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## ATEM POWER AP-MPPT-20A-LFP-UFA

# ATEM POWER 20A 12V/24V MPPT Solar Charge Controller

Model: AP-MPPT-20A-LFP-UFA

## INTRODUCTION

This user manual provides detailed instructions for the installation, operation, and maintenance of your ATEM POWER 20A 12V/24V MPPT Solar Charge Controller. This device is designed to efficiently manage power flow from your solar panels to your battery bank, ensuring optimal charging and battery longevity. It is compatible with various battery types, including Lead Acid, AGM, Gel, Calcium, and LiFePO4 batteries.

## SAFETY INFORMATION

Please read all safety instructions carefully before installation and operation. Failure to follow these instructions may result in damage to the controller, battery, or personal injury.

- Ensure all connections are secure and correct polarity is observed to prevent damage.
- Do not expose the controller to water or excessive moisture.
- Install the controller in a well-ventilated area, away from flammable materials.
- Always disconnect the solar panel and battery before performing any maintenance or wiring changes.
- Use appropriate wire gauges for your system to prevent overheating.

## PRODUCT OVERVIEW

The ATEM POWER MPPT Solar Charge Controller is a robust and intelligent device designed for various off-grid applications. It features advanced Maximum Power Point Tracking (MPPT) technology for high efficiency.

## Key Features:

- **Lithium Battery Activation:** Capable of activating lithium batteries.
- **High Efficiency:** Up to 99% tracking efficiency and 98% conversion efficiency.
- **Greater Compatibility:** Supports 12V/24V systems and automatically detects system voltage.

Compatible with Lead Acid, AGM, Gel, Calcium, and LiFePO4 batteries.

- **Intelligent & Safe:** Features multiple protections including reverse polarity, overcurrent, overtemperature, undervoltage, overvoltage, and short circuit.
- **Durable Design:** Made from strengthened ABS housing and aluminum alloy chassis with heat sinks.
- **User-Friendly:** Simple screw terminals, multiple LED indicators for system information, and a button for battery type selection.

## Components:



Front view of the ATEM POWER 20A 12V/24V MPPT Solar Charge Controller, showing LED indicators, MPPT label, voltage rating, and battery type selection area.

# PACKAGE INCLUDES



Image showing the retail box, the solar charge controller, and the user manual included in the package.

## SETUP

Follow these steps for proper installation of your solar charge controller. Always connect the battery first, then the solar panel, and finally the load.

### Wiring Instructions:

- Connect the Battery:** Connect the positive and negative terminals of your battery to the corresponding battery terminals on the solar charge controller. Ensure correct polarity.
- Connect the Solar Panel:** Connect the positive and negative terminals of your solar panel(s) to the corresponding solar input terminals on the controller. Ensure correct polarity.
- Connect the Load (Optional):** If using a DC load directly from the controller, connect its positive and negative terminals to the load output terminals.

# WIRING SYSTEM

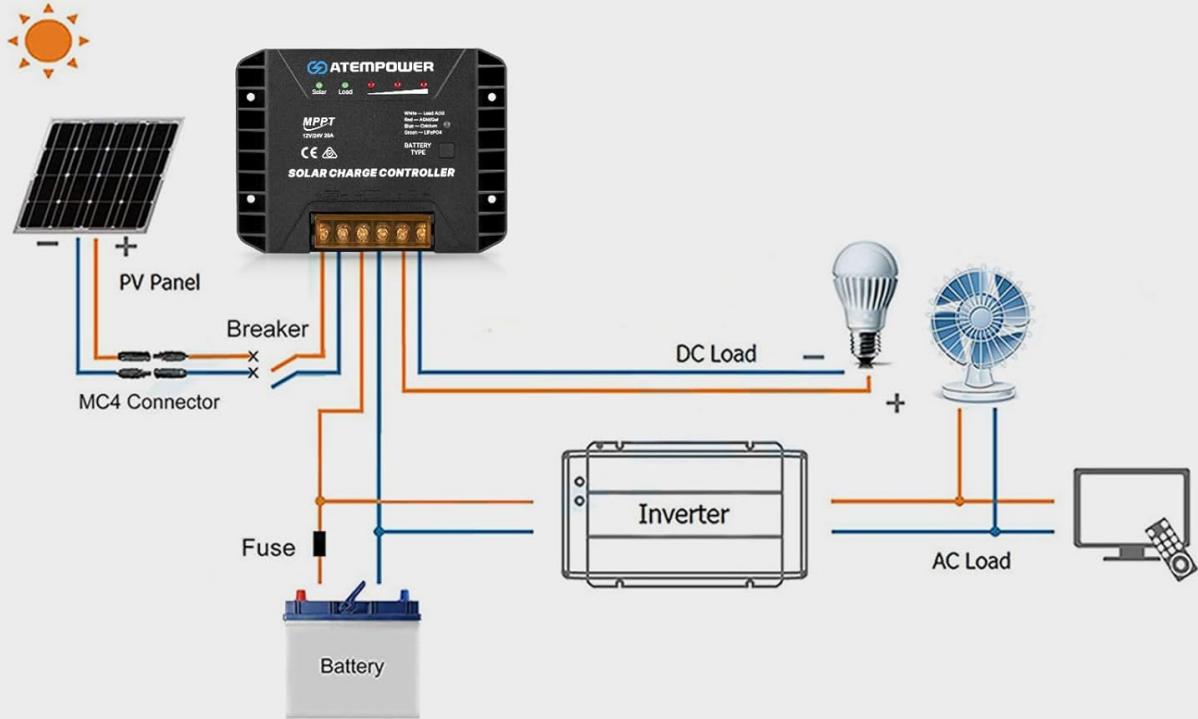


Diagram illustrating the correct wiring sequence: solar panel to controller, controller to battery, and controller to DC load/inverter for AC load.

**Important:** Always connect the battery first and disconnect the solar panel first when disassembling the system.

## OPERATING INSTRUCTIONS

### Battery Type Selection:

The controller supports various battery types. It is crucial to select the correct battery type for optimal charging and battery health.

# SELECT BATTERY TYPE

Compatible with 12V or 24V lead acid, AGM, Gel, calcium and LiFePO4 batteries.

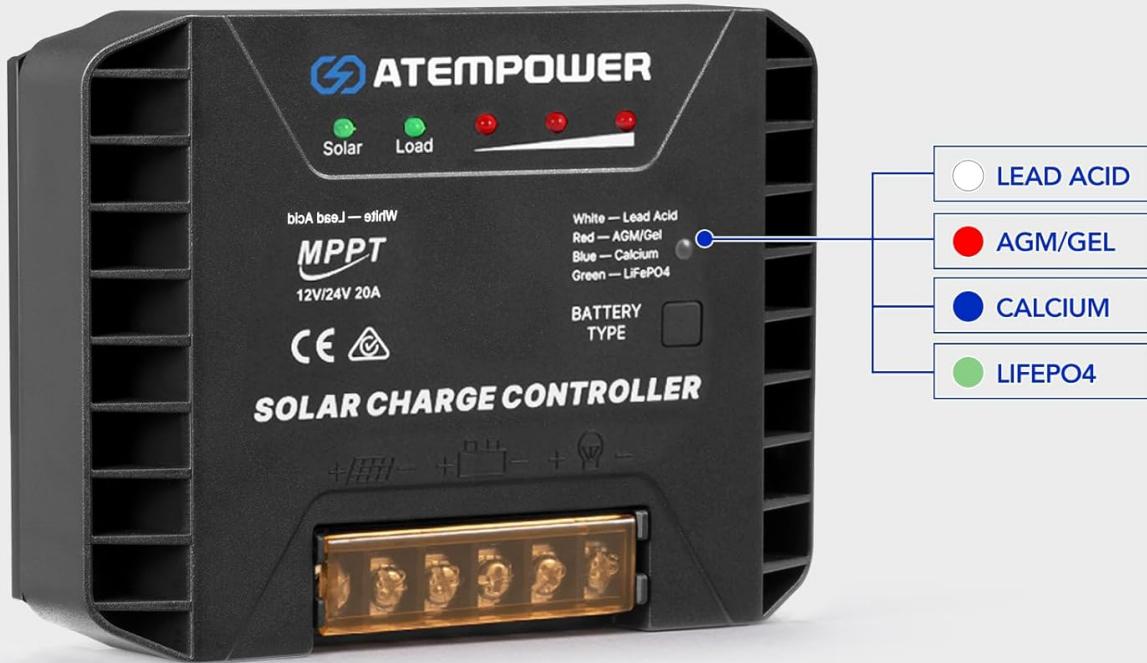
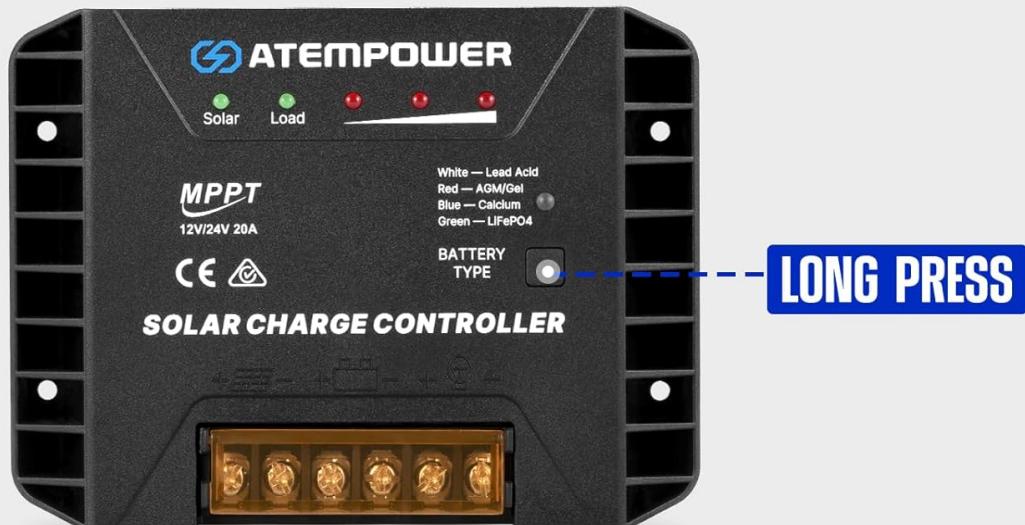


Image showing the battery type indicator lights: White for Lead Acid, Red for AGM/Gel, and Green for LiFePO4.

## How to Select Battery Type:

1. **Step 1:** Keep the battery and the controller connected.
2. **Step 2:** Long press the battery type button on the controller. Wait for the indicator light to flash.
3. **Step 3:** While the light is flashing, press the button repeatedly to cycle through the desired battery types (White: Lead Acid, Red: AGM/Gel, Blue: Calcium, Green: LiFePO4). Release the button when the desired battery type's indicator light is selected. The light will remain on, indicating successful selection.

# HOW TO SELECT BATTERY TYPE



## STEP 1

Keep the battery and the controller connected.

## STEP 2

Long press the battery type button, wait for the indicator light to flash.

## STEP 3

Switch to the desired battery type, and wait until the indicator light remains on.

Visual guide demonstrating the three steps for selecting the battery type using the long press method.

## Lithium Battery Activation:

This controller can activate deeply discharged LiFePO4 batteries.

- Switch on the "lithium battery mode" (by selecting LiFePO4 battery type).
- Connect your battery and solar panel to the controller. The controller will initiate the activation process to bring the battery back to life.

# LITHIUM BATTERY ACTIVATION

Switch on the "lithium mode" and connect your battery and solar panel. It will work its magic and the battery will spring back to life.

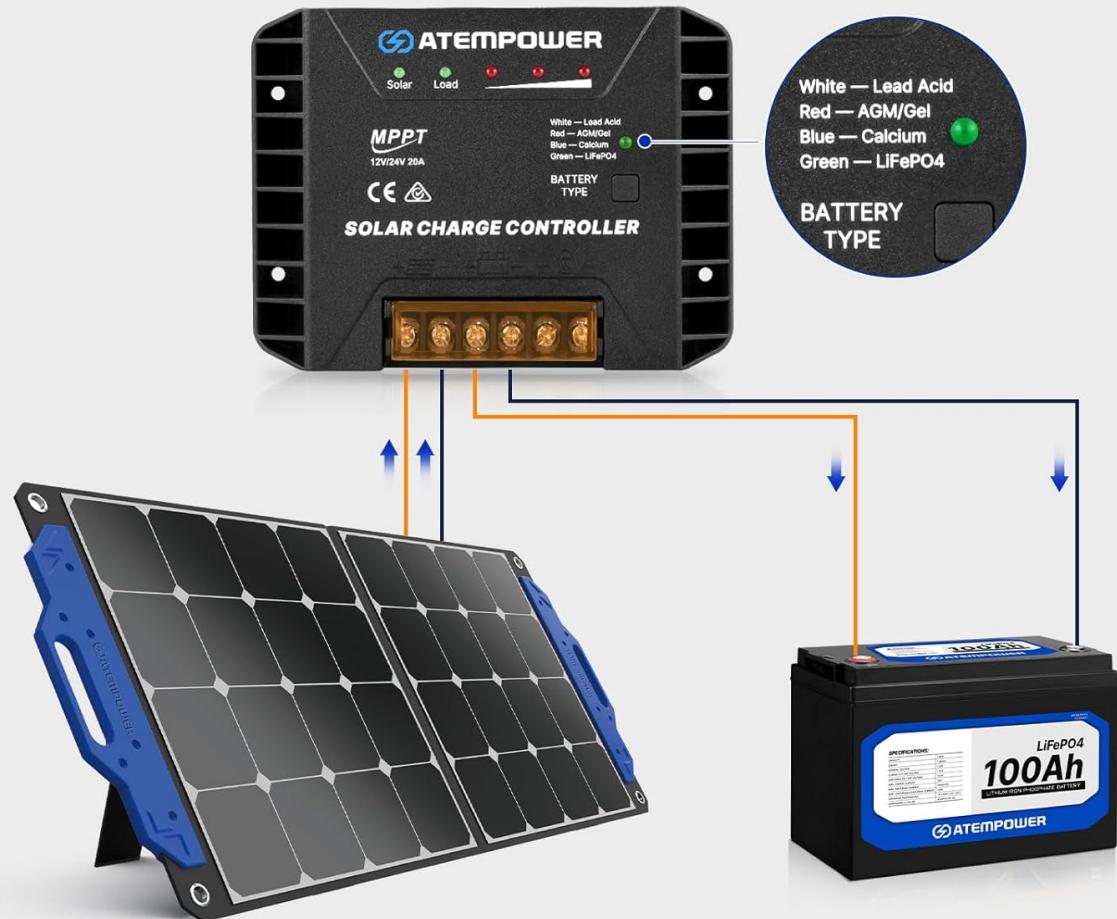


Diagram showing the solar panel and battery connected to the controller, illustrating the lithium battery activation feature.

## Understanding LED Indicators:

The controller features multiple LED indicators to display system operation information.

# USER FRIENDLINESS

It has multiple LED indicators for displaying system operation information and a button for selecting the corresponding battery type.

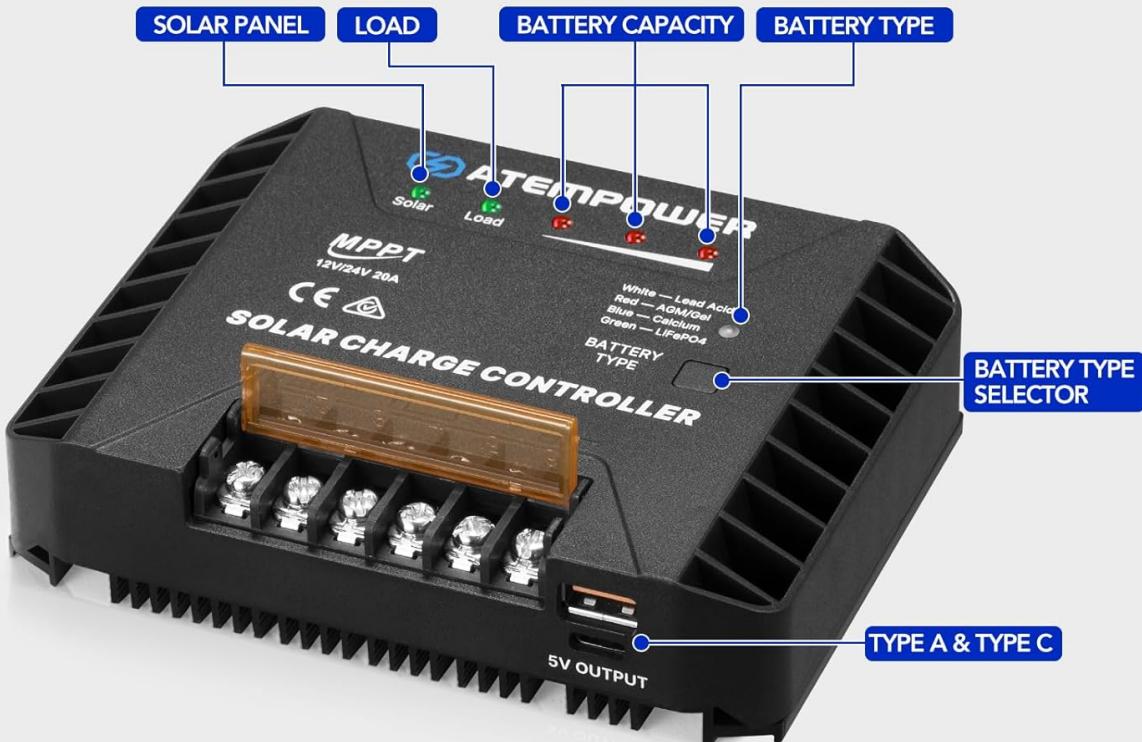


Image highlighting the locations of the Solar Panel, Load, Battery Capacity, and Battery Type indicators, along with the Battery Type Selector button and USB output ports.

- **Solar LED:** Indicates solar panel activity and charging status.
- **Load LED:** Indicates the status of the connected DC load.
- **Battery Capacity LEDs:** A series of LEDs indicating the current battery charge level.
- **Battery Type LED:** Indicates the currently selected battery type (White, Red, Blue, Green).

## MAINTENANCE

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

- **Cleaning:** Periodically clean the controller's exterior with a dry cloth to remove dust and debris. Ensure ventilation openings are clear.
- **Connections:** Annually check all wiring connections for tightness and corrosion. Loose connections can cause overheating and poor performance.
- **Environment:** Ensure the installation environment remains within the specified operating temperature range and is free from excessive moisture or direct sunlight.

## TROUBLESHOOTING

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

Problem	Possible Cause	Solution
No charging from solar panel	No solar input; reversed polarity; faulty panel/wiring.	Check solar panel connections and polarity. Ensure sufficient sunlight. Test panel voltage.
Battery not charging fully	Incorrect battery type selected; insufficient solar input; battery issues.	Verify correct battery type selection. Increase solar panel capacity or improve sun exposure. Check battery health.
Load not working	Overload; short circuit; low battery voltage; faulty load.	Reduce load. Check for short circuits. Ensure battery is adequately charged. Test the load device.
Controller LEDs not lit	No power from battery; reversed battery polarity.	Check battery connections and ensure battery has sufficient voltage. Correct polarity if reversed.

If the problem persists after attempting these solutions, please contact ATEM POWER customer support.

## SPECIFICATIONS

Feature	Specification
Model Number	AP-MPPT-20A-LFP-UFA
Brand	ATEM POWER
Display Type	LED
Voltage	12V/24V (Auto Recognition)
Max. Charge Current	20A
Material	Strengthened ABS, Aluminum Alloy
Color	Black
Item Weight	14.8 ounces (0.42 Kilograms)
Package Dimensions	9.25 x 7.28 x 2.09 inches
Included Components	Solar Controller

## WARRANTY

This ATEM POWER Solar Charge Controller comes with a 1-year warranty from the date of purchase. This warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by misuse, accident, unauthorized modification, or improper installation.

Please retain your proof of purchase for warranty claims.

# SUPPORT

For technical assistance, warranty claims, or further inquiries, please contact ATEM POWER customer support. Refer to the contact information provided with your product packaging or visit the official ATEM POWER website for support details.

We are committed to providing excellent customer care and support for your ATEM POWER products.

## Related Documents - AP-MPPT-20A-LFP-UFA

 ATEMPOWER AP20MT MPPT Solar Charge Controller User Manual Comprehensive user manual for the ATEMPOWER AP20MT MPPT Solar Charge Controller. Covers installation, operation, safety, technical specifications, troubleshooting, and warranty information for 12V/24V systems.
 ATEMPOWER AP20MT MPPT Solar Charge Controller User Manual User manual for the ATEMPOWER AP20MT Maximum Power Point Tracking (MPPT) Solar Charge Controller. Covers installation, operation, setup, technical specifications, maintenance, troubleshooting, and warranty information.
 ATEMPOWER AP60DC 60A DC-DC Charger User Manual Comprehensive user manual for the ATEMPOWER AP60DC 60A DC-DC Charger, covering installation, operation, safety instructions, technical specifications, error codes, maintenance, and warranty information. Designed for RVs, 4x4s, boats, and solar systems.
 ATEMPOWER VABG008A DC-DC Charger User Manual Comprehensive user manual for the ATEMPOWER VABG008A DC-DC charger, detailing features, installation, operation, safety instructions, troubleshooting, technical specifications, and warranty information for 12V vehicle and solar charging applications.
 ATEM POWER AP20DC DC-DC Charger User Manual and Installation Guide Comprehensive user manual for the ATEM POWER AP20DC DC-DC charger. Covers features, safety instructions, installation, usage, deep cycle battery maintenance, troubleshooting, technical specifications, and warranty information for charging auxiliary batteries in vehicles, caravans, and RVs using DC or solar power.



### [ATEMPOWER AP40DC DC-DC Charger User Manual | Installation, Operation & Safety Guide](#)

Comprehensive user manual for the ATEMPOWER AP40DC DC-DC charger. This guide covers installation instructions, operation for DC battery and solar input, safety precautions, troubleshooting, technical specifications, charging algorithms, and warranty information.