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› DUQTMBDT MPPT Solar Charge Controller User Manual (Models: MPPT-30A, MPPT-60A, MPPT-120A)

DUQTMBDT MPPT-30A, MPPT-60A, MPPT-120A

DUQTMBDT MPPT Solar Charge Controller User Manual

Models: MPPT-30A, MPPT-60A, MPPT-120A

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your DUQTMBDT MPPT Solar Charge Controller. This device is designed to maximize power harvesting from your photovoltaic (PV) array and efficiently charge various battery types, including lithium batteries, across a wide range of system voltages (12V to 96V).

The controller features automatic system voltage identification and supports a maximum photovoltaic input voltage of 230V. Please read this manual thoroughly before installation and operation to ensure optimal performance and longevity of your solar charging system.

2. SAFETY INSTRUCTIONS

Always observe the following safety precautions to prevent personal injury and damage to the controller or other components:

- Installation and wiring must be performed by qualified personnel.
- Ensure all connections are tight and correct to avoid loose connections that can cause excessive heat.
- Do not disassemble or attempt to repair the controller. Contact customer support for service.
- Install the controller in a well-ventilated area, away from flammable materials and corrosive gases.
- Avoid direct sunlight, high temperatures, and moisture exposure.
- Always connect the battery first, then the PV array, and finally the load. Disconnect in the reverse order.
- Ensure the PV array's open-circuit voltage (Voc) does not exceed the controller's maximum input voltage (230V).

3. PRODUCT OVERVIEW

The DUQTMBDT MPPT Solar Charge Controller efficiently converts excess PV voltage into additional charging current, optimizing power delivery to your battery bank. It features a clear display for monitoring system status and user-friendly

buttons for configuration.



Figure 3.1: Front view of the DUQTMBDT MPPT Solar Charge Controller. The display shows real-time system parameters, and the buttons allow for navigation and setting adjustments.

The controller's robust design includes internal components engineered for high efficiency and reliability, as shown in the internal view below.



Figure 3.2: Internal view of the DUQTMBDT MPPT Solar Charge Controller, highlighting the power conversion components and circuit board layout.

4. SETUP

4.1 Mounting Location

Choose a dry, well-ventilated indoor location, protected from direct sunlight, high temperatures, and moisture. Ensure there is sufficient clearance around the controller for proper heat dissipation. Mount the controller vertically on a non-flammable surface.

4.2 Wiring Sequence

Follow the wiring sequence carefully to prevent damage:

1. **Connect the Battery:** Connect the battery cables to the controller's battery terminals. Ensure correct polarity (+ to + and - to -). The controller will automatically detect the battery voltage.

2. **Connect the Photovoltaic (PV) Array:** Connect the PV array cables to the controller's PV terminals. Ensure correct polarity. The controller will begin charging if sufficient sunlight is available.
3. **Connect the DC Load (Optional):** If using the controller's load output, connect the DC load cables to the load terminals. Ensure correct polarity.

Important: Always connect the battery first and disconnect it last. Failure to do so may damage the controller.

4.3 Cable Sizing

Use appropriate wire gauges for all connections to minimize voltage drop and ensure safe operation. Refer to local electrical codes and the controller's specifications for recommended cable sizes based on current and distance.

5. OPERATING INSTRUCTIONS

5.1 Display Interface

The controller's LCD display provides real-time information about your solar charging system, including:

- PV Voltage and Current
- Battery Voltage and Charging Current
- Load Status and Current
- Battery State of Charge (SOC)
- System Status and Error Indicators

5.2 Button Functions

The controller typically features four buttons for navigation and parameter settings:

- **SET/Back:** Enters/exits setting menus, or returns to the previous screen.
- **UP:** Navigates up through menu options or increases parameter values.
- **DOWN:** Navigates down through menu options or decreases parameter values.
- **CONFIRM:** Confirms selections or saves parameter changes.

5.3 Parameter Settings

To adjust charging parameters (e.g., battery type, charge voltage limits, load control modes), press the SET button to enter the menu. Use UP/DOWN to navigate and CONFIRM to select. Follow the on-screen prompts to modify values. Always ensure settings match your battery type and system requirements.

6. MAINTENANCE

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

- **Inspect Connections:** Periodically check all wiring connections for tightness and corrosion. Loose connections can cause overheating and damage.
- **Clean the Controller:** Keep the controller clean and free of dust and debris. Use a dry cloth to wipe the exterior. Do not use liquids or solvents.
- **Check Ventilation:** Ensure that the ventilation openings are not blocked to allow for proper airflow and heat dissipation.
- **Monitor System Performance:** Regularly check the display for normal operation and any error indicators.

7. TROUBLESHOOTING

If you encounter issues with your controller, refer to the following common problems and solutions:

- **No Display/No Power:**
 - Check battery connections and ensure the battery voltage is within the operating range.
 - Verify battery fuse or circuit breaker.
- **No Charging Current from PV:**
 - Check PV array connections and polarity.
 - Ensure sufficient sunlight and that the PV array voltage is above the battery voltage.
 - Inspect PV array for shading or damage.
- **Load Not Working:**
 - Check load connections and polarity.
 - Verify load control settings (e.g., dusk-to-dawn, timer).
 - Ensure battery voltage is not too low, triggering low voltage disconnect.
- **Error Codes:** If the display shows an error code, consult the specific error code section in the full product manual (if available) or contact customer support with the code.

For persistent issues, please contact DUQTMBDT customer support.

8. SPECIFICATIONS

The DUQTMBDT MPPT Solar Charge Controller is available in multiple current ratings, each designed for various system capacities. All models feature a maximum photovoltaic input voltage of 230V and automatic system voltage identification.

Feature	MPPT-30A	MPPT-60A	MPPT-120A
System Voltage (Auto ID)	12V / 24V / 36V / 48V / 60V / 72V / 84V / 96V		
Controller Type	MPPT		
Photovoltaic Charging Current	30A	60A	120A
Max Photovoltaic Input (12V)	414W	828W	1656W
Max Photovoltaic Input (24V)	828W	1656W	3312W
Max Photovoltaic Input (36V)	1242W	2484W	4968W
Max Photovoltaic Input (48V)	1656W	3312W	6624W
Max Photovoltaic Input (60V)	2070W	4140W	8280W
Max Photovoltaic Input (72V)	2484W	4968W	9936W
Max Photovoltaic Input (84V)	2898W	5796W	11592W

Feature	MPPT-30A	MPPT-60A	MPPT-120A
Max Photovoltaic Input (96V)	3312W	6624W	13248W
Machine Size (LxWxH)	18 x 9.2 x 19 cm	18 x 9.2 x 26.5 cm	21.5 x 9.2 x 31.5 cm
Weight	2 kg ± 0.2 kg	2.8 kg ± 0.2 kg	3.94 kg ± 0.2 kg
Max PV Input Voltage	230V		
Lithium Battery Activation	Yes		

9. WARRANTY AND SUPPORT

DUQTMBDT products are manufactured to high-quality standards. For warranty information, please refer to the product packaging or the official DUQTMBDT website. In case of technical issues or questions not covered in this manual, please contact DUQTMBDT customer support for assistance.

Please have your model number (MPPT-30A, MPPT-60A, or MPPT-120A) and purchase information ready when contacting support.

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

