Saved from manuals.plus.
Open the live page for links to other documents and user manuals.

Aexit SR-ML2420

SR-ML2420 MPPT Solar Charge Controller User Manual

Model: SR-ML2420 | Brand: Aexit

1. Introduction

The Aexit SR-ML2420 MPPT Solar Charge Controller is an advanced device designed to optimize the energy harvesting from solar panels and efficiently charge various battery types. It features sophisticated Maximum Power Point Tracking (MPPT) technology to ensure maximum power extraction from your photovoltaic system, even under challenging conditions like partial shading.
This controller is suitable for 12V and 24V battery systems and offers high conversion efficiency, making it an ideal choice for off-grid solar power applications.

2. Key Features

- **Advanced MPPT Technology:** Utilizes dual-peak or multi-peak tracking to accurately find the maximum power point, even with shaded panels or multiple peaks on the I-V curve.
- **High Efficiency:** Features a proprietary algorithm for maximum power tracking, resulting in 15% to 20% higher charging efficiency compared to traditional PWM controllers. Circuit energy conversion efficiency up to 98%.
- **Fast Tracking:** A combination of multiple tracking algorithms ensures accurate tracking of the optimum working point in a very short time.
- **Versatile Battery Compatibility:** Supports various battery types including gel, sealed, open (flooded), and lithium batteries.
- **LCD Display:** Integrated LCD provides real-time system information and allows for easy parameter configuration.

3. Product Overview



Figure 3.1: Front view of the SR-ML2420 MPPT Solar Charge Controller. This image shows the main unit with its LCD screen, control buttons, and connection terminals at the bottom. A table on the unit lists model specifications for 12V and 24V systems.



Figure 3.2: SR-ML2420 MPPT Solar Charge Controller with accessories. This image displays the controller unit alongside its included temperature sensor cable, providing a view of the complete package.

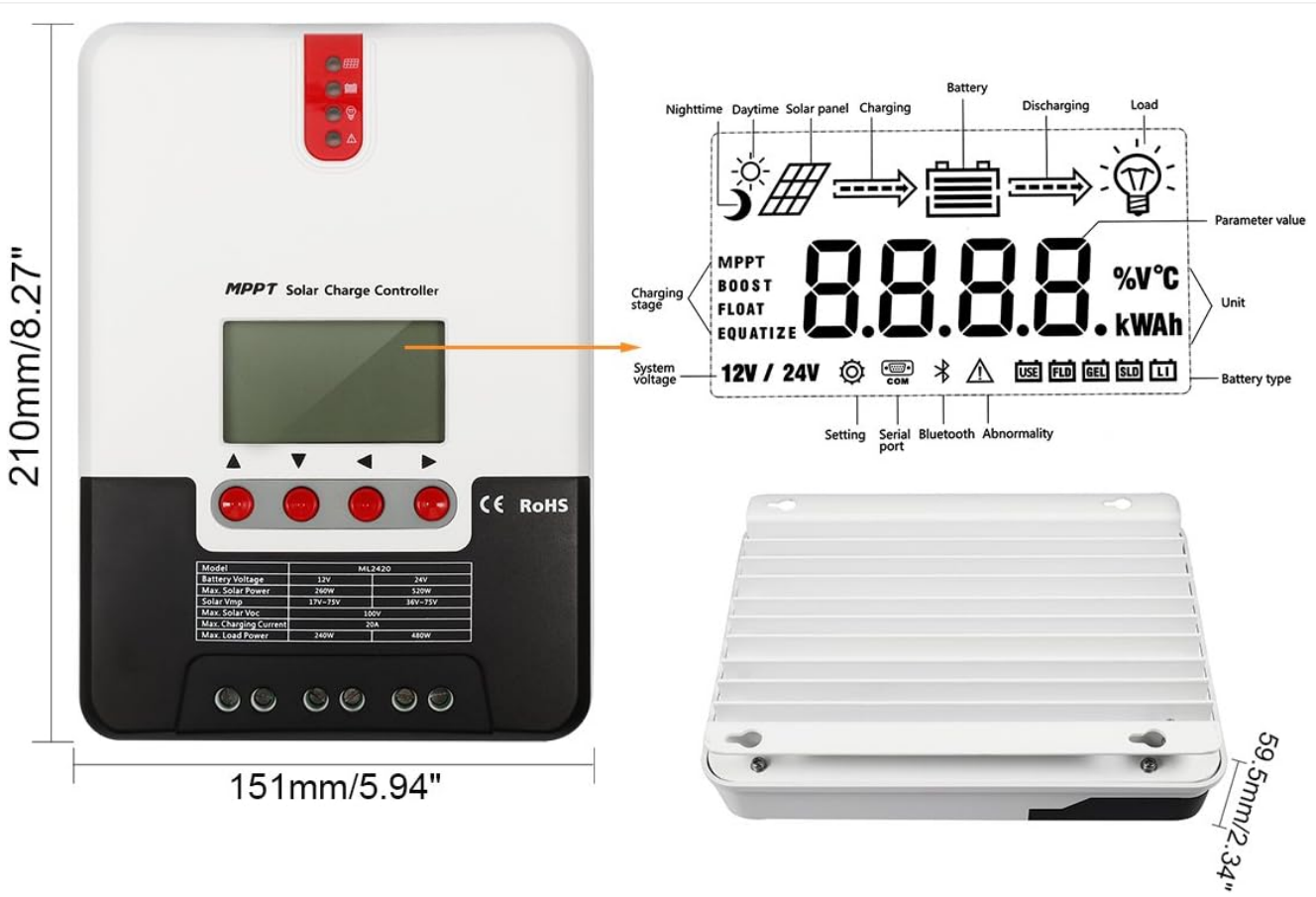


Figure 3.3: Dimensions and LCD display details. This image provides precise measurements of the controller (210mm x 151mm x 59.5mm) and illustrates the various icons and indicators on the LCD screen, such as charging stage, system voltage, and battery type.

4. Setup and Installation

Before installation, ensure all components are present and undamaged. Disconnect all power sources, including solar panels and batteries, to prevent electric shock or damage to the controller.

4.1 Mounting Location

- Mount the controller vertically on a non-flammable surface.
- Ensure adequate ventilation around the controller to dissipate heat.
- Avoid direct sunlight, high temperatures, and humid environments.
- Maintain a minimum clearance of 150mm (6 inches) above and below the controller for proper airflow.

4.2 Wiring Instructions

Follow the wiring sequence carefully to avoid damage. Always connect the battery first, then the solar panel, and finally the load.

1. **Connect the Battery:** Connect the positive and negative terminals of the battery to the corresponding battery terminals on the controller. Ensure correct polarity. The controller will power on and display system information.
2. **Connect the Solar Panel:** Connect the positive and negative terminals of the solar panel array to the corresponding PV terminals on the controller. Ensure correct polarity. The controller will begin charging the battery if solar power is available.
3. **Connect the Load (Optional):** Connect the positive and negative terminals of your DC load to the corresponding load terminals on the controller. Ensure correct polarity.

4. **Connect the Temperature Sensor:** Plug the included temperature sensor into the designated port on the controller. Place the sensor near the battery to enable accurate temperature compensation for charging.

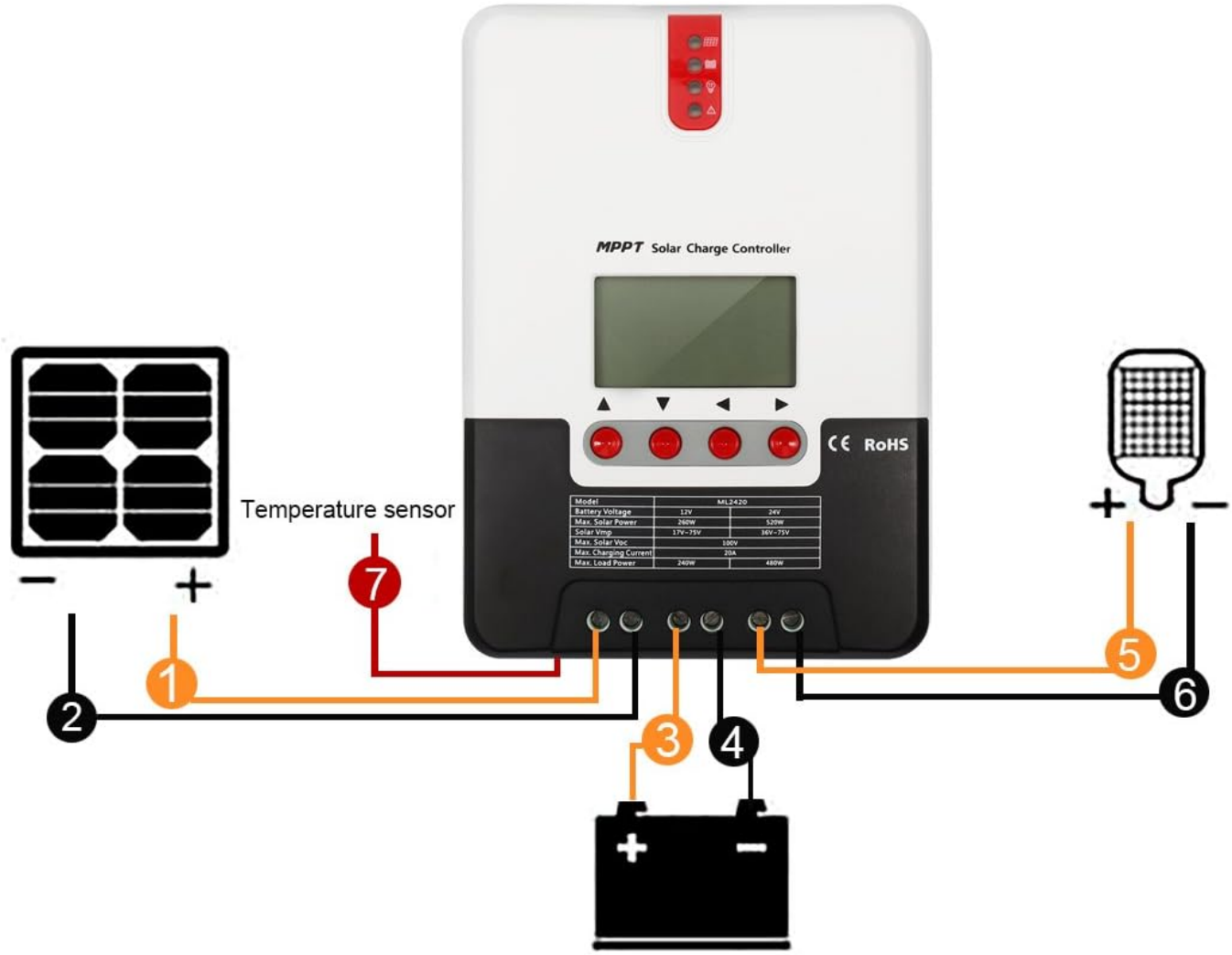


Figure 4.1: Wiring Diagram. This diagram illustrates the correct connection sequence: 1 & 2 for solar panel input, 3 & 4 for battery connection, 5 & 6 for DC load output, and 7 for the temperature sensor.

Important: Always connect the battery first and disconnect it last. Incorrect wiring sequence can damage the controller.

5. Operating Instructions

5.1 LCD Display and Buttons

The controller features an LCD display for real-time monitoring and three buttons for navigation and setting adjustments.

- **Up Button:** Used to navigate upwards through menus or increase parameter values.
- **Down Button:** Used to navigate downwards through menus or decrease parameter values.
- **Enter/Set Button:** Used to confirm selections or enter setting modes.

5.2 Monitoring Parameters

The LCD cycles through various parameters automatically. You can also press the Up/Down buttons to manually cycle through them.

- Battery Voltage

- Solar Panel Voltage (Vmp, Voc)
- Charging Current
- Load Current
- Battery Temperature
- Total Charged Energy (kWh)
- Total Discharged Energy (kWh)

5.3 Battery Type Setting

The controller supports different battery types. It is crucial to set the correct battery type for optimal charging and battery longevity.

1. Press and hold the **Enter/Set** button to enter the parameter setting mode.
2. Use the **Up/Down** buttons to navigate to the battery type setting.
3. Press **Enter/Set** to select the option, then use **Up/Down** to choose your battery type (e.g., Gel, Sealed, Open, Lithium).
4. Press **Enter/Set** again to confirm and save the setting.

6. Maintenance

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

- **Check Connections:** Periodically inspect all wiring connections for tightness and corrosion. Loose connections can cause overheating and poor performance.
- **Clean the Controller:** Keep the controller clean and free of dust and debris. Use a dry cloth to wipe the surface. Do not use liquid cleaners.
- **Ventilation:** Ensure that the ventilation openings are not blocked to allow for proper heat dissipation.
- **Battery Inspection:** Regularly check your batteries for signs of damage, swelling, or leaks. Ensure battery terminals are clean.
- **System Performance:** Monitor the system's performance via the LCD display. Note any unusual readings or behavior.

7. Troubleshooting

Problem	Possible Cause	Solution
Controller not powering on.	Battery not connected or reverse polarity.	Check battery connections and ensure correct polarity. Connect battery first.
No charging from solar panel.	Solar panel not connected, reverse polarity, or insufficient sunlight.	Check solar panel connections and polarity. Ensure adequate sunlight. Verify panel voltage.
Load not working.	Load not connected, reverse polarity, or battery voltage too low.	Check load connections and polarity. Ensure battery is sufficiently charged.
Abnormal readings on LCD.	Faulty sensor or internal error.	Check temperature sensor connection. If problem persists, contact customer support.

8. Specifications

Parameter	Value
System Voltage	12V/24V Auto Recognition
Battery Voltage Range	9V to 35V
Max. PV Voltage (25°C)	100V
Max. PV Voltage (-25°C)	90V
Max. PV Power (12V System)	260W
Max. PV Power (24V System)	520W
Rated Charging Current	20A
Rated Load Current	20A
No-load Loss	0.7W to 1.2W
Operating Temperature	-35°C to +45°C
Installation Hole Diameter	8.5mm / 0.33in
Installation Hole Center Distance	154mm x 130mm / 6.06in x 5.12in (L*W)
Total Size (L*W*H)	210mm x 151mm x 59.5mm / 8.27in x 5.94in x 2.34in

Note: Specifications are subject to change without prior notice.

© 2023 Aexit. All rights reserved.
For technical support, please refer to the product packaging or manufacturer's website.

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

Open the live page

https://manuals.plus/asin/B0838KNSHG

More documents and user manuals: **https://manuals.plus/**