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> [ICONSPORTSS 60V/70V 2000W-2500W Brushless Controller User Manual](#)

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Model: 60V/70V 2000W-2500W Brushless Controller

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your ICONSPORTSS 60V/70V 2000W-2500W Brushless Controller. This controller is designed for high-performance electric vehicles such as golf carts, go-karts, ATVs, quads, buggies, and scooters, offering robust power management for motors ranging from 2000W to 2500W.

Please read this manual thoroughly before installation and use to ensure proper function and to prevent damage to the unit or your vehicle.



Figure 1: ICONSPORTSS Brushless Controller (Top View)

This image displays the ICONSPORTSS 60V/70V 2000W-2500W Brushless Controller, showcasing its aluminum casing and the array of wires extending from one end, ready for connection to an electric vehicle system.

2. SAFETY INFORMATION

- Always disconnect the battery power before performing any installation, maintenance, or wiring work on the controller or vehicle.
- Ensure all connections are secure and properly insulated to prevent short circuits.
- Wear appropriate personal protective equipment (PPE), such as safety glasses and gloves, during installation.
- Verify that the voltage and power ratings of your vehicle's battery and motor are compatible with this controller (60V/70V, 2000W-2500W).
- Do not expose the controller to water, excessive moisture, or extreme temperatures.
- If you are unsure about any part of the installation process, consult a qualified technician.

3. PRODUCT OVERVIEW AND WIRING DIAGRAM

The ICONSPORTSS brushless controller features a robust aluminum housing designed for heat dissipation and durability. It includes multiple wiring harnesses for various functions within your electric vehicle system.

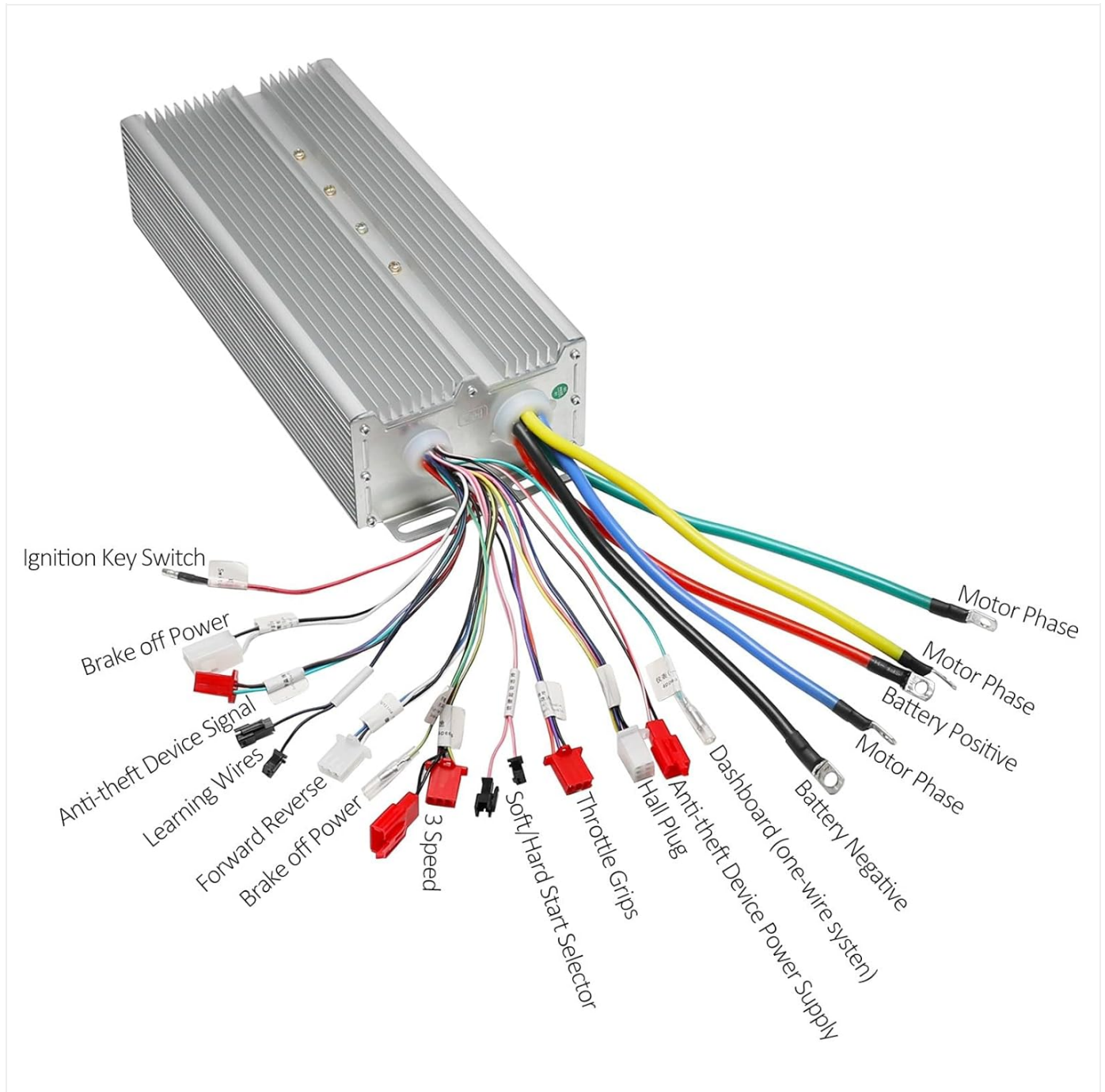


Figure 2: Controller Wiring Diagram with Labeled Connections

This image provides a detailed view of the controller with all its wires clearly labeled, indicating their respective functions such as Ignition Key Switch, Brake off Power, Anti-theft Device Signal, Learning Wires, Forward/Reverse, 3 Speed, Soft/Hard Start Selector, Throttle Grips, Hall Plug, Dashboard (one-wire system), Anti-theft Device Power Supply, Battery Negative, Battery Positive, and Motor Phase connections.

Key Connections:

- **Motor Phase:** Connects to the motor's phase wires (typically three thick wires).
- **Battery Positive/Negative:** Connects to the vehicle's battery pack.
- **Ignition Key Switch:** For turning the controller on/off.
- **Throttle Grips:** Connects to the accelerator input.
- **Hall Plug:** Connects to the motor's Hall sensors for precise motor control.

- **Brake off Power:** Disables motor power when brakes are applied.
- **Learning Wires:** Used for initial motor pairing and direction setting.
- **3 Speed:** Allows selection of different speed modes.
- **Forward/Reverse:** Controls the direction of motor rotation.
- **Anti-theft Device Signal/Power Supply:** For integrating with anti-theft systems.
- **Dashboard (one-wire system):** For connecting to a compatible display unit.
- **Soft/Hard Start Selector:** Adjusts acceleration response.

4. SETUP AND INSTALLATION

1. **Preparation:** Ensure the vehicle's battery is disconnected. Identify the mounting location for the controller, ensuring good ventilation and protection from elements.
2. **Mounting:** Securely mount the controller using appropriate fasteners.
3. **Motor Connections:** Connect the three thick Motor Phase wires from the controller to the corresponding motor phase wires. If your motor has Hall sensors, connect the Hall Plug.
4. **Battery Connections:** Connect the Battery Positive and Battery Negative wires from the controller to the vehicle's battery pack. Observe correct polarity.
5. **Throttle Connection:** Connect the throttle grips wiring to the designated throttle input on the controller.
6. **Brake Connections:** Connect the Brake off Power wires to your vehicle's brake levers or sensors.
7. **Ignition Key Switch:** Connect the ignition key switch wires.
8. **Optional Connections:** Connect any optional features such as 3 Speed, Forward/Reverse, Dashboard, Anti-theft, or Soft/Hard Start Selector as required by your vehicle setup.
9. **Initial Learning (if applicable):** Some controllers require an initial "learning" process to match the motor's phase and Hall sensor sequence. Refer to your motor's specific instructions or the controller's learning wire function (typically by connecting two specific wires temporarily).
10. **Final Check:** Double-check all connections for security and correct polarity. Ensure no bare wires are exposed.

5. OPERATING INSTRUCTIONS

- After successful installation, reconnect the battery power.
- Turn the ignition key to the "ON" position.
- Gently apply the throttle to initiate motor movement.
- Test brake functionality to ensure the motor power cuts off when brakes are engaged.
- If equipped, test the 3-speed and forward/reverse functions.
- Monitor for any unusual noises, smells, or excessive heat during initial operation.

6. MAINTENANCE

- **Regular Inspection:** Periodically inspect all wiring connections for signs of wear, corrosion, or looseness.
- **Cleaning:** Keep the controller clean and free from dust, dirt, and debris. Use a dry, soft cloth for cleaning. Do not use liquids.
- **Environmental Protection:** Ensure the controller remains protected from direct water exposure and extreme temperatures.
- **Heat Management:** Verify that the controller's fins are not obstructed, allowing for proper heat dissipation.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Motor does not run	No power to controller; Loose connections; Faulty throttle; Motor or Hall sensor issue.	Check battery connection and voltage; Verify all wiring is secure; Test throttle functionality; Inspect motor and Hall sensors.
Motor runs intermittently	Loose wiring; Intermittent throttle signal; Overheating.	Inspect all connections; Check throttle wiring; Allow controller to cool down, ensure proper ventilation.
Motor runs in wrong direction	Incorrect motor phase wire connection; Incorrect Hall sensor connection; Learning wires not properly used.	Reverse two of the motor phase wires; Recheck Hall sensor connections; Perform the learning procedure again.
Controller gets excessively hot	Overload; Insufficient ventilation; Short circuit.	Reduce load on the motor; Ensure controller is in a well-ventilated area; Check for short circuits in wiring.

8. SPECIFICATIONS

Model: 60V/70V 2000W-2500W Brushless Controller

Brand: ICONSPORTSS

Voltage Compatibility: 60V / 70V

Power Rating: 2000W - 2500W

Maximum Current: 110A

Tube Count: 36 Tubes

Application: Golf Carts, Go Karts, ATVs, Quads, Buggies, Scooters

Dimensions (Approximate): Refer to Figure 3 for detailed measurements.

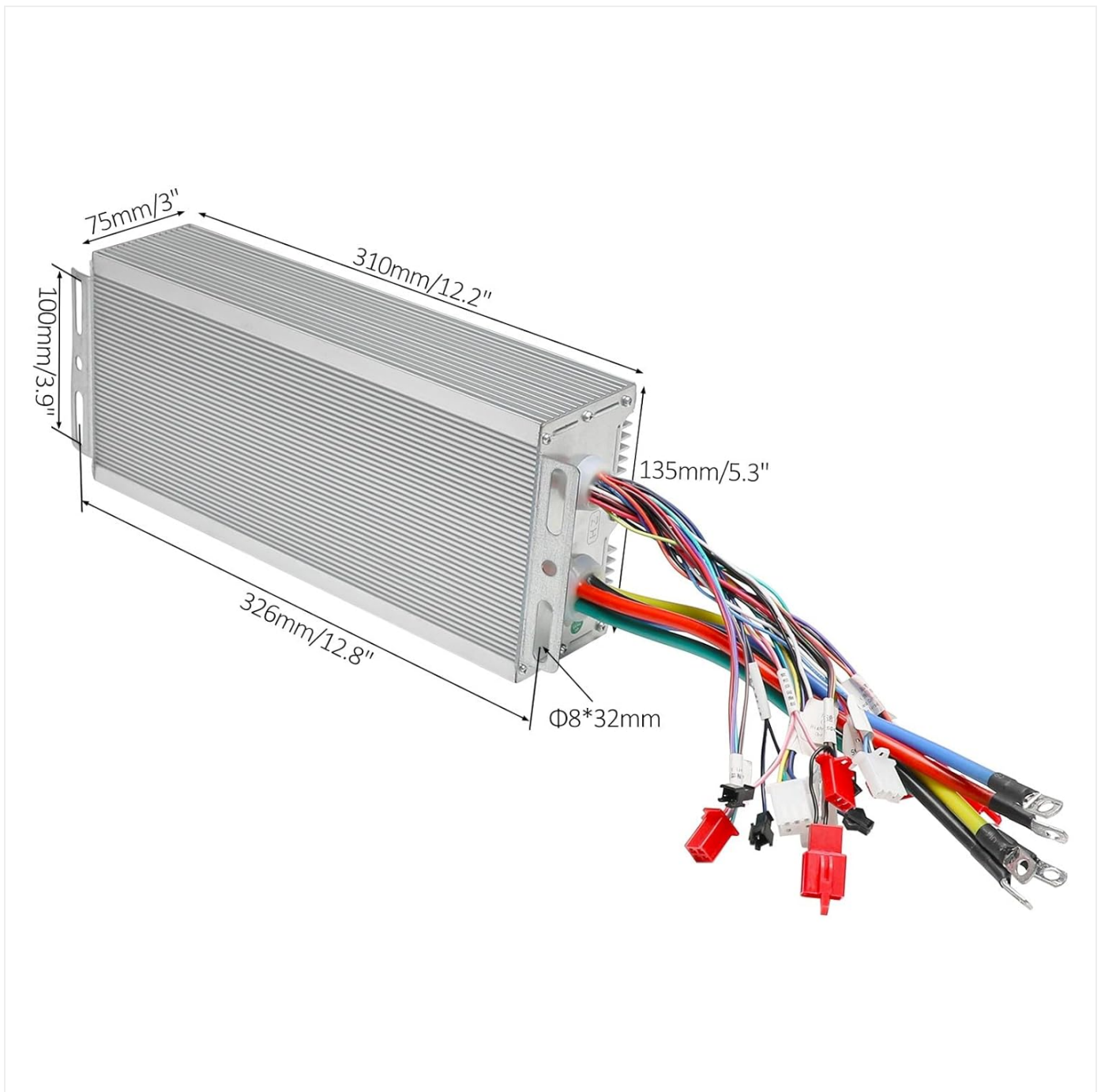


Figure 3: Controller Dimensions

This image illustrates the physical dimensions of the controller, showing a length of approximately 326mm (12.8 inches), a width of 135mm (5.3 inches) at the widest point, and a height of 75mm (3 inches) for the main body, with a total height of 100mm (3.9 inches) including mounting tabs.

9. WHAT'S IN THE BOX

- 1 x ICONSPORTSS 60V/70V 2000W-2500W Brushless Controller

10. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the purchase documentation or contact ICONSPORTSS customer service through the retailer where the product was purchased. Keep your proof of purchase for any warranty claims.



