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Wanptek APS605

Wanptek APS605 60V 5A Bench DC Power Supply User Manual

Model: APS605

1. Introduction

Thank you for choosing the Wanptek APS605 Bench DC Power Supply. This device is a high-precision, programmable DC power supply designed for various applications requiring stable and adjustable voltage and current outputs. It features an intuitive interface with an encoder adjustment knob, memory storage functions, and a USB fast charge port, making it ideal for laboratory, educational, and industrial use.



Figure 1.1: Wanptek APS605 DC Power Supply

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 damage to the product.

- Always connect the power supply to a grounded outlet.
- Do not operate the device in wet or damp conditions.
- Ensure proper ventilation; do not block the cooling fan or vents.
- Do not open the casing of the power supply. There are no user-serviceable parts inside.
- Verify the input voltage switch (115V/230V) is set correctly for your region before connecting to AC power.
- Always turn off the output and disconnect the load before making or changing connections.
- Use appropriate cables and connectors rated for the voltage and current levels.

3. Product Overview

3.1 Front Panel Layout



Figure 3.1: Front and Rear Panel Components

- **Voltage Display:** Shows the set or output voltage.
- **Current Display:** Shows the set or output current.
- **Power Display:** Shows the calculated output power.
- **Voltage Coding Adjustment Knob:** Adjusts the output voltage. Press to switch digits.
- **Current Coding Adjustment Knob:** Adjusts the output current. Press to switch digits.
- **Constant Voltage (C.V) Indicator:** Illuminates when the power supply is operating in constant voltage mode.
- **Constant Current (C.C) Indicator:** Illuminates when the power supply is operating in constant current mode.
- **USB Quick Charge Interface:** Provides a dedicated USB port for fast charging compatible devices.
- **Memory Keys (M1, M2, M3):** Used to save and recall frequently used voltage and current settings.

- **OCP (Over Current Protection) Button:** Activates or deactivates the over current protection function.
- **Output Switch:** Enables or disables the power output to the terminals.
- **Power On/Off Button:** Turns the unit on or off.
- **Positive Terminal (+):** Red terminal for positive output connection.
- **Negative Terminal (-):** Black terminal for negative output connection.
- **GND Terminal (Ground):** Green terminal for chassis ground connection.

3.2 Rear Panel Layout

- **Cooling Fan:** Provides active cooling for the internal components.
- **Voltage Switch (115V/230V):** Selects the appropriate input voltage for your region.
- **AC Power Input:** Connects the power cord to the AC mains supply.
- **Fuse Box:** Contains the replaceable fuse for overcurrent protection of the input.

4. Setup

4.1 Unpacking

Carefully remove the power supply and all accessories from the packaging. Verify that all components are present and undamaged:

- Wanptek APS605 DC Power Supply
- Power Cord
- Output Test Leads (Alligator Clips)
- User Manual

4.2 Input Voltage Selection

Before connecting the power supply to the AC mains, ensure the voltage switch on the rear panel is set to the correct voltage for your region (115V or 230V). Incorrect voltage selection can damage the unit.



Figure 4.1: Input Voltage Switch and Fuse Box

4.3 Connecting to AC Power

1. Ensure the power supply's power button is in the OFF position.
2. Connect the provided power cord to the AC power input on the rear panel of the power supply.
3. Plug the other end of the power cord into a grounded AC outlet.

5. Operation

5.1 Powering On/Off

Press the **POWER** button on the front panel to turn the unit on or off. The display will illuminate when the unit is powered on.

5.2 Setting Voltage and Current

The APS605 uses high-precision encoder adjustment knobs for setting voltage and current.

1. **Select Parameter:** Press the **VOLTAGE** knob to select the voltage setting, or the **CURRENT** knob to select the current setting. The active digit will blink.
2. **Adjust Digits:** Rotate the selected knob to change the value of the blinking digit (0-9).
3. **Move to Next Digit:** Press the knob again to move to the next digit. Repeat until all desired digits are set.
4. **Confirm Setting:** After setting the last digit, press the knob one more time to confirm the setting and exit adjustment mode.



Figure 5.1: Encoder Adjustment Knob Operation

5.3 Using Memory Functions (M1, M2, M3)

The power supply allows you to save and recall three groups of frequently used voltage and current settings.

1. **Saving Settings:** Set the desired voltage and current. Press and hold the desired memory key (**M1**, **M2**, or **M3**) for approximately 3 seconds until the display indicates the setting has been saved.
2. **Recalling Settings:** Briefly press the desired memory key (**M1**, **M2**, or **M3**). The saved voltage and current values will be loaded.



Figure 5.2: Memory Keys

5.4 Output Enable/Disable

The **OUTPUT** button controls the power output to the terminals. This allows you to set voltage and current without applying power to the load.

- Press the **OUTPUT** button to enable the output (button illuminates green).
- Press the **OUTPUT** button again to disable the output (button light turns off).



Figure 5.3: Output Enable/Disable Button

5.5 Over Current Protection (OCP)

The OCP function protects your load from excessive current. When OCP is active and the output current exceeds the set limit, the output will shut down.

- Press the **OCP** button to activate or deactivate the over current protection. When active, the button will illuminate.
- To reset OCP after a trip, disable and then re-enable the output, or cycle the power supply.



Figure 5.4: OCP Button

5.6 USB Fast Charge

The dedicated USB Quick Charge interface provides efficient and stable charging for compatible devices.

- Connect your USB device to the USB port on the front panel.
- The power supply will automatically detect and provide appropriate charging current.



Figure 5.5: USB Fast Charge Port in Use

5.7 Connecting a Load

Always ensure the power supply output is disabled before connecting or disconnecting a load.

1. Ensure the **OUTPUT** button is off.
2. Connect the positive lead of your load to the red (+) terminal and the negative lead to the black (-) terminal.
3. If your application requires grounding, connect the ground lead to the green (GND) terminal.
4. Set the desired voltage and current limits.

5. Press the **OUTPUT** button to enable the power output to your load.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your power supply.

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the unit. Do not use abrasive cleaners or solvents. Ensure the unit is powered off and disconnected from AC mains before cleaning.
- **Ventilation:** Periodically check that the cooling fan and ventilation openings are free from dust and obstructions. A clogged fan can lead to overheating.
- **Fuse Replacement:** If the unit does not power on, check the fuse located in the fuse box on the rear panel. Replace it with a fuse of the same type and rating only. Refer to the specifications for the correct fuse type.

7. Troubleshooting

If you encounter issues with your Wanptek APS605, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Unit does not power on.	No AC power; Blown fuse; Incorrect voltage switch setting.	Check power cord connection and outlet; Replace fuse; Verify 115V/230V switch setting.
No output voltage/current.	Output button is off; OCP tripped; Short circuit in load.	Press OUTPUT button to enable; Check OCP status and reset if tripped; Disconnect load and check for short.
Voltage/Current cannot be adjusted.	Knob not pressed to select digit; Unit in C.C. or C.V. mode.	Press the knob to select the digit to adjust; Understand C.C./C.V. operation (e.g., if in C.C., voltage is limited by load).
Unit overheats.	Blocked ventilation; Excessive load.	Ensure cooling fan and vents are clear; Reduce load or operate within specified limits.

8. Specifications

Technical specifications for the Wanptek APS605 DC Power Supply:

Parameter	Value
Model	APS605
Output Voltage	0-60V DC
Output Current	0-5A DC
Output Power	300W
Input Voltage	AC 115V/230V ±10% (Switchable)
Load Regulation (Voltage)	CV <= 0.1% + 10mV

Parameter	Value
Load Regulation (Current)	CC <= 0.1% + 10mA
Ripple & Noise (Voltage)	Vp-p <= 20mV
Ripple & Noise (Current)	Vp-p <= 20mA
Display Accuracy	±0.5% + 2 digits
Protection	Over Voltage Protection (OVP), Over Current Protection (OCP), Over Temperature Protection (OTP)
Dimensions (L x W x H)	7.48 x 3.54 x 5.7 inches (approx.)
Item Weight	3.29 pounds (approx.)
Cooling Method	Air Cooling (Fan)

Parameter Information



Figure 8.1: Product Dimensions

9. Warranty and Support

Wanptek products are manufactured to high-quality standards. For warranty information, technical support, or service inquiries, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase.

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