

DC HOUSE 48V 100AH

DC HOUSE 48V Golf Cart Solar System Instruction Manual

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your DC HOUSE 48V Golf Cart Solar System. This integrated energy solution is designed for 48V golf carts (compatible with YAMAHA, Club Car, EZ GO, and other models). The system includes a 130W flexible solar panel, a 5120Wh 48V 100Ah LiFePO4 battery, a 300W MPPT controller, and a 48V 18A fast charger.

The system aims for energy self-sufficiency, reducing reliance on traditional charging methods. The controller operates stably in temperatures from -4°F to 122°F (-20°C to 50°C) with an aluminum case for durability. The flexible solar panel is lightweight and designed to conform to irregular surfaces, featuring four mounting holes for easy installation. The battery includes a handle for portability and 21.2°F (approximately -6°C) protection to extend its lifespan.

The MPPT controller utilizes advanced technology for high efficiency ($\geq 95\%$ conversion, $\geq 99\%$ charging peak) to maximize solar energy utilization. It supports 13-65V input and is compatible with 36V, 48V, and 60V systems. The battery's 200A smart BMS (Battery Management System) offers overcurrent auto-recovery, while the controller provides multiple protections including overvoltage, ensuring safe operation.

The 130W flexible solar panel can generate approximately 520Wh with 4 hours of daily sunshine. When paired with the 5120Wh battery, this system can extend a golf cart's range by 44-60 miles, suitable for multiple rounds of use. The battery is significantly lighter than traditional lead-acid batteries (35% lighter than 6x8V lead-acid batteries) and offers over 4000 deep cycles (approximately 10 years lifespan) with 100% discharge capability. It is vibration-resistant and compatible with solar, charger, and generator recharging options.

Real-time monitoring is available via the controller's built-in display, showing voltage, current, and other key data. Dual wireless monitoring is also supported through a Bluetooth APP and an LCD screen, allowing users to check battery capacity and power status. Note: Bluetooth devices support single connections only; switch between the APP and LCD screen as needed.

2. PRODUCT COMPONENTS

The DC HOUSE 48V Golf Cart Solar System includes the following main components:

- 48V 100Ah LiFePO4 Lithium Battery
- Battery Monitor
- 48V 18A Charger
- 130W Flexible Solar Panel
- 300W MPPT Controller



Figure 2.1: Main components of the DC HOUSE 48V Golf Cart Solar System.

3. SETUP AND INSTALLATION

3.1 Safety Precautions

- Ensure all connections are secure and correctly polarized (positive to positive, negative to negative).
- Do not short-circuit the battery terminals or solar panel output.
- Install the system in a well-ventilated area, away from flammable materials.
- Wear appropriate personal protective equipment (PPE) during installation.

- Refer to the specific safety guidelines for your golf cart model.

3.2 Connection Steps

Follow these steps to connect your solar system:

1. **Connect the Controller to the 48V Battery:** Connect the positive and negative terminals of the MPPT controller to the corresponding terminals on the 48V LiFePO4 battery. Ensure a tight and secure connection.



Figure 3.1: Connect the controller's output port (battery packs) to the 48V battery terminals.

2. **Set up the Controller:** Adjust the output voltage and battery type settings on the controller using the paddle design. The output voltage can be set to 36V, 48V, or 60V. The battery type can be set for Lithium or Lead-acid batteries.
3. **Connect the Controller to the Solar Panel:** Plug the solar panel's MC-4 connectors into the input port of the MPPT controller. The controller supports a wide input voltage range of 13V to 65V.



Figure 3.2: Connect the solar panel to the controller's input port.

3.3 MPPT Controller Overview and Connection Guide

Video 3.1: This video provides an unboxing, feature overview, and detailed connection instructions for the DC HOUSE 300W MPPT Boost Controller, demonstrating how to connect it to both the battery and solar panel.

4. OPERATING INSTRUCTIONS

4.1 MPPT Controller Operation

Once connected, the MPPT controller will automatically begin charging the battery from the solar panel. The controller's display provides real-time data for monitoring the system's performance.

- **Output Voltage:** Displays the current voltage being supplied to the battery.
- **Charge Current:** Shows the current (in Amperes) flowing from the solar panel to the battery.
- **State Indicator:** A green light indicates charging is complete with no current output. A red light indicates charging is in progress.



Figure 4.1: Real-time data monitoring on the MPPT controller display.



Figure 4.2: Charging status indicator light on the MPPT controller.

4.2 Battery Monitoring

The system supports dual wireless monitoring via a Bluetooth APP and an LCD screen. This allows you to check the battery capacity, power, and other details remotely. Remember that Bluetooth devices support only one connection at a time, so switch between the APP and LCD screen as needed.

5. MAINTENANCE

5.1 Battery Care

- Regularly inspect battery terminals for corrosion and ensure connections are tight.
- Keep the battery clean and dry.
- Avoid exposing the battery to extreme temperatures outside its operating range.
- While LiFePO4 batteries are robust, avoid prolonged deep discharge cycles if possible to maximize lifespan.

5.2 Solar Panel Care

- Clean the surface of the solar panel regularly to remove dirt, dust, and debris that can reduce efficiency. Use a soft cloth and mild cleaning solution.
- Inspect the panel for any physical damage or cracks.
- Ensure the panel is securely mounted and not obstructed by shade.

5.3 Controller Care

- Keep the controller in a dry, well-ventilated area.
- Periodically check all wiring connections to the controller for tightness and integrity.
- Ensure the controller's cooling fins are free from dust and obstructions to prevent overheating.

6. TROUBLESHOOTING

6.1 Common Issues and Solutions

Issue	Possible Cause	Solution
No charging current displayed on controller.	Solar panel not connected, insufficient sunlight, faulty wiring, or controller error.	Check solar panel connections. Ensure adequate sunlight. Inspect wiring for damage. Check controller's error reporting.
Battery not charging or charging slowly.	Low solar input, incorrect controller settings, battery issue, or loose connections.	Verify solar panel is clean and unshaded. Confirm controller voltage and battery type settings are correct. Check battery health. Secure all connections.
Controller display not working.	No power from battery, faulty connection, or controller malfunction.	Ensure battery is connected and has sufficient charge. Check wiring to the controller. If issue persists, contact support.
Over-current protection triggered.	Excessive load or short circuit.	Reduce load on the battery. Check for any short circuits in the system. The 200A BMS has auto-recovery for overcurrent.

The MPPT controller is equipped with multiple safety protection mechanisms. In case of over-voltage, over-current, short circuit, overheating, or reverse connection, the controller will alarm and report errors to ensure safe operation.

7. SPECIFICATIONS

7.1 48V 100Ah LiFePO4 Battery

Parameter	Value
Product Name	LiFePO4 Battery
Model	ECO-LFP48100
Rated Capacity	100Ah / 5120Wh (25°C, 0.5C)
Rated Voltage	51.2V
Voltage Range	40V ~ 58.4V
Maximum Continuous Charging Current	200A
Maximum Continuous Discharging Current	200A
Charging Voltage	58.4V
Dimensions (LxWxH)	20.47" x 10.55" x 8.62" (52 x 26.8 x 21.9 cm)
Weight	82.9 lbs (37.6 kg)
Charging Temperature	32°F ~ 131°F (0°C ~ 55°C)
Discharging Temperature	-4°F ~ 131°F (-20°C ~ 55°C)



Figure 7.1: 48V 100Ah LiFePO4 Battery Specifications.

7.2 130W Flexible Solar Panel

Parameter	Value
Maximum Power	130W
Maximum Power Voltage (Vm)	20.05V
Maximum Current (Im)	6.48A
Open Circuit Voltage (Voc)	23.36V
Short Circuit Current (Isc)	6.84A
Operating Temperature	-40°C ~ +85°C
Cable Length	12AWG (2.9ft long)
Size	1030 x 690 x 2.5 mm (40.6 x 27.16 x 0.1 in)
Weight	4.62 lbs (2.1 kg)
Fire Class	Class C

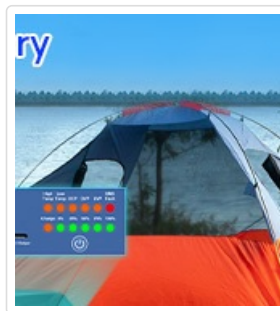


Figure 7.2: 130W Flexible Solar Panel Specifications.

7.3 300W MPPT Solar Charge Controller

Parameter	Value
Model	DC-CON-MPPT10ADZ01
Product Name	300W MPPT Solar Charge Controller
PV Input Voltage	DC 22V - 65V
Controller Output Power	300W

Parameter	Value
No-load Output Voltage	43.2V - 73V
Maximum Self-consumption	4.5W
Battery Type	LFP/Lead-acid
Battery System Voltage	36V / 48V / 60V
Charging Efficiency	≥99%
Display Method	Digital LED Tube
Operating Temperature	-20°C ~ 50°C (-4°F ~ 122°F)
Dimension (L*W*H)	151 x 95 x 56 mm (5.94 x 3.74 x 2.20 in)
Weight	510 g (1.24 lbs)



Figure 7.3: 300W MPPT Solar Charge Controller Specifications.

7.4 48V 18A Charger

Parameter	Value
Input Voltage	100-240VAC
Charging Voltage	58.4V
Max Charging Current	18A
Max Charging Power	900W
Working Temperature	-20°C ~ +45°C
Storage Temperature	-40°C ~ +70°C
Waterproof Rating	IP65
Battery Type	LiFePO4 Batteries



Figure 7.4: 48V 18A Charger Specifications.

8. WARRANTY AND SUPPORT

8.1 Warranty Information

The DC HOUSE 48V Golf Cart Solar System comes with a 3-year manufacturer's warranty. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

8.2 Customer Support

If you encounter any issues or have questions regarding your DC HOUSE Solar System, please contact our customer service team via Amazon email. Our team is available to assist you with troubleshooting, technical support, and any other inquiries.

Important Notice: To ensure product packages are not damaged during transportation, your order may be shipped in multiple packages. If you have any questions about your order, please contact our customer service team.