

[Manuals.plus](#) /

› [WERCHTAY](#) /

› 60A MPPT Solar Charge Controller User Manual

WERCHTAY WERCHTAYR000188

60A MPPT Solar Charge Controller User Manual

Model: WERCHTAYR000188 | Brand: WERCHTAY

1. PRODUCT OVERVIEW

The WERCHTAY 60A MPPT Solar Charge Controller is an advanced device designed to manage the power flow from your solar panels to your battery bank, ensuring efficient and safe charging. It features auto-focus MPPT tracking for optimal energy harvesting, an LCD display for real-time monitoring, and dual USB ports for charging external devices. This controller is suitable for 12V/24V battery systems and offers multiple load control modes.



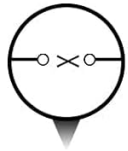
Figure 1.1: Front view of the WERCHTAY 60A MPPT Solar Charge Controller, showing the LCD display and USB ports.

2. SAFETY PRECAUTIONS

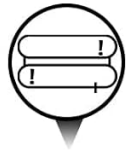
Please read all safety instructions carefully before installation and operation to prevent personal injury or damage to the controller and connected equipment.

- Ensure all wiring is correctly polarized and securely connected to prevent short circuits.
- Always connect the battery first, then the solar panels, and finally the load. Disconnect in the reverse order.
- Do not attempt to disassemble or repair the controller yourself. Refer to qualified personnel for service.
- Install the controller in a well-ventilated area, away from flammable materials and direct sunlight.
- Verify that the system voltage (12V/24V) matches the controller's auto-detection capabilities.
- This controller is designed for specific battery types (lead-acid, lithium iron phosphate, ternary lithium, water battery, colloidal battery). Ensure your battery type is compatible.

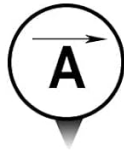
SECURITY PROTECTION



Short circuit protection



Open circuit protection



Over current protection



Overcharge protection



Put protection



Reverse connect protection

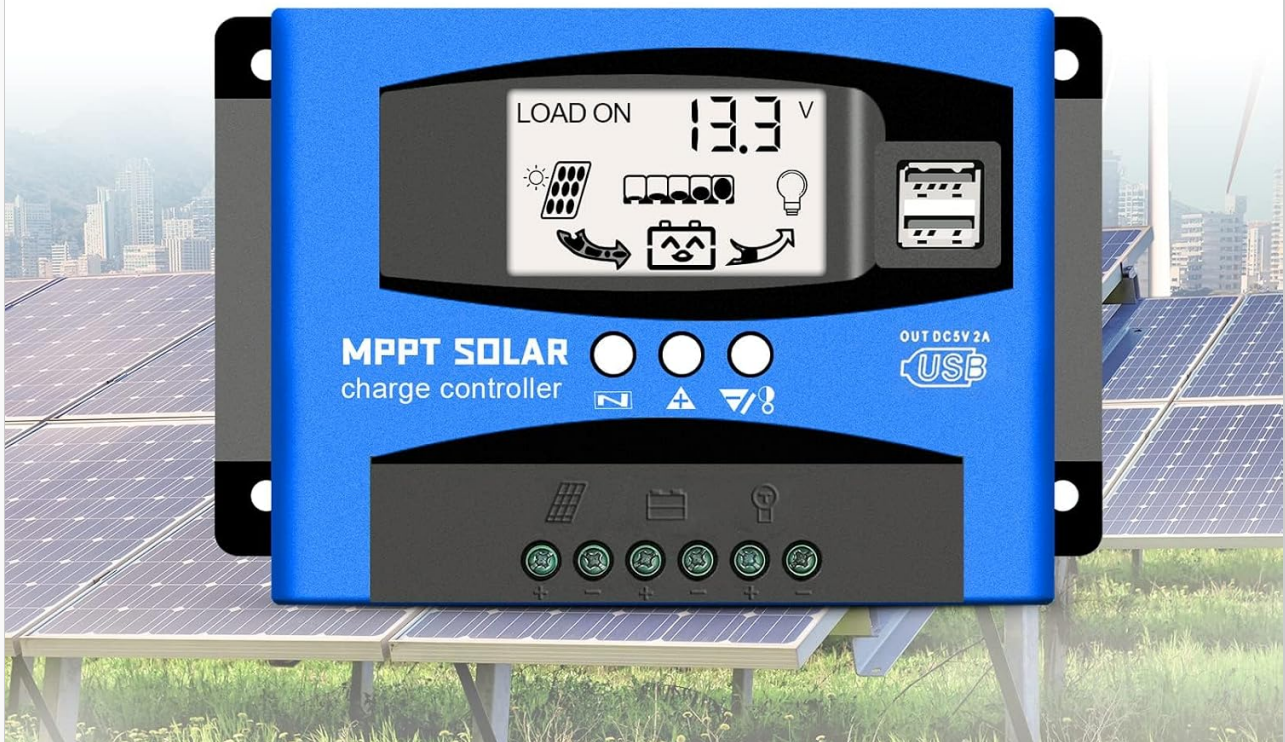


Figure 2.1: The controller includes multiple security protections: short circuit, open circuit, over current, overcharge, put protection, and reverse connect protection.

3. KEY FEATURES

- **Advanced MPPT Technology:** Auto-focus tracking for maximum power point, improving conversion efficiency by 10-30% compared to traditional PWM controllers.
- **Automatic System Voltage Identification:** Automatically detects 12V or 24V battery systems.
- **LCD Display:** Clear digital display showing real-time charging status, battery voltage, charging current, discharge current, and more.
- **Dual USB Outputs:** Provides 5V/2A output for charging mobile phones, power banks, and other USB-powered devices.
- **Multiple Protection Functions:** Includes short circuit protection, open circuit protection, over current protection, overcharge protection, reverse connection protection, and discharge cut-off.
- **Adjustable Parameters:** User-adjustable settings for floating charge voltage, discharge recovery voltage, discharge cut-off voltage, and load working modes.
- **Temperature Compensation:** Built-in temperature sensor for accurate charging voltage adjustment.

HIGHER CONVERSION EFFICIENCY



PWM



MPPT SOLAR
(Increased by 10% - 30%)



Compared with other controllers, the conversion efficiency can be improved by 10-30%

Figure 3.1: MPPT technology offers higher conversion efficiency (10-30% increase) compared to PWM controllers.

4. PACKAGE CONTENTS

Please check the package contents upon receipt to ensure all items are present and undamaged:

- WERCHTAY 60A MPPT Solar Charge Controller
- User Manual (this document)

5. INSTALLATION GUIDE

5.1 Wiring Diagram

Follow the wiring sequence strictly to prevent damage to the controller. Connect the components in the order listed below:

1. **Connect the Battery:** Connect the positive and negative terminals of the battery to the corresponding battery terminals on the controller. The controller will automatically detect the system voltage (12V or 24V).
2. **Connect Solar Panels:** Connect the positive and negative terminals of your solar panels to the corresponding solar panel terminals on the controller.

3. **Connect DC Load (Optional):** Connect your DC load to the load terminals on the controller.
4. **Connect Inverter (Optional):** If using an inverter, connect it to the battery terminals (not directly to the controller's load terminals).

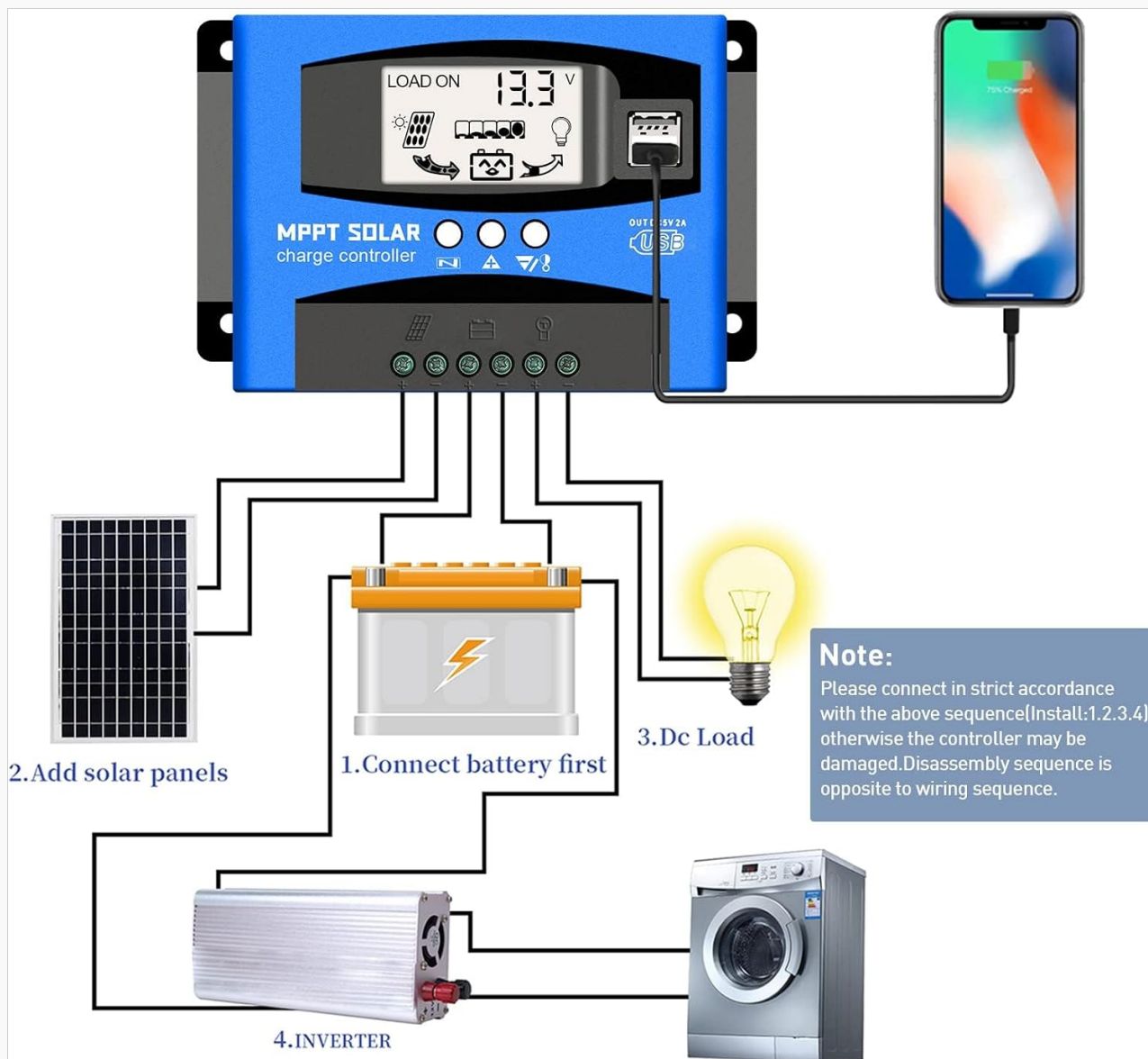


Figure 5.1: Wiring sequence for the solar charge controller. Connect battery first, then solar panels, then DC load, and finally the inverter to the battery.

5.2 Initial Setup and Operation Overview

This video provides a comprehensive guide on how to set up and operate your WERCHTAY solar charge controller, including navigating the menu and adjusting parameters.

Video 5.1: WERCHTAY 60A MPPT solar controller instruction video. This video demonstrates initial battery connection, menu navigation, parameter adjustments for floating charge, discharge recovery, discharge cut-off, battery type selection, load working modes, and system voltage settings. It also highlights the dual USB charging ports.

6. OPERATING INSTRUCTIONS

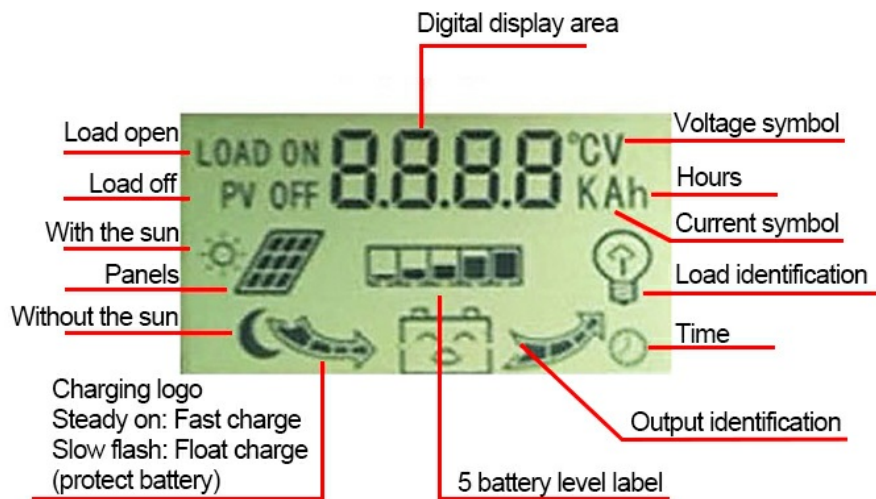
6.1 LCD Display Overview

The LCD display provides real-time information about your solar system. Familiarize yourself with the various indicators and buttons.

LCD DISPLAY KEY DESCRIPTION



Figure 6.1: Key descriptions for the LCD display, showing the LCD screen, home page, turn on/off buttons, next turn button, and dual USB ports.



MENU

Switch parameter display interface, long press 3s-5s to enter or exit parameter setting.



UP

In the parameter setting interface, press once to increase the parameter by one gear.



DOWN

1. In the parameter setting interface, press once to decrease by one gear.
2. Turn load off or on.

Figure 6.2: Detailed breakdown of LCD display elements including digital display area, voltage symbol, hours, current symbol, load identification, time, output identification, 5 battery level labels, charging logo (steady on for fast charge, slow flash for float charge), and button functions (MENU, UP, DOWN).

6.2 Parameter Settings

The controller allows for customization of various parameters to optimize performance for your specific setup. Use the MENU, UP, and DOWN buttons to navigate and adjust settings.

THE PAGE / PARAMETER SETTINGS ARE DISPLAYED

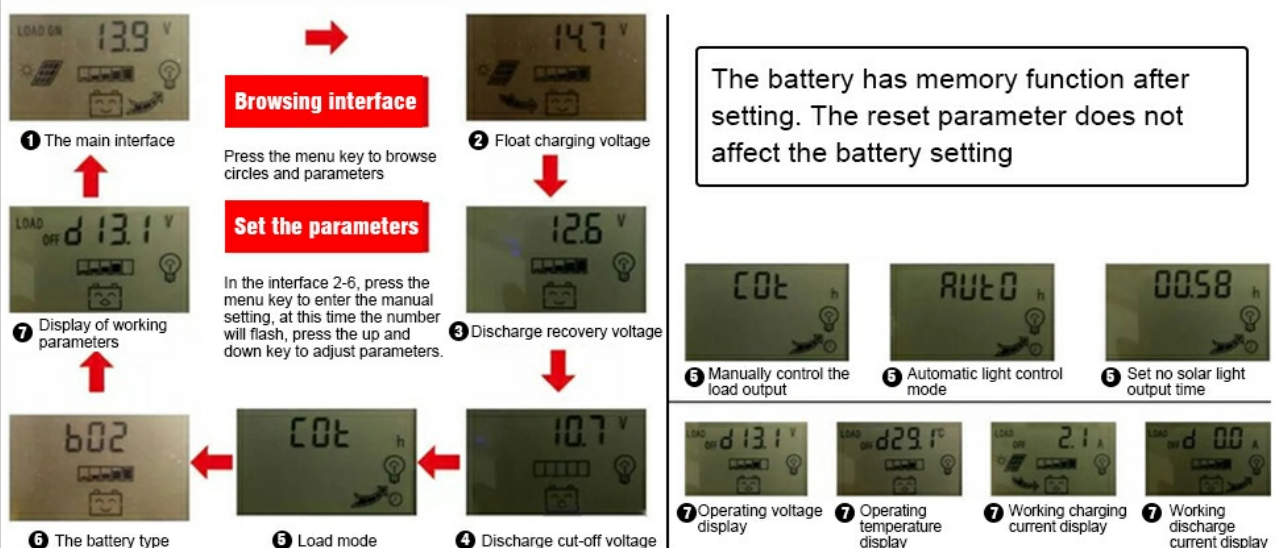


Figure 6.3: Flowchart of parameter settings, including browsing interface, setting parameters, float charging voltage, discharge recovery voltage, discharge cut-off voltage, load mode, battery type, operating display, operating temperature display, working charging current display, and working discharge current display. The battery has memory function after setting.

Adjusting Parameters:

1. **Enter Parameter Setting:** From the main interface, long press the MENU button for 3-5 seconds to enter the parameter setting mode. The number on the display will flash.
2. **Navigate Parameters:** Short press the MENU button to cycle through different parameters (e.g., floating charge voltage, discharge recovery voltage, discharge cut-off voltage, battery type, load working mode).
3. **Adjust Value:** While a parameter is flashing, use the UP (+) or DOWN (-) buttons to adjust the value to your desired setting.
4. **Save and Exit:** After adjusting a value, short press the MENU button again to save the setting and move to the next parameter. To exit the parameter setting mode, long press the MENU button for 3-5 seconds.

Key Parameters:

- **Floating Charge Voltage:** The voltage at which the battery is maintained after being fully charged to prevent overcharging.
- **Discharge Recovery Voltage:** The voltage at which the load will automatically reconnect after being disconnected due to low battery.
- **Discharge Cut-off Voltage:** The voltage at which the load will be disconnected to protect the battery from over-discharge.
- **Battery Type (B01, B02, B03):** Select the correct battery type for optimal charging. B01 is ternary lithium, B02 is lead acid, B03 is water battery or colloidal battery.
- **Load Working Mode (CoE, AuEO, 00.00, OUE):**
 - **CoE:** Manual mode (load controlled by ON/OFF button).
 - **AuEO:** Automatic optical control mode (load turns on/off based on light).
 - **00.00:** Optical control delay mode (load turns on/off based on light with a set delay).
 - **OUE:** Normally open mode (load is always on).
- **System Voltage Setting (bt12, bt24, bt60):** This parameter allows you to manually force the system voltage, which can prevent charging/overcharging issues due to identification errors.

7. MAINTENANCE

- Regularly check all wire connections for tightness and corrosion.
- Keep the controller clean and free from dust and debris. Use a dry cloth for cleaning.
- Ensure adequate ventilation around the controller to prevent overheating.
- Monitor the LCD display for any error codes or unusual readings.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
No display on LCD	Battery not connected or low voltage; reverse polarity.	Check battery connections and voltage. Ensure correct polarity.

Problem	Possible Cause	Solution
Battery not charging	Solar panels not connected; insufficient sunlight; faulty panel/wiring; battery full.	Verify solar panel connections. Check for adequate sunlight. Inspect panels and wiring. Controller stops charging when battery is full.
Load not working	Load mode incorrect; battery low voltage cut-off; load overcurrent/short circuit.	Check load working mode settings. Charge battery. Inspect load for faults.
Controller overheating	Insufficient ventilation; excessive load/current.	Ensure proper airflow around the controller. Reduce load or check system sizing.

9. TECHNICAL SPECIFICATIONS

Specification	Value
Model Number	WERCHTAYR000188
System Voltage	12V/24V Auto-detect
Max Charging Current	60A
Display Type	LCD
USB Output	Dual USB, 5V/2A
Product Dimensions	6.7 x 3.7 x 1.85 inches
Item Weight	11.3 ounces
Manufacturer	WERCHTAY
Batteries Required	No

PRODUCT SIZE

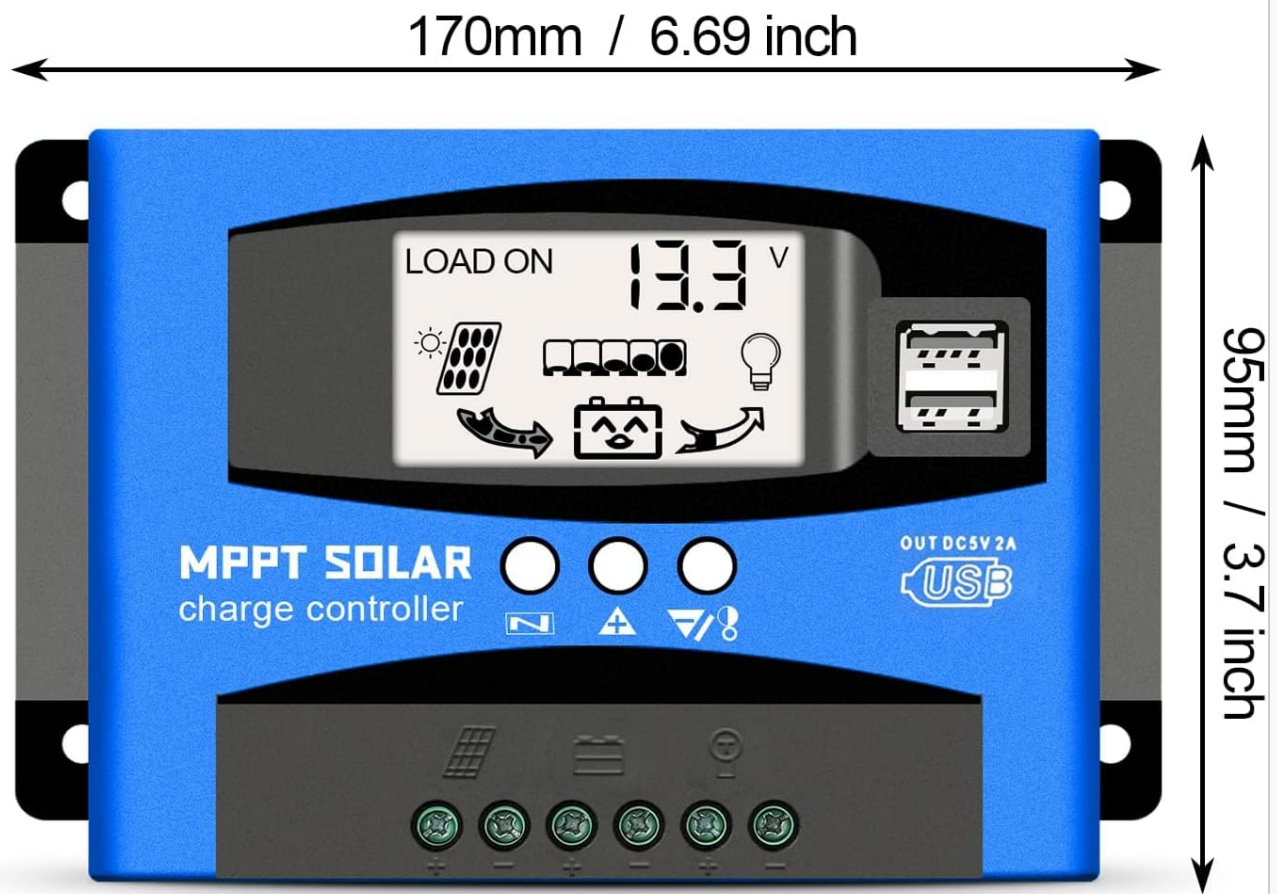


Figure 9.1: Product dimensions: 170mm (6.69 inches) length and 95mm (3.7 inches) width.

10. WARRANTY AND SUPPORT

WERCHTAY products are manufactured to high quality standards. For warranty information and technical support, please refer to the contact details provided with your purchase or visit the official WERCHTAY website. Keep your purchase receipt as proof of purchase for warranty claims.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for

conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question