MakerHawk 603040

MakerHawk 3.7V Lipo Battery 700mAh 603040 Instruction Manual

1. Introduction

Welcome to the instruction manual for your MakerHawk 3.7V 700mAh 603040 Lithium Polymer Battery. This guide provides essential information for the safe and effective use of your rechargeable battery, including specifications, installation, operation, and maintenance procedures. Please read this manual thoroughly before using the product.

2. Safety Information

Your MakerHawk LiPo battery is equipped with an integrated protection circuit designed to ensure safe operation. However, it is crucial to follow general safety guidelines for lithium polymer batteries.

2.1 Integrated Protection Circuit

The built-in protection board safeguards against:

- **Overcharging:** Prevents the battery from being charged beyond its safe voltage limit.
- **Over-discharging:** Protects the battery from being discharged below its minimum safe voltage.
- **Overcurrent:** Limits the current draw to prevent damage from excessive loads.
- **Overheating:** Monitors battery temperature to prevent thermal runaway.
- **Short Circuits:** Automatically cuts off power in case of a short circuit.

Image: The MakerHawk LiPo battery features multiple integrated protection mechanisms for safe and reliable operation.

2.2 General Safety Precautions

- Do not puncture, disassemble, or modify the battery.
- Avoid exposing the battery to extreme temperatures (above 60°C or below -10°C), direct sunlight, or fire.
- Do not short circuit the battery terminals.
- Keep the battery away from water and moisture.
- If the battery shows signs of swelling, leakage, or damage, discontinue use immediately and dispose of it properly.
- Keep out of reach of children.

3. Product Overview & Specifications

The MakerHawk 3.7V 700mAh 603040 LiPo battery is a high-quality rechargeable power source designed for various electronic devices. It features a compact design and a Micro PH1.25 connector for easy integration.

3.1 Key Specifications

- **Nominal Voltage:** 3.7V
- **Nominal Capacity:** 700mAh
- **Battery Cell Composition:** Lithium Polymer
- **Connector Type:** Micro PH1.25
- **Battery Model:** 603040 (approximate dimensions: 6mm thickness, 30mm width, 40mm length)
- **Battery Weight:** 15 Grams
- **Energy:** 2.59Wh

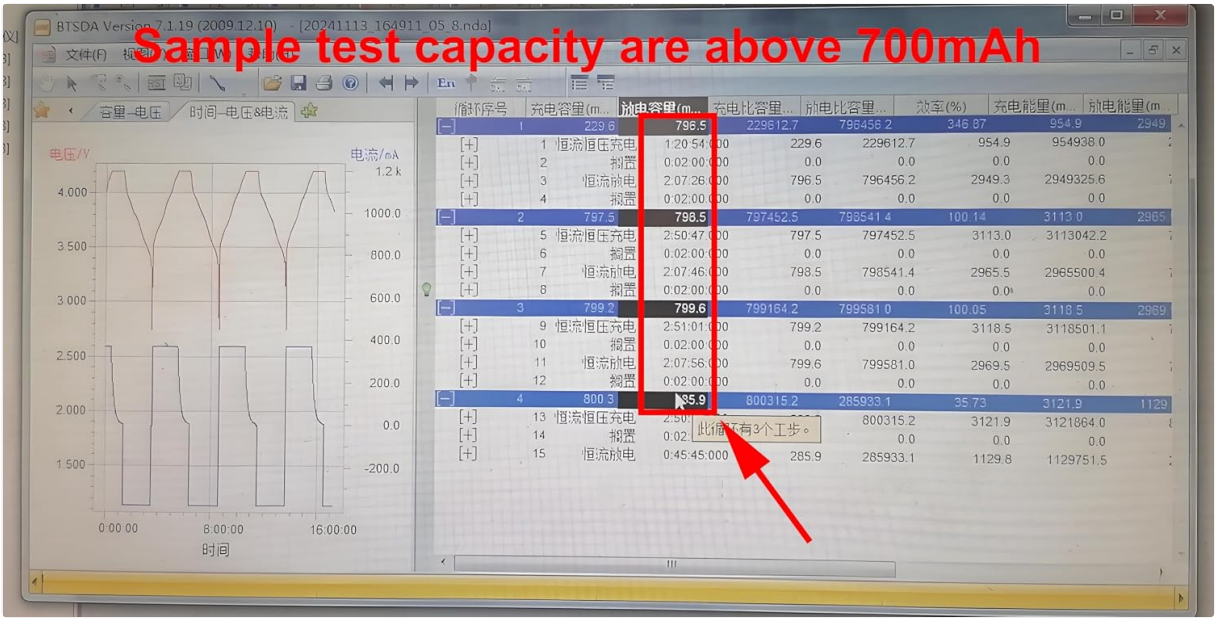


Image: Detailed electrical specifications for the MakerHawk 700mAh LiPo battery.

3.2 Physical Dimensions

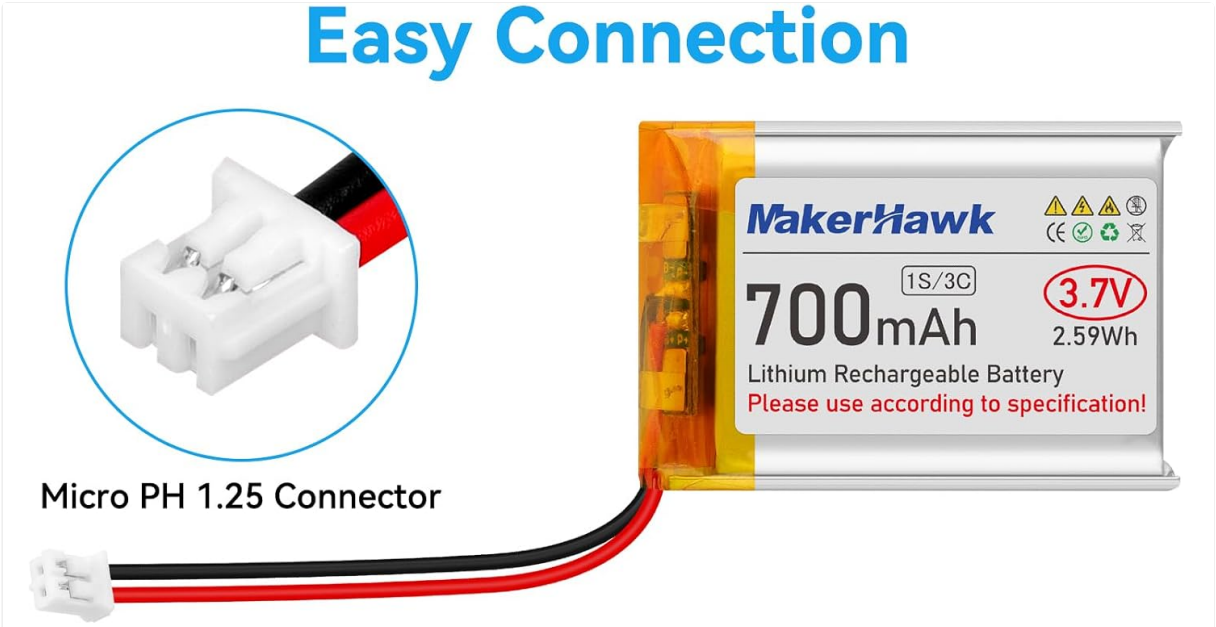
Image: The compact size of the battery, illustrating its dimensions (6mm x 30mm x 42mm) and wire length (60mm).

4. Setup & Installation

The MakerHawk LiPo battery is designed for easy installation with its Micro PH1.25 connector.

4.1 Connecting the Battery

1. Identify the Micro PH1.25 connector on your device.
2. Align the battery's Micro PH1.25 connector with the corresponding port on your electronic device.
3. Gently push the connector until it is securely seated. Ensure the polarity is correct (red wire typically positive, black wire negative).
4. Verify a firm connection before operating your device.



Performance Testing

Items	Test Method and Condition	Criteria
Charge/Discharge Cycle	0.5C charge and 1C discharge cycle 300 times at 23±5°C	Capacity ≥80%
Retention Capability	After full charging, store the cell at 23±5°C for 30 days, then discharge continuously at 0.5C to 2.75V cut-off voltage	Capacity ≥85%

Image: The Micro PH1.25 connector facilitates simple and secure battery installation.

5. Operating Instructions

Proper charging and discharging are essential for maximizing battery life and performance.

5.1 Charging Method

- **Standard Charge Method:** Charge the battery first at a constant current of 0.5C (350mA for a 700mAh battery) and then at a constant voltage of 4.2V until the charging current drops to 0.05C (35mA).
- **Charge Cut-off Voltage:** 4.2V
- **Maximum Charge Rate:** 1C (700mA for a 700mAh battery)
- Always use a charger compatible with 3.7V Lithium Polymer batteries.

5.2 Discharging Guidelines

- **Discharge Cut-off Voltage:** 2.75V. The integrated protection circuit will prevent discharge below this level.
- **Maximum Discharge Rate:** 1C (700mA for a 700mAh battery).
- **Operating Temperature:** 0°C to 45°C. Avoid operating the battery outside this range.

6. Versatile Applications

This 700mAh LiPo battery is suitable for a wide range of electronic devices and projects due to its compact size and reliable power output.

- Small portable electronic devices
- Wireless devices
- DIY projects
- Development boards
- Other battery-powered devices requiring 3.7V power

Image: Examples of devices and projects compatible with the MakerHawk 700mAh LiPo battery.

7. Maintenance

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

- **Storage Temperature:** Store the battery in a cool, dry place with a temperature range of -10°C to 45°C.

- **Long-Term Storage:** For extended storage, charge the battery to approximately 50-60% of its capacity. Avoid storing it fully charged or fully discharged.
- **Periodic Charging:** If stored for long periods, check the battery voltage every 3-6 months and recharge to 50-60% if necessary.
- **Cleaning:** Keep the battery and its connectors clean and free from dust or debris.

8. Troubleshooting

If you encounter issues with your battery, consider the following common troubleshooting steps:

- **Battery Not Charging:**
  - Ensure the charger is correctly connected and functioning.
  - Verify that the charger is compatible with 3.7V LiPo batteries.
  - Check for any visible damage to the battery or charging cable.
- **Device Not Powering On:**
  - Confirm the battery is fully charged.
  - Ensure the battery is securely connected to the device's power port.
  - Check if the device itself is functioning correctly with another power source, if possible.
- **Shortened Battery Life:**
  - Review charging and discharging habits to ensure they align with recommended guidelines.
  - Ensure the battery is not exposed to extreme temperatures during use or storage.
  - Battery capacity naturally degrades over time and cycles.

9. Performance Testing

The MakerHawk LiPo battery undergoes rigorous testing to ensure its performance and durability.

Battery Performance Test Criteria

Items	Test Method and Condition	Criteria
Charge/Discharge Cycle	0.5C charge and 1C discharge cycle 300 times at 23±5°C	Capacity ≥80%
Retention Capability	After full charging, store the cell at 23±5°C for 30 days, then discharge continuously at 0.5C to 2.75V cut-off voltage	Capacity ≥85%

These tests confirm the battery's ability to maintain a high percentage of its nominal capacity over many charge/discharge cycles and during storage.

10. Certifications

The MakerHawk LiPo battery complies with various international safety and environmental protection regulations, including UN 38.3 and CE standards, ensuring product quality and safety.

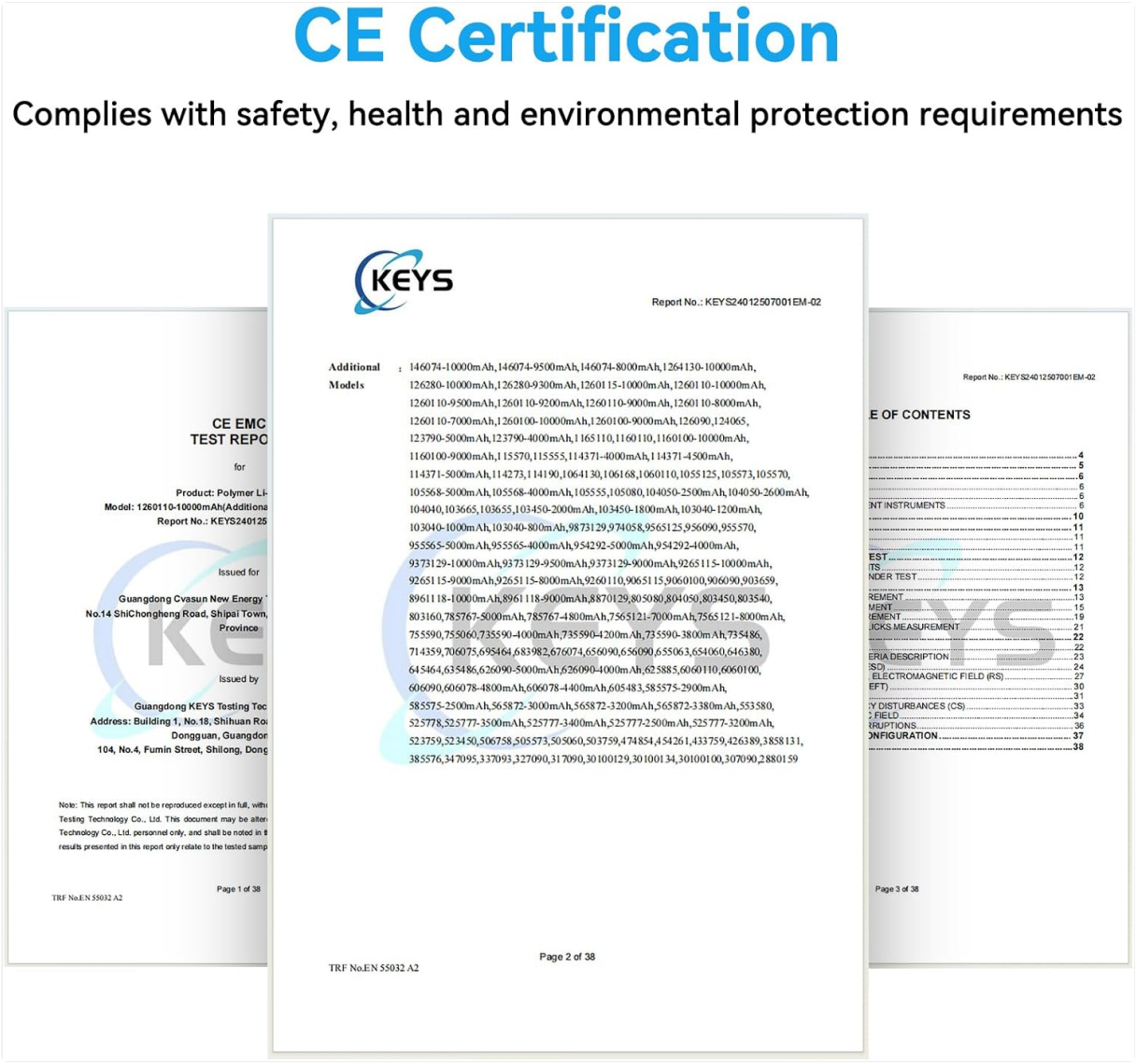


Image: The battery holds CE certification, confirming adherence to European safety standards.

11. Warranty and Support

MakerHawk provides a warranty for this product. For specific warranty details or technical support, please refer to the product packaging or contact MakerHawk customer service through the official channels. Please have your product model and purchase information ready when contacting support.