BLUETTI SolarX 4K+XT60

BLUETTI SolarX 4K MPPT Solar Charge Controller User Manual

Model: SolarX 4K+XT60

1. INTRODUCTION

The BLUETTI SolarX 4K MPPT Solar Charge Controller is designed to efficiently convert solar energy for charging compatible BLUETTI solar generators and batteries. It features a wide voltage input range, high efficiency, and smart monitoring capabilities via Bluetooth and Wi-Fi, making it suitable for various applications including RVs, off-grid homes, and outdoor use.

Image 1.1: The BLUETTI SolarX 4K MPPT Solar Charge Controller integrated into a home solar setup.

2. SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating the SolarX 4K MPPT Solar Charge Controller. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **High Voltage Warning:** Solar panels can produce high voltages. Always disconnect solar panels from the controller before performing any wiring or maintenance.

- **Proper Grounding:** Ensure the controller is properly grounded according to local electrical codes.
- **Reverse Polarity Protection:** The device includes reverse polarity protection, but always double-check wiring connections to prevent damage.
- **Overcurrent Protection:** The controller is equipped with overcurrent protection. Do not exceed the specified input or output current limits.
- **Insulation Detection:** The unit features insulation detection for enhanced safety.
- **Qualified Personnel:** Installation and maintenance should be performed by qualified personnel.
- **Environmental Conditions:** Do not expose the controller to rain, moisture, or extreme temperatures outside its specified operating range.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- BLUETTI SolarX 4K Solar Charge Controller
- DC output cable (XT60-F connectors)
- 8 fixing screws
- 3 grounding screws
- 9 OT terminals
- 8 anchors
- Knockout connector
- Hex socket wrench
- User Manual (Document)

4. PRODUCT OVERVIEW

The SolarX 4K MPPT Solar Charge Controller offers advanced features for efficient solar power management:

- **High Solar Input:** Supports up to 4200W solar power input (150V–500V), compatible with various solar panels.
- **Exceptional Efficiency:** Achieves up to 99% MPPT efficiency, maximizing energy harvest even in low light conditions.
- **Stable Output:** Delivers 4000W DC power (58V/80A) to BLUETTI solar batteries such as the Apex 300 and B300K.
- **Smart Monitoring:** Remote monitoring and control via the BLUETTI app using Bluetooth and Wi-Fi.
- **Robust Design:** Operates reliably in temperatures from -20°C to 55°C (-4°F to 131°F).

12kW Solar Charging System
Designed for high-power electrical applications

Cabins   **RVs**   **Solar projects**

12,600W Solar Input & 12,000W Output Power

Image 4.1: Performance comparison highlighting the SolarX 4K's superior efficiency, input voltage, safety, and scalability.

5. SETUP INSTRUCTIONS

Follow these steps for proper installation of your SolarX 4K MPPT Solar Charge Controller:

1. **Unpacking:** Carefully remove all components from the packaging and inspect for any damage.
2. **Mounting:** Choose a suitable location for mounting the controller. Ensure it is in a well-ventilated area, protected from direct sunlight and moisture. Use the provided fixing screws and anchors to securely mount the unit.
3. **Grounding:** Connect the grounding screw to a reliable earth ground using appropriate wiring.
4. **Solar Panel Connection:** Connect your solar panels to the input terminals of the SolarX 4K. Ensure correct polarity (+ to + and - to -) and that the total open-circuit voltage of your solar array is within the controller's specified input range (150V-500V).
5. **Battery/Generator Connection:** Connect the DC output cable (XT60-F connectors) from the SolarX 4K to your compatible BLUETTI solar generator or battery (e.g., Apex 300, B300K). Ensure a secure connection. For optimal 4kW output performance, use with BLUETTI Apex 300 & B300K systems and a P090A cable.
6. **Initial Power-Up:** Once all connections are secure, power on your BLUETTI solar generator or battery. The SolarX 4K will automatically detect the solar input and begin charging.

Image 5.1: Connection diagram for the SolarX 4K with BLUETTI Apex 300 and B300K units.

Image 5.2: Example of a 12kW solar charging system using multiple SolarX 4K controllers for high-power applications.

6. OPERATING INSTRUCTIONS

The SolarX 4K is designed for automatic operation once properly installed. Monitoring and advanced settings are managed through the BLUETTI app.

- **Automatic Charging:** The controller will automatically begin charging your connected BLUETTI power station when sufficient solar input is available.
- **BLUETTI App Monitoring:** Download the official BLUETTI app from your device's app store. Connect to the SolarX 4K via Bluetooth or Wi-Fi to monitor real-time charging status, energy production, and system performance.
- **Firmware Updates:** The BLUETTI app allows for convenient over-the-air firmware updates to ensure your controller always has the latest features and optimizations.

SolarX 4K Solar Charge Controller

Massive 4kW solar charging

Hardware Protection   Smart Monitoring

4,000W Pure Sine Wave Output
150V-500V Wide Input → 35-58V Safe Output
99% Peak MPPT Efficiency

* For optimal 4kW output performance, use with BLUETTI Apex 300 & B300K systems and P090A cable.

Image 6.1: The BLUETTI app provides smart control and monitoring of your solar power system, including firmware updates and fault alerts.

7. MAINTENANCE

To ensure optimal performance and longevity of your SolarX 4K MPPT Solar Charge Controller, perform the following

maintenance:

- **Regular Inspection:** Periodically check all wiring connections to ensure they are tight and free from corrosion.
- **Cleaning:** Keep the controller's exterior clean and free from dust and debris. Use a dry, soft cloth for cleaning. Do not use liquid cleaners.
- **Ventilation:** Ensure that the ventilation openings are not obstructed to prevent overheating.
- **Environmental Check:** Confirm the operating environment remains within the specified temperature range (-20°C to 55°C).

8. TROUBLESHOOTING

If you encounter issues with your SolarX 4K, refer to the following common troubleshooting steps:

- **No Charging:**

  - Check all solar panel connections for proper polarity and secure fit.
  - Verify that the solar panel voltage is within the controller's input range (150V-500V).
  - Ensure the DC output cable is securely connected to the BLUETTI power station.
  - Confirm that the BLUETTI power station is powered on and ready to receive charge.

- **Low Charging Power:**

  - Check for shading on solar panels.
  - Clean solar panels if dirty.
  - Ensure solar panels are optimally angled towards the sun.

- **Communication Issues (Bluetooth/Wi-Fi):**

  - Ensure the controller is powered on.
  - Check your mobile device's Bluetooth/Wi-Fi settings.
  - Move closer to the controller to improve signal strength.
  - Restart the BLUETTI app and/or your mobile device.

- **Error Codes:** The BLUETTI app provides detailed fault alerts and error codes (15+ error codes). Consult the app for specific error messages and recommended actions.

If problems persist, contact BLUETTI customer support for assistance.

9. SPECIFICATIONS

Brand	BLUETTI
Model Name	SolarX 4K+XT60
Solar Input Power	Up to 4200W
Solar Input Voltage Range	150V-500V
Output Power	4000W DC
Output Current	80A
MPPT Efficiency	99%
Operating Temperature	-20°C to 55°C (-4°F to 131°F)

Connectivity	Bluetooth, Wi-Fi
Recommended Uses	Residential, Outdoor, RV, Off-Grid Living

10. Warranty and Support

Warranty: The BLUETTI SolarX 4K MPPT 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.

Customer Support: For technical assistance, warranty claims, or any questions regarding your product, please contact BLUETTI customer service. Refer to the official BLUETTI website for contact information and support resources.