

N62400 Series Low Voltage High Current DC Electronic Load



Product Introduction

N62400 series is developed based on NGI's years of experience in testing for fuel cell. It can load high current under ultra-low voltage. The minimum operating voltage when loading 1200A can be low to 0.2V. N62400 series support multiple functions, such as local/remote control, SEQ test, dynamic test, reverse polarity test, MPPT test, discharging test, charging test and so on. It is with LAN/RS232/CAN communication interface. N62400 is designed in a 19 inch 3U chassis, which is available for benchtop use or integration test system.

Application Fields

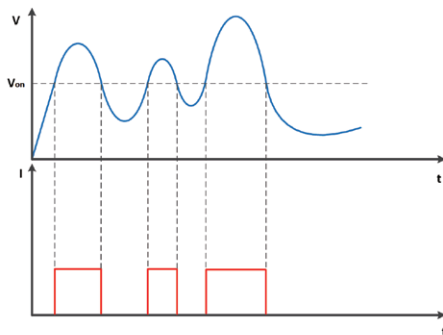
- ▶ Fuel cell test
- ▶ Power device supply system test
- ▶ CPU, GPU, AI and other chip power supply power test
- ▶ Other low voltage & high current applications

Main Features

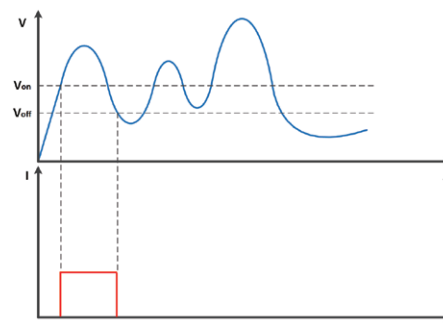
- ▶ Power range: 0-7200W
- ▶ Voltage range: 0-40V
- ▶ Current range: 0-2160A
- ▶ Min. operating voltage as low as 0.2V when loading current 1200A
- ▶ N62400S series support -3V@2160A when loading in negative voltage
- ▶ Short-circuit simulation, Von/Voff function available
- ▶ Supporting charge & discharge test, reverse polarity test, OCP test
- ▶ Stable and reliable CR/CP function supported by hardware
- ▶ Analog programming interface(APG), current monitoring interface, remote/local trigger function
- ▶ Programmable sequence test function(SEQ), up to 100 groups sequence files, up to 50 steps per file
- ▶ Built-in DCIR test function (Optional)
- ▶ Support MPPT function
- ▶ Editable rise and fall slew rate
- ▶ Operation mode: CC, CV, CP, CR
- ▶ CV/CC/CR dual range
- ▶ Supporting LAN/RS232/CAN communication

Settable Von/Voff

The Von latch function has two modes to meet your various test needs: enabled and disabled.



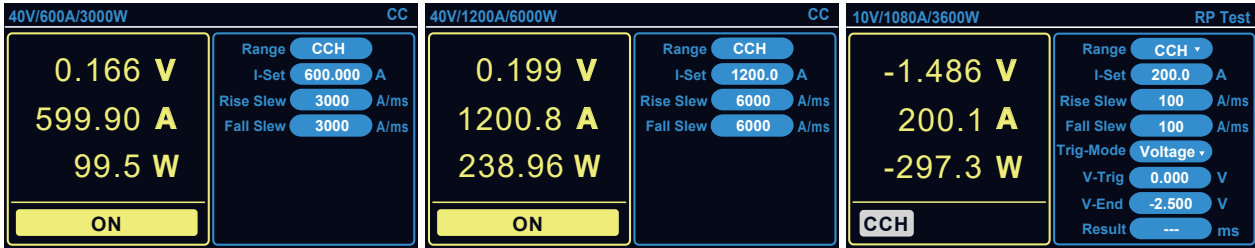
- ▲ Disabled: When the input voltage is higher than Von, N62400 starts to sink current. When the input voltage is lower than Von, it stops sinking current.



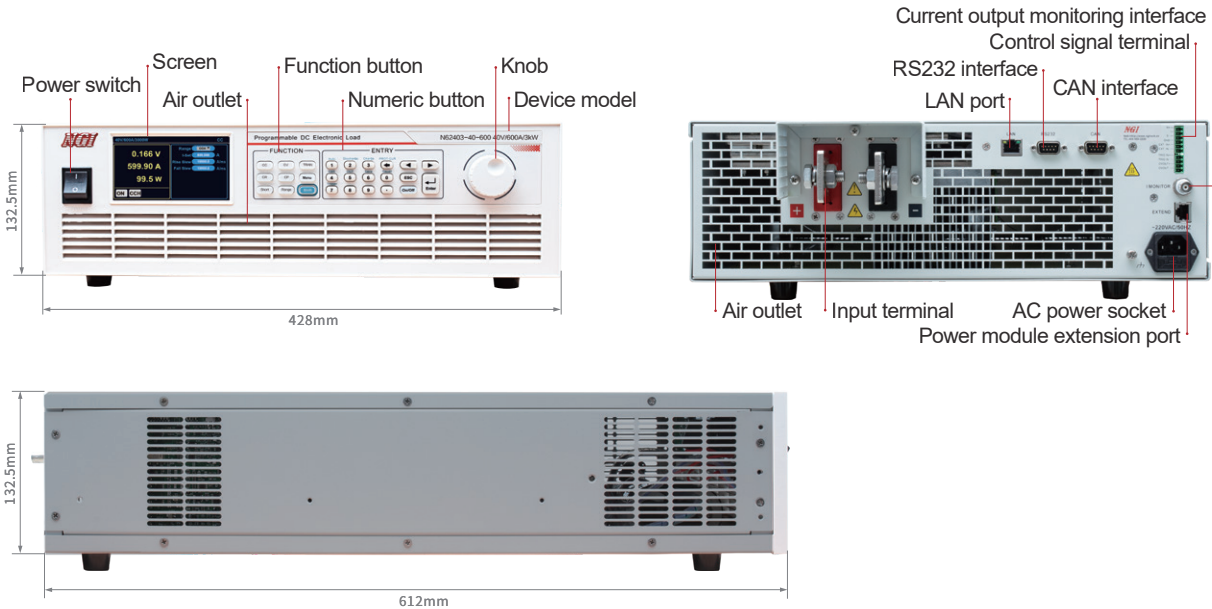
- ▲ Enabled: When the input voltage is higher than Von, N62400 starts to sink current. When the input voltage is lower than Voff, N62400 stops sinking current. After that, it will not sink current automatically even the input voltage is higher than Von again.

Loading current at ultra-low voltage

The output voltage of a single fuel cell gradually decreases as the current increases, which requires the test equipment to be able to load high current at ultra-low voltage. N62400 3U standalone supports a maximum input of 600A, and the minimum operating voltage is 0.2V@600A. Under positive voltage, N62400 series can support a maximum of 0.2V@1200A; under the simultaneous presence of positive and negative voltage, it can support a maximum of -3V@2160A, which can realize the characteristic test for almost all voltage points in the single fuel cell test process, and can fully display the current of fuel cell in the entire voltage range, so as to provide sufficient data for the performance study of fuel cells.



Product Dimension



DC Electronic Load

Technical Data Sheet(1)

Model	N62401-40-200		N62402-40-400		N62403-40-600	
Voltage	40V		40V		40V	
Current	200A		400A		600A	
Power	1000W		2000W		3000W	
Min. Operating Voltage	0.1V@100A	0.2V@200A	0.1V@200A	0.2V@400A	0.1V@300A	0.2V@600A
CC Mode						
Range	0~20A	0~200A	0~40A	0~400A	0~60A	0~600A
Setting Resolution	1mA	10mA	1mA	10mA	1mA	10mA
Setting Accuracy (23±5°C)	0.05%+0.05%F.S.					
CV Mode						
Range	0~4V	0~40V	0~4V	0~40V	0~4V	0~40V
Setting Resolution	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV
Setting Accuracy (23±5°C)	0.025%+0.025%F.S.					
CP Mode						
Range	0~1000W		0~2000W		0~3000W	
Setting Resolution	0.1W					
Setting Accuracy (23±5°C)	0.1%+0.1%F.S.					
CR Mode						
Range	0.004Ω~20Ω	0.08Ω~200Ω	0.002Ω~10Ω	0.04Ω~100Ω	0.002Ω~6.6Ω	0.03Ω~66Ω
Setting Resolution	16bits					
Setting Accuracy (23±5°C)	0.35%+16mS	0.35%+1.6mS	0.35%+32mS	0.35%+3.2mS	0.35%+48mS	0.35%+4.8mS
Slew Rate						
Current	3.3~200A/ms	200~1000A/ms	6.6~400A/ms	400~2000A/ms	10~600A/ms	600~3000A/ms
Voltage	0.334~16.7V/ms	16.7~166.7V/ms	0.334~16.7V/ms	16.7~166.7V/ms	0.334~16.7V/ms	16.7~166.7V/ms
Power	3.3~200A/ms	200~1000A/ms	6.6~400A/ms	400~2000A/ms	10~600A/ms	600~3000A/ms
Resistance	3.3~200A/ms	200~1000A/ms	6.6~400A/ms	400~2000A/ms	10~600A/ms	600~3000A/ms
Accuracy (23±5°C)	(1±35%) * Setting value					
Voltage Measurement						
Range	0~4V	0~40V	0~4V	0~40V	0~4V	0~40V
Readback Accuracy (23±5°C)	0.025%+0.025%F.S.					
Current Measurement						
Range	0~20A	0~200A	0~40A	0~400A	0~60A	0~600A
Readback Accuracy (23±5°C)	0.05%+0.05%F.S.					
Power Measurement						
Range	0~1000W		0~2000W		0~3000W	
Readback Accuracy (23±5°C)	0.1%+0.1%F.S.					
Dynamic Mode						
T1&T2	1~60000ms					
Resolution	1ms					
Accuracy (23±5°C)	1ms+100ppm					
Others						
Interface	LAN/RS232/CAN					
AC Input	Single phase, 220V AC±10%, frequency 47Hz~63Hz					
Communication Response Time	≤10ms					
Temperature	Operating temperature: 0°C~40°C, storage temperature: -20°C~60°C					
Operating Temperature	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa					
Net Weight	Approx. 20 kg		Approx. 24 kg		Approx. 28 kg	
Dimension	3U,132.5(H)*482.0(W)with handle*612.0(D)mm					

Note 1: For other specifications, please contact NGI.

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

Technical Data Sheet(2)

Model	N62404-40-800		N62405-40-1000		N62406-40-1200	
Voltage	40V		40V		40V	
Current	800A		1000A		1200A	
Power	4000W		5000W		6000W	
Min. Operating Voltage	0.1V@400A	0.2V@800A	0.1V@500A	0.2V@1000A	0.1V@600A	0.2V@1200A
CC Mode						
Range	0~80A	0~800A	0~100A	0~1000A	0~120A	0~1200A
Setting Resolution	1mA	10mA	10mA	100mA	10mA	100mA
Setting Accuracy (23±5°C)	0.05%+0.05%F.S.					
CV Mode						
Range	0~4V	0~40V	0~4V	0~40V	0~4V	0~40V
Setting Resolution	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV
Setting Accuracy (23±5°C)	0.025%+0.025%F.S.					
CP Mode						
Range	0~4000W		0~5000W		0~6000W	
Setting Resolution	0.1W					
Setting Accuracy (23±5°C)	0.1%+0.1%F.S.					
CR Mode						
Range	0.001Ω~5Ω	0.02Ω~50Ω	0.001Ω~4Ω	0.02Ω~40Ω	0.001Ω~3.3Ω	0.02Ω~33.3Ω
Setting Resolution	16bits					
Setting Accuracy (23±5°C)	0.35%+64mS	0.35%+6.4mS	0.35%+80mS	0.35%+8mS	0.35%+96S	0.35%+9.6mS
Slew Rate						
Current	13.3~800A/ms	800~4000A/ms	16.7~1000A/ms	1000~5000A/ms	20~1200A/ms	1200~6000A/ms
Voltage	0.334~16.7V/ms	16.7~166.7V/ms	0.334~16.7V/ms	16.7~166.7V/ms	0.334~16.7V/ms	16.7~166.7V/ms
Power	13.3~800A/ms	800~4000A/ms	16.7~1000A/ms	1000~5000A/ms	20~1200A/ms	1200~6000A/ms
Resistance	13.3~800A/ms	800~4000A/ms	16.7~1000A/ms	1000~5000A/ms	20~1200A/ms	1200~6000A/ms
Accuracy (23±5°C)	(1±35%) * Setting value					
Voltage Measurement						
Range	0~4V	0~40V	0~4V	0~40V	0~4V	0~40V
Readback Accuracy (23±5°C)	0.025%+0.025%F.S.					
Current Measurement						
Range	0~80A	0~800A	0~100A	0~1000A	0~120A	0~1200A
Readback Accuracy (23±5°C)	0.05%+0.05%F.S.					
Power Measurement						
Range	0~4000W		0~5000W		0~6000W	
Readback Accuracy (23±5°C)	0.1%+0.1%F.S.					
Dynamic Mode						
T1&T2	1~60000ms					
Resolution	1ms					
Accuracy (23±5°C)	1ms+100ppm					
Others						
Interface	LAN/RS232/CAN					
AC Input	Single phase, 220V AC±10%, frequency 47Hz~63Hz					
Communication Response Time	≤10ms					
Temperature	Operating temperature: 0°C~40°C, storage temperature: -20°C~60°C					
Operating Temperature	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa					
Net Weight	Approx. 32kg		Approx. 37kg		Approx. 41kg	
Dimension	6U, 265.0(H)*482.0(W)with handle*612.0(D)mm					

Note 1: For other specifications, please contact NGI.

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

Technical Data Sheet(3)

Model	N62406S-10-180	N62412S-10-360	N62418S-10-540	N62424S-10-270				
Voltage	10V							
Current	180A	360A	540A	720A				
Power	600W	1200W	1800W	2400W				
Min. Operating Voltage	-3V@180A	-3V@360A	-3V@540A	-3V@720A				
CC Mode								
Range	0~18A	0~180A	0~36A	0~360A	0~54A	0~540A	0~72A	0~720A
Setting Resolution	1mA	10mA	1mA	10mA	1mA	10mA	1mA	10mA
Setting Accuracy (23±5°C)	0.05%+0.05%F.S.							
CV Mode								
Range	0~5V	0~10V	0~5V	0~10V	0~5V	0~10V	0~5V	0~10V
Setting Resolution	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV
Setting Accuracy (23±5°C)	0.025%+0.025%F.S.							
CP Mode								
Range	600W	1200W	1800W	2400W				
Setting Resolution	10mW	100mW	100mW	100mW				
Setting Accuracy (23±5°C)	0.1%+0.1%F.S.							
Voltage Measurement								
Range	-3~5V	-3~10V	-3~5V	-3~10V	-3~5V	-3~10V	-3~5V	-3~10V
Readback Accuracy (23±5°C)	0.025%+0.025%F.S.							
Current Measurement								
Range	0~18A	0~180A	0~36A	0~360A	0~54A	0~540A	0~72A	0~720A
Readback Accuracy (23±5°C)	0.05%+0.05%F.S.							
Power Measurement								
Range	600W	1200W	1800W	2400W				
Readback Accuracy (23±5°C)	0.1%+0.1%F.S.							
Dynamic Mode								
T1&T2	0.015ms~60000ms							
Resolution	1μs/1ms							
Accuracy (23±5°C)	1μs+100ppm/1ms+100ppm							
Others								
Protection	OVP/OCP/OPP/OTP							
Interface	LAN/RS232/CAN							
Communication Protocol	Modbus-RTU protocol, SCPI protocol							
AC Input	220V AC±10%, frequency 47Hz~63Hz, current≤10A		3-phase 5-wire wiring, AC 380V/50Hz, ≤4kW					
Communication Response Time	≤10ms							
Temperature	Operating temperature: 0°C~40°C, storage temperature: -20°C~60°C							
Operating Temperature	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa							
Net Weight	Approx. 24kg	Approx. 31kg	Approx. 43kg	Approx. 50kg				
Dimension	132.5(H)*482.0(W)with handle*612.0(D)mm		265.0(H)*482.0(W)with handle*612.0(D)mm					

Note 1: For other specifications, please contact NGI.

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

Technical Data Sheet(4)

Model	N62436S-10-1080		N62448S-10-1440		N62460S-10-1800		N62472S-10-2160	
Voltage	10V							
Current	1080A		1440A		1800A		2160A	
Power	3600W		4800W		6000W		7200W	
Min. Operating Voltage	-3V@1080A		-3V@1440A		-3V@1800A		-3V@2160A	
CC Mode								
Range	0~108A	0~1080A	0~144A	0~1440A	0~180A	0~1800A	0~216A	0~2160A
Setting Resolution	10mA	100mA	10mA	100mA	10mA	100mA	10mA	100mA
Setting Accuracy (23±5°C)	0.05%+0.05%F.S.							
CV Mode								
Range	0~5V	0~10V	0~5V	0~10V	0~5V	0~10V	0~5V	0~10V
Setting Resolution	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV
Setting Accuracy (23±5°C)	0.025%+0.025%F.S.							
CP Mode								
Range	3600W		4800W		6000W		7200W	
Setting Resolution	100mW							
Setting Accuracy (23±5°C)	0.1%+0.1%F.S.							
Voltage Measurement								
Range	-3~5V	-3~10V	-3~5V	-3~10V	-3~5V	-3~10V	-3~5V	-3~10V
Readback Accuracy (23±5°C)	0.025%+0.025%F.S.							
Current Measurement								
Range	0~108A	0~1080A	0~144A	0~1440A	0~180A	0~1800A	0~216A	0~2160A
Readback Accuracy (23±5°C)	0.05%+0.05%F.S.							
Power Measurement								
Range	3600W		4800W		6000W		7200W	
Readback Accuracy (23±5°C)	0.1%+0.1%F.S.							
Dynamic Mode								
T1&T2	0.015ms~60000ms							
Resolution	1μs/1ms							
Accuracy (23±5°C)	1μs+100ppm/1ms+100ppm							
Others								
Protection	OVP/OCP/OPP/OTP							
Interface	LAN/RS232/CAN							
Communication Protocol	Modbus-RTU protocol, SCPI protocol							
AC Input	3-phase 5-wire wiring, AC 380V/50Hz							
Communication Response Time	≤10ms							
Temperature	Operating temperature: 0°C~40°C, storage temperature: -20°C~60°C							
Operating Temperature	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa							
Dimension	Pallet 487.5(H)*482.0(W)with handle*612.0(D)mm		Pallet 619.5(H)*482.0(W)with handle*612.0(D)mm		Cabinet 22U*600.0(W)*800.0(D)mm			

Note 1: For other specifications, please contact NGI.

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

DC Electronic Load