HOBBYWING 30902042

HOBBYWING XRotor PRO 40A ESC (Dual Pack) Instruction Manual

Model: 30902042

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the HOBBYWING XRotor PRO 40A ESC (Dual Pack). This Electronic Speed Controller is designed for multi-rotor applications, offering precise throttle response and compatibility with various flight control systems. Please read this manual thoroughly before use to ensure proper functionality and safety.

2. Safety Information

Important Safety Warnings:

- Always disconnect the battery before handling or performing maintenance on the ESC or motor.
- Ensure correct polarity when connecting the battery to avoid damage to the ESC and other components.
- Operate the ESC within its specified voltage and current limits (3-6S Lipo, 40A continuous / 60A peak).
- Keep the ESC away from water, moisture, and extreme temperatures.
- Mount the ESC in a location with adequate airflow to prevent overheating.
- This product is not a toy. Keep out of reach of children.

3. Package Contents

Verify that all items are present in your package:

- HOBBYWING XRotor PRO 40A ESC (2 units)
- Instruction Manual (this document)

Image: HOBBYWING XRotor PRO 40A ESC (Dual Pack). This image shows the two ESC units with their pre-attached wires.

4. Setup and Installation

Follow these steps for proper installation of the XRotor PRO 40A ESC:

1. **Mounting:** Securely mount the ESCs to your multi-rotor frame. Ensure adequate ventilation around each ESC to dissipate heat effectively. Use double-sided tape or zip ties as appropriate for your frame.
2. **Motor Connection:** Connect the three motor wires from the ESC to the three wires of your brushless motor. The order of connection determines the motor's rotation direction. If the motor spins in the wrong direction, swap any two of the three motor wires.
3. **Power Connection:** Connect the red (+) and black (-) power wires of the ESC to your flight battery's corresponding terminals. Ensure correct polarity. The ESC supports 3-6S LiPo batteries.
4. **Signal Cable Connection:** Connect the throttle signal cable (usually a single white or yellow wire) from the ESC to the appropriate channel on your flight controller. The twisted-pair design of the throttle signal cable helps reduce signal interference.

5. **Initial Calibration (if required by flight controller):** Refer to your flight controller's manual for ESC calibration procedures. The XRotor PRO 40A ESC is designed for excellent compatibility and often requires minimal setup.

5. Operating Instructions

The XRotor PRO 40A ESC is largely plug-and-play due to its pre-set configurations. However, understanding its operation is crucial for optimal performance.

- **Throttle Response:** The special core program for multi-rotor controllers significantly improves throttle response, providing precise control for flight maneuvers.
- **Compatibility:** Optimized software ensures excellent compatibility with disc-type motors and various flight control systems. It supports signal frequencies up to 621Hz. Note that throttle signals over 500Hz are non-standard.
- **Timing:** All settings except "Timing" are pre-set. Adjusting motor timing is typically done via the flight controller or a separate programming card if advanced customization is desired. Refer to your motor's specifications for optimal timing settings.
- **DEO Function:** The ESC includes a DEO (Driving Efficiency Optimization) function. This can be enabled or disabled, usually through a programming item if available, to further enhance efficiency and response.

6. Maintenance

Regular maintenance ensures the longevity and reliable performance of your ESCs:

- **Inspection:** Periodically inspect all wires and solder joints for signs of wear, fraying, or corrosion. Repair or replace damaged components immediately.
- **Cleaning:** Keep the ESCs clean and free from dust, dirt, and debris. Use a soft brush or compressed air for cleaning. Avoid using liquids.
- **Heat Management:** Ensure the ESCs are not consistently overheating during operation. If they are, check for adequate airflow, proper motor/propeller combination, and correct timing settings.
- **Storage:** When not in use for extended periods, store the ESCs in a dry, cool environment, disconnected from the battery.

7. Troubleshooting

If you encounter issues with your XRotor PRO 40A ESC, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Motor does not spin or stutters.	Incorrect motor wire connection, ESC not calibrated, faulty motor/ESC.	Check motor wire connections; swap two wires if motor spins wrong way. Perform ESC calibration. Test with a different motor/ESC if possible.
ESC gets excessively hot.	Insufficient airflow, overloaded motor, incorrect timing.	Ensure proper ventilation. Check motor/propeller combination for appropriate load. Adjust motor timing if programmable.
Intermittent power or signal loss.	Loose connections, damaged wires, signal interference.	Inspect all solder joints and connectors. Ensure signal cable is securely connected and away from power wires.

Problem	Possible Cause	Solution
ESC does not power on.	Battery not connected, incorrect battery polarity, faulty battery/ESC.	Verify battery connection and polarity. Test battery voltage. Check for visible damage on ESC.

8. Specifications

Feature	Detail
Model	30902042
Continuous Current	40A
Peak Current	60A
Input Voltage	3-6S LiPo
BEC Type	No BEC
Applicable Multicopter Class	550/650 Class Quadcopter
Dimensions	5.25 x 3.5 x 2.25 inches (Product Dimensions)
Item Weight	5.6 ounces
Material	Aluminum, Plastic
UPC	088718514408

9. Warranty and Support

For warranty information and technical support, please contact HOBBYWING North America directly. Details regarding specific warranty periods and conditions are typically provided with the product packaging or on the official HOBBYWING website.

Manufacturer: Hobbywing Technology

Contact: Refer to the official HOBBYWING website for the most current support contact information and resources.