Repower VBS-5V3A-16S

Tester Technical Specification

Model: VBS-5V3A-16S

Shenzhen RePower Technology Co., Ltd

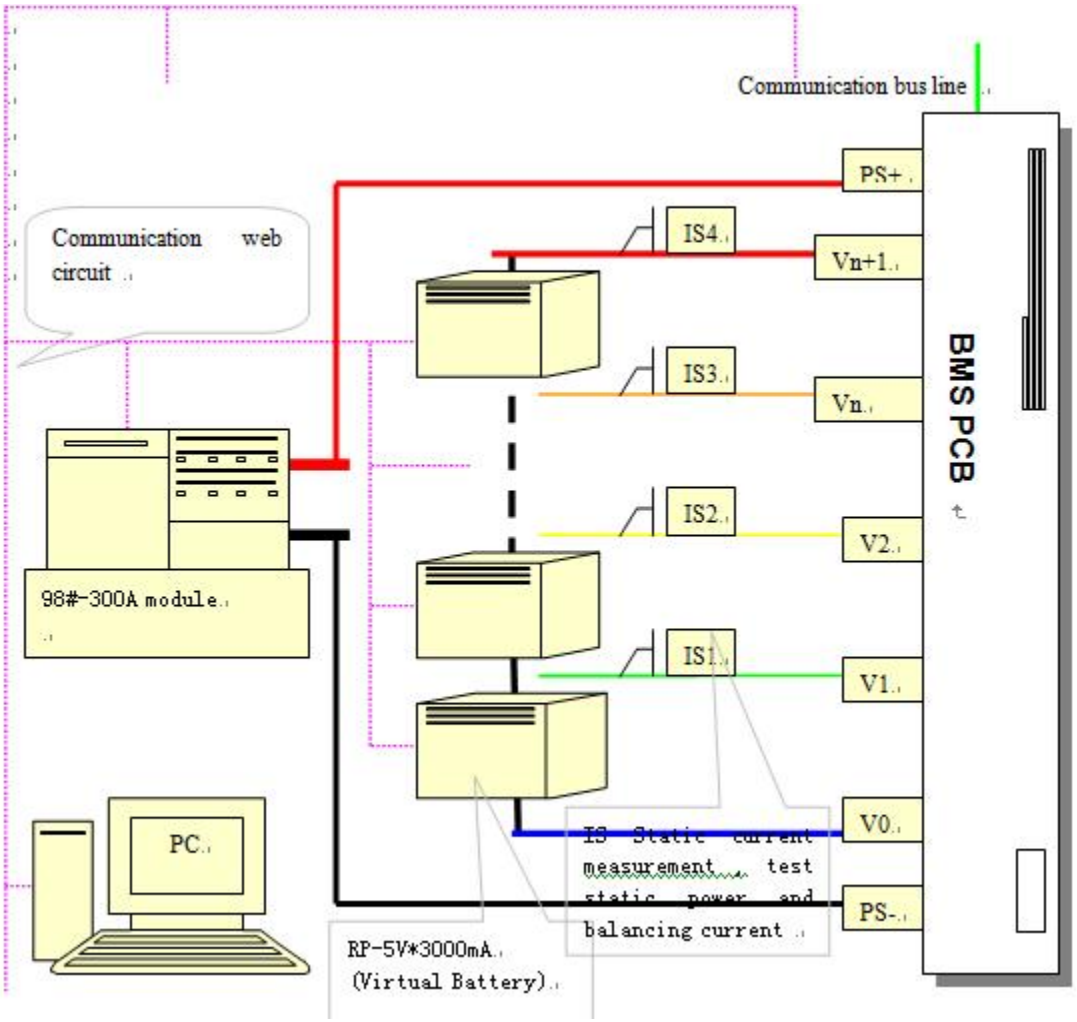
Date: 2024

1. Equipment Overview

The RePower VBS Test System consists of a simulated battery, communication unit, and host computer software. It can fully test the protection board (BMS) for self-consumption, protection functions, communication functions, balancing functions, conduction resistance, charge-discharge functions, etc. The test results can determine whether the product meets the qualification criteria and flag defective products. The system can store test results and integrate with the Manufacturing Execution System (MES) for data management and traceability.

This equipment is primarily used in the production testing of power battery pack protection boards (BMS), incoming material inspection, quality control, and R&D testing.

2. Equipment Topology Diagram



3. Main Testing Items

3.1 Applicable Range and Main Testing Items

Product Name	Power VBS-5V3A-16S Test System
1.Application	Capable of testing 3~16 series power lithium battery pack protection boards with support for future upgrades.

2.Testing Items	
2.1	Open Circuit Voltage Test
2.2	Total Static Current Measurement
2.3	Single-Cell Static Current Measurement
2.4	Balancing Activation Voltage Measurement
2.5	Balancing Current Measurement
2.6	Balancing Deactivation Voltage Measurement
3.Secondary Development Features	Offers support for secondary development with dynamic libraries and script editing.
4.Test Program Activation	Supports test activation via bar code scanning, button press, or manual initiation.
5.Test Data	Can generate data tables for local backup and upload test data to the MES system.
6.Compatibility	Supports testing of protection boards for lithium-ion batteries of various chemistries (LFP, NMC, LCO, LMO, LTO) in 4-24 series configurations.
	It is compatible with both hardware and software protection boards, supporting both same-port and different-port testing.

4. Equipment Components and Technical Parameters

4.1 Equipment Components List

No.	Component Name	Model Specification	Quantity	Remarks
1	Virtual Battery	VBS-5V3A-8S	2unit	Total 16CH

4.2 Equipment Technical Parameters

No.	Unit Name	Model Specification	Technical Parameters
1	Virtual Battery Unit	5V3A	1) Voltage output measurement range: 0.1 -5V; 2) Voltage resolution: 0.1mV; 3) Voltage output accuracy (@25±10℃): ±0.05% FS; 4) Voltage measurement accuracy (@25±10℃): ±0.05% FS; 5) Current output measurement range: - 3~3A, 1~5000μA; 6) Current resolution: 0.1mA/0.1μA; 7) Current output accuracy (@25±10℃): ±0.1% FS; 8) Current measurement accuracy (@25±10℃): ±0.1% FS;

			9) Output method: Four-wire output.

4.2. Main Features

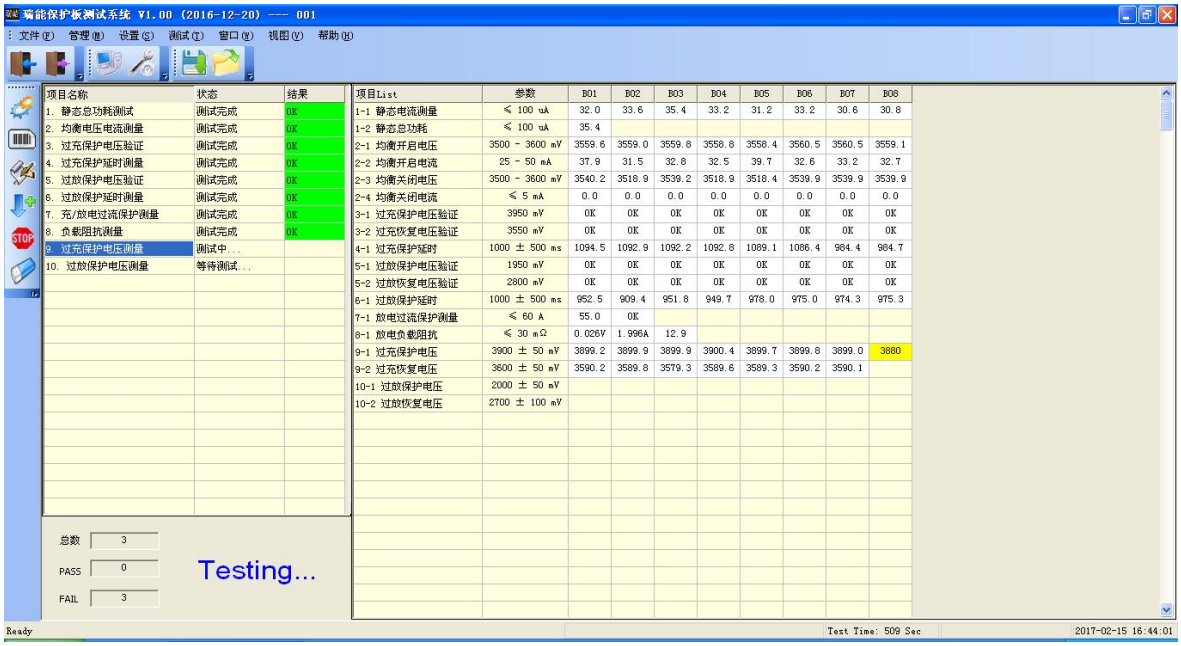
· The simulated battery adopts a design that integrates source and load, supporting both charging and discharging.
· The system provides multi-range, multi-level, high-precision outputs, suitable for product calibration and accuracy comparison testing.
· Supports secondary development, allowing users to customize testing projects.

6. Overall Appearance and Dimensions

6.1 Equipment Appearance

Note: The appearance may vary depending on the specific functionalities delivered.

7. Test Software Interface



8. Basic Parameters

No.	Item	Technical Parameter
1	Equipment Size	≤482W *88H*395Lmm (8CH)
2	Equipment Weight	≤15 KG
3	Number of Channels	16CH
4	Operation Mode	Manual wiring, automatic testing
5	Communication Mode	RS485
6	Input Power	AC220V±10%，50HZ±5%
7	Input Power Consumption	≤1KW
8	Dustproof and Cooling	Equipped with dustproof and cooling devices.
9	Cooling Method	Air-cooled
10	Operating Temperature	0℃～45℃
11	Storage Temperature	-10℃～70℃
12	Operating Relative Humidity	30%～85%(non-condensing).
13	Operating Environment Requirements	· The environment should be free from strong vibrations, corrosive gases, metal powders, dust, flammable, or explosive gases. · The equipment should maintain a proper distance from walls or other objects to ensure adequate ventilation and heat dissipation.