Hobbywing Xerun XD10 Pro

HOBBYWING Xerun XD10 Pro ESC Series User Manual

Model: Xerun XD10 Pro

1. Introduction

Thank you for choosing the HOBBYWING Xerun XD10 Pro Electronic Speed Controller (ESC). This high-performance sensored brushless ESC is designed to enhance your experience with Hobbywing brushless power systems. Please read this manual thoroughly before use to ensure proper operation and safety.

2. Safety Precautions

Failure to follow these safety guidelines may result in damage to the product, property, or serious injury.

- To avoid short circuits, ensure that all wires and connections are well insulated before connecting the ESC to related devices.
- Ensure all devices are well connected to prevent poor connections and avoid damage to your electronic devices.
- Read through the manuals of all power devices and chassis and ensure the power configuration is rational before using this unit.
- Please use a soldering iron with the power of at least 60W to solder all input/output wires and connectors.
- Do not hold the vehicle in the air and rev it up to full throttle, as rubber tires can "expand" to extreme size or even crack to cause serious injury.
- Stop immediate usage once the casing of the ESC exceeds 90°C/194°F as this may cause damage to both the ESC and motor.
- Hobbywing recommends setting the "ESC Thermal Protection" to 105°C/221°F (this refers to the internal temperature of the ESC).
- Users must always disconnect the batteries after use as the current on the ESC is consuming continuously if it is connected to the batteries (even if the ESC is turned off). The battery will

completely be discharged and may result in damage to the battery or ESC when it is connected for a long period of time. This WILL NOT be covered under warranty.

3. Product Overview and Features

The Xerun XD10 Pro ESC is equipped with advanced features for optimal performance.

- Cont./Peak Current: 100A/800A
- LiPo/NiMH Cells: 2S LiPo/4-6S NiMH
- BEC Output: 5-7.4V Adjustable, Continuous Current of 5A (Switch-mode)
- Built-in switch mode BEC with a maximum output of 10A and voltage adjustable from 5V to 7.4V (step: 0.1V) for usage with servos & other devices requiring different voltages.
- Separate PRG/FAN port is able to power an external fan for maximized cooling performance or connect a LCD program box or WiFi module to the ESC.
- Variable frequency regulation of PWM & brake frequencies allows users to precisely regulate the driving & braking forces (of the motors).
- Multiple protections: low-voltage cutoff protection, ESC and motor thermal protection, and fail safe (throttle signal loss protection), reverse polarity protection (the external standard cappack will still be damaged if battery reversal occurs).
- Data logging for recording the maximum ESC/motor temperature, motor speed/RPM, and others in real time.
- Firmware upgrade via Hobbywing multifunction LCD program box or OTA Programmer (item sold separately).

Product Views



Figure 3.1: Top and side view of the Xerun XD10 Pro ESC, showing the fan, heat sink, and connection ports.



Figure 3.2: Angled view of the Xerun XD10 Pro ESC, highlighting the PRG/FAN port and power button.

4. Setup Guide

Follow these steps to set up your Xerun XD10 Pro ESC:

1. **Mounting the ESC:** Securely mount the ESC in your vehicle chassis using double-sided tape or screws, ensuring adequate airflow for cooling.
2. **Motor Connection:** Connect the motor wires to the ESC's motor output terminals (A, B, C). Ensure correct phase matching for sensored motors.
3. **Battery Connection:** Connect your battery pack to the ESC's battery input wires. Pay close attention to polarity (+ to + and - to -) to prevent damage.
4. **Receiver Connection:** Plug the ESC's throttle cable into the throttle channel (usually channel 2) of your receiver.
5. **Capacitor Pack:** Ensure the external standard capacitor pack is securely connected.
6. **Optional Fan/Program Box:** If using an external cooling fan or a program box/WiFi module, connect it to the dedicated PRG/FAN port.

5. Operating Instructions

Once setup is complete, follow these steps to operate your ESC:

1. **Power On:** Ensure all connections are secure. Turn on your transmitter first, then turn on the ESC using its power button.
2. **Throttle Calibration:** Perform throttle calibration according to your transmitter and ESC manual to ensure proper throttle range recognition.
3. **Driving:** Operate your vehicle using the transmitter. Monitor ESC and motor temperatures during initial runs.
4. **Power Off:** Always turn off the ESC first, then turn off your transmitter. Disconnect the battery from the ESC immediately after use to prevent over-discharge.

Programming the ESC

The Xerun XD10 Pro ESC can be programmed using a Hobbywing multifunction LCD program box or an OTA Programmer (sold separately). Refer to the respective programmer's manual for detailed instructions on adjusting parameters such as:

- Running Mode
- Low Voltage Cutoff
- ESC Thermal Protection (recommended 105°C/221°F)
- Motor Rotation
- PWM Frequency
- Brake Frequency
- Drag Brake Force
- Initial Brake Force
- Max. Brake Force
- Boost Timing
- Turbo Timing

6. Maintenance

Proper maintenance ensures the longevity and performance of your ESC:

- **Cleaning:** Regularly clean the ESC and fan to remove dirt, dust, and debris. Use a soft brush or compressed air. Avoid using liquids.
- **Insulation:** Periodically inspect all wires and connections for signs of wear, fraying, or poor insulation. Repair or replace as necessary.
- **Temperature Monitoring:** Always monitor the ESC's temperature during operation. If it consistently exceeds 90°C/194°F, investigate the cause (e.g., gearing, motor, airflow).
- **Storage:** Store the ESC in a dry, cool place away from direct sunlight and extreme temperatures. Disconnect batteries before storage.

7. Troubleshooting

This section provides solutions to common issues you might encounter:

Problem	Possible Cause	Solution
ESC does not power on.	Battery not connected, low battery voltage, faulty power switch, reverse polarity.	Check battery connection and charge. Inspect power switch. Ensure correct polarity.
Motor not responding to throttle.	Incorrect throttle calibration, motor wires loose, receiver not powered, transmitter off.	Perform throttle calibration. Check motor and receiver connections. Turn on transmitter.
ESC overheats.	Over-gearing, motor too large, insufficient airflow, high ambient temperature.	Reduce gearing, use appropriate motor, ensure proper ventilation, adjust thermal protection setting. Stop use if temperature exceeds 90°C/194°F.
Vehicle runs in reverse when throttle is applied forward.	Motor rotation setting incorrect, motor wires connected incorrectly.	Adjust motor rotation parameter via program box or reverse motor wires (A to C, C to A).
ESC cuts off unexpectedly.	Low voltage cutoff activated, thermal protection activated, poor battery connection.	Recharge battery. Allow ESC to cool down. Check battery connections.

8. Specifications

Feature	Detail
Brand	Hobbywing
Model	Xerun XD10 Pro
Cont./Peak Current	100A/800A
LiPo/NiMH Cells	2S LiPo/4-6S NiMH
BEC Output	5-7.4V Adjustable, Continuous Current of 5A (Switch-mode)
Max BEC Output Current	10A
Operating Temperature	Up to 90°C (194°F) recommended max.
Product Dimensions	5.25 x 3.5 x 2 inches
Item Weight	7 ounces
Material	Plastic
Voltage	7.4 Volts (nominal)
Display Type	LCD (via external program box)

9. Warranty and Support

For warranty information and technical support, please refer to the official Hobbywing website or contact your local Hobbywing distributor. Please note that damage resulting from continuous connection to

batteries when the ESC is turned off, leading to battery discharge, is not covered under warranty as stated in the safety precautions.

Online Resources:

- Official Hobbywing Website: www.hobbywing.com
- Product Support: Refer to the support section on the official website for FAQs, firmware updates, and contact information.

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