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Y&H BL917

Y&H BL917 Solar Charge Controller User Manual

Model: BL917 | Brand: Y&H

1. Introduction

This manual provides instructions for the installation, operation, and maintenance of your Y&H BL917 Solar Charge Controller. This device is designed to manage power flow from your solar panels to your battery bank, ensuring efficient charging and protecting your batteries from overcharge and over-discharge.

2. Safety Instructions

Please read and understand all safety instructions before installing or operating the controller.

- Ensure all connections are correct and secure before operation. Incorrect wiring can cause damage to the controller, battery, or solar panels.
- Do not attempt to disassemble or repair the controller yourself. Contact qualified personnel for service.
- Install the controller in a well-ventilated, dry environment, away from direct sunlight, high temperatures, and flammable materials.
- Connect the battery to the controller first, then the solar panel, and finally the load. Disconnect in reverse order: load, then solar panel, then battery.
- Use appropriate wire gauges for all connections to prevent overheating and ensure efficient power transfer.

3. Product Overview

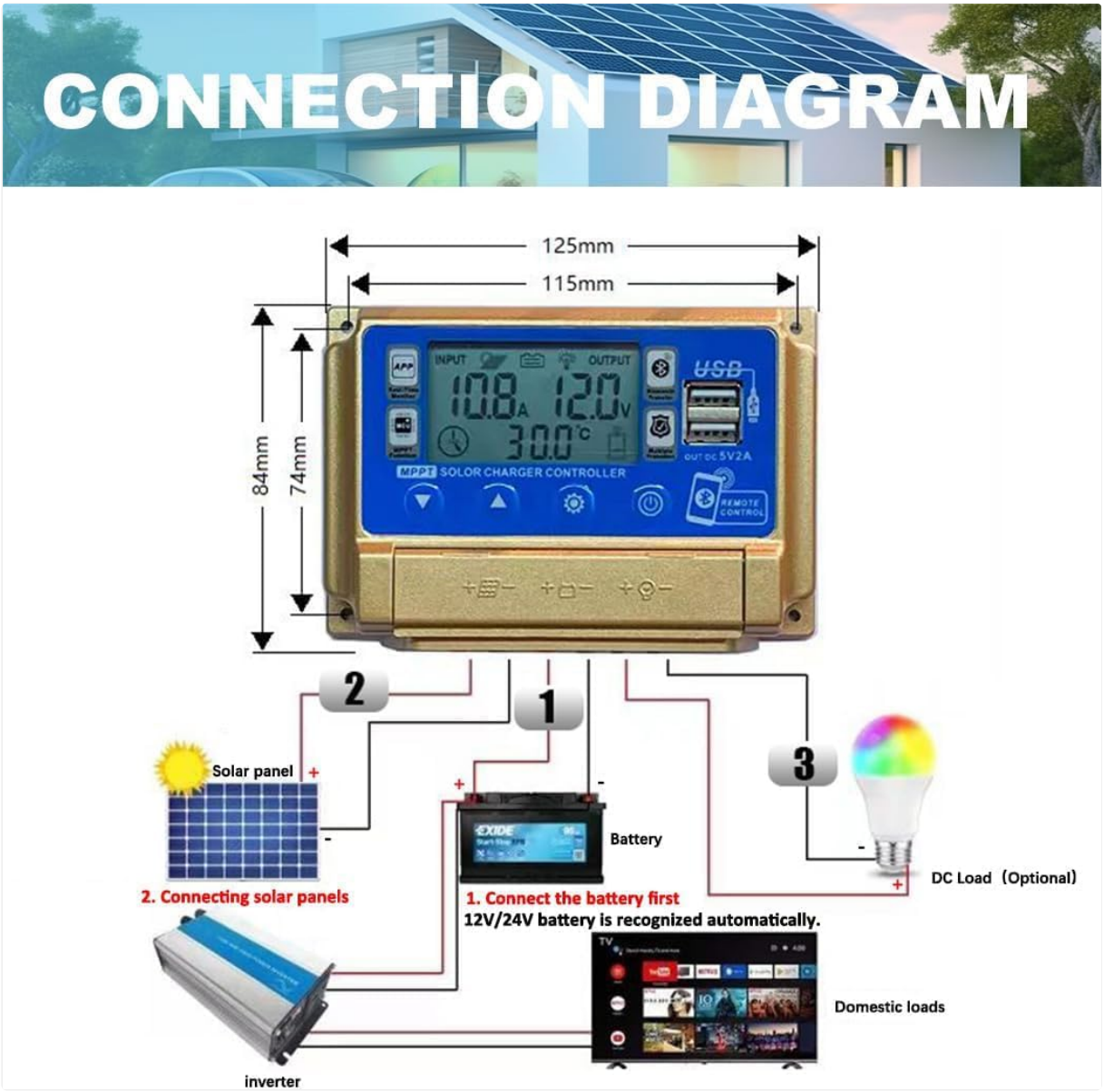
3.1 Key Features

- **Wide Compatibility:** Automatically detects 12V/24V systems and supports open, AGM, and gel lead-acid batteries. Features dual 5V/2.5A USB ports for charging external devices.
- **Smart MPPT Technology:** Utilizes an advanced MPPT algorithm for high efficiency, continuous detection, and bidirectional tracking, optimizing power harvest even in varying conditions.
- **Functional LCD Display:** Large LCD for clear display of system parameters and adjustable charge/discharge settings. Includes a programmable output timer for convenience.
- **Reliable Protection:** Integrated protection against over-heating, over-current, short-circuit, open-circuit, and reverse connection. The system automatically recovers after fault resolution without damage.

- **Easy to Use:** Comprehensive protection system with automatic recovery. Suitable for various applications including home appliances, garden street lights, and industrial use.

3.2 Components

The Y&H BL917 Solar Charge Controller features an intuitive design for ease of use. Below is an image highlighting its main components.

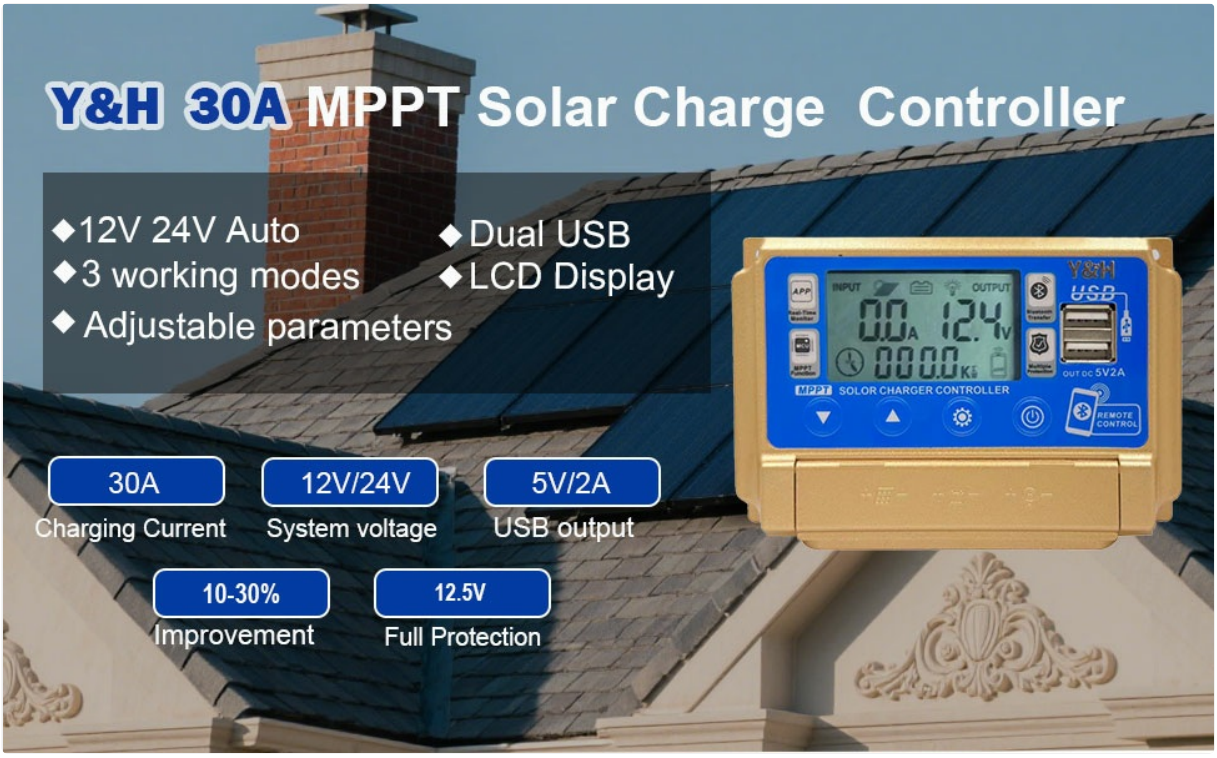


Front view of the Y&H BL917 Solar Charge Controller, showing the LCD screen, control buttons, and dual USB ports.

4. Setup

4.1 Connection Diagram

Follow the steps below to correctly connect your solar charge controller to your battery, solar panels, and DC loads. Always connect in the specified order to prevent damage.



A detailed diagram illustrating the connection sequence for the solar charge controller. It shows the battery connected first, followed by the solar panel, and then optional DC loads and an inverter for AC loads.

1. **Connect the Battery:** Connect the battery to the controller's battery terminals (labeled '1' in the diagram). Ensure correct polarity (+ to + and - to -). The controller will automatically detect 12V or 24V system voltage.
2. **Connect the Solar Panel:** Connect the solar panel to the controller's solar panel terminals (labeled '2' in the diagram). Ensure correct polarity.
3. **Connect DC Loads:** Connect your DC loads (e.g., LED lights) to the controller's load terminals (labeled '3' in the diagram).
4. **Connect AC Loads (Optional):** For AC loads, connect an inverter to the battery terminals (not directly to the load terminals of the controller).

4.2 Battery Compatibility

The Y&H BL917 controller is designed to work with various battery types.

The Y&H BL917 Solar Charge Controller shown alongside illustrations of GEL, FLOODED, and LITHIUM battery types, indicating compatibility.

This controller is suitable for all kinds of lead-acid batteries, including open, sealed, and gel types. If charging a lithium battery, ensure you are familiar with its characteristics and set the charging parameters accordingly through the controller's settings.

5. Operating Instructions

5.1 LCD Display and Buttons

The integrated LCD displays real-time system parameters such as input/output current, voltage, and temperature. Use the control buttons below the screen to navigate menus and adjust settings.

Close-up of the Y&H BL917 Solar Charge Controller's LCD screen, showing input/output current, voltage, and temperature readings.

5.2 Load Working Modes

The controller supports different load working modes for flexible power management of your DC loads.

An image detailing the three load working modes available on the Y&H BL917 Solar Charge Controller: Manual Mode (24H), Solar Light Control Mode (Sunset-Sunrise), and Solar Light Time Control.

- **Manual Mode (24H):** The load output is continuously on, 24 hours a day.
- **Solar Light Control Mode (Sunset-Sunrise):** The load output automatically turns on at sunset and turns off at sunrise.
- **Solar Light Time Control:** The load output turns on at sunset and remains on for a user-programmable duration.

5.3 Parameter Settings

The charge and discharge parameters can be adjusted via the LCD display using the control buttons. This allows customization based on your specific battery type and system requirements. Refer to the specifications table for default values and adjustment ranges.

5.4 Wireless Monitoring (Optional)

The Y&H BL917 controller supports wireless monitoring and control via Bluetooth using a compatible smartphone application. This allows you to view real-time system data and adjust settings remotely.

A smartphone displaying a monitoring application connected via Bluetooth to the Y&H BL917 Solar Charge Controller, showing real-time system data.

6. Maintenance

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

- **Check Connections:** Regularly inspect all wiring connections for tightness and signs of corrosion. Loose or

corroded connections can lead to power loss or system malfunction.

- **Keep Clean:** Keep the controller clean and free from dust, dirt, and debris. Use a dry cloth to wipe the exterior.
- **Ensure Ventilation:** Verify that there is adequate airflow around the controller to prevent overheating, especially during peak operation.
- **Battery Inspection:** Periodically inspect battery terminals for corrosion and clean them if necessary.

7. Troubleshooting

This section provides solutions to common issues you might encounter.

Problem	Possible Cause	Solution
No display on LCD	Battery not connected or low battery voltage	Check battery connections and ensure correct polarity. Verify battery voltage is above the minimum operating threshold.
Battery not charging	Solar panel not connected, insufficient sunlight, or reverse polarity	Check solar panel connections and polarity. Ensure panels are receiving adequate sunlight. Clean panels if dirty.
Load not working	Load disconnected, low battery voltage, or incorrect load mode setting	Check load connections. Verify battery voltage is sufficient. Adjust load working mode settings on the controller.
Error code on display	System fault (e.g., over-current, short-circuit, over-temperature)	Identify the specific error code (if provided by the controller). Disconnect all components, wait a few minutes, and reconnect in the correct sequence. If the error persists, contact support.

7.1 Protection Features

The controller is equipped with multiple protection mechanisms to safeguard your system.

An image highlighting the security protection features of the Y&H BL917 Solar Charge Controller, including short-circuit protection, over-heating protection, reverse connection protection, and over-current protection.

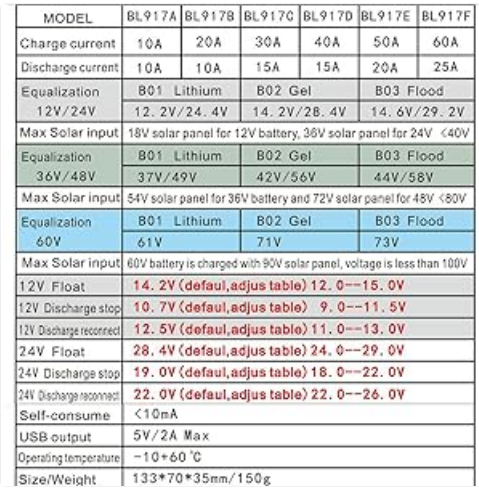
- **Short-circuit Protection:** Prevents damage from short circuits in the load or battery.
- **Over-Heating Protection:** Shuts down or reduces power if the internal temperature exceeds safe limits.

- **Reverse Connection Protection:** Protects the controller and battery from damage due to incorrect polarity connections.
- **Over-Current Protection:** Prevents excessive current flow to the load.
- **Over-Charge/Over-Discharge Protection:** Safeguards the battery from being charged or discharged beyond its safe limits.

8. Specifications

Detailed technical specifications for the Y&H BL917 Solar Charge Controller.

Feature	Value
System Voltage	12V/24V Auto
Max Charge Current	30A (for BL917-30A-SA variant)
Max Discharge Current	15A (for 30A variant)
USB Output	Dual 5V/2A Max
Display Type	LCD
Battery Types Supported	Lead-acid (Open, AGM, Gel), Lithium (user-set parameters)
Max Solar Input (12V system)	<40V (18V solar panel)
Max Solar Input (24V system)	<40V (36V solar panel)
Operating Temperature	-10°C to +60°C
Dimensions	13 x 7 x 3 cm
Weight	160g
Model Number	BL917-30A-SA
UPC	704334854895



MODEL	BL917A	BL917B	BL917C	BL917D	BL917E	BL917F
Charge current	10A	20A	30A	40A	50A	60A
Discharge current	10A	10A	15A	15A	20A	25A
Equalization 12V/24V	B01 Lithium		B02 Gel		B03 Flood	
	12.2V/24.4V		14.2V/28.4V		14.6V/29.2V	
Max Solar input	18V solar panel for 12V battery, 36V solar panel for 24V <40V					
Equalization 36V/48V	B01 Lithium		B02 Gel		B03 Flood	
	37V/49V		42V/56V		44V/58V	
Max Solar input	54V solar panel for 36V battery and 72V solar panel for 48V <80V					
Equalization 60V	B01 Lithium		B02 Gel		B03 Flood	
	61V		71V		73V	
Max Solar input	60V battery is charged with 90V solar panel, voltage is less than 100V					
12V Float	14.2V (defaul,adjus table) 12.0--15.0V					
12V Discharge stop	10.7V (defaul,adjus table) 9.0--11.5V					
12V Discharge reconnect	12.5V (defaul,adjus table) 11.0--13.0V					
24V Float	28.4V (defaul,adjus table) 24.0--29.0V					
24V Discharge stop	19.0V (defaul,adjus table) 18.0--22.0V					
24V Discharge reconnect	22.0V (defaul,adjus table) 22.0--26.0V					
Self-consume	<10mA					
USB output	5V/2A Max					
Operating temperature	-10+60℃					
Size/Weight	133*70*35mm/150g					

Diagram showing the dimensions of the Y&H BL917 Solar Charge Controller (13cm length, 7cm width, 3cm height) and a table summarizing model features like USB output, auto 12V/24V detection, and MOS charging mode.

9. Warranty and Support

For warranty information or technical support regarding your Y&H BL917 Solar Charge Controller, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase for any warranty claims.