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## Castle Creation Mamba X

# Castle Creations Mamba X ESC Instruction Manual

Model: Mamba X

## INTRODUCTION

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This manual provides comprehensive instructions for the installation, operation, and maintenance of your Castle Creations Mamba X Extreme 1:10 Scale Waterproof Electronic Speed Controller (ESC). The Mamba X is designed for versatility, reliability, and performance in various RC applications, supporting 2S to 6S input voltage and suitable for 1/10th to 1/8th scale vehicles.

Please read this manual thoroughly before using the product to ensure proper function and safety.

## KEY FEATURES

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- Wide 2S to 6S input voltage range
- Sensored Motor Support
- Waterproof design
- 8A Adjustable BEC (5.25V-8.0V)
- Data-logging capabilities
- Rugged CNC Aluminum Case
- Castle Link Programming Support
- Convenient Transmitter Programming
- Auxiliary Wire Functionality for "on-the-fly" adjustments
- SmartSense Integrated Capacitors
- Removable 30mm Cooling Fan
- Integrated 4mm Bullet Connectors
- 12 AWG Power Wires
- Waterproof Switch
- Audible Alerts and LED Alerts for easy diagnoses
- ROAR Certified
- RECON G6 Certified

## PACKAGE CONTENTS

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The Mamba X ESC package includes:

- Mamba X ESC with Sensor Harness
- Coupon for free Castle Link USB
- Gearing Chart for Castle Motors
- Mamba Decals
- Driver's Ed Guide
- Quick Start Guide

## SETUP AND INSTALLATION

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### 1. Mounting the ESC

Securely mount the Mamba X ESC in your vehicle using double-sided tape or screws. Ensure adequate airflow around the ESC for optimal cooling, especially if operating in demanding conditions. The CNC aluminum case aids in heat dissipation.

### 2. Wiring Connections

Follow these steps for proper wiring:

1. **Motor Connection:** Connect the three motor wires from the ESC to your sensored or sensorless motor. For sensored motors, also connect the sensor harness. Ensure correct phase matching for sensored operation.
2. **Battery Connection:** Connect your 2S-6S LiPo battery to the ESC's power wires. The Mamba X features integrated 4mm bullet connectors. Ensure polarity is correct (red to positive, black to negative).
3. **Receiver Connection:** Plug the ESC's receiver wire into the throttle channel (typically channel 2) of your RC receiver.
4. **Auxiliary Wire (Optional):** The auxiliary wire can be connected to an open channel on your receiver to allow for "on-the-fly" adjustments of certain ESC parameters via your transmitter. Refer to the Castle Link software for configuration options.



**Image Description:** A close-up view of the Castle Creations Mamba X Electronic Speed Controller. The black aluminum case features the "MAMBA X" logo. Various colored wires, including thick red and black power wires with 4mm bullet connectors, and thinner signal wires, are

connected to the unit. A cooling fan is visible on top of the ESC. This image illustrates the physical appearance and primary connection points of the Mamba X ESC.

### 3. Calibration

Before first use, calibrate the ESC to your radio system. This ensures proper throttle and brake response. Consult the included Quick Start Guide or the Castle Creations website for detailed calibration procedures specific to your radio.

## OPERATING INSTRUCTIONS

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### 1. Powering On/Off

- **To Power On:** Ensure all connections are secure. Turn on your radio transmitter first, then connect the battery to the ESC and activate the waterproof switch. The ESC will emit audible tones and LED alerts during startup.
- **To Power Off:** Disconnect the battery from the ESC, then turn off your radio transmitter.

### 2. Programming with Castle Link

The Mamba X ESC is highly programmable via the Castle Link USB adapter (coupon included). Connect the ESC to your computer using the Castle Link and download the Castle Link software from the Castle Creations website. This software allows you to customize various parameters, including:

- Throttle curves
- Brake strength
- BEC voltage (5.25V-8.0V)
- Motor timing and type
- Cutoff voltage for LiPo batteries
- Auxiliary wire functions
- Data logging settings

### 3. Data Logging

The Mamba X features integrated data logging. This allows you to record and review critical performance data such as battery voltage, ESC temperature, motor RPM, and more. Access and analyze logged data using the Castle Link software to optimize your vehicle's setup and diagnose issues.

## MAINTENANCE

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- **Cleaning:** While the Mamba X is waterproof, it is recommended to clean it after use in wet or dirty conditions. Use a soft brush and compressed air to remove debris. Avoid using harsh chemicals.
- **Fan Inspection:** Regularly inspect the cooling fan for obstructions or damage. The fan is removable for cleaning or replacement.
- **Wire Connections:** Periodically check all wire connections for tightness and signs of wear or corrosion. Loose connections can lead to performance issues or damage.
- **Storage:** Store the ESC in a cool, dry place away from direct sunlight and extreme temperatures.

## TROUBLESHOOTING

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Problem	Possible Cause	Solution
ESC does not power on	Battery not connected, low battery voltage, faulty switch, incorrect polarity.	Check battery connection and charge. Ensure switch is on. Verify correct polarity.
Motor stutters or runs erratically	Incorrect motor wiring, sensor harness issue, motor timing incorrect, low battery.	Verify motor wire connections and sensor harness. Check motor timing in Castle Link. Charge battery.
No throttle response	ESC not calibrated, receiver not powered, radio interference, faulty receiver connection.	Recalibrate ESC to radio. Check receiver power and connections. Ensure radio is on.
ESC overheats	Insufficient airflow, gearing too high, motor over-stressed, fan not working.	Improve airflow. Adjust gearing. Check motor for damage. Inspect cooling fan.
Audible alerts/LED codes	Indicates specific error conditions (e.g., low voltage, over-temperature).	Refer to the Mamba X Quick Start Guide or Castle Creations website for a complete list of alert codes and their meanings.

## TECHNICAL SPECIFICATIONS

- **Input Voltage Range:** 2S-6S LiPo (25.2V max)
- **BEC Output:** 8A adjustable (5.25V-8.0V)
- **Continuous Current:** Not explicitly stated, but designed for extreme 1:10 scale applications.
- **Motor Support:** Sensored and Sensorless Brushless
- **Waterproof:** Yes
- **Datalogging:** Yes
- **Dimensions:** Approximately 3 x 3 x 3 inches (based on product dimensions)
- **Weight:** Not specified
- **Connectors:** Integrated 4mm Bullet Connectors (power wires)
- **Wire Gauge:** 12 AWG (power wires)

## WARRANTY INFORMATION

Castle Creations products are typically covered by a manufacturer's warranty against defects in materials and workmanship. For specific warranty terms, duration, and claim procedures, please refer to the official Castle Creations website or the warranty card included with your product. Keep your proof of purchase for warranty claims.

## CUSTOMER SUPPORT

For technical assistance, troubleshooting, or further information regarding your Mamba X ESC, please visit the official Castle Creations website or contact their customer support directly. Online resources often include FAQs, firmware updates, and detailed programming guides.

**Website:** [www.castlecreations.com](http://www.castlecreations.com)

**Contact:** Refer to the website for current contact methods (phone, email, support tickets).

