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› EPEVER MPPT Charge Controller Tracer7810BP Instruction Manual

EPEVER Tracer7810BP

EPEVER MPPT Charge Controller

TRACER7810BP INSTRUCTION MANUAL

1. Product Overview

The EPEVER MPPT Charge Controller Tracer7810BP is a high-efficiency Maximum Power Point Tracking (MPPT) solar charge controller designed for advanced solar power systems. It is suitable for 12V and 24V DC battery systems and supports various battery types including Sealed, Gel, Flooded, Lithium, and User-defined. This controller features an IP67 waterproof enclosure, ensuring durability in various environmental conditions. It is designed to maximize power harvest from solar panels and efficiently charge batteries, providing stable power for DC loads.

2. Package Contents

Upon unboxing your EPEVER MPPT Charge Controller Tracer7810BP, please verify that all components listed below are present and in good condition:

- 1 x EPEVER MPPT Solar Charge Controller Tracer7810BP (30A)
- 1 x Remote Meter MT50 (with 2M cable)
- 1 x CC-RS485-RS485-150U-4LLT Communication Cable
- 2 x User Manuals (English)



Image: EPEVER MPPT Charge Controller Tracer7810BP and its complete package contents, including the MT50 remote meter and cables.

3. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your EPEVER MPPT Charge Controller. Please follow these steps carefully. For safety, circuit breaker connections are recommended for all wiring.

3.1 Component Identification



Image: Close-up view of the EPEVER Tracer7810BP charge controller showing the battery, load, and PV terminals, along with the temperature sensor and COM cable ports.

The controller features clearly labeled terminals for Battery, Load, and PV (solar panel) connections. It also includes indicator lights for PV and Battery status, a temperature sensor port, and a COM cable port for the MT50 remote meter.



MT50 is an optional remote meter to monitor and program EPSolar controller,

Compatible with:

EPEVER Controller, Tracer-AN, Triron-N, Tracer-BN, LS-B(P), LS-BP, VS-BN, eTRACER, iTracer, Tracer-BP, XTRA

Features:

- Automatic identify the controller, and display relevant parameter data
- Large-screen informative LCD displays all the operating data and system working status
- Simple and convenient operation
- Real-time alarm of failure information
- Longer communication distance based on RS485
- Diversified load control modes : Manual Control, Light ON/OFF, Light ON+ Timer, Time Control
- Battery type selection: Gel, sealed, flooded and User(programable)
- Programmable parameters
- Energy statistics display function



Image: Front view of the MT50 Remote Meter, displaying its LCD screen and control buttons for monitoring and setting parameters. The MT50 Remote Meter provides a display screen, navigation buttons (Esc, Up, Down, Left, Right, OK), and indicator lights for warning and communication status.

3.2 Connection Steps

Always Connect the Battery First. Do not use an electric screwdriver for connections.

Please read the complete installation instructions to familiarize yourself with the steps before proceeding.

1. **Connect Battery:** Connect the battery to the controller's battery terminals. Ensure correct polarity (+ to + and - to -).

- 2. **Connect Load:** Connect your DC load to the controller's load terminals. Ensure correct polarity.
- 3. **Connect Solar Panel (PV array):** Connect the solar panel array to the controller's PV terminals. Ensure correct polarity.

Uninstallation Procedure:

To disconnect the system, reverse the connection order:

- 1. Disconnect Solar Panel (PV array).
- 2. Disconnect Load.
- 3. Disconnect Battery.

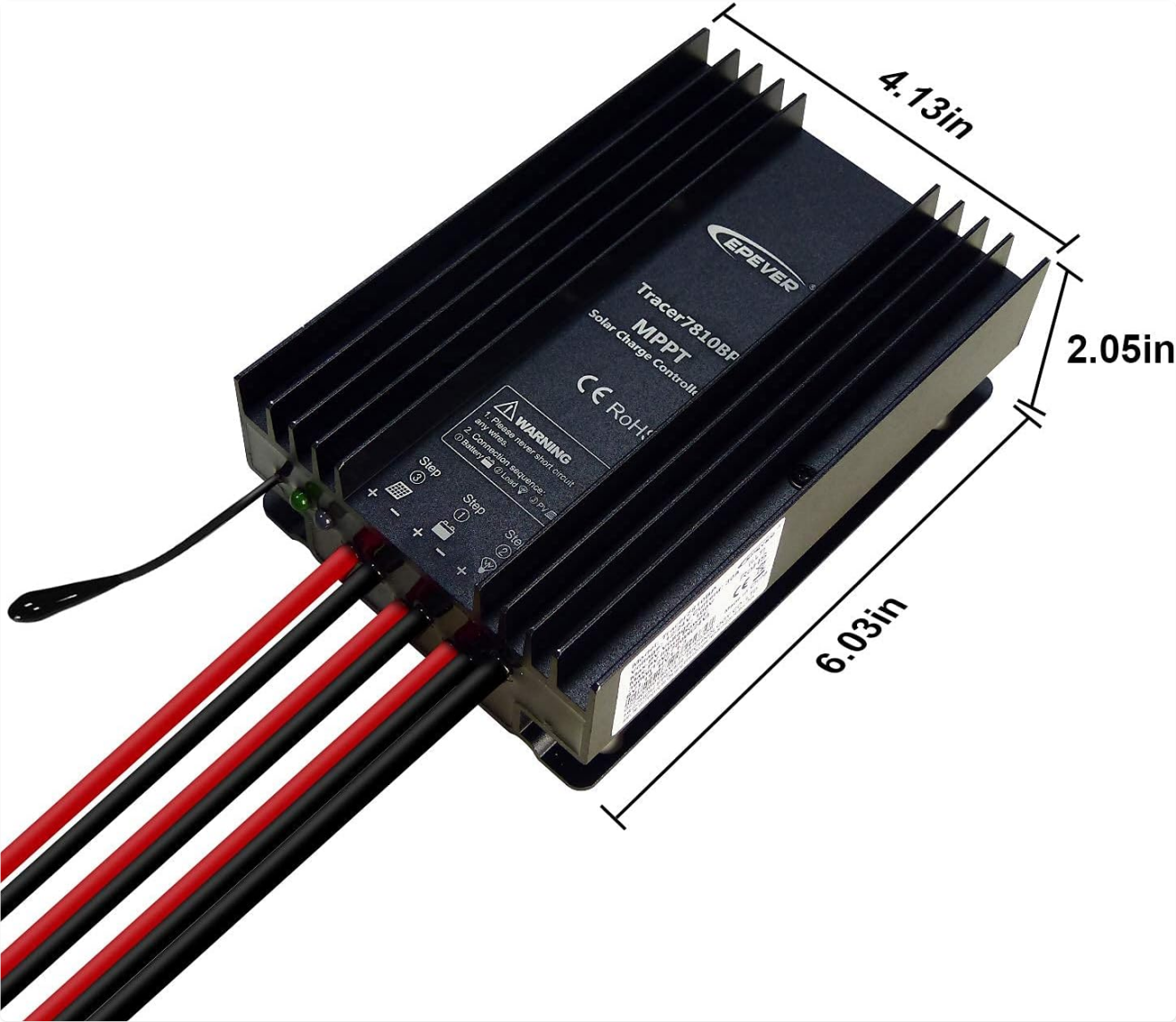


Image: Comprehensive wiring diagram for the EPEVER Tracer7810BP, illustrating connections for battery, DC load, inverter, and solar panel, with recommended circuit breaker placement.

3.3 LED Indicators

The controller features LED indicators to provide real-time status information. Refer to the table below for their meanings:

Indicator	Color	Status	Instruction
	Green	On Solid	PV connection normal but low voltage (irradiance) from PV, no charging

Indicator	Color	Status	Instruction
PV	Green	OFF	No PV voltage (night time) or PV connection problem
	Green	Slowly Flashing	In charging
BATT	Green	On Solid	Normal
	Green	Slowly Flashing	Full
	Green	Fast Flashing	Over voltage
	Orange	On Solid	Under voltage
	Red	On Solid	Over discharged
	Red	Fast Flashing	Battery Overheating / Low Temperature
Charging/green and battery indicator/orange flashing simultaneously			System voltage error

4. Operating the MT50 Remote Meter

The MT50 remote meter allows for monitoring and setting parameters of the charge controller. It connects via the COM cable to the controller.



Real time monitoring



Parameter setting

Image: The MT50 Remote Meter displaying real-time monitoring data and a menu for parameter settings, showing battery voltage, charge current, and load status.

4.1 Basic Monitoring

Once connected, the MT50 will display real-time system data, including PV voltage, battery voltage, charge current, and load status. Use the navigation buttons (Up/Down/Left/Right) to scroll through different monitoring pages.

4.2 Load Control

From the monitoring page, you can typically toggle the load on or off by pressing the "OK" button when the load icon is highlighted. This allows for manual control of connected DC devices.

4.3 Setting Battery Parameters

To optimize charging for your specific battery type, you can set various parameters through the MT50. This is especially important for Lithium batteries, as they do not automatically identify system voltage.

1. Choose "Control Para" from the main menu.
2. Press "OK" to enter.
3. Press "OK" again to confirm.
4. Set parameters such as Battery Type (e.g., Sealed, Gel, Flooded, User) and Battery AH. For User-defined Lithium batteries, select 12V or 24V for your system.
5. Press "OK" to save your settings.

Note: Please set the parameters under the guidance of professionals, especially for Lithium battery systems, to prevent damage to your batteries or system.



Technical Specifications

Tracer BP Series

Item/Model		Tracer5210BP	Tracer7810BP
Nominal system voltage		12/24VDC Auto(Lithium battery do not automatic identification system voltage)	
Battery input voltage range		8.5~32VDC	
Rated charge/discharge current		20A	30A
Rated charge power		260W/12V;520W/24V	390W/12V;780W/24V
Max.PV open circuit voltage		100V(at min operating environment tem);92V(at 25°C environment tem)	
MPP Voltage range		(Battery voltage+2V)~72V	
Battery Type		Lead-acid:Sealed(Default)/Gel/Flooded/User;Lithium battery:LiFePO4/Li-NiCoMn/User	
Lead-acid	Equalize Charging Voltage	Sealed:14.6V/Gel: No/Flooded:14.8V/User:9-17V(X2/24V)	
	Boost Charging Voltage	Sealed:14.4V/Gel: 14.2V/Flooded:14.6V/User:9-17V(X2/24V)	
	Float Charging Voltage	Sealed/Gel/Flooded:13.8V/User:9-17V(X2/24V)	
	Low Voltage Reconnect Voltage	Sealed/Gel/Flooded:12.6V/User:9-17V(X2/24V)	
	Low Voltage Disconnect Voltage	Sealed/Gel/Flooded:11.1V/User:9-17V(X2/24V)	
Lithium	Boost Charging Voltage	LiFePO4:14.5V/Li-NiCoMn:12.5V/User:9-17V(X2/24V)	
	Low Voltage Reconnect Voltage	LiFePO4:12.8V/Li-NiCoMn:10.5V/User:9-17V(X2/24V)	
	Low Voltage Disconnect Voltage	LiFePO4:11.1V/Li-NiCoMn:9.3V/User:9-17V(X2/24V)	
Self-consumption		≤13mA/12v;≤11.5mA/24V	
Temperature compensation coefficient		-3mV/°C/2V(Lithium battery don't have temperature compensation coefficient)	
Communication		RS485	
Working environment Tem.		-40°C~+60°C	-40°C~+50°C
Enclosure		IP68	
Overall dimension		153.3x105x52.1mm	153.3x105x52.1mm
Mounting hole size		3.5mm	
Mounting dimension		120x94mm	
Power cable		12AWG(4mm ²)	10AWG(6mm ²)
Net weight		1.20kg	1.26kg

Image: Detailed technical specifications table for EPEVER Tracer BP Series, including charging parameters for various battery types (Lead-acid and Lithium).

4.4 Load Working Mode Settings

The controller supports various load working modes. To set these parameters:

1. Navigate to "Load Set" in the menu.
2. Select your desired working mode: Manual Control, Light ON/OFF, Light ON+Timer, or Time Control.
3. Refer to the detailed setting instructions in the main manual (Pages 21-23) for specific configurations of each mode.

Your browser does not support the video tag.

Video: An official EPEVER video demonstrating the unboxing, physical features, wiring connections, LED indicators, and MT50 remote meter operation, including how to set battery parameters and load control modes for the Tracer7810BP charge controller.

5. Maintenance

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

- **Cleanliness:** Keep the controller and its terminals clean and free from dust and debris.
- **Connection Checks:** Periodically inspect all wiring connections to ensure they are tight and secure. Loose

connections can lead to overheating and poor performance.

- **Ventilation:** Ensure adequate airflow around the controller to prevent overheating, especially in hot environments.
- **Battery Inspection:** Regularly check your batteries for any signs of damage, corrosion, or electrolyte levels (for flooded batteries).

6. Troubleshooting

If you encounter issues with your EPEVER MPPT Charge Controller, consider the following common problems and solutions:

- **No Power/Display:** Check all wiring connections, especially the battery connection, for proper polarity and tightness. Ensure the battery has sufficient voltage.
- **Battery Not Charging:** Verify solar panel connections and ensure sufficient sunlight. Check PV voltage and current on the MT50. Confirm battery parameters are correctly set for your battery type.
- **Load Not Working:** Check load connections and ensure the load is not overloaded. Verify the load control setting on the MT50 (e.g., not set to OFF or a timer mode that is currently inactive).
- **"Save Failed" Error on MT50:** This can sometimes occur due to communication issues or loose cable connections. Ensure the MT50 cable is securely connected to both the controller and the meter. Try tightening the plastic screw connectors on the cable.
- **Over-charging/Under-charging:** Review your battery type and charging parameters on the MT50. Ensure they match your battery manufacturer's recommendations. For Lithium batteries, manually select the correct system voltage (12V or 24V).
- **System Voltage Error:** This indicates a mismatch or issue with the detected system voltage. Double-check all connections and ensure the battery voltage is within the controller's operating range.

If the issue persists after attempting these troubleshooting steps, please contact EPEVER customer support for further assistance.

7. Specifications

Key technical specifications for the EPEVER MPPT Charge Controller Tracer7810BP:

Specification	Value
Model	Tracer7810BP
Rated Charge/Discharge Current	30 Amp
Nominal System Voltage	12V/24V DC Auto Identify (Note: Lithium battery system voltage not automatically identified)
Max. PV Input Power	390W (12V system) / 780W (24V system)
Max. PV Open Circuit Voltage	100V (at minimum operating environment temperature); 92V (at 25°C environment temperature)
Battery Input Voltage Range	8.5 32V
MPP Voltage Range	V(BAT+2V) 72V

Specification	Value
Battery Type	Lead-acid (Sealed/Gel/Flooded); Lithium (LiFePO4/Li-NiCoMn); User
Grounding	Common Negative
Enclosure	IP67
Product Dimensions (L x W x H)	6.04 x 4.13 x 2.05 inches (153.3 x 105 x 52.1 mm)
Item Weight	4.07 pounds (1.26 KG)
Communication	RS485
Working Environment Temperature	-40°C +50°C

8. Warranty and Support

EPEVER products are designed for reliability and performance. For warranty information and technical support, please refer to the warranty card included in your product packaging or visit the official EPEVER website. Our dedicated support team is available to assist with any questions or issues you may encounter during the installation or operation of your charge controller.

For direct support, please contact your original seller or EPEVER's customer service channels as provided in the product documentation.

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Question

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Details

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