

N3600 Series Wide Range Programmable DC Power Supply



Product Introduction

N3600 series is a programmable DC power supply with wide range and medium power. Its output current range is 5A to 1500A, output voltage range is 16V to 1200V, and output power range is 800W to 9kW. With ultra-wide range, N3600 series can be used for multiple purposes. It also adopts modular design, supporting cascade mode, CC/CV/CP mode, SEQ test and external programming. N3600 with wide range, multi-function, high performance and high reliability can be used in new energy, industrial automation, etc.

Application Fields

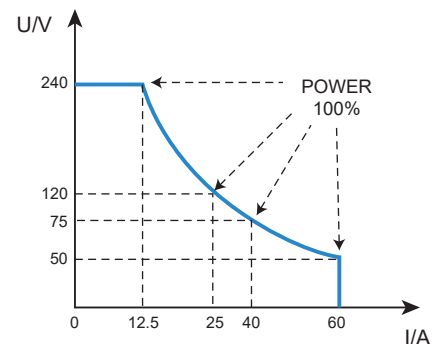
- ▶ New energy fields, such as Li-on battery, photovoltaic, hydrogen fuel, energy storage BMS, etc.
- ▶ Civil fields, such as home appliances, consumer electronics, communications, etc.
- ▶ Laboratory, production line ATE automatic test system
- ▶ Automotive fields, such as BMS, DC-DC, automotive electronics, etc.
- ▶ Testing and powering of aerospace electronics
- ▶ Industrial automation fields, such as controllers, drives, servers, robots, etc.

Main Features

- ▶ Standalone voltage range: 0~1200V
- ▶ Standalone power range: 0~9kW
- ▶ Ultra-wide voltage and current range, one can be used as several
- ▶ External dissipater to protect the power supply and DUT
- ▶ Multiple protections: OCP, OVP, UVP, OTP, OPP, peripheral control and communication error alarm
- ▶ Analog programming (APG) interface, current monitoring interface, remote trigger function to realize complex function control and monitoring
- ▶ Sequence test function(SEQ), up to 100 groups sequence files, up to 100 steps per file
- ▶ Editable rise/fall slew rate
- ▶ UI flat icon design, convenient HMI (human-machine interaction) interface
- ▶ Equipped with 4.3 inch LCD screen to display comprehensive information
- ▶ Standard 19-inch chassis, available for benchtop or rack installation
- ▶ Built-in RS232/LAN communication interface
- ▶ Standalone current range: 0~1500A
- ▶ Multiple devices operation in cascade mode, maximum 90kW
- ▶ CC, CV and CP mode

Ultra-wide range, one can be used as several

N3600 series' maximum power is not the result of Max. voltage multiplied by Max. current. Let's take model N3630-240-060 for example. The Max. power is 3kW while Max. voltage 240V and Max. current 60A. This feature offers N3600 wider application range, compared with traditional power supply.



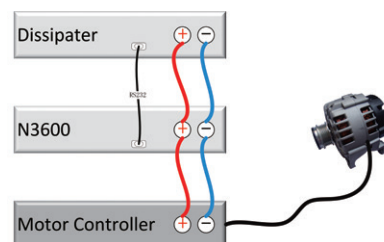
Voltage up to 1200V, making high voltage test more secure

N3600 series supports up to 1200V. In the fields of LED, battery, DC/DC converter and other industries, high voltage is the basic need for power supplies. Besides the above mentioned industries, N3600 series can also be applied for special tests with extremely high voltage requirements.

The safety of high-voltage test has always been a concern of engineers. NGI puts emphasis on details like the safety terminals design to ensure the safety of the test.

External dissipater function

When using N3600 to supply power to inductive loads such as motors, users press ON/OFF button on N3600's front panel to stop power supply. At this time, the motor may return avoltage greater than the setting value of N3600, which is likely to damage N3600 and the motor. Users can connect a load to N3600 as a dissipater. The setting voltage of the load must be an increment higher than the setting voltage of N3600. When the setting voltage of the load is higher than the setting voltage of N3600, the load will not work. If the voltage returned by the motor is exceeding the setting voltage of the load, the load starts to work to protect N3600 and the motor controller.

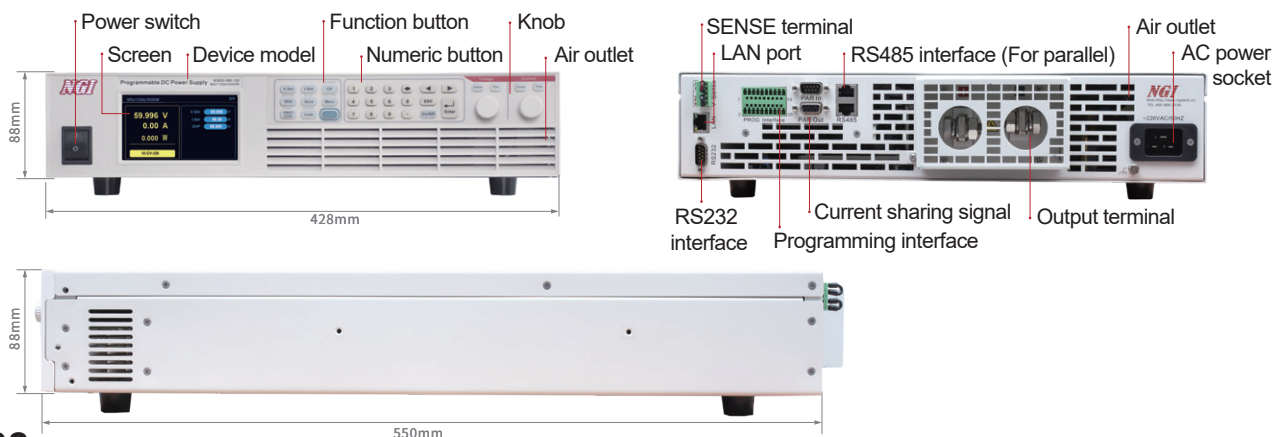


Quick Selection Table

Model	Specification	Size	Model	Specification	Size
N3608-080-060	800W/80V/60A	19inch//2U	N3630-1000-010	3000W/1000V/10A	19inch//2U
N3612-080-060	1200W/80V/60A	19inch//2U	N3630-1200-008	3000W/1200V/8A	19inch//2U
N3612-240-030	1200W/240V/30A	19inch//2U	N3660-016-1000	6000W/16V/1000A	19inch//4U
N3618-016-250	1800W/16V/250A	19inch//2U	N3660-080-240	6000W/80V/240A	19inch//4U
N3618-080-120	1800W/80V/120A	19inch//2U	N3660-240-120	6000W/240V/120A	19inch//4U
N3618-240-060	1800W/240V/60A	19inch//2U	N3660-360-070	6000W/360V/70A	19inch//4U
N3618-360-035	1800W/360V/35A	19inch//2U	N3660-600-040	6000W/600V/40A	19inch//4U
N3618-600-005	1800W/600V/5A	19inch//2U	N3660-800-030	6000W/800V/30A	19inch//4U
N3618-600-020	1800W/600V/20A	19inch//2U	N3660-1000-020	6000W/1000V/20A	19inch//4U
N3618-800-015	1800W/800V/15A	19inch//2U	N3660-1200-016	6000W/1200V/16A	19inch//4U
N3618-1000-010	1800W/1000V/10A	19inch//2U	N3690-016-1500	9000W/16V/1500A	19inch//6U
N3618-1200-008	1800W/1200V/8A	19inch//2U	N3690-080-360	9000W/80V/360A	19inch//6U
N3630-016-500	3000W/16V/500A	19inch//2U	N3690-240-180	9000W/240V/180A	19inch//6U
N3630-080-120	3000W/80V/120A	19inch//2U	N3690-360-105	9000W/360V/105A	19inch//6U
N3630-240-060	3000W/240V/60A	19inch//2U	N3690-600-060	9000W/600V/60A	19inch//6U
N3630-360-035	3000W/360V/35A	19inch//2U	N3690-800-045	9000W/800V/45A	19inch//6U
N3630-600-020	3000W/600V/20A	19inch//2U	N3690-1000-030	9000W/1000V/30A	19inch//6U
N3630-800-015	3000W/800V/15A	19inch//2U	N3690-1200-024	9000W/1200V/24A	19inch//6U

*N3600 series support parallel expansion power, please contact NGI for more specifications.

Product Dimension



Technical Data Sheet (1)

Model	N3608-080-060	N3612-080-060	N3612-240-030
Voltage	0~80V	0~80V	0~240V
Current	0~60A	0~60A	0~30A
Power	800W	1200W	1200W
CV Mode			
Range	0~80V	0~80V	0~240V
Setting Resolution	1mV	1mV	10mV
Setting Accuracy (23±5℃)	0.05%+0.05%F.S.		
CC Mode			
Range	0~60A	0~60A	0~30A
Setting Resolution	1mA		
Setting Accuracy (23±5℃)	0.1%+0.1%F.S.		
Voltage Measurement			
Range	0~80V	0~80V	0~240V
Readback Resolution	1mV	1mV	10mV
Readback Accuracy (23±5℃)	0.05%+0.05%F.S.		
Temperature Coefficient	50ppm/℃		
Current Measurement			
Range	0~60A	0~60A	0~30A
Readback Resolution	1mA		
Readback Accuracy (23±5℃)	0.1%+0.1%F.S.		
Temperature Coefficient	50ppm/℃		
Line Regulation			
Voltage	≤0.01%		
Current	≤0.05%		
Load Regulation			
Voltage	≤0.05%		
Current	≤0.05%		
Dynamic Characteristics			
Voltage Rise Time (no load)	≤20ms	≤20ms	≤60ms
Voltage Rise Time (full load)	≤500ms		
Voltage Fall Time (no load)	≤1.2s	≤1.2s	≤0.8s
Voltage Fall Time (full load)	≤20ms	≤20ms	≤50ms
Transient Recovery Time	The recovery time of load varying from 10% to 90% and output voltage recovering within 0.5% of rated voltage is less than 20ms.		
Output Ripple(20Hz-20MHz)			
Voltage Ripple Noise (P-P)	≤300mVp-p	≤300mVp-p	≤400mVp-p
Others			
Efficiency	90% (Typical)		
Interface	RS232/LAN		
Communication Response Time	≤5ms		
AC Input	Single phase, 220V AC±10%, current ≤16A, frequency 47Hz~63Hz		
Temperature	Operating temperature: 0℃~40℃, storage temperature: -20℃~60℃		
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa		
Net Weight	Approx. 13.5kg		
Dimension	2U, 88.0(H)*482.0(W)with handle*550.0(D)mm		

Technical Data Sheet (2)

Model	N3618-016-250	N3618-080-120	N3618-240-060	N3618-360-035
Voltage	0~16V	0~80V	0~240V	0~360V
Current	0~250A	0~120A	0~60A	0~35A
Power	1800W			
CV Mode				
Range	0~16V	0~80V	0~240V	0~360V
Setting Resolution	1mV	1mV	10mV	10mV
Setting Accuracy (23±5℃)	0.05%+0.05%F.S.			
CC Mode				
Range	0~250A	0~120A	0~60A	0~35A
Setting Resolution	10mA	10mA	1mA	1mA
Setting Accuracy (23±5℃)	0.1%+0.1%F.S.			
Voltage Measurement				
Range	0~16V	0~80V	0~240V	0~360V
Readback Resolution	1mV	1mV	10mV	10mV
Readback Accuracy (23±5℃)	0.05%+0.05%F.S.			
Temperature Coefficient	50ppm/℃			
Current Measurement				
Range	0~250A	0~120A	0~60A	0~35A
Readback Resolution	10mA	10mA	1mA	1mA
Readback Accuracy (23±5℃)	0.1%+0.1%F.S.			
Temperature Coefficient	50ppm/℃			
Line Regulation				
Voltage	≤0.01%			
Current	≤0.05%			
Load Regulation				
Voltage	≤0.05%			
Current	≤0.05%			
Dynamic Characteristics				
Voltage Rise Time (no load)	≤10ms	≤20ms	≤60ms	≤80ms
Voltage Rise Time (full load)	≤300ms	≤500ms	≤500ms	≤400ms
Voltage Fall Time (no load)	≤0.6s	≤1.2s	≤0.8s	≤1.2s
Voltage Fall Time (full load)	≤5ms	≤20ms	≤50ms	≤80ms
Transient Recovery Time	The recovery time of load varying from 10% to 90% and output voltage recovering within 0.5% of rated voltage is less than 80ms.	The recovery time of load varying from 10% to 90% and output voltage recovering within 0.5% of rated voltage is less than 20ms.		
Output Ripple(20Hz-20MHz)				
Voltage Ripple Noise (P-P)	≤400mVp-p	≤400mVp-p	≤400mVp-p	≤500mVp-p
Others				
Efficiency	90% (Typical)			
Interface	RS232/LAN			
Communication Response Time	≤5ms			
AC Input	Single phase, 220V AC±10%, current ≤16A, frequency 47Hz~63Hz			
Temperature	Operating temperature: 0℃~40℃, storage temperature: -20℃~60℃			
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa			
Net Weight	Approx. 14.5kg	Approx. 16.5kg		
Dimension	2U, 88.0(H)*482.0(W)with handle*550.0(D)mm			

Technical Data Sheet (3)

Model	N3618-600-005	N3618-600-020	N3618-800-015	N3618-1000-010
Voltage	0~600V	0~600V	0~800V	0~1000V
Current	0~5A	0~20A	0~15A	0~10A
Power	1800W			
CV Mode				
Range	0~600V	0~600V	0~800V	0~1000V
Setting Resolution	10mV	10mV	10mV	100mV
Setting Accuracy (23±5℃)	0.05%+0.05%F.S.			
CC Mode				
Range	0~5A	0~20A	0~15A	0~10A
Setting Resolution	1mA	1mA	1mA	1mA
Setting Accuracy (23±5℃)	0.1%+0.1%F.S.			
Voltage Measurement				
Range	0~600V	0~600V	0~800V	0~1000V
Readback Resolution	10mV	10mV	10mV	100mV
Readback Accuracy (23±5℃)	0.05%+0.05%F.S.			
Temperature Coefficient	50ppm/℃			
Current Measurement				
Range	0~5A	0~20A	0~15A	0~10A
Readback Resolution	1mA	1mA	1mA	1mA
Readback Accuracy (23±5℃)	0.1%+0.1%F.S.			
Temperature Coefficient	50ppm/℃			
Line Regulation				
Voltage	≤0.01%			
Current	≤0.05%			
Load Regulation				
Voltage	≤0.05%			
Current	≤0.05%			
Dynamic Characteristics				
Voltage Rise Time (no load)	≤100ms	≤100ms	≤150ms	≤150ms
Voltage Rise Time (full load)	≤400ms	≤400ms	≤500ms	≤500ms
Voltage Fall Time (no load)	≤1.2s	≤1.2s	≤0.9s	≤0.9s
Voltage Fall Time (full load)	≤80ms	≤80ms	≤80ms	≤100ms
Transient Recovery Time	The recovery time of load varying from 10% to 90% and output voltage recovering within 0.5% of rated voltage is less than 20ms.			
Output Ripple(20Hz-20MHz)				
Voltage Ripple Noise (P-P)	≤600mVp-p	≤600mVp-p	≤750mVp-p	≤750mVp-p
Others				
Efficiency	90% (Typical)			
Interface	RS232/LAN			
Communication Response Time	≤5ms			
AC Input	Single phase, 220V AC±10%, current ≤16A, frequency 47Hz~63Hz			
Temperature	Operating temperature: 0℃~40℃, storage temperature: -20℃~60℃			
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa			
Net Weight	Approx. 13.5kg	Approx. 16.5kg		
Dimension	2U, 88.0(H)*482.0(W)with handle*550.0(D)mm			

Technical Data Sheet (4)

Model	N3630-016-500	N3630-080-120	N3630-240-060	N3630-360-035
Voltage	0~16V	0~80V	0~240V	0~360V
Current	0~500A	0~120A	0~60A	0~35A
Power	3000W			
CV Mode				
Range	0~16V	0~80V	0~240V	0~360V
Setting Resolution	1mV	1mV	10mV	10mV
Setting Accuracy (23±5℃)	0.05%+0.05%F.S.			
CC Mode				
Range	0~500A	0~120A	0~60A	0~35A
Setting Resolution	10mA	10mA	1mA	1mA
Setting Accuracy (23±5℃)	0.1%+0.1%F.S.			
Voltage Measurement				
Range	0~16V	0~80V	0~240V	0~360V
Readback Resolution	1mV	1mV	10mV	10mV
Readback Accuracy (23±5℃)	0.05%+0.05%F.S.			
Temperature Coefficient	50ppm/℃			
Current Measurement				
Range	0~500A	0~120A	0~60A	0~35A
Readback Resolution	10mA	10mA	1mA	1mA
Readback Accuracy (23±5℃)	0.1%+0.1%F.S.			
Temperature Coefficient	50ppm/℃			
Line Regulation				
Voltage	≤0.01%			
Current	≤0.05%			
Load Regulation				
Voltage	≤0.05%			
Current	≤0.05%			
Dynamic Characteristics				
Voltage Rise Time (no load)	≤10ms	≤20ms	≤60ms	≤80ms
Voltage Rise Time (full load)	≤300ms	≤500ms	≤500ms	≤400ms
Voltage Fall Time (no load)	≤0.6s	≤1.2s	≤0.8s	≤1.2s
Voltage Fall Time (full load)	≤5ms	≤20ms	≤50ms	≤80ms
Transient Recovery Time	The recovery time of load varying from 10% to 90% and output voltage recovering within 0.5% of rated voltage is less than 80ms.	The recovery time of load varying from 10% to 90% and output voltage recovering within 0.5% of rated voltage is less than 20ms.		
Output Ripple(20Hz-20MHz)				
Voltage Ripple Noise (P-P)	≤400mVp-p	≤400mVp-p	≤400mVp-p	≤500mVp-p
Others				
Efficiency	90% (Typical)			
Interface	RS232/LAN			
Communication Response Time	≤5ms			
AC Input	Single phase, 220V AC±10%, current ≤16A, frequency 47Hz~63Hz			
Temperature	Operating temperature: 0℃~40℃, storage temperature: -20℃~60℃			
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa			
Net Weight	Approx. 18.5kg	Approx. 16.5kg		
Dimension	2U, 88.0(H)*482.0(W)with handle*550.0(D)mm			

Technical Data Sheet (5)

Model	N3630-600-020	N3630-800-015	N3630-1000-010
Voltage	0~600V	0~800V	0~1000V
Current	0~20A	0~15A	0~10A
Power	3000W		
CV Mode			
Range	0~600V	0~800V	0~1000V
Setting Resolution	10mV	10mV	100mV
Setting Accuracy (23±5℃)	0.05%+0.05%F.S.		
CC Mode			
Range	0~20A	0~15A	0~10A
Setting Resolution	1mA		
Setting Accuracy (23±5℃)	0.1%+0.1%F.S.		
Voltage Measurement			
Range	0~600V	0~800V	0~1000V
Readback Resolution	10mV	10mV	100mV
Readback Accuracy (23±5℃)	0.05%+0.05%F.S.		
Temperature Coefficient	50ppm/℃		
Current Measurement			
Range	0~20A	0~15A	0~10A
Readback Resolution	1mA		
Readback Accuracy (23±5℃)	0.1%+0.1%F.S.		
Temperature Coefficient	50ppm/℃		
Line Regulation			
Voltage	≤0.01%		
Current	≤0.05%		
Load Regulation			
Voltage	≤0.05%		
Current	≤0.05%		
Dynamic Characteristics			
Voltage Rise Time (no load)	≤100ms	≤150ms	≤150ms
Voltage Rise Time (full load)	≤400ms	≤500ms	≤500ms
Voltage Fall Time (no load)	≤1.2s	≤0.9s	≤0.9s
Voltage Fall Time (full load)	≤80ms	≤80ms	≤100ms
Transient Recovery Time	The recovery time of load varying from 10% to 90% and output voltage recovering within 0.5% of rated voltage is less than 20ms.		
Output Ripple(20Hz-20MHz)			
Voltage Ripple Noise (P-P)	≤600mVp-p	≤750mVp-p	≤750mVp-p
Others			
Efficiency	90% (Typical)		
Interface	RS232/LAN		
Communication Response Time	≤5ms		
AC Input	Single phase, 220V AC±10%, current ≤16A, frequency 47Hz~63Hz		
Temperature	Operating temperature: 0℃~40℃, storage temperature: -20℃~60℃		
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa		
Net Weight	Approx. 16.5kg		
Dimension	2U, 88.0(H)*482.0(W)with handle*550.0(D)mm		

Technical Data Sheet (6)

Model	N3660-016-1000	N3660-080-240	N3690-016-1500	N3690-080-360
Voltage	0~16V	0~80V	0~16V	0~80V
Current	0~1000A	0~240A	0~1500A	0~360A
Power	6000W	6000W	9000W	9000W
CV Mode				
Range	0~16V	0~80V	0~16V	0~80V
Setting Resolution	1mV			
Setting Accuracy (23±5℃)	0.05%+0.05%F.S.			
CC Mode				
Range	0~1000A	0~240A	0~1500A	0~360A
Setting Resolution	100mA	10mA	100mA	10mA
Setting Accuracy (23±5℃)	0.1%+0.1%F.S.			
Voltage Measurement				
Range	0~16V	0~80V	0~16V	0~80V
Readback Resolution	1mV			
Readback Accuracy (23±5℃)	0.05%+0.05%F.S.			
Temperature Coefficient	50ppm/℃			
Current Measurement				
Range	0~1000A	0~240A	0~1500A	0~360A
Readback Resolution	100mA	10mA	100mA	10mA
Readback Accuracy (23±5℃)	0.1%+0.1%F.S.			
Temperature Coefficient	50ppm/℃			
Line Regulation				
Voltage	≤0.01%			
Current	≤0.05%			
Load Regulation				
Voltage	≤0.05%			
Current	≤0.05%			
Dynamic Characteristics				
Voltage Rise Time (no load)	≤10ms	≤20ms	≤10ms	≤20ms
Voltage Rise Time (full load)	≤300ms	≤500ms	≤300ms	≤500ms
Voltage Fall Time (no load)	≤0.6s	≤1.2s	≤0.6s	≤1.2s
Voltage Fall Time (full load)	≤5ms	≤20ms	≤5ms	≤20ms
Transient Recovery Time	The recovery time of load varying from 10% to 90% and output voltage recovering within 0.5% of rated voltage is less than 80ms.	The recovery time of load varying from 10% to 90% and output voltage recovering within 0.5% of rated voltage is less than 20ms.	The recovery time of load varying from 10% to 90% and output voltage recovering within 0.5% of rated voltage is less than 80ms.	The recovery time of load varying from 10% to 90% and output voltage recovering within 0.5% of rated voltage is less than 20ms.
Output Ripple(20Hz-20MHz)				
Voltage Ripple Noise (P-P)	≤400mVp-p			
Others				
Efficiency	90% (Typical)			
Interface	RS232/LAN			
Communication Response Time	≤5ms			
AC Input	Single phase, 220V AC±10%, current ≤32A, frequency 47Hz~63Hz		Three phase, 380V AC±10%, current ≤16A, frequency 47Hz~63Hz	
Temperature	Operating temperature: 0℃~40℃, storage temperature: -20℃~60℃			
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa			
Net Weight	Approx. 36kg	Approx. 30kg	Approx. 50kg	Approx. 42kg
Dimension	4U, 175.0(H)*482.0(W)with handle*600.0/580.0(D)mm		6U, 264.0(H)*482.0(W)with handle*600.0/580.0(D)mm	