DEWIN KMCBKQQZK-GS109396-02

DEWIN 60A MPPT Solar Charge Controller User Manual

Model: KMCBKQQZK-GS109396-02

Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your DEWIN 60A MPPT Solar Charge Controller. Please read this manual thoroughly before installation and use to ensure proper functionality and safety.



This image shows the DEWIN 60A MPPT Solar Charge Controller, highlighting its robust design and clear LCD interface.

The DEWIN 60A MPPT Solar Charge Controller is designed to efficiently manage power flow from your solar panels to your battery bank, optimizing charging performance with its advanced Maximum Power Point Tracking (MPPT) technology. It supports 12V, 24V, 36V, and 48V battery systems and is compatible with various battery types.

Key Features

- **MPPT Technology:** Utilizes advanced MPPT tracking with up to 99% efficiency and 98% power conversion efficiency for optimal solar energy harvesting.
- **Automatic Voltage Identification:** Supports automatic detection for 12V, 24V, 36V, and 48V battery systems.
- **Wide Battery Compatibility:** Compatible with gel, sealed, open (flooded), ternary lithium, and lithium iron phosphate batteries.
- **High Input Voltage:** Maximum photovoltaic generator input voltage up to 180VDC.
- **LCD Display:** Large LCD screen for dynamic and accurate display of operation data and equipment status.
- **Efficient Cooling:** Aluminum alloy heatsink design with a built-in dual fan cooling system for improved heat dissipation and extended lifespan.
- **Multiple Safety Protections:** Includes overcharging, over-discharge, lightning protection, anti-backflow, and overheating protection.

Safety Information

Please observe the following safety precautions during installation and operation:

- Ensure all wiring is correctly connected and securely fastened to prevent loose connections and potential hazards.
- Do not install the controller in direct sunlight, high temperature environments, or areas exposed to water. Ensure adequate ventilation.
- Always disconnect the solar panel and battery power before performing any wiring or maintenance on the controller.
- This device operates at high voltages. Only qualified personnel should perform installation and maintenance.
- Wear appropriate personal protective equipment (PPE) during installation.

WARNING: Use Under Adult Supervision Only.

Package Contents

Verify that all components are present upon unpacking:

- DEWIN 60A MPPT Solar Charge Controller
- User Manual (this document)
- Mounting Screws (if included)

Setup and Installation

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

1. Select Installation Location and Mount Controller

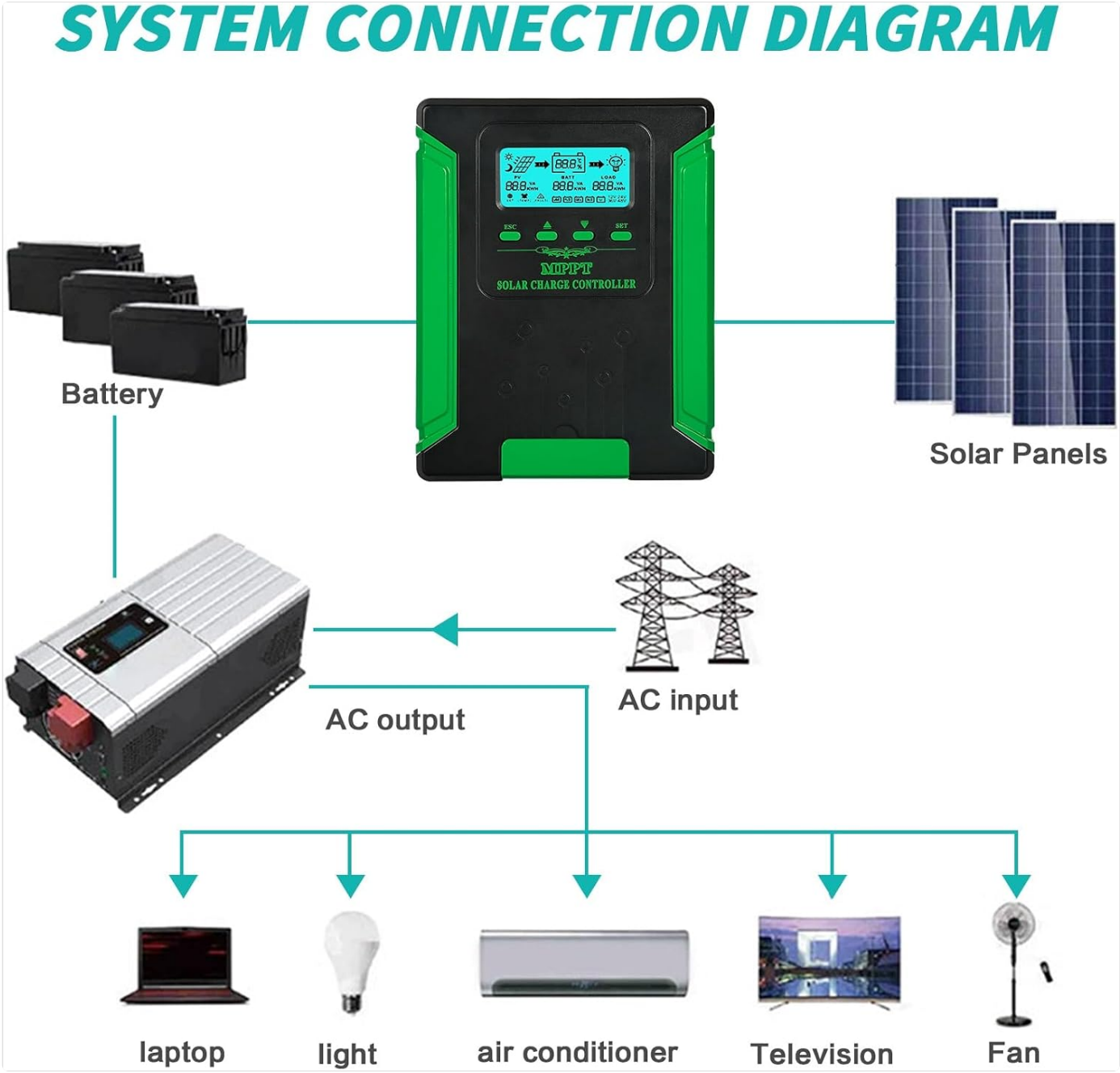
Choose a suitable location for the controller. Avoid direct sunlight, high temperatures, and areas prone to water exposure. Ensure good ventilation around the controller to facilitate heat dissipation. Once the location is chosen, place the controller in position, mark the four installation holes, drill them, and then secure the controller firmly with screws.



This image illustrates the three key steps for physical installation: selecting a suitable location, marking and drilling screw holes, and finally securing the controller to the mounting surface.

2. System Connection Diagram

Refer to the diagram below for the correct wiring sequence. It is crucial to connect components in the specified order to prevent damage. Always connect the battery first, then the solar panels, and finally the load. Ensure all connections are tight and correct polarity is observed.



This diagram illustrates the complete system connection, including solar panels, the charge controller, battery bank, an inverter for AC output, and various AC/DC loads such as laptops, lights, air conditioners, televisions, and fans. Follow the arrows for power flow direction.

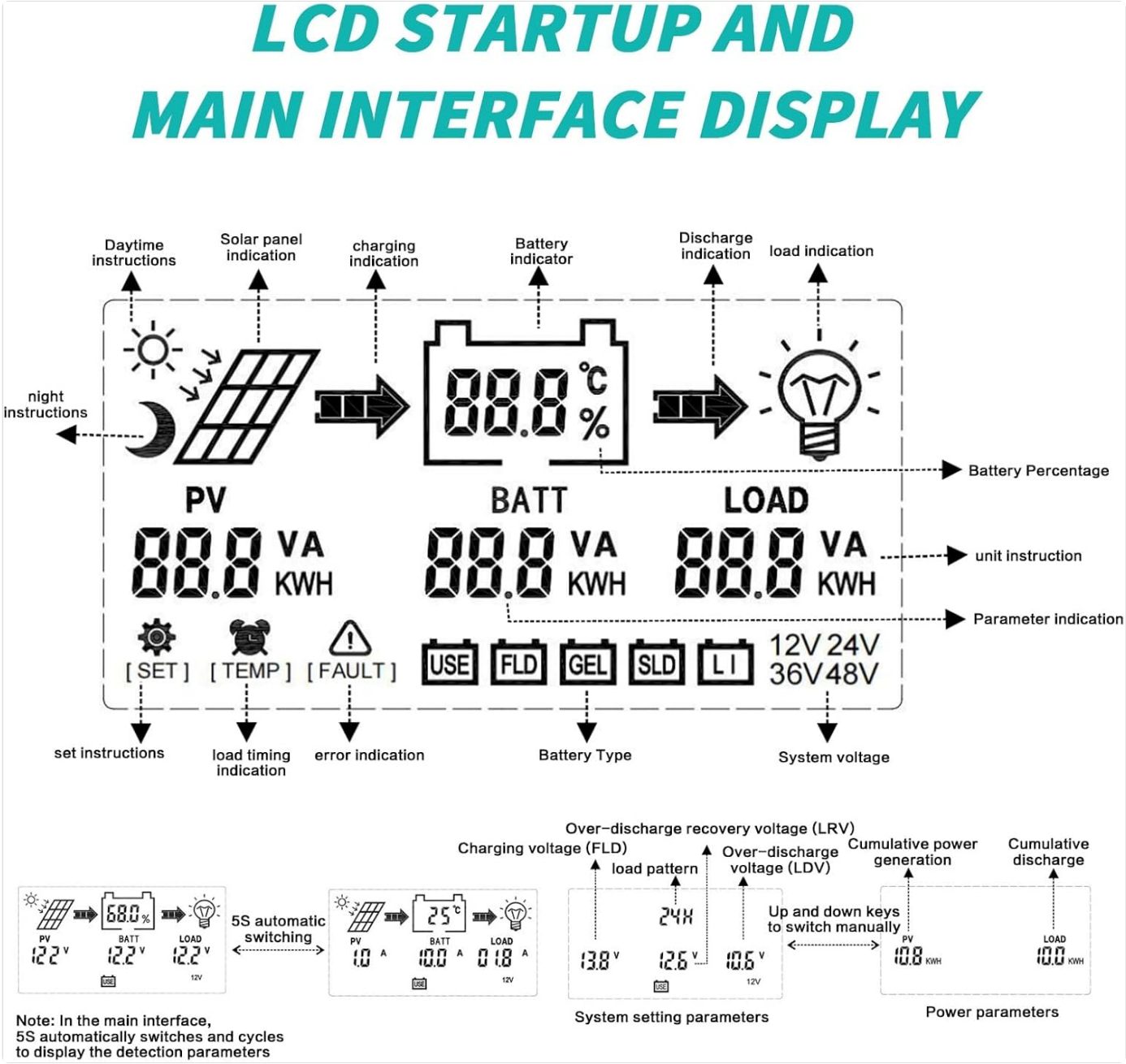
1. **Connect the Battery:** Connect the positive and negative terminals of your battery bank to the corresponding battery terminals on the controller.
2. **Connect Solar Panels:** Connect the positive and negative terminals of your solar panel array to the corresponding PV terminals on the controller.
3. **Connect DC Load (Optional):** If using a DC load directly from the controller, connect its positive and negative terminals to the load terminals on the controller.
4. **Connect Inverter (Optional):** If using an inverter for AC loads, connect it to the battery bank terminals, not directly to the controller's load terminals.

CRITICAL WARNING: Always connect the battery first, then the solar panel. Disconnect in the reverse order: first the load, then the solar panel, and finally the battery. Incorrect connection order can damage the controller.

Operating Instructions

LCD Display and Main Interface

The controller features a large LCD display that provides real-time operational data. The main interface displays information such as solar panel status, charging indication, battery status, load status, battery percentage, and system voltage.



This image details the LCD display, showing icons for daytime/night instructions, solar panel indication, charging indication, battery indicator, discharge indication, load indication, battery percentage, unit instruction, parameter indication, set instructions, load timing indication, error indication, battery type, and system voltage. It also shows examples of system setting parameters and power parameters.

Navigation and Settings

Use the "ESC", "UP", "DOWN", and "SET" buttons to navigate through the display and adjust parameters. The display automatically switches between different data views every 5 seconds.



This image provides a clear view of the controller's LCD screen and the "ESC", "UP", "DOWN", and "SET" buttons, highlighting the intuitive control interface.

Battery Type Selection

The controller supports various battery types. For sealed lead-acid, vented gel batteries, the parameters are automatically adjusted. For lithium batteries, you need to manually adjust the parameters according to the actual voltage of the batteries.



This diagram illustrates the controller's compatibility with various battery types, including GEL, SLD (Sealed Lead-Acid), FLD (Flooded), USR (User-defined), and Lithium batteries. A note emphasizes that while lead-acid and gel batteries are automatically adjusted, lithium batteries require manual parameter adjustment.

- **GEL:** Gel batteries.
- **SLD:** Sealed Lead-Acid batteries.
- **FLD:** Flooded (Open) batteries.
- **USR:** User-defined settings for specific battery types.
- **LI:** Lithium batteries (ternary lithium, lithium iron phosphate).

To change battery type or adjust parameters, press the "SET" button to enter the settings menu, then use "UP" and "DOWN" to navigate and "SET" to confirm.

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. Re-tighten if necessary.
- **Clean Controller:** Keep the controller clean and free from dust and debris. Use a dry cloth to wipe the exterior. Ensure ventilation openings are not blocked.
- **Check Battery Status:** Monitor battery voltage and health regularly. Ensure batteries are properly maintained according to their manufacturer's guidelines.
- **Environmental Check:** Ensure the installation environment remains within recommended temperature and humidity ranges.

Troubleshooting

This section provides solutions to common issues you might encounter.

Problem	Possible Cause	Solution
Controller display is off	No power from battery or solar panel; loose connections.	Check battery and solar panel connections. Ensure battery voltage is above minimum operating voltage.
Battery not charging	Solar panel not connected; insufficient sunlight; faulty solar panel; incorrect battery settings.	Verify solar panel connections. Check for shading. Test solar panel output. Confirm correct battery type and parameters are set.
Load not working	Load disconnected; over-discharge protection active; faulty load.	Check load connections. Ensure battery voltage is above the low voltage disconnect setting. Test the load directly.
Overheating warning	Poor ventilation; high ambient temperature; excessive load.	Ensure adequate airflow around the controller. Reduce load if possible. Relocate controller to a cooler area.

Specifications

Parameter	Value
Model	KMCBKQQZK-GS109396-02 (60A variant)
System Voltage	12V/24V/36V/48V Automatic Identification
Max PV Input Voltage	180VDC
Rated Charge Current	60A
MPPT Tracking Efficiency	Up to 99%
Conversion Efficiency	Up to 98%
Battery Types Supported	Gel, Sealed, Open (Flooded), Ternary Lithium, Lithium Iron Phosphate
Cooling Method	Aluminum alloy heatsink, dual fan cooling
Package Dimensions	28 x 22 x 10 cm
Item Weight	1.54 Kilograms



This image provides the physical dimensions of the solar charge controller, indicating a width of 185mm and a height of 240mm for the front view, and a depth of 65mm for the side view.

Warranty and Support

For warranty information or technical support, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase.

Product information is subject to change without prior notice. For the latest version, please contact your customer service representative.

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

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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