EPEVER Tracer2210AN-G3

EPEVER Tracer2210AN-G3 20A MPPT Solar Charge Controller User Manual

Brand: EPEVER | Model: Tracer2210AN-G3

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your EPEVER Tracer2210AN-G3 20A MPPT Solar Charge Controller. This device is designed to efficiently manage power flow from solar panels to various battery types, including lead-acid and lithium batteries.
Key features include:

- Advanced MPPT technology with efficiency no less than 99.5%.
- Automatic 12V/24V system voltage recognition.
- Maximum PV input voltage of 100V.
- Support for Gel, AGM, Flooded, Sealed, and Lithium (LiFePO4, Li(NiCoMn)O2) batteries.
- Common negative grounding design.
- RS-485 communication bus interface with Modbus protocol for monitoring and parameter setting via mobile app or PC software.
- Charging power and current limitation function.
- Real-time energy statistics function and overheating power reduction.

Figure 1.1: EPEVER Tracer2210AN-G3 20A MPPT Solar Charge Controller with LCD display.

2. Setup and Installation

Proper installation is crucial for optimal performance and safety. Follow the connection order carefully.

2.1 Connection Order

Connect the system components in the following sequence:

1. **Battery:** Connect the battery to the charge controller.
2. **PV Panel:** Connect the solar PV panel to the charge controller.
3. **Load:** Connect the DC load to the charge controller.

To disconnect the system, reverse the order: Load → PV Panel → Battery.

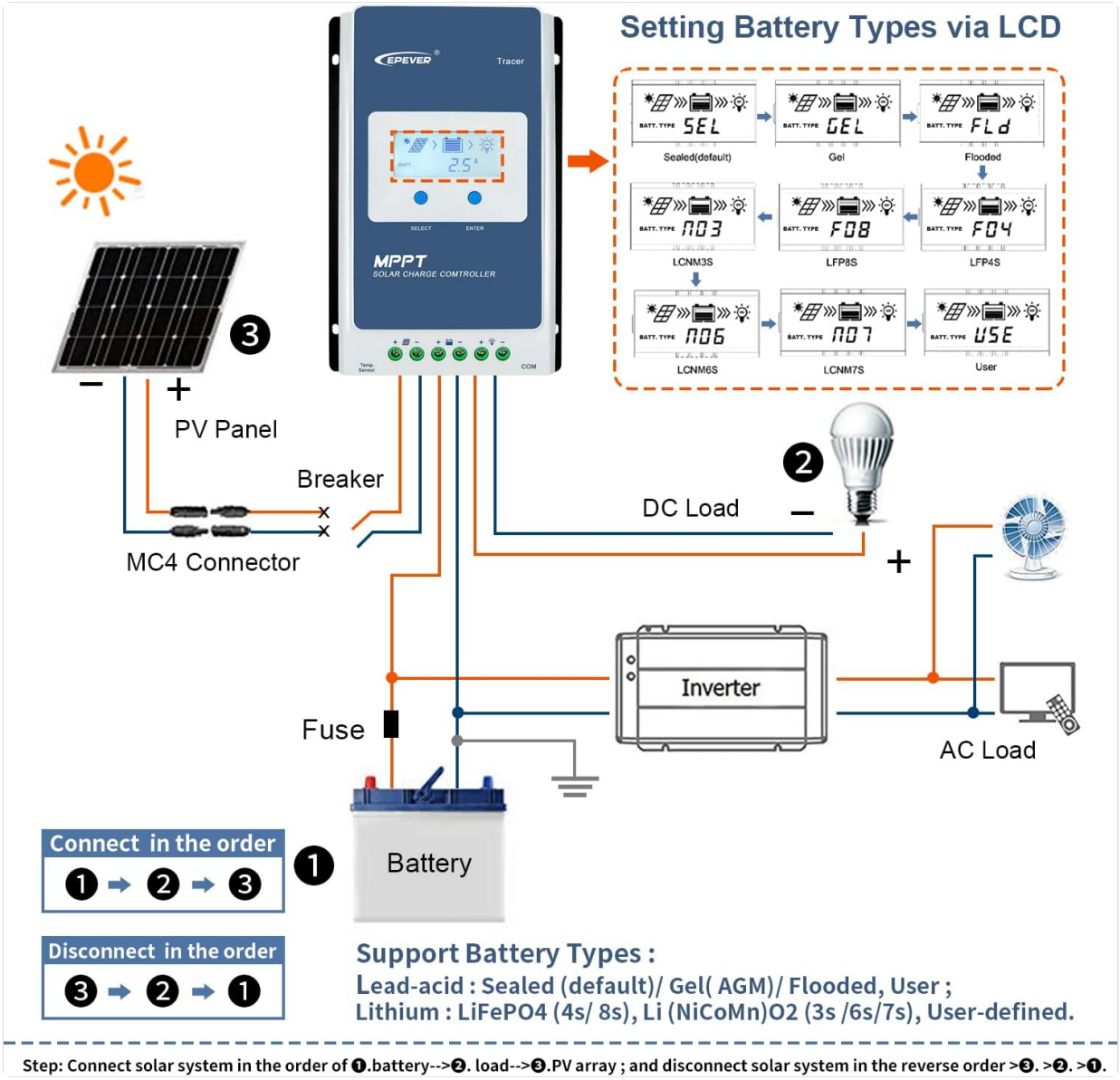

Figure 2.1: Diagram illustrating the correct connection order for the solar charge controller, battery, PV panel, and DC load.

2.2 No-Battery Mode and Battery Mode

The Tracer-AN G3 series supports operation with or without a battery, depending on the inverter type and power requirements.

- **No-battery Mode**

WARNING	When there is no battery, the Tracer-AN G3/Tracer-AN G3 BLE series can be directly connected to the inverter. The inverter shall be connected to the battery terminals of the controller and meets the following conditions: 1) For high-frequency inverter: PV input power > (load output power ÷ inverter conversion efficiency ÷ controller conversion efficiency) 2) For power frequency inverter: PV input power > (load output power ÷ inverter conversion efficiency ÷ controller conversion efficiency ÷ 2)

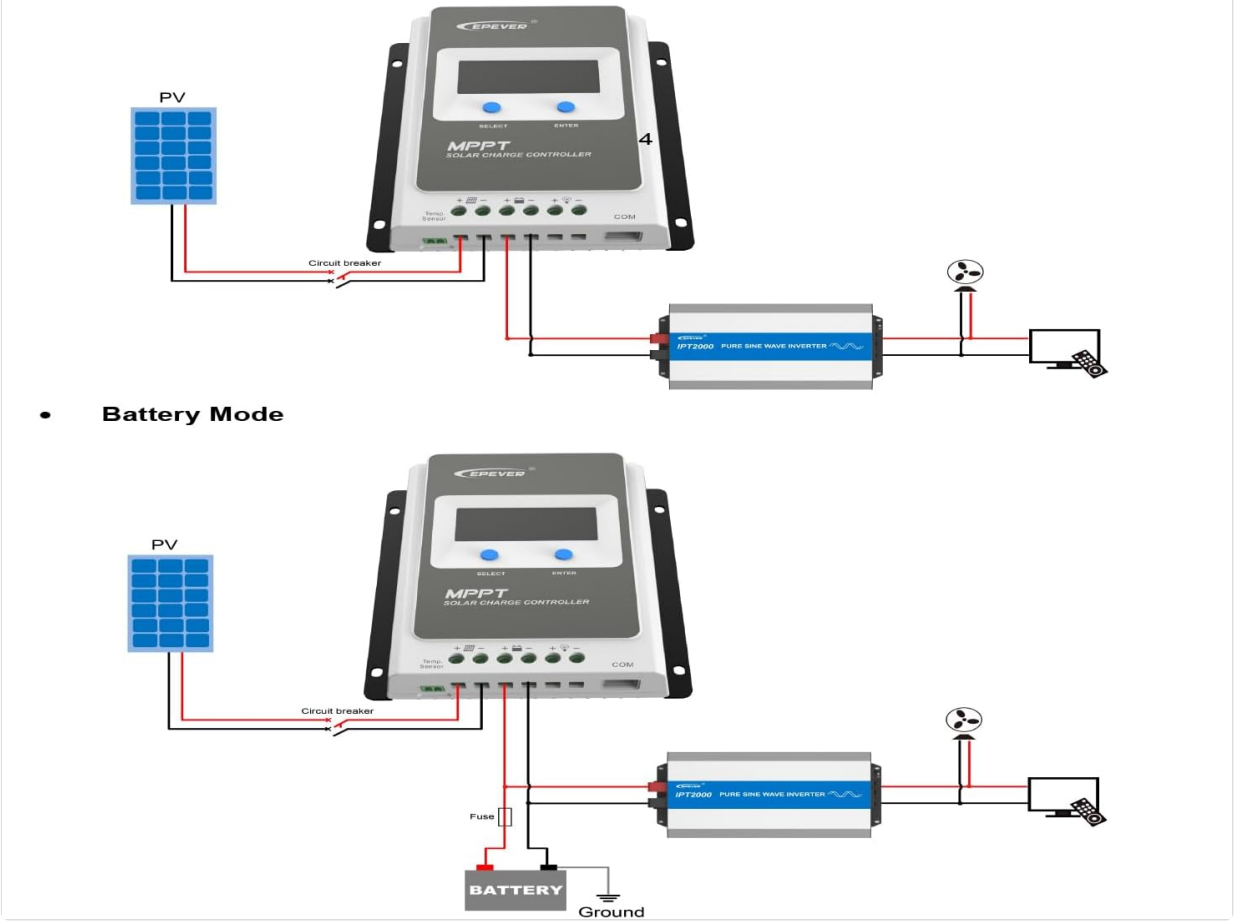

Figure 2.2: Connection diagrams for operating the solar charge controller in no-battery mode (top) and battery mode (bottom).

No-Battery Mode Warning: When operating without a battery, ensure the inverter is connected directly to the controller's battery terminals. For high-frequency inverters, PV input power must be greater than (load output power ÷ inverter conversion efficiency ÷ controller conversion efficiency). For power frequency inverters, PV input power must be greater than (load output power ÷ inverter conversion efficiency ÷ controller conversion efficiency ÷ 2).

2.3 Temperature Sensor Connection

Connect the remote temperature sensor probe to the designated port on the controller. This ensures accurate temperature compensation for charging parameters, optimizing battery life.

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Video 2.1: Demonstrates the unboxing, overview of components, and basic installation steps for the Tracer-AN controller, including connecting the temperature sensor.

3. Operating Instructions

The controller features an LCD display and buttons for easy configuration and monitoring.

3.1 Setting Battery Type

To ensure proper charging, configure the battery type on the controller:

1. Press and hold the "ENTER" button for 5 seconds under the battery voltage interface.

2. Press the "SELECT" button when the battery type interface is flashing to cycle through available types.
3. Press the "ENTER" button to confirm the selected battery type.

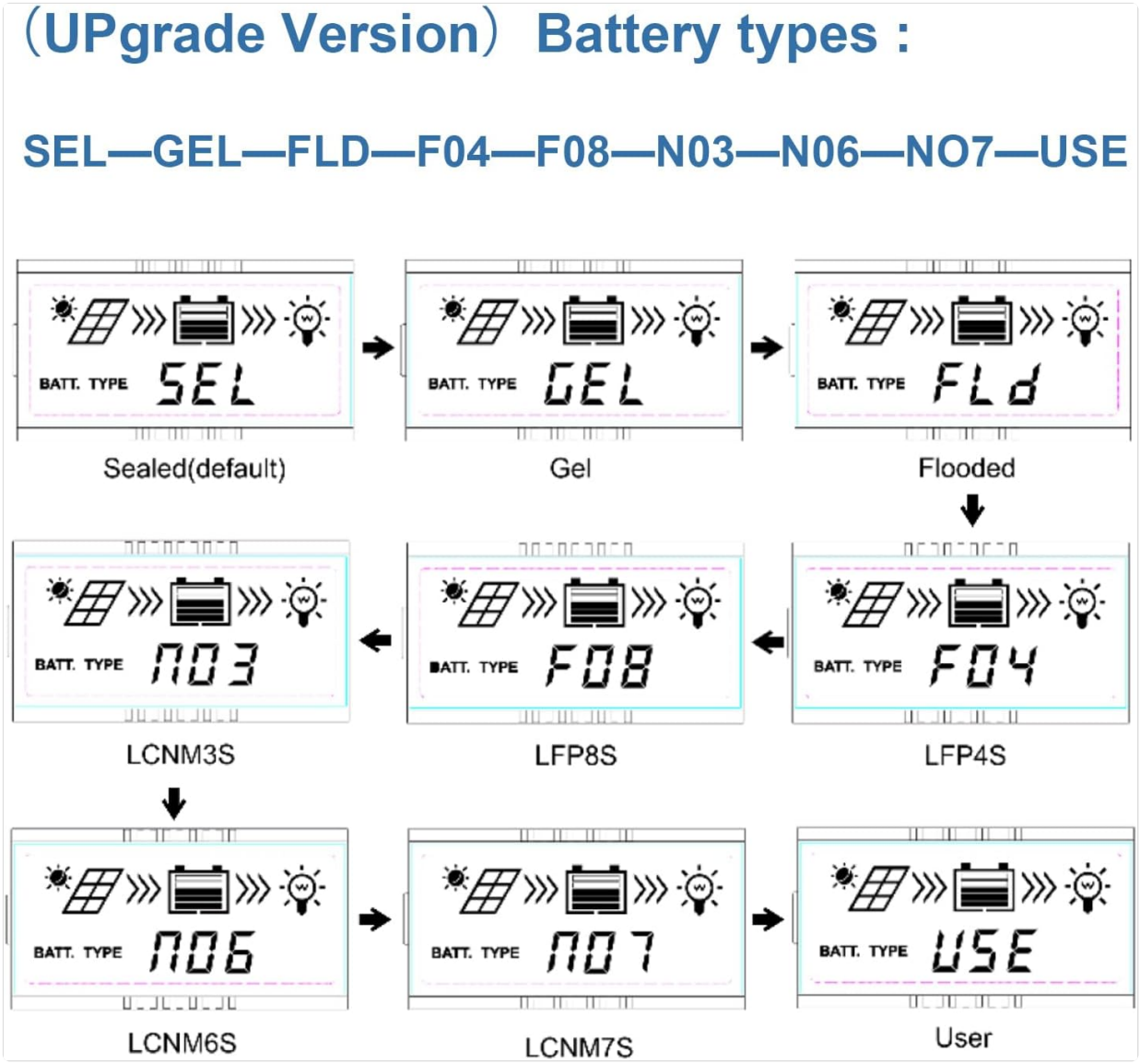


Figure 3.1: LCD display showing battery type selection options.

Supported Battery Types:

- **Lead-acid:** Sealed (default), Gel, Flooded, User-defined.
- **Lithium:** LiFePO4 (4s/8s), Li(NiCoMn)O2 (3s/6s/7s), User-defined.

3.2 Setting Load Mode

The controller offers multiple load working modes. To set the load mode:

1. Press and hold the "ENTER" button for 5 seconds under the load mode interface.
2. Press the "SELECT" button when the load mode interface is flashing to cycle through options.
3. Press the "ENTER" button to confirm the desired load mode.

Manual Control Mode: When you press the ENTER button, the load will open; press ENTER again, the load will close.

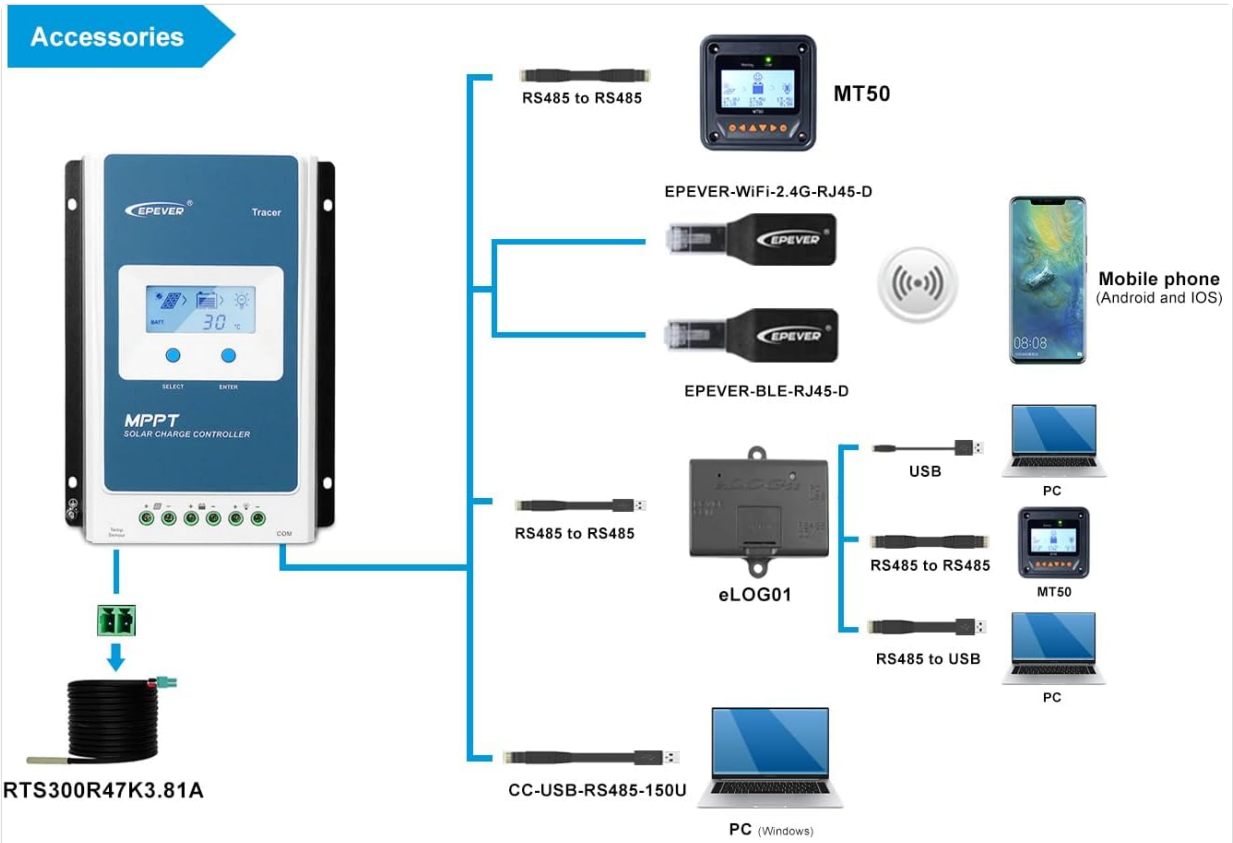
3.3 Load Working Modes

1**	Timer 1	2**	Timer 2
100	Light ON/OFF	2n	Disabled

1**	Timer 1	2**	Timer 2
101	Load will be on for 1 hour since sunset	201	Load will be on for 1 hour before sunrise
102	Load will be on for 2 hours since sunset	202	Load will be on for 2 hours before sunrise
103-113	Load will be on for 3 ~ 13 hours since sunset	203-213	Load will be on for 3 ~ 13 hours before sunrise
114	Load will be on for 14 hours since sunset	204	Load will be on for 14 hours before sunrise
115	Load will be on for 15 hours since sunset	205	Load will be on for 15 hours before sunrise
116	Test mode	2n	Disabled
117	Manual mode (Default load ON)		Disabled

4. Accessories

The EPEVER Tracer2210AN-G3 controller supports various accessories for enhanced monitoring and control:



Mechanical Parameters

Item	Tracer1210AN	Tracer2210AN	Tracer3210AN	Tracer4210AN
Diemension	172x139x44mm	220x154x52mm	228x164x55mm	252x180x63mm
Mounting dimension	130x130mm	170x145mm	170x164mm	210x171mm
Mounting hole size	Φ5mm			
Terminal	12AWG(4mm²)	6AWG(16mm²)	6AWG(16mm²)	6AWG(16mm²)
Recommended cable	12AWG(4mm²)	10AWG(6mm²)	8AWG(10mm²)	6AWG(16mm²)
Weight	0.57kg	0.94kg	1.26kg	1.65kg
Certification	CE IEC62109			

Figure 4.1: Diagram showing the EPEVER Tracer2210AN-G3 controller and compatible accessories.

- **Remote Temperature Sensor (RTS300R47K3.81A):** Acquires battery temperature for compensation of control parameters. Standard cable length is 3m.
- **USB to RS485 Cable (CC-USB-RS485-150U):** Used to monitor and set parameters via PC software (Solar Station PC software). Cable length is 1.5m.
- **Remote Meter (MT50):** Displays various operating data and system faults. Features easy-to-operate buttons and a numeric display.
- **WiFi Serial Adapter (eBox-WiFi-01):** For monitoring and setting parameters via mobile APP software through WiFi signals.
- **RS485 to Bluetooth Adapter (eBox-BLE-01):** For monitoring and setting parameters via mobile APP software through Bluetooth signals.
- **Logger (eLOG01):** Records real-time operating status of the controller.

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Video 4.1: An overview of the EPEVER G3 Version TracerAN MPPT Solar Charge Controller, highlighting its features and accessories.

5. Specifications

5.1 Mechanical Parameters

Item	Tracer1210AN	Tracer2210AN	Tracer3210AN	Tracer4210AN
Dimension	172x139x44mm	220x154x52mm	228x164x55mm	252x180x63mm
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Weight	0.57kg	0.94kg	1.26kg	1.65kg
Certification	CE IEC62109			

5.2 Electrical Parameters (Tracer2210AN)

Item	Tracer 1210AN	Tracer 2210AN	Tracer 3210AN	Tracer 4210AN
System nominal voltage	12/24VDC 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	100V①	92V②		
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			

Item	Tracer 1210AN	Tracer 2210AN	Tracer 3210AN	Tracer 4210AN
Discharge circuit voltage drop	≤0.23V			
Temperature compensate coefficient③	-3mV/℃/2V (Default)			
Grounding	Common negative			
RS485 interface	5VDC/100mA			
LCD backlight time	60S (Default)			
Working environment temperature④	-25℃ +50℃ (100% input and output)			
Storage temperature range	-20℃ +70℃			
Relative humidity	≤95%, N.C.			
Enclosure	IP30			

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

6. Maintenance

To ensure the longevity and optimal performance of your EPEVER Tracer2210AN-G3 MPPT Solar Charge Controller, regular maintenance is recommended. Please refer to the full product manual for detailed maintenance procedures. Key maintenance aspects typically include:

- Periodically inspect all wiring and connections for tightness and corrosion.
- Ensure the controller's heat sink is free from dust and debris to maintain proper cooling.
- Verify that the ventilation around the controller is unobstructed.
- Check the battery terminals for any signs of wear or damage.
- Monitor the system's performance regularly via the LCD display or connected monitoring software/app to detect any anomalies.

7. Troubleshooting

If you encounter any issues with your EPEVER Tracer2210AN-G3 MPPT Solar Charge Controller, please refer to the comprehensive troubleshooting guide in the full product manual. Common issues and their solutions are typically covered, including:

- LCD display not lighting up or showing incorrect readings.
- Battery not charging or overcharging.
- Load not functioning correctly.
- Error codes or warning indicators on the display.

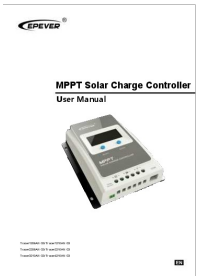
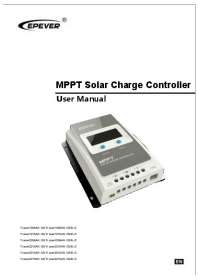
For complex issues or if problems persist, please contact customer support.

8. Warranty and Support

EPEVER products are backed by a manufacturer's warranty. For specific warranty terms and conditions, please refer to the warranty card included with your product or contact the seller.

Authorized Supplier: GolandCentury is an authorized supplier for the EPEVER brand. Our engineers are available to provide technical support and assistance with your solar system setup.
For technical inquiries or support, please reach out to GolandCentury's service centers.

Related Documents - Tracer2210AN-G3

	EPEVER Tracer-AN G3 Series MPPT Solar Charge Controller User Manual Comprehensive user manual for the EPEVER Tracer-AN G3 series MPPT solar charge controllers, detailing installation, operation, safety, key features like advanced MPPT and multi-stage charging, remote monitoring capabilities, and essential technical specifications for efficient solar energy management in RVs, household systems, and field applications.
	EPEVER Tracer-AN G3 Series MPPT Solar Charge Controller User Manual Comprehensive user manual for EPEVER Tracer-AN G3 and G3 BLE series MPPT solar charge controllers. Covers installation, safety, features, specifications, troubleshooting, and maintenance for efficient solar energy management.
	EPEVER Tracer-AN (10~40A) Troubleshooting Guide A comprehensive troubleshooting guide for the EPEVER Tracer-AN series solar charge controllers (10-40A), covering common faults, connection issues, and component testing.
	Manuale del Regolatore di Carica Solare MPPT EPEVER Serie Tracer-AN G3 Guida completa al manuale d'uso e installazione per i regolatori di carica solare MPPT EPEVER serie Tracer-AN G3. Include istruzioni di sicurezza, caratteristiche tecniche, configurazione e risoluzione problemi.
	EPEVER XTRA-N G3 Advanced MPPT Charge Controller Detailed information on the EPEVER XTRA-N G3 Advanced MPPT Charge Controller, including features, naming conventions, setup guide, and accessories for solar off-grid systems.


EPEVER

Advanced MPPT Charge Controller XTRA-N G3

What is XTRA-N G3 charge controller?

The XTRA-N G3 series solar charge controllers are engineered to meet the increasing requirements of off-grid energy systems. These controllers include a built-in Bluetooth module for easy management via the EPEVER app.

Utilizing advanced Maximum Power Point Tracking (MPPT) algorithms, the controllers optimize the tracking of the Maximum Power Point to maximize energy harvest across various environmental conditions. They are designed for efficient operation, featuring a three-stage charging process that enhances battery lifespan and system efficiency while minimizing static power consumption.

The controllers are built with an IP33 ingress protection rating for reliable performance and include an isolated RS485 communication port to support diverse applications. They are compatible with multiple types of lithium batteries, providing the necessary adaptability to maintain safe battery operation across different user cases such as RVs, residential systems, and monitoring setups.

[EPEVER XTRA-N G3 Advanced MPPT Charge Controller: Features, Setup, and Specifications]

Comprehensive guide to the EPEVER XTRA-N G3 series Advanced MPPT Charge Controller. Covers product features, naming conventions, unique functionalities like constant voltage output and over-current protection, installation steps, wiring diagrams, load working modes, and available accessories for solar off-grid systems.