



ToolkitRC B50

User manual
Battery heating bag with controller



Read the entire manual before use. Input voltage 6.0-28.0 V DC - pay attention to the correct polarity. Always heat under supervision.

Version 1.0 · Rotorama, s.r.o.

Contents

1. Safety

- 1.1 Manufacturer's safety instructions
- 1.2 Heating batteries safely
- 1.3 Power supply
- 1.4 USB-C output

2. Product description

- 2.1 Controller
- 2.2 Bag
- 2.3 Packing list
- 2.4 Specification
- 2.5 Manufacturer and further information

3. Quick start

4. Parameter settings

- 4.1 Input protection voltage (CUT OFF)
- 4.2 Temperature settings (SET TMP)

5. Start heating

6. Firmware upgrade

7. Maintenance, storage and troubleshooting

- 7.1 Maintenance and storage
- 7.2 Troubleshooting

8. Information for the EU and Czech Market

- 8.1 Importer and responsible person in the EU
- 8.2 Product conformity
- 8.3 Disposal of electrical equipment

9. Warranty and rights arising from defective performance

1. Safety

Thank you for purchasing the **ToolkitRC B50** battery heating bag (hereinafter B50). Please read this manual carefully before use.

1.1 Manufacturer's safety instructions

- 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.

1.2 Heating batteries safely

- The B50 is intended solely for heating and carrying RC batteries. Do not use it to heat people, animals or food.
- Only place **undamaged** batteries in the bag. Never heat a swollen, punctured, deformed or otherwise damaged battery.
- **Do not charge or discharge** the batteries in the bag while they are being heated.
- Select the temperature to suit the battery and follow the battery manufacturer's recommendations.
- While heating, place the bag on a stable, non-flammable surface, do not cover it and do not leave it unattended.
- The product is intended for persons aged 14 and over. Keep it out of the reach of children.

1.3 Power supply

- Connect power only to the **XT60** input. The source voltage must not exceed 28.0 V even when fully charged: a full 6S LiPo (25.2 V, 4.20 V/cell) is suitable, a full 7S LiPo (29.4 V) is not.
- When powering the B50 from a battery, always set a suitable **CUT OFF** voltage (Chapter 4.1) so that the supply battery is not over-discharged.
- Do not use damaged cables or connectors. Check the heating pack cable and the power cable before every use.

1.4 USB-C output

- The USB-C output (max. 20 W) is used for charging mobile devices. Do not connect any power source to it.
- Use the USB-A to USB-C cable from the package for firmware upgrades (Chapter 6).

2. 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 50 W heating element, as well as real-time temperature monitoring and control functions.

- Smart constant-temperature control with real-time temperature display.
- Wide voltage input: 6.0–28.0 V DC.
- Input protection voltage is adjustable (6–28 V DC).
- Heating power up to 50 W for fast heating.
- Heating temperature can be set (25–55 °C).
- 20 W multi-protocol fast charging (PD 3.0 / QC 3.0) via USB-C output for charging mobile devices.
- 1.54" IPS full-view display, high resolution 240 × 240 pixels.

2.1 Controller



B50 controller

- ① USB-C fast charging output
- ② Power/Function button
- ③ Arrow key (Left)
- ④ LCD display
- ⑤ External temperature sensor connector (DS18B20)
- ⑥ Heating pack connector
- ⑦ XT60 power input
- ⑧ Arrow key (Right)

2.2 Bag



B50 bag

- ① Heating area – place the batteries you want to heat here.
- ② Storage area – mesh pocket in the lid and side compartment, e.g. for the controller and cables.

2.3 Packing list

Item	Qty
Smart Heated Battery Case	1×
Controller	1×
USB-A to USB-C cable	1×
Quick Start Guide	1×

2.4 Specification

Parameter	Value
Input voltage	6.0–28.0 V DC (XT60), max. 5.5 A
Heating power	≈ 50 W (at input voltage ≥ 12 V)
Heating element materials	silicone rubber and nickel alloy resistance wire
Set temperature (SET TMP)	25–55 °C, in 0.1 °C increments
Temperature control accuracy	55 ± 2 °C
Input protection voltage (CUT OFF)	6–28 V, in 0.1 V increments
USB-C output	5 V / 9 V / 12 V, max. 20 W
Display	IPS LCD 1.54", 240 × 240 px
Controller dimensions	73 × 53 × 18.5 mm

Parameter	Value
Controller weight	60 g
Storage bag dimensions	310 × 240 × 115 mm
Storage bag weight	980 g
Bag capacity	up to 20 × 6S 1000 mAh batteries
Packing dimensions	322.5 × 237.5 × 122.5 mm
Packing weight	1350 g

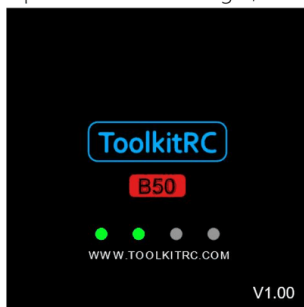
2.5 Manufacturer and further information

Manufacturer	ToolkitRC CO., LTD
Address	3F, B1 Building, Shanghe Industrial Park, Nanchang Road, Hangcheng Street, Bao'an District, Shenzhen, China
E-mail	sales@toolkitrc.com
Web	www.toolkitrc.com

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.

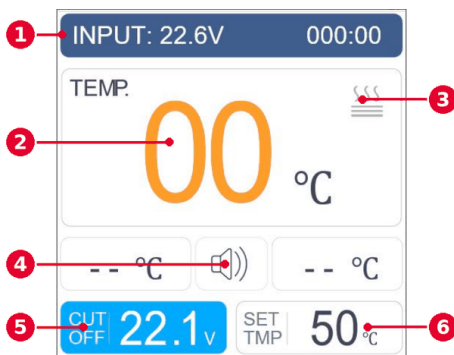
3. Quick start

- 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 will see four dots change from gray to green in sequence from left to right.



Power-on screen

- ③ After startup is complete, the main interface appears.



Main interface

- ① **INPUT** – current input voltage
- ② **TEMP** – temperature inside the heating pack
- ③ Heating indicator (gray = heating paused, red = heating)
- ④ Buzzer on / off
- ⑤ **CUT OFF** – input protection voltage
- ⑥ **SET TMP** – set temperature

► Operation

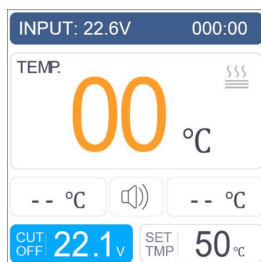
- ④ Press and release the **[Power/Function]** button to cycle through the cursor positions and select either **CUT OFF** (input protection voltage), the buzzer on/off switch, or **SET TMP** (set temperature).
- ⑤ When the cursor is in the **CUT OFF** field, briefly press the **[Left Arrow Key]** to decrease the input protection voltage; briefly press the **[Right Arrow Key]** to increase it.
- ⑥ When the cursor is in the **SET TMP** field, briefly press the **[Left Arrow Key]** to decrease the heating temperature; briefly press the **[Right Arrow Key]** to increase it.
- 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.

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

4. Parameter settings

4.1 Input protection voltage (CUT OFF)

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



Cursor in the CUT OFF field

- ① CUT OFF 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 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 CUT OFF to 0.5 V below the input voltage. Please check this setting and adjust it to an appropriate value to prevent the supply battery from being over-discharged and damaged due to an excessively low voltage.

► Recommended input protection voltage (LiPo example)

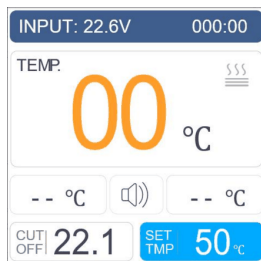
Number of cells	Protection voltage	Number of cells	Protection voltage
1S	3.4 V	4S	13.6 V
2S	6.8 V	5S	17 V
3S	10.2 V	6S	20.4 V

► Glossary

- ① **LiPo** – lithium-polymer batteries; nominal voltage 3.70 V/cell, 4.20 V/cell when fully charged.
- ② **LiHV** – high-voltage lithium batteries; nominal voltage 3.85 V/cell, 4.35 V/cell when fully charged.
- ③ **LiFe** – lithium iron phosphate batteries; nominal voltage 3.30 V/cell, 3.60 V/cell when fully charged.
- ④ **Li-ion** – lithium-ion batteries; nominal voltage 3.60 V/cell, 4.10 V/cell when fully charged.

4.2 Temperature settings (SET TMP)

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

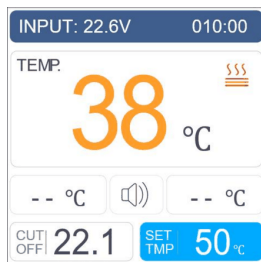


Cursor in the SET TMP field

- ① SET TMP adjustable range: **25-55 °C**, in 0.1 °C increments. Press and hold the left/right arrow keys to quickly decrease or increase this value.
- ② When setting the temperature, be sure to select a temperature that matches the battery 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 (optional) for targeted temperature measurements.

5. 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 CUT OFF and the detected temperature is below SET TMP, the heating function will activate.



Heating in progress

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

6. Firmware upgrade

- ① After connecting the power supply, 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 **[Toolkit]** disk, 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.

Firmware download: www.toolkitrc.com/B50

7. Maintenance, storage and troubleshooting

7.1 Maintenance and storage

- Before cleaning, disconnect the power supply and let the bag cool down. Clean the bag with a dry or slightly damp cloth; clean the controller with a dry cloth only.
- Protect the controller from moisture, dust, drops and impacts.
- Regularly check the heating pack cable and connector as well as the power cable. If they are damaged, stop using the product.
- Store in a dry place out of the reach of children, with the power supply disconnected.

7.2 Troubleshooting

Symptom	Cause and remedy
The display shows NC instead of the temperature	The heating pack plug is not connected or has a poor connection. Check the connection.
Heating does not start, an alarm sounds, the device switches off after 60 s	The input voltage is below CUT OFF. Charge or replace the power source, or check the CUT OFF setting.
The heating indicator is gray	Heating is paused. Heating only runs when the input voltage is above CUT OFF and the temperature is below SET TMP.
After power-on, CUT OFF differs from your setting	Each time it powers on, the system sets CUT OFF to 0.5 V below the input voltage. Adjust the value.

8. Information for the EU and Czech Market

❖ The information in Chapters 8 and 9 describes the situation under the law of the Czech Republic, where the product is sold. The law of the country in which the product is operated always prevails – if you use it in another country, follow the regulations of that country.

8.1 Importer and responsible person in the EU

The product is placed on the European Union market by the importer stated below, who is at the same time the responsible person within the meaning of Article 16 of Regulation (EU) 2023/988 of the European Parliament and of the Council on general product safety (GPSR).

Importer / responsible person in the EU	Rotorama, s.r.o.
Company ID (IČO)	051 57 692
VAT ID (DIČ)	CZ05157692
Registered office	Okrajová 1351, 674 01 Třebíč, Czech Republic
E-mail	info@rotorاما.cz
Phone	+420 252 252 098
Website	www.rotorاما.cz

8.2 Product conformity



- The product bears the **CE** marking and complies with the requirements of the applicable European Union harmonisation legislation.
- A copy of the **EU Declaration of Conformity** is available from the importer at the address stated above or at the e-mail address info@rotorاما.cz.
- **Product identification:** the type designation (B50) is given on the controller; the firmware version number is shown on the display at start-up.

8.3 Disposal of electrical equipment



- The crossed-out wheeled bin symbol on the product, its packaging or in the documentation means that at the end of its service life the product **must not be disposed of together with mixed municipal waste.**
- Hand it over at a take-back point for electrical equipment – at a collection yard, at a take-back point of a collective system, or at the retailer when purchasing a new equivalent product. Take-back is free of charge for the end user.
- The obligations under Act No. 542/2020 Coll., on end-of-life products, are fulfilled by the importer through a collective take-back system.
- Proper disposal helps prevent negative impacts on the environment and human health and contributes to the reuse of secondary raw materials.

Through its contractual partner **ASEKOL a.s.**, the company ensures the take-back of waste electrical equipment from households and the separate collection of waste electrical equipment, batteries and accumulators in accordance with the applicable legislation. The customer is entitled to hand over old electrical equipment or a battery or accumulator at any collection point of the above contractual partner. The addresses of these take-back points are listed at www.asekol.cz, www.ecobat.cz and also <https://visoh2.mzp.cz/RegistrMistZO/RegistrMistZOPublic/MapaMistZpetOdberu>.

9. Warranty and rights arising from defective performance

The rights and obligations of the contracting parties are governed by Czech law, in particular by Act No. 89/2012 Coll., the Civil Code, and Act No. 634/1992 Coll., on consumer protection.

- The seller is liable to the buyer for the product being free of defects on receipt. If the buyer is a consumer, a defect may be notified **within two years of receipt** of the product (Section 2165 of the Civil Code).
- If a defect appears within **one year** of receipt, the product is deemed to have been defective already at the time of receipt (Section 2161(5) of the Civil Code).
- When purchasing online, a consumer has the right to **withdraw from the contract within 14 days** of receiving the goods without giving a reason (Section 1829 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. The importer's contact details are given in Chapter 8.1.
- The competent body for out-of-court settlement of consumer disputes is the **Czech Trade Inspection Authority**, Štěpánská 796/44, 110 00 Prague 1, www.coi.cz.