KKnoon E26150

KKnoon 8-Channel 18650 Battery Tester User Manual

Model: E26150

1. Introduction

This manual provides detailed instructions for the safe and efficient operation of the KKnoon 8-Channel 18650 Battery Tester (Model E26150). This device is designed for testing the capacity and performance of 18650 lithium-ion batteries, offering multiple operation modes and comprehensive data display. Please read this manual thoroughly before use to ensure proper functionality and to prevent damage to the device or batteries.

2. Safety Information

Important Safety Tips:

- **Power Supply:** Use only a 5VDC, 10A power supply. Overvoltage will inevitably burn out the machine.
- **Battery Compatibility:** This 18650 battery holder is only applicable to flat-head 18650 battery tests. It is not suitable for pointed-head 18650 or other battery specifications. Before use, adjust the spring piece and the tightness with pointed-nose pliers if necessary.
- **Battery Type:** This equipment is suitable for charging of lithium iron phosphate battery. The lithium iron phosphate battery for test can only operate in discharge mode. Charging, automatic and active modes are prohibited.
- **Damaged Batteries:** No power-on test is allowed in case of damaged or leaking battery.
- **Professional Use:** The active mode belongs to forced charging mode, which shall not be used by non-professional personnel and personnel shall not leave the site during use.
- **Heat Dissipation:** Heat will be generated during charging and discharging. Keep away from inflammables during use!
- **Reverse Connection Protection:** The tester incorporates reverse connection protection for both the power supply and batteries, preventing device damage from incorrect connections.
- **Overheat Protection:** Overheat protection and active heat dissipation mechanisms ensure operational safety and prevent overheating during extended test sessions.
- **External Test Terminals:** When using external test terminals (2P terminals), ensure that only one channel is connected to either the battery base or the external test. Do not test both simultaneously on the same channel.

3. Product Overview and Components

The KKnoon 8-Channel 18650 Battery Tester is a compact and lightweight device designed for comprehensive battery analysis. It features an intuitive 2.4-inch TFT display and 8 independent channels.

3.1. Device Layout

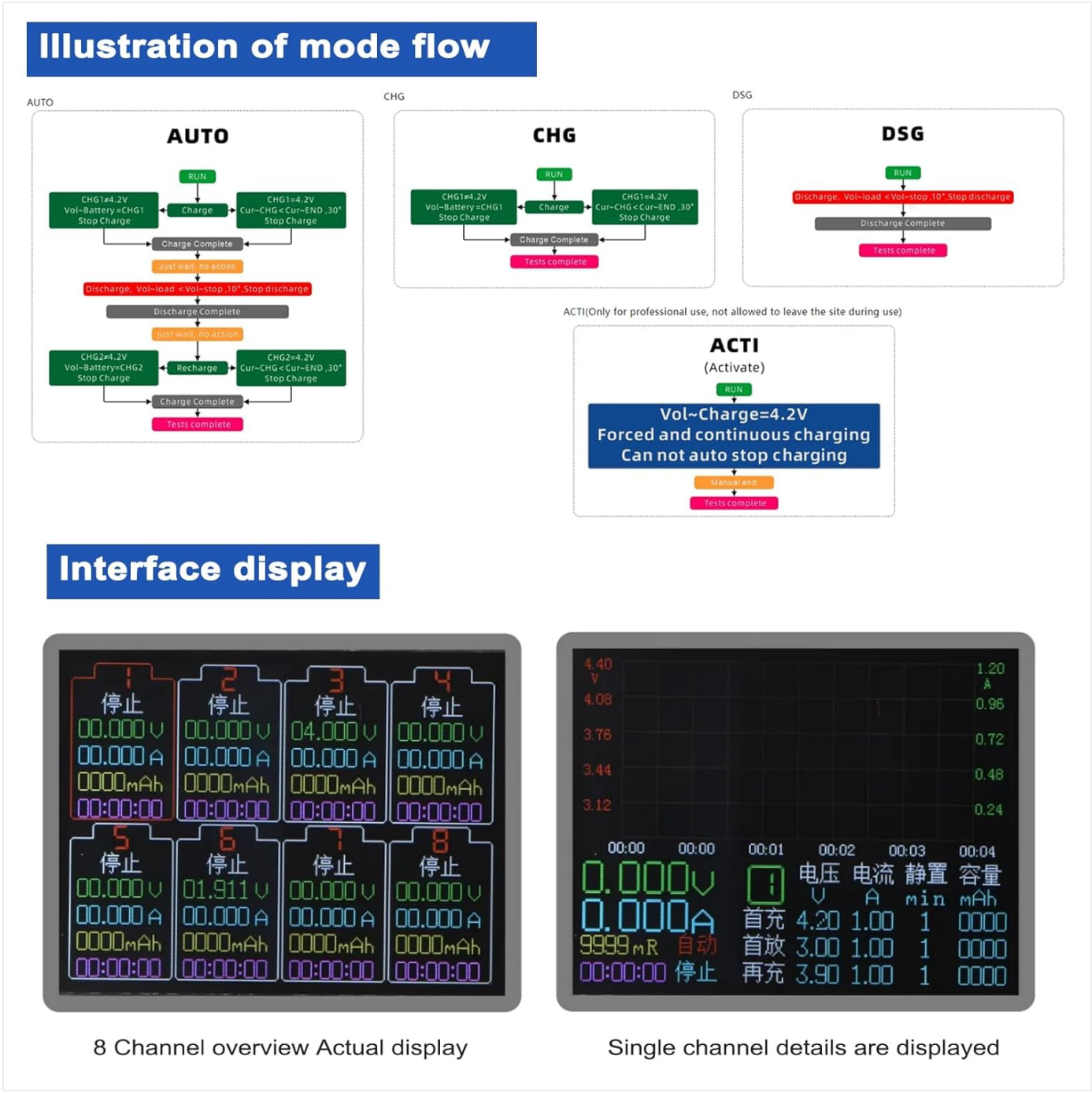

Figure 3.1: Top-down view of the KKnoon 8-Channel 18650 Battery Tester.

This image displays the overall layout of the battery tester, highlighting the eight individual battery slots, two cooling fans for active heat dissipation, and the central 2.4-inch TFT display. The power input and control buttons are also visible.

3.2. Key Components

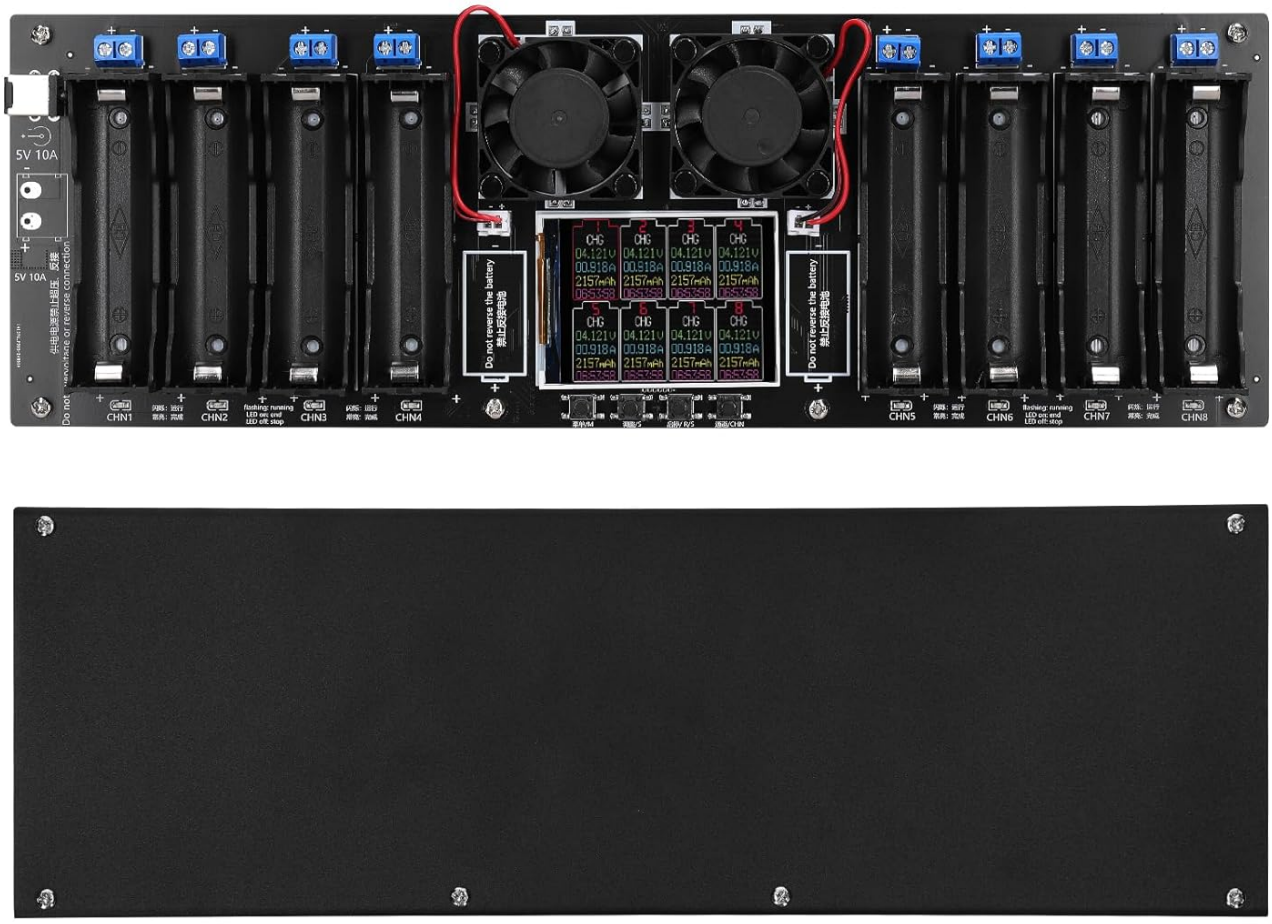

Figure 3.2: Detailed view of key components.

This image provides a closer look at the various interfaces and components:

- **Power Supply Interface:** DC5.5 interface and 5V positive/negative welding spots.
- **Control Panel:** Includes buttons for CHN Switch, Run/Stop, S-SET, and MENU.
- **Display:** 2.4-inch TFT screen for real-time data.
- **Cooling Fan:** For active heat dissipation.
- **Battery Holders:** Eight slots for 18650 batteries.
- **External Test Terminals:** 2P terminals for external discharge testing (Point B).
- **Status Indicators:** LEDs indicating channel status (Off is Stop, Flash is Running, ON is Complete).

4. Technical Specifications

Parameter	Value

Model	E26150
Material	Plastic
Operating Voltage	5VDC, 10A (Overvoltage will cause damage)
Power Interface	DC5.5 interface, 5V positive and negative welding spots
Power Reverse Connection Protection	Supported
Channel Type	8 independent channels
Channel Synchronization	Supports 8-channel setting synchronization, individual parameter settings
Charging Current	Approx. 1A non-constant current (not adjustable)
Charge Stop Voltage	3.7V, 3.8V, 3.9V, 4.0V, 4.1V, 4.2V (6 levels adjustable)
Charge Termination Current	100mA, 200mA, 300mA (adjustable)
Discharge Current	Approx. 1A non-constant current (not adjustable)
Discharge Stop Voltage	2.0V to 3.6V (17 levels adjustable)
Stop Time	1-5 minutes (adjustable)
Display	2.4-inch TFT Display
Internal Resistance Detection	2-wire (DC) method (for sorting/analogy only)
Heat Dissipation Mode	Active heat dissipation
Overheat Protection	Supported
Cyclic Charge/Discharge	Auto mode supports one cycle (Charge-Discharge-Charge) only
External Test Support	External discharge via 2P terminals (one channel at a time)
Battery Reverse Connection Protection	Supported
Product Size	310 x 112 x 38mm (12.20 x 4.41 x 1.50 inches)
Product Weight	397g (0.88 pounds)

5. Setup

Follow these steps to set up your KKnoon 8-Channel 18650 Battery Tester for operation.

1. **Connect Power:** Connect a 5VDC, 10A power supply to the DC5.5 power interface. Ensure the power supply meets the specifications to prevent damage.
2. **Insert Batteries:** Carefully insert the 18650 batteries into the designated slots, paying attention to the positive and negative poles. Ensure correct polarity to avoid triggering reverse connection protection.
3. **Initial Check:** After connecting power and inserting batteries, the device will power on. Observe the 2.4-inch TFT display for initial status.
4. **Prepare for Test:** The device is now ready for test configuration. Do not leave the site unattended during testing.

Figure 5.1: On-screen guide for initial setup and operation.

This image illustrates the basic steps for using the tester as displayed on its screen, including connecting the 5V/10A power supply, inserting batteries with correct polarity, starting the test program, and checking the results.

6. Operating Instructions

The tester offers multiple operation modes for various battery testing needs.

6.1. Operation Modes Overview

Figure 6.1: Illustration of mode flow.

This diagram visually explains the sequence of operations for the AUTO, CHG (Charge), DSG (Discharge), and ACTI (Activate) modes. Each mode has specific steps like 'Run', 'Charge Complete', 'Discharge Complete', and 'Test Complete'.

6.2. Mode Selection and Parameter Setting

Use the control buttons (CHN Switch, Run/Stop, S-SET, MENU) to navigate through the modes and adjust parameters.

- **MENU Button:** Press to access the main menu for mode selection and parameter adjustments.
- **S-SET Button:** Used to set specific parameters within a selected mode (e.g., charge/discharge stop voltage, termination current, stop time).
- **CHN Switch:** Allows switching between individual channels for viewing or setting parameters.
- **Run/Stop:** Starts or stops the current operation on the selected channel(s).

6.2.1. AUTO Mode

The AUTO mode performs a charge-discharge-charge cycle to determine battery capacity. Only one cycle is supported.

- Select AUTO mode from the menu.
- Set desired charge stop voltage, discharge stop voltage, and charge termination current.
- Press Run/Stop to begin the automatic cycle.

6.2.2. CHG (Charge) Mode

Charges the battery to a specified voltage.

- Select CHG mode.
- Set the desired charge stop voltage (3.7V to 4.2V, 6 levels).
- Set the charge termination current (100mA, 200mA, 300mA).
- Press Run/Stop to start charging.

6.2.3. DSG (Discharge) Mode

Discharges the battery to a specified voltage to measure capacity.

- Select DSG mode.
- Set the desired discharge stop voltage (2.0V to 3.6V, 17 levels).
- Press Run/Stop to start discharging.

6.2.4. ACTI (Activate) Mode

This is a forced charging mode. Use with caution and only if you are a professional. Do not leave unattended.

- Select ACTI mode.
- Set the activation voltage (e.g., 4.2V).
- Press Run/Stop. Note that auto-stopping may not be available in this mode.

6.3. Channel Synchronization

The device supports 8-channel setting synchronization, allowing you to apply the same parameters to multiple channels simultaneously, or set parameters individually for each channel.

Figure 6.2: Menu for channel settings and synchronization.

This image displays the on-screen menu, showing options for 'Sync CHN Setting', 'Mode', 'Vol-CHG1', 'Vol-CHG2', 'Cur-CHG', 'Vol-STOP', 'Wati', and 'Min'. These parameters can be adjusted for individual channels or synchronized across multiple channels.

7. Interface Display

The 2.4-inch TFT display provides comprehensive real-time data and status information.

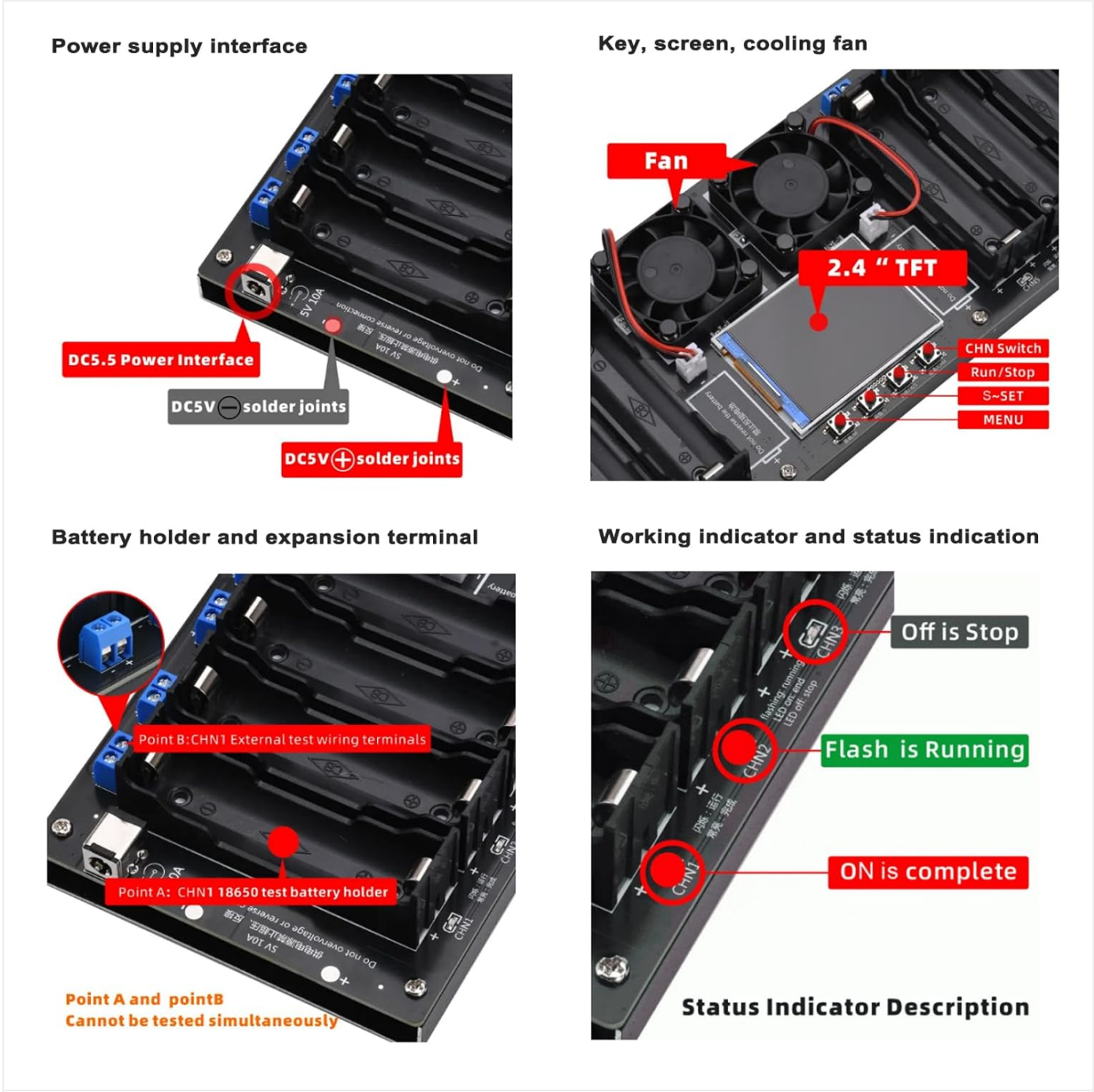

Figure 7.1: 8-Channel overview and single channel detailed display.

This image shows two main display views:

- **8-Channel Overview:** Displays a summary of the status for all eight channels simultaneously, including voltage, current, and capacity.
- **Single Channel Detailed Display:** Provides in-depth information for a selected channel, such as real-time voltage, current, operating status, measured capacity, and total program execution time.

7.1. Data Points Explained

Figure 7.2: Explanation of display data points.

This image highlights and explains the various data points shown on the TFT display during operation:

1. Channel Indication
2. Real-time status indication (e.g., CHG/Discharge)
3. STOP / END (AWAIT / DSG(discharge))
4. Real-time battery voltage indication
5. Real-time working current indication
6. Capacity metering
7. Total program run time (hour: minute: second)
8. Battery internal resistance (measured by DC two-wire method)

The display also supports single channel charge and discharge curve display, providing a visual representation of battery performance over time.

8. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Storage:** Store the tester in a cool, dry place away from direct sunlight and extreme temperatures.
- **Inspection:** Periodically inspect the power cable and battery holders for any signs of damage.
- **Firmware:** Check the manufacturer's website for any available firmware updates.

9. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Incorrect power supply voltage/current, loose power connection.	Ensure a 5VDC, 10A power supply is correctly connected. Check power cable integrity.
Battery not detected or error message.	Incorrect battery insertion (polarity), battery type incompatibility, damaged battery.	Re-insert battery with correct polarity. Ensure it's a flat-head 18650 battery. Do not test damaged or leaking batteries.
Test stops unexpectedly.	Overheat protection triggered, battery fault, incorrect parameter settings.	Ensure adequate ventilation. Check battery condition. Verify test parameters (stop voltage, termination current).
Inaccurate capacity readings.	Improper calibration (not user-adjustable), battery degradation, incorrect test parameters.	Ensure batteries are fully charged/discharged before testing. Verify test parameters. Note that internal resistance measurement is for sorting/analogy only.

10. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the official KKnoon website or contact their customer service directly. Keep your purchase receipt as proof of purchase.
Manufacturer: KKnoon
Model: E26150