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## heltec bms HT-ED50AC8

# heltec bms 8-Channel Lithium Battery Capacity Tester HT-ED50AC8 User Manual

Model: HT-ED50AC8

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## 1. INTRODUCTION

The heltec bms HT-ED50AC8 is an advanced 8-channel battery capacity tester designed for comprehensive analysis of various lithium battery types. This device facilitates precise charging, discharging, and equalization processes, making it suitable for battery repair, research, and quality control. Each channel operates independently with a dedicated processor, ensuring accurate data collection and control. This manual provides essential information for the safe and effective use of your HT-ED50AC8 tester.

## 2. SAFETY INFORMATION

Please read and understand all safety instructions before operating the device. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Power Source:** Use only the specified power source (Corded Electric) and ensure proper grounding.
- **Ventilation:** Ensure adequate ventilation around the device. Do not block the air outlets. The device features an independent heat source air duct with temperature-controlled fans.
- **Battery Handling:** Always handle batteries with care. Ensure correct polarity when connecting batteries to avoid damage to the device or batteries.
- **Environment:** Operate the device in a dry, stable environment, away from flammable materials, moisture, and extreme temperatures.
- **Maintenance:** Do not attempt to open or repair the device yourself. Refer all servicing to qualified personnel.
- **Emergency Shutdown:** Familiarize yourself with the location of the main power switch for quick shutdown in emergencies.

## 3. PACKAGE CONTENTS

Verify that all items are present in the package:

- heltec bms 8-Channel Lithium Battery Capacity Tester (HT-ED50AC8)
- Power Cord
- Connection Cables with Alligator Clips (8 sets)

- USB Communication Cable (for PC connection)
- User Manual (this document)

## 4. PRODUCT OVERVIEW

The HT-ED50AC8 features an intuitive design for efficient battery testing. Below is a diagram highlighting key components and their functions.

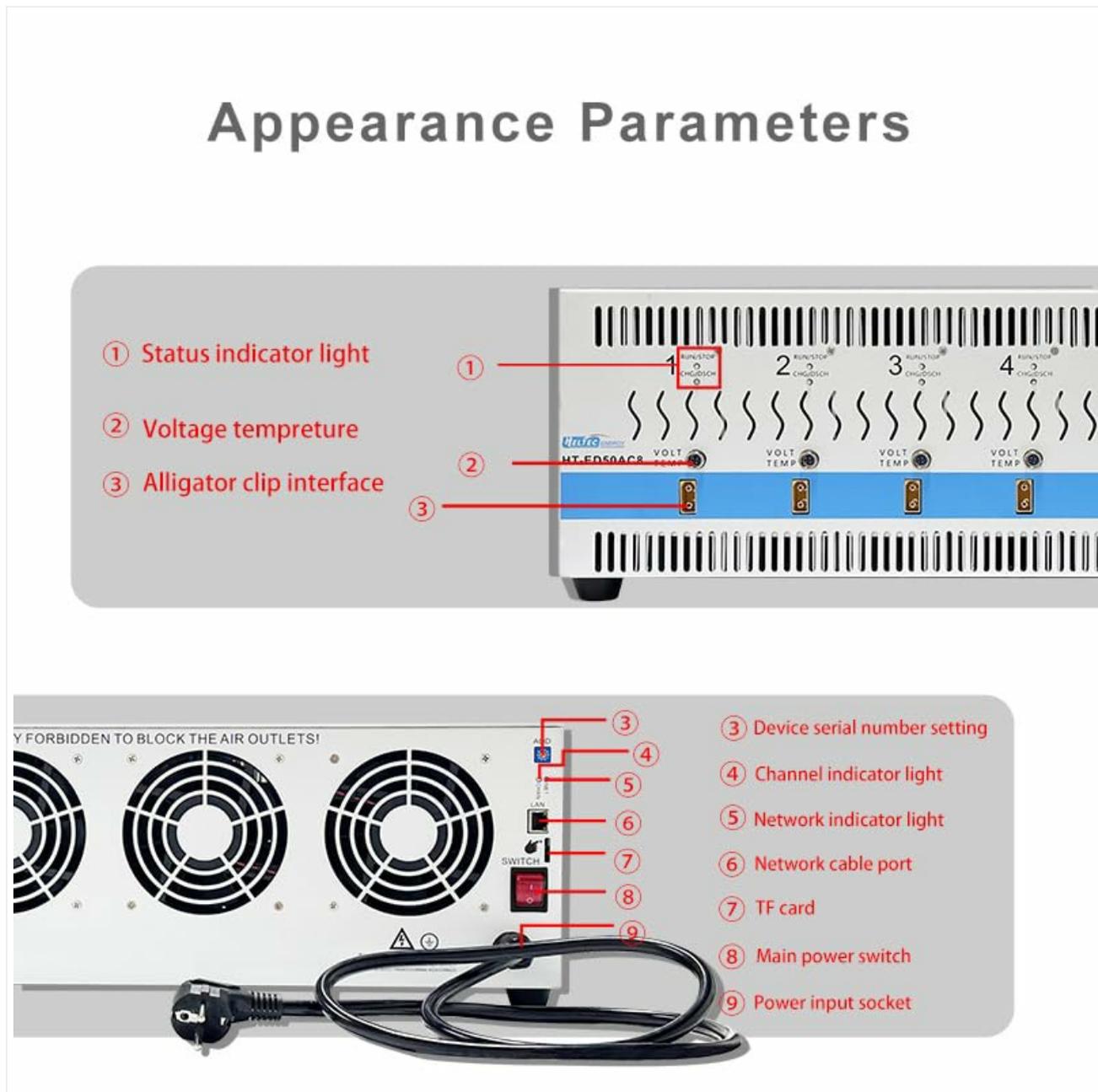


Figure 4.1: Front and Rear Panel Layout of the HT-ED50AC8

### Front Panel Components:

1. **Status Indicator Light:** Displays the operational status of each channel.
2. **Voltage/Temperature Ports:** Connectors for voltage and temperature probes.
3. **Alligator Clip Interface:** Connection points for battery cables with alligator clips.

### Rear Panel Components:

4. **Device Serial Number Setting:** For identification and software configuration.

5. **Channel Indicator Light:** Indicates the status of individual channels.
6. **Network Indicator Light:** Shows network connectivity status.
7. **Network Cable Port:** For connecting to a computer network.
8. **TF Card Slot:** For data storage.
9. **Main Power Switch:** Controls the main power to the unit.
10. **Power Input Socket:** For connecting the power cord.

## 5. SETUP

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Follow these steps to set up your HT-ED50AC8 battery tester:

### 5.1 Physical Placement and Power Connection

- Place the device on a stable, flat surface with sufficient clearance around the air vents for proper cooling.
- Connect the power cord to the Power Input Socket (9) on the rear panel and then to a suitable power outlet.
- Ensure the Main Power Switch (8) is in the OFF position before connecting power.



Figure 5.1: Rear Panel with Power Connection and Air Ducts

### 5.2 Software Installation and PC Connection

- Install the provided software on your computer. Refer to the software's installation guide for detailed steps.
- Connect the device to your computer using the USB communication cable or a network cable via the Network Cable Port (7).
- Launch the software. The Network Indicator Light (6) should illuminate, indicating a successful connection.



Figure 5.2: Device Connected to PC with Software Interface

### 5.3 Battery Connection

- Ensure the device is powered off before connecting batteries.
- Connect the battery cables with alligator clips to the Alligator Clip Interfaces (3) for each channel you intend to use.
- Attach the alligator clips to the battery terminals, ensuring correct polarity (red for positive, black for negative).
- The battery test probe is height-adjustable; adjust it for proper contact with various battery types.

# Compatible with multiple battery types

Fully compatible with lithium iron phosphate, ternary lithium, lithium cobalt oxide, nickel metal hydride, nickel cadmium and other types of batteries @18650, 26650, soft pack batteries, block batteries and other physical specifications of batteries are fully compatible and installed



LFP



NCM



NiMH



LCO



Soft pack battery



Square cell

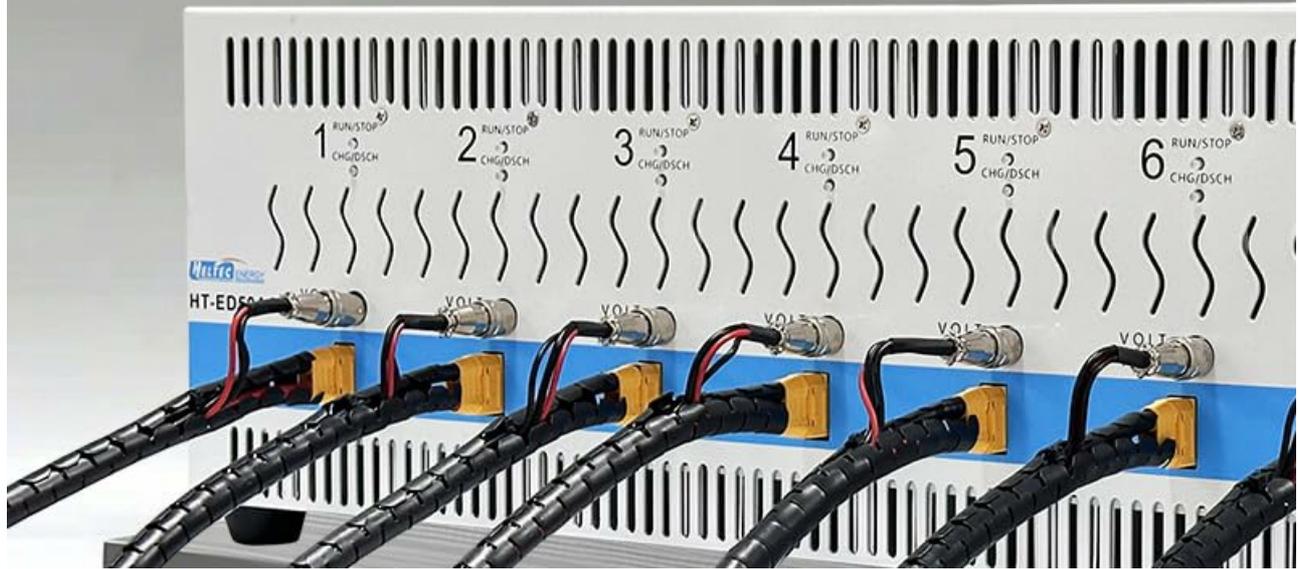


Figure 5.3: Battery Connections to the Tester

## 6. OPERATION

The HT-ED50AC8 offers various testing modes and features for comprehensive battery analysis.

### 6.1 Powering On and Initializing

- After connecting all cables and batteries, turn on the Main Power Switch (8).
- Open the control software on your computer. The software should detect the device.
- The Status Indicator Lights (1) and Channel Indicator Lights (4) will show the device's readiness.

### 6.2 Battery Compatibility

The HT-ED50AC8 is compatible with a wide range of battery chemistries and physical specifications:

- Lithium Iron Phosphate (LFP)
- Ternary Lithium (NCM)
- Lithium Cobalt Oxide (LCO)

- Nickel Metal Hydride (NiMH)
- Nickel Cadmium (NiCd)
- Compatible physical specifications include 18650, 26650, soft pack batteries, and block batteries.

## 8 channels 50A charge-discharge



Figure 6.1: Compatible Battery Types

### 6.3 Test Modes and Parameters

The software provides various test steps and customizable parameters:

- **Charging Modes:** Constant Current (CC) charging, Constant Voltage (CV) charging, Constant Current Constant Voltage (CCCV) charging.
- **Discharging Modes:** Constant Current (CC) discharge, Constant Power (CP) discharge, Constant Resistance (CR) discharge.
- **Other Steps:** Shelving, step jump capability.
- Customize parameters such as charging voltage, current limits, and duration for each step.

### 6.4 Data Recording and Analysis

- The device records test process data, which can be viewed and analyzed through the software.
- The software offers 3 Y-axes (voltage, current, capacity) and a time axis for curve plotting.
- Data report functions are available for detailed analysis and export.
- Test results can be grouped according to custom standards, with visual indicators on the device and software.

### 6.5 Advanced Features

- **Dedicated Processors:** Each channel has a dedicated processor for precise capacity calculation, timing, voltage, and current control.
- **Full Channel Isolation:** Allows direct testing of battery cells within an entire battery pack without interference.
- **Intelligent Protection:** Features include module design, 50A charge-discharge capability, intelligent temperature monitoring, data visualization, custom grouping, anti-reverse connection, compatible installation, constant current protection,

and precise calculation.



Figure 6.2: Dedicated Processor Architecture

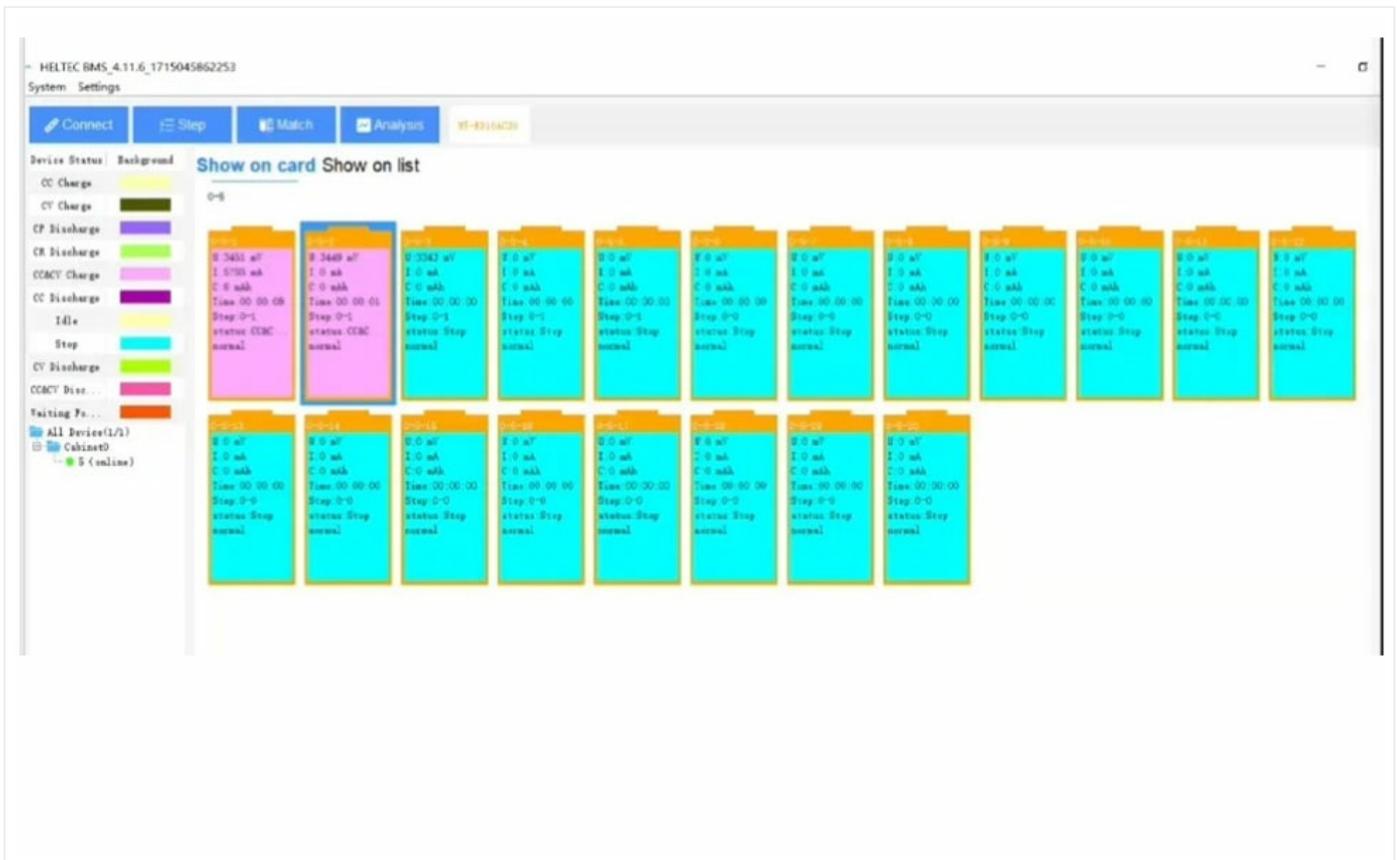


Figure 6.3: Intelligent Protection Features

## 7. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your HT-ED50AC8 tester.

- **Cleaning:** Regularly clean the exterior of the device with a soft, dry cloth. Do not use liquid cleaners or solvents.
- **Ventilation:** Periodically check that the air vents are clear of dust and debris to maintain optimal cooling performance.
- **Storage:** When not in use for extended periods, store the device in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Cable Inspection:** Inspect all cables and connectors regularly for signs of wear or damage. Replace any damaged cables immediately.

## 8. TROUBLESHOOTING

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If you encounter issues with your HT-ED50AC8, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Device does not power on.	Power cord not connected or faulty; Main power switch off.	Ensure power cord is securely connected and the main power switch is ON. Check power outlet.
Software does not detect the device.	USB/Network cable not connected or faulty; Software not installed correctly; Device drivers missing.	Verify cable connections. Reinstall software and drivers. Restart both device and computer.
Channel not responding or showing incorrect readings.	Battery not connected correctly; Faulty battery cable; Channel malfunction.	Check battery polarity and connection. Try a different battery or cable. If issue persists, contact support.
Overheating or fan noise.	Blocked air vents; High ambient temperature; Prolonged high-current operation.	Ensure air vents are clear. Operate in a well-ventilated area. The intelligent temperature control system will adjust fan speed. If alarm, reduce load.
Test data not saving or incorrect.	TF card full or faulty; Software error.	Check TF card status, replace if necessary. Ensure software is up-to-date.

## 9. SPECIFICATIONS

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Key technical specifications for the heltec bms HT-ED50AC8 battery tester:

- **Model Number:** HT-ED50AC8
- **Brand:** heltec bms
- **Channels:** 8 (fully isolated)
- **Charge/Discharge Current:** Up to 50A per channel
- **Power Source:** Corded Electric
- **Compatible Battery Types:** Lithium Iron Phosphate, Ternary Lithium, Lithium Cobalt Oxide, Nickel Metal Hydride, Nickel Cadmium
- **Compatible Battery Sizes:** 18650, 26650, soft pack, block batteries
- **Cooling:** Independent heat source air duct with temperature-controlled speed-adjustable fan
- **Connectivity:** USB, Network (for PC control)
- **Data Storage:** TF Card slot
- **Dimensions:** Approximately 29.13 x 20.47 x 12.2 inches (Package Dimensions)
- **Item Weight:** Approximately 28 Kilograms (61.6 pounds)
- **UPC:** 762716254336

## 10. SUPPORT

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For technical assistance, warranty information, or service inquiries, please contact heltec bms customer support. Refer to the product packaging or the official heltec bms website for the most current contact details.

**Online Resources:** Visit the [heltec bms Store on Amazon](#) for product updates and additional information.