

## N8336 Series Ultra-high Accuracy Multi-channel Battery Simulator



Battery Simulator

### Product Introduction

N8336 is a programmable battery simulator with low power, ultra-high accuracy and multi-channel. N8336 standalone supports up to 16 channels, and each channel is isolated, which is convenient for multi-channel series connection. N8336 series supports nA-level current measurement, supports source mode, charge mode, SOC test, SEQ test, real-time curve and other test functions. Its application software is easy to use and can meet the needs of multi-channel, multi-parameter and complex test environments.

### Application Fields

- ▶ BMS/CMS test for new energy vehicle, UAV and energy storage
- ▶ Portable consumer electronics R&D and production, such as mobiles, bluetooth earphones, smartwatch, etc.
- ▶ Calibration of voltage acquisition device, such as fuel cell voltage monitor

### Main Features

- ▶ Voltage range: 0~5V/0~6V
- ▶ Current range: 0~1A/0~3A
- ▶ Voltage accuracy up to 1: 60,000
- ▶ nA level current measurement
- ▶ Single device up to 16 channels
- ▶ Supporting SOC test, SEQ test, real-time curve, etc.
- ▶ 16-channel communication response time ≤10ms
- ▶ LAN port, RS2485 interface, CAN interface

### Ultra-high integration, single device with up to 16 channels

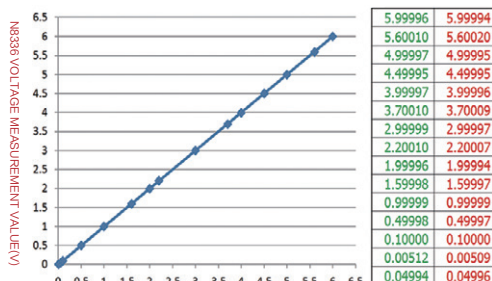
N8336 series adopts a standard 19-inch 2U size, with up to 16 channels in a single device. Each channel is isolated. One device can support 16-station test simultaneously, which greatly reduces the instruments used and improves test efficiency.



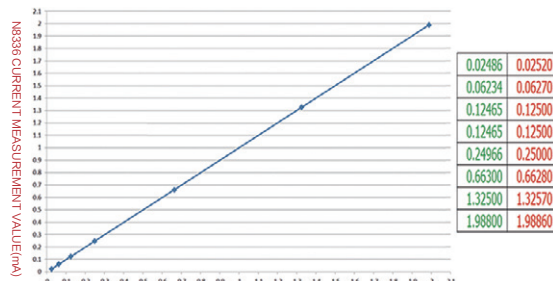
▲ Rear Panel with 16 Channels

### Ultra-high voltage accuracy, nA level current measurement

N8336 series has an ultra-high voltage accuracy of up to 1/60,000, with current resolution up to 10nA and voltage resolution up to 10μV. Up to 0.1mV voltage accuracy and nA-level current measurement can provide high accuracy DC power supply and ultra-high accuracy voltage & current measurement for product test, which can be widely used in R&D and product performance test for BMS, CMS, portable consumer electronics (Bluetooth headsets, electric tools, etc.).



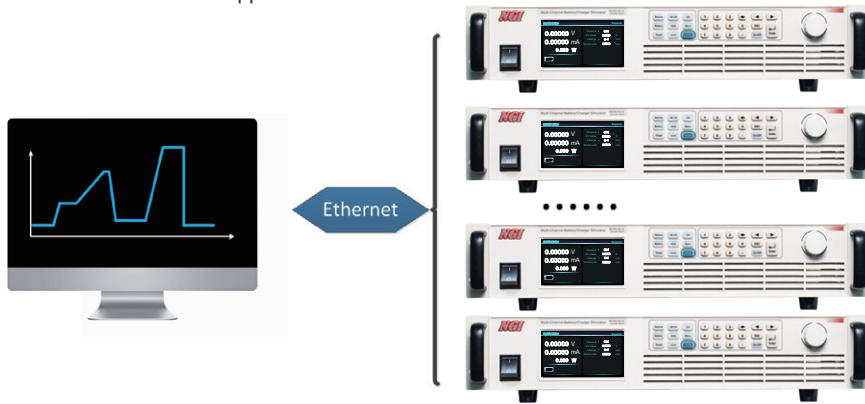
▲ Measured Voltage(V)



▲ Measured Current(mA)

## Series connection available to simulate working condition of battery pack

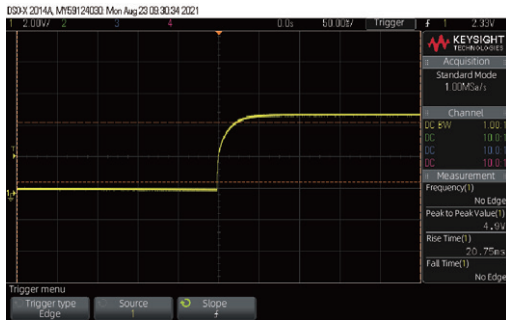
When simulating multiple strings of battery cells, N8336 supports multiple devices connection in serial mode. Users can realize remote control and other automatic tests on the application software.



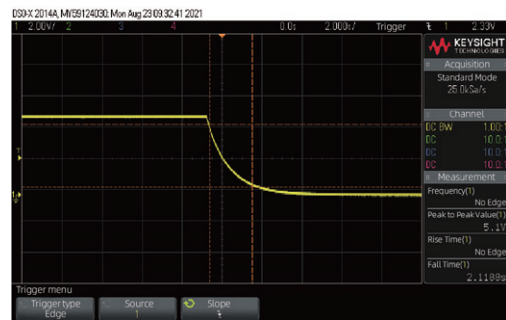
Battery Simulator

## Ultra-fast transient response without overshoot

The low output noise is the true DC characteristic of the battery cell without ripple. When the DUT dynamically changes, N8336 can promptly provide a stable DC output and reduce the surge voltage damage to the DUT. For non-static products test & applications, N8336 series can supply a stable DC source timely. N8336 series has fast dynamic response to simulate real batteries.



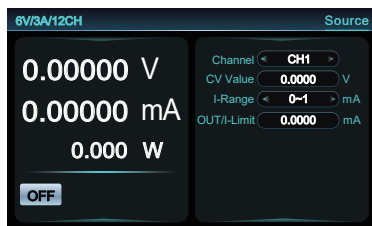
▲ High-speed Voltage Rise Time  $\leq 25\text{ms}$



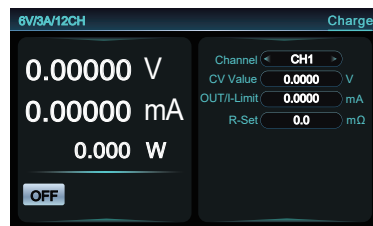
▲ High-speed Voltage Fall Time  $\leq 2.5\text{s}$

## Battery simulation suitable for BMS chips test of various specifications

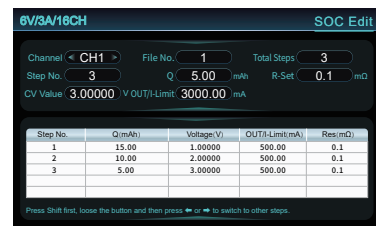
N8336 series battery simulators have multiple functions and features, supporting Source, Charge, SOC Test, SEQ Test, Graph, All CH, CAN setting, etc. One device can achieve multiple uses, streamline test equipment and optimize test procedures. N8336's internal circuit is optimized for different chips, which can be adapted to test BMS chips of various specifications.



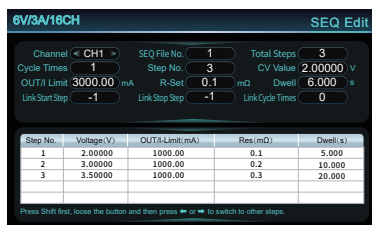
▲ Source



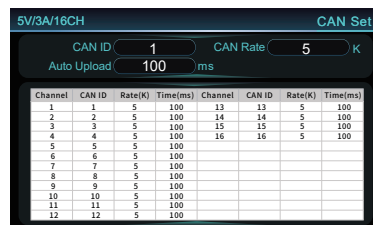
▲ Charge



▲ SOC Edit



▲ SEQ Edit

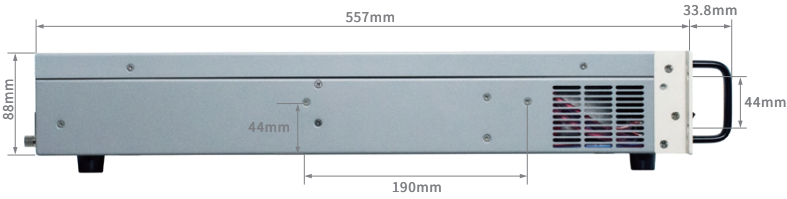
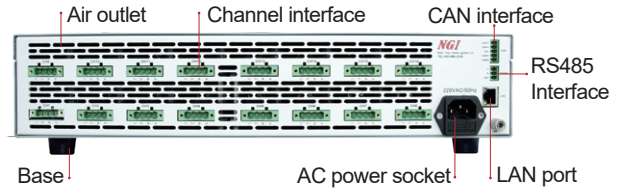
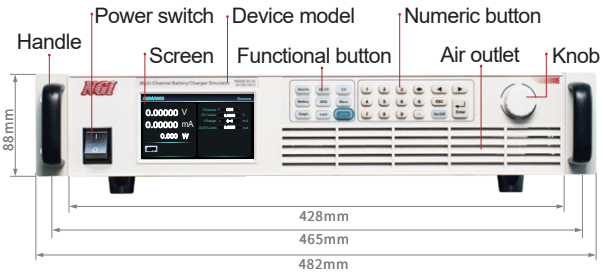


▲ CAN Set



▲ System

### Product Dimension



## Technical Data Sheet

Model	N8336-06-01		N8336-05-03	
Current	1A/CH		3A/CH	
Voltage	6V/CH		5V/CH	
Power	6W/CH		15W/CH	
Channels	16CH			
CC Mode				
Range	0~1A	0~1mA	0~3A	0~1mA
Setting Resolution	0.01mA	0.01 $\mu$ A	0.01mA	0.01 $\mu$ A
Setting Accuracy ( 23 $\pm$ 5 $^{\circ}$ C )	0.001%+0.5mA	0.001%+0.5 $\mu$ A	0.001%+1.5mA	0.001%+0.5 $\mu$ A
Readback Resolution	0.01mA	0.01 $\mu$ A	0.01mA	0.01 $\mu$ A
Readback Accuracy ( 23 $\pm$ 5 $^{\circ}$ C )	0.001%+0.5mA	0.001%+0.5 $\mu$ A	0.001%+1.5mA	0.001%+0.5 $\mu$ A
Temperature Coefficient ( 0~40 $^{\circ}$ C )	20ppm/ $^{\circ}$ C			
Long-term Stability	40ppm/1000h			
CV Mode				
Range	0~6V		0~5V	
Setting Resolution	0.01mV			
Setting Accuracy ( 23 $\pm$ 5 $^{\circ}$ C )	0.001%+0.1mV			
Readback Resolution	0.01mV			
Readback Accuracy ( 23 $\pm$ 5 $^{\circ}$ C )	0.001%+0.1mV			
Temperature Coefficient ( 0~40 $^{\circ}$ C )	10ppm/ $^{\circ}$ C			
Long-term Stability	40ppm/1000h			
Voltage Ripple Noise ( 20Hz-20MHz )	$\leq$ 2mVrms			
Dynamic Characteristics				
Voltage Rise Time	$\leq$ 25ms ( no load ) (10%-90%F.S. Variation Time)			
Voltage Rise Time	$\leq$ 25ms ( full load ) (10%-90%F.S. Variation Time)			
Voltage Fall Time	$\leq$ 3s ( no load ) (90%-10%F.S. Variation Time)			
Voltage Fall Time	$\leq$ 30ms ( full load ) (90%-10%F.S. Variation Time)		$\leq$ 10ms ( full load ) (90%-10%F.S. Variation Time)	
Transient Recovery Time <sup>1</sup>	$\leq$ 100 $\mu$ s			
Others				
Isolation ( Output to Ground )	1000VDC			
Isolation ( Inter-channel )	500VDC			
Communication Response Time	$\leq$ 10ms			
Interface	LAN/RS485(Isolated)/CAN			
AC Input	Single phase, 220V AC $\pm$ 10%, current <2A, frequency 47Hz~63Hz			
Temperature	Operating temperature: 0 $^{\circ}$ C~40 $^{\circ}$ C, storage temperature: -20 $^{\circ}$ C~60 $^{\circ}$ C			
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa			
Net Weight	Approx. 20kg			
Dimension	2U, 88.0(H)*482.0(W)with handle*557.0(D)mm			

Note 1: Load varies from 10% to 90% by full voltage output, with voltage recovering within 50mV of previous voltage.

Note 2: For other specifications, please contact NGI.

Note 3: All specifications are subject to change without notice.