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## POWLSOJX 30A

# POWLSOJX 12V/24V Auto Solar Charge Controller 30A Instruction Manual

Model: 30A

## INTRODUCTION

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This manual provides detailed instructions for the installation, operation, and maintenance of your POWLSOJX 12V/24V Auto Solar Charge Controller. This device is designed to efficiently manage power flow from your solar panels to your battery system, ensuring optimal charging and extending battery life. It features automatic 12V/24V battery detection, a multi-stage PWM charging algorithm, an LCD display for real-time monitoring, and USB quick charge ports.

## SAFETY INFORMATION

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Please read all safety instructions carefully before installation and operation. Failure to follow these instructions may result in damage to the controller, battery, or solar panels, and could lead to personal injury.

- This solar charge controller is designed for **indoor use only**. Do not expose it to water, moisture, or direct sunlight. Ensure installation in a dry, well-ventilated area.
- Always connect the battery first, then the solar panel, and finally the load. Disconnect in the reverse order: load, then solar panel, then battery. This sequence prevents damage to the controller.
- Ensure all wiring connections are tight and secure to prevent loose connections that can cause excessive heat.
- For 24V systems, note that input voltage values (e.g., equalization, discharge stop, discharge reconnect) displayed on the controller or in specifications should be doubled. For example, a 25V setting for a 12V system corresponds to 50V for a 24V system.
- The controller is suitable for lead-acid and GEL batteries. Verify battery compatibility before connection.
- Do not attempt to repair or modify the controller. Refer all servicing to qualified personnel.

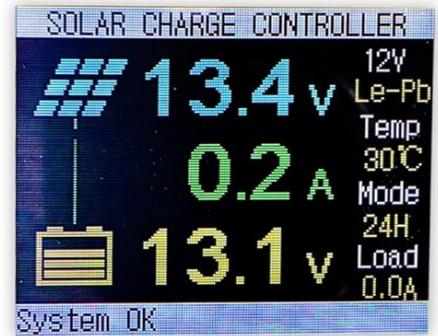
## PRODUCT OVERVIEW

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The POWLSOJX Solar Charge Controller is a robust device designed for efficient solar power management. It features a clear LCD display and intuitive controls.

# NEW CONTROLLER MENU

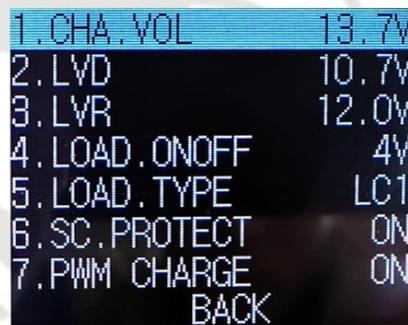
## & COLOR LCD SCREEN



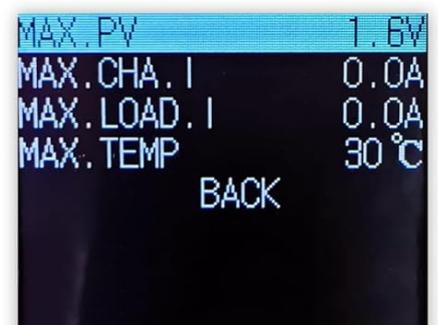
### STATE OF CHARGE



### MULTIPLE SETTINGS



### CHARGING SETTINGS



### HISTORICAL DATA

Image: Front view of the POWLSOJX Solar Charge Controller, showing the LCD screen, control buttons, and terminal blocks.

## Key Features:

- **Smart 3-Stage PWM Charging:** Automatically detects 12V/24V battery systems and optimizes charging with Bulk, Absorption, and Float stages to prolong battery life for lead-acid and GEL batteries.
- **LCD Real-Time Monitoring:** A backlit screen displays solar input voltage, battery voltage, charging current, discharge current, and load status.
- **Customizable Settings:** Allows adjustment of light/time control modes (e.g., 24H for continuous output, or timed modes for streetlights), and voltage thresholds. Settings are retained even after power loss.
- **USB Quick Charge Ports:** Equipped with 5V/2.5A USB outputs for charging small electronic devices while prioritizing battery charging.
- **Comprehensive Protection:** Built-in safeguards against overcurrent, short circuits, reverse polarity, and overcharging.

# SMART CHIP . STABLE OUTPUT

The smart chip makes the output more temperature, safe and secure



Image: The POWLSOJX PWM Solar Charge Controller highlighting its color LCD screen and 12V/24V 10/20/30A capabilities.



Image: A close-up view of the controller's side, showing the 5V/2A USB interface and highlighting the use of high-quality materials for electrical conductivity.

## SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your solar charge controller. Follow these steps carefully.

### Connection Order:

- 1. Connect the Battery:** First, connect the battery to the controller's battery terminals. Ensure correct polarity (+ to + and - to -). The controller will automatically detect the battery voltage (12V or 24V).
- 2. Connect the Solar Panel:** Next, connect the solar panel to the controller's PV terminals. Ensure correct polarity.
- 3. Connect the DC Load:** Finally, connect your DC load (e.g., lights, fan) to the controller's load terminals. Ensure correct polarity.

**Important:** Always follow this connection order to prevent damage to the controller. Disconnect in the reverse order: Load, then

PV Panel, then Battery.



Image: A wiring diagram illustrating the correct sequence for connecting the battery, solar panel, and DC load to the solar charge controller. It also shows an optional inverter connection.

Ensure that the total power of your solar panels does not exceed the controller's maximum input capacity for your system voltage (e.g., for the 30A model: 360W for 12V systems, 720W for 24V systems).

## OPERATING INSTRUCTIONS

The controller features an intuitive LCD display and control buttons for easy operation and monitoring.

### LCD Display and Menu Navigation:

The backlit LCD screen provides real-time information about your solar power system. Use the control buttons to navigate through menus and adjust settings.



Image: A detailed view of the controller's LCD screen, showing various menu options for battery type, load mode, advanced settings, charging settings, and historical data.

- **Main Screen:** Displays current solar input voltage, battery voltage, charging current, and load status.
- **Menu Navigation:** Use the **Up** and **Down** buttons to scroll through menu options. Press the **Enter** button (often represented by a gear icon or similar) to select an option or confirm a setting.
- **Setting Parameters:** You can customize parameters such as battery type (Lead-Acid, GEL), load control modes (e.g., 24H

for continuous output, or timed modes for streetlights), and voltage thresholds.

- **Memory Function:** All customized settings are retained even if power is lost, eliminating the need for repetitive configurations.

## USB Quick Charge Ports:

The controller includes two 5V/2.5A USB ports. These ports can be used to charge mobile phones, tablets, or other low-wattage USB-powered devices. The controller prioritizes solar energy for battery charging, then allocates remaining power to the USB outputs.

## MAINTENANCE

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To ensure optimal performance and longevity of your solar charge controller, follow these simple maintenance guidelines:

- **Keep Clean:** Periodically wipe the controller with a dry cloth to remove dust and dirt. Do not use liquid cleaners.
- **Check Connections:** Regularly inspect all wiring connections (battery, solar panel, load) to ensure they are tight and free from corrosion. Loose connections can lead to power loss or overheating.
- **Ventilation:** Ensure the installation area remains well-ventilated to prevent overheating of the controller.
- **Environmental Conditions:** Confirm the controller is not exposed to moisture, extreme temperatures, or direct sunlight, as it is designed for indoor use.

## TROUBLESHOOTING

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If you encounter issues with your solar charge controller, refer to the following common problems and solutions:

- **No Display/No Power:**
  - Check battery connections and ensure the battery has sufficient charge. The controller draws power from the battery to operate its display.
  - Verify correct polarity of battery connections.
- **Battery Not Charging:**
  - Ensure solar panels are connected correctly and receiving adequate sunlight.
  - Check solar panel polarity.
  - Verify that the solar panel voltage is within the controller's operating range (e.g., for 12V battery, max 23V; for 24V battery, max 46V).
- **Load Not Working:**
  - Check load connections and ensure correct polarity.
  - Verify that the load control mode is set correctly (e.g., 24H for continuous power).
  - Ensure the battery has sufficient charge; the controller may cut off load output if battery voltage is too low.
  - Check for short circuits in the load circuit.
- **Incorrect Voltage Readings (24V System):**
  - Remember that for 24V systems, certain voltage settings (Equalization, Discharge Stop, Discharge Reconnect) need to be manually doubled in the controller's settings if they are displayed as 12V equivalents.

If problems persist, contact customer support for assistance.

## SPECIFICATIONS

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Technical specifications for the POWLSOJX 30A Solar Charge Controller.

<b>Batt voltage</b>	<b>12V-24V</b>		
<b>Charge current</b>	<b>10A</b>	<b>20A</b>	<b>30A</b>
<b>Discharge current</b>	<b>10A</b>	<b>10A</b>	<b>10A</b>
<b>Max solar input</b>	<b>12V battery, the highest 23V; 24V battery when the highest 46V</b>		
<b>Battery type</b>	Lead acid battery <b>12V/24V</b> auto Lithium-ion battery (lithium battery) 3 strings 3.7V=11.1V Lithium iron phosphate battery 4 strings 3.2V=12.8V		
<b>Equalization</b>	<b>14.4V(B1)</b>	<b>12.6V(B2)</b>	<b>14.6V(B3)</b>
<b>Discharge stop</b>	<b>10.7V(B01)</b>	<b>9V(B2)</b>	<b>10V(B3)</b>
<b>Discharge reconnect</b>	<b>12.6V(B1)</b>	<b>10.5(B2)</b>	<b>12V(B3)</b>
<b>Voltage of open light</b>	<b>Solar panel 8V(Light lights delay)</b>		
<b>Voltage of close light</b>	<b>Solar panel 8V(Light off delay)</b>		
<b>USB output</b>	<b>USB output, 5V/2.5A(MAX)</b>		
<b>Self-consume</b>	<b>&lt;10mA</b>		
<b>Operating temperature</b>	<b>-35 ~ +60°C</b>		

**\*All red color voltage x2 while using 24V system**

**\*This instruction is a general manual, such as a slight difference in the physical.**

**\*Product specifications are subject to change without prior notice**

Image: A table detailing various technical specifications including battery voltage, charge/discharge current, max solar input, battery types, and operating temperatures.

**POWLSOJX Solar Charge Controller (30A Model)**

Parameter	Value (30A Model)
Battery Voltage	12V/24V Auto
Charge Current	30A
Discharge Current	10A
Max Solar Input (12V Battery)	23V (up to 360W)
Max Solar Input (24V Battery)	46V (up to 720W)
Battery Type Support	Lead-acid (B1), GEL (B2), Lithium-ion (B3)
Equalization Voltage (B1)	14.4V

Parameter	Value (30A Model)
Discharge Stop Voltage (B1)	10.7V
Discharge Reconnect Voltage (B1)	12.6V
USB Output	5V/2.5A (Max)
Self-Consumes	<10mA
Operating Temperature	-35°C to +60°C
Dimensions	10.3 cm x 6.6 cm x 2.6 cm (4.05 in x 2.59 in x 1.02 in)
Item Weight	4.9 ounces (0.14 kg)

**Note:** All red color voltage values in the image should be multiplied by 2 when using a 24V system. Product specifications are subject to change without prior notice.

# PRODUCT SIZE

**10.3cm / 4.05 INCH**



**6.6cm  
2.59INCH**

**2.6cm / 1.02INCH**

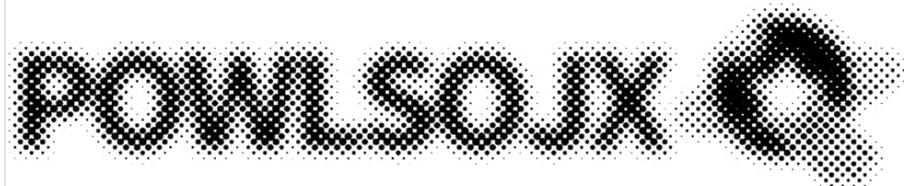


Image: The POWLSOJX Solar Charge Controller with its dimensions labeled: 10.3cm (4.05 inches) length, 6.6cm (2.59 inches) width, and 2.6cm (1.02 inches) thickness.

## WARRANTY AND SUPPORT

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Your POWLSOJX Solar Charge Controller comes with a **12-month warranty** from the date of purchase, covering manufacturing defects. Additionally, lifetime technical support is provided.

For warranty claims, technical assistance, or any questions regarding your product, please contact POWLSOJX customer service through the retailer where you purchased the product or refer to the contact information provided on the product packaging.