

## Spektrum SPMXAE1120HV

# Spektrum Avian 120 Amp Brushless Smart ESC 6S - 12S Instruction Manual

Model: SPMXAE1120HV | Brand: Spektrum

## 1. SAFETY INFORMATION

**WARNING:** Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury. This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not attempt disassembly, use with incompatible components or augment product in any way without the approval of Horizon Hobby, LLC. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

## 2. INTRODUCTION TO THE SPEKTRUM AVIAN 120 AMP BRUSHLESS SMART ESC

The Spektrum Avian 120 Amp Brushless Smart ESC (Electronic Speed Controller) is designed for use in remote-controlled aircraft, supporting 6S to 12S LiPo battery configurations. This Smart ESC integrates advanced technology to provide real-time telemetry data and enhanced safety features, simplifying the setup and operation of your RC model.

Key features include:

- Integrated Smart Technology for telemetry data.
- Support for 6S - 12S LiPo batteries.
- High-power BEC (Battery Eliminator Circuit) for reliable power to receiver and servos.
- Durable construction with efficient cooling.





Figure 4.1: Side view of the ESC, illustrating the main power input and motor output connections.



Figure 4.2: Detailed view of the three motor wire connections (A, B, C) on the ESC.

## 4.2 Mounting the ESC

Mount the ESC securely within your model, ensuring adequate airflow for cooling. Avoid mounting it near sensitive electronic components that could be affected by heat or electromagnetic interference. The ESC features built-in tabs for hard mounting.



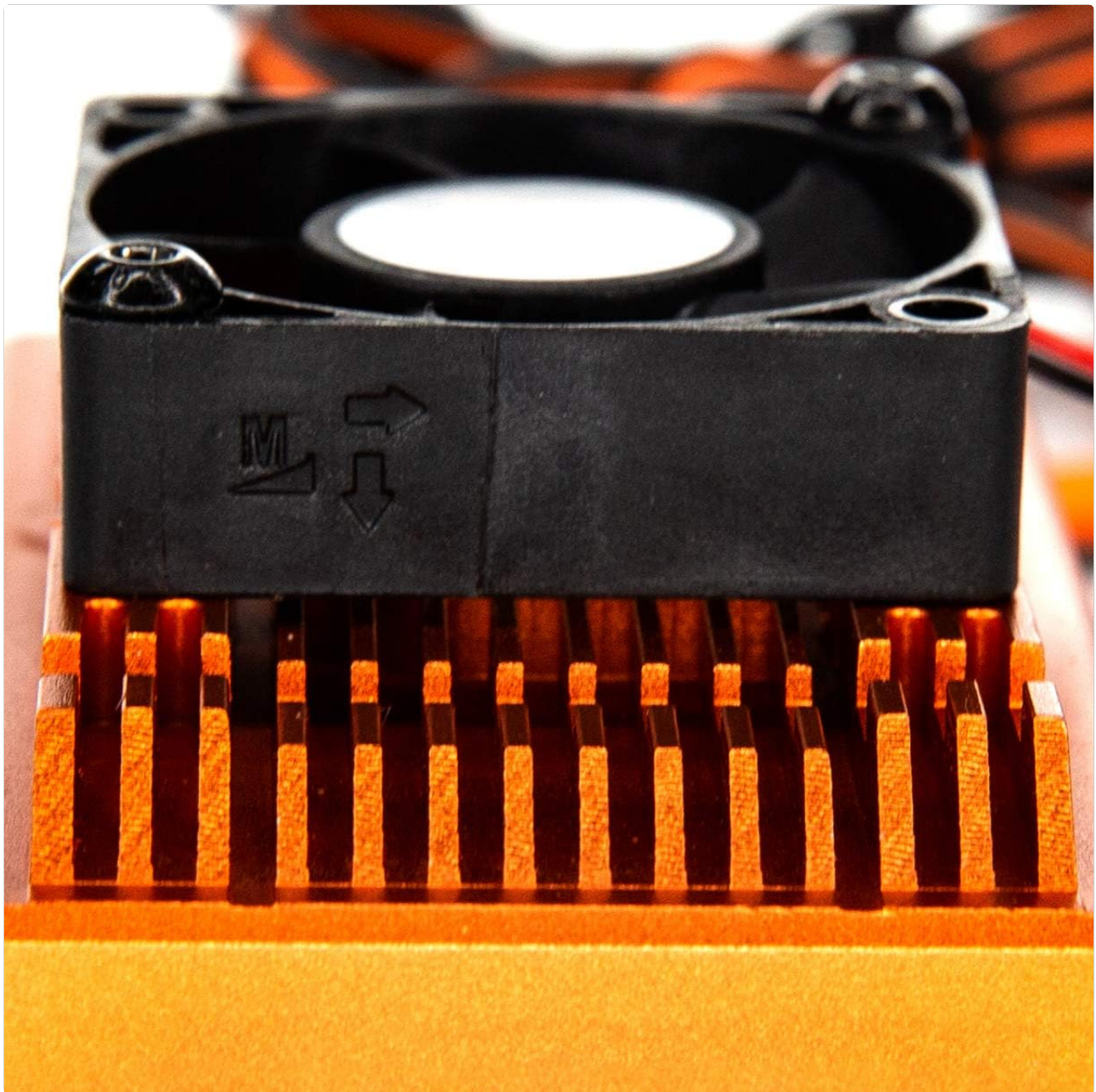


Figure 4.3: The ESC's heat sink and cooling fan, highlighting the importance of airflow for thermal management.

## 5. OPERATING THE SMART ESC

### 5.1 Smart Technology Integration

The Spektrum Avian Smart ESC is designed to work seamlessly with Spektrum Smart batteries and compatible Spektrum transmitters. This integration provides a streamlined experience with real-time telemetry data directly on your transmitter screen. When connected, the system can display vital information such as:

- Battery Voltage and Cell Voltage
- Motor Current
- ESC Temperature
- Motor RPM
- Battery Capacity Used
- Battery Cycle Count and Health

This real-time data helps you monitor your power system's health and performance, allowing for informed decisions during flight and preventing potential issues.

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Video 5.1: Demonstrates the integration and telemetry features of Spektrum Smart ESCs with a Spektrum transmitter.

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Video 5.2: Explains the benefits and functionality of Spektrum Smart Technology in RC electronics.

## 6. ESC PROGRAMMING AND UPDATES

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The Spektrum Avian Smart ESC can be easily adjusted, programmed, and updated using the Spektrum Smart Link app. This ensures your ESC always has the latest features and optimal performance settings.

Connect your ESC to a computer with the Spektrum Smart Link app installed to access various parameters and perform firmware updates. Refer to the Spektrum Smart Link app's instructions for detailed guidance on programming and updating procedures.

## 7. MAINTENANCE AND CARE

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- **Regular Inspection:** Periodically inspect the ESC for any signs of damage, loose connections, or excessive wear on wires and connectors.
- **Cleaning:** Keep the ESC clean from dirt, dust, and moisture. Use a soft brush or compressed air to remove debris from the heat sink and fan.
- **Storage:** Store the ESC in a dry, cool environment away from direct sunlight and extreme temperatures.
- **Waterproof Design:** While the ESC is designed to be waterproof, it is recommended to clean and dry it thoroughly after exposure to moisture to prevent long-term corrosion.



Figure 7.1: Capacitors on the ESC, which should be regularly inspected for any signs of damage or swelling.





Figure 7.2: The cooling fan, which should be kept clear of obstructions for effective heat dissipation.

## 8. TROUBLESHOOTING

If you encounter issues with your Spektrum Avian Smart ESC, consider the following common troubleshooting steps:

- **No Power/No Response:**
  - Check all battery and receiver connections for proper seating and polarity.
  - Ensure the battery is fully charged and in good condition.
  - Verify the ESC's power switch (if applicable) is in the ON position.
- **Motor Not Spinning/Incorrect Direction:**
  - Confirm motor wire connections (A, B, C) are secure. If the motor spins in the wrong direction, swap any two of the three motor wires.
  - Check throttle trim and sub-trim settings on your transmitter.
  - Ensure the ESC is properly calibrated to your transmitter's throttle range.
- **Overheating:**

- Ensure the ESC has adequate airflow and is not covered.
- Check for proper gearing or propeller size for your motor and model.
- Verify battery C-rating is sufficient for the current draw.

- **Telemetry Issues:**

- Ensure your Spektrum receiver and transmitter are Smart Technology compatible.
- Verify the ESC's signal wire is correctly connected to the receiver's telemetry port or throttle channel.
- Check for the latest firmware updates for both the ESC and your transmitter.

For further assistance, refer to the Spektrum website or contact customer support.

## 9. TECHNICAL SPECIFICATIONS

Feature	Specification
Model Number	SPMXAE1120HV
Brand	Spektrum
Current Rating	120 Amp
Battery Cells	6S - 12S LiPo
Product Dimensions	5.6 x 4.1 x 2.2 inches
Item Weight	14.4 ounces
Recommended Age	14 years and up

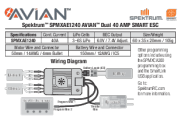

## 10. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries regarding your Spektrum Avian 120 Amp Brushless Smart ESC, please visit the official Spektrum website or contact Horizon Hobby, LLC customer service. Keep your proof of purchase for any warranty claims.





### Horizon Hobby, LLC Contact Information:

- [Contact Us Page](#)
- [Spektrum RC Website](#)

## Related Documents - SPMXAE1120HV

	<p><a href="#">Spektrum SPMXAE1240 Avian Dual 40A SMART ESC: Specifications &amp; Programming</a></p> <p>Detailed specifications and programming options for the Spektrum SPMXAE1240 Avian Dual 40 Amp SMART ESC, including wiring diagrams and technical features.</p>
	<p><a href="#">Spektrum SPMXAE1100 100 Amp Avian Smart ESC User Guide</a></p> <p>This document provides specifications, wiring diagrams, and programming parameters for the Spektrum SPMXAE1100 100 Amp Avian Smart ESC.</p>



	<p><a href="#">Spektrum SPMXAE1030 30 Amp Avian Smart ESC: Specifications and Programming Guide</a></p> <p>Detailed specifications and programming instructions for the Spektrum SPMXAE1030 30 Amp Avian Smart ESC, including motor/battery connections and parameter settings.</p>
	<p><a href="#">Spektrum Firma 25A Brushed Smart ESC with Dual Protocol Receiver - User Manual</a></p> <p>Detailed user manual for the Spektrum Firma 25A Brushed Smart ESC with Dual Protocol Receiver (SPMXSER1025). Includes setup, operation, troubleshooting, and warranty information from Horizon Hobby.</p>
	<p><a href="#">Manuale di Istruzioni: Spektrum Sensored 1/10th Scale Crawler Smart ESC (SPMXSE1060)</a></p> <p>Guida completa allo Spektrum Sensored 1/10th Scale Crawler Smart ESC (SPMXSE1060). Scopri installazione, configurazione, programmazione e consigli di sicurezza per il tuo veicolo RC crawler.</p>
	<p><a href="#">Spektrum Avian ESC Update and Programming Guide</a></p> <p>Comprehensive guide on how to update and program Spektrum Avian Electronic Speed Controllers (ESCs) using the SmartLink PC App. Covers firmware updates, general settings, throttle control, and governor setup for various Spektrum Avian ESC models.</p>