DEWIN BTA-4000W

DEWIN BTA-4000W AC 220V Stepless Voltage Regulator User Manual

Model: BTA-4000W (ZJTYQ0918)

1. Product Overview

The DEWIN BTA-4000W is an AC 220V stepless voltage regulator designed for controlling the voltage, speed, and dimming of various electrical loads. It utilizes a high-performance thyristor for stable and efficient operation. This device is suitable for resistive loads such as electric furnaces, water heaters, lamps, and for controlling the speed of small motors and electric irons.



Image 1.1: DEWIN 4000W AC 220V Stepless Voltage Regulator with key features highlighted.

The regulator features a thickened metal shell for high-temperature resistance, flame retardancy, and rust prevention. Its compact design includes five-sided heat dissipation to prevent overheating and deformation, ensuring safe and durable use.



Image 1.2: Examples of applications for the voltage regulator, including power tools, resistors, motor fans, and lamps.

2. Specifications

Below are the technical specifications for the DEWIN BTA-4000W Stepless Voltage Regulator:

Parameter	Value
Model	BTA-4000W
Input Voltage	AC 220V
Plug Type	EU Plug
Output Voltage	0-220V (stepless adjustment)
Maximum Power	4000W (peak)
Rated Current	9A
Limit Current	18A

Material	Thickened Metal Shell
Dimensions (approx.)	115mm x 100mm x 60mm (L x H x W)
Weight (approx.)	507g
Manufacturer Model Number	ZJTYQ0918



Image 2.1: Product dimensions and key specifications.

3. Safety Information and Precautions

Please read and understand the following safety guidelines before operating the device:

- **Power Rating:** The peak power of this product is 4000W. It is recommended that the rated power of resistive loads (e.g., incandescent lamps, heating wires) be within 2000W-3000W. For inductive loads (e.g., series excitation motors), the rated power should be less than 1300W.
- **Voltage Compatibility:** This product is designed for 220V AC power reduction. It is not suitable for products with different voltages, such as 110V electrical appliances. This product does not have voltage stabilization function and cannot be used as a voltage stabilizer.
- **Output Type:** The output is AC (Alternating Current), not DC (Direct Current).
- **Load Requirement for Measurement:** The measured output voltage is a virtual voltage when unloaded.

It must be connected to a load of 20W or more to measure the correct output voltage. The voltmeter will not function when the output voltage is below 5V.

- **Grounding:** This product has a metal casing and must be safely grounded to prevent electrical shock.
- **Electronic Products:** Electronic products with printed circuit boards should be used with caution, as voltage regulation may affect their sensitive components.
- **Multiple Protections:** The device is equipped with multiple protections, including overvoltage and surge protection, and RC absorption, to safeguard the high-power thyristors.



Image 3.1: Features of the voltage regulator, including iron casing, low voltage starting, vents, and multiple protection mechanisms.

4. Product Components

Familiarize yourself with the main components of the voltage regulator:

- **Voltage Adjustment Knob:** Used to continuously adjust the output voltage from 0V to 220V.
- **Output Socket:** Where the appliance to be controlled is plugged in.
- **Power Input Switch:** Toggles the power supply to the regulator ON or OFF.

- **Power Plug:** Connects the regulator to the main AC 220V power supply.
- **Output Power Indicator Light:** A digital display that shows the output voltage (when a load of 20W or more is connected).



Image 4.1: Detailed view of the product with labeled components such as the output power indicator light, output socket, voltage adjustment knob, power input switch, and power plug.

The internal construction features high-quality components for reliable performance:

- **Original Imported Chip Thyristor:** Ensures high performance and stable voltage regulation.
- **All-aluminum Large Heat Sink:** Provides efficient heat dissipation to maintain optimal operating temperature.
- **Double-sided Copper Foil Welding & Platinum Welding:** Enhances conductivity and durability.
- **Precision Resistor & High Voltage Capacitor:** Contribute to accurate and stable circuit operation.



Image 4.2: View of the internal circuit board, highlighting components like the thyristor, heat sink, and resistors.

5. Setup and Installation

Follow these steps to set up your DEWIN BTA-4000W voltage regulator:

1. Ensure the power input switch on the regulator is in the**OFF** position.
2. Plug the power plug of the voltage regulator into a standard AC 220V wall outlet.
3. Connect the electrical appliance (e.g., fan, heater, power tool) you wish to control into the output socket of the voltage regulator.
4. Ensure all connections are secure before proceeding.

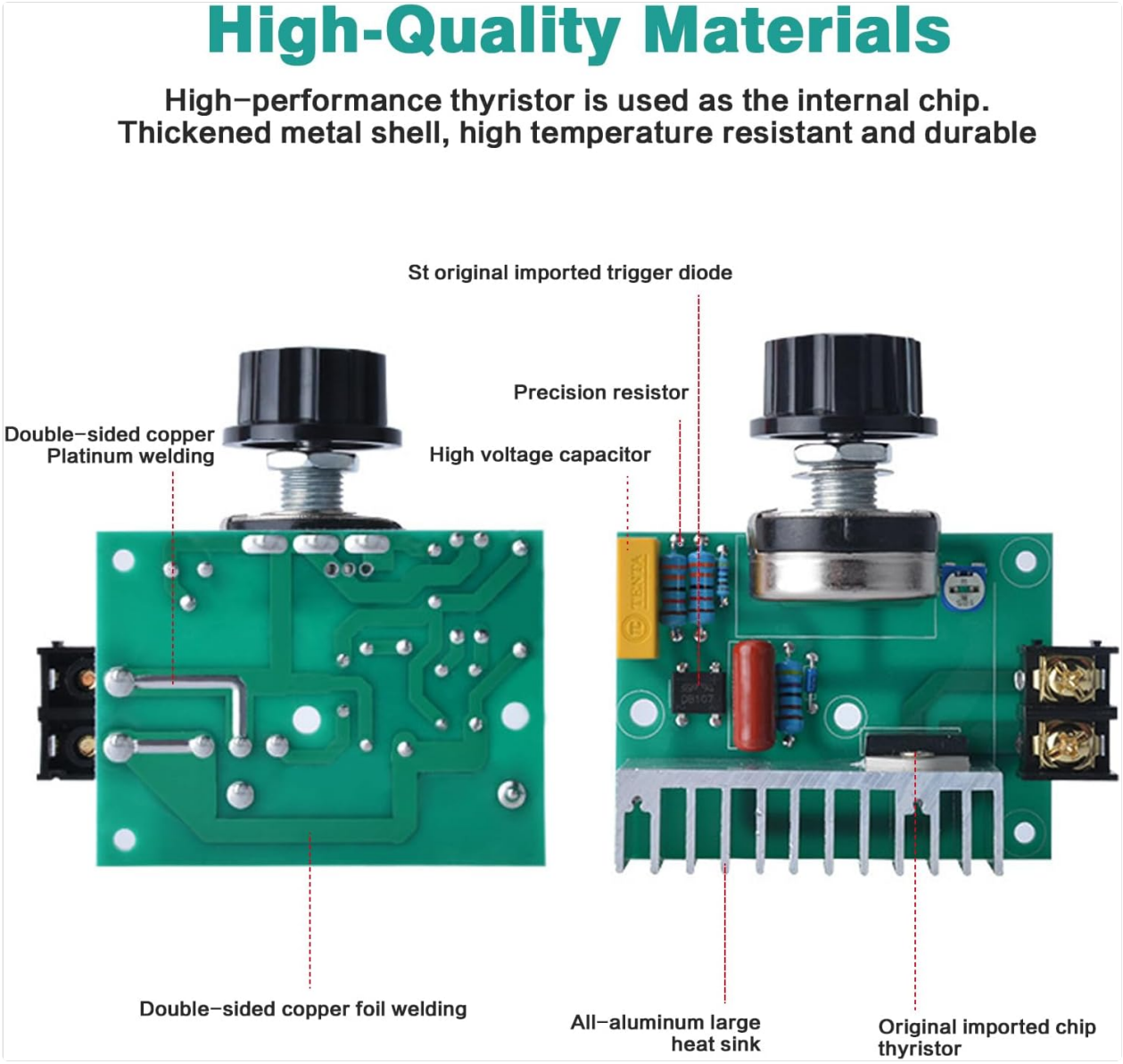


Image 5.1: Diagram illustrating the connection of the voltage regulator between a power source and an appliance (e.g., a fan).

6. Operating Instructions

To operate the DEWIN BTA-4000W voltage regulator:

1. After connecting the regulator and your appliance as described in the Setup section, turn the power input switch to the **ON** position.
2. Slowly rotate the **Voltage Adjustment Knob** clockwise to increase the output voltage, or counter-clockwise to decrease it.
3. Observe the output power indicator light (digital display) to monitor the current output voltage. Remember, this display will only show a reading if a load of 20W or more is connected and the output voltage is above 5V.
4. Adjust the knob until the desired voltage, speed, or dimming level is achieved for your connected appliance.
5. To turn off the appliance, switch the power input switch to the**OFF** position.



Image 6.1: A hand demonstrating the adjustment of the voltage knob on the regulator.

7. Maintenance

To ensure the longevity and proper functioning of your voltage regulator:

- Keep the device clean and free from dust and debris. Use a dry, soft cloth for cleaning.
- Do not expose the regulator to moisture or extreme temperatures.
- Ensure adequate ventilation around the device to facilitate heat dissipation, especially during prolonged use at high loads.
- Regularly check the power cord and plug for any signs of damage. Do not use the device if the cord or plug is damaged.

8. Troubleshooting

If you encounter issues with your DEWIN BTA-4000W voltage regulator, consider the following:

- **Voltmeter Not Displaying:** If the digital display is not showing a voltage reading, ensure that an electrical load of at least 20W is connected to the output socket and that the output voltage is set above

5V. The voltmeter does not operate below 5V or without a sufficient load.

- **No Output Power:** Check if the power input switch is in the ON position. Verify that the regulator's power plug is securely connected to a live 220V AC outlet. Ensure the connected appliance is functioning correctly when plugged directly into a wall outlet.
- **Appliance Not Responding to Adjustment:** Confirm that the connected appliance is compatible with voltage regulation (e.g., not sensitive electronics with complex PCBs). Ensure the load's power rating is within the recommended limits for resistive or inductive loads.
- **Overheating:** If the device feels excessively hot, reduce the load or ensure it is not operating continuously at its maximum capacity. Check for obstructions around the ventilation holes.

9. Warranty and Support

Specific warranty details for the DEWIN BTA-4000W AC 220V Stepless Voltage Regulator are not provided in the product description. For warranty claims, technical support, or further assistance, please contact the seller or manufacturer directly. Retain your purchase receipt as proof of purchase.