (no load 10%-90%) ≤5ms Voltage Fall Time (full 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 Voltage <0.01%F.S.	_					
Readback Accuracy(23±5°C)			-60A		-65A~+65A	
Temperature Coefficient S30ppm/°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 55ms 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.	Tempera	ature Coefficient				
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.			Dynamic C			
Voltage Fall Time (no load 10%~90%) Voltage Fall Time (full load 10%~90%) 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) Max. Efficiency 93% Power Factor 0.99 Protection OVP/OCP/OPP/UVP/UCP Interface LAN/RS232/RS485/CAN Communication Response Time AC Input Three phase 340VAC~480VAV,47Hz~63Hz,550A Three phase 340VAC~480VAV,47Hz~63Hz,550A Three phase 340VAC~480VAV,47Hz~63Hz,550A Temperature: Operating temperature: 0°C~50°C(>35°C derating output); Storage temperature: 10°C~70°C Operating Environment Dimension Altitude <2000m; relative humidity: 5%~90%RH(non-condensing); atmospheric pressure: 80~110kPactors 132.0mm(H)*482.0mm(W)*755.0(D)(with shield)						
Voltage Fall Time (full load 10%~90%) 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						
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. Current < 0.05%F.S. Current < 0.05%F.S. Others Isolation (Output to ground) Max. Efficiency 93% Power Factor <a <="" href="#" td=""><td></td><td></td><td></td><td></td><td></td>						
Line Regulation			≤5ms			
Voltage <0.01%F.S. Current <0.02%F.S. Voltage <0.01%F.S. Current <0.01%F.S. Current <0.01%F.S. Current <0.05%F.S. Station (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,50A Three phase 340VAC~480VAV,47Hz~63Hz,50A Three phase 340VAC~480VAV,47Hz~63Hz,50A 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 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)	Transier	it Response Time			in 0.75% of rated voltage is less than 500μs.	
Current Courrent Color: Horse-place AOVP/OCP/OPP/UVP/UCP Interestance Color: Horse-place AOVP/OCP/OPP/UVP/UCP LAN/RS232/RS485/CAN Communication Response Time AC Input Three phase 340VAC~480VAV.47Hz~63Hz,540A Intereplace AUNAC~480VAV.47Hz~63Hz,540A Intereplace AUNAC~480VAV.47Hz~63Hz,540A Intereplace Horse-place AUNAC~480VAV.47Hz~63Hz,540A Intereplace Three phase 340VAC~480VAV.47Hz~63Hz,540A Intereplace Three phase 340VAC~480VAV.47Hz~63Hz,540A Intereplace Maintain-tree Three phase 340VAC~480VAV.47Hz~63Hz,540A Intereplace Three phase 340VAC~480VAV.47Hz~63Hz,540A Intereplace Three phase 340VAC~480VAV.47Hz~63Hz,5	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Line Re	<u> </u>		
Load Regulation						
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Current Coloration Current Coloration Current Coloration Solution (Output to ground) Coloration C	Valtaga		Load Re	<u> </u>		
Solation (Output to ground) 2250V DC						
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	Current					
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	Icolotica	(Output to ground)	Otne			
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)						
Protection OVP/OCP/OPP/UVP/UCP Interface LAN/RS232/RS485/CAN Communication Response Time 5ms AC Input 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)						
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)						
Communication Response Time 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 Dimension 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)						
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 Dimension 132.0mm(H)*482.0mm(W)*755.0(D)(with shield)						
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)	-					
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)			· · · · · · · · · · · · · · · · · · ·			
Dimension 132.0mm(H)*482.0mm(W)*755.0(D)(with shield)						
ivet vveignt Approx. 42kg						
	ivet mei	gnt	Approx. 42kg			

Note 1: For other specifications, please contact NGI. Note 2: All specifications are subject to change without notice.