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> VAYALT DC 12V 50A 600W Switching Power Supply User Manual

VAYALT 12V-600W

VAYALT DC 12V 50A 600W Switching Power Supply User Manual

Model: 12V-600W | Brand: VAYALT

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your VAYALT DC 12V 50A 600W Switching Power Supply. This device converts AC input voltages (110V/220V) to a regulated 12V DC output, suitable for various electronic applications requiring up to 600W of power. Please read this manual thoroughly before installation and use.

2. SAFETY INFORMATION

WARNING: This device operates with high voltage. Improper installation or use can result in electric shock, fire, or personal injury. Always ensure power is disconnected before making any connections or adjustments.

- **Professional Installation Recommended:** Installation should be performed by qualified personnel.
- **Ventilation:** Ensure adequate ventilation around the power supply to prevent overheating. Do not block ventilation holes.
- **Grounding:** Proper grounding is essential for safety. Connect the ground terminal to an earth ground.
- **Input Voltage Selection:** Verify the input voltage switch (115V/230V) is set correctly for your region before connecting to AC power. Incorrect setting will damage the unit.
- **Load Capacity:** Do not exceed the maximum output power of 600W or current of 50A. For resistive loads, ensure the power supply's peak power is at least 1.25 times the device power. For motor equipment, the power supply's peak power should exceed twice the motor power. This unit is not suitable for variable speed motors.
- **Protection Features:** The power supply includes overloading protection, overcurrent protection, short-circuit protection, and overheat protection. These features help protect connected equipment and the power supply itself.
- **Certifications:** This product has passed RoHS/CE/LVD/EMC safety certifications.

POWER SUPPLY WITH MULTIPLE SAFETY PROTECTIONS



Image: The power supply features multiple safety protections including short circuit, over-voltage, overload, earth leakage, overcurrent, and overheat protection.

3. PRODUCT OVERVIEW

The VAYALT DC 12V 50A 600W Switching Power Supply is designed for stable and efficient power conversion. It features a robust aluminum alloy casing and an intelligent cooling system.

Key Features:

- **Universal AC Input:** Supports 110V/220V AC input (selectable).
- **Adjustable DC Output:** 12V DC output with fine-tuning adjustment (V-ADJ) of $\pm 10\%$.
- **High Power Output:** Maximum 600W, 50A.
- **Effective Cooling:** Integrated cooling fan, heat sink, and multiple ventilation holes for optimal heat dissipation.
- **Durable Construction:** High-strength aluminum alloy casing.
- **Integrated Wiring:** Convenient power connections with full copper nickel-plated terminals for good conductivity and corrosion resistance.

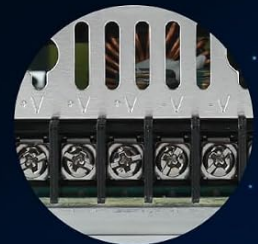
- **Multiple Protections:** Overloading, overcurrent, short-circuit, and overheat protection.

FULLY UPGRADED SWITCH POWER SUPPLY

- Safe and reliable
- Excellent performance
- Easy to operate
- High compatibility



Safety switch



New Connection Design



High-Density Copper Coil



VS



Image: Overview of the VAYALT Switching Power Supply, highlighting the safety switch, new connection design, and internal high-density copper coil.

Internal Components:

- High Temperature Resistant Capacitor
- Fan Cooling Device
- Aluminum Housing
- Built-in EMI Filter
- Copper Transformer
- LED Status Indicator Light
- High Quality PCB Circuitboard
- High-Density Copper Coil

HIGH-QUALITY ELECTRONIC COMPONENTS

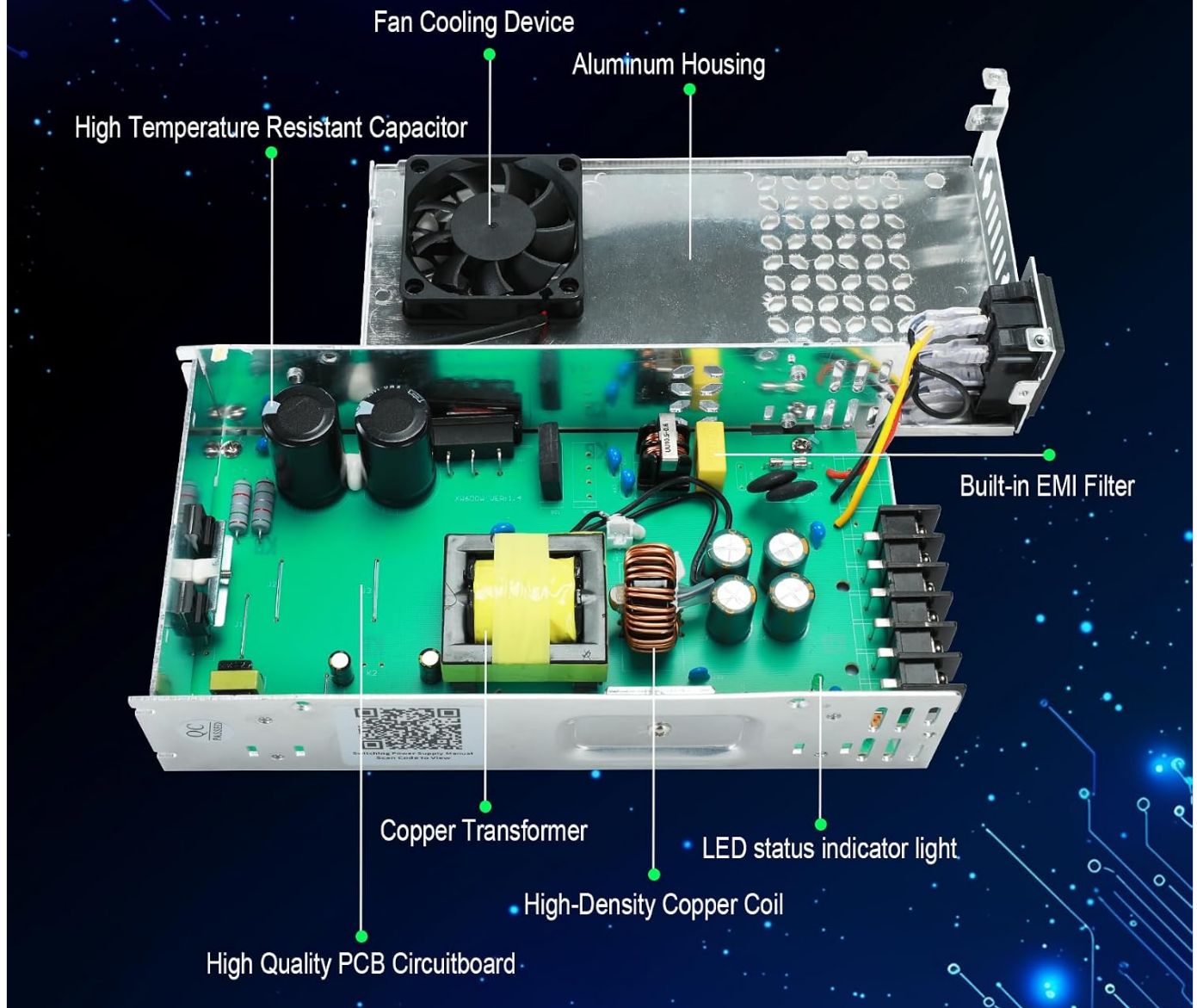


Image: Detailed view of the power supply's internal components, including the fan, capacitors, transformer, and PCB.

4. SETUP

Follow these steps for proper installation and setup of your power supply.

4.1 Input Voltage Selection

1. **Ensure the power supply is disconnected from all power sources.**
2. Locate the red switch on the side of the unit, labeled 115V/230V.
3. Slide the switch to the appropriate voltage for your region: **115V** for North America (US/CA) or **230V** for Europe (EU).

110V TO 12V DC CONVERTER

Input Voltage	110V-120V / 220V-240V , 50-60 HZ
Max Power	600W (Max 80%)
Working Temperature Range	14°F-140°F

Output Voltage	DC12V (±5%)
Current Range	0-50A Max
Working Efficiency	80%



Image: The input voltage selector switch (115V/230V) and the V-ADJ potentiometer for output voltage fine-tuning.

4.2 Wiring Connections

WARNING: Ensure the power supply is OFF and unplugged before making any wiring connections.

1. **AC Input:** Connect your AC power cord to the input terminals labeled **L** (Live), **N** (Neutral), and **⊗** (Ground). Ensure secure connections.
2. **DC Output:** Connect your 12V DC devices to the output terminals. The terminals are labeled **+V** for positive output and **-V** for negative output. Multiple output terminals are provided for connecting several devices, ensuring the total load does not exceed 600W/50A.



Image: Detail of the AC input and DC output terminals for wiring connections.

4.3 Output Voltage Adjustment (V-ADJ)

The output voltage can be fine-tuned by $\pm 10\%$ using the V-ADJ potentiometer. Use a small screwdriver to carefully turn the potentiometer clockwise to increase voltage or counter-clockwise to decrease it. Monitor the output voltage with a multimeter during adjustment to ensure it meets your device requirements.

5. OPERATING INSTRUCTIONS

After completing the setup, you can power on the unit.

1. Ensure all connections are secure and the input voltage switch is correctly set.
2. Plug the AC power cord into a suitable wall outlet.
3. Flip the red safety switch on the power supply to the 'ON' position. The LED status indicator light should illuminate.
4. The power supply will now provide 12V DC power to your connected devices.

Cooling Fan Operation:

This power supply features a smart cooling fan. The fan will only activate when the internal temperature reaches a certain threshold to maintain optimal operating conditions and improve efficiency. It is normal for the fan not to be running when the unit is first powered on or under light loads. A non-spinning fan at startup or low temperature is not indicative of a malfunction.



Image: The smart cooling fan, designed to activate only when needed to improve efficiency and extend lifespan.

6. MAINTENANCE

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

- **Cleaning:** Periodically clean the exterior of the power supply with a soft, dry cloth. Ensure all ventilation holes are free from dust and debris. Do not use liquid cleaners or solvents.
- **Ventilation:** Always ensure the power supply is placed in an area with adequate airflow. Do not obstruct the fan or ventilation openings.
- **Connection Checks:** Regularly inspect all wiring connections for tightness and signs of wear or corrosion.
- **Environmental Conditions:** Operate the power supply within its specified working temperature range (14°F-140°F / -10°C-60°C). Avoid exposure to excessive moisture or extreme temperatures.

INTELLIGENT COOLING SYSTEM

Improves the conversion efficiency of the switching power supply
reduces energy loss, and extends its service life

21.5cm/8.46in

11.5cm/4.52in

5cm/1.97in

VAYALT® POWER SUPPLY
Model: V17-E51J-V600W
Input: AC 100V-230V ±15% 50/60Hz
Output: DC 12V 50A (max 60W)

230V/EU

115V/USA/CA

- Built-in cooling fan
- Metal aluminum casing
- Multiple ventilation holes

Warm tip: the fan will only start the fan cooling device when it reaches a certain temperature to improve efficiency, the temperature is within the normal range when it just starts working, and the fan not working is not a broken fan

Image: The intelligent cooling system with a built-in fan, metal aluminum casing, and multiple ventilation holes for efficient heat dissipation.

7. TROUBLESHOOTING

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

- **No Power Output / LED Off:**

- Check if the AC input power cord is securely connected and the wall outlet has power.
- Ensure the red safety switch on the power supply is in the 'ON' position.
- Verify the input voltage selector switch (115V/230V) is set correctly for your region.
- Check for blown fuses in your electrical circuit.

• **Unstable or Incorrect Output Voltage:**

- Ensure the load connected does not exceed the power supply's maximum capacity (600W/50A).
- Adjust the V-ADJ potentiometer carefully with a screwdriver while monitoring with a multimeter.
- Check for loose or faulty wiring connections.

• **Cooling Fan Not Running:**

- The smart cooling fan only activates when the internal temperature reaches a certain level. If the unit is not under heavy load or has just started, the fan may not be running, which is normal operation and not a fault.
- Ensure ventilation holes are not blocked by dust or other obstructions.

• **Power Supply Shuts Down:**

- This could indicate activation of an internal protection mechanism (overload, overcurrent, overheat, short-circuit).
- Disconnect the load and power cycle the unit. If it powers on normally, the issue is likely with the connected load exceeding limits or a short circuit in the load.
- Reduce the load or check for short circuits in your connected devices.

8. SPECIFICATIONS

Specification	Value
Model Name	12V-600W
Brand	VAYALT
Compatible Devices	12V DC Devices
Output Wattage	600 Watts
Current Rating	50 Amps
Cooling Method	Air (Smart Cooling Fan)
Number of Fans	1
Maximum Input Voltage	220 Volts (AC)
Minimum Input Voltage	110 Volts (AC)
Item Dimensions (L x W x H)	8.46 x 1.97 x 4.53 inches
Item Weight	1.7 Pounds
Connector Type	Barrel Connector (for compatible devices, wiring terminals provided on unit)

NEW VERSION AC TO DC CONVERTER IS A SMART CHOICES FOR YOU



Input Voltage	110V-120V / 220V-240V , 50-60 HZ
Output Voltage	DC12V (±5%)
Max Power	600w (Max 80%)
Current Range	0-50A Max
Working Temperature Range	14°F-140°F
Working Efficiency	80%
Leakage current	<1mA / 230v
Cooling method	Smart Cooling Fan
Attention	The smart fan only activates when the temperature reaches a high level

Image: A summary of key specifications for the power supply.

9. WARRANTY AND SUPPORT

This VAYALT Switching Power Supply comes with a **24-month warranty service** from the date of purchase. This warranty covers manufacturing defects and ensures reliable operation under normal use.

For any issues, technical support, or warranty claims, please contact VAYALT customer service through the retailer where the product was purchased. Please have your purchase details and model number (12V-600W) ready when contacting support.

For additional information or to register your product, you may visit the manufacturer's website or scan the QR code found on the product packaging or labels. An example of a relevant link is: <https://qr61.cn/oDdon8/qtrX58v>

ASK A QUESTION ABOUT THIS MANUAL

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

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