HASANEN EBC-A10H

HASANEN EBC-A10H Battery Capacity Tester User Manual

Model: EBC-A10H | Brand: HASANEN

1. Introduction

The HASANEN EBC-A10H is an electronic load battery capacity tester with integrated charging functionality. It is designed for comprehensive charging and discharging capacitance testing of various battery types. This device can be connected to a computer for enhanced functionality, including data logging and advanced test configurations.

Figure 1.1: The EBC-A10H Battery Capacity Tester shown with its included accessories, including power cord and test clips.

2. Safety Information

Please read and understand all safety instructions before operating the EBC-A10H Battery Capacity Tester. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Ensure the device is connected to a grounded 110V power outlet.
- Do not operate the device in wet or damp conditions.
- Always connect the test clips to the battery terminals correctly (positive to positive, negative to negative) to avoid short circuits or damage.
- Do not exceed the specified voltage and current limits of the tester or the battery being tested.
- Keep the device away from flammable materials during operation, as it may generate heat.
- Ensure adequate ventilation around the device to prevent overheating.
- Do not attempt to disassemble or repair the device yourself. Refer all servicing to qualified personnel.

3. Package Contents

Verify that all items listed below are included in your package:

- 1x EBC-A10H Battery Capacity Tester
- 1x On-line Line (USB communication cable)
- 1x Power Cord (American Standard 110V)
- 4x Test Clips (Red and Black, for 4-wire connection)

4. Product Overview

The EBC-A10H features a robust design with an intuitive interface for battery testing.

4.1 Front Panel

Figure 4.1: Front panel of the EBC-A10H, showing the LCD display, control knob, power button, and connection terminals.

- **LCD Display:** Shows real-time test data including voltage, current, capacity, time, power, and energy.
- **Control Knob (SET):** Used for navigating menus and adjusting parameters.
- **ON/OFF Button:** Powers the device on or off.
- **A+** / **A- Terminals:** Current input/output terminals.
- **V+** / **V- Terminals:** Voltage sensing terminals for 4-wire connection.

4.2 Side Panel and Ventilation

Figure 4.2: Side view of the EBC-A10H, highlighting the air vents for heat dissipation.

The side panel features air vents designed to effectively dissipate heat generated during operation, ensuring stable performance and extended device lifespan.

4.3 Connection Cables

Figure 4.3: The four-wire test clips and cables provided with the EBC-A10H for accurate measurements.

The tester utilizes a 4-wire detection method. Separate wiring for voltage and current channels ensures more accurate measurements by eliminating voltage drop across the current leads.

5. Setup

Follow these steps to set up your EBC-A10H Battery Capacity Tester:

1. **Placement:** Place the tester on a stable, flat surface with adequate ventilation around the air vents.
2. **Power Connection:** Connect the provided power cord to the tester's power input and then to a standard 110V AC grounded outlet.
3. **Battery Connection (4-wire method):**
   - Connect the red test clip (current positive) to the A+ terminal and the black test clip (current negative) to the A- terminal.
   - Connect the red test clip (voltage positive) to the V+ terminal and the black test clip (voltage negative) to the V- terminal.
   - Connect the corresponding clips to the positive and negative terminals of the battery being tested. Ensure a secure connection.
4. **Computer Connection (Optional):** If using the online software, connect the provided USB

communication cable (On-line Line) from the tester to your computer. Install the necessary software and drivers as per the manufacturer's instructions (typically available for download).

6. Operating Instructions

The EBC-A10H supports various test modes for different battery types and testing requirements.

Figure 6.1: The EBC-A10H tester actively performing a battery test, displaying data on its LCD screen.

6.1 Powering On and Basic Navigation

1. Press the **ON** button to power on the device. The LCD display will illuminate.
2. Use the **SET** knob to navigate through menu options and adjust values. Press the knob to confirm selections.

6.2 Discharge Modes

The tester offers three primary discharge modes:

- **DSC-CC (Constant Current Discharge):** Used for testing battery capacity by discharging at a constant current until a set low voltage cutoff is reached.
- **DSC-CP (Constant Power Discharge):** Simulates constant power devices, discharging the battery at a

constant power output.

- **CHG-CV (Constant Voltage Charge):** Used for charging batteries at a constant voltage, typically after a constant current phase, until the current drops below a set cutoff. This mode is suitable for Lithium, Lead Acid, NiMH, and NiCr batteries.

6.3 Automatic Charge-Discharge-Charge Mode

This mode allows for automated cycling to determine battery capacity and condition. It performs a full charge, then a full discharge to measure capacity, followed by another full charge. This is particularly useful for comprehensive battery analysis.

6.4 Using the Online Software

Connecting the EBC-A10H to a computer via the USB cable unlocks advanced features:

- **Real-time Data Logging:** Monitor test parameters on your computer screen.
- **Curve Plotting:** Visualize voltage, current, and capacity curves over time.
- **Parameter Configuration:** Set up complex test scripts and parameters with greater precision.
- **Calibration:** Perform benchmark tests and calibration for improved accuracy.

Refer to the software's specific documentation for detailed instructions on its features and usage.

7. Maintenance

Proper maintenance ensures the longevity and accuracy of your EBC-A10H Battery Capacity Tester.

- **Cleaning:** Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Storage:** Store the tester in a cool, dry place away from direct sunlight and extreme temperatures.
- **Ventilation:** Ensure the air vents are clear of dust and debris to maintain proper airflow and prevent overheating.
- **Cable Inspection:** Regularly inspect the power cord and test clips for any signs of damage or wear. Replace damaged components immediately.

8. Troubleshooting

This section addresses common issues you might encounter with the EBC-A10H.

Problem	Possible Cause	Solution
Device does not power on.	No power supply; faulty power cord.	Check power cord connection; ensure outlet is functional; try a different power cord if available.
Inaccurate readings.	Poor battery connection; incorrect 4-wire setup; uncalibrated device.	Ensure test clips are securely connected; verify 4-wire connections are correct; perform calibration using the online software.
Device overheats.	Blocked ventilation; excessive load.	Ensure air vents are clear; reduce test current/power if operating at maximum limits for extended periods.
Software connection issues.	Incorrect USB cable; missing drivers; software not installed correctly.	Use the provided USB cable; install the latest drivers and software from the manufacturer's website.

Problem	Possible Cause	Solution
Cutoff current limit in charging mode is 9.99A.	Firmware limitation or software bug.	Check for firmware updates from the manufacturer. If the issue persists, contact customer support.

9. Specifications

Technical specifications for the HASANEN EBC-A10H Battery Capacity Tester:

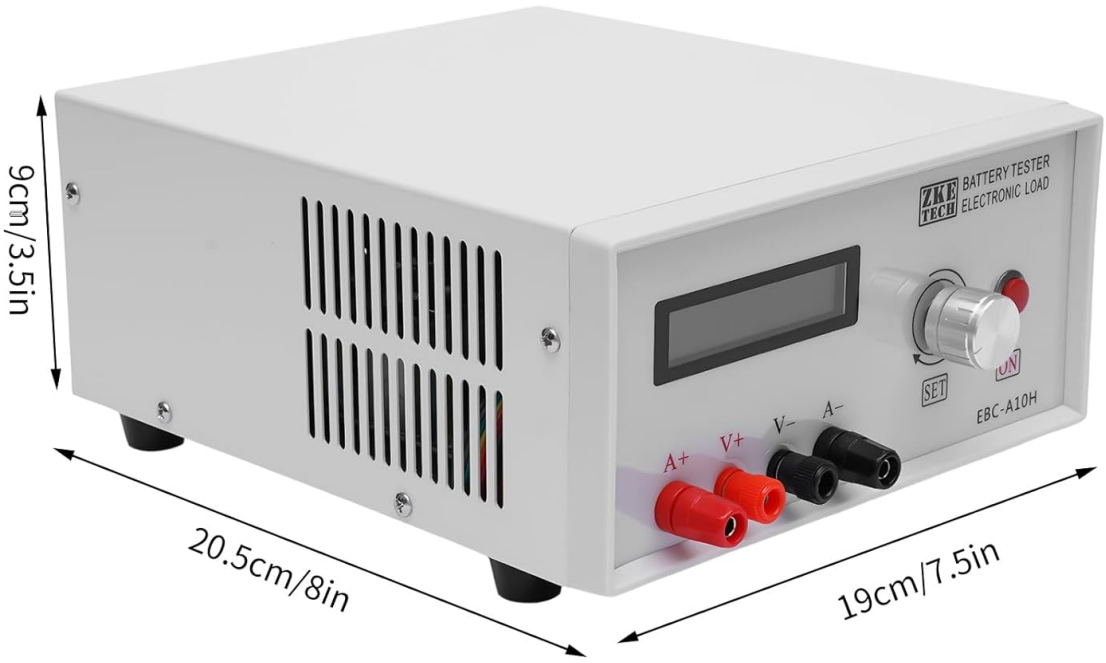

Figure 9.1: Physical dimensions of the EBC-A10H tester.

Parameter	Value
Model	EBC-A10H
Input Voltage	110V (American Standard Plug)
Discharge Voltage Range	0.00 - 30.00V (Min Step: 0.01V)
Charging Voltage Range	0.00 - 22.00V (Min Step: 0.01V)

Parameter	Value
Discharge Current Range	0.05 - 10.00A (Min Step: 0.01A)
Charging Current Range	0.05 - 5.00A (Min Step: 0.01A)
Charging Methods Supported	Standard Charging (NiMH, NiCr, Lithium, Iron, Lead Acid)
Low Voltage Test Accuracy	0.002 - 4.500V (Accuracy: 0.003V, Error ± 0.5%)
High Voltage Test Accuracy	4.50 - 30.00V (Accuracy: 0.01V, Error ± 0.5%)
Current Test Accuracy	0.05 - 10.000A (Accuracy: 0.005A, Error ± 0.5%)
Capacity Test Resolution	10Ah (0.001Ah); 10-100Ah (0.01Ah); >100Ah (0.1Ah)
Connection Method	Four-wire Detection
Dimensions (Approx.)	20.5cm (8in) x 19cm (7.5in) x 9cm (3.5in)

10. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact HASANEN customer service. Keep your purchase receipt as proof of purchase for warranty claims.