**PACUM KPS3010D**

# PACUM KPS3010D Adjustable DC Power Supply User Manual

Model: KPS3010D

## 1. Product Overview

The PACUM KPS3010D is a miniature switching DC power supply designed for laboratory and industrial applications. It features adjustable output voltage and current, providing precise control for various testing and development needs. The unit includes a high-precision digital display for voltage, current, and power, ensuring clear monitoring of operational parameters. Its compact design, high power density, and comprehensive protection functions make it a reliable tool for professionals.


**Figure 1:** Front view of the PACUM KPS3010D DC Power Supply, showing the digital display and control knobs.

## 2. Safety Instructions

To ensure safe operation and prevent damage to the device or injury to personnel, please observe the following safety precautions:

- Always connect the power supply to a grounded electrical outlet.
- Do not operate the device in wet or damp conditions.
- Ensure proper ventilation to prevent overheating. Do not block ventilation openings.
- Do not open the casing of the power supply. There are no user-serviceable parts inside. Refer all servicing to qualified personnel.
- Before making any connections or disconnections, ensure the power supply is turned off and unplugged from the main power source.
- Verify that the input voltage switch (if present) is set correctly for your local power grid (115V or 230V).
- Avoid short-circuiting the output terminals.

## 3. Product Features

- **Adjustable Output:** Continuously adjustable output voltage (0-30V) and current (0-10A) with fine and coarse adjustments.
- **Digital Display:** High-precision two/three-window LED display for voltage, current, and power.
- **Protection Functions:** Includes Over Voltage Protection (OVP), Over Current Protection (OCP), and Over Temperature Protection (OTP).
- **Constant Voltage/Current:** Automatic switching between Constant Voltage (CV) and Constant Current (CC) modes.
- **Cooling System:** Temperature-controlled fan cooling for low noise and extended lifespan.
- **Compact Design:** Small size, light weight, and high power density.
- **Dual Voltage Input:** Convenient choice for AC 230V/115V ±10%; 50Hz/60Hz.

## 4. Package Contents

Upon unpacking, please verify that all items listed below are present and undamaged:

- PACUM KPS3010D DC Power Supply Unit
- U-shaped transmission line (1 set)
- Power cable (1)
- User Manual (this document)

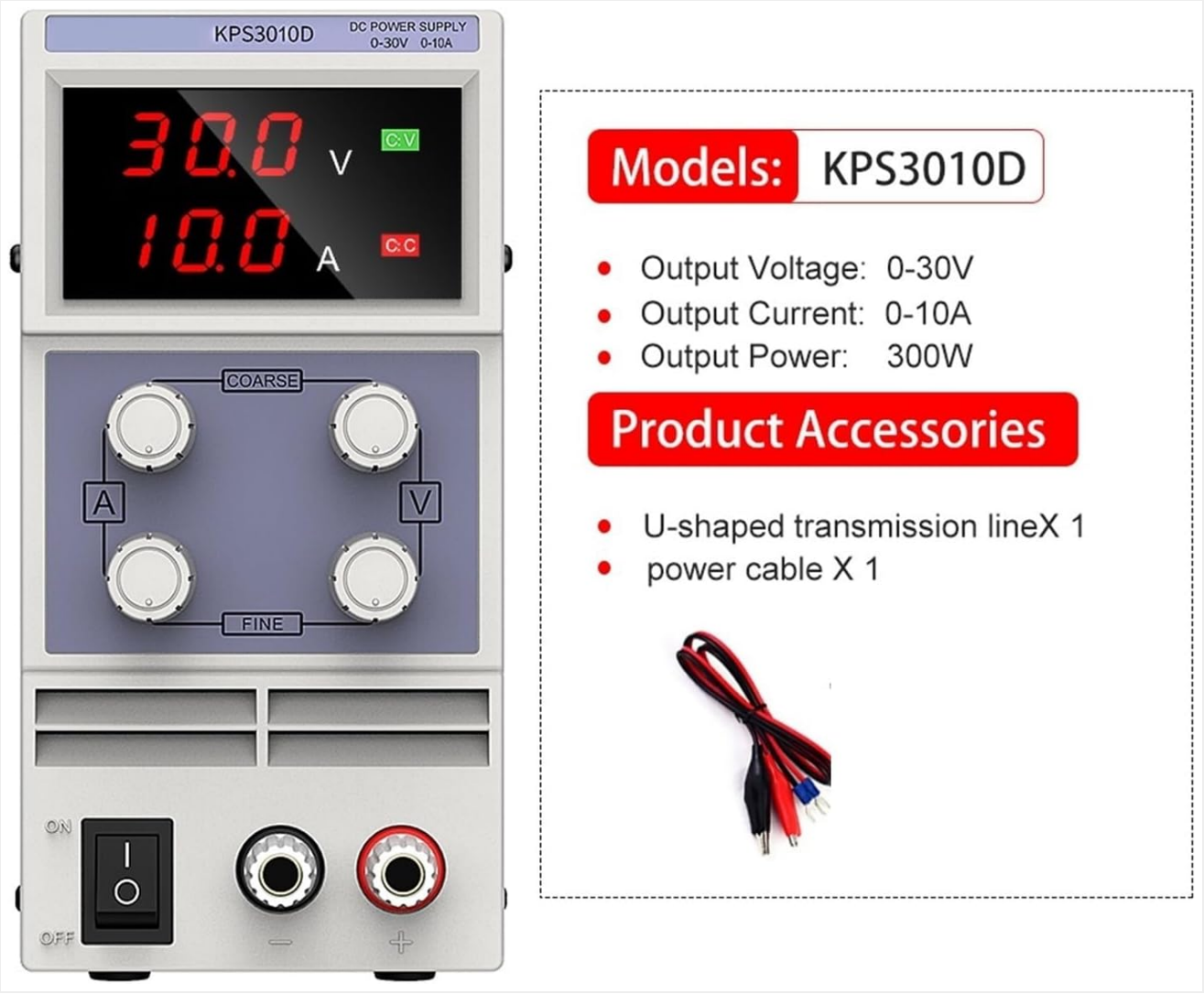


**Figure 2:** The KPS3010D power supply shown with its included U-shaped transmission line and power cable.

## 5. Setup

1. **Placement:** Place the power supply on a stable, level surface with adequate ventilation around the unit. Ensure no objects obstruct the air vents on the sides or rear.
2. **Input Voltage Selection:** Locate the input voltage selector switch (if present, usually on the rear panel) and ensure it is set to match your local AC mains voltage (115V or 230V). Incorrect setting can damage the unit.
3. **Power Connection:** Connect the provided power cable to the AC input socket on the rear of the power supply and then plug it into a grounded electrical outlet.
4. **Output Connections:**
    - Ensure the power supply is OFF before connecting any load.
    - Connect the positive (+) terminal of your load to the red output terminal of the power supply.
    - Connect the negative (-) terminal of your load to the black output terminal of the power supply.
    - For safety, ensure all connections are secure and free from short circuits.

## 6. Operating Instructions

This section details the steps for operating your PACUM KPS3010D power supply.

1. **Power On:** Press the power switch to the "ON" position. The digital display will illuminate, showing the current voltage, current, and power settings.
2. **Adjusting Voltage:**
    - Use the **COARSE** voltage knob (V-COARSE) for large adjustments of the output voltage.
    - Use the **FINE** voltage knob (V-FINE) for precise adjustments of the output voltage.
    - Observe the voltage reading on the digital display.
3. **Adjusting Current Limit:**
    - To set the current limit, first short-circuit the output terminals (briefly, or use a low-resistance load) or connect a multimeter in ammeter mode.
    - Use the **COARSE** current knob (A-COARSE) for large adjustments of the current limit.
    - Use the **FINE** current knob (A-FINE) for precise adjustments of the current limit.
    - The "C.C" (Constant Current) indicator will light up when the current limit is reached.
    - Remove the short circuit or multimeter after setting the current limit.
4. **Constant Voltage (CV) and Constant Current (CC) Modes:**
    - When the load resistance is high, the power supply operates in Constant Voltage (CV) mode, and the "C.V" indicator will be lit. The output voltage remains stable at the set value.
    - When the load resistance is low or the current drawn by the load exceeds the set current limit, the power supply automatically switches to Constant Current (CC) mode, and the "C.C" indicator will be lit. The output current remains stable at the set limit, and the output voltage will drop.
5. **Power Off:** After use, turn off the power supply by pressing the power switch to the "OFF" position. Disconnect the load and then unplug the power cable from the mains.


**Figure 3:** An example of a similar power supply (KPS3010DF) being used with a multimeter to measure output, demonstrating typical operation.

## 7. Maintenance

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

- **Cleaning:** Regularly clean the exterior of the unit with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the unit is powered off and unplugged before cleaning.
- **Ventilation:** Keep the ventilation openings clear of dust and debris. Periodically inspect and clean the fan area if necessary, ensuring the unit is unplugged.
- **Storage:** When not in use for extended periods, store the power supply in a cool, dry place, away from direct sunlight and excessive humidity.
- **Inspection:** Periodically check the power cord and output cables for any signs of damage. Replace damaged cables immediately.

## 8. Troubleshooting

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

| Problem | Possible Cause | Solution |
| --- | --- | --- |

| Problem | Possible Cause | Solution |
|---|---|---|
| No power/Display off | Power cable disconnected; Power switch off; Blown fuse; Incorrect input voltage setting. | Check power cable connection; Ensure power switch is ON; Check and replace fuse (if accessible and safe); Verify input voltage selector. |
| No output voltage/current | Output terminals not connected; Voltage/current knobs set to zero; Overload protection (OCP) or Over Voltage Protection (OVP) activated. | Ensure load is properly connected; Adjust voltage/current knobs to desired values; Reduce load or check for short circuit; Cycle power to reset protection. |
| Output voltage drops under load | Power supply operating in Constant Current (CC) mode; Load drawing more current than set limit. | Increase the current limit setting; Check if the load resistance is too low for the desired voltage and current. |
| Unit overheats/Fan runs constantly | Blocked ventilation; Excessive ambient temperature; Prolonged operation at maximum output. | Ensure clear airflow around the unit; Operate in a cooler environment; Reduce load or allow for cooling periods. |

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

## 9. Specifications

| Parameter | Value |
|---|---|
| Model | KPS3010D |
| Output Power | 300W |
| Output Voltage | 0~30V |
| Output Current | 0~10A |
| Input Voltage | AC 230V/115V±10%; 50Hz/60Hz |
| Working Environment Humidity | <80%RH (Storage: <70%RH) |
| Voltage Stability (CV) | 0.1%±3mV |
| Load Stability (CV) | 0.2%±3mV |
| Ripple Voltage (CV) | 0.5% Vp-p |
| Current Stability (CC) | 0.1%±3mA |
| Load Stability (CC) | 0.2%±3mA |
| Ripple Current (CC) | 0.5% Vp-p |
| Recovery Time | 500μS |
| Temperature Coefficient | 100ppm/°C |
| Display Accuracy | 0.5%±digits |
| Display Resolution (Voltage) | 0.1V/0.01V |

| Parameter | Value |
|---|---|
| Display Resolution (Current) | 0.01A/0.001A |
| Item Weight | 4.41 pounds (2 kg) |
| Package Dimensions | 1.18 x 0.79 x 0.39 inches (3 x 2 x 1 cm) - *Note: This seems incorrect for a power supply, likely a data entry error in source. Actual unit dimensions would be larger.* |

## 10. Warranty and Support

Specific warranty details are not provided in the product information. For warranty claims, technical support, or service inquiries, please contact the retailer or the manufacturer, PACUM, directly. Please have your product model number (KPS3010D) and purchase information ready when contacting support.
Manufacturer: PACUM