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› Jadeshay 60A MPPT Solar Charge Controller 12V 24V 36V 48V Auto Detection User Manual

Jadeshay 60A

Jadeshay 60A MPPT Solar Charge Controller User Manual

Model: 60A

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your Jadeshay 60A MPPT Solar Charge Controller. This device is designed to efficiently manage power from solar panels to charge various battery types, including lead-acid (AGM, GEL, Sealed) and lithium batteries, in 12V, 24V, 36V, and 48V systems. It features automatic voltage detection and a programmable LCD for monitoring and parameter adjustment.



Figure 1: Jadeshay 60A MPPT Solar Charge Controller. Displays maximum transfer efficiency of $\geq 98.1\%$ and photovoltaic utilization rate of $\geq 99\%$.

2. PRODUCT FEATURES

- **Wide Compatibility:** Supports automatic battery voltage detection for 12V, 24V, 36V, and 48V systems. Compatible with lithium, LiFePO₄, Li(NiCoMn)O₂, flooded, alloy, sealed, GEL, and nickel-cadmium batteries. Features three-stage charging to optimize battery performance.
- **User-Friendly Interface:** Equipped with a programmable LCD screen that displays various operational data and system status. Allows for quick identification of system faults and parameter modification.
- **High Charging Limit:** MPPT charger controller with a maximum solar open circuit voltage (VOC) of 180V and a maximum solar charge current of 60 Amp. Achieves a maximum efficiency of $\geq 98.1\%$ and a photovoltaic utilization rate of $\geq 99\%$.
- **Efficient Heat Dissipation:** Features an intelligent cooling fan controller and an aluminum alloy heat dissipation casing to minimize losses during the charging process.
- **Important Note for Battery Types:** For sealed lead-acid, vented GEL batteries, etc., no parameter settings are

required as the solar regulator adjusts automatically. For lithium batteries, parameters must be adjusted according to the actual battery voltage.



Figure 2: Cooling fan for efficient heat dissipation and backlit LCD display for quick fault identification and parameter modification.

3. SETUP & INSTALLATION

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

3.1 Connection Diagram

Conexión del sistema solar

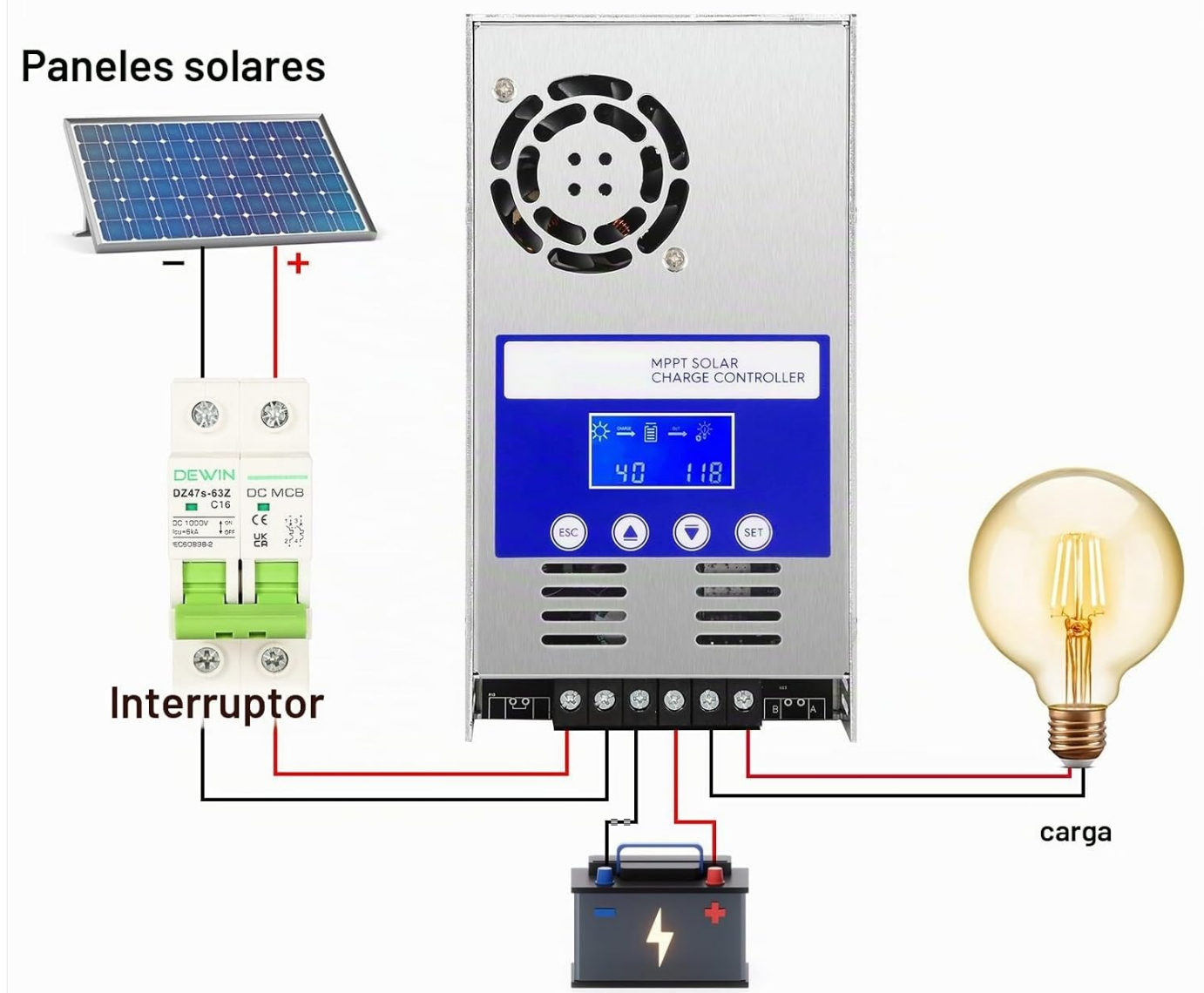


Figure 3: Solar System Connection Diagram. Connect solar panels to the controller, then the controller to the battery, and finally the load to the controller. Ensure circuit breakers are installed.

3.2 Wiring Instructions

Connect the components in the following order to prevent damage:

1. **Connect Battery:** First, connect the battery to the controller's BAT+ and BAT- terminals. Ensure correct polarity. It is recommended to install a circuit breaker between the battery and the controller.
2. **Connect Solar Panels:** Next, connect the solar panels to the controller's PV+ and PV- terminals. Ensure correct polarity. A circuit breaker should be installed between the solar panels and the controller.
3. **Connect Load:** Finally, connect your DC load to the controller's LOAD+ and LOAD- terminals.

WARNING: Always connect the battery first, then the solar panels, and finally the load. Disconnect in the reverse order. Incorrect wiring can damage the controller and other components.

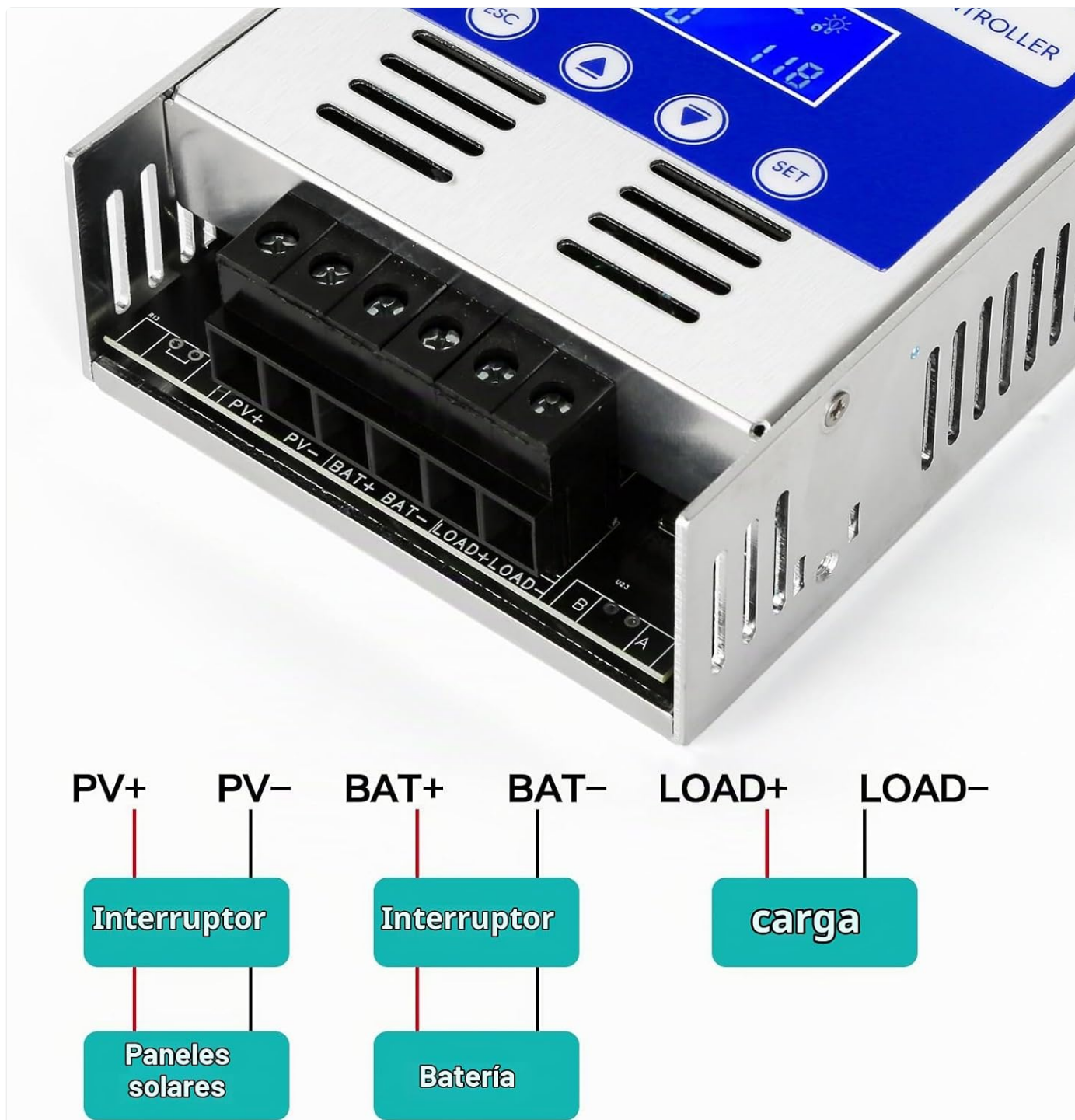


Figure 4: Terminal connections for PV (Solar Panels), BAT (Battery), and LOAD. Ensure proper wiring and polarity.

4. OPERATING INSTRUCTIONS

The Jadeshay 60A MPPT Solar Charge Controller features an intuitive LCD display and control buttons for easy operation and monitoring.

4.1 Button Functions

Introducción clave



Figure 5: Controller buttons. ESC (Exit/Settings), Up arrow (+), Down arrow (-), SET (Confirm/Enter).

- **ESC Button:** Used to exit menus or return to the previous screen. In some contexts, it may also initiate settings mode.
- **Up Arrow (+) Button:** Used to increase values or navigate upwards through menu options.
- **Down Arrow (-) Button:** Used to decrease values or navigate downwards through menu options.
- **SET Button:** Used to confirm selections, enter sub-menus, or save parameter changes.

4.2 LCD Display Overview

LCD STARTUP AND MAIN INTERFACE DISPLAY

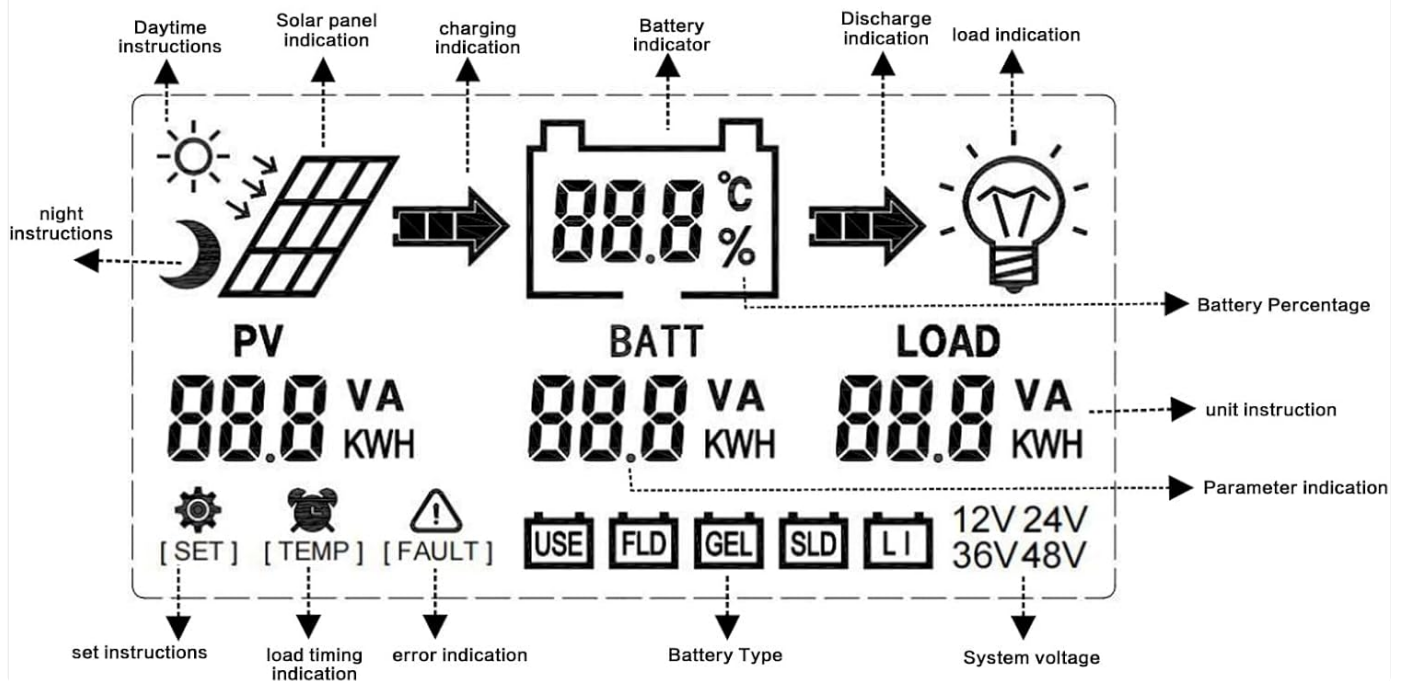


Figure 6: LCD Startup and Main Interface Display. Shows indicators for daytime/night instructions, solar panel indication, charging indication, battery indicator (percentage, type), discharge indication, load indication, unit instruction, parameter indication, set instructions, load timing error indication, and system voltage. The LCD provides real-time information about your solar system's performance. Key indicators include:

- **PV:** Solar panel input status and power.
- **BATT:** Battery charge level, voltage, and selected battery type (USE, FLD, GEL, SLD, LI).
- **LOAD:** Load output status and power consumption.
- **System Voltage:** Automatically detected or manually set system voltage (12V, 24V, 36V, 48V).
- **Error Indication:** Displays fault codes or warnings if issues arise.

4.3 Parameter Settings (for Lithium Batteries)

If using lithium batteries, it is essential to adjust the charging parameters to match your battery's specifications.

1. Press the **SET** button to enter the parameter setting menu.
2. Use the **Up (+)** and **Down (-)** buttons to navigate through the parameters (e.g., charge voltage, float voltage, low voltage disconnect).
3. Press **SET** again to select a parameter for editing.
4. Use the **Up (+)** and **Down (-)** buttons to adjust the value.
5. Press **SET** to confirm and save the new value.
6. Press **ESC** to exit the setting menu.

Refer to your lithium battery's datasheet for recommended charging voltages and settings.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your Jadeshay MPPT Solar Charge Controller.

- **Cleaning:** Periodically clean the exterior of the controller, especially the cooling fan vents, to prevent dust buildup. Use a soft, dry cloth. Do not use liquids or abrasive cleaners.
- **Connections Check:** Annually inspect all wiring connections to ensure they are tight and free from corrosion. Loose connections can lead to power loss or overheating.
- **Environmental Conditions:** Ensure the controller is installed in a well-ventilated area, away from direct sunlight, moisture, and corrosive gases. Maintain operating temperatures within specified limits.
- **Firmware Updates:** Check the manufacturer's website periodically for any available firmware updates that may improve performance or add features.

6. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
No display on LCD	Battery not connected or low voltage; power cable loose.	Check battery connections and voltage. Ensure power cables are securely connected.
Battery not charging	Solar panels not connected; insufficient sunlight; PV voltage too low/high; battery type mismatch.	Check solar panel connections and ensure adequate sunlight. Verify PV input voltage is within range. Confirm correct battery type setting.
Load not working	Load disconnected; battery low voltage disconnect; overload protection activated.	Check load connections. Ensure battery voltage is above the low voltage disconnect threshold. Reduce load or check for short circuits.
Error code on display	Internal fault; over-voltage/current; short circuit.	Note the error code and refer to the full product manual (if available) for specific meanings. Disconnect and reconnect power to reset. If persistent, contact support.

7. SPECIFICATIONS

Detailed technical specifications for the Jadeshay 60A MPPT Solar Charge Controller.

Technical Parameters

MPPT controller		30A	40A	50A	60A
charging mode	MPPT automatic maximum power point tracking				
charging method	Three stages: constant current (MPPT), constant voltage, float charge				
system type	DC12V/24V/36V/48V	Automatic Identification			
System identification voltage	12V system	DC9V-DC15V			
	24V system	DC18V-DC29V			
	36V system	DC30V-DC39V			
	48V system	DC40V-DC60V			
soft start time	12V/24V/36V/48V system	≤1S			
Dynamic Response Recovery Time	12V24V/36V48V system	100us			
Overall efficiency	12V/24V/36V48V system	≥98.1%			
PV Module Utilization Rate	12V/24V/36V/48V system	≥99%			
input characteristics					
MPPT working voltage and range	12V system	Recommended value of PV open circuit voltage input voltage: DC20V-DC80VPV			
	24V system	Recommended value of open circuit voltage input voltage: DC37V-Dc105VPV			
	36 systems	Recommended value of open circuit voltage input voltage: DC50V-DC160V			
	48V system	Recommended value of PV open circuit voltage input voltage: DC72~DC160V			
Maximum limit input voltage (VOC)	12V/24V/36V/48V system	DC180V			
Maximum solar panel input power	12V system	400W	480W	600W	720W
	24V system	720W	960W	1200W	1440W
	36V system	1000W	1400W	1800W	2100W
	48V system	1200W	1700W	2200W	2800W

Figure 7: Technical Parameters Table. Provides detailed specifications for different current ratings (30A, 40A, 50A, 60A).

Parameter	Value (60A Model)
Charging Mode	MPPT automatic maximum power point tracking
Charging Method	Three stages: constant current (MPPT), constant voltage, float charge
System Type	DC12V/24V/36V/48V (Automatic Identification)
System Identification Voltage (12V)	DC9V-DC15V
System Identification Voltage (24V)	DC18V-DC29V
System Identification Voltage (36V)	DC30V-DC39V
System Identification Voltage (48V)	DC40V-DC60V

Parameter	Value (60A Model)
Soft Start Time	≤1S
Dynamic Response Recovery Time	100us
Overall Efficiency	≥98.1%
PV Module Utilization Rate	≥99%
Maximum Limit Input Voltage (VOC)	DC180V
Maximum Solar Panel Input Power (12V System)	720W
Maximum Solar Panel Input Power (24V System)	1440W
Maximum Solar Panel Input Power (36V System)	2100W
Maximum Solar Panel Input Power (48V System)	2800W
Color	Grey, White
Material	Aluminum alloy, PC plastic
Product Weight	1260 Grams
Display Type	Backlit LCD
Operating Temperature	Up to 65 Degrees Celsius

7.1 Dimensions



Figure 8: Controller Dimensions. Height: 215mm, Width: 114mm, Depth: 48mm.

8. WARRANTY & SUPPORT

For warranty information or technical support, please refer to the product packaging or contact Jadeshay customer service through your purchase platform. Keep your purchase receipt as proof of purchase.

