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Hobbywing HWI30112751

HOBBYWING XR10 Pro Stock Spec 1S Sensored Brushless ESC Speed Control User Manual

Model: HWI30112751

1. Introduction

The HOBBYWING XR10 Pro Stock Spec 1S Sensored Brushless ESC is an advanced electronic speed controller designed for 1/12 and 1/10 scale RC vehicles, particularly for stock class racing. This ESC features zero timing firmware, a compact design, and comprehensive programming options to optimize performance. It is equipped with an integrated data logger and a powerful built-in BEC.

2. Safety Precautions

- Always read the entire manual before operating the ESC.
- Ensure all connections are correct and secure to prevent damage.
- Avoid short circuits. Incorrect wiring can cause damage to the ESC, battery, and other components.
- Keep the ESC away from water, moisture, and corrosive materials.
- Do not operate the ESC in extreme temperatures.
- Disconnect the battery from the ESC after use to prevent accidental activation or discharge.
- Ensure proper ventilation to prevent overheating during operation.

3. Package Contents

Verify that all items are present in your package:

- HOBBYWING XR10 Pro Stock Spec 1S ESC
- Cooling Fan (pre-installed or separate)
- Connection Wires (motor, battery, receiver)
- Shrink Tubing
- User Manual
- Hobbywing Decals



Image 3.1: The package contents for the HOBBYWING XR10 Pro Stock Spec ESC, including the ESC unit, various wires, shrink tubing, a cooling fan, and the user manual.

4. Product Overview

The XR10 Pro Stock Spec 1S ESC is designed for high-performance applications. Key features include:

- **Zero Timing Firmware:** Optimized for ROAR SPORTMAN races and other fair racing classes.
- **Compact and Lightweight:** Smallest footprint and lightest ESC in its class.
- **Wireless Programming:** Supports programming, upgrading, and data reading wirelessly via a Wi-Fi module (sold separately).
- **Integrated Data Logger:** Records maximum ESC and motor temperatures, as well as maximum RPM.
- **Built-in Boost BEC:** Maximum output of 6A, adjustable voltage between 6V and 7.4V for high-voltage servos.
- **Separate Program/Fan Port:** Allows connection of an external fan for enhanced cooling or a LCD program box/Wi-Fi module.
- **Advanced Brake & Throttle Functions:** Features 100 levels of drag brake, 50 levels of initial brake force, 9 levels of maximum brake force, 20 levels of brake rate, and 30 levels of throttle rate.
- **Adjustable Timing:** Turbo timing and boost timing are adjustable for various applications.
- **Multiple Protections:** Includes low-voltage cutoff, ESC and motor thermal protection, and fail-safe (throttle signal loss protection).



Image 4.1: The HOBBYWING XR10 Pro Stock Spec ESC, featuring its integrated cooling fan and connection wires. Mounting screws are also visible.



Image 4.2: A top-down view of the HOBBYWING XR10 Pro Stock Spec ESC, highlighting the motor output terminals (A, B, C), battery input terminals (+, -), and the PRG/FAN port.

5. Setup and Installation

5.1 Mounting the ESC

Mount the ESC securely in your vehicle using double-sided tape or screws. Ensure it is positioned to allow adequate airflow for cooling.

5.2 Connecting the Motor

Connect the three motor wires (A, B, C) from the ESC to the corresponding motor terminals. For sensored motors, connect the sensor cable from the motor to the sensor port on the ESC. Ensure the sensor cable is inserted correctly and securely.

5.3 Connecting the Battery

Connect the positive (+) and negative (-) wires from the ESC to your 1S LiPo battery. Ensure polarity is correct to prevent damage.

5.4 Connecting to the Receiver

Plug the ESC's throttle cable into the throttle channel (usually channel 2) of your RC receiver.

5.5 Connecting the Cooling Fan

The ESC comes with a cooling fan. Connect the fan to the dedicated fan port on the ESC. If using a 7-9 Cells NiMH/NiCd or 3S LiPo battery, the standard cooling fan must be replaced with a 12V high-voltage fan (not included).

6. Operating Instructions

6.1 Throttle Range Calibration

Before first use, or after changing your radio system, perform throttle range calibration:

1. Turn on your transmitter and ensure the throttle channel is set to neutral, with no trim or sub-trim applied.
2. Hold the SET button on the ESC and then turn on the ESC. Release the SET button when the LED flashes.
3. Set the throttle stick to the full throttle position and press the SET button.
4. Set the throttle stick to the full brake/reverse position and press the SET button.
5. Set the throttle stick to the neutral position and press the SET button.
6. The ESC will confirm calibration with a series of beeps and LED flashes.

6.2 Powering On/Off

To power on, ensure all connections are secure, then connect the battery. To power off, disconnect the battery from the ESC.

7. Programming and Configuration

The XR10 Pro Stock Spec ESC offers extensive programming options. Parameters can be adjusted using a HOBBYWING LCD Program Box or a HOBBYWING Wi-Fi Express Module (both sold separately).

7.1 Adjustable Parameters

- **Running Mode:** Forward/Brake, Forward/Brake/Reverse, Forward/Reverse.
- **Drag Brake Force:** 100 levels.
- **Initial Brake Force:** 50 levels.
- **Maximum Brake Force:** 9 levels.
- **Brake Rate:** 20 levels.
- **Throttle Rate:** 30 levels.
- **BEC Voltage:** Adjustable between 6V and 7.4V.
- **Turbo Timing & Boost Timing:** Adjustable for different applications.
- **PWM Drive Frequency:** Adjustable.
- **Brake Frequency:** Adjustable.
- **Low Voltage Cutoff:** Protection setting.
- **Motor Rotation:** Normal/Reverse.

Refer to the detailed programming guide provided with your program box or Wi-Fi module for specific instructions on parameter adjustment.

8. Maintenance

- **Cleaning:** Regularly clean the ESC and cooling fan to remove dirt and debris. Use a soft brush or compressed air.
- **Inspection:** Periodically check all wires and connectors for signs of wear or damage.
- **Storage:** Store the ESC in a dry, cool place when not in use. Disconnect the battery.
- **Firmware Updates:** Check the HOBBYWING website for the latest firmware updates to ensure optimal performance and access to new features.

9. Troubleshooting

Problem	Possible Cause	Solution
ESC does not power on	Battery not connected, low battery voltage, faulty switch/wiring	Check battery connection and charge level. Inspect wiring for damage.
Motor does not run	Incorrect motor/ESC connection, throttle calibration error, motor fault	Verify motor wiring. Perform throttle calibration. Test motor separately if possible.
ESC overheats	Insufficient cooling, incorrect gear ratio, motor overload, fan not working	Ensure fan is operating. Check gear ratio. Reduce load. Clean fan.
Vehicle runs in reverse	Motor rotation setting incorrect	Adjust motor rotation parameter using program box/Wi-Fi module.
No response from throttle	Receiver not connected, throttle channel incorrect, transmitter issue	Check receiver connection. Ensure ESC is plugged into correct channel. Verify transmitter battery.

10. Specifications

Feature	Specification
Model	XR10 Pro Stock Spec 1S (HWI30112751)
Continuous Current	80A
Burst Current	380A
Input Voltage	1S LiPo / 3-4S NiMH
BEC Output	6V/7.4V @ 6A (Switch Mode)
Motor Supported	Sensored and sensorless brushless motors
Suitable Motor	3650 Motors T≥10.5T
Application	1/12 & 1/10 Stock Class RC Vehicles
Cooling Fan	5V - 7.4V (20x20x8mm)

Feature	Specification
Wires	14AWG-200mm
Dimensions (LxWxH)	31.6 x 25.8 x 16.2mm (without fan)
Weight	23.5g (without wires, cooling fan)
UPC	088718508438

11. Warranty and Support

HOBBYWING products are manufactured to high standards. For warranty information, technical support, or service inquiries, please contact your local HOBBYWING distributor or visit the official HOBBYWING website. Keep your purchase receipt as proof of purchase for warranty claims.

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