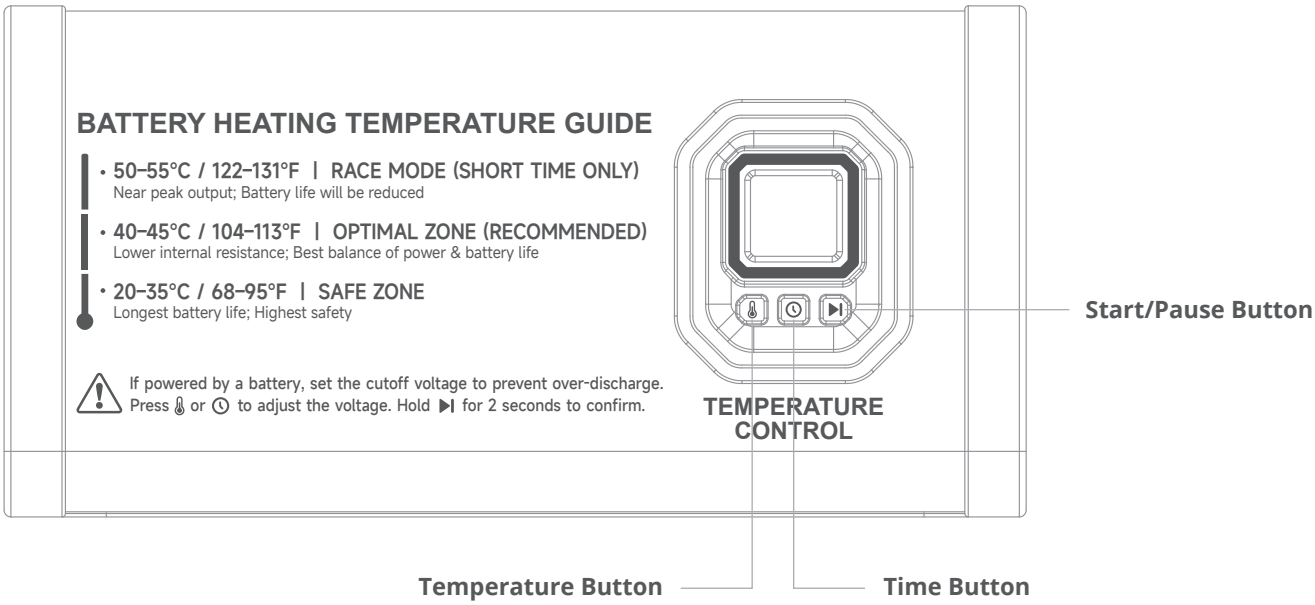
# Instruction Manual

## SKYRC ThermoGuard LiPo Battery Warmer

SK-600164
V.29

## Introduction

ThermoGuard LiPo Battery Warmer provides controlled preheating for RC LiPo batteries, with adjustable temperature and time settings, real-time temperature monitoring, and automatic temperature maintenance. Built-in protection helps make battery preparation simple, consistent, and controlled.




## Getting to know ThermoGuard

**Temperature Button**
a. Short press to enter Temperature Setting mode;
b. After 2 seconds of inactivity, the display automatically returns to the real-time temperature.

**Timer Button (Idle)**
a. Short press to enter Timer Setting mode;
b. After 2 seconds of inactivity, the display automatically returns to the real-time temperature.

**Timer Button (During Heating)**
a. Press to show the remaining time
b. Release to resume real-time temperature display

**Start/Pause Button**
a. Short press to start or pause heating
b. Start condition: Set temperature > real-time temperature

## Operation

1. Place the battery securely inside the ThermoGuard.
2. Connect ThermoGuard to a DC 7.4V–18V power source via the XT60 connector. Make sure the input power is at least 25W.
3. Short press the Temperature Button to enter temperature setting mode.
4. Short press the Timer Button to enter timer setting mode.
5. After setting a temperature higher than the real-time temperature, short press the Start/Pause Button to begin heating.
6. Once heated to the target temperature, constant temperature maintenance will activate. (Note: When the set temperature exceeds 45°C, the maximum timer limit is 30 minutes.)
7. After reaching the target temperature, short press the Start/Pause Button to manually stop heating. Heating will automatically stop when the timer ends.

## LED Indicator Status

| Color | Temperature Range | Indication |
|---|---|---|
| Blue | 20°C / 25°C / 30°C / 35°C | Heating: Breathing light; |
| Green | 40°C / 45°C | Temperature reached: Solid light in corresponding color; |
| Red | 50°C / 55°C | Timer finished: Light off |

## Specifications

| Item | Option | Specification |
|---|---|---|
| Input Voltage | | DC 7.4V-18V |
| Power Connector | | XT60 Male-Female Shell Connector |
| Input Cable Length | | 680 mm ± 5 mm |
| Input Power | | ≥25W |
| Temperature | Real-time Temperature<br>ThermoGuard | 1. Displayed in idle / heating / heating completed status<br>2. Displayed when no key input<br>3. Real-time temperature shown by default |
| | Set Temperature | Displayed in temperature setting mode |
| | Set Temperature Range | • Range: 20°C ~ 55°C<br>• Step: 5°C<br>• High-temperature alert: Value flashes above 45°C. |
| | Temperature Error | ±10°C |
| Time | Timer | • Range: 10 ~ 90 minutes<br>• Step: 10 minutes<br>• High-temperature limit: 30-minute maximum above 45°C. |
| | Remaining Time | Display condition: Press the Timer Button during heating. |
| Firmware Version | How to Check | Press and hold the Temperature Button and the Timer Button simultaneously<br>Note: Firmware version cannot be checked under working status |
| Dimensions | | 180 × 90 × 93.8 mm |
| Weight | | Approximately 186 g |
| Working Environment | Temperature | 0°C ~ 55°C |
| | Humidity | 10% ~ 90% RH, non-condensing |
| Storage Environment | Temperature | -10°C ~ 55°C |
| | Humidity | 20% ~ 65% RH, non-condensing |

## Low-Voltage Protection Setting

At power-on, ThermoGuard automatically determines the low-voltage protection voltage based on the input voltage.

| Input Voltage (Vin) | Setting |
|---|---|
| Vin ≤ 8.7V | No setting required. Protection voltage is fixed at 6.6V. |
| 8.7V < Vin ≤ 9.9V | Manual setting required. Must be lower than the input voltage. |
| 9.9V < Vin ≤ 12.6V | No setting required. Protection voltage is fixed at 9.9V. |
| 12.6V < Vin ≤ 13.2V | Manual setting required. Must be lower than the input voltage. |
| 13.2V < Vin ≤ 18V | No setting required. Protection voltage is fixed at 13.2V. |

When manual setting is required, the voltage value flashes and the red LED remains solid. Set the low-voltage protection voltage before use.

**Setting Procedure:**

- Short press the Temperature Button: Increase the protection voltage.
- Press and hold the Temperature Button: Continuously increase the protection voltage.
- Short press the Timer Button: Decrease the protection voltage.
- Press and hold the Timer Button: Continuously decrease the protection voltage.
- Press and hold the Start/Pause Button for 2 seconds: Confirm the current low-voltage protection voltage and exit the setting mode.

**Note:**

a. The low-voltage protection voltage can only be set at power-on.
The setting is not saved. To change it, power-cycle the device and set it again.
b. During setting, the adjustment step is 0.1V when the input voltage is below 10V, and 1V when the input voltage is 10V or higher.
c. Voltage measurement accuracy: ±0.2V.

## Error Messages

| | |
|---|---|
| E0 | Low voltage protection |
| E1 | Internal temperature too high or too low |
| E2 | External temperature too high or too low |
| -- | Temperature below 0°C |

## Safety Notes

- Before use, verify that the unit and cables have no damage. Do not use if damage is found.
- Do not pull the cables, and do not operate with tangled or knotted cables.
- Do not use this product for purposes other than its intended application.
- Do not place any objects over the heating bag.
- The heating bag will remain hot after use; place it in a safe area to cool down.
- Our company shall not be liable for any damages caused by the use of this product.

## Warranty and Service

### Liability Exclusion

The ThermoGuard is designed and approved exclusively for the scenarios stated in this Instruction Manual. SkyRC accepts no liability of any kind if the ThermoGuard is used for any purpose other than that stated. We are unable to ensure that you follow the instructions supplied with the ThermoGuard, and we have no control over the methods you employ for using, operating, and maintaining the device. For this reason, we are obliged to deny all liability for loss, damage, or costs that are incurred due to the incompetent or incorrect use and operation of our products, or which are connected with such operation in any way. Unless otherwise prescribed by law, our obligation to pay compensation, regardless of the legal argument employed, is limited to the invoice value of those SkyRC products which were immediately and directly involved in the event in which the damage occurred.

### Warranty and Service

We guarantee this product to be free of manufacturing and assembly defects for a period of one year from the time of purchase. The warranty only applies to material or operational defects, which are present at the time of purchase. During that period, we will repair or replace free of service charge for products deemed defective due to those causes.
This warranty is not valid for any damage or subsequent damage arising as a result of misuse, modification, or as a result of failure to observe the procedures outlined in this manual.

### Note:

1. The warranty service is valid in China only.
2. If you need warranty service overseas, please contact your dealer in the first instance, who is responsible for processing guarantee claims overseas. Due to high shipping costs, and complicated custom clearance procedures to send back to China, please understand that SkyRC can't provide warranty service to overseas end users directly.
3. If you have any questions which are not mentioned in the manual, please feel free to send an email to support@skyrc.com.

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**https://www.skyrc.com**

If you have any questions about this document, please contact SkyRC by sending a message to **support@skyrc.com**

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