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EPEVER Tracer1210AN

EPEVER 10A MPPT Charge Controller Tracer1210AN User Manual

Model: Tracer1210AN

1. Product Overview

The EPEVER Tracer1210AN is an advanced Maximum Power Point Tracking (MPPT) solar charge controller designed for off-grid solar systems. It efficiently manages power flow from solar panels to batteries, ensuring optimal charging and extending battery life. Featuring a common negative design and a sophisticated MPPT control algorithm, this controller quickly and accurately tracks the maximum power point of your solar array under various conditions, maximizing energy harvest.



Figure 1: EPEVER Tracer1210AN MPPT Charge Controller showing its dimensions (6.77in length, 5.47in width, 1.73in height).

2. Key Features

- Advanced MPPT technology for maximum energy harvest.
- High tracking efficiency, typically 99.5%.
- Supports 12V/24V battery systems with automatic voltage recognition.
- Compatible with various battery types: Gel, Sealed, Flooded, and Lithium-ion.
- LCD display for real-time system information and parameter settings.
- Comprehensive electronic protection functions.
- RS485 communication port for external display or PC software monitoring.

3. Product Components

The Tracer1210AN controller features a clear LCD display and intuitive buttons for operation, along with clearly marked connection terminals.

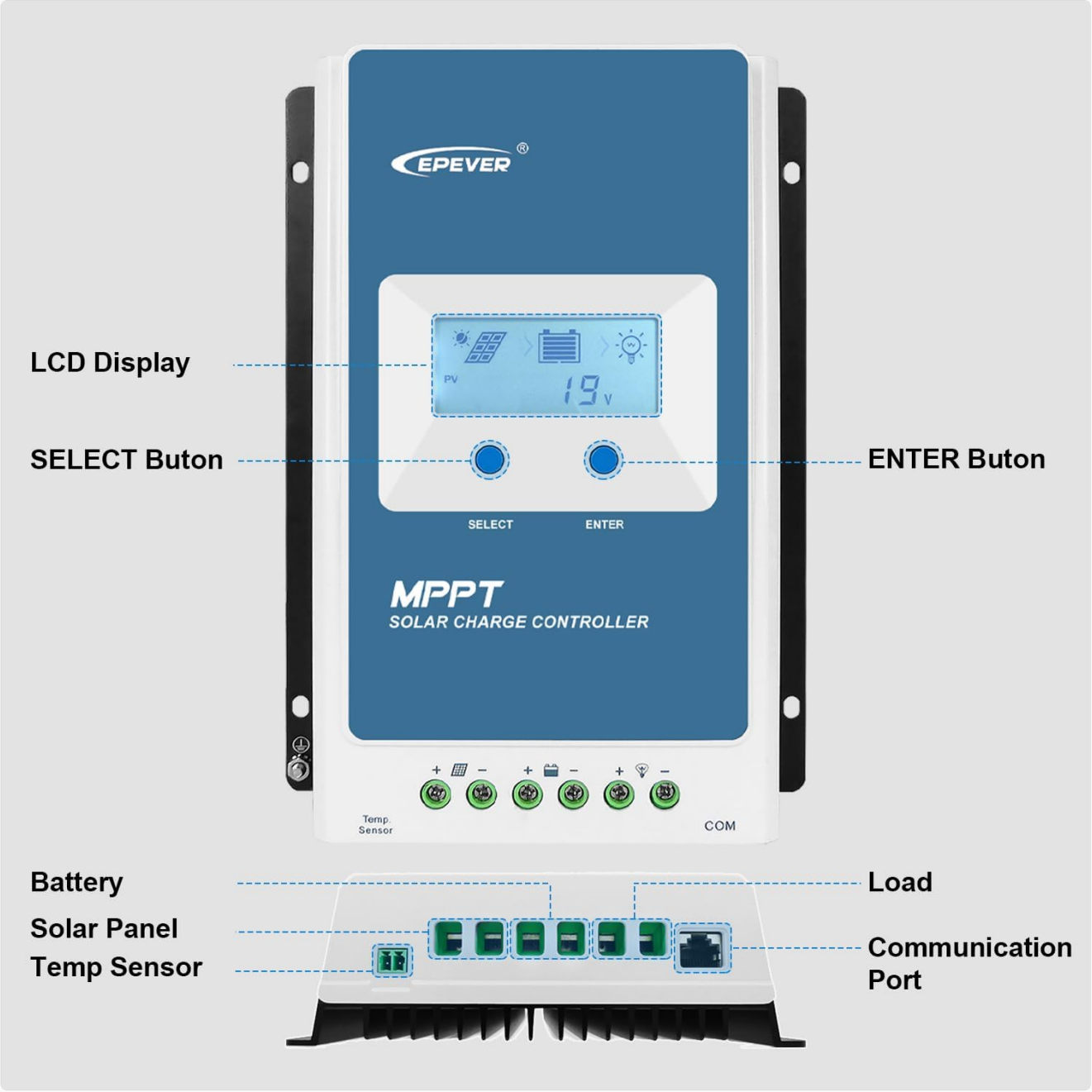


Figure 2: Front and bottom view of the controller with key components labeled.

- **LCD Display:** Shows system status and parameters.
- **SELECT Button:** Used to navigate through display screens.
- **ENTER Button:** Used to confirm selections or enter settings.
- **Battery Terminals:** Connect to the battery bank.
- **Solar Panel Terminals:** Connect to the solar array.
- **Load Terminals:** Connect to DC loads.
- **Temp Sensor Port:** Connects to an external temperature sensor for accurate battery charging.
- **Communication Port (COM):** For PC or external display connection.

4. 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 wiring is correctly polarized and securely connected.
- Do not connect solar panels with a voltage exceeding the controller's maximum input voltage (100V).
- Always 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.
- Use appropriate circuit breakers or fuses for all connections.
- Avoid touching live terminals.

5. Installation Guide

5.1 Wiring Diagram

The following diagram illustrates the typical connection sequence for the Tracer1210AN MPPT charge controller in a solar power system.

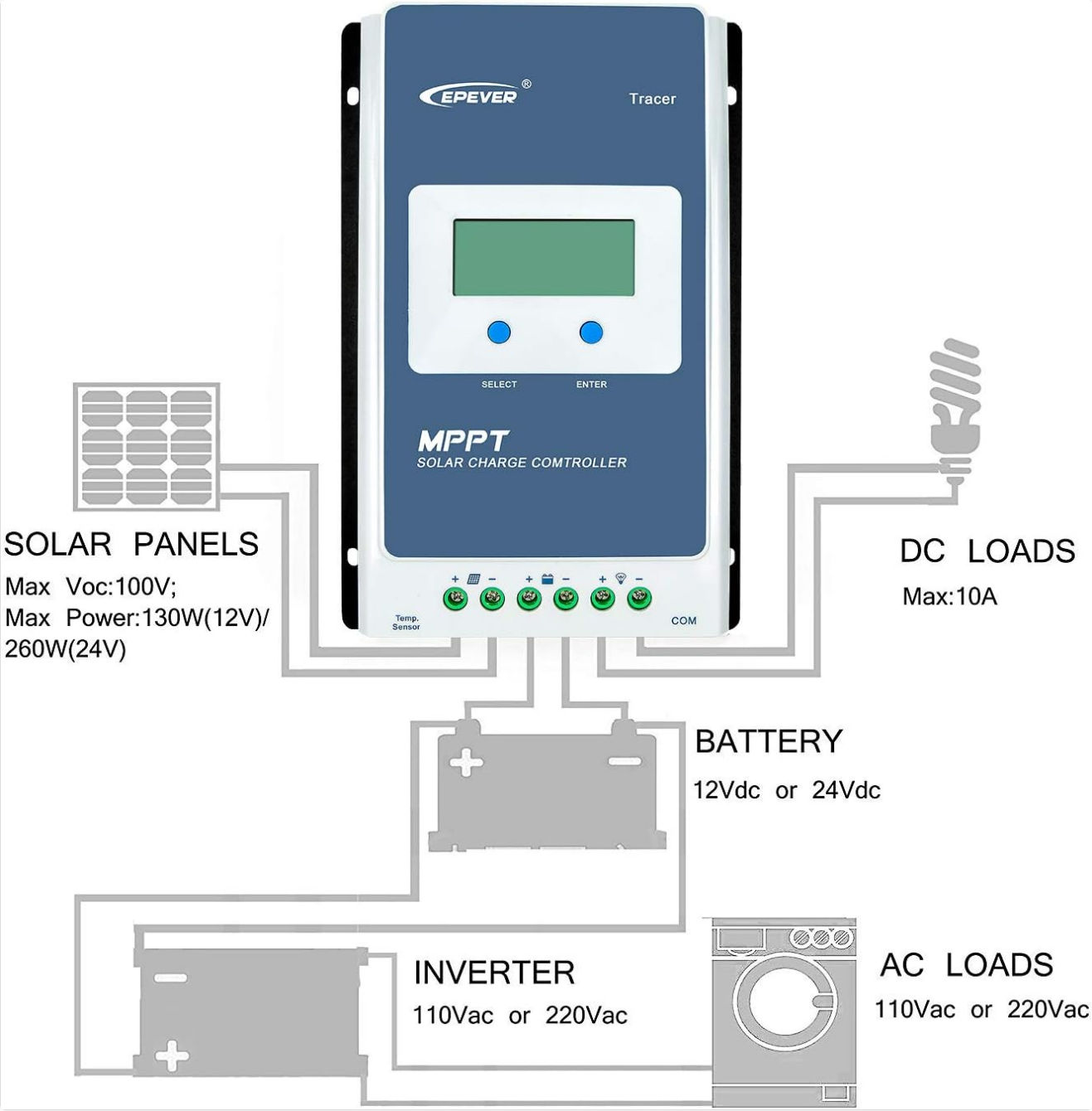


Figure 3: Wiring diagram showing connections for solar panels, battery, DC loads, and inverter for AC loads.

5.2 Connection Steps

Follow these steps to connect your solar charge controller:

1. **Connect the Battery:** Connect the battery to the controller's battery terminals (positive to positive, negative to negative). Ensure the battery voltage is within the controller's operating range (8-32V). The controller will automatically detect 12V or 24V system voltage.
2. **Connect the Solar Panel:** Connect the solar panel array to the controller's solar panel terminals (positive to positive, negative to negative). Verify that the open-circuit voltage (Voc) of your solar array does not exceed 100V.
3. **Connect the Load:** Connect your DC loads to the controller's load terminals (positive to positive, negative to negative). Ensure the total current of your loads does not exceed 10A. For AC loads, connect an inverter to the battery directly, not through the controller's load terminals.
4. **Connect Temperature Sensor (Optional):** If using an external temperature sensor, connect it to the designated port. This improves charging accuracy by compensating for battery temperature.
5. **Power On:** Once all connections are secure, the controller will power on and begin operation.

6. Operating Instructions

6.1 LCD Display Overview

The LCD display provides real-time information about your solar system's performance and status.

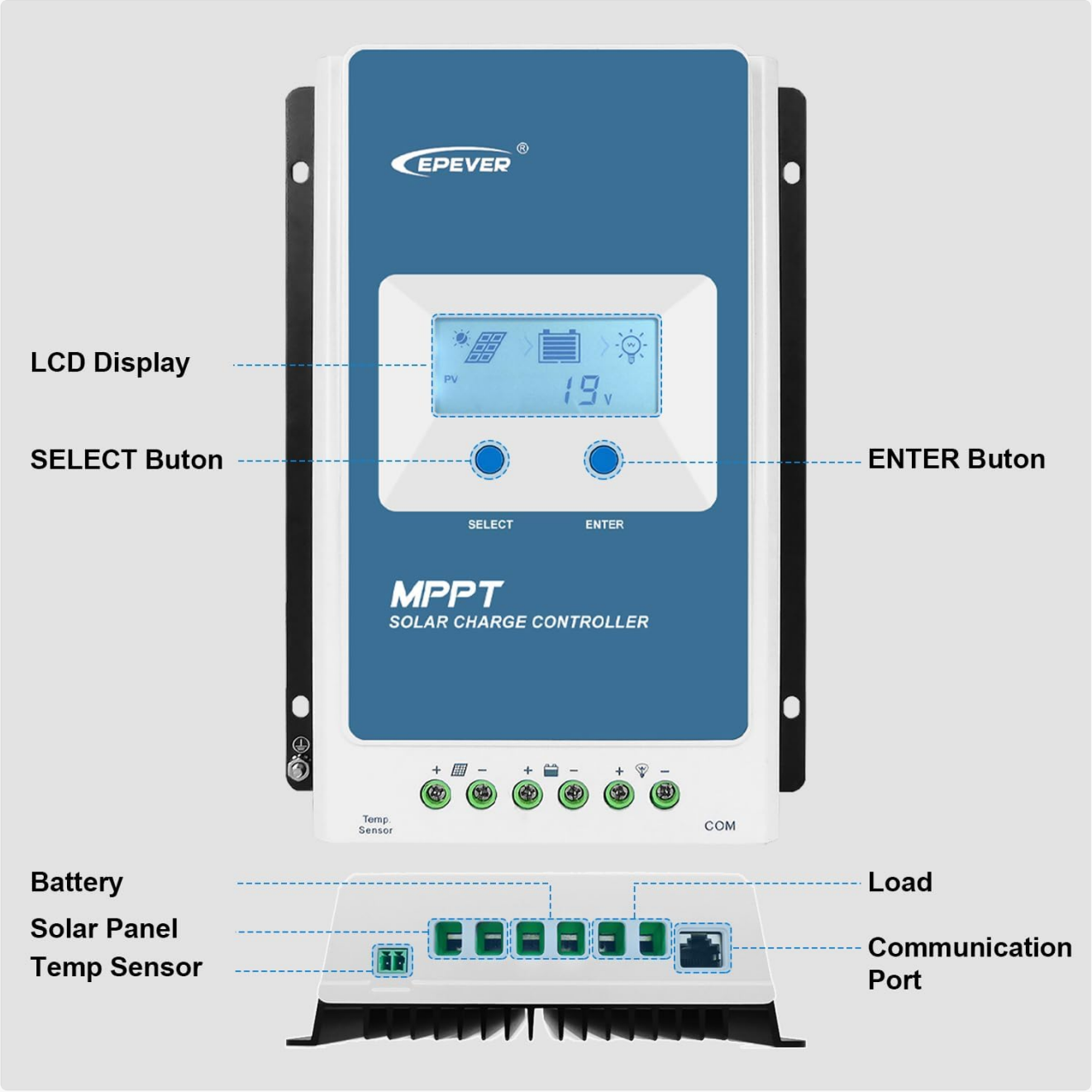


Figure 4: Close-up of the LCD display and control buttons.

6.2 Navigating the Display

Use the **SELECT** and **ENTER** buttons to navigate through the display screens and adjust settings:

- Press the **SELECT** button to cycle through different display pages (e.g., PV voltage, battery voltage, load current, temperature).
- Press and hold the **ENTER** button to enter parameter setting mode for the currently displayed item.
- While in setting mode, use **SELECT** to change values and **ENTER** to confirm and save.

6.3 Battery Type Settings

The controller allows you to program the battery type to ensure correct charging parameters. Supported types include:

- Sealed
- Gel
- Flooded

- Li Ion (Lithium-ion)

Refer to the detailed manual for specific steps on how to change battery type settings via the LCD or external communication tools.

7. Protection Features

The Tracer1210AN is equipped with multiple electronic protection functions to ensure the safety and longevity of your solar system components.



Figure 5: Overview of the controller's integrated protection mechanisms.

- PV Over Current Protection
- PV Short Circuit Protection
- PV Reverse Polarity Protection
- Night Reverse Charging Protection
- Battery Reverse Polarity Protection

- Battery Over Voltage Protection
- Battery Over Discharge Protection
- Battery Overheating Protection
- Lithium Battery Low Temperature Protection
- Load Short Circuit Protection
- Load Overload Protection

8. Technical Specifications

Parameter	Value
System Nominal Voltage	12V / 24V Auto Recognition
Rated Charge Current	10A
Rated Discharge Current	10A
Max. PV Open Circuit Voltage	100V
Max. PV Input Power (12V)	120W
Max. PV Input Power (24V)	240W
Battery Input Voltage Range	8V ~ 32V
Battery Type Options	Sealed, Gel, Flooded, Li Ion
Display Type	LCD
Item Weight	0.81 kg
Manufacturer	Beijing Epsolar Technology Co., Ltd.

9. Troubleshooting

This section addresses common issues you might encounter with your EPEVER Tracer1210AN MPPT charge controller.

- **Controller Not Charging:**
  - Check all wiring connections for looseness or incorrect polarity.
  - Verify solar panel voltage and current are within specifications.
  - Ensure battery voltage is above the low voltage disconnect threshold.
  - Check for any error codes on the LCD display.
- **Incorrect Battery Voltage Reading:**
  - Ensure battery connections are secure and free of corrosion.
  - If an external temperature sensor is used, ensure it is properly connected and functioning.
- **Load Not Functioning:**
  - Check load wiring and ensure the load current does not exceed 10A.
  - Verify the battery has sufficient charge.

- Check for load short circuit or overload protection activation.

- **Radio Interference:**
  - Some users have reported radio interference. This can often be mitigated by adding filters to all leads and ensuring proper grounding and shielding of the controller.

For more detailed troubleshooting or persistent issues, please contact EPEVER customer support.

10. Warranty and Support

EPEVER products typically come with a manufacturer's warranty covering defects in materials and workmanship. For specific warranty terms, duration, and to initiate a support request, please refer to the warranty card included with your product or visit the official EPEVER website. Keep your purchase receipt as proof of purchase.
For technical assistance, product inquiries, or service, please contact EPEVER customer support through their official channels. You can often find contact information on the manufacturer's website or in the product packaging.

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