BOSYTRO TYTL-60V600W

BOSYTRO 60V 600W Adjustable DC Power Supply User Manual

Model: TYTL-60V600W

1. Introduction

This manual provides essential information for the safe and efficient operation of your BOSYTRO 60V 600W Adjustable DC Power Supply, model TYTL-60V600W. This switching power supply is designed to convert AC 110V/220V input to an adjustable DC output ranging from 0-60V, with a maximum power output of 600W. It features an LED digital display for precise voltage and current monitoring and is suitable for a wide range of applications including 3D printers, CCTV systems, dimmable LEDs, and various DC devices.

Image 1.1: The BOSYTRO 60V 600W Adjustable DC Power Supply, showcasing its front panel with LED display and output terminals, alongside a set of included wire connectors.

Image 1.2: A visual representation of the wide range of applications for this power supply, including LED light strips, LED advertising displays, security monitoring, medical equipment, car audio, and automation equipment.

2. Safety Instructions

Please read and understand all safety instructions before operating the device. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Input Voltage Selection:** Before connecting the power supply to an AC source, ensure the 115V/230V switch on the side of the unit is set correctly for your local mains voltage. Incorrect setting can cause damage to the unit.
- **Grounding:** Always ensure the power supply is properly grounded to prevent electric shock. Connect the 'E' (Earth) terminal to a reliable ground connection.

- **Ventilation:** Do not block the ventilation holes. Ensure adequate airflow around the unit to prevent overheating. The built-in cooling fan operates based on internal temperature.
- **Environment:** Operate the power supply in a dry, well-ventilated area, away from flammable materials, moisture, and extreme temperatures.
- **Professional Installation:** Installation and wiring should be performed by qualified personnel to ensure safety and proper function.
- **Protection Functions:** The unit is equipped with multiple protection functions including short circuit, over-voltage, overload, earth leakage, overcurrent, and overheat protection. However, these are safeguards and should not be relied upon to prevent improper usage.

Image 2.1: This diagram highlights the power supply's multiple protection features: short circuit protection, over-voltage protection, overload protection, earth leakage protection, overcurrent protection, and overheat protection.

3. Product Overview and Components

The BOSYTRO 60V 600W Adjustable DC Power Supply is housed in a durable metal aluminum shell designed for efficient heat dissipation. Key components and features are detailed below:

- **Aluminum Housing:** Provides robust protection and aids in heat dissipation.
- **Fan Cooling Device:** A built-in fan activates when the internal temperature reaches a certain threshold to maintain optimal operating conditions and extend service life.
- **Adjustable Voltage Knob:** Allows precise adjustment of the DC output voltage from 0V to 60V.
- **Adjustable Current Knob:** Allows precise adjustment of the DC output current from 0A to 10A.
- **LED Digital Display:** Clearly shows the real-time output voltage (V) and current (A).
- **Built-in Filter Jammer:** Helps to reduce electrical noise.
- **High Quality PCB Circuit Board:** Ensures stable and reliable performance.
- **Input Terminals (L, N, E):** For connecting the AC mains power. 'L' for Live, 'N' for Neutral, 'E' for Earth/Ground.
- **Output Terminals (V+, V-):** For connecting the DC load. 'V+' for positive, 'V-' for negative.

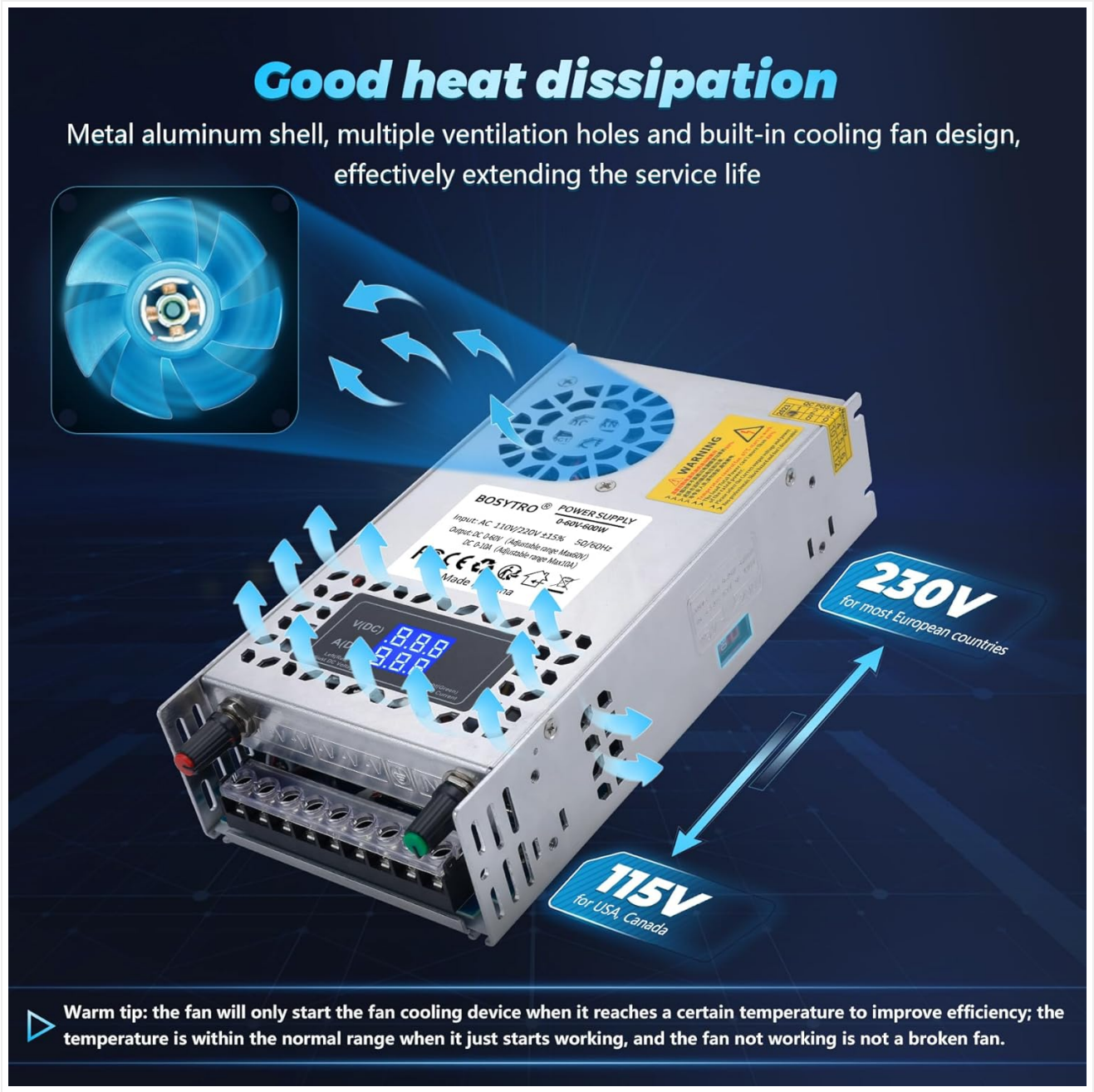

Image 3.1: An internal view of the power supply, labeling key components such as the fan cooling device, aluminum housing, adjustable voltage knob, LED digital display, built-in filter jammer, adjustable current knob, high quality electronic components, and the PCB circuit board.

4. Setup

Follow these steps to set up your power supply safely and correctly.

1. **Unpack and Inspect:** Carefully remove the power supply from its packaging. Inspect the unit for any signs of physical damage. If damage is found, do not proceed with installation and contact support.
2. **Select Input Voltage:** Locate the 115V/230V switch on the side of the power supply. Use a small tool to set it to the correct voltage for your region (115V for USA/Canada, 230V for most European countries). **This step is critical and must be done before connecting AC power.**
3. **Mounting (Optional):** If mounting, ensure it is in a location with sufficient ventilation and away from heat sources or flammable materials.
4. **AC Input Wiring:** Connect your AC mains power cable to the input terminals. Connect the Live wire to 'L', Neutral wire to 'N', and the Earth/Ground wire to 'E'. Ensure all connections are secure and properly insulated.
5. **DC Output Wiring:** Connect your DC load to the output terminals. Connect the positive wire of your load to 'V+' and the negative wire to 'V-'. Ensure correct polarity and secure connections.
6. **Initial Check:** Before powering on, double-check all wiring connections and the input voltage switch setting.

Image 4.1: A detailed wiring port diagram illustrating the AC input connections (L, N, E) and DC output connections (V+, V-), along with the adjustable voltage and current knobs. It also shows the 115V/230V input voltage selection switch.

5. Operating Instructions

Once the power supply is set up, follow these steps for operation:

1. **Power On:** Connect the power supply to the AC mains. The LED digital display should illuminate, showing the current voltage and current settings.
2. **Adjust Voltage:** Use the **Adjustable Voltage Knob** (typically red or labeled 'V.ADJ') to set the desired output voltage. Turn clockwise to increase voltage, counter-clockwise to decrease. The LED display will show the set voltage.
3. **Adjust Current:** Use the **Adjustable Current Knob** (typically green or labeled 'A.ADJ') to set the desired output current limit. Turn clockwise to increase the current limit, counter-clockwise to decrease. The LED display will show the actual current being drawn by the load, up to the set limit. If no load is connected, the current display will show zero.
4. **Monitor Output:** Continuously monitor the LED digital display for real-time voltage and current readings during operation.
5. **Cooling Fan Operation:** The internal cooling fan is temperature-controlled. It will only start operating when the internal temperature reaches a certain level to ensure efficient cooling and extend the fan's lifespan. If the fan is not running, it does not indicate a malfunction unless the unit is overheating.
6. **Power Off:** Disconnect the load before powering off the unit from the AC mains.

Image 5.1: A close-up view of the LED digital display, clearly showing the voltage (V) and current (A) readings in blue digits.

Image 5.2: This diagram illustrates the good heat dissipation design, featuring a metal aluminum shell, multiple ventilation holes, and a built-in cooling fan. Arrows indicate airflow for effective cooling. A note clarifies that the fan operates only when a certain temperature is reached.

6. Maintenance

Proper maintenance ensures the longevity and reliable performance of your power supply.

- **Cleaning:** Periodically clean the exterior of the unit with a soft, dry cloth. Do not use liquid cleaners or solvents. Ensure ventilation holes are free from dust and debris.
- **Ventilation:** Regularly check that the cooling fan and ventilation openings are not obstructed. Blocked airflow can lead to overheating and reduced performance.
- **Storage:** When not in use for extended periods, store the power supply in a cool, dry place, away from direct sunlight and excessive dust.
- **Inspection:** Periodically inspect power cables and connections for any signs of wear or damage. Replace damaged cables immediately.

7. Troubleshooting

If you encounter issues with your power supply, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No output voltage/display off	No AC input power; Incorrect input voltage switch setting; Internal fault.	Check AC power connection and wall outlet. Verify 115V/230V switch is set correctly. If problem persists, contact support.
Output voltage incorrect or unstable	Voltage knob not adjusted; Overload condition; Faulty load.	Adjust voltage knob. Reduce load or check load for short circuits.
Output current is zero with load	Current knob set too low; Open circuit in load; Faulty current measurement.	Increase current limit with the current knob. Check load connections.
Cooling fan not running	Normal operation (temperature-controlled).	The fan will only activate when the internal temperature requires cooling. This is not a fault unless the unit is excessively hot.
Unit shuts down unexpectedly	Overload protection activated; Overheat protection activated; Short circuit.	Reduce load. Ensure adequate ventilation. Check for short circuits in the load. Allow unit to cool down before restarting.

8. Specifications

Technical specifications for the BOSYTRO TYTL-60V600W Adjustable DC Power Supply:

Feature	Specification
Model Number	TYTL-60V600W
Input Voltage	AC 110V/220V ±15% (Switchable)
Input Frequency	50/60 Hz
Output Voltage	DC 0-60V (Adjustable)
Output Current	DC 0-10A (Adjustable)
Output Power	600W Max
Display	LED Digital Display (Voltage & Current)
Working Efficiency	≥ 80%
Cooling Method	Air Cooling (Temperature-controlled fan)
Material	Aluminum Shell
Operating Temperature	-10°C to 60°C

Feature	Specification
Product Dimensions (L x W x H)	8.46 x 4.53 x 1.97 inches (21.5 x 11.5 x 5 cm)
Item Weight	1.63 pounds
Protection Functions	Short Circuit, Over-voltage, Overload, Earth Leakage, Overcurrent, Overheat

Image 8.1: This image provides a summary of key specifications including input voltage, output voltage/current, LED display, material, working efficiency, operating temperature, and physical dimensions (21.5cm length, 11.5cm width, 5cm height).

9. Warranty and Support

BOSYTRO is committed to providing high-quality products and customer satisfaction.

- **Warranty:** This product is covered by a one-year long-term after-sales service. In the event of any quality problems with your product, you are entitled to a brand new replacement.
- **Customer Support:** If you have any questions, concerns, or require technical assistance, please do not hesitate to

contact BOSYTRO customer support. Your feedback and suggestions are valuable to us.