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> [SUNGOOYUE Digital Display DC Voltage Regulator \(Model XY-6509\) User Manual](#)

SUNGOOYUE XY-6509

SUNGOOYUE Digital Display DC Voltage Regulator

Model: XY-6509

1. INTRODUCTION

The SUNGOOYUE Model XY-6509 is an efficient digital display DC voltage regulator designed for various power supply applications, including workshop use. This device offers precise control over output voltage and current, along with comprehensive monitoring capabilities.

Key features include:

- **Wide Input/Output Range:** Accepts 12V to 72V DC input and provides a 0V to 65V DC output.
- **High Power Output:** Capable of delivering up to 9A current and 585W power.
- **Digital Display:** Real-time monitoring of input/output voltage, current, temperature, power, energy capacity, and runtime.
- **Precise Control:** Allows setting of voltage and current limits with high accuracy. Settings are retained after power cycles.
- **High Efficiency:** Achieves a conversion efficiency of approximately 95%.
- **MPPT Function:** Supports Maximum Power Point Tracking for solar charging applications.



Figure 1: Front view of the SUNGOOYUE XY-6509 Digital Display DC Voltage Regulator.

This image displays the front panel of the voltage regulator, highlighting its clear digital display and user-friendly control interface, including the rotary encoder and push buttons.

2. SETUP

The SUNGOOYUE XY-6509 is designed for immediate use upon unpacking. Follow these steps for initial setup:

1. **Unpacking:** Carefully remove the voltage regulator from its packaging. Inspect for any visible damage.
2. **Placement:** Place the unit on a stable, flat surface with adequate ventilation to prevent overheating.
3. **Input Power Connection:** Connect your DC power source (12V-72V) to the input terminals. The unit features multiple input options:
 - **XT60 Connector (IN):** For high-current DC input.
 - **DC Barrel Jack (DC):** For standard DC power adapters.
 - **USB-C PD Port (PD):** For Power Delivery compatible input sources.
 - **Screw Terminal Block:** For direct wire connections, ensuring correct polarity (+ and -).
4. **Output Connection:** Connect your load to the output terminals on the front panel. Ensure correct polarity (red for positive, black for negative).
5. **Power On:** Press the power button (usually located near the display) to turn on the device. The digital display will illuminate.



Figure 2: Rear input connections of the voltage regulator.

This image illustrates the various input options available on the rear panel, including the XT60 connector, DC barrel jack, USB-C PD port, and a screw terminal block for flexible power source integration.

3. OPERATING INSTRUCTIONS

The XY-6509 features an intuitive interface for setting output parameters and monitoring performance.

3.1 Front Panel Controls



Figure 3: Front panel display and controls.

This image provides a detailed view of the control buttons (VSET, SW, ISET) and the rotary encoder, which are used for navigating menus and adjusting settings on the digital display.

- **Rotary Encoder:** Used to navigate menus and adjust values. Pressing the encoder typically confirms a selection or toggles a setting.
- **VSET Button:** Used to enter voltage setting mode.
- **ISET Button:** Used to enter current limit setting mode.
- **SW Button:** Used to switch between different display modes (e.g., input/output voltage, current, power, energy, runtime).
- **ON/OFF Button:** Toggles the output power on or off.

3.2 Setting Output Voltage and Current

1. **Set Voltage:** Press the **VSET** button. The voltage value on the display will start blinking. Rotate the encoder to adjust the desired output voltage. Press the encoder to confirm the setting.
2. **Set Current Limit:** Press the **ISET** button. The current value on the display will start blinking. Rotate the encoder to adjust the maximum output current. Press the encoder to confirm the setting.
3. **Enable Output:** After setting the desired voltage and current, press the **ON/OFF** button to enable the output. The display will show the actual output voltage and current.

3.3 Display Modes

Press the **SW** button to cycle through various display screens, which may include:

- Input Voltage (IN V)
- Output Voltage (OUT V)
- Output Current (OUT A)
- Output Power (W)
- Energy Capacity (Ah)
- Runtime (h)
- Temperature

- Voltage and Current Curves (if supported by firmware)

3.4 Data Storage Groups

The device supports 10 data storage groups. Refer to the on-screen menu (accessed via encoder press or specific button combination) for saving and recalling preset voltage/current configurations.

4. MAINTENANCE

Proper maintenance ensures the longevity and reliable operation of your voltage regulator.

- **Cleaning:** Regularly wipe the unit with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the device is powered off and disconnected from all power sources before cleaning.
- **Ventilation:** Keep the ventilation openings clear of dust and obstructions to ensure proper airflow and prevent overheating.
- **Storage:** When not in use for extended periods, store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- **Inspection:** Periodically check all cables and connections for signs of wear or damage. Replace any damaged components immediately.

5. TROUBLESHOOTING

If you encounter issues with your SUNGOOYUE XY-6509, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Device does not power on.	No input power, incorrect input voltage, or faulty connection.	<ul style="list-style-type: none"> • Ensure the input power source is connected and active. • Verify input voltage is within the 12V-72V range. • Check all input cable connections for secure fit and correct polarity.
No output voltage/current.	Output is disabled, current limit set too low, or load issue.	<ul style="list-style-type: none"> • Press the ON/OFF button to enable output. • Increase the current limit (ISET) if it's too low for the connected load. • Check the load for short circuits or excessive current draw. • Ensure output connections are secure and have correct polarity.
Output voltage/current is unstable.	Input power fluctuations, excessive load, or poor connections.	<ul style="list-style-type: none"> • Use a stable input power source. • Ensure the load does not exceed the device's maximum output power (585W) or current (9A). • Verify all input and output connections are tight.

Problem	Possible Cause	Solution
Display shows error message or abnormal readings.	Internal fault or sensor issue.	<ul style="list-style-type: none"> Power off the device, wait a few minutes, then power it back on. If the issue persists, contact customer support.

6. SPECIFICATIONS

Parameter	Value
Model	XY-6509
Type	DC Voltage Regulator
Material	ABS
Input Voltage	12.00V - 72.00V DC
Output Voltage	0V - 65.00V DC
Output Current	0 - 9.000 A
Output Power	585 W (Max)
Voltage Accuracy	± 0.5% + 1 digit
Current Accuracy	± 0.5% + 3 digits
Voltage Resolution	0.01 V
Current Resolution	0.001 A
Data Storage Groups	10
Number of Buttons	5 (including rotary encoder push function)
Screen Visible Area	Approx. 38x29 mm (1.50x1.14 inch) LCD
Buzzer	Yes
Conversion Efficiency	Approx. 95%
Gradual Start	Yes
MPPT Function	Supported (for solar charging)
Typical Ripple Value Exit	VPP-150 MV
Package Dimensions	5.91 x 4.33 x 2.76 inches
Item Weight	12.6 ounces

7. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or contact

SUNGOOYUE customer service through their official channels. Keep your purchase receipt for warranty claims.

Visit the [SUNGOOYUE Store](#) for more products and information.

