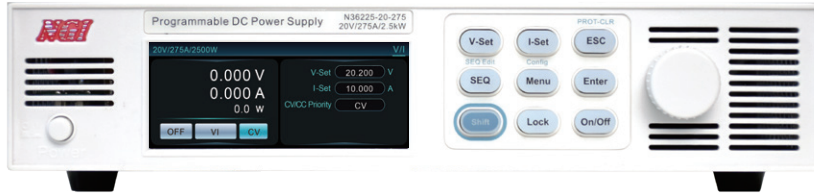


N36200 Series Wide Range Programmable DC Power Supply



Product Introduction

N36200 series is a wide range programmable DC power supply with rackmount design, high performance, high power density, integrating 5000W in 1U height and 19-inch width chassis, up to 10kW in 2U width chassis, covering a wide range of test applications of the DUT. The design of N36200 brings comfortable experience with space-saving in both desktop use and integrated system. N36200 series supports fast dynamic response, high accuracy output, multi test functions, to meet the needs of different application scenarios.

Application Fields

- ▶ R&D, design and verification
- ▶ ATE Test System
- ▶ Aerospace Electronics
- ▶ Batteries
- ▶ Consumer Electronics, Industrial Electronics
- ▶ Automotive Electronics

Main Features

- ▶ Ultra compact size, high power density, integrating 10kW in 2U height and 19 inch width chassis
- ▶ Wide range of output, one can be used as several
- ▶ Voltage accuracy: 0.03%+0.02%F.S.
- ▶ Adjustable voltage/current slew rate for different requirements
- ▶ CC&CV priority function, suitable for all types of DUT
- ▶ Support SEQ test, battery charging test, internal resistance simulation, etc.
- ▶ Large LCD screen to display test data clearly
- ▶ Support Modbus-RTU/SCPI/CANopen communication protocol
- ▶ Fast dynamic response time, voltage rise&fall time $\leq 10\text{ms}$ ^[1]
- ▶ Current accuracy: 0.1%+0.1%F.S.
- ▶ Support car waveform simulation test
- ▶ 19 inch standard size, standalone or integration available
- ▶ Support LAN/RS232/RS485/CAN communication control
- ▶ External analog programming control (optional)^[2]

Note[1]: 1500V model voltage rise and fall time $\leq 100\text{ms}$

Note[2]: N36210-1500-01 without this function

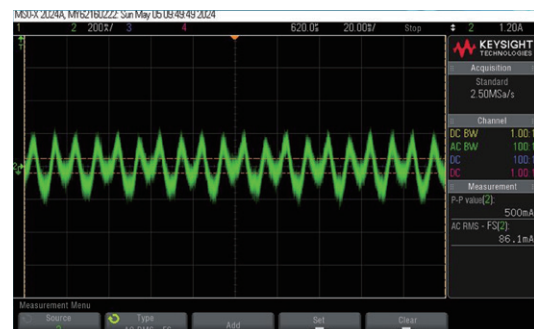
Ultra compact size and high power density to save cost and space

N36200 series DC power supply adopts systematic heat dissipation design, with optimisation of device selection, main circuit topology, system heat dissipation, integrating 2500W in 1U height and half 19-inch width chassis. With wide range of output, its voltage up to 20V, current up to 275 A. N36200 series is designed with small size and high power density to meet multiple test scenarios, to save the purchasing cost and occupied space.



Low output ripple noise

Ripple is one of the core indexes of DC power supply. NGI has accumulated many years of experience in power supply product research and development. Through the optimisation of device selection and multi-phase staggered parallel technology, it can ensure that the ripple of N36200 series is less than 0.8Arms when the high current output is 1100A, which can effectively guarantee the quality of the output signal.

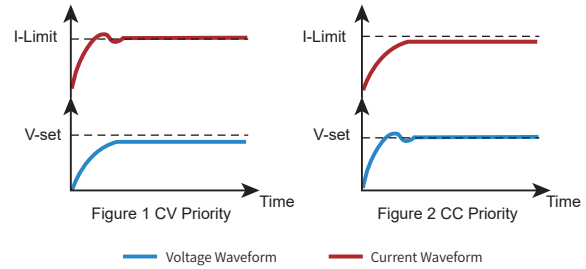


CC&CV priority function

N36200 has the function of selecting priority of voltage-control loop or current-control loop, which enables N36200 to adopt the optimal test mode for different DUTs, and thus protect the DUT.

As shown in figure one, when the DUT requires reducing voltage overshoot during test, such as supplying power to a low-voltage processor or FPGA core, voltage priority mode should be selected to obtain fast and smooth rise voltage.

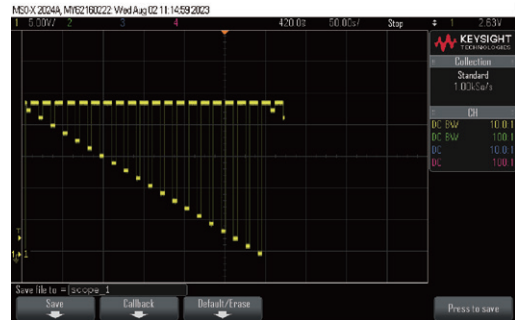
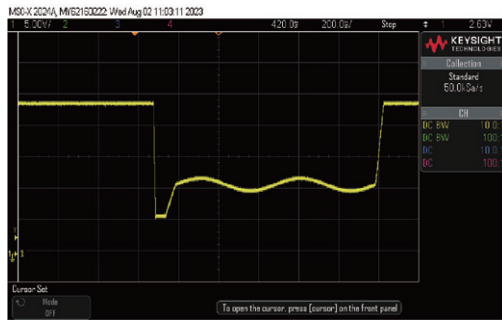
As shown in figure two, when the DUT requires reducing current overshoot during test, or when the DUT is with low impedance, such as battery charging scenario, current priority mode should be selected to obtain fast and smooth rise current.



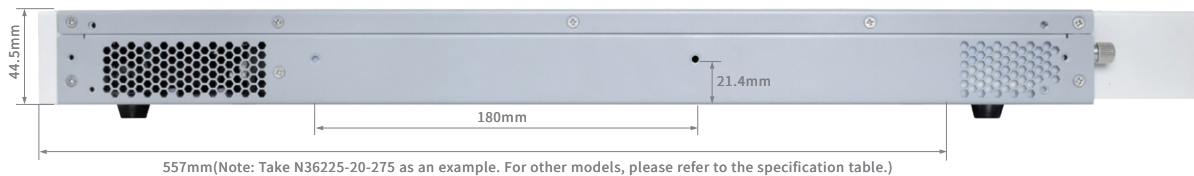
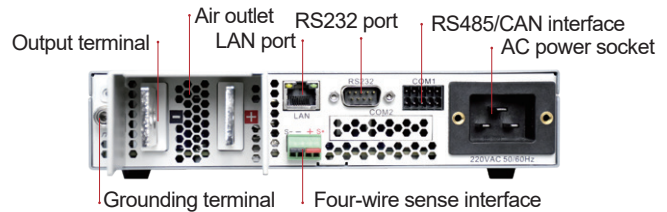
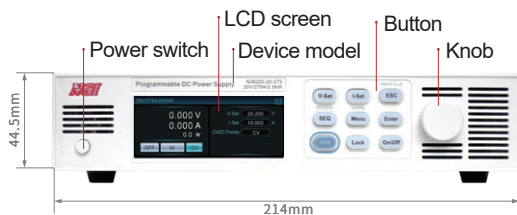
Car waveform simulation for electronics performance test

With the application of automotive electronics increasing every year, car manufacturers have formulated relevant test specifications, which focus on testing the immunity of electronic equipment to interference under certain scenarios of power transients, so that when designing automotive electronic hardware, it is important to set protections to avoid the effects of extreme situations.

N36200 series can be standard with car waveform simulation, including car start-up waveform, car short-time voltage drop waveform, load dump waveform, car voltage reset test Waveform etc., meeting ISO16750-2, LV124 and other standards, used for electronics electric performance test.



Product Dimension



Technical Data Sheet(1)

Model		N36225-20-275	N36235-20-350	N36250-20-550	N362100-20-1100
Rated Value	Voltage	0~20V			
	Current	0~275A	0~350A	0~550A	0~1100A
	Power	2500W	0~3500W	0~5000W	0~10000W
Channels	1CH				
CV Mode					
Range	0~20V				
Setting Resolution	1mV				
Setting Accuracy (23±5°C)	≤0.03%+0.02%F.S.				
Voltage Ripple(20Hz-20MHz)	≤5mVrms; ≤65mVp-p				
CC Mode					
Range	0~275A	0~350A	0~550A	0~1100A	
Setting Resolution	10mA				
Setting Accuracy (23±5°C)	≤0.1%+0.1%F.S.				
Current Ripple(20Hz-5MHz)	≤100mArms	≤150mArms	≤200mArms	≤300mArms	
	≤500mA _{p-p}	≤800mA _{p-p}	≤1000mA _{p-p}	≤2000mA _{p-p}	
CP Mode					
Range	2500W	3500W	5000W	10000W	
Setting Resolution	0.1W				
Setting Accuracy (23±5°C)	0.5%F.S.				
Voltage Measurement					
Range	0~20V				
Readback Resolution	1mV				
Readback Accuracy (23±5°C)	≤0.03%+0.02%F.S.				
Current Measurement					
Range	0~275A	0~350A	0~550A	0~1100A	
Readback Resolution	10mA				
Readback Accuracy (23±5°C)	≤0.1%+0.1%F.S.				
Line Regulation					
Voltage	<0.02%F.S.		Current	<0.05%F.S.	
Load Regulation					
Voltage	<0.03%F.S.		Current	<0.05%F.S.	
Dynamic Characteristics					
Voltage Rise Time(no load)	≤10ms		Current Rise Time(no load)	≤10ms	
Voltage Rise Time(full load)	≤10ms		Current Rise Time(full load)	≤10ms	
Voltage Fall Time(no load)	≤300ms		Current Fall Time(no load)	≤10ms	
Voltage Fall Time(full load)	≤10ms		Current Fall Time(full load)	≤10ms	
Transient Recovery Time	The output voltage recovering within 0.5% of the rated output voltage value (10%~90% load)≤5ms				
Others					
Isolation(Output to Ground)	500V DC				
Max. Efficiency	92%				
Power Factor	0.99				
Interface	LAN/RS232/RS485/CAN				
Communication Response Time	≤5ms				
AC Input	220V AC±10%,47Hz~63Hz,≤16A	220V AC±10%,47Hz~63Hz,≤20A	220V AC±10%,47Hz~63Hz,≤30A	340VAC~480VAC,47Hz~63Hz,≤28A	
Temperature	Operating temperature: 0°C~40°C, storage temperature: -20°C~70°C				
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa				
Net Weight	Approx. 7.5kg	Approx. 15kg	Approx. 15kg	Approx. 30kg	
Dimension	44.5(H)*214.0(W)*557.0(D)mm, with output shield	44.5(H)*428.0(W)*662.0(D)mm, with output shield	44.5(H)*428.0(W)*662.0(D)mm, with output shield	88(H)*428.0(W)*688.0(D)mm, with output shield	

Note 1: For other specifications, please contact NGI.

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

Technical Data Sheet(2)

Model		N36205-40-50	N36209-40-50	N36216-40-80
Rated Value	Voltage	0~40V		
	Current	0~50A	0~50A	0~80A
	Power	500W	900W	1600W
Channels		1CH		
CV Mode				
Range		0~40V		
Setting Resolution		1mV		
Setting Accuracy (23±5°C)		≤0.03%+0.02%F.S.		
Voltage Ripple(20Hz-20MHz)		≤40mVp-p	≤40mVp-p	≤80mVp-p
CC Mode				
Range		0~50A	0~50A	0~80A
Setting Resolution		1mA		
Setting Accuracy (23±5°C)		≤0.1%+0.1%F.S.		
Current Ripple(20Hz-5MHz)		≤50mArms		
CP Mode				
Range		500W	900W	1600W
Setting Resolution		0.01W		
Setting Accuracy (23±5°C)		0.5%F.S.		
Voltage Measurement				
Range		0~40V		
Readback Resolution		1mV		
Readback Accuracy (23±5°C)		≤0.03%+0.02%F.S.		
Current Measurement				
Range		0~50A	0~50A	0~80A
Readback Resolution		1mA		
Readback Accuracy (23±5°C)		≤0.1%+0.1%F.S.		
Line Regulation				
Voltage		<0.02%F.S.	Current	<0.05%F.S.
Load Regulation				
Voltage		<0.03%F.S.	Current	<0.05%F.S.
Dynamic Characteristics				
Voltage Rise Time(no load)		≤10ms		
Voltage Rise Time(full load)		≤10ms		
Voltage Fall Time(no load)		≤25ms		
Voltage Fall Time(full load)		≤10ms		
Transient Recovery Time		The output voltage recovering within 0.5% of the rated output voltage value (10%~90% load)≤2ms		
Others				
Isolation(Output to Ground)		500V DC		
Max. Efficiency		91.5%		
Power Factor		0.99		
Interface		LAN/RS232/RS485/CAN		
Communication Response Time		≤5ms		
AC Input		220V AC±10%,47Hz~63Hz,≤10A		
Temperature		Operating temperature: 0°C~40°C, storage temperature: -20°C~70°C		
Operating Environment		Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa		
Net Weight		Approx. 4.3kg		Approx. 7.5kg
Dimension		44.5(H)*214.0(W)*390.0(D)mm, with output shield		44.5(H)*214.0(W)*557.0(D)mm, with output shield

Note 1: For other specifications, please contact NGI.

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

Technical Data Sheet(3)

Model		N36225-40-135	N36250-40-275
Rated Value	Voltage	0~40V	
	Current	0~135A	0~275A
	Power	2500W	5000W
Channels	1CH		
CV Mode			
Range	0~40V		
Setting Resolution	1mV		
Setting Accuracy (23±5°C)	≤0.03%+0.02%F.S.		
Voltage Ripple(20Hz-20MHz)	≤80mVp-p		
CC Mode			
Range	0~135A	0~275A	
Setting Resolution	10mA		
Setting Accuracy (23±5°C)	≤0.1%+0.1%F.S.		
Current Ripple(20Hz-5MHz)	≤100mArms	≤200mArms	
CP Mode			
Range	2500W	5000W	
Setting Resolution	0.1W		
Setting Accuracy (23±5°C)	0.5%F.S.		
Voltage Measurement			
Range	0~40V		
Readback Resolution	1mV		
Readback Accuracy (23±5°C)	≤0.03%+0.02%F.S.		
Current Measurement			
Range	0~135A	0~275A	
Readback Resolution	10mA		
Readback Accuracy (23±5°C)	≤0.1%+0.1%F.S.		
Line Regulation			
Voltage	<0.02%F.S.	Current	<0.05%F.S.
Load Regulation			
Voltage	<0.03%F.S.	Current	<0.05%F.S.
Dynamic Characteristics			
Voltage Rise Time(no load)	≤10ms		
Voltage Rise Time(full load)	≤10ms		
Voltage Fall Time(no load)	≤200ms		
Voltage Fall Time(full load)	≤10ms		
Transient Recovery Time	The output voltage recovering within 0.5% of the rated output voltage value (10%~90% load)≤5ms		
Others			
Isolation(Output to Ground)	500V DC		
Max. Efficiency	91.5%		
Power Factor	0.99		
Interface	LAN/RS232/RS485/CAN		
Communication Response Time	≤5ms		
AC Input	220V AC±10%,47Hz~63Hz,≤16A	220V AC±10%,47Hz~63Hz,≤30A	
Temperature	Operating temperature: 0°C~40°C, storage temperature: -20°C~70°C		
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa		
Net Weight	Approx. 7.5kg	Approx. 15kg	
Dimension	44.5(H)*214.0(W)*557.0(D)mm, with output shield	44.5(H)*428.0(W)*662.0(D)mm, with output shield	

Note 1: For other specifications, please contact NGI.

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

Technical Data Sheet(4)

Model	N36205-80-25	N36209-80-25	N36212-80-42	N36216-80-42
Rated Value	Voltage			
	0~80V			
	0~25A	0~25A	0~42A	0~42A
Power	500W	900W	1200W	1600W
	Channels			
1CH				
CV Mode				
Range	0~80V			
Setting Resolution	1mV			
Setting Accuracy (23±5°C)	≤0.03%+0.02%F.S.			
Voltage Ripple(20Hz-20MHz)	≤80mVp-p			
CC Mode				
Range	0~25A	0~25A	0~42A	0~42A
Setting Resolution	1mA			
Setting Accuracy (23±5°C)	≤0.1%+0.1%F.S.			
Current Ripple(20Hz-5MHz)	≤30mArms		≤50mArms	
CP Mode				
Range	500W	900W	1200W	1600W
Setting Resolution	0.01W		0.1W	
Setting Accuracy (23±5°C)	0.5%F.S.			
Voltage Measurement				
Range	0~80V			
Readback Resolution	1mV			
Readback Accuracy (23±5°C)	≤0.03%+0.02%F.S.			
Current Measurement				
Range	0~25A	0~25A	0~42A	0~42A
Readback Resolution	1mA			
Readback Accuracy (23±5°C)	≤0.1%+0.1%F.S.			
Line Regulation				
Voltage	<0.02%F.S.		Current	<0.05%F.S.
Load Regulation				
Voltage	<0.03%F.S.		Current	<0.05%F.S.
Dynamic Characteristics				
Voltage Rise Time(no load)	≤10ms		≤10ms	
Voltage Rise Time(full load)	≤10ms		≤10ms	
Voltage Fall Time(no load)	≤25ms		≤30ms	
Voltage Fall Time(full load)	≤10ms		≤10ms	
Transient Recovery Time	The output voltage recovering within 0.5% of the rated output voltage value (10%~90% load)≤2ms			
Others				
Isolation(Output to Ground)	500V DC			
Max. Efficiency	91.5%			
Power Factor	0.99			
Interface	LAN/RS232/RS485/CAN			
Communication Response Time	≤5ms			
AC Input	220V AC±10%,47Hz~63Hz,≤10A		220V AC±10%,47Hz~63Hz,≤16A	
Temperature	Operating temperature: 0°C~40°C, storage temperature: -20°C~70°C			
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa			
Net Weight	Approx. 4.3kg			
Dimension	44.5(H)*214.0(W)*390.0(D)mm, with output shield		44.5(H)*214.0(W)*440.0(D)mm, with output shield	

Note 1: For other specifications, please contact NGI.

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

Technical Data Sheet(5)

Model		N36210-1500-01	N36216-1500-02	N36232-1500-04
Rated Value	Voltage	0~1500V		
	Current	0~1A	0~2A	0~4A
	Power	0~1000W	0~1600W	0~3200W
Channels	1CH			
CV Mode				
Range	0~1500V			
Setting Resolution	10mV			
Setting Accuracy (23±5°C)	≤0.03%+0.02%F.S.			
Voltage Ripple(20Hz-20MHz)	≤1000mVp-p			
CC Mode				
Range	0~1A	0~2A	0~4A	
Setting Resolution	1mA			
Setting Accuracy (23±5°C)	≤0.1%+0.1%F.S.			
Current Ripple(20Hz-5MHz)	≤1mArms	≤2mArms	≤4mArms	
CP Mode				
Range	0~1000W	0~1600W	0~3200W	
Setting Resolution	0.1W			
Setting Accuracy (23±5°C)	0.5%F.S.			
Voltage Measurement				
Range	0~1500V			
Readback Resolution	10mV			
Readback Accuracy (23±5°C)	≤0.03%+0.02%F.S.			
Current Measurement				
Range	0~1A	0~2A	0~4A	
Readback Resolution	1mA			
Readback Accuracy (23±5°C)	≤0.1%+0.1%F.S.			
Line Regulation				
Voltage	<0.02%F.S.	Current	<0.01%F.S.+2mA	
Load Regulation				
Voltage	<0.03%F.S.			
Current	<0.05%F.S.+2mA	<0.05%F.S.+5mA		
Dynamic Characteristics				
Voltage Rise Time(no load)	≤100ms			
Voltage Rise Time(full load)	≤100ms			
Voltage Fall Time(no load)	≤1000ms			
Voltage Fall Time(full load)	≤100ms			
Transient Recovery Time	Voltage drop depth ≤0.3%, the output voltage recovering within 0.2% of the rated output voltage value (10%~90% load)≤2ms			
Others				
Isolation(Output to Ground)	2000V DC			
Max. Efficiency	91%	92%		
Power Factor	0.99			
Interface	LAN/RS232/RS485/CAN			
Communication Response Time	<5ms			
AC Input	220V AC±10%,47Hz~63Hz,≤6A	220V AC±10%,47Hz~63Hz,≤10A	220V AC±10%,47Hz~63Hz,≤20A	
Temperature	Operating temperature: 0°C~40°C, storage temperature: -20°C~60°C			
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa			
Net Weight	Approx. 5kg		Approx. 10kg	
Dimension	44.5(H)*214.0(W)*540.2(D)mm, with output shield		44.5(H)*428.0(W)*540.2(D)mm, with output shield	

Note 1: For other specifications, please contact NGI.

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