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› IMAYCC 0-24V 20A 480W Adjustable AC to DC Power Supply User Manual

IMAYCC AC to DC Converter

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Model: AC to DC Converter

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your IMAYCC Adjustable AC to DC Power Supply. This device converts 110V AC input to an adjustable 0-24V DC output, with a maximum current of 20A and a total power output of 480W. It is designed for various applications requiring a stable and adjustable DC power source.



Figure 1: IMAYCC Adjustable Power Supply. This image shows the overall view of the power supply unit, highlighting its compact design and the integrated LED display.

2. SAFETY INFORMATION

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

- **Input Voltage Selection:** Ensure the 115V/230V switch on the side of the unit is set to match your local AC input voltage (110V-120V or 220V-240V) **before** connecting to power. Incorrect selection can damage the unit.
- **Proper Grounding:** Always connect the AC input to a properly grounded outlet. The unit includes an Earth Wire (Ground) terminal for safety.
- **Protection Features:** The power supply is equipped with overload, overvoltage, leakage, and short circuit protection functions. Do not attempt to bypass these safety features.
- **Ventilation:** Ensure adequate ventilation around the unit. Do not block the cooling fan or ventilation openings.
- **Environment:** Operate the unit in a dry environment, away from moisture, flammable materials, and extreme temperatures.

1. **LED Display:** Shows output voltage (V) and current (A).
2. **Voltage Adjustment Knob:** Adjusts the DC output voltage (0-24V).
3. **Current Adjustment Knob:** Adjusts the DC output current limit (0-20A).
4. **AC Input Terminals:** L (Live), N (Neutral), and Ground (Earth Wire) for AC power connection.
5. **DC Output Terminals:** V+ (Positive pole) and V- (Negative pole) for DC load connection. Note: V- terminals serve as the DC ground and are isolated from the AC ground terminal.
6. **115V/230V Selector Switch:** For selecting the appropriate AC input voltage.
7. **Cooling Fan:** Automatically operates based on internal temperature.



Figure 3: Front Panel and Terminal Overview. This image details the LED display showing voltage and current, and the DC output terminals, indicating their adjustable ranges.



Figure 4: Power Supply with Connected Power Cord. This image shows the power supply unit with a power cord connected, illustrating a typical setup.

4. SETUP INSTRUCTIONS

Follow these steps to set up your power supply:

1. **Verify Input Voltage:** Locate the 115V/230V selector switch on the side of the unit. Use a small tool (e.g., screwdriver) to slide the switch to the correct position corresponding to your local AC mains voltage (110V-120V or 220V-240V).
2. **AC Input Wiring:** Connect your AC power cord to the L (Live), N (Neutral), and Ground terminals. Ensure connections are secure and correct. Refer to the wiring diagram on the unit or in Figure 5.
3. **DC Output Wiring:** Connect your DC load to the V+ (Positive) and V- (Negative) terminals. Ensure correct polarity and secure connections. The V- terminals are the DC ground and are isolated from the AC ground.

4. **Initial Adjustment:** Before connecting the power supply to your load, turn both the voltage and current adjustment knobs counter-clockwise to their minimum settings.



Figure 5: Wiring Diagram and Application Examples. This image provides a visual guide for connecting AC input and DC output, along with examples of common applications.

5. OPERATING INSTRUCTIONS

Once the unit is properly wired and the input voltage is selected:

1. **Power On:** Connect the AC power cord to a wall outlet. The LED display will illuminate, showing the current voltage and current settings.
2. **Adjust Voltage:** Slowly turn the voltage adjustment knob clockwise to increase the output voltage to your desired level (0-24V). Observe the LED display for the precise voltage reading.
3. **Adjust Current Limit:** Slowly turn the current adjustment knob clockwise to set the maximum current your load can draw (0-20A). This acts as a current limiter to protect your device.
4. **Voltage and Current Interaction:** Note that the voltage and current regulation are linked. If you are trying to adjust voltage but cannot reach the desired setting, ensure the current limit knob is set high enough. Conversely, if adjusting current, ensure the voltage knob is set appropriately.
5. **Monitoring:** Continuously monitor the LED display for real-time voltage and current output during operation.
6. **Power Off:** To turn off the unit, disconnect the AC power cord from the wall outlet.



Figure 6: Adjustment Knobs. This image highlights the voltage and current adjustment knobs, which allow precise control over the power supply's output.

6. MAINTENANCE

To ensure the longevity and optimal performance of your power supply:

- **Cleaning:** Regularly clean the exterior of the unit with a soft, dry cloth. Do not use liquid cleaners or solvents.
- **Ventilation:** Keep the ventilation openings clear of dust and debris. The smart cooling fan will activate as needed to maintain optimal internal temperature.
- **Fan Operation:** The cooling fan is designed to activate only when the internal temperature reaches approximately 113°F (45°C). It is normal for the fan to remain off during light loads or cooler operating conditions.
- **Storage:** When not in use for extended periods, store the unit in a cool, dry place.



Figure 7: Smart Cooling Fan. This image illustrates the internal cooling fan and its intelligent activation mechanism, ensuring efficient heat dissipation.

7. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
No power/LED display off	No AC input power; Incorrect 115V/230V switch setting; Blown fuse.	Check AC power connection; Verify 115V/230V switch position; Inspect and replace fuse if necessary (by qualified personnel).
No DC output voltage/current	Output terminals incorrectly wired; Voltage/current knobs set to minimum; Overload/short circuit protection activated.	Check DC output wiring polarity; Adjust voltage/current knobs clockwise; Disconnect load, check for short circuit, then reconnect.
Fan not running	Normal operation under low load or cool conditions.	The fan activates only when the internal temperature reaches 113°F (45°C). This is not an error unless the unit is overheating.
Cannot reach desired voltage/current	The other adjustment knob (voltage or current) is limiting the output.	If adjusting voltage, ensure the current limit knob is set high enough. If adjusting current, ensure the voltage knob is set appropriately. Both settings interact.

If the problem persists after attempting these solutions, contact customer support.

8. SPECIFICATIONS

- **Brand:** IMAYCC
- **Model:** AC to DC Converter
- **Input Voltage:** AC 110V-120V or 220V-240V (Switchable)
- **Input Frequency:** 50/60 Hz
- **Output Voltage:** 0-24V DC (Adjustable)
- **Output Current:** 0-20A (Adjustable)
- **Max Output Power:** 480W
- **Dimensions (L x W x H):** 8.5" x 4.5" x 1.9"
- **Cooling:** Smart Fan (activates at 113°F / 45°C)
- **Protections:** Overload, Overvoltage, Leakage, Short Circuit
- **Certifications:** CE, RoHS

9. WARRANTY AND SUPPORT

This IMAYCC power supply comes with a **1-Year Warranty** against manufacturing defects. If you experience any quality-related issues, please contact IMAYCC customer support for assistance.

For technical support or warranty claims, please contact IMAYCC customer service. We are committed to resolving any product or service issues within 24 hours.

