

AERO SELFIE 4IN1-ESC-DA1

AERO SELFIE 60A 4-in-1 ESC Instruction Manual

Model: 4IN1-ESC-DA1

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your AERO SELFIE 60A 4-in-1 Electronic Speed Controller (ESC). This high-performance ESC is designed for FPV drones, offering reliable control and efficient power management. Please read this manual thoroughly before use to ensure proper setup and safe operation.

2. SAFETY GUIDELINES

Adhering to these safety guidelines is crucial for preventing damage to the ESC, your drone, and ensuring personal safety.

- **Power Source:** Always disconnect the battery before performing any installation, maintenance, or wiring changes.
- **Polarity:** Ensure correct polarity when connecting the battery. Incorrect connections will cause immediate and irreversible damage.
- **Soldering:** Use appropriate soldering techniques and equipment. Cold solder joints or solder bridges can lead to malfunctions.
- **Insulation:** Insulate all exposed solder joints and wires to prevent short circuits.
- **Motor Rotation:** Verify motor rotation direction before flight. Incorrect rotation can lead to loss of control.
- **Environment:** Operate the ESC within its specified temperature and humidity ranges.
- **Children:** Keep electronic components and tools out of reach of children.

3. PACKAGE CONTENTS

Verify that all items listed below are included in your package:

- 1 x AERO SELFIE 60A 4-in-1 ESC
- 1 x XT60 Male Power Cable
- 1 x 8pin Cable (1.0mm Pitch, 5cm Length)
- 1 x Fixed Capacitor
- 5 x 3*8mm Silicon Grommets
- 5 x M3 Nuts
- 5 x M3*30 Inner Hexagon Screws

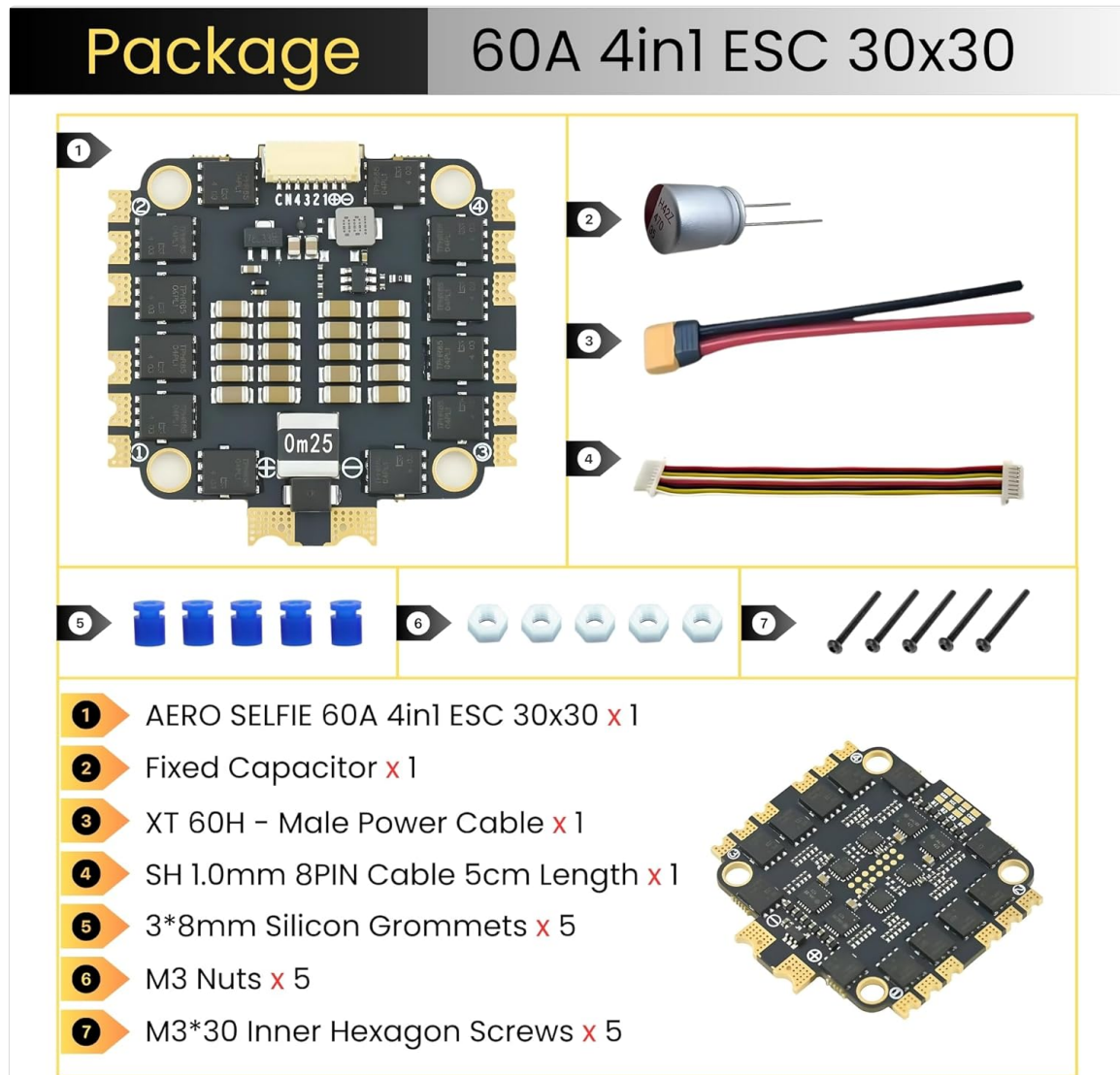


Figure 3.1: Package Contents. This image displays the AERO SELFIE 60A 4-in-1 ESC along with its accessories: XT60 power cable, 8-pin cable, fixed capacitor, silicon grommets, M3 nuts, and M3 screws.

4. PRODUCT OVERVIEW

4.1 Key Features

- **High-Performance:** Supports 6V to 28V input voltage (2S-6S LiPo) with 60A continuous current per channel and burst capabilities up to 80A.

- **Advanced Control:** Equipped with an 8-bit high-speed MCU for precise speed control.
- **Efficiency:** Features hardware synchronous rectification and regenerative braking for efficient energy recovery.
- **Compact Design:** Lightweight 13.8g 4-in-1 design for easy integration into FPV drones.
- **Reliability:** Operates efficiently in temperatures from -10°C to +55°C and humidity from 10% to 95%.
- **Safety Features:** Includes smart throttle signal detection, stalling protection, and motor sound indicators.
- **Supported Protocols:** Compatible with PWM, DSHOT, and ONESHOT.

4.2 Physical Dimensions

The AERO SELFIE 60A 4-in-1 ESC has a compact form factor suitable for various drone builds.

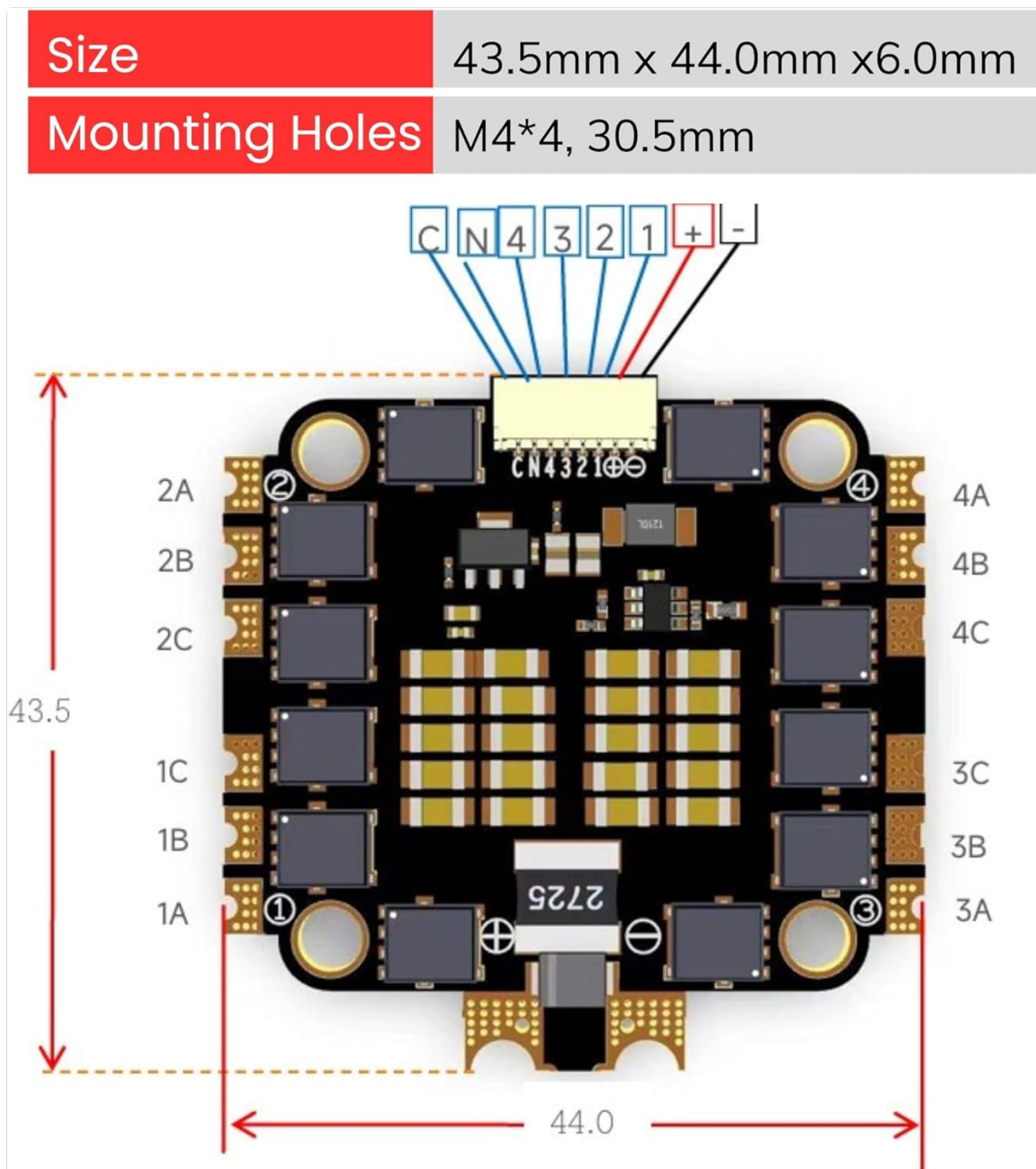


Figure 4.1: Physical Dimensions. This diagram illustrates the length (43.5mm) and width (44.0mm) of the ESC, along with the 30.5mm mounting hole spacing.

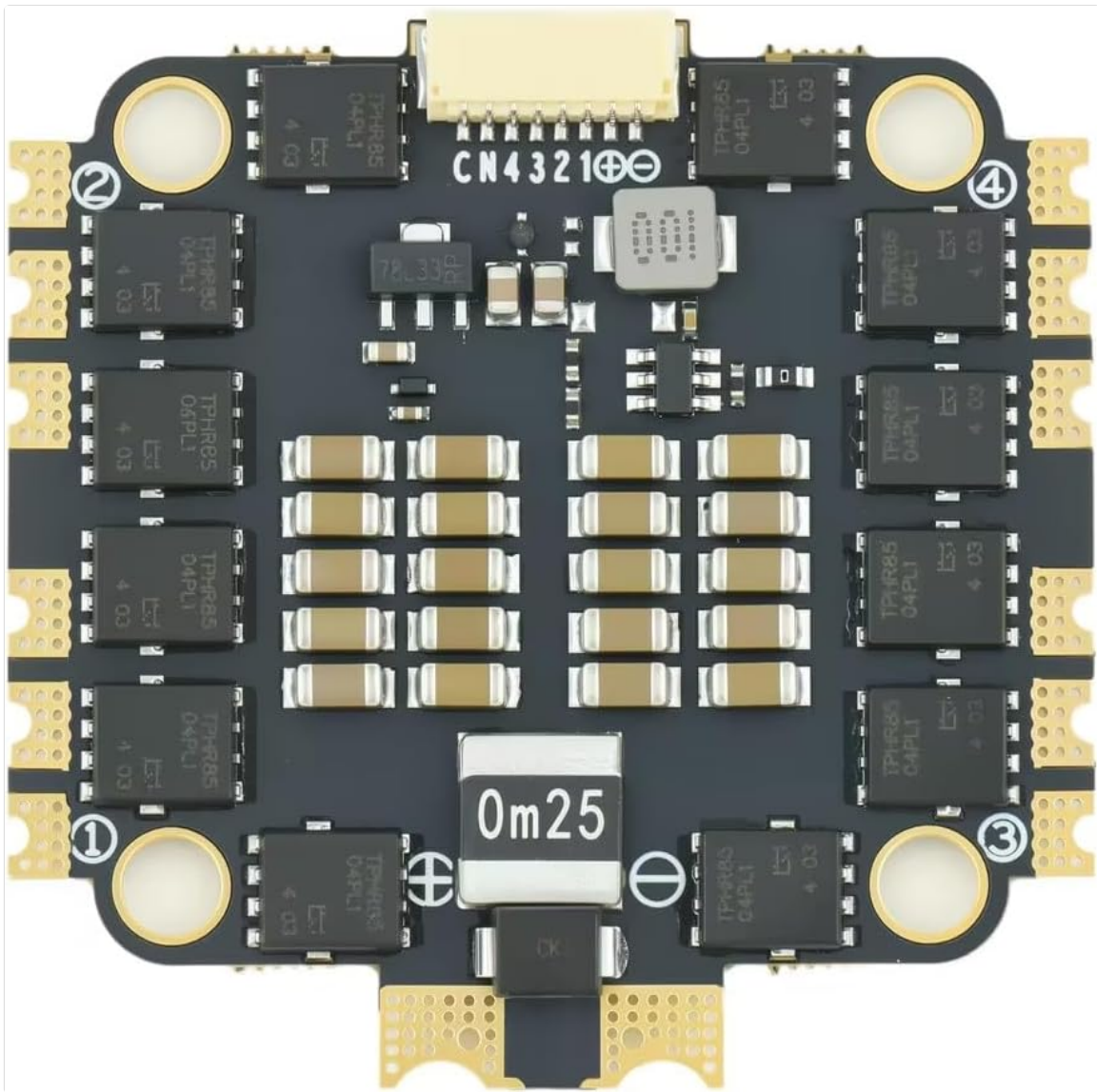


Figure 4.2: Top View of the ESC. This image provides a clear view of the top side of the ESC, highlighting the main components, capacitor bank, and motor output pads.

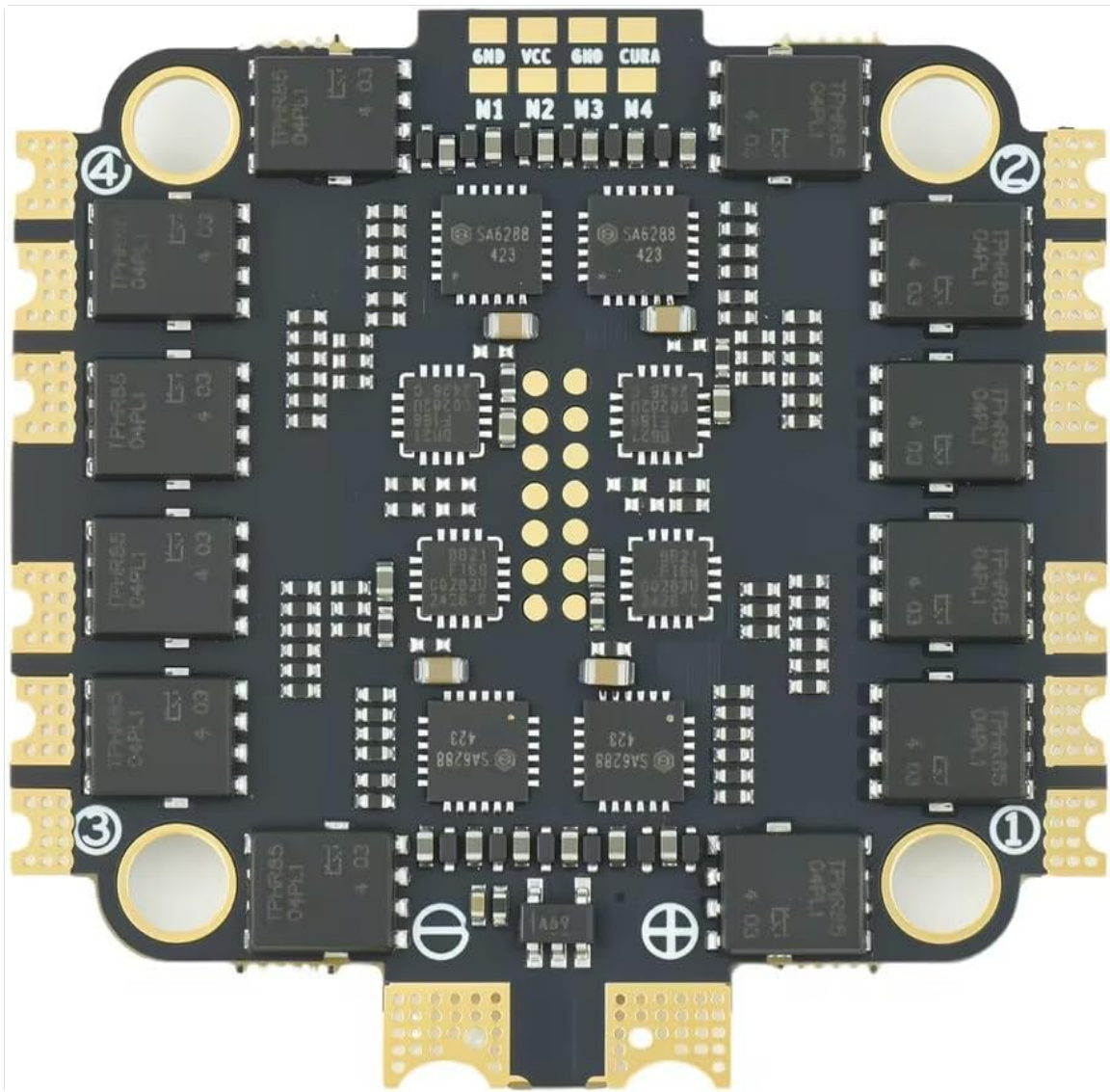


Figure 4.3: Bottom View of the ESC. This image shows the underside of the ESC, revealing the microcontroller (MCU) and other surface-mount components.



Figure 4.4: Angled View 1. A perspective view of the ESC, illustrating its compact form factor.

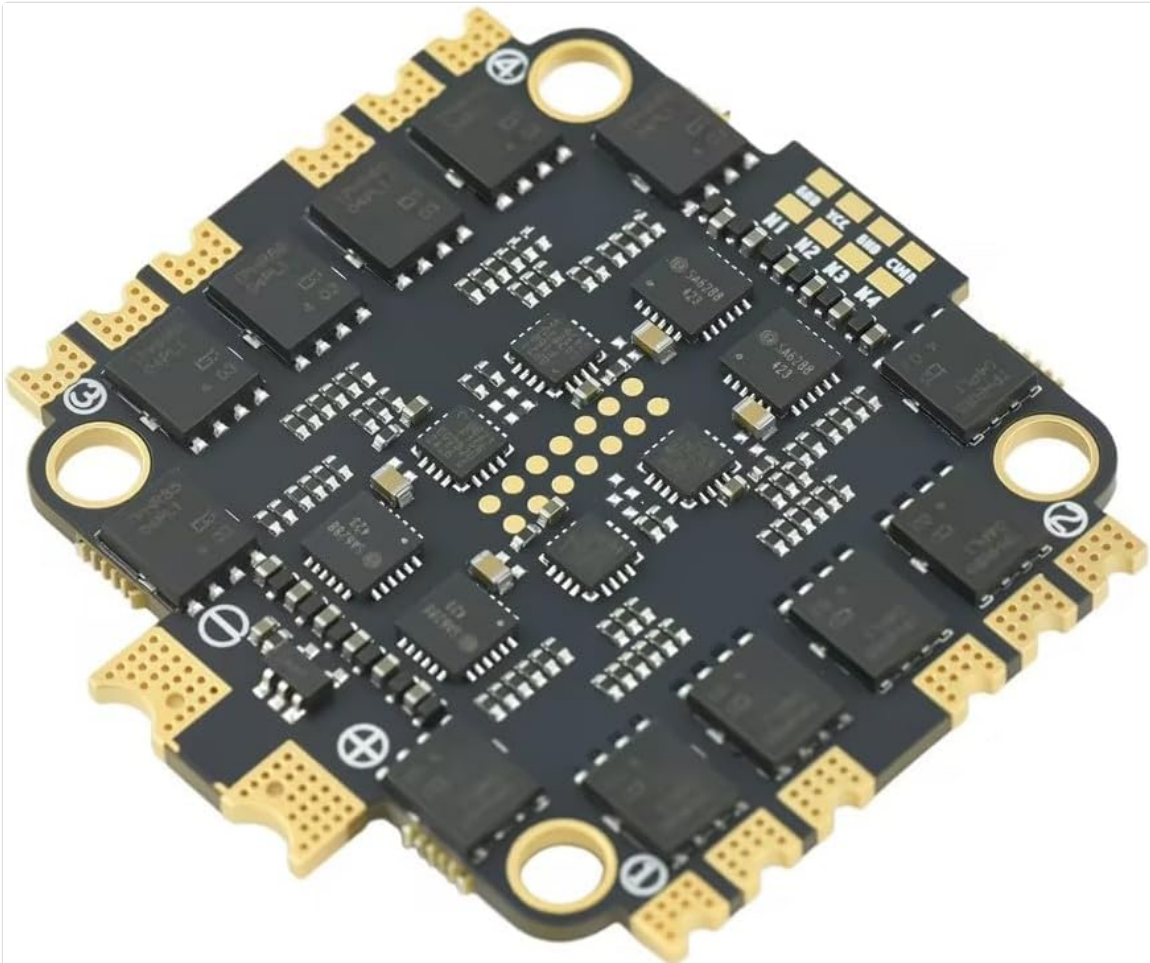


Figure 4.5: Angled View 2. Another perspective view, highlighting the various connection points and components.

5. SPECIFICATIONS

Detailed technical specifications for the AERO SELFIE 60A 4-in-1 ESC:

Feature	Specification
Model Name	4IN1-ESC-DA1
Input Voltage Range	6V ~ 28V
LiPo Cells Supported	2S ~ 6S
Continuous Current	60A * 4 channels
Peak Current	>80A * 4
MCU	8-bit High-Speed
Drive Signal	PWM, DSHOT, ONESHOT
Stalling Protection	Supported
Cooling Method	Natural cooling
Working Temperature	-10°C to +55°C
Humidity Range	10% to 95%
Storage Temperature	0°C to +25°C
Weight	13.8 grams
Size	43.5mm x 44.0mm x 6.0mm
Mounting Holes	M4*4, 30.5mm spacing
BEC Output	None
Protection Level	None
Hardware Version	1.0
Software Version	1.0

Product Specifications

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- BEC Output: None
- Drive Signal: PWM, DSHOT, ONESHOT
- Stalling Protection: Supported
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- Protection Level: None
- MCU: 8-bit High-Speed
- Working Temp: -10°C to +55°C
- Humidity Range: 10% to 95%
- Storage Temp: 0°C to +25°C
- Hardware Version: 1.0
- Software Version: 1.0

Note:

Bare metal
natural
aspiration test
data at 25°C
during the
same period

Model	4IN1-ESC-DA1
Cont. Current	45A*4 channels
Peak Current	>80A *4
Lipo Cells	2S ~ 6S
Weight	13.8 grams
Size	43.5mm x 44.0mm x 6.0mm
Mounting Holes	M4*4, 30.5mm

Figure 5.1: Product Specifications. This image presents a table summarizing the key technical specifications of the ESC, including voltage, current, dimensions, and features.

6. INSTALLATION AND WIRING

Careful installation and correct wiring are essential for the proper function of your ESC.

6.1 Wiring Diagram

Refer to the diagram below for connecting the ESC to your flight controller, motors, and power source.

Connection Diagram

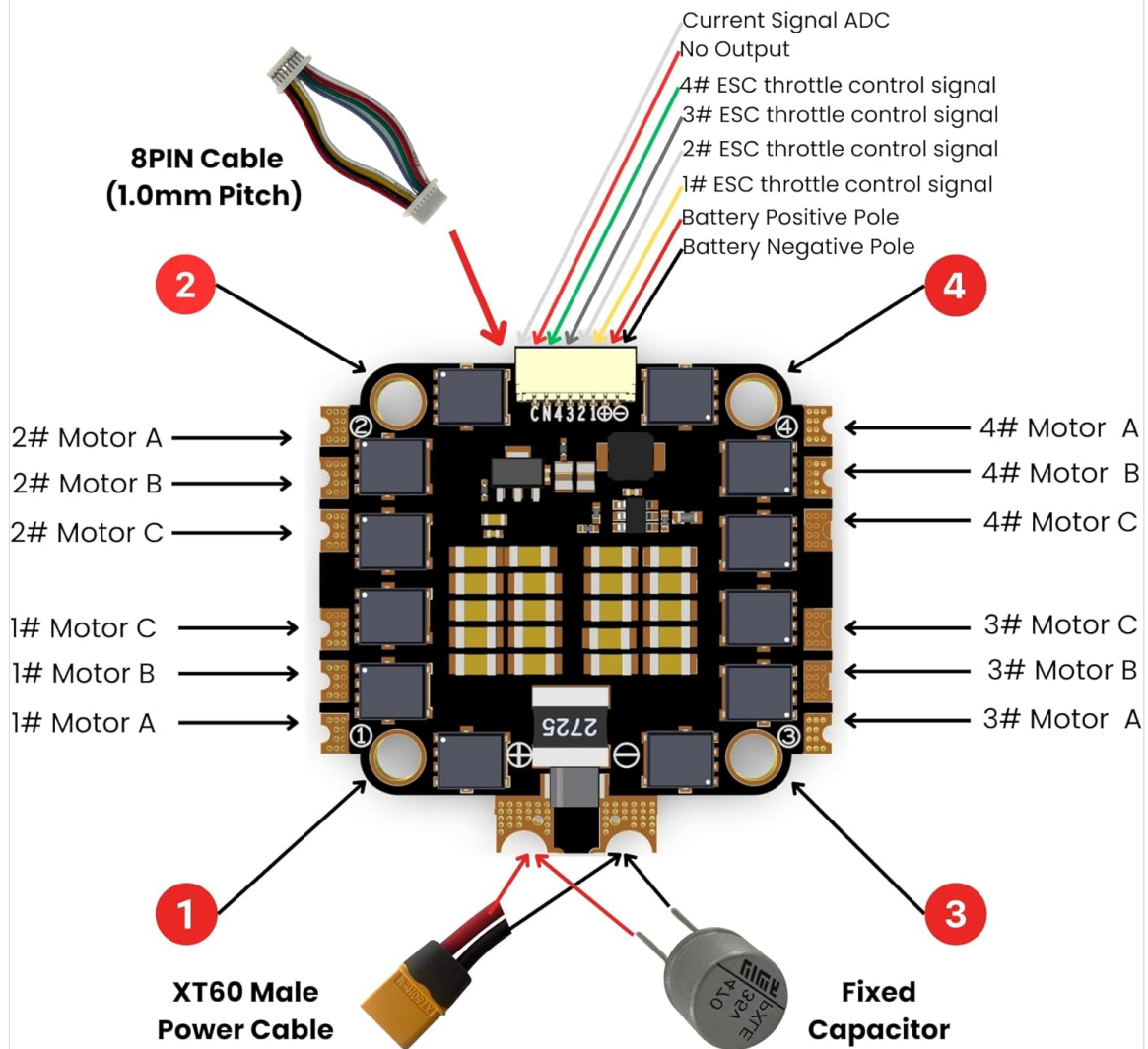


Figure 6.1: Connection Diagram. This diagram illustrates the connections for the XT60 power cable, fixed capacitor, 8-pin cable to the flight controller, and motor wires (Motor A, B, C for each of the four motors).

- **Power Connection (1):** Solder the XT60 Male Power Cable to the designated positive (+) and negative (-) pads on the ESC. Ensure correct polarity.
- **Fixed Capacitor (3):** Solder the included fixed capacitor to the main battery pads (positive to positive, negative to negative) for voltage spike suppression.
- **Flight Controller Connection (2):** Use the 8-pin cable (1.0mm Pitch) to connect the ESC to your flight controller. Ensure the pinout matches your flight controller's specifications. The cable typically carries battery positive, battery negative, and individual ESC throttle control signals (1#, 2#, 3#, 4#).
- **Motor Connections (4):** Solder the three wires from each motor to the corresponding motor pads (A, B, C) for each of the four ESC channels. The order of these wires determines motor rotation; this can be adjusted in your flight controller software if needed.

6.2 Mounting

Mount the ESC securely to your drone frame using the provided M3 nuts and M3*30 screws. Utilize the 3*8mm silicon grommets to absorb vibrations and protect the ESC from mechanical stress. Ensure there is adequate airflow around the ESC for natural cooling.

7. OPERATION

The AERO SELFIE 60A 4-in-1 ESC is designed for straightforward operation once correctly installed and configured.

7.1 Supported Protocols

This ESC supports common digital and analog protocols for communication with your flight controller:

- **PWM:** Pulse Width Modulation (analog signal).
- **DSHOT:** Digital Shot (digital signal, DSHOT150, DSHOT300, DSHOT600). DSHOT offers improved noise immunity and faster communication.
- **ONESHOT:** A faster analog protocol than standard PWM.

Select the appropriate protocol in your flight controller's configuration software (e.g., Betaflight, INAV).

7.2 Advanced Features

- **Stalling Protection:** The ESC includes features to detect and protect against motor stalling, which can prevent damage to the motors and ESC.
- **Motor Sound Indicators:** Upon successful initialization, the ESC will emit a series of beeps through the motors, indicating it is ready for arming.
- **Regenerative Braking:** This feature allows the ESC to recover energy during deceleration, improving efficiency and braking response.

8. MAINTENANCE

To ensure the longevity and optimal performance of your AERO SELFIE ESC, follow these maintenance guidelines:

- **Regular Inspection:** Periodically check for loose connections, damaged wires, or signs of overheating (discoloration on components).
- **Cleaning:** Keep the ESC free from dust, dirt, and moisture. Use a soft brush or compressed air for cleaning. Avoid using liquids.
- **Storage:** Store the ESC in a dry, cool environment, ideally within the recommended storage temperature range of 0°C to +25°C.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates. Follow update instructions carefully.

9. TROUBLESHOOTING

If you encounter issues with your AERO SELFIE ESC, consider the following troubleshooting steps:

- **No Power/No Initialization Beeps:**
 - Check battery connection and polarity.
 - Inspect power cables (XT60) for damage or poor solder joints.

- Ensure the fixed capacitor is correctly installed and not shorted.
- Verify the 8-pin cable connection to the flight controller is secure and correctly oriented.
- **Motors Not Spinning/Irregular Spinning:**
 - Confirm motor wires are securely soldered to the ESC pads.
 - Check for continuity in motor wires.
 - Verify ESC protocol settings in your flight controller software match the ESC's capabilities (DSHOT, ONESHOT, PWM).
 - Calibrate ESCs if necessary (though DSHOT typically does not require calibration).
 - Inspect for any physical obstructions preventing motor rotation.
- **ESC Overheating:**
 - Ensure adequate airflow around the ESC.
 - Check for motor issues (e.g., bent shafts, damaged bearings) that could cause excessive current draw.
 - Verify propeller size and pitch are appropriate for your motors and battery voltage.
- **Voltage Fails to Send Through Connector (as reported by some users):**
 - If the connector to the flight controller does not supply power, inspect the connector pins for damage or misalignment.
 - As an alternative, if your flight controller supports it, you may need to hardwire power directly from the main battery pads on the ESC to the flight controller's power input pads, bypassing the connector for power delivery. Consult your flight controller manual for appropriate power input points.

10. SUPPORT INFORMATION

For further assistance, technical support, or warranty inquiries, please refer to the official AERO SELFIE website or contact your retailer. Keep your purchase receipt as proof of purchase.

Manufacturer: Shenzhen Ruijie Innovation Technology Co.,Ltd

Brand: AERO SELFIE