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› EPEVER MPPT Solar Charge Controller Tracer3210AN User Manual

EPEVER Tracer-AN

EPEVER MPPT Solar Charge Controller

MODEL: TRACER3210AN

User Instruction Manual

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your EPEVER MPPT Solar Charge Controller Tracer3210AN. Please read this manual thoroughly before installation and use to ensure optimal performance and longevity of the product.

2. SAFETY INFORMATION

WARNING:

- Always connect the battery first to the controller before connecting solar panels or loads.
- Ensure correct polarity for all connections to prevent damage to the controller and connected devices.
- Do not use an electric screwdriver for wiring to avoid over-tightening and damaging terminals.
- Ensure proper ventilation around the controller to prevent overheating.
- Disconnect all power sources before performing any maintenance or wiring.

3. PACKAGE CONTENTS

- 1 x 30A MPPT Solar Charge Controller (Tracer3210AN)
- 1 x Remote Meter MT50
- 1 x Temperature Sensor Cable (RT-MF58R47K3.81A)
- 1 x Temperature Sensor Cable for Battery (RTS300R47K3.81A)
- 2 x User Manual (English)
- Mounting Screws and Wall Plugs

4. PRODUCT OVERVIEW

The EPEVER MPPT Solar Charge Controller Tracer3210AN is an advanced Maximum Power Point Tracking (MPPT) controller for off-grid solar systems. It features high tracking efficiency, support for various battery types including LiFePO4 and Lithium, and multiple protection functions.

Controller Components



Figure 4.1: EPEVER MPPT Solar Charge Controller Tracer3210AN with included accessories.

The main unit features an LCD display for real-time data, select and enter buttons for navigation, and clearly marked terminals for solar panel, battery, and load connections. A temperature sensor port and a COM port for external communication devices are also present.

TOP SIDE

MPPT 30A



BOTTOM SIDE

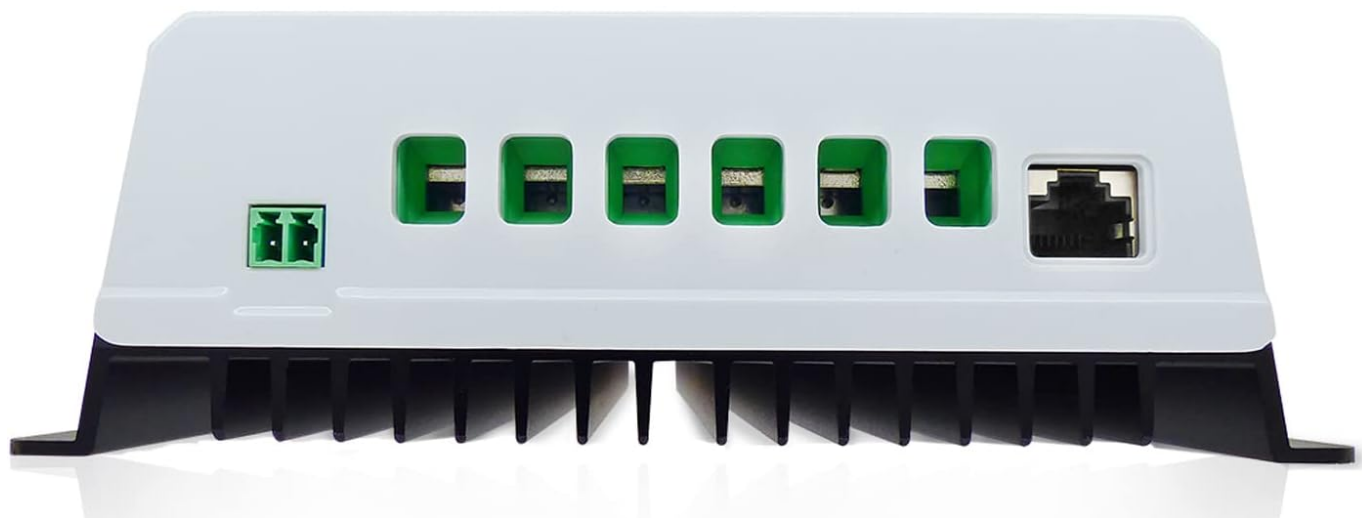


Figure 4.2: Top and bottom views of the Tracer3210AN controller, showing heat sink and terminal layout.

MT50 Remote Meter

The MT50 remote meter provides a large-screen informative LCD to display all operating data and system working status. It allows for simple and convenient operation, real-time alarm of failure information, and diversified load control modes.



Figure 4.3: The MT50 Remote Meter, showing its display and control buttons.

5. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your solar charge controller. Please follow these steps carefully.

Wiring Sequence

Always connect the battery first!

1. Connect the battery to the controller.
2. Connect the load to the controller.
3. Connect the solar panel (PV array) to the controller.

Disconnection Sequence:

1. Disconnect the solar panel (PV array) from the controller.
2. Disconnect the load from the controller.
3. Disconnect the battery from the controller.

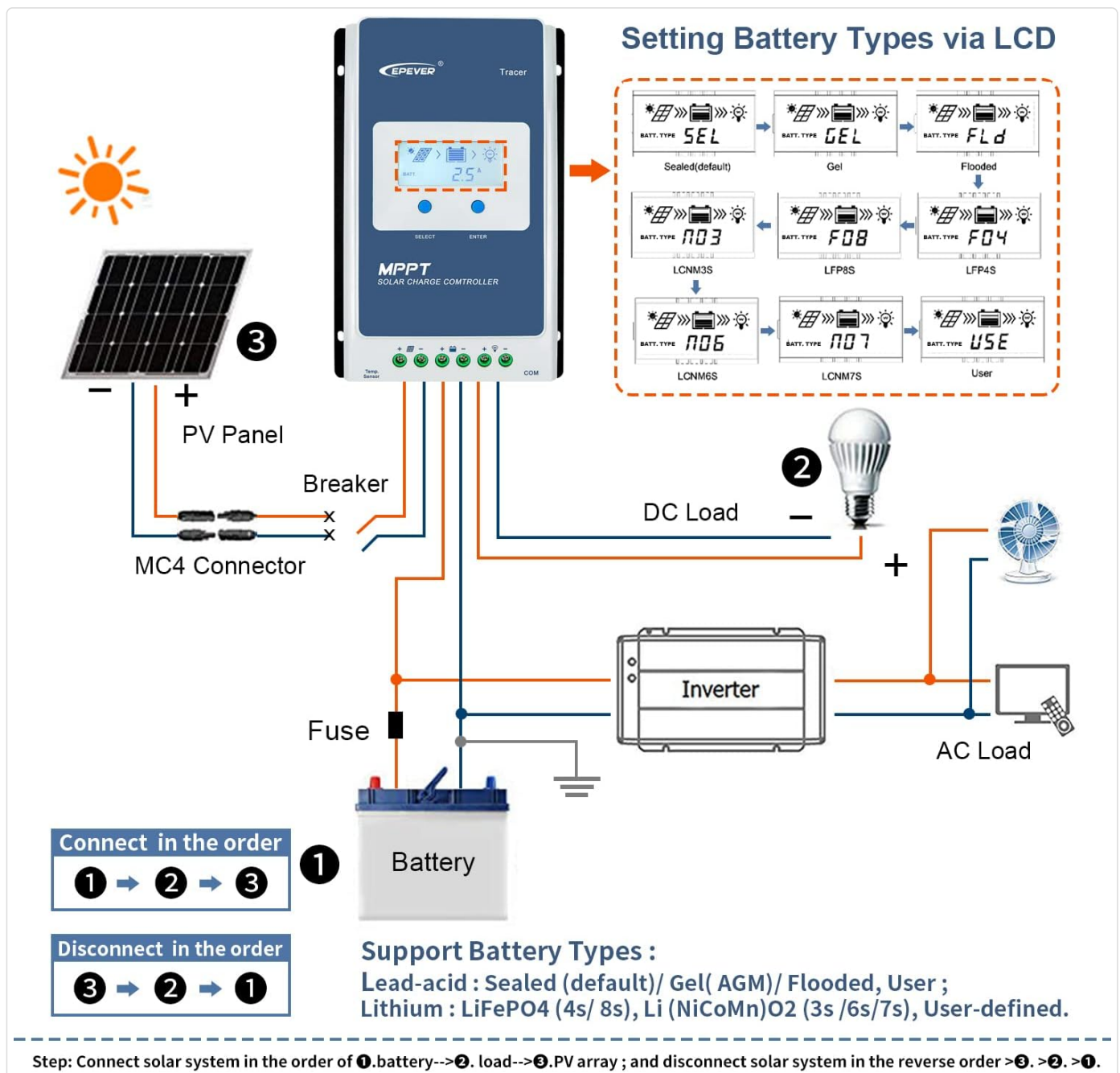


Figure 5.1: Connection diagram for the solar charge controller, showing solar panel, battery, and load connections.

Step-by-Step Wiring Guide

Follow the video guide below for a visual demonstration of the wiring process.

Your browser does not support the video tag.

Video 5.1: Unboxing and Installation Guide for Tracer-AN + MT50 + RTS. This video demonstrates the unboxing, identification of components, and step-by-step wiring for the solar charge controller, battery, and load.

Ensure all wires are securely fastened and polarity is correct. Refer to the terminal markings on the controller for guidance.

6. OPERATING INSTRUCTIONS

LCD Display and Buttons

The controller's LCD provides real-time monitoring of PV, battery, and load parameters. Use the 'SELECT' and 'ENTER' buttons to navigate through the display menus.

Your browser does not support the video tag.

Video 6.1: EPEVER MPPT Solar Charge Controller kit TracerAN+MT50+RTS. This video provides a comprehensive overview of the kit, including detailed instructions on how to set battery parameters and load working modes using the MT50 remote meter.

Setting Battery Type

It is essential to set the correct battery type for proper charging and battery longevity. The controller supports Sealed, Gel (AGM), Flooded, LiFePO4, and Li(NiCoMn)O2 batteries. For Lithium batteries, you can set user-defined parameters.

- Press the "ENTER" button and hold for 5 seconds under the battery voltage interface.
- Press the "SELECT" button when the battery type interface is flashing.
- Press the "ENTER" button to confirm the battery type.

Refer to the specifications table for default voltage parameters for each battery type. For user-defined lithium battery settings, consult the detailed parameter table in the Specifications section.

Setting Load Working Mode

The controller offers multiple load control modes:

- Manual Control: Load can be manually turned ON/OFF.
- Light ON/OFF: Load turns ON at dusk and OFF at dawn.
- Light ON + Timer: Load turns ON at dusk and stays ON for a set duration.
- Time Control: Load turns ON/OFF based on programmed times.

To set the load working mode, access the "Load Set" menu via the MT50 remote meter. Detailed instructions are available in the full user manual (pages 24-27).

7. MAINTENANCE

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

- Periodically check all wiring connections for tightness and corrosion.
- Clean the controller's exterior with a dry cloth to remove dust and debris.
- Ensure adequate airflow around the controller's heat sink.
- Monitor battery voltage and temperature regularly to ensure they are within safe operating limits.

8. TROUBLESHOOTING

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

Problem		Possible Cause	Solution
No display on controller	Battery not connected or low voltage	Check battery connections and voltage. Ensure battery voltage is above 8V.	
No charging current	Solar panel not connected, insufficient sunlight, or PV open circuit voltage too low/high.	Check solar panel connections. Ensure adequate sunlight. Verify PV voltage is within controller's operating range (8V~32V).	
Load not working	Load disconnected, load overcurrent, or battery low voltage disconnect.	Check load connections. Reduce load power. Charge battery. Adjust load working mode.	

For more complex issues, refer to the comprehensive troubleshooting section in the full user manual or contact EPEVER customer support.

9. SPECIFICATIONS

Tracer3210AN Technical Data	
Rated Charge Current	30A

Tracer3210AN Technical Data	
System Nominal Voltage	12V/24VDC Auto identifying
Battery Voltage Range	8V~32V
Max. PV Open Circuit Voltage	100VDC
Max. PV Input Power	390W/12V, 780W/24V
MPPT Tracking Efficiency	≥99.5%
Charge Conversion Efficiency	Up to 98%
Grounding	Common Negative Ground
Enclosure	IP30

Battery Voltage Parameters (User-Defined)

For custom battery types, refer to the following voltage parameters. Adjustments should be made under professional guidance.

Electrical Parameters

Item	Tracer 1210AN	Tracer 2210AN	Tracer 3210AN	Tracer 4210AN
System nominal voltage	12/24VDC ^① Auto			
Rated charge current	10A	20A	30A	40A
Rated discharge current	10A	20A	30A	40A
Battery voltage range	8~32V			
Max. PV open circuit voltage	100V ^② 92V ^③			
MPP voltage range	(Battery voltage +2V)~72V			
Max. PV input power	130W/12V 260W/24V	260W/12V 520W/24V	390W/12V 780W/24V	520W/12V 1040W/24V
Self-consumption	≤12mA			
Discharge circuit voltage drop	≤0.23V			
Temperature compensate coefficient ^④	-3mV/°C/2V (Default)			
Grounding	Common negative			
RS485 interface	5VDC/100mA			
LCD backlight time	60S (Default)			
Working environment temperature [◆]	-25°C~+50°C (100% input and output)			
Storage temperature range	-20°C~+70°C			
Relative humidity	≤95%, N.C.			
Enclosure	IP30			

Electrical Parameters

- ①When a lead-acid battery is used, the controller hasn't the low temperature protection.
- ②At minimum operating environment temperature
- ③At 25°C environment temperature
- ④When a lithium-ion battery is used, the system voltage can't be identified automatically.

Figure 9.1: Detailed table of battery voltage parameters for various battery chemistries, including user-defined settings.

10. WARRANTY AND SUPPORT

EPEVER products come with a standard manufacturer's warranty. For specific warranty terms and conditions, please refer to the warranty card included in your package or visit the official EPEVER website.

For technical support, troubleshooting assistance, or product inquiries, please contact Goland Century, the official authorized sales agent for EPEVER. They offer free technical support and have service centers in various locations.

- **Manufacturer:** HUIZHOU EPEVER TECHNOLOGY CO.,LTD
- **Authorized Sales Agent:** Goland Century
- **Technical Support:** Available via Goland Century service centers.

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