

N8361 Series High-accuracy Programmable Battery Simulator



Battery Simulator

Product Introduction

N8361 is a high performance battery simulator with power up to 180W, covering the specifications of lithium battery for consumer electronics mainstream market. N8361 supports a variety of test functions, such as power mode, charging mode, battery simulation, internal resistance simulation, SOC simulation, fault simulation, etc., to achieve a variety of battery characteristics simulation; The current flows bidirectionally, and the source load state changes quickly. N8361 products can be widely used in the field of consumer electronics testing.

Application Fields

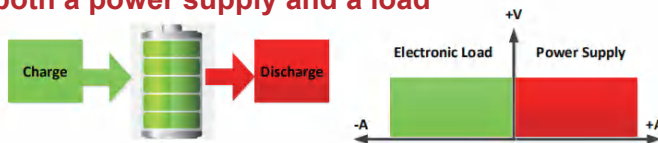
- ▶ Battery protection board test
- ▶ Portable consumer electronics R&D and production, such as mobiles, bluetooth earphones, smartwatch, etc
- ▶ Power tools production test, such as electric screwdriver
- ▶ Testing of Battery powered, small power supply such as DC-DC, wireless charging and other product
- ▶ Battery maintenance equipment testing

Main Features

- ▶ Voltage Range: 0~20V
- ▶ Current Range: -10A~+10A
- ▶ Single channel power up to 200W
- ▶ Voltage rise and fall time $\leq 50\mu s$
- ▶ Current Accuracy up to 1 μA
- ▶ High precision DVM
- ▶ Support front and rear outlet, easier for desktop & integration
- ▶ With digital I/O, supporting trigger test
- ▶ LAN/RS232/CAN Interface

Current flowing bidirectionally to make it both a power supply and a load

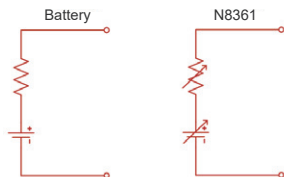
The current flows in both directions. N8361 can both suck and output current, and the current is up to 10A. The output port has a switch component, and the off state disconnects the physical connection with the external loop.



▲ N8361 Two-quadrant Operation

Variable output impedance allowing battery internal resistance simulation

N8361 has the battery internal resistance simulation function, and supports resistance value programming. The programmable range is 0-20 Ω , which can emulate the variation graph consistent with the real battery internal resistance characteristics.



▲ Schematic of Battery and N8361-12-15

Front and rear wiring design

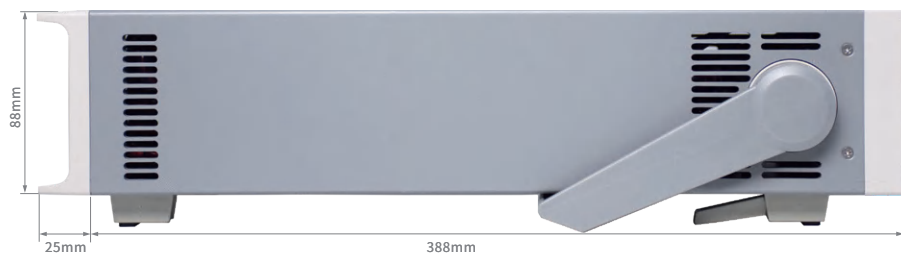
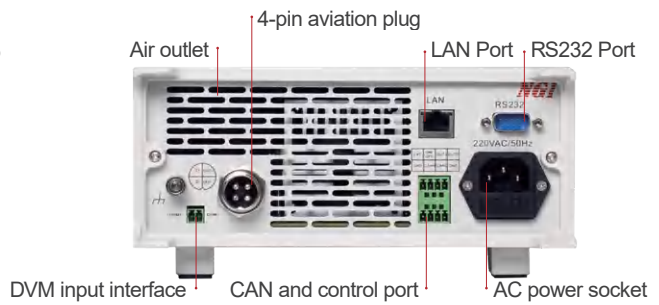
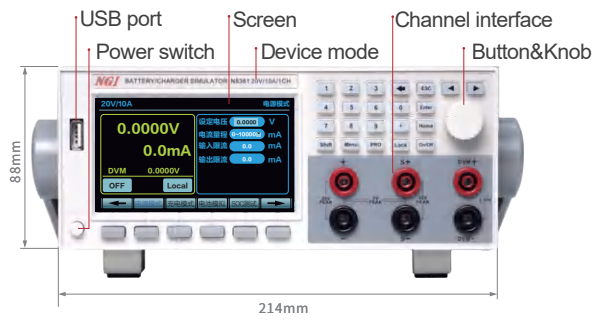
N8361 is equipped with banana jack at the front panel and output terminal at the rear panel, which is easy for desktop application & integration, and improves the test efficiency.



DVM test function

N8361 series provides basic circuit measurement function. It has one channel built-in DVM to test external voltage. The voltage range is -30V ~ 30V, and the resolution is 0.1mV. The LCD screen will show the dynamic data, which is convenient for users to observe the voltage changes.

Product Dimension



Battery Simulator

Technical Data Sheet

Model	N8361-20-10		
Current	±10A/CH		
Voltage	20V/CH		
Power	200W/CH		
Channels	1CH		
CV Mode			
Range	0~20V		
Setting Resolution	0.1mV		
Setting Accuracy (23±5°C)	0.01%+3mV		
Readback Resolution	0.1mV		
Readback Accuracy (23±5°C)	0.01%+2mV		
Output Voltage Settling Time	≤10ms		
Load Regulation	0.01%		
Line Regulation	0.01%		
Voltage Ripple (20Hz-20MHz)	1mVrms		
Temperature Coefficient (0-40°C)	≤25ppm/°C		
Current Measurement			
Range 1			
Range	-10~10A		
Resolution	0.1mA		
Accuracy (23±5°C)	0.05%+4mA		
Temperature Coefficient (0-40°C)	≤50ppm/°C		
Range 2			
Range	-1~1A		
Resolution	0.01mA		
Accuracy (23±5°C)	0.05%+0.4mA		
Temperature Coefficient (0-40°C)	≤50ppm/°C		
Range 3			
Range	-1~1mA		
Resolution	0.1μA		
Accuracy (23±5°C)	0.05%+1μA		
Temperature Coefficient (0-40°C)	≤50ppm/°C		
Current Protection Limit			
Range	-10~10A		
Setting Resolution	0.1mA		
Setting Accuracy(23±5°C)	0.05%+5mA		
Ripple Noise (20Hz-20MHz)	<5mArms		
Temperature Coefficient (0-40°C)	≤50ppm/°C		
DVM Function			
Channels	1CH	Measurement Accuracy	±0.01%F.S.
Measurement Range	-30V~+30V	Measurement Frequency	4Hz
Measurement Resolution	0.1mV	Input Impedance	2MΩ
Terminal	Pluggable terminal	Temperature Coefficient (0~40°C)	30ppm/°C
Dynamic Characteristics			
Voltage Rise Time (10%-90%F.S. Variation Time)	<50μs (no load)	Voltage Rise Time (10%-90%F.S. Variation Time)	<50μs (pure resistive full load)
Voltage Fall Time (90%-10%F.S. Variation Time)	<50μs (no load)	Voltage Fall Time (90%-10%F.S. Variation Time)	<50μs (pure resistive full load)
Transient Voltage Drop ¹	600mV	Transient Recovery Time ²	<100μs
Others			
Communication Response Time	≤10ms		
Interface	LAN/RS232/CAN		
AC Input	Single phase 100-240V AC, frequency 47Hz~63Hz, current ≤2A@220V, ≤4A@110V		
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. 4kg		
Dimension	2U, 88.0(H)*214.0(W)*388.0(D)mm		

Note 1: Load varies from 10% to 90% by full voltage output.

Note 2: Load varies from 10% to 90% by full voltage output, with voltage recovering within 50mV of previous voltage.

Note 3: For other specifications, please contact NGI.

Note 4: All specifications are subject to change without notice.