

ZERODRAG *BOOST*



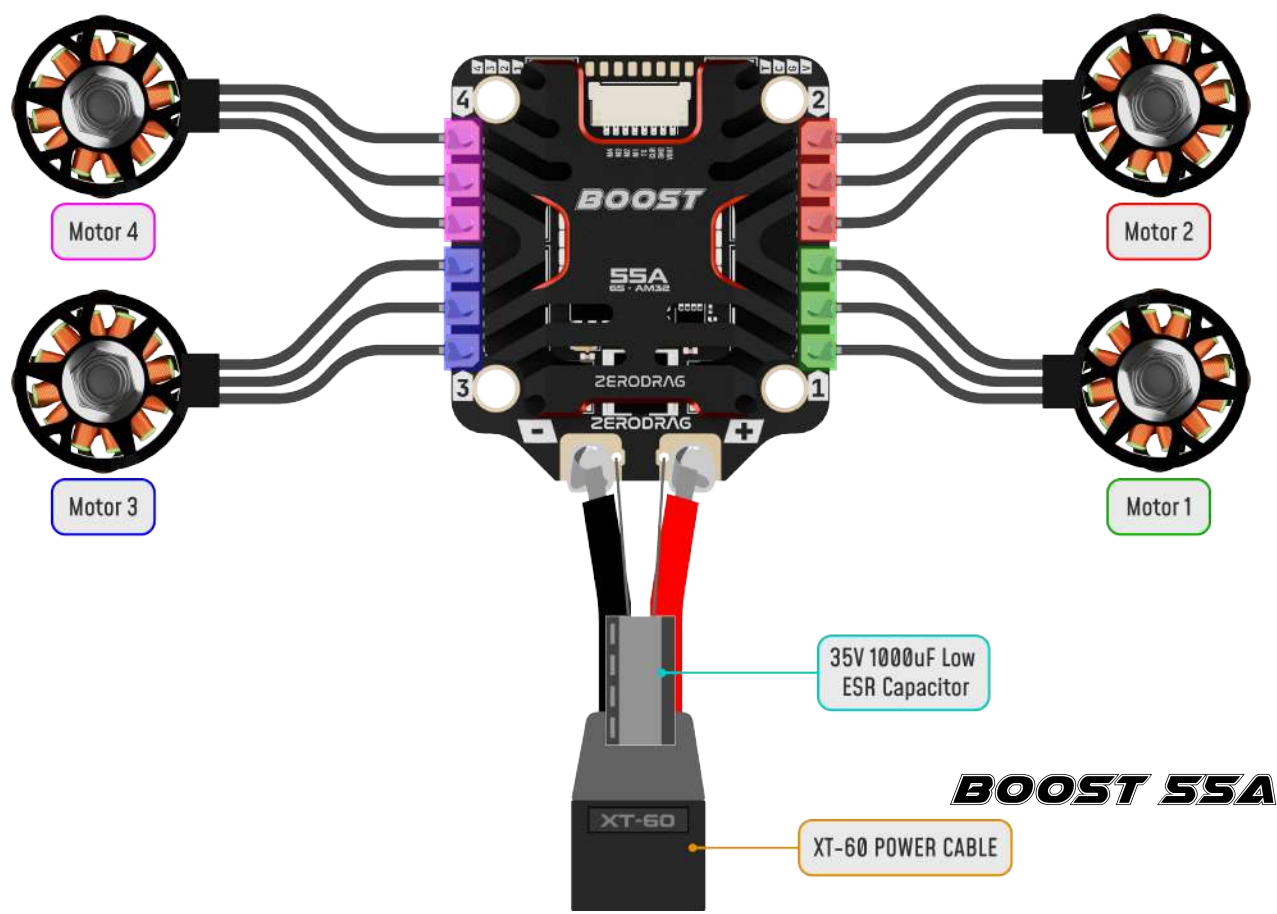
**WHEN
PERFORMANCE
MATTERS**

USER MANUAL

VERSION 1.0
01/01/2025

BOOST 55A

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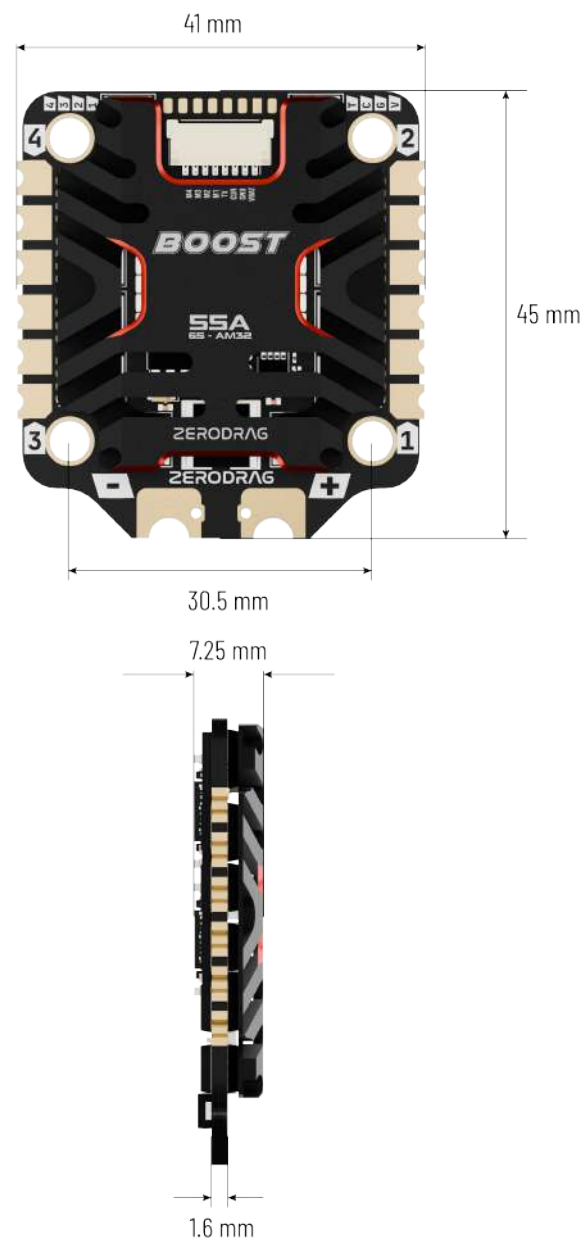


1. Product Description

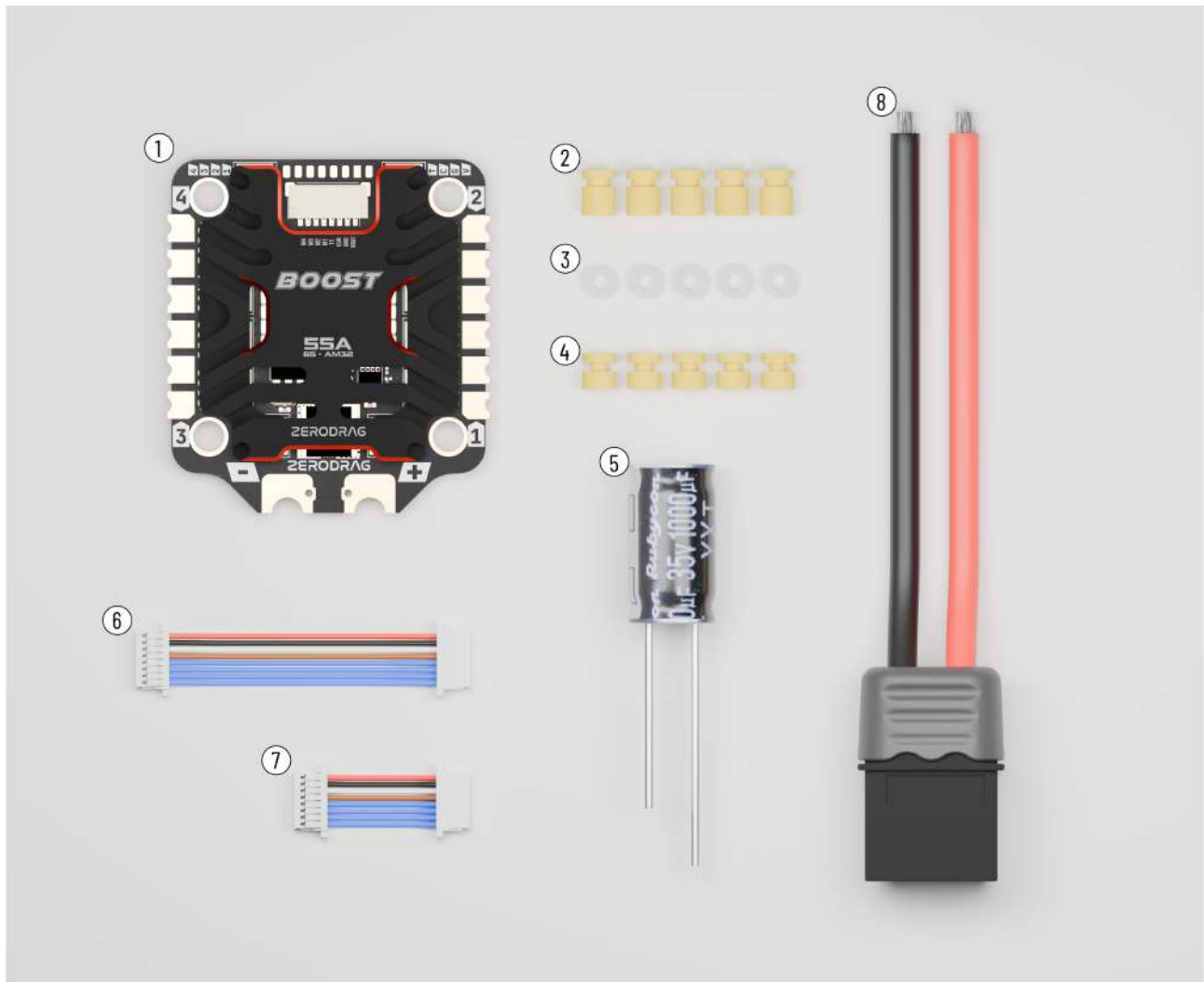
The Zerodrag BOOST AM32 55A 4-in-1 ESC is a high-performance electronic speed controller designed for various UAVs and remote control applications. This ESC supports a 3s-6s LiPo power input and uses reliable AM32 firmware, providing smooth throttle response and precise control. With current sensing and ESC telemetry support, this ESC offers advanced monitoring capabilities for optimized performance.

2. Specification

Power Input	3s-6s LiPo
Mounting Pattern	30.5 x 30.5mm, with 4mm hole size
Weight	17g
MCU	QF32 (AT32 target)
Protocols	DSHOT 150/300/600
Firmware	AM32
Features	Current Sensing, ESC Telemetry
TVS Protective Diode	Yes
Heat Sink	Yes
External Capacitor	35V 1000uF Rubycon capacitor

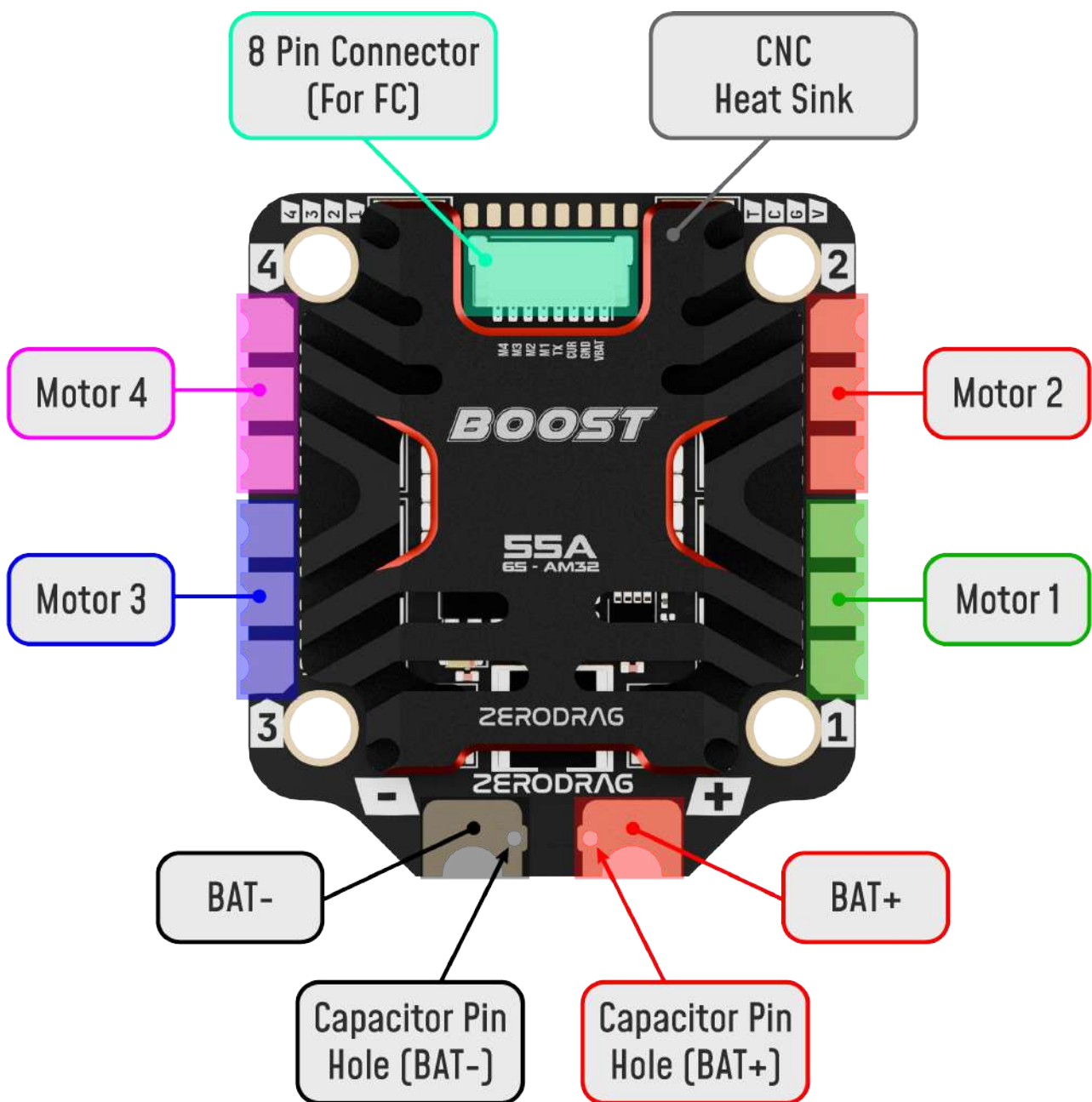


3. In The Box



- 1 x Zerodrag BOOST AM32 55A 4-in-1 ESC
- 1 x XT60H Pigtail
- 1 x Capacitor (35V 1000uF Rubycon)
- 5 x Short Gummies (6mm)
- 5 x Tall Gummies (8mm)

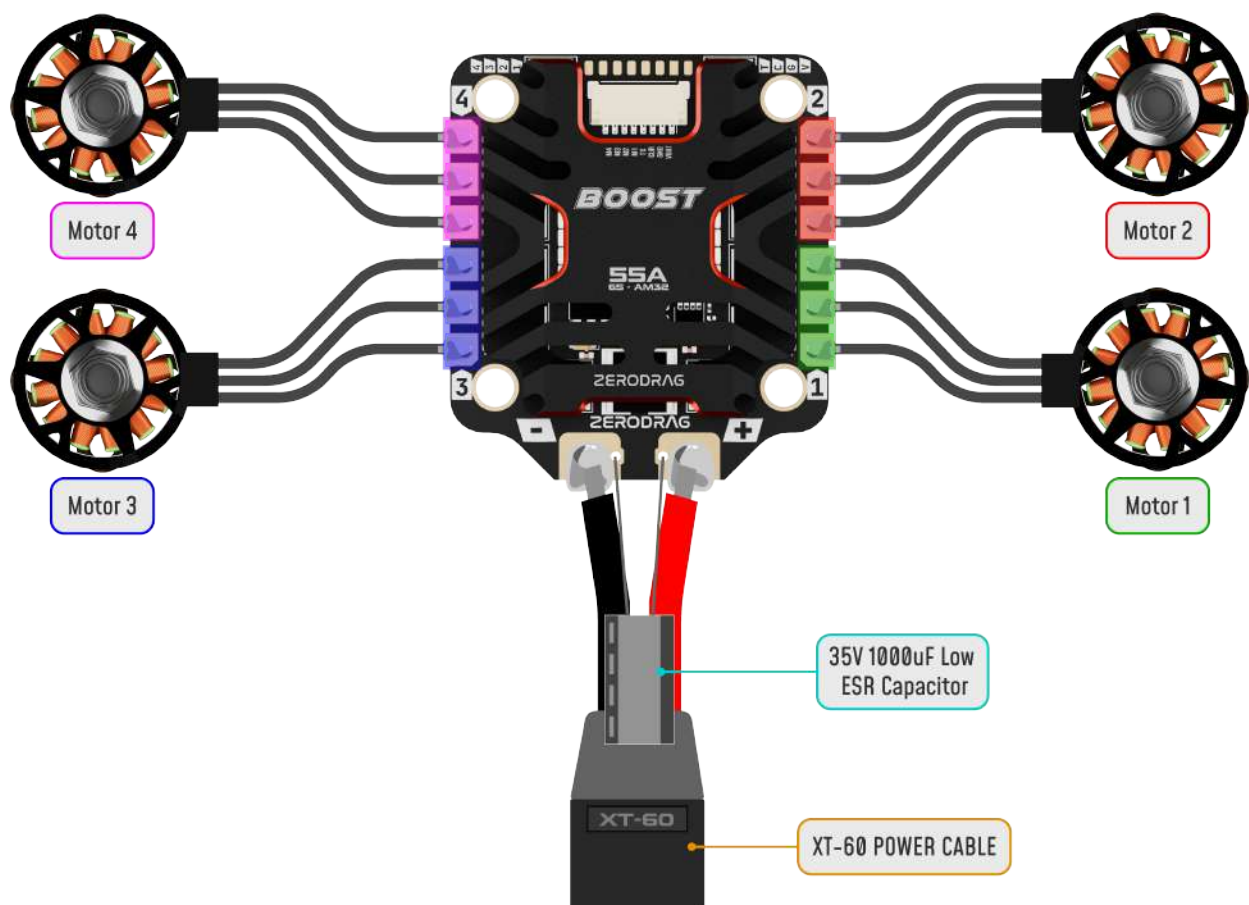
4. Layout



5. Installation Guide

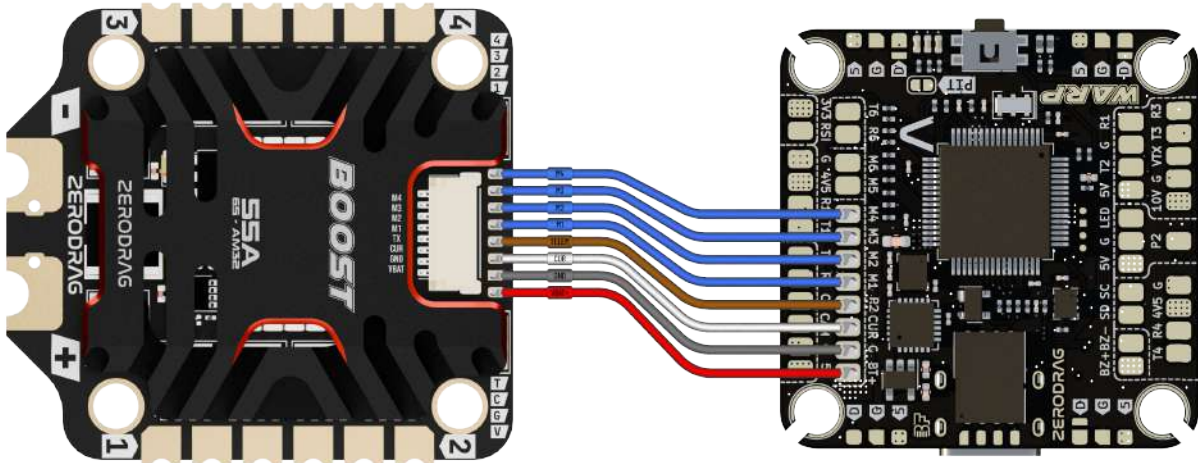
1. Mounting the ESC:

- Attach the ESC securely to the frame, aligning it with the 30.5 x 30.5mm mounting pattern. Use screws with a 4mm diameter hole.
- Ensure that the ESC is oriented correctly, as incorrect orientation can impact performance.
- Use the provided Low ESR 35V 1000uF Rubycon capacitor to prevent voltage spikes that could damage the ESC, especially during power-ups.



2. Connecting to the Flight Controller:

- The BOOST ESC uses the Betaflight JST SH connector standard, making connection to the flight controller easy and streamlined.
- Ensure the connector is oriented correctly and verify the pin configuration described below.

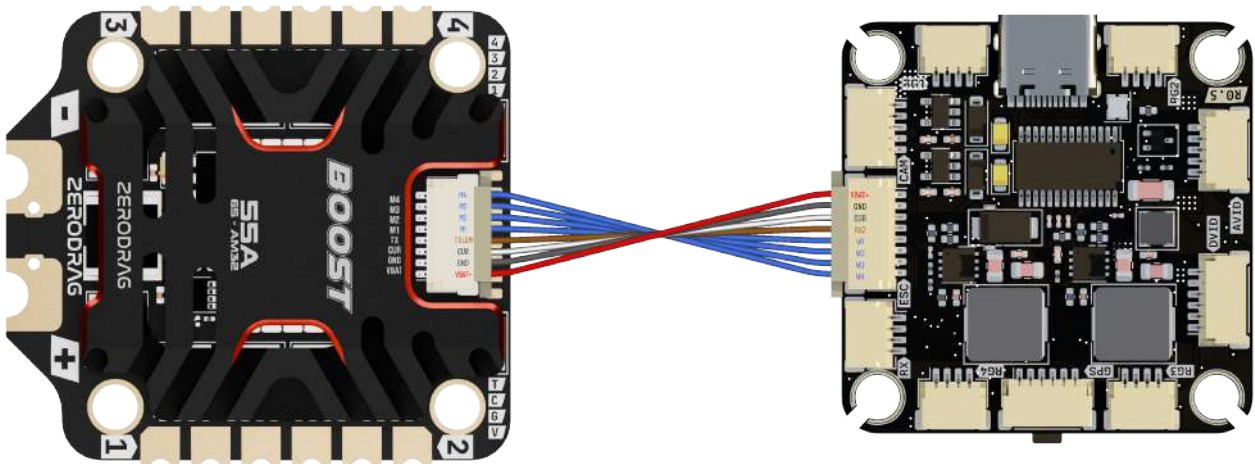


6. Wiring and Connection Diagram

The pin configuration for the ESC-to-FC connection, using the Betaflight JST SH standard, is as follows:

Pin #	Signal Name	Description
1	V+ (VBAT)	Power
2	GND	Ground
3	Current	Current sensing
4	Telemetry	Telemetry data
5	Signal 1	Motor 1 control signal
6	Signal 2	Motor 2 control signal
7	Signal 3	Motor 3 control signal
8	Signal 4	Motor 4 control signal

Note: The **+** connection carries the VBAT voltage directly from the battery. It is recommended to use twisted wires to prevent connection mirroring errors and ensure consistent wiring order. Additionally, while the VBAT connection can power other components, it's advisable to use a regulated 10V/2A power source for sensitive devices like VTX or cameras to minimise voltage fluctuation risks.



7. Firmware and Protocols

The BOOST 55A ESC uses AM32 firmware, which enhances the responsiveness and compatibility of this ESC across various flight controllers. The firmware supports DSHOT 150/300/600 protocols, allowing users to select the preferred protocol based on their system requirements.

- AM32 Firmware Updates and Configuration:
 - Download and install the AM32 configuration tool or visit the online configurator. [\[Link\]](#)
 - Use the tool to configure ESC parameters, adjust motor direction, and perform firmware updates.

8. Current Sensing and Telemetry

This ESC includes built-in current sensing and telemetry capabilities to provide real-time data on power consumption and performance. For optimal use:

- **Connecting Telemetry:** Attach the telemetry wire to the appropriate input on the flight controller.
- **Monitoring Data:** View telemetry data through the flight controller's interface, displaying information such as current draw and voltage levels.

9. ESC Calibration and Configuration

- **Calibration:** Most DSHOT-enabled ESCs, including the BOOST 55A, do not require manual calibration. However, you may need to update the firmware or recalibrate if issues occur.
- **Motor Direction Adjustment:** Motor direction can be changed directly in the AM32 configuration software without physical rewiring. Simply connect to the AM32 tool, navigate to the motor configuration page, and adjust direction as needed.

10. Safety and Precautions

To ensure safe operation, follow these precautions:

- **Voltage Limits:** Operate only within the recommended 3s-6s LiPo voltage range.
- **Avoid Overcurrent Situations:** Ensure proper motor and propeller pairing to prevent overcurrent.
- **Environmental Conditions:** Avoid exposure to extreme temperatures and moisture, which may damage the ESC.

11. Troubleshooting

If you encounter any issues, refer to the solutions below:

- ESC Not Responding: Verify wiring connections and check for correct polarity.
- Telemetry Not Showing: Ensure the telemetry wire is properly connected to the flight controller.
- Error Signals: Check for any unusual beeping patterns, indicating a connection or protocol mismatch.

12. Contact

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- 🌐 LinkedIn: <https://www.linkedin.com/company/zerodrag/>
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