

B50 BATTERY HEATING BAG

Manual V1.0

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www.toolkitrc.com

ToolkitRC CO.,LTD

Introduction

Thank you for purchasing the B50 battery heating bag(Hereinafter referred to as B50), please read this manual carefully before use.

Key Points



Tips



Important



Information

Further information

To make sure you get the best experience using this product, please stay updated on news, information, and firmware updates about the B50 by visiting:
www.toolkitrc.com/B50.



Safety

- 1, The B50 accepts an input voltage of 6.0–28.0 V DC. Ensure that the power supply voltage meets this range, and pay attention to the positive and negative polarities when connecting the power supply.
- 2, Do not use this product in hot, humid, flammable or explosive environments.
- 3, Please use this product under supervision to prevent accidents.
- 4, When not using this product, please unplug the input power.

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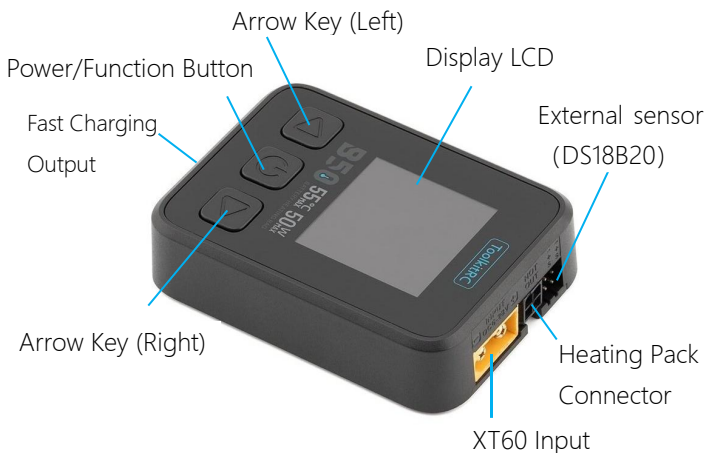
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Product description

The B50 is a smart battery storage box designed to heat batteries, enhance cell activity, and ensure they deliver their full power output. It features a built-in 50W heating element, as well as real-time temperature monitoring and control functions.

- Smart constant-temperature control with real-time temperature display.
- Wide voltage input: DC 6.0-28.0V.
- Input protection voltage is adjustable (DC 6–28 V).
- Heating power up to 50W for fast heating.
- Heating temperature can be set (25–55°C).
- 20W multi-protocol fast charging via Type-C output for charging mobile devices.
- 1.54-inch IPS full-view display.
- High resolution 240*240 pixels.

Get to Know the B50



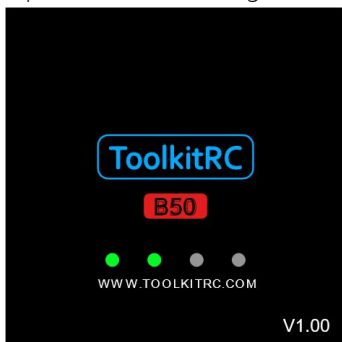
Controller



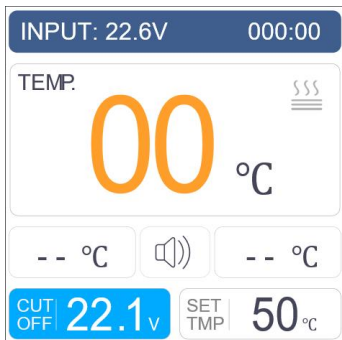
HEATING BAG

Quick start

- 1, Connect a DC voltage of 6.0–28.0 V to the XT60 input port of the B50 controller.
- 2, Press and hold the [Power/Function] button for about 2–3 seconds. The power-on logo will appear on the display, and you'll see four dots change from gray to green in sequence from left to right, as shown below:



- 3, After startup is complete, the main interface appears as shown below:



4, Press and release the [Power/Function] button to cycle through the cursor positions and select either CUT OFF (input protection voltage), the buzzer on/off switch, or HEAT SET TMP (set temperature).

5, When the cursor is in the CUT OFF (input protection voltage) field, briefly press the [Left Arrow Key] to decrease the input protection voltage; briefly press the [Right Arrow Key] to increase the input protection voltage.

6, When the cursor is in the SET TMP (Set Temperature) field, briefly press the [Left Arrow Key] to decrease the heating temperature; briefly press the [Right Arrow Key] to increase the heating temperature.

7, When the cursor is on the buzzer icon, briefly press the [Arrow Key (Left)/(Right)] to turn the buzzer sound on  or off .

8, On the home screen, press and hold the [Power/Function] button for about 2 seconds to turn off the device.

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Tips:

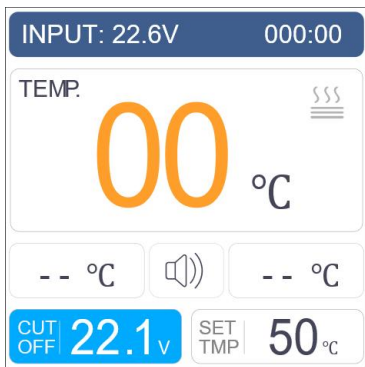
1, After turning off the device, we recommend disconnecting the power supply from the B50 to prevent accidental activation inside the bag.

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Parameter Settings

1, Input Protection Voltage Setting

When the cursor is in the CUT OFF (Input Protection Voltage) field, briefly press the [Left Arrow Key] to decrease the input protection voltage; briefly press the [Right Arrow Key] to increase the input protection voltage.



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Tips:



1, CUT OFF (input protection voltage) adjustable range: 6–28 V, in 0.1 V increments; press and hold the left/right arrow keys to quickly decrease or increase this value.

2, If the input voltage falls below the CUT OFF (input protection voltage) value, the B50 will not activate

heating and will continue to sound an alarm; if the alarm is ignored, the unit will automatically shut down after 60 seconds.

3, Each time the system powers on, it sets the CUT OFF (input protection voltage) to 0.5V below the input voltage. Please check this setting and adjust it to an appropriate value to prevent the battery from being over-discharged and damaged due to an excessively low voltage.

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Recommended input protection voltage (using LiPo as an example).

As shown in the table below:

Number of Battery Strings	Protection Voltage	Number of Battery Strings	Protection Voltage
1S	3. 4V	4S	13. 6V
2S	6. 8V	5S	17V
3S	10. 2V	6S	20. 4V

Glossary:

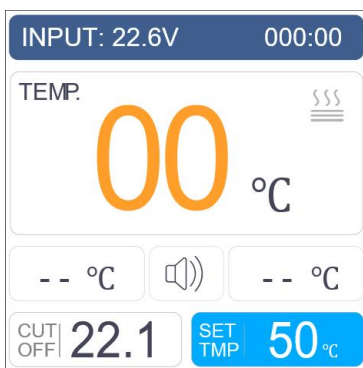
- 1, **LiPo:** Commonly referred to as lithium-polymer batteries, these batteries have a nominal voltage of 3.70 V and reach 4.20 V when fully charged.
- 2, **LiHv:** Commonly referred to as high-voltage lithium-ion batteries, these have a nominal voltage of 3.85 V and a fully charged voltage of 4.35 V.
- 3, **LiFe:** Commonly referred to as lithium iron phosphate batteries, these batteries have a nominal

voltage of 3.30 V and reach 3.60 V when fully charged.

- 4, **Lion:** 4. Commonly referred to as lithium-ion batteries, these have a nominal voltage of 3.60 V and reach 4.10 V when fully charged.
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2, Temperature Settings

When the cursor is in the SET TMP (Set Temperature) field, briefly press the [Left Arrow Key] to decrease the heating temperature; briefly press the [Right Arrow Key] to increase the heating temperature.



Tips:

- 1, SET TMP (Set Temperature) adjustable range: 25–55° C, in 0.1°C increments. Press and hold the left/right arrow keys to quickly decrease/increase this value.
- 2, When setting the temperature, be sure to select a

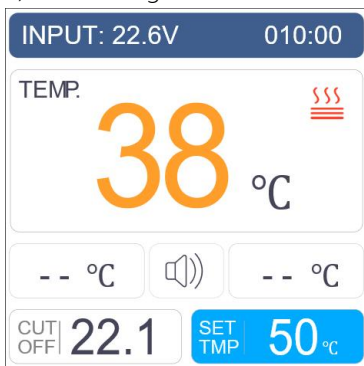
temperature that matches the battery's activity to prevent damage caused by excessive heat.

3, The B50 is equipped with two external temperature probe interfaces that can be used to connect DS18B20 temperature sensors for targeted temperature measurements (optional).

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Start heating

Connect the heating pack's plug to the controller; the controller will display the temperature inside the pack in real time (if the plug is not connected or there is a poor connection, "NC" will be displayed). When the input voltage exceeds the CUT OFF (input protection voltage) and the detected temperature is below the SET TMP (set temperature), the heating function will activate.



Tips:

- 1, If the heating indicator icon in the upper-right corner is gray, it means heating is paused.
- 2, If the heating indicator icon in the upper-right corner is red, it means the device is heating up.

Firmware Upgrade

- 1, After plugging in the charger, the display will show the firmware version number during startup. Check the firmware version.
- 2 , Download the latest firmware package from the official website, save it to your computer, and unzip it to obtain the [app.upga] file for later use.
- 3, Disconnect the B50 from its power source. Using the USB-A to USB-C cable included in the package, connect the cable to your computer first, then hold down the [Left Arrow Key] on the B50 while plugging the cable into the B50.
- 4, Once the computer detects the charger disk [Toolkit], copy the [app.upga] file from the firmware update package to the [Toolkit] disk.
- 5, Once the copy is complete, the [Toolkit] disk will pop out.
- 6, Unplug the data cable, turn on the device, and check the firmware version after the update.

Specification

	Input Voltage	XT60 6.0-28.0V MAX 5.5A
	Heating Element Materials	Silicone Rubber and Nickel Alloy Resistance Wire
	Heating Power	$V_{in} \geq 12V @ \approx 50W$
	Temperature Control Accuracy	$55 \pm 2^{\circ}C$
	USB-C Output	5V/9V/12V@20W(max)
Display	LCD	IPS 1.54-inch, 240×240 resolution
Products	Controller Dimensions	73*53*18.5mm
	Controller Weight	60g
	Storage Bag Dimensions	310*240*115 mm
	Weight of the storage bag	980g
Individual packing	size	322.5*237.5*122.5mm
	Weight	1350g
Packing List		Smart Heated Battery Case*1, Controller*1 USB-A to USB-C Cable*1, Quick Start Guide*1