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Hobbywing 30109004

HOBBYWING QUICRUN Mini24 ESC User Manual

Model: 30109004

Brand: Hobbywing

1. Safety Information

Thank you for purchasing this HOBBYWING product! We strongly recommend reading through this user manual before use. Since we have no control over the use, installation, or maintenance of this product, no liability may be assumed for any damage or losses resulting from the use of the product. We do not assume responsibility for any losses caused by unauthorized modifications to our product. We, HOBBYWING, are only responsible for our product cost and nothing else as result of using our product.

2. What's in the Box

- (1) QUICRUN Mini24 Electronic Speed Controller
- (1) User Manual

3. Product Overview

The HOBBYWING QUICRUN Mini24 ESC is a versatile electronic speed controller designed for various RC applications. It supports both sensorless brushless motors and brushed motors, offering broad compatibility. Its fully waterproof design ensures reliable performance in diverse conditions. The Mini24 ESC features a super internal switch-mode BEC with switchable voltage options (6V/7.4V) to support high torque and high voltage servos. For ease of programming, it includes a separate port for connecting an LED program card or LCD Pro program box. Comprehensive protection features, including motor lock-up, low-voltage cutoff, thermal, overload, and fail-safe (throttle signal loss) protection, ensure the longevity and safety of your RC system. Additionally, the drag brake force can be adjusted in real-time using your transmitter's AUX channel.

Key Features:

- **Motor Compatibility:** Supports sensorless brushless motors (including QuicRun Outer 1621, mainstream 1212, 1806 external rotor) and brushed motors (050, 130, 180, and others).
- **Waterproof Design:** Ensures reliable operation in wet conditions.
- **High-Performance BEC:** Switch-mode BEC with adjustable 5-7.4V output and 5A continuous current, suitable for high-power servos.
- **Easy Programming:** Dedicated programming port for LED program card or LCD Pro program box.

- **Multiple Protections:** Includes motor lock-up, low-voltage cutoff, thermal, overload, and fail-safe protection.
- **Adjustable Drag Brake:** Real-time adjustment via transmitter's AUX channel.

Product Images:



Figure 3.1: HOBBYWING QUICRUN Mini24 ESC with power and motor wires connected.

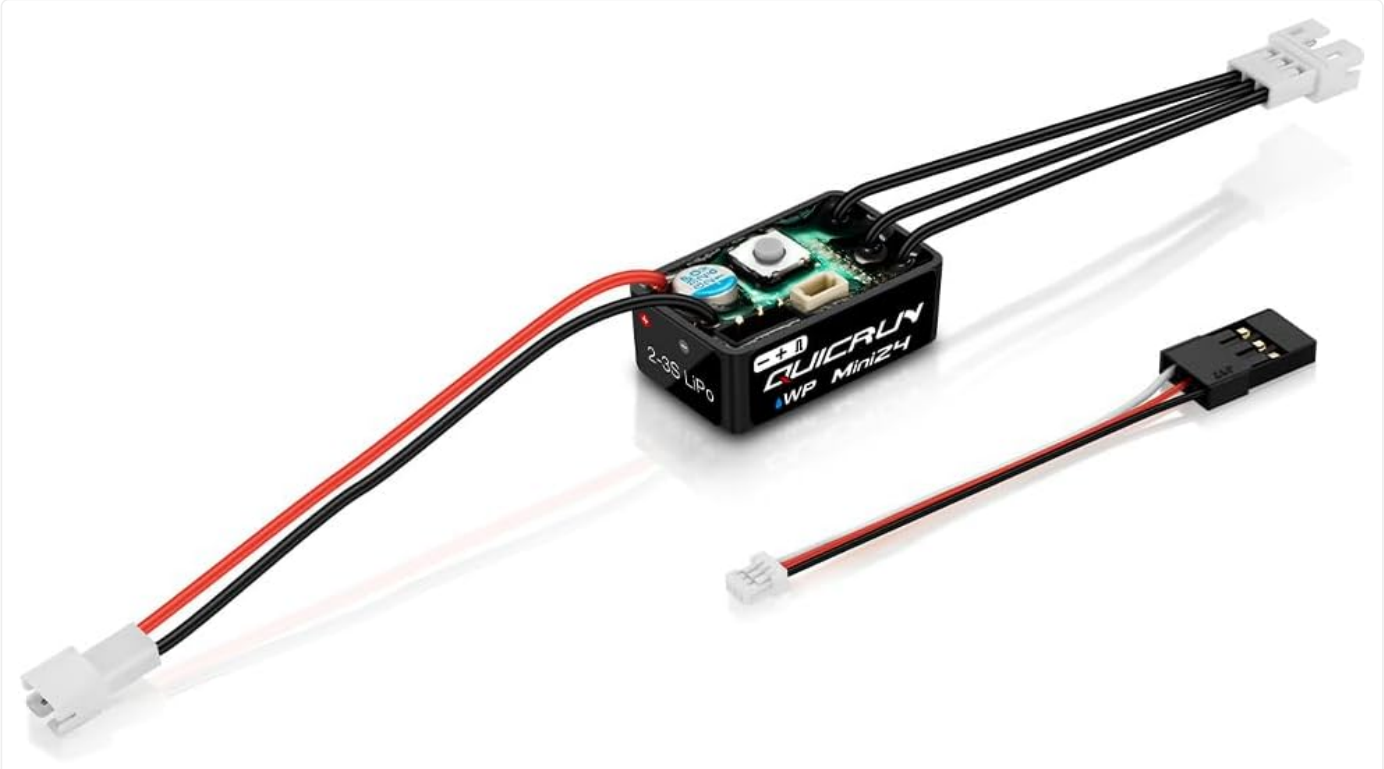


Figure 3.2: HOBBYWING QUICRUN Mini24 ESC showing all wiring and included connectors.



Figure 3.3: Close-up of the QUICRUN WP Mini24 branding on the ESC unit.

4. Specifications

Feature	Detail
Cont./Peak Current	25A/60A
Motor Type	Sensor-less brushless motor, Sensored brushless motor (only works in sensor-less mode), and brushed motor
LiPo Cells	2-3S Lipo
BEC Output	5-7.4V Adjustable, Continuous Current of 5A (Switch-mode)
Product Dimensions	3.3 x 2.2 x 1.2 inches
Item Weight	2.39 ounces
Item Model Number	30109004
Manufacturer	Hobbywing Technology

5. Setup and Installation

Proper installation of the QUICRUN Mini24 ESC is crucial for optimal performance and safety. Follow these steps carefully:

1. **Mounting the ESC:** Securely mount the ESC in your RC vehicle using double-sided tape or zip ties. Ensure it is in a location that allows for adequate airflow for cooling, although its waterproof design reduces concerns about moisture.
2. **Motor Connection:**
    - **For Brushless Motors:** Connect the three motor wires (A, B, C) from the ESC to the corresponding motor wires. The order may affect motor rotation direction; if the direction is incorrect, swap any two of the motor wires.
    - **For Brushed Motors:** Connect the two motor wires from the ESC to the brushed motor. Ensure correct polarity (+ to + and - to -) to avoid damage.
3. **Battery Connection:** Connect the battery connector from the ESC to your 2-3S LiPo battery. Ensure correct polarity (red to positive, black to negative). Incorrect polarity will damage the ESC.

4. **Receiver Connection:** Plug the ESC's throttle cable (usually a three-wire servo connector) into the throttle channel (CH2 or TH) of your RC receiver.
5. **Servo Connection:** If using high torque or high voltage servos, ensure the BEC output voltage is set appropriately (6V or 7.4V) via programming. Connect your steering servo to the steering channel (CH1 or ST) of your receiver.
6. **Programming Port:** The separate programming port is for connecting an optional LED program card or LCD Pro program box for advanced settings. Do not connect other devices to this port.

Important: *Always double-check all connections before powering on your RC vehicle to prevent damage to the ESC, motor, or battery.*

6. Operating Instructions

6.1 Basic Operation

1. **Power On:** Ensure your transmitter is turned on first. Then, connect the battery to the ESC. The ESC will emit a series of tones indicating successful initialization.
2. **Throttle Calibration:** For first-time use or after changing your transmitter, it is recommended to calibrate the throttle range. Refer to the detailed programming guide for your specific program card/box for this procedure.
3. **Driving:** Use your transmitter's throttle stick to control the motor speed. The ESC provides smooth and precise control for both forward and reverse movements.
4. **Power Off:** Always disconnect the battery from the ESC first, then turn off your transmitter.

6.2 Programming the ESC

The QUICRUN Mini24 ESC offers various programmable parameters to fine-tune its performance. These settings can be adjusted using an optional LED Program Card or LCD Pro Program Box (sold separately) connected to the dedicated programming port.

Common programmable parameters include:

- **Running Mode:** Forward/Brake/Reverse, Forward/Brake, Forward/Reverse.
- **Drag Brake Force:** Adjust the automatic braking force applied when the throttle stick returns to neutral. This can also be adjusted in real-time via the transmitter's AUX channel if configured.
- **Low Voltage Cutoff:** Set the voltage threshold at which the ESC reduces or cuts power to protect the battery.
- **Start Mode (Punch):** Adjust the initial acceleration response.
- **Max. Brake Force:** Set the maximum braking power.
- **Max. Reverse Force:** Set the maximum power for reverse.
- **BEC Voltage:** Select between 6.0V and 7.4V for optimal servo performance.
- **Motor Rotation:** Adjust motor direction if needed.

For a complete list of parameters and detailed programming instructions, please refer to the manual provided with your specific Hobbywing program card or box.

7. Maintenance

Regular maintenance helps ensure the longevity and reliable performance of your QUICRUN Mini24 ESC.

- **Cleaning:** Although the ESC is waterproof, it is recommended to clean it after use, especially if exposed to dirt, mud, or saltwater. Use a soft brush or compressed air to remove debris. For wet conditions, rinse with fresh water and allow it to dry completely before storage or next use.
- **Connection Check:** Periodically inspect all wiring and connectors for signs of wear, corrosion, or loose connections. Ensure all plugs are securely seated.

- **Wire Inspection:** Check the insulation of all wires for cuts, nicks, or fraying. Repair or replace damaged wires immediately.
- **Storage:** Store the ESC in a cool, dry place away from direct sunlight and extreme temperatures. Disconnect the battery when not in use for extended periods.

8. Troubleshooting

This section outlines common issues and their potential solutions. The QUICRUN Mini24 ESC includes several built-in protections that may indicate a problem if activated.

Problem	Possible Cause	Solution
No Power / ESC Not Turning On	Battery not connected, low battery voltage, incorrect battery polarity, damaged ESC.	Check battery connection and charge level. Ensure correct polarity. Inspect ESC for visible damage.
Motor Not Responding / Erratic Behavior	Throttle not calibrated, loose motor wires, incorrect motor type setting, signal loss (fail-safe activated).	Perform throttle calibration. Check all motor and receiver connections. Verify motor type setting via program card. Ensure transmitter is on and bound.
Motor Stutters / Lacks Power	Low battery voltage (low-voltage cutoff activated), motor lock-up protection, thermal protection, overload protection.	Charge battery. Check for obstructions preventing motor rotation. Allow ESC/motor to cool down. Reduce load on the motor.
ESC Overheats	Excessive load, insufficient cooling, incorrect gear ratio, motor issues.	Reduce load, improve airflow around ESC, adjust gear ratio, inspect motor for damage.
BEC Output Issues (e.g., Servo Glitching)	BEC voltage set too low, excessive current draw from servos, faulty servo.	Increase BEC voltage if compatible with servos. Reduce number of high-power servos or use an external BEC. Test with a different servo.

If problems persist after attempting these solutions, please contact Hobbywing customer support for further assistance.

9. Warranty and Support

9.1 Warranty Information

HOBBYWING products are manufactured to high quality standards. As stated in the safety information, Hobbywing is responsible for the product cost in case of defects, but does not assume liability for damages or losses resulting from use, installation, maintenance, or unauthorized modifications. Please retain your proof of purchase for any warranty claims.

9.2 Customer Support

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact Hobbywing customer support through their official website or the retailer from whom you purchased the product. Providing your product model number (30109004) and a detailed description of the issue will help expedite the support process.

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