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> [100A MPPT 36V/48V/60V Solar Charge Controller User Manual](#)

## CDIYTOOL 4yhujuj

# CDIYTOOL 100A MPPT Solar Charge Controller User Manual

Model: 4yhujuj

## INTRODUCTION

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This manual provides essential information for the safe and efficient operation of your CDIYTOOL 100A MPPT Solar Charge Controller. This controller is designed for 36V, 48V, and 60V battery systems and features an LCD display, multiple load control modes, and dual USB outputs. Please read this manual thoroughly before installation and use. The controller automatically adapts to 36V/48V/60V systems and is not suitable for 12V/24V systems. It utilizes innovative MPPT technology for high tracking efficiency, detecting the maximum charging current.

## SAFETY INSTRUCTIONS

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Always adhere to the following safety guidelines to prevent injury and damage to the controller or other components.

- Ensure the battery has sufficient voltage for the controller to recognize the correct battery type upon first use.
- Connect the battery to the controller first, then connect the solar panels. Reversing this order can damage the controller.
- The maximum input voltage is 50V. Ensure your solar panel configuration does not exceed this limit. For example, a 19V photovoltaic panel matches a 12V battery, and a 38V photovoltaic panel matches a 24V battery. When a 38V panel is connected, the maximum voltage may reach 42V.
- The controller is suitable for various battery types (including open, lead-acid, gel, and lithium batteries). Refer to the controller's settings for specific battery types.
- The controller provides protection against overvoltage, short circuit, overload, overcharge, and over-discharge.
- Do not attempt to disassemble or repair the controller yourself. Contact qualified personnel for service.



Image: Excerpt from the user manual detailing safety instructions and a connection diagram.

## PRODUCT FEATURES

- **Multi-function LCD Display:** Provides real-time display of charging current, discharge current, and power generation.
- **MPPT Technology:** Innovative Maximum Power Point Tracking with high efficiency (up to 99%) for optimal solar energy harvesting.
- **Reliable Protection:** Includes overvoltage, short circuit, overload, overcharge, and over-discharge protection.
- **Automatic Focusing MPPT Tracking:** Ensures high charging efficiency and bidirectional focusing tracking.
- **Temperature Compensation:** Automatically adjusts charging voltage based on ambient temperature changes.
- **Dual USB Outputs:** Provides 5V/2A output for charging mobile devices.



Image: Front view of the CDIYTOOL 100A MPPT Solar Charge Controller, highlighting the LCD display and dual USB ports.

## SETUP AND INSTALLATION

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Follow these steps for proper installation of the solar charge controller:

1. **Prepare Wiring:** Ensure all wires are correctly sized for the expected current and are properly insulated.
2. **Connect Battery:** Connect the battery to the charge controller first. Ensure correct polarity (+ to + and - to -). The controller requires sufficient battery voltage to recognize the system type.
3. **Connect Solar Panel:** Connect the solar panel(s) to the charge controller. Ensure correct polarity. Do not exceed the maximum input voltage of 50V.
4. **Connect Load (Optional):** Connect your DC load to the load terminals of the controller. The controller can manage load output based on settings.

# Characteristic

36V/ 48V/ 60V 100A

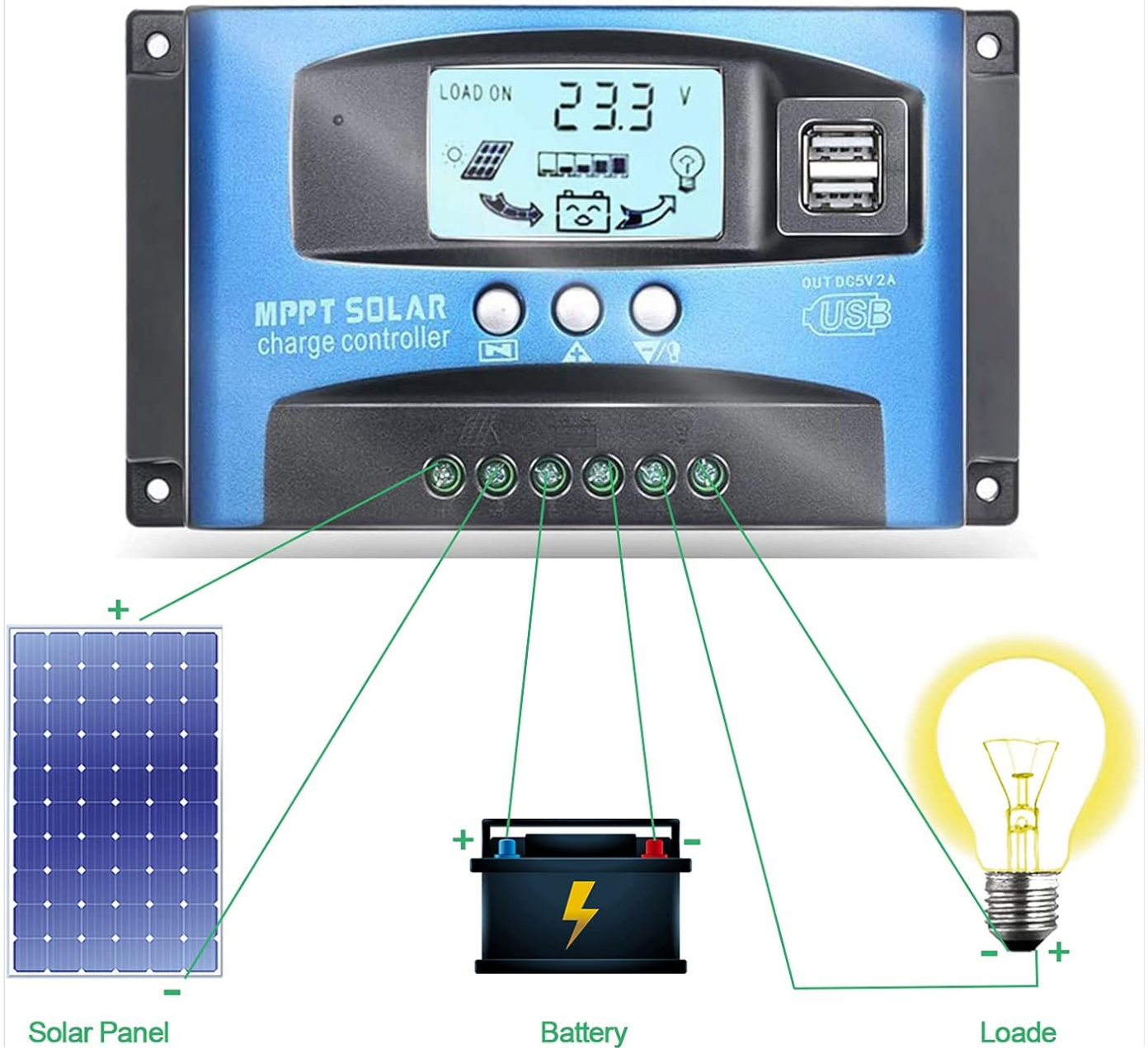


Image: Connection diagram illustrating how to connect solar panels, battery, and load to the charge controller.



Image: Detailed view of the controller with labels for its components, including buttons, LCD, USB ports, and connection points.

## OPERATING INSTRUCTIONS

The controller features an LCD display and three buttons for operation: Menu, Page Up, and Page Down/Manual.

### LCD Display

The LCD displays various parameters including battery voltage, charging current, discharge current, and system status. The icons on the display indicate solar panel activity, battery charge level, and load status.

### Button Functions

- **Menu Button:** Press to enter the menu interface and cycle through different settings. Long press to modify parameters.
- **Page Up Button:** Used to increase values or navigate upwards in menus.
- **Page Down/Manual Button:** Used to decrease values or navigate downwards in menus. Also functions as a

manual load control switch (on/off) when on the main interface.

## USB Charging

The controller is equipped with dual USB ports providing 5V/2A output for charging compatible devices such as mobile phones and tablets.



*Image: Demonstration of the controller's dual USB ports being used to charge a mobile phone.*

## MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your solar charge controller.

- **Inspect Connections:** Periodically check all wiring connections for tightness and corrosion. Loose connections can lead to power loss or overheating.
- **Clean Controller:** Keep the controller clean and free from dust and debris. Use a dry cloth to wipe the surface. Do

not use liquid cleaners.

- **Monitor Performance:** Regularly check the LCD display for normal operation and expected voltage/current readings.
- **Battery Health:** Ensure your battery is well-maintained and within its recommended operating parameters.

## TROUBLESHOOTING

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This section provides solutions to common issues you might encounter.

Situation	Probable Cause	Solution
No display on screen	Battery not connected or low voltage	Connect battery, check battery voltage
No charge when sunny	Solar panel reversed or open circuit	Reconnect solar panel, check wiring
Load not working	Load short circuit, overload, or over-discharge protection	Check load wiring, reduce load, or charge battery
Controller not charging	Solar panel voltage too low or battery full	Ensure sufficient solar input, check battery status

The controller includes built-in protections for reverse polarity, overvoltage, short circuit, overload, overcharge, and over-discharge. If an issue persists after troubleshooting, contact customer support.

## SPECIFICATIONS

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Parameter	Value
Model	4yhujuj
Brand	CDIYTOOL
Rated Current	100A
System Voltage	36V/48V/60V Auto Adapt (Not for 12V/24V)
Max Solar Input Voltage	50V
USB Output	Dual 5V/2A
Display Type	LCD
Item Weight	14.4 ounces
Package Dimensions	6.81 x 3.98 x 2.01 inches

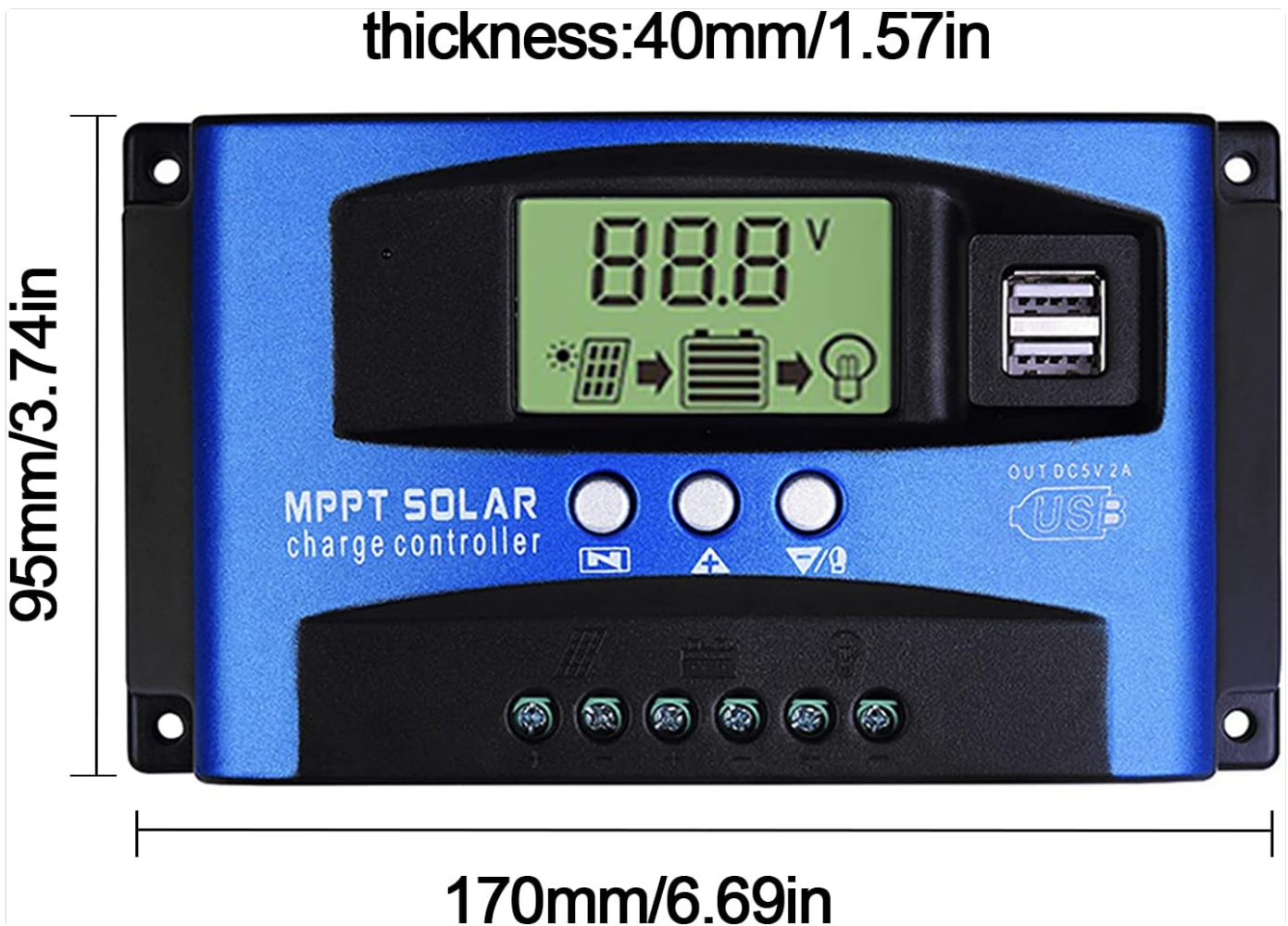


Image: Diagram showing the physical dimensions of the solar charge controller.

## ADDITIONAL RESOURCES AND SUPPORT

For further assistance or to access the mobile application for monitoring, please refer to the following:

### Mobile Application

The BL-912V APP can be installed on your Android phone to monitor and control the solar charge controller. Scan the QR code below or visit the provided link to download and install the application.

**Download Link:** <http://fir.sdhzwl.cn/5w4b>

The mobile phone app allows for remote monitoring of charging and discharging data, daily power generation, and other functions.



Image: Section of the user manual detailing the BL-912V APP installation process, including a QR code.

## Warranty and Customer Service

For warranty information or technical support, please contact CDIYTOOL customer service through the platform where you purchased the product. Keep your purchase receipt for warranty claims.

## TYPICAL APPLICATIONS

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The CDIYTOOL MPPT Solar Charge Controller is suitable for a variety of off-grid solar power applications, including:

- Residential solar power systems
- RV and marine solar setups
- Solar street lighting
- Remote monitoring stations
- Agricultural irrigation systems

# User's Manual

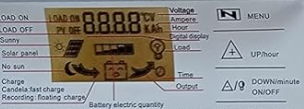
## SAFETY INSTRUCTIONS

1. This controller is 12V/24V automatic adaptation, or another version 12/24/36/48/60V manually set the appropriate battery charging mode. When installing for the first time, please make sure that the battery has enough voltage to start and automatically set the controller parameters.
2. The battery cable should be as short as possible to minimize loss.
3. This controller is suitable for all kinds of lead-acid batteries (including open, sealed, gel and other batteries). If you charge a lithium battery, you must be familiar with its battery characteristics, and you must set the charging parameters before you can use it. For example, charge 12V lithium battery, prohibit output protection setting 9.5V, full protection 12.2V, start charging voltage 11.5V when the battery drops.
4. The charge regulator is only suitable for regulating solar modules. Never connect another charging source to the charge regulator.

## PRODUCT FEATURES

1. Industrial-grade master chip, 18 AD sampling accuracy, temperature, charging current, discharge current accuracy real-time display, power generation at a glance
2. Automatic tracking MPPT tracking charging, high charging efficiency, non-stop detection during charging, bidirectional locating tracking
3. Large-screen LCD display, adjustable charging and discharging parameters. Ultra-wide charge and discharge adjustable, as long as you understand the characteristics of the battery set to corresponding charging parameters, you can charge a battery. When the output is off, the line can be adjusted, which is more convenient (on the market, there is no point adjustment).
4. A complete three-phase charge management, effectively protect the battery, the battery is more durable.
5. Built-in over-heat, over-current, short circuit, open circuit protection, reverse connection protection, when the fault is eliminated, the controller automatically recovers, does not damage the device.
6. Bidirectional MOS tube anti-backflow circuit, high-power charging mode, ultra-low heat.
7. RS-485 solar charging DC plug, RS-485 DC lamp output DC plug, convenient connection.

## LCD DISPLAY/KEY



MENU: Used to switch the parameter display interface and settings, lightly press to switch, long press to enter to modify the parameters, and automatically remember the parameters after modification.  
UP: Press to increase value.  
DOWN: Press to decrease value. Add as follows, rearrange suitable positions in the main interface, long press the middle button to display (ESD), reset all parameters except the battery.

## SYSTEM CONNECTION

1. Connect the battery to the charge regulator plus and minus.
2. Connect the photovoltaic module to the regulator plus and minus.
3. Connect the consumer to the charge regulator plus and minus.

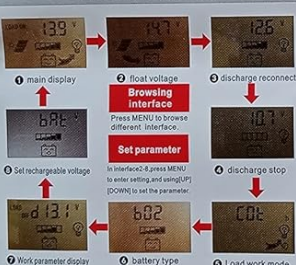
## Setting Description:

1. Main interface Press the menu key, select the interface to adjust the corresponding parameters, and set the working status of the equipment.
2. Load working mode Col manual control load output Auto automatic light control mode 00-58 OUT continuous output
3. Set real-time working status d15.1V display battery voltage value load output current display d29.1°C temperature display CC.1A solid charging flow shows that high current charging and charging arrows flow fast, and current flows slowly.
4. The 00.0A output load current shows that the large current discharge discharge arrow flows fast and the current flows slowly.
5. BAt sets the voltage value of the rechargeable battery, AUTO automatic identification mode, low-voltage machine 12/24V, high-voltage machine 12V 24V 36V 48V 60V

The reverse order applies when deinstalling!  
An improper sequence order can damage the controller!



## DISPLAY/SETTING



## TROUBLE SHOOTING

Situation	Probable cause	Solution
Charge icon not on	Solar panel opened or reversed	Reconnect
when sunny	Mode setting wrong	Set again
Load icon off	Battery low	re-charge
Load icon slow flashing	Over load	Reduce load watt
Load icon fast flashing	Short circuit protection	Auto-reconnect
Power off	Low Battery voltage / Reverse	Check battery/connection
Suddenly not charging	Solar energy disappears, only arrows	Overheat protection, self-recovery of temperature drop

## TECHNICAL PARAMETER

MODEL	BL912A	BL912B	BL912C	BL912D	BL912E	BL912F		
Charge current	20A	30A	40A	50A	60A	120A		
Discharge current	10A	10A	20A	20A	30A	30A		
Equalization	B01 Lithium	B02 Gel	B03 Flood	B03 Flood	B03 Flood	B03 Flood		
12V/24V	12 2V/24 4V	14 2V/28 4V	14 0V/28 2V	14 0V/28 2V	14 0V/28 2V	14 0V/28 2V		
Max Solar input	18V solar panel for 12V battery, 36V solar panel for 24V/48V	36V/48V	36V/48V	42V/54V	42V/54V	42V/54V		
Max Solar input	6V solar panel for 36V battery and 12V solar panel for 48V/60V	6V	6V	6V	6V	6V		
Equalization	B01 Lithium	B02 Gel	B03 Flood	B03 Flood	B03 Flood	B03 Flood		
60V	61V	71V	73V	73V	73V	73V		
Max Solar input	60V battery is charged with 30V solar panel, voltage is less than 100V	12V Float	14 2V (default, adjust table)	12 0-15 0V	12V Discharge stop	10 7V (default, adjust table)	9 0-11 5V	
12V Discharge stop	10 7V (default, adjust table)	9 0-11 5V	10V Discharge	12 0V (default, adjust table)	11 0-13 0V	24V Float	28 4V (default, adjust table)	24 0-29 0V
24V Discharge stop	19 0V (default, adjust table)	18 0-22 0V	24V Discharge	22 0V (default, adjust table)	22 0-26 0V	36V Discharge stop	30 0V (default, adjust table)	30 0-33 0V
36V Discharge stop	30 0V (default, adjust table)	30 0-33 0V	36V Discharge	38 0V (default, adjust table)	38 0-42 0V	48V Discharge stop	56 0V (default, adjust table)	48 0-50 0V
48V Discharge stop	56 0V (default, adjust table)	48 0-50 0V	48V Discharge	40 0V (default, adjust table)	40 0-44 0V	60V Discharge stop	71 0V (default, adjust table)	60 0-70 0V
60V Discharge stop	71 0V (default, adjust table)	60 0-70 0V	60V Discharge	50 0V (default, adjust table)	45 0-55 0V	Self-consume	<10mA	
Self-consume	<10mA		USB output	5V/2A Max		Operating temperature	-10~50°C	
Operating temperature	-10~50°C		Size/Weight	170*92*45mm/450g				

## Device number binding instructions

- Only devices with antennas have APP function, only the Chinese market can use APP machines
1. Click the device number cloud location selection in the software by case.
  2. On the local agent interface, click Scan Device and Device Number, shoot a QR code or manually enter the device number or module number.
  3. After the input is complete, click the bind button to bind.
- example 13800000000  
password:123456

## BL-912V APP INSTALLATION PROCESS

1. Scan the QR code on your Android phone to enter <https://www.aliexpress.com/hashtag/123456>
2. Download and install the software, enter the installation password 123456
3. The mobile phone scans the QR code of the machine, adds the device, and enters the device name to facilitate multi-device and multi-project operations.



## Instructions for remote control APP

1. APP interface description
  1. The name can be modified to facilitate management.
  2. Data collection corresponds to 0, which displays the current working status of the equipment.
  3. Parameter configuration can modify the solar controller parameters, and automatically memorize them after modification.
  4. Real-time power generation collection and display, daily sunlight utilization, and clear records of power generation.
2. Solar controller remote control adjustment
  1. Use battery type settings: 1, lithium battery, 2, gel battery, 3, lead-acid battery
  2. Data collection corresponds to 0, which displays the current working status of the equipment.
  3. Effective in timing output mode. Turn off the light by the hour after no sunlight, the range is 0-23 hours.
  4. Set the battery's full voltage value to prevent over-charging damage to the battery. The setting range is 10-15.0V. You can also automatically select the appropriate parameters when the battery is selected.
  5. Set the use mode of the load: 0 manual control load output, 1 automatic light control mode, 2 load output when there is no sunlight, 3 always output four use states
  6. Set the over-discharge voltage value to prevent over-discharge damage to the battery. The setting range is 0-12.0V. You can also choose the battery to automatically select the appropriate parameters.
  7. Load output control, close or open, and display the current status through data collection.
  8. Battery voltage selection, select the voltage value of the rechargeable battery, automatic detection mode (low-voltage models only 12V and 24V batteries), or high-voltage models lock 12V, 24V, 36V, 48V, 60V batteries.

Product specifications are subject to change without prior notice.

Image: Examples of typical applications for the solar charge controller in various settings.