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› EPEVER MPPT XTRA-N XTRA1210N Solar Charge Controller User Manual

EPEVER XTRA 1210N (10A, 12/24V, max PV 100V)

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Model: XTRA 1210N (10A, 12/24V, max PV 100V)

1. INTRODUCTION

The EPEVER MPPT XTRA-N series solar charge controller is an advanced Maximum Power Point Tracking (MPPT) device designed for off-grid solar systems. It efficiently manages power flow from solar panels to batteries, ensuring optimal charging and extending battery life. This manual provides detailed instructions for the safe and effective operation of your XTRA 1210N charge controller.

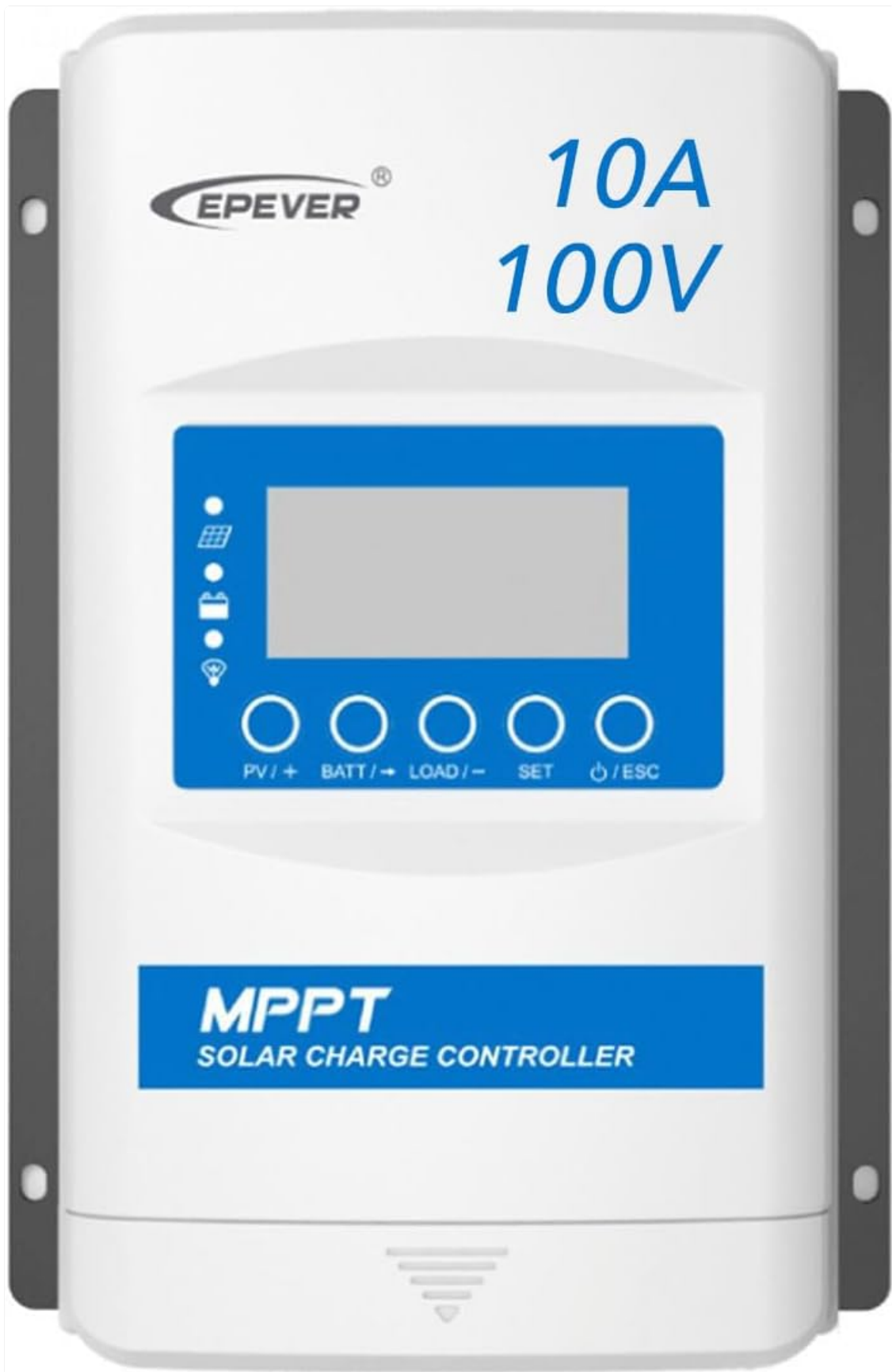


Figure 1: EPEVER MPPT XTRA-N XTRA1210N Solar Charge Controller. This image shows the front view of the white and blue solar charge controller with its display and control buttons, indicating its 10A and 100V ratings.

2. SAFETY INFORMATION

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

- Ensure all connections are correct and secure before applying power.
- Do not exceed the maximum PV open circuit voltage (Voc) of 100V for the XTRA1210N model. Exceeding this limit can damage the controller.
- Connect the battery first, then the solar panel, and finally the load. Disconnect in the reverse order.
- Install the controller in a well-ventilated area, away from flammable materials and direct sunlight.
- This device is designed for indoor use only. Protect it from moisture and dust.
- Only qualified personnel should perform installation and maintenance.

3. PRODUCT OVERVIEW

The XTRA-N series features an improved design and performance over its predecessor, the Tracer AN series. Key features include advanced MPPT technology for precise tracking of multiple Maximum Power Points (MPP) of the solar module, potentially yielding 20-30% more power. Lithium battery parameters can be adjusted via the LCD display.

3.1 Components and Ports

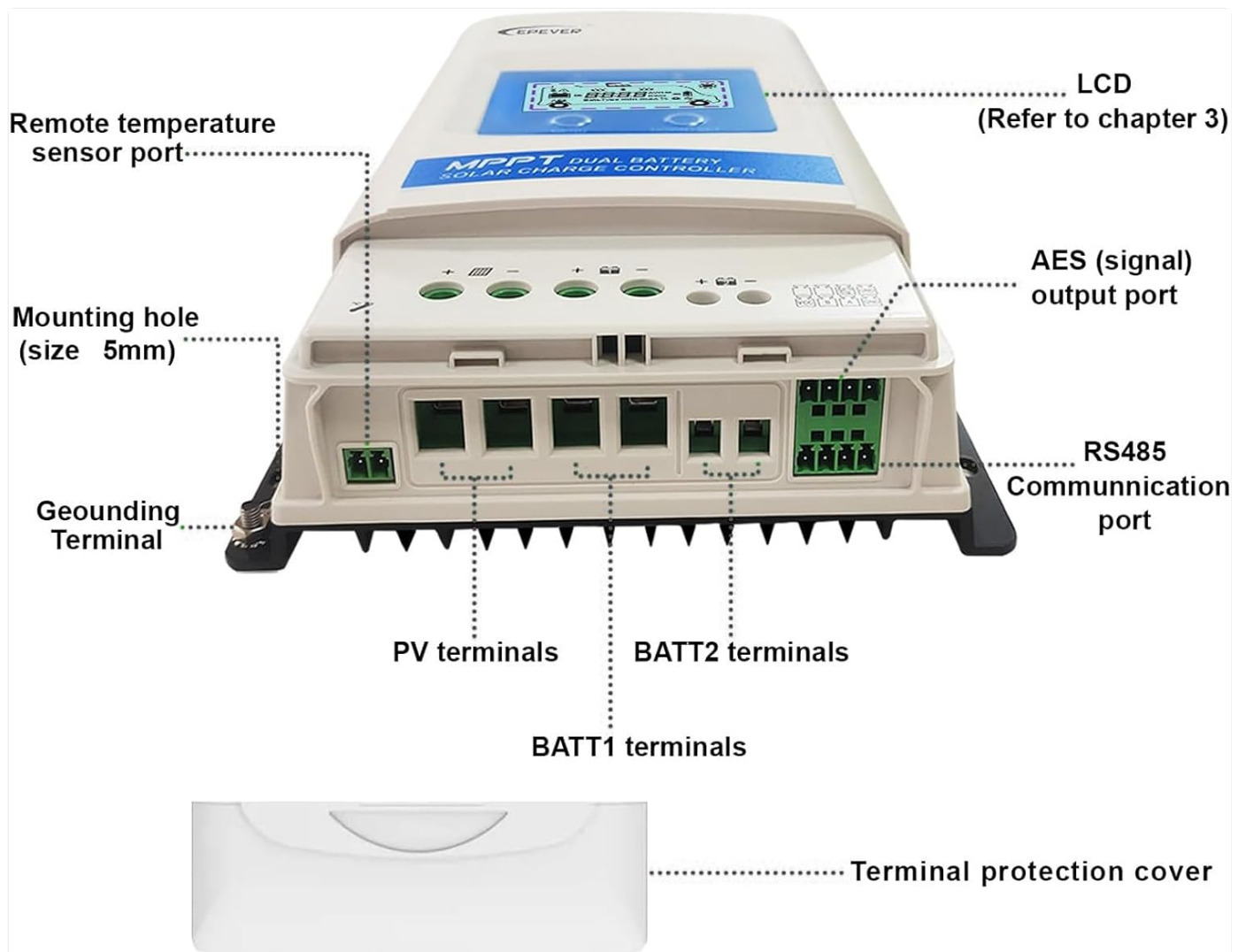


Figure 2: Bottom view of the EPEVER MPPT XTRA-N charge controller showing various connection ports. Labels include Remote temperature sensor port, Mounting hole (size 5mm), Geounding Terminal, PV terminals, BATT1 terminals, BATT2 terminals, RS485 Communication port, AES (signal) output port, and LCD (Refer to chapter 3).

- **LCD Display:** Shows system status, parameters, and error codes.
- **Control Buttons:** For navigation and setting parameters.
- **PV Terminals:** Connect to solar panel array.

- **Battery Terminals (BATT1, BATT2):** Connect to battery bank.
- **Load Terminals:** Connect to DC loads.
- **Remote Temperature Sensor Port:** For external temperature compensation.
- **RS485 Communication Port:** For PC communication or external display.
- **AES (Signal) Output Port:** For specific applications.
- **Grounding Terminal:** For system grounding.

3.2 Supported Battery Types

The controller supports various battery types, including Lead-Acid (AGM, GEL, Flooded, USER defined) and Lithium batteries (LiFePO4, Li(NiCoMn)O2). Lithium battery parameters can be customized via the LCD display.

Nennladestrom

10A

Max.PV-Eingung

100V

Nennspannung

12/24VDC

UNTERSTÜTZENDE BATTERIETYPE

Blei-Säure-Batterie
Gel(AGM), Flooded, User

Lithiumbatteri
LiFePO4, Li (NiCoMn)O2



The image shows a white EPEVER MPPT Solar Charge Controller. It features a blue LCD display on the top panel with several status icons and five circular buttons labeled 'PV / +', 'BATT / -', 'LOAD / -', 'SET', and 'ESC'. A blue label on the front reads 'MPPT SOLAR CHARGE CONTROLLER'. The bottom of the unit has a series of terminal blocks for connections and a green ground terminal.

Figure 3: Image illustrating the supported battery types: Lead-Acid (Gel, AGM, Flooded, User) and Lithium (LiFePO4, Li(NiCoMn)O2).

4. SETUP AND INSTALLATION

Proper installation is crucial for the performance and longevity of your solar charge controller. Follow these steps carefully.

4.1 Mounting the Controller

- Choose a mounting location that is dry, well-ventilated, and protected from direct sunlight and moisture.
- Ensure there is sufficient space around the controller for heat dissipation.
- Mount the controller vertically on a non-flammable surface using appropriate screws.

4.2 Connection Sequence

Follow the connection sequence below to prevent damage to the controller or other components.



Figure 4: Diagram illustrating the recommended connection sequence for the solar charge controller. Step 1: Connect solar modules to form a 12V(2s) array. Step 2: Set up a 12V battery bank (battery not included). Step 3: Connect the charge controller to the battery bank. Step 4: Plug the solar module output into the PV input of the controller.

1. **Step 1: Connect the Battery.** Connect the battery to the controller's battery terminals (BATT1 or BATT2). Ensure correct polarity (+ to + and - to -). The controller will power on.
2. **Step 2: Connect the Solar Panel.** Connect the solar panel array to the controller's PV terminals. Ensure correct polarity. The controller will begin charging.
3. **Step 3: Connect the DC Load (Optional).** Connect your DC loads to the controller's load terminals. Ensure correct polarity.

Disconnection Sequence: Disconnect the load first, then the solar panel, and finally the battery.

4.3 Accessory Connections

The controller supports various accessories for enhanced monitoring and control (accessories not included).

ZUBEHÖRANSCHLUSS

* Zubehör **NICHT** im Lieferumfang enthalten

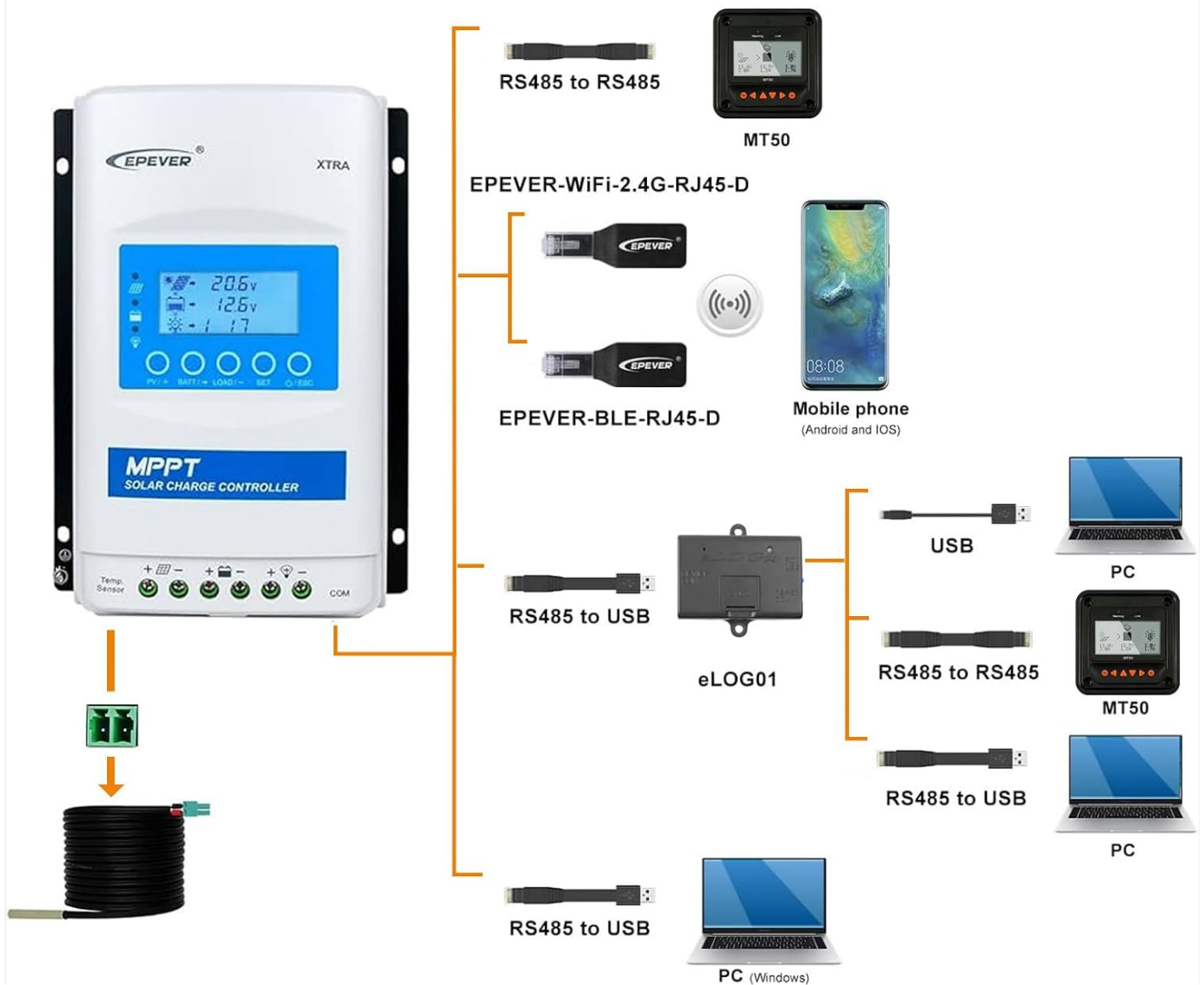


Figure 5: Diagram showing various accessory connections for the EPEVER XTRA-N controller, including RS485 to RS485, EPEVER-WIFI-2.4G-RJ45-D, EPEVER-BLE-RJ45-D for mobile phone connectivity, RS485 to USB for PC connection, and eLOG01 data logger.

TIPP ZU EINBAU

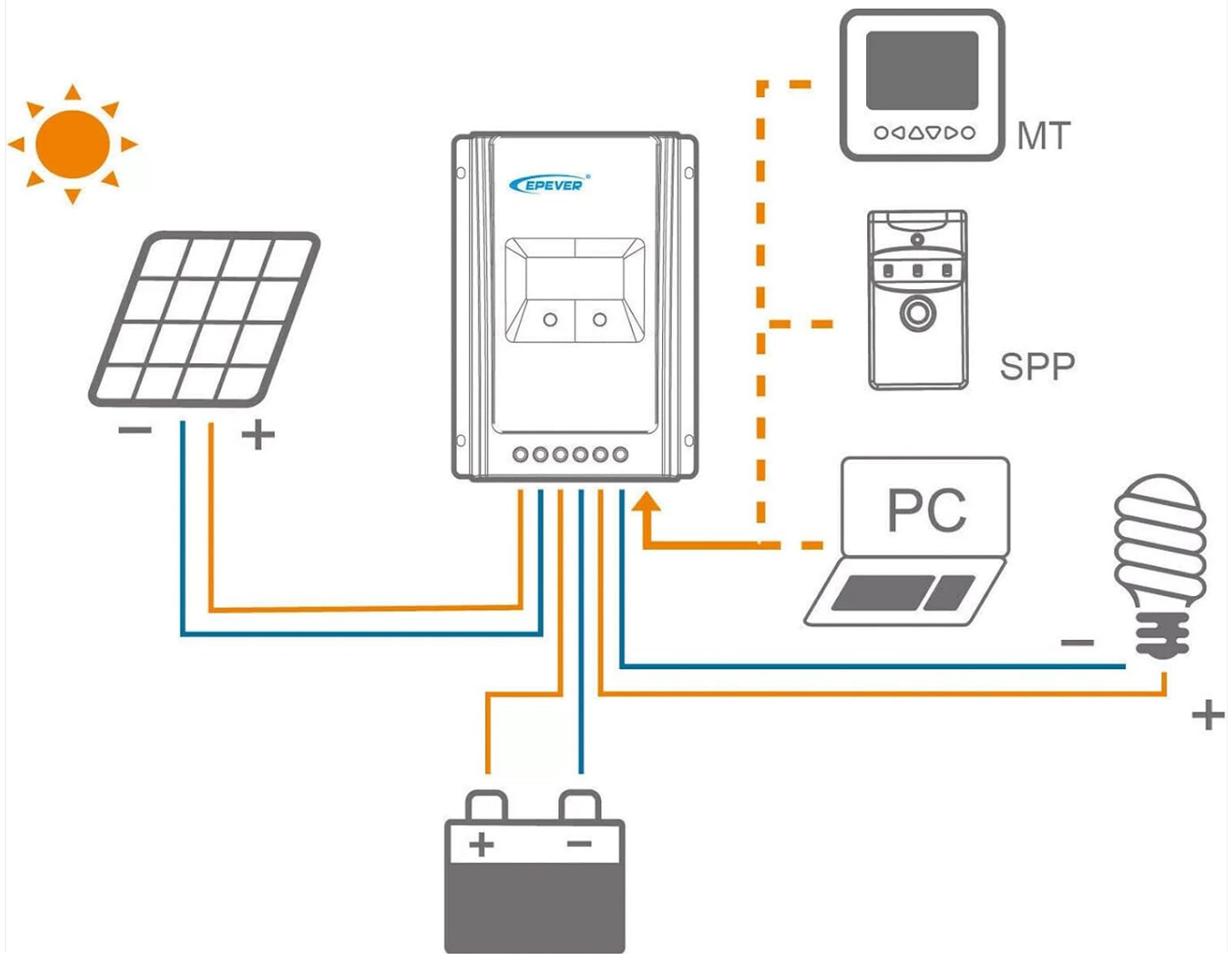


Figure 6: Basic installation diagram showing connections between solar panels, the EPEVER charge controller, battery, and DC load, along with optional PC and remote meter connections.

5. OPERATING INSTRUCTIONS

5.1 LCD Display and Buttons

The LCD display provides real-time system data. Use the buttons to navigate menus and adjust settings.

- **PV/+ Button:** Short press to view PV parameters; long press to enter/exit setting mode.
- **BATT/- Button:** Short press to view battery parameters; long press to decrease values in setting mode.
- **LOAD/- Button:** Short press to view load parameters; long press to decrease values in setting mode.
- **SET Button:** Short press to confirm selection; long press to enter/exit setting mode.
- **ON/OFF/ESC Button:** Short press to turn load on/off; long press to exit current menu or setting.

5.2 Parameter Settings

To adjust battery type, charge voltage, or other parameters, long press the SET button to enter the setting menu. Use the PV/+ and BATT/- buttons to navigate and adjust values, and the SET button to confirm.

6. MAINTENANCE

Regular maintenance ensures optimal performance and extends the lifespan of your charge controller.

- **Check Connections:** Periodically inspect all wiring connections for tightness and corrosion.
- **Clean the Controller:** Keep the controller clean and free of dust. Use a dry cloth for cleaning. Ensure ventilation openings are not blocked.
- **Inspect Wiring:** Check for any signs of wear, fraying, or damage to cables. Replace damaged cables immediately.
- **Battery Inspection:** Regularly check battery terminals for corrosion and ensure proper ventilation around the battery.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your EPEVER MPPT XTRA-N charge controller.

Problem	Possible Cause	Solution
Controller not powering on	Battery not connected or reverse polarity; Battery voltage too low.	Check battery connections and polarity. Ensure battery voltage is above minimum operating voltage.
No charging from PV	PV panels not connected or reverse polarity; PV voltage too low/high; Insufficient sunlight.	Check PV connections and polarity. Verify PV voltage is within controller's operating range. Ensure adequate sunlight.
Load not working	Load output disabled; Overload; Short circuit; Battery low voltage disconnect.	Check load settings on display. Reduce load. Check for short circuits. Charge battery.
Display shows error code	Specific system fault (e.g., over-voltage, over-current, high temperature).	Refer to the full product manual for specific error code meanings and solutions. Address the underlying issue.

8. SPECIFICATIONS

Detailed technical specifications for the EPEVER MPPT XTRA 1210N Solar Charge Controller.

Parameter	Value
Nominal System Voltage	12/24VDC Auto
Rated Charge Current	10A
Rated Discharge Current	10A
Max. PV Open Circuit Voltage	100V
Max. PV Input Power (12V)	130W
Max. PV Input Power (24V)	260W
Operating Temperature	-25°C to +45°C

Parameter	Value
Enclosure Protection	IP30
Dimensions (L x W x H)	175 x 143 x 48 mm
Weight	0.57 KG
Display Type	LCD



Figure 7: Image showing the dimensions of the EPEVER MPPT XTRA-N charge controller: 175mm height, 143mm width, 48mm depth, and a weight of 0.57kg.

9. WARRANTY AND SUPPORT

The EPEVER MPPT XTRA-N XTRA1210N Solar Charge Controller comes with a**2-year manufacturer's warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. For technical support, warranty claims, or further inquiries, please contact your local dealer or the manufacturer directly. Please have your product model number and purchase information ready when contacting support.

Certifications: CE, FCC, IEC, ETL, and RoHS compliant.

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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.

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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