

Bidirectional DC Power Supplies

VP35500 Data sheet



High Performance High Power Bidirectional Programmable DC Power Supply



Product Introduction

The VP35500 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. VP35500 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.

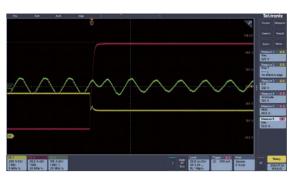
Main Features

- 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
- Load mode supporting 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
- Integreierter Funktionsgenerator

Seamless switch between source and load to regenerate energy

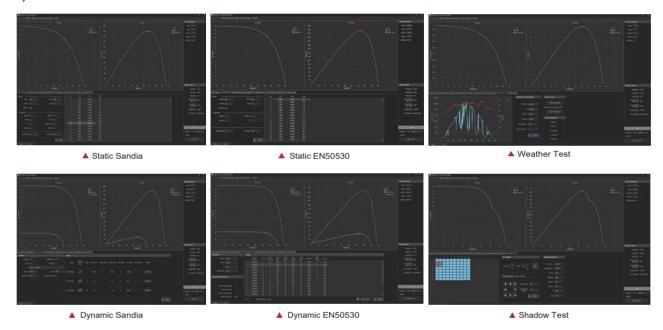
With the integration of power supply and regenerative load, VP35500 series bidirectional power supply can be converted continuously seamlessly between the output and absorbed current, effectively avoiding voltage or current overshoot. Under load mode, VP35500 series can not only provide external power, 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, VP35500 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.



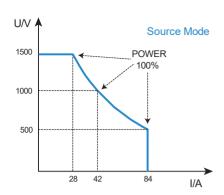
Battery Simulation

VP35500 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

VP35500 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, VP35500 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.

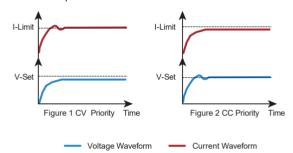


CC&CV priority function

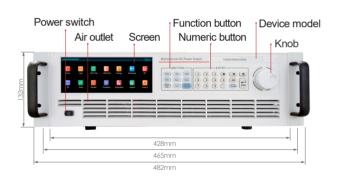
VP35500 series has the function of setting voltage-control priority or current-control loop priority, it can adopt the optimal working mode for testing according to the characteristics of DUT, so as to better protect DUT.

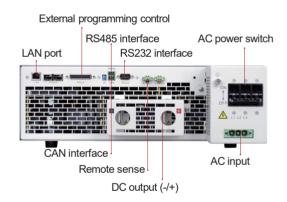
As shown in Figure 1, when it needs to reduce voltage overshoot during testing, such as powering a DC-DC power module, the voltage priority mode should be used to obtain a fast and smooth rising voltage.

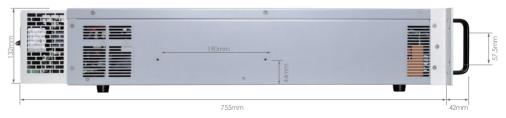
As shown in Figure 2, when it needs to reduce current overshoot during testing or the component to be measured is low impedance such as in the battery charging scenario, the current priority mode should be used to obtain a fast and smooth rising current.



Product Dimension







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Technical Specifications

		\/D05544_500_05	VD05540 500 405		
Model	\	VP35514-500-65	VP35542-500-195		
Datad	Voltage	0~50			
Rated	Current	-65A~+65A -14kW~+14kW	-195A~+195A		
	Power		-42kW~+42kW		
Range		CV Mode	201/		
	Pecolution	0~500V 1mV			
Setting Resolution		≤0.02%+0.02%F.S.			
Setting Accuracy(23±5°C)		≤3Vp-p			
Voltage Ripple(20Hz-20MHz)		≤0.4Vrms			
Max. Voltage Slew Rate		300V/ms			
Widow V C	nago orom mato	CC Mode			
Range		-65A~+65A	-195A~+195A		
Setting Resolution		0.1mA	1mA		
Setting A	Accuracy(23±5°C)	≤0.1%+0	0.1%F.S.		
Current Ripple(20Hz-20MHz)		≤1.4Ap-p ≤2Ap-p			
Current	Rippie(20HZ-20MHZ)	≤200mArms			
		CP Mode			
Range		-14kW~+14kW	-42kW~+42kW		
	Resolution	0.1			
Setting A	Accuracy(23±5°C)	≤0.1%+0	0.1%F.S.		
		Voltage Measurement	2014		
Range	ala Danalastiasa	0~50			
	ck Resolution	1m			
	k Accuracy(23±5°C) ature Coefficient	≤0.02%+0.02%F.S. ≤15ppm/°C			
rempera	ature Coemcient	Current Measurement	only C		
Range		-65A~+65A	-195A~+195A		
	ck Resolution	0.1mA	1mA		
Readback Accuracy(23±5°C)		≤0.1%+0			
	ature Coefficient	≤30ppm/°C			
		Dynamic Characteristics			
Voltage Ris	e Time (no load 10%~90%)	≤5r			
	se Time (full load 10%~90%)	≤5r	าาร		
Voltage Fa	Il Time (no load 10%~90%)	≤300ms			
Voltage Fa	Il Time (full load 10%~90%)	≤5ms			
Transier	nt Response Time		oltage recovering within 0.75% of rated voltage is less than 500µs.		
		Line Regulation			
Voltage		<0.01%F.S.			
Current		<0.02%F.S.			
Voltage		Load Regulation			
Voltage Current		<0.01%F.S. <0.05%F.S.			
Current		Others	701 .G.		
Isolation	(Output to around)				
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 Three phase 340VAC~480VAV,47Hz~63Hz,≤70A			
Tempera		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	on	132.0mm(H)*482.0mm(W)*755.0(D)(with shield)			
Net Wei	ght	Approx. 34kg	Approx. 42kg		

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

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Technical Specifications

Model		VP35528-1000-65		
	Voltage	0~1000V		
Rated	Current	-65A~+65A		
	Power	-28kW~+28kW		
		CV Mode		
Range		0~1000V		
Setting I	Resolution	10mV		
Setting A	Accuracy(23±5°C)	≤0.02%+0.02%F.S.		
,		≤3Vp-p		
_	Ripple(20Hz-20MHz)	≤0.4Vrms		
Max. Voltage Slew Rate		300V/ms		
		CC Mode		
Range		-65A~+65A		
	Resolution	0.1mA		
Setting A	Accuracy(23±5°C)	≤0.1%+0.1%F.S.		
Current I	Ripple(20Hz-20MHz)	≤1.4Ap-p		
- Currone i	**************************************	≤200mArms		
		CP Mode		
Range	D L	-28kW~+28kW		
	Resolution	0.1W		
Setting A	Accuracy(23±5°C)	≤0.1%+0.1%F.S.		
		Voltage Measurement		
Range	ck Resolution	0~1000V		
		10mV		
	k Accuracy(23±5°C) ature Coefficient	≤0.02%+0.02%F.S.		
remper	ature Coefficient	≤15ppm/°C		
D		Current Measurement		
Range Readback Resolution		-65A~+65A		
		0.1mA ≤0.1%+0.1%F.S.		
Readback Accuracy(23±5°C)				
Temperature Coefficient		≤30ppm/°C		
Voltago Die	se Time (no load 10%~90%)	Dynamic Characteristics ≤5ms		
	se Time (folload 10%~90%)	≤5ms		
	Ill Time (no load 10%~90%)	≤300ms		
	Ill 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		
Transier	K T toop one o Time	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: Fo	or other specifications, pl	ease contact us		

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Technical Specifications

Model		VP35522 -1500-60	VP35532 -1500-60	VP35542 -1500-65		
Voltage		0~1500V				
Rated	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.				
	, , , , , , , , , , , , , , , , , , ,	≤3Vp-p				
Voltage Ripple(20Hz-20MHz)		≤0.4Vrms				
Max. Voltage Slew Rate		300V/ms				
max. venage elem rate		CC Mode				
Range		-60A~+60A		-65A~+65A		
Setting Resolution		0.1mA				
Setting A	Accuracy(23±5°C)	≤0.1%+0.1%F.S.				
Current F	Dinnla/20Hz 20MHz)					
Current	Ripple(20Hz-20MHz)	≤1.4Ap-p ≤200mArms				
		CP I	Mode			
Range		-22kW~+22kW -32kW~+32kW		-42kW~+42kW		
Setting F	Resolution	0.1W				
Setting A	Accuracy(23±5°C)		≤0.1%+0.1%F.S.			
		Voltage Measurement				
Range		0~1500V				
	ck Resolution	10mV				
	k Accuracy(23±5°C)	≤0.02%+0.02%F.S.				
Tempera	ature Coefficient	≤15ppm/°C				
			Current Measurement			
Range		-60A~+60A -65A~+65A		-65A~+65A		
	ck Resolution	0.1mA				
Readback Accuracy(23±5°C)		≤0.1%+0.1%F.S.				
Tempera	ature Coefficient	≤30ppm/°C				
		Dynamic C	Characteristics			
Voltage Ris	e Time (no load 10%~90%)		≤5ms			
	se Time (full load 10%~90%)		≤5ms			
	I Time (no load 10%~90%)		≤300ms			
_	Il 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 Line Regulation						
Voltage		<0.01%F.S.				
Current		<0.02%F.S.				
		Load Regulation				
Voltage		<0.01%F.S.				
Current		<0.05%F.S.				
		Oth	ers			
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 Weig		Approx. 42kg				
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