

SKYRC BD250

SkyRC BD250 Battery Discharger & Analyzer User Manual

Model: BD250

1. PRODUCT OVERVIEW

The SkyRC BD250 is a high-performance battery discharger and analyzer designed for various battery types, including LiPo, LiHV, and NiMH. It offers powerful discharge capabilities up to 35 amps or 250 watts, allowing for efficient battery conditioning and performance analysis. This device can test a wide range of batteries from 5.4 volts up to 35 volts, regardless of chemistry or cell count.

Key features include a robust cooling system for continuous operation, an intuitive rotary dial for easy parameter setting, and digital LED displays for real-time monitoring of battery voltage, discharged capacity, and current. The BD250 also supports PC software connectivity for advanced data analysis, enabling users to export battery voltage values at 30-second intervals and choose between Constant Power or Constant Current discharge modes.



The SkyRC BD250 unit, a compact device designed for discharging and analyzing various battery types.

2. SAFETY INSTRUCTIONS

Please read and understand all safety instructions before operating the SkyRC BD250 to prevent injury or damage to the device and batteries.

- Always operate the BD250 in a well-ventilated area, away from flammable materials.
- Ensure correct battery polarity when connecting to the device. Incorrect connection can cause damage.
- Do not short-circuit the battery terminals or the BD250 output.
- Monitor the discharge process at all times. Do not leave the device unattended during operation.
- Use only compatible batteries within the specified voltage range (5.4V to 35V).
- Keep the device away from water, moisture, and extreme temperatures.
- In case of smoke, unusual odors, or excessive heat, immediately disconnect the battery and power source.
- Dispose of batteries according to local regulations.

3. SETUP

3.1 Package Contents

Verify that all components are present:

- SkyRC BD250 Discharger & Analyzer Unit
- XT60 Battery Connector Cable with Fuse
- USB Data Cable (for PC connection)
- User Manual (this document)

3.2 Component Identification



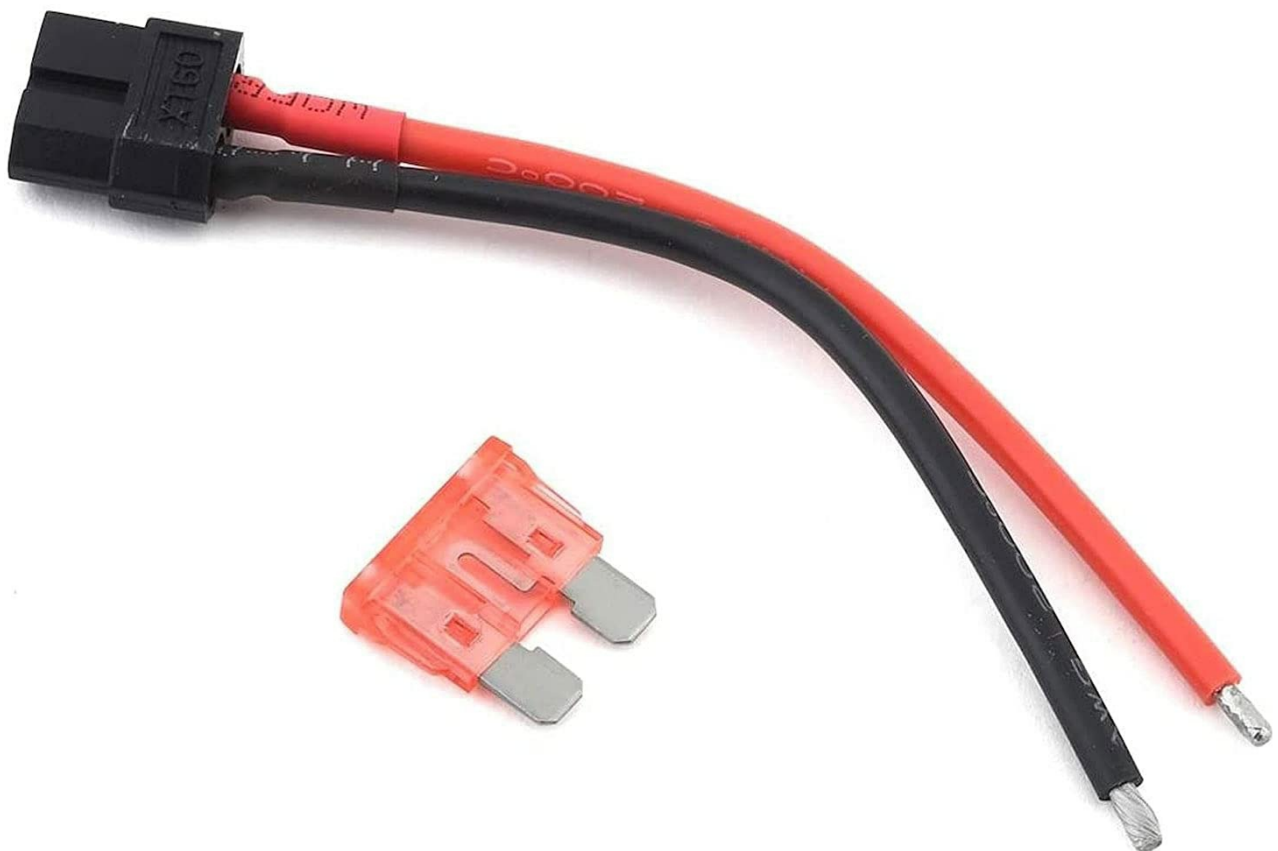
An annotated view of the BD250, highlighting key components such as the XT60 battery port, data link, temperature-controlled cooling fan, heat sink, rotary dial for settings, and digital LED displays for voltage, capacity, and current.

- **XT60 Battery Port:** For connecting the battery to be discharged.
- **Data Link Port:** For connecting to a PC using the USB data cable.
- **Temperature Controlled Cooling Fan:** Activates to dissipate heat during discharge.

- **Heat Sink:** Aluminum fins for efficient heat transfer.
- **Rotary Dial:** Used for navigating menus, adjusting settings (cutoff voltage, current), and confirming selections.
- **Digital LED Displays:** Shows real-time battery voltage (V/mAh) and discharge current (A).

3.3 Connecting the Battery

1. Ensure the BD250 is placed on a stable, non-flammable surface with adequate ventilation.
2. Connect the XT60 battery connector cable to the XT60 port on the BD250.
3. Connect the battery to be discharged to the XT60 connector cable. Ensure correct polarity.



An XT60 connector cable, typically used for connecting batteries to the BD250, shown with an inline fuse for safety.

4. OPERATING INSTRUCTIONS

4.1 Powering On and Initial Display

Once a battery is connected, the BD250 will power on automatically, displaying the current battery voltage and other relevant information on the digital LED screen.



Simple and Intuitive Operation

Rotary Dial, simplify your operation.
Digital LED Display.
provide clearer information.

A detailed view of the BD250's user interface, featuring the digital LED display showing voltage and current, and the rotary dial for intuitive setting adjustments and navigation.

4.2 Selecting Discharge Mode

The BD250 offers two primary discharge modes:

- **Constant Power (CP):** Maintains a constant power output during discharge.
- **Constant Current (CC):** Maintains a constant current output during discharge.

Use the rotary dial to navigate through the menu options and select your desired discharge mode. Press the dial to confirm your selection.

4.3 Setting Discharge Parameters

After selecting the discharge mode, you will need to set the following parameters:

- **Cutoff Voltage:** The voltage at which the discharge process will automatically stop. This is crucial for battery health.
- **Discharge Current/Power:** The desired current (for CC mode) or power (for CP mode) at which the battery will be discharged.

Rotate the dial to adjust the values and press to confirm each setting. Ensure that the cutoff voltage is appropriate for your battery type (e.g., 3.0V per cell for LiPo, 3.3V per cell for LiHV, 0.9V per cell for NiMH).

4.4 Starting and Stopping Discharge

1. Once all parameters are set, navigate to the 'Start' option using the rotary dial.
2. Press the rotary dial to begin the discharge process. The display will show real-time discharge data.
3. To stop the discharge manually at any time, press the rotary dial again. The discharge will also stop automatically once the cutoff voltage is reached.

4.5 PC Software for Data Analysis

The BD250 can be connected to a computer for advanced data logging and analysis. This allows for a more detailed understanding of battery performance over time.

1. Download and install the official SkyRC BD250 PC software from the manufacturer's website.
2. Connect the BD250 to your PC using the provided USB data cable.
3. Launch the PC software. It will automatically detect the connected BD250.
4. The software allows you to view discharge curves, export battery voltage values at 30-second intervals (for the first six minutes), and analyze data in various formats (Amp-hours, Watt-hours, Minutes).

Easy-to-Use PC Software for Data Analysis

PC software supplied with the BD250 is easy to use, intuitive. There are two discharge mode: 1. Constant Power; 2. Constant Current.

The software can automatically sense battery cell counts and recommend a minimum safe discharge voltage. Discharge tests may be viewed in Amp Hours, Watt-hours or Minutes. Results can be graphed as Voltage vs. Amp-hours, Watt-hours, Minutes.



The BD250 unit connected via a data link to a laptop, illustrating the use of the easy-to-use PC software for comprehensive data analysis of battery discharge cycles.

With PC software connected, BD250 allows you to export the battery voltage value at 30 seconds intervals (for the first six minutes).

	No. of Cell	Min. Cut-off Voltage	Voltage	Min. Discharge Current (A)	Max. Discharge Current (A)
LiPo	2S	6.0	8.40	23.80	30.00
LiHV	3S	9.0	12.60	15.87	22.20
NiMH	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00
	2S	6.0	8.40	23.80	30.00

An example of the PC software interface, demonstrating its capability to export battery voltage data at 30-second intervals and showing a table with minimum cut-off voltage, voltage, minimum discharge current, and maximum discharge current for LiPo, LiHV, and NiMH batteries.

5. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your BD250.

- **Cleaning:** Regularly wipe the exterior of the device with a soft, dry cloth. Do not use solvents or abrasive cleaners. Ensure no dust or debris accumulates in the cooling fan or heat sink fins.
- **Storage:** Store the BD250 in a cool, dry place away from direct sunlight and extreme temperatures.
- **Cooling System:** The BD250 features a high-performance cooling system. Ensure the air intake and exhaust vents are not obstructed during operation to maintain efficient heat dissipation.

Breakthrough Cooling System

A unibody and larger fan pushes air downward through an extruded aluminum heat sink. As air passes vertically through the heat sink, it absorbs heat and carries it out. Due to cooling efficiency, BD250 can discharge at 250 Watts continuously.



A visual representation of the BD250's cooling system, showing how the unibody design and larger fan push air downward through an extruded aluminum heat sink for efficient heat dissipation, allowing continuous 250W discharge.

6. TROUBLESHOOTING

If you encounter issues with your BD250, refer to the following common problems and solutions:

- **Device does not power on:**
 - Ensure the battery is correctly connected and has sufficient voltage (above 5.4V).
 - Check the XT60 cable and fuse for any damage or disconnections.
- **Discharge does not start:**
 - Verify that all discharge parameters (cutoff voltage, current/power) are set correctly.
 - Ensure the 'Start' option has been selected and confirmed with the rotary dial.
 - Check if the battery voltage is above the set cutoff voltage.
- **Overheat warning:**
 - Ensure the cooling fan and heat sink vents are not obstructed.

- Operate the device in a well-ventilated area.
- Reduce the discharge current/power if operating in a high ambient temperature environment.
- **PC software not detecting device:**
 - Ensure the USB data cable is securely connected to both the BD250 and the PC.
 - Try a different USB port on your computer.
 - Reinstall the PC software and any necessary drivers.

If the problem persists, please contact SkyRC customer support or your retailer for further assistance.

7. SPECIFICATIONS

Feature	Specification
Brand	SKYRC
Model	BD250
Discharge Power	Up to 250W
Discharge Current	Up to 35A
Input Voltage Range	5.4V - 35V
Compatible Battery Types	LiPo, LiHV, NiMH
Discharge Modes	Constant Power (CP), Constant Current (CC)
Display	Digital LED
Control Interface	Rotary Dial
PC Connectivity	USB for Data Analysis
Cooling System	Temperature Controlled Fan & Heat Sink
Item Weight	879 Grams

8. WARRANTY AND SUPPORT

For warranty information, please refer to the documentation provided at the time of purchase or contact your retailer. SkyRC products typically come with a manufacturer's warranty covering defects in materials and workmanship.

For technical support, product updates, or additional resources, please visit the official SkyRC website or contact their customer service department. Keep your purchase receipt as proof of purchase for any warranty claims.