Hobbywing SEAKING V4 120A

HOBBYWING SEAKING V4 ESC (120A)

INSTRUCTION MANUAL

INTRODUCTION

The HOBBYWING SEAKING V4 120A Electronic Speed Controller (ESC) is engineered for high-performance marine applications, offering exceptional reliability and durability. It features a robust hardware foundation combined with optimized software to deliver powerful performance while minimizing the risk of damage under high-load conditions. This ESC incorporates advanced protection features, including low-voltage, over-temperature, throttle loss, and current overload protection, specifically designed for ship models to ensure both practicality and user-friendliness. Its IP67 fully waterproof design allows for immediate use without additional waterproofing treatment.

SAFETY INFORMATION

Adhering to the following safety guidelines is crucial for preventing damage to the ESC and ensuring safe operation:

- Ensure all devices within the system are connected correctly to prevent any damage.
- Properly secure all soldered wires and connectors. A high-quality soldering station is recommended to avoid short circuits, floating solder joints, and overheating.
- Do not attempt to drive two brushless motors with a single ESC, as this can cause severe damage to the ESC.
- During setup and testing, always hold the boat in the air to ensure the propeller can spin freely and will not come into contact with body parts or other objects, thereby preventing accidents.
- The battery must be disconnected from the ESC after each use. A small current draw persists even when the system is off, which can eventually fully drain the battery and potentially damage the ESC. Such damage will not be covered under warranty.

KEY FEATURES

- **Explosive Performance:** Designed to deliver explosive acceleration and high top speeds for marine applications.
- **Integrated BEC:** Features a built-in ultra-powerful switch mode BEC with adjustable voltage, supporting high torque and high voltage servos.
- **Bluetooth Connectivity:** Built-in Bluetooth function (integrated into the switch) allows for direct connection to the mobile app (HW LINK) for setting parameters and upgrading firmware without additional devices.
- **Data Logging:** Enables viewing of various running data directly on the HW LINK app.
- **Firmware Upgradeable:** Supports firmware upgrades to ensure access to the latest functions and

improvements.

- **IP67 Waterproof Design:** Excellent waterproof and dustproof performance, allowing direct use without additional waterproofing treatment. (Note: After use in water, ensure all plugs are dried to prevent rusting).
- **AUX External Control Channel:** Allows real-time adjustment of ESC parameters (e.g., reverse thrust) using an unused receiver channel and your radio's open auxiliary channel for on-the-fly tuning.
- **Capacitor Overheating Protection:** Mitigates the risk of damage to the ESC by preventing capacitor failure due to overloading, protecting the unit from complete failure. (Note: SEAKING 30A V4 does not have this function).

What's in the Box

- (1) HOBBYWING SEAKING V4 ESC (120A)

Setup

Proper setup is essential for optimal performance and safety. Follow these general steps:

1. **Mounting the ESC:** Securely mount the ESC in a well-ventilated area within your boat. Ensure it is protected from excessive vibration.
2. **Motor Connection:** Connect the three motor wires from the ESC to your brushless motor. Ensure correct phase matching (A-A, B-B, C-C). If the motor spins in the wrong direction, swap any two of the motor wires.
3. **Battery Connection:** Connect the battery input wires (red for positive, black for negative) from the ESC to your battery pack. Ensure polarity is correct to avoid damage.
4. **Receiver Connection:** Plug the ESC's throttle cable (usually a three-wire servo connector) into the throttle channel (typically channel 2) of your RC receiver.
5. **Initial Calibration:** Follow your radio system's and ESC's specific calibration procedures to set the throttle range. This typically involves powering on the radio, then the ESC, and moving the throttle stick through its full range.
6. **App Connection (HW LINK):** Download the HW LINK app on your mobile device. Power on the ESC, then open the app and connect via Bluetooth to access settings and monitoring features.
7. **AUX Channel Setup (Optional):** If using the AUX external control feature, connect the yellow signal wire to an unused auxiliary channel on your receiver and configure your radio to control this channel.

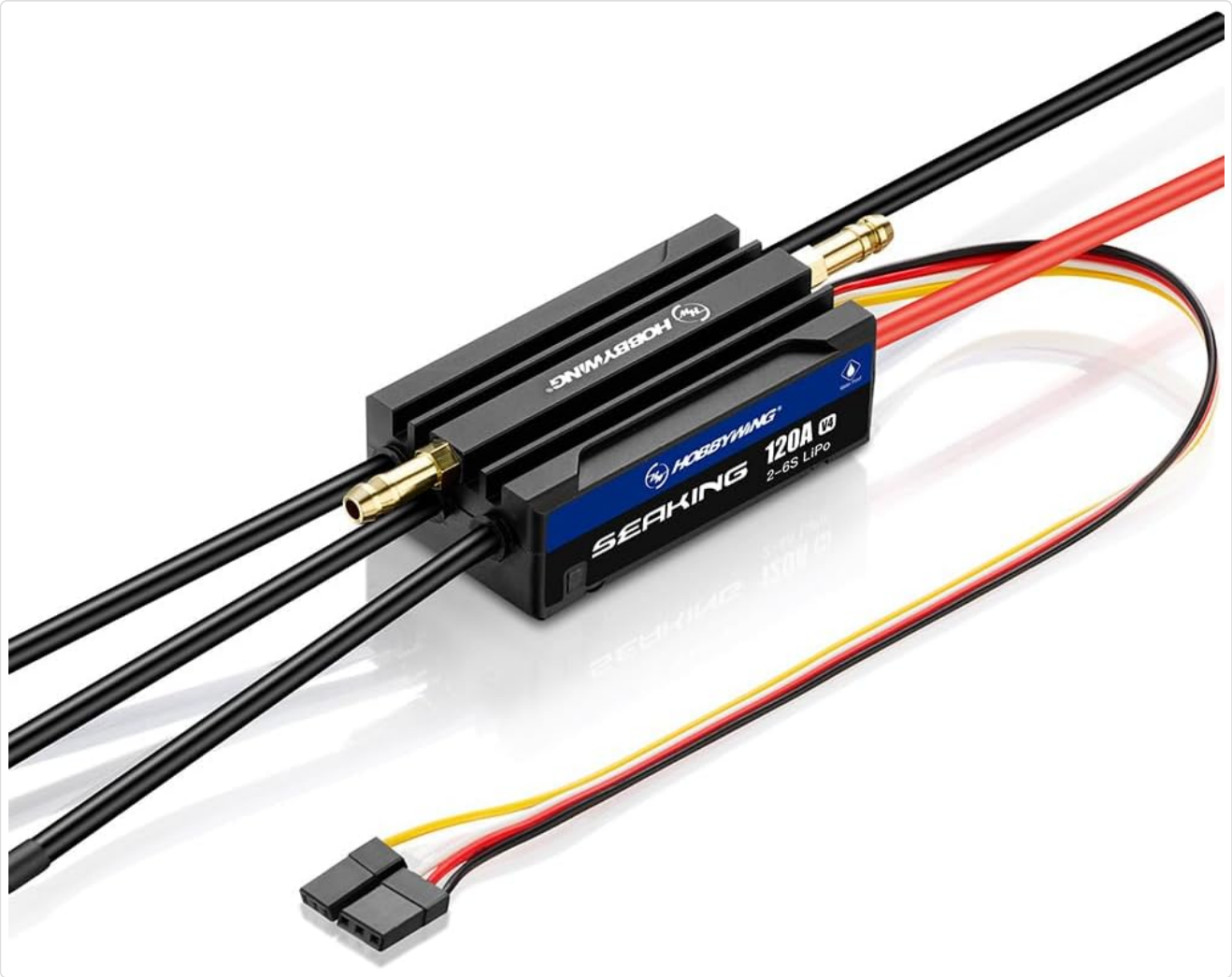


Figure 1: Overview of the HOBBYWING SEAKING V4 120A ESC, showing its main body, power input wires (red/black), motor output wires (black), and receiver signal cable.

Operating

Once the ESC is properly set up, you can begin operation. The SEAKING V4 offers advanced control and monitoring capabilities:

- **Power On:** Ensure your radio transmitter is turned on first, then connect the battery to the ESC. The ESC will emit a series of tones indicating successful initialization.
- **Throttle Control:** Use your radio's throttle stick to control the motor speed. The ESC provides smooth and precise throttle response.
- **HW LINK App Usage:** Connect to the ESC via the HW LINK app on your smartphone. From the app, you can:
  - Adjust various ESC parameters (e.g., timing, cut-off voltage, start mode).
  - Monitor real-time data such as battery voltage, ESC temperature, and motor RPM.
  - Access the data logging function to review performance data from previous runs.
  - Update the ESC firmware to the latest version.
- **AUX External Control:** If configured, use the assigned auxiliary channel on your radio to make real-time adjustments to specific ESC parameters while operating, such as reverse thrust or drag brake settings.
- **Power Off:** Always disconnect the battery from the ESC first, then turn off your radio transmitter.



Figure 2: Top-down view highlighting the robust construction and connection points of the ESC, including the motor and battery terminals.

Maintenance

Regular maintenance ensures the longevity and optimal performance of your SEAKING V4 ESC:

- **Post-Use Care (Waterproof Feature):** Although the ESC is IP67 waterproof, it is recommended to dry all plugs and connectors thoroughly after use in water to prevent corrosion and rusting.
- **Cleaning:** Periodically clean the ESC to remove any dirt, dust, or debris that may accumulate, especially around the heatsink fins, to ensure efficient cooling. Use a soft brush or compressed air.
- **Connection Check:** Regularly inspect all wiring and connectors for signs of wear, fraying, or loose connections. Re-solder or replace as necessary.
- **Firmware Updates:** Check the HW LINK app periodically for new firmware updates. Keeping the firmware current can improve performance, add features, and resolve potential issues.
- **Storage:** When not in use for extended periods, store the ESC in a dry, cool place, disconnected from the battery.



Figure 3: Angled view of the ESC, showcasing its compact design and robust casing, designed for marine environments.

Troubleshooting

This section provides guidance on common issues you might encounter with your ESC.

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
ESC does not power on	Incorrect battery connection; Battery discharged; Faulty wiring/connector	Check battery polarity; Charge battery; Inspect all connections for damage or looseness.
Motor not spinning or erratic operation	Incorrect motor wire connection; Throttle calibration issue; Receiver not connected properly; Motor fault	Verify motor wire connections (swap two if needed); Re-calibrate throttle range; Ensure receiver cable is secure; Test motor separately if possible.
ESC overheats	Overloading (e.g., wrong propeller size); Insufficient cooling; Incorrect ESC settings (e.g., timing)	Reduce load; Ensure adequate airflow; Adjust ESC parameters via HW LINK app; Check capacitor overheating protection status.
Low-voltage cut-off activates too soon	Battery voltage too low; Incorrect low-voltage protection setting	Charge battery fully; Adjust low-voltage protection setting in HW LINK app to match battery type.
No Bluetooth connection to HW LINK app	Bluetooth on phone is off; App permissions not granted; ESC not powered on	Enable Bluetooth on your device; Grant necessary app permissions; Ensure ESC is powered on.

Specifications

Feature	Detail
Model	SEAKING V4 120A
Product Dimensions	5.23 x 3.4 x 2.1 inches
Item Weight	6.7 ounces
Waterproof Rating	IP67
Manufacturer	Hobbywing Technology
Recommended Age	4 years and up

Warranty and Support

For warranty information and technical support, please refer to the official Hobbywing website or contact Hobbywing customer service directly. Ensure you retain your proof of purchase for any warranty claims. Damage resulting from improper use, unauthorized modifications, or failure to follow safety guidelines may void the product warranty.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question