SEQURE SQESC 14200 Pro

SEQURE SQESC 14200 Pro Brushless ESC Instruction Manual

Model: SQESC 14200 Pro

1. PRODUCT OVERVIEW

The SEQURE SQESC 14200 Pro is a high-performance 200A Brushless Electronic Speed Controller designed for various RC applications, including crawler cars, helicopters, model ships, and off-road vehicles. It features a robust design with effective heat dissipation and supports a wide range of signal protocols and programming adjustments.

- **Firmware:** ESCape32, Processor: STM32G071
- **Input Voltage:** DC 18V-59V (5-14S Lipo)
- **Continuous Current:** 200A, Peak Current: 350A
- **Adjustable BEC:** 6V, 7.4V, 8.4V, 12V (15A continuous, 35A peak)
- **Supported Protocols:** Dshot (All), PWM, Oneshot, Multishot, etc.
- **Advanced Features:** RPM specialized signal, throttle calibration, current detection, motor steering, telemetry signal, RGB LED light settings.
- **Protection:** Low voltage, temperature, locked rotor, and current protection.

2. WHAT'S IN THE BOX

- Electric Speed Controller (SQESC 14200 Pro) x 1
- 5V Fan x 1
- 4*250mm Black Tie Straps x 2
- Hexagonal Screws x 10
- Transparent Heat Shrinkable Sleeve x 4

3. SPECIFICATIONS

Feature	Specification
Model	SQESC 14200 Pro
Processor	STM32G071
Input Voltage	DC 18V-59V (5-14S Lipo)
Continuous Current	200A
Peak Current	350A
Supported Firmware	ESCape32
Signal Protocols	Dshot (All), PWM, Oneshot, Multishot, etc.
BEC Output	6V/7.4V/8.4V/12V, 15A Continuous, 35A Peak
Fan	5V 0.5A continuous current
Functions	Forward, Reverse, Brake
Programmable Parameters	Motor timing, throttle calibration, current detection, motor steering, telemetry signal, RGB LED light settings
Power Cable	8AWG silicone wire 160mm
Motor Cable	10AWG silicone wire 160mm
Product Dimensions (L*W*H)	96mm * 46mm * 38mm (Not including wire)
Product Weight	293g (Including wire)
Applications	Multi-axis UAV, fixed-wing drones, crop protection aircraft, helicopters, multi rotor drones, climbing cars, off-road model vehicles, model ships, surfboards, water sports products, etc.

Physical Dimensions: 16.3 x 1.8 x 1.49 inches. **Item Weight:** 11.2 ounces.

4. SETUP AND INSTALLATION

4.1 Wiring Diagram

Proper wiring is crucial for safe and optimal performance. Refer to the diagram below for connecting the ESC to your motor and battery.
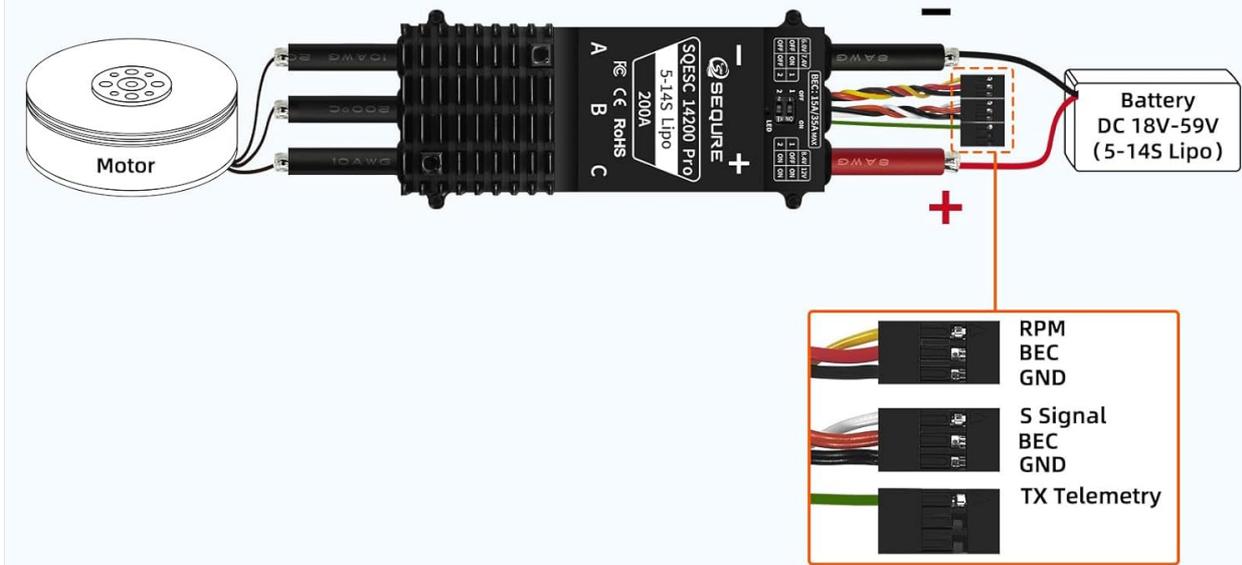
Wiring Diagram

Figure 4.1: Wiring diagram showing connections for motor, battery, signal, BEC, GND, and telemetry.

The diagram illustrates the connections: Motor (A, B, C phases), Battery (DC 18V-59V, 5-14S Lipo), RPM, BEC, GND, S Signal, and TX Telemetry.

4.2 BEC Voltage Adjustment

The SQESC 14200 Pro features a dip switch system for adjusting the BEC output voltage. This allows precise adjustment to match your receiver and servo requirements.

SQESC 14200 Pro Is Equipped With A Dip Switch System To Adjust BEC

Convenient to precisely adjust the output voltage
BEC: 6V/7.4V/8.4V/12V 15A continuous current, 35A peak current

Figure 4.2: BEC dip switch settings for 6V, 7.4V, 8.4V, and 12V output. The continuous current is 15A, with a peak current of 35A.

Ensure the correct voltage is selected before powering on your system to prevent damage to connected components.

4.3 Installation Hole Position

Refer to the following diagram for the installation hole positions and dimensions to securely mount your ESC.
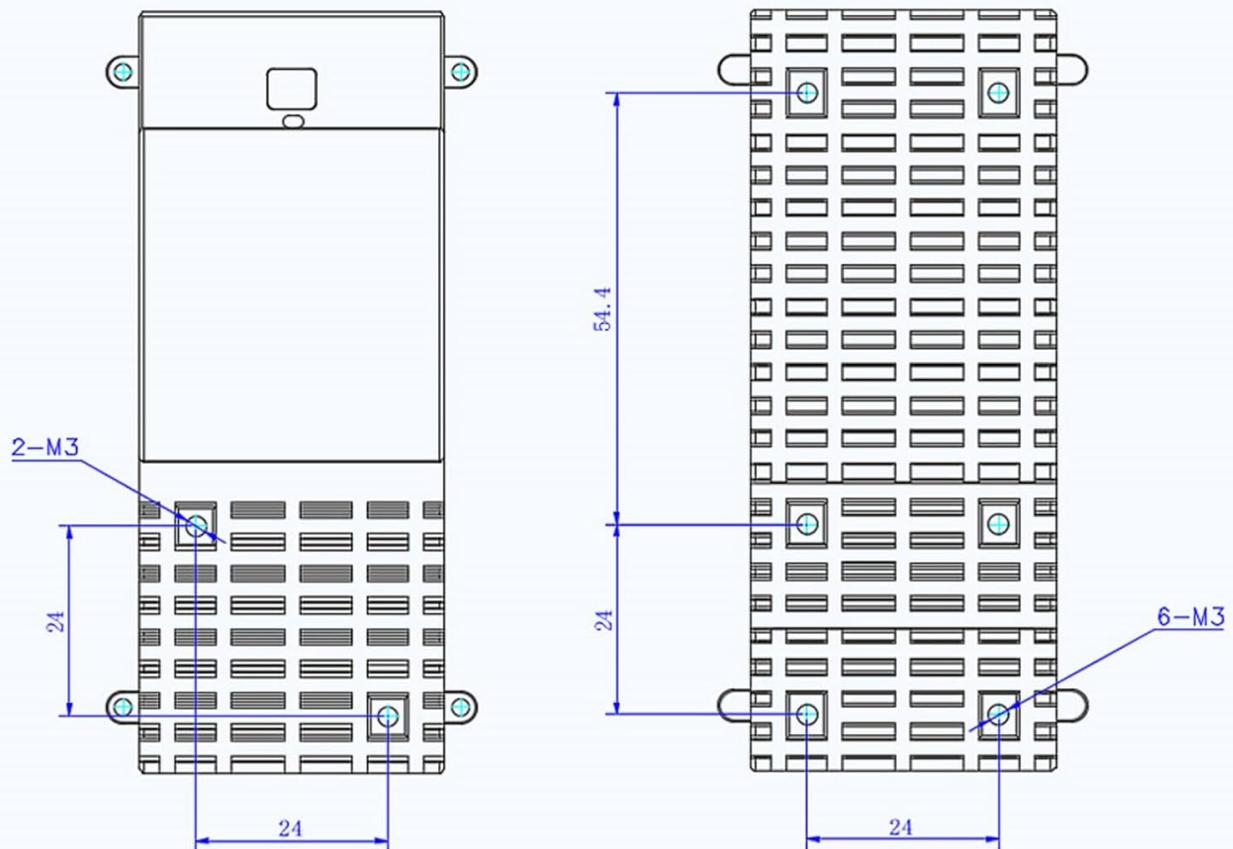
Figure 4.3: Top and bottom views of the ESC with M3 screw hole positions and 24mm spacing indicated.

5. OPERATING INSTRUCTIONS

5.1 Initial Power-Up and Throttle Calibration

Upon initial power-up, the ESC automatically detects the throttle signal. For optimal performance and safety, it is recommended to perform a throttle calibration with your transmitter. Consult your transmitter's manual for specific throttle calibration procedures.

5.2 Programming Parameters

The SQESC 14200 Pro supports visual programming parameter adjustment. This tool allows you to customize various settings such as motor timing, throttle calibration, current detection, motor steering, telemetry signal, and RGB LED color lights. Refer to the official SEQURE website for the latest programming software and detailed instructions.

5.3 Application Scenarios

The ESCape32 firmware makes this ESC suitable for a wide range of RC models requiring precise speed control and robust power delivery.

Figure 5.1: Examples of RC models compatible with the SQESC 14200 Pro, including helicopters, model ships, and crawler cars.

6. MAINTENANCE

To ensure the longevity and reliable performance of your ESC, follow these maintenance guidelines:

- **Heat Dissipation:** The ESC is equipped with a CNC metal radiator for effective heat dissipation. Ensure the radiator fins are kept clean and free from debris to maintain optimal cooling.
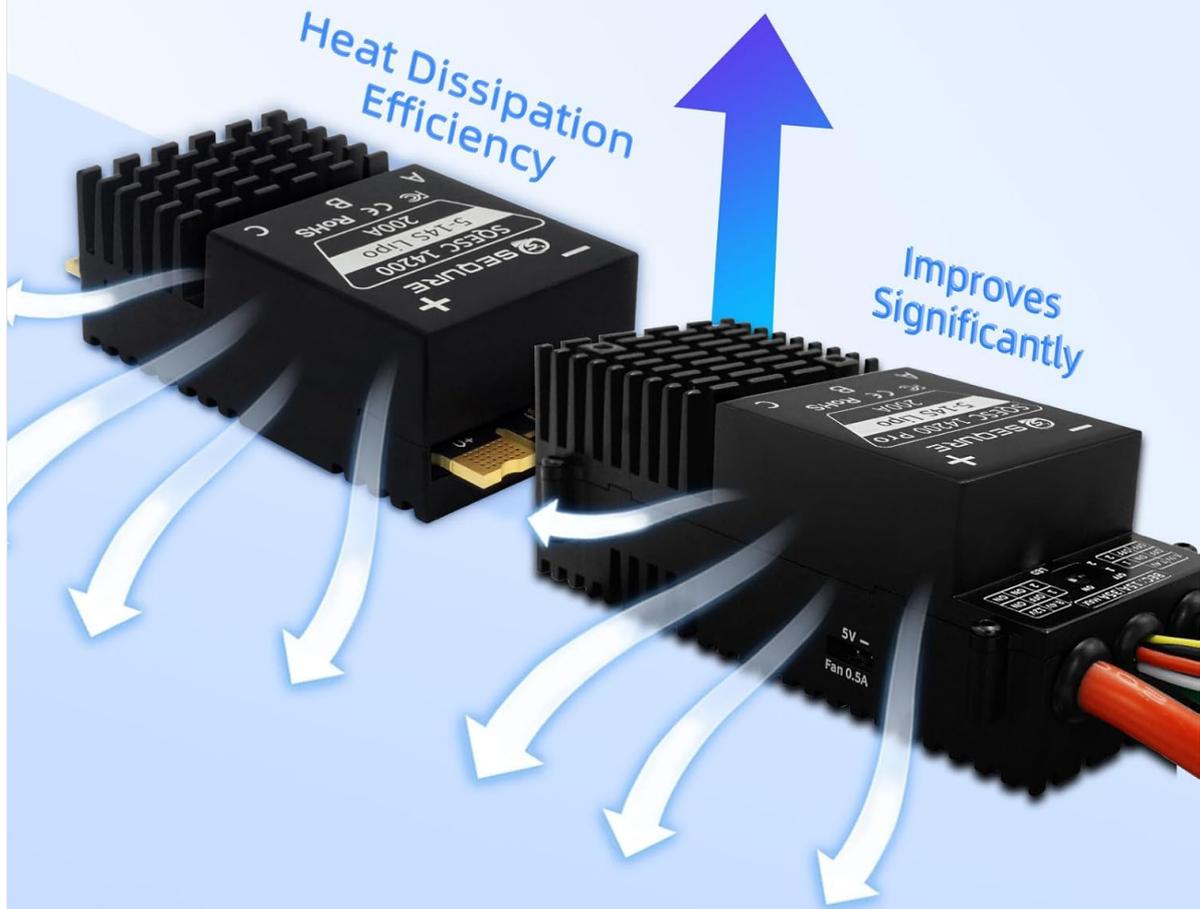
Figure 6.1: The metal aluminum radiator ensures continuous stable operation by efficiently dissipating heat.

- **Cable Integrity:** Regularly inspect all power and signal cables for any signs of wear, cuts, or damage. The high-quality twisted pair cables are designed to reduce interference, but physical damage can compromise performance.
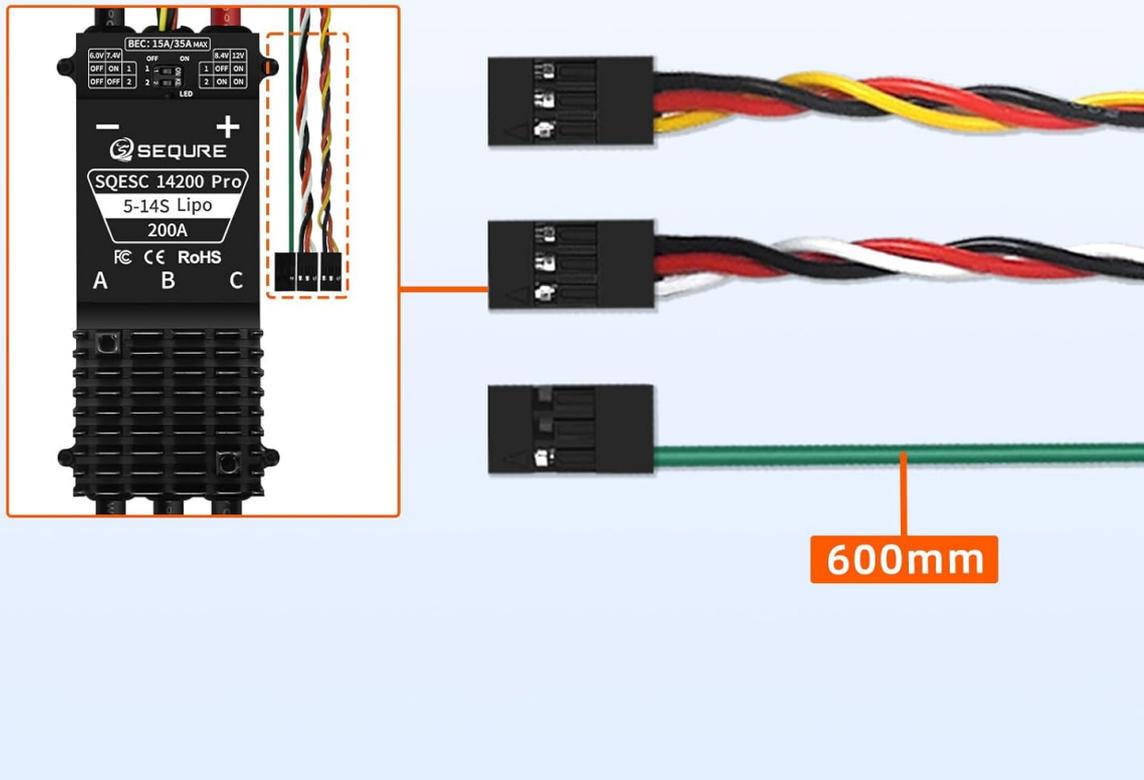
Figure 6.2: High quality twisted pair cables effectively reduce interference during signal transmission, ensuring stable and precise transmission.

- **Cleanliness:** Keep the ESC clean and dry. Avoid exposure to moisture, dust, and corrosive substances.
- **Secure Mounting:** Ensure the ESC is securely mounted using the provided tie straps and screws to prevent movement and potential damage during operation.

7. TROUBLESHOOTING

If you encounter issues with your SEQURE SQESC 14200 Pro, consider the following common problems and solutions:

- **ESC Not Responding / No Power:**
  - Check all power connections to ensure they are secure and correctly polarized.
  - Verify the battery is fully charged and functioning correctly.
  - Ensure the BEC voltage is set appropriately for your receiver.
- **Motor Not Spinning / Incorrect Direction:**

- Perform a throttle calibration as described in Section 5.1.
- Check motor phase connections (A, B, C). If the motor spins in the wrong direction, swap any two of the three motor wires.
- Verify motor steering settings in the programming tool.

- **Intermittent Operation / Signal Loss:**

  - Inspect signal cables for damage or loose connections.
  - Ensure the twisted pair cables are properly routed and not exposed to excessive electromagnetic interference.
  - Check for any physical obstructions or debris affecting the ESC or motor.

- **Overheating:**

  - Ensure the ESC's metal radiator is clean and has adequate airflow.
  - Verify the 5V fan is operating correctly.
  - Check for excessive current draw from the motor or an undersized motor for the application.

- **Programming Issues:**

  - Ensure you are using the correct programming tool and firmware version (ESCape32) from the official SEQURE website.
  - Verify the connection between the programming tool and the ESC.

8. SAFETY INFORMATION

No specific safety warnings were provided in the product description. However, when operating any high-power electronic speed controller and RC equipment, always observe the following general safety precautions:

- Always connect the battery last and disconnect it first.
- Ensure all connections are secure and insulated to prevent short circuits.
- Never operate the ESC or motor without proper ventilation.
- Keep hands and loose clothing away from spinning propellers or moving parts.
- Use appropriate battery types and voltages as specified for the ESC.
- Store batteries and ESCs in a safe, cool, and dry environment.
- This product is recommended for users 16 years and up.

9. SUPPORT

For further assistance, technical support, or warranty inquiries, please contact SEQURE directly through their official website or the retailer where the product was purchased.
Visit the SEQURE Store on Amazon for more information and products.