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Tissting DK72300S

Tissting DK72300S Brushless DC Motor Controller User Manual

Model: DK72300S

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Tissting DK72300S Brushless DC Motor Controller. This controller is designed for electric motorcycles and mobility scooters, offering advanced sinusoid control for smooth and powerful performance. Please read this manual thoroughly before use to ensure proper functionality and to prevent damage.



Figure 1.1: Tissting DK72300S Brushless DC Motor Controller.

2. Product Features

- **Boosted Motor Output:** Designed to enhance motor performance, significantly increasing speed and power output for electric vehicles.
- **Advanced Sinusoid Control:** Utilizes sinusoid control technology for smooth, efficient, and stable operation, compatible with various hub and mid-drive motors.
- **Innovative Self-Learning Feature:** Equipped with a self-learning function for easy integration and optimal adaptation to different motor specifications.
- **Enhanced Battery Protection:** Optimizes power usage to extend battery life and increase driving range.
- **Robust Build and Longevity:** Constructed from durable ABS and metal materials to withstand high temperatures and ensure long-term stability and consistent performance.

3. Setup and Installation

Proper installation is crucial for the controller's performance and safety. It is highly recommended that installation be performed by a qualified technician.

1. **Safety First:** Disconnect all power sources from the electric vehicle before beginning installation. Ensure the vehicle is stable and cannot move unexpectedly.
2. **Mounting:** Securely mount the controller in a location that is protected from direct water exposure and allows for adequate airflow for cooling. The metal base acts as a heat sink.
3. **Wiring Connections:** Carefully connect the controller to the motor, battery, throttle, and other peripheral components according to the vehicle's wiring diagram. Pay close attention to polarity for all connections (positive and negative). The controller supports FOC (Field-Oriented Control) for motor control.
4. **LCD Display Connection:** Connect the LCD display unit to the designated port on the controller.
5. **Self-Learning Function:** After all connections are made, power on the system. The controller's self-learning function will help it adapt to your motor. Follow any specific instructions provided by your vehicle manufacturer for initiating this process, if applicable.
6. **Initial Test:** Before full operation, perform a low-speed test in a safe, open area to ensure all functions are working correctly.



Figure 3.1: Controller installation context showing typical wiring environment.

4. Operating Instructions

Once installed, the Tissting DK72300S controller provides intuitive operation through the connected LCD display and throttle.

1. **Power On:** Turn on the main power switch of your electric vehicle. The LCD display should illuminate, showing current battery status, speed, and other relevant information.
2. **Throttle Control:** Gently apply the throttle to initiate movement. The sinusoid control ensures a smooth and responsive acceleration.
3. **Braking:** The controller supports positive 12V and negative compatible brake modes. Apply brakes as needed. Ensure the brake cut-off function (if equipped) is working correctly to disengage motor power during braking.
4. **Monitoring:** Regularly check the LCD display for operational parameters such as voltage, current, and error codes. The controller has an under-voltage guard value of 0.875xVCC±1V to protect the battery.

5. **Speed Management:** The controller is capable of speeds up to 85km/h, though actual speed depends on vehicle weight and wind resistance. Operate within safe and legal speed limits.



Figure 4.1: The controller utilizes sine wave technology for stable performance.

5. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your controller.

- **Cleaning:** Keep the controller clean and free from dust, dirt, and moisture. Use a soft, dry cloth for cleaning. Avoid using harsh chemicals or solvents.
- **Connection Inspection:** Periodically check all electrical connections for tightness and signs of corrosion or wear. Loose connections can lead to poor performance or damage.
- **Heat Dissipation:** Ensure the controller's heat sink (bottom metal plate) is not obstructed. Proper airflow is essential for dissipating heat and maintaining stable operation, especially during prolonged use.
- **Environmental Protection:** While robust, avoid exposing the controller to extreme temperatures, direct sunlight for

extended periods, or heavy rain.

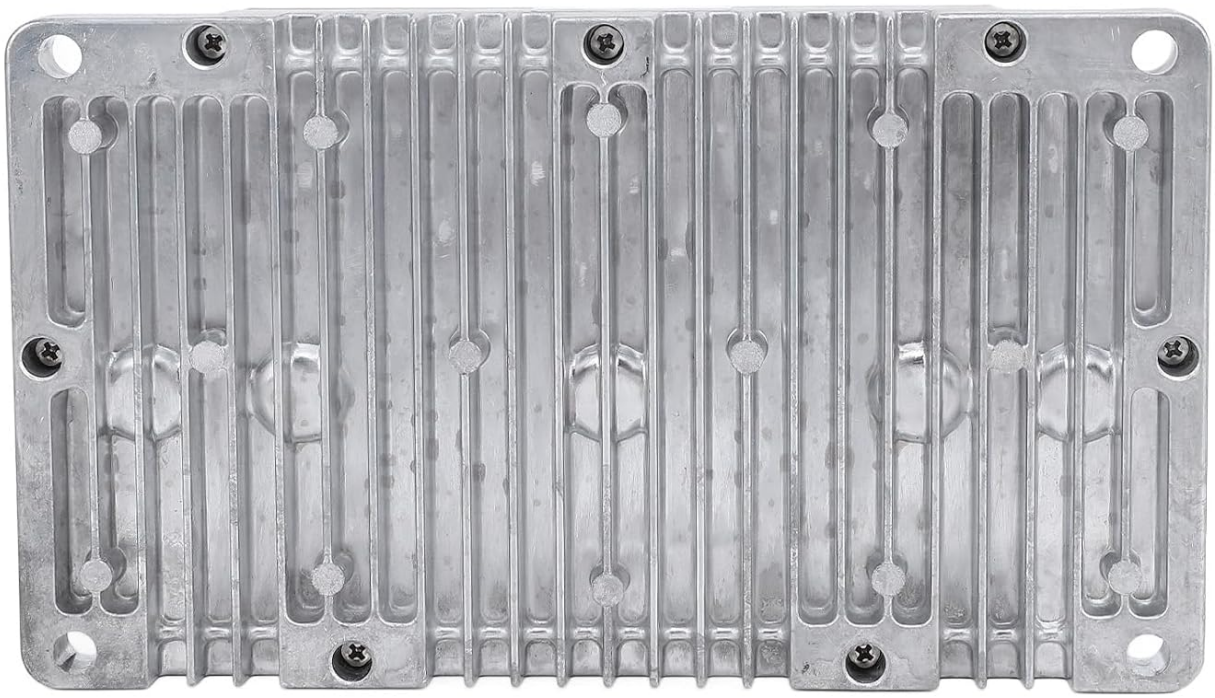


Figure 5.1: Bottom view of the controller, illustrating the heat sink for thermal management.

6. Troubleshooting

If you encounter issues with your controller, refer to the following common troubleshooting steps:

- **No Power:**
  - Check battery connections and ensure the battery is charged.
  - Verify the main power switch is on.
  - Inspect all wiring for loose connections or damage.
- **Motor Not Responding:**
  - Ensure the throttle is correctly connected and functioning.

- Check motor phase wire connections.
- Verify Hall sensor connections (if applicable).
- If the self-learning function was not completed, try re-initiating it.

- **Erratic Operation:**
  - Check for electromagnetic interference from other devices.
  - Inspect for any loose or corroded connections.
  - Ensure the controller is not overheating.

- **LCD Display Issues:**
  - Check the display unit's connection to the controller.
  - Ensure the display unit is receiving power.

If problems persist after following these steps, please contact your retailer or a qualified service technician for assistance.

7. Specifications

Parameter	Value
Item Type	Brushless DC Motor Controller
Model	DK72300S
Material	Metal + ABS
Rated Voltage	72V
Bus Current	65-85A
Phase Current	300A
Estimated Max Speed	85km/h (dependent on vehicle load and wind resistance)
Under Voltage Guard Value	0.875xVCC±1V
Motor Control Mode	FOC (Field-Oriented Control)
Brake Mode	Positive 12V, Negative Compatible
Fitment	For QS Motor Electric motorcycle mobility scooter 3000W
Package Dimensions	7.87 x 6.3 x 2.76 inches
Item Weight	2.38 pounds

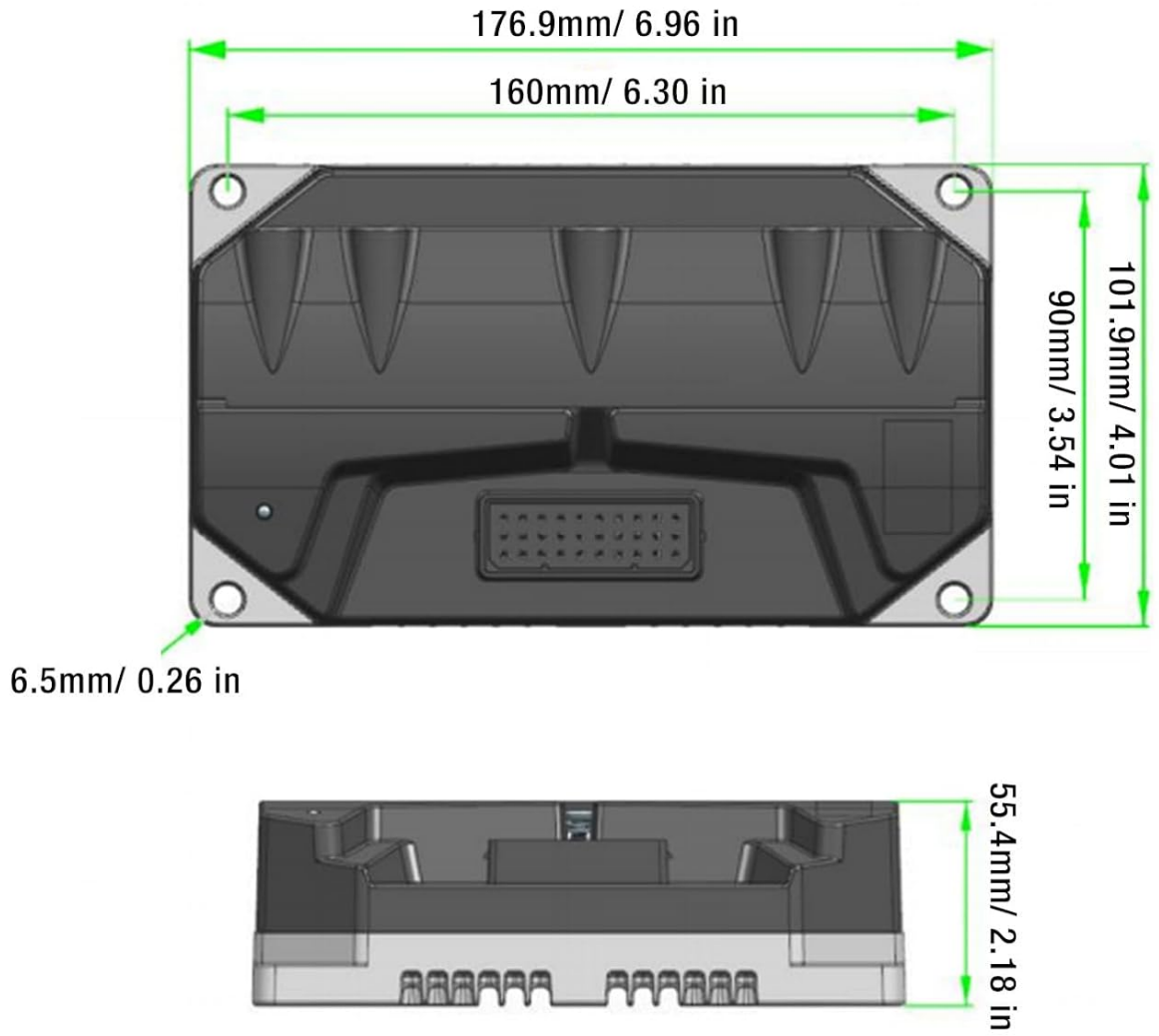


Figure 7.1: Controller dimensions for installation planning.

8. Package Contents

The package for the Tissting DK72300S Brushless DC Motor Controller typically includes:

- 1 x Brushless DC Motor Controller (DK72300S)
- 1 x Wiring Harness
- 5 x Mounting Screws

9. Warranty and Support

For warranty information, please refer to the terms and conditions provided by your retailer at the time of purchase. Keep your proof of purchase for any warranty claims.
For technical support or further assistance, please contact the Tissting customer service or your product retailer. When

contacting support, please have your product model (DK72300S) and a detailed description of the issue ready.

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