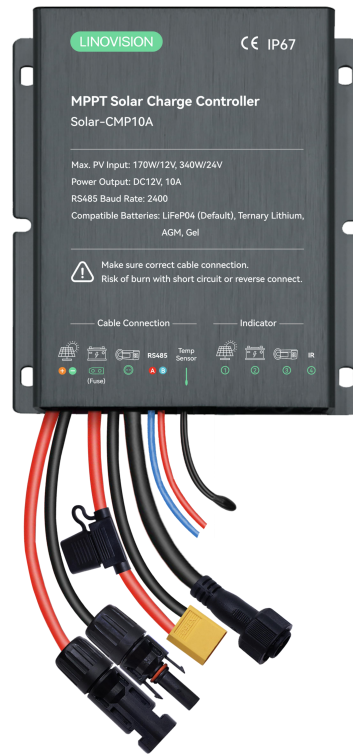# Solar-CMP10A

10A MPPT Solar Charge Controller with RS485 Remote Control and Cloud Access
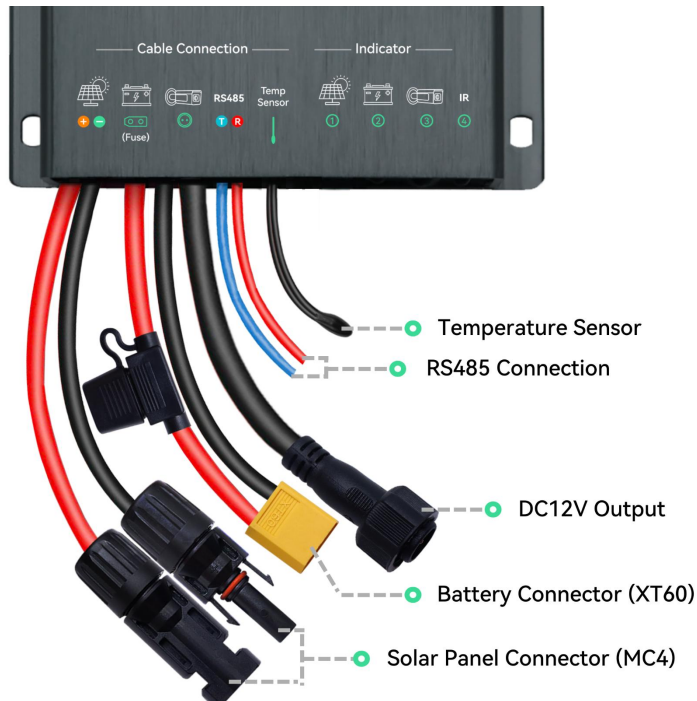

Outstanding Features

- Advanced MPPT charging technology with up to 99% tracking efficiency and 98% peak PV conversion efficiency, greatly improving performance over traditional PWM controllers, especially in cloudy conditions.
- Supports automatic 12V/24V battery detection and is compatible with various battery types, including Lead Acid, Gel, AGM, Lithium, and LiFePO4 (default: 4S LiFePO4).
- Delivers 10A output current, ideal for small solar systems such as cameras, street lights, and IoT stations, with 4-stage smart charging tailored for both lead-acid and lithium batteries.
- Built-in 20A fuse and comprehensive protections against overcharging, over-discharging, short circuits, overcurrent, and reverse polarity.
- Features MC4, XT60, and 2-pin connectors for easy, secure wiring; compact aluminum housing with IP67 waterproof rating and wide temperature range for reliable outdoor use.
- Supports RS485 Modbus for remote monitoring and control, and can be integrated into Linovision RemoteMonit cloud platform with compatible gateways.
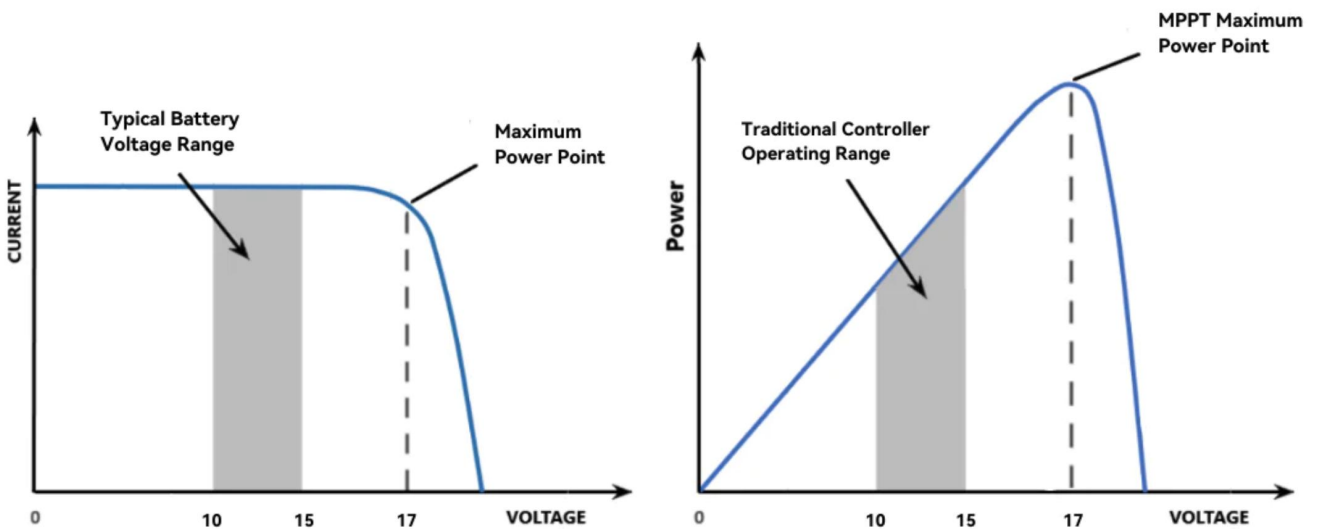
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Specifications

Charging

Charge Mode	MPPT(Maximum Power Point Tracking)
Battery Type	Lead Acid, Gel, AGM, Lithium, LiFePO4 Lithium, etc. (Default set to 4S LiFePO4 Lithium, voltage 11.2V ~ 14.4V)
Fuse protection	20A Fuse
Max PV Open Circuit Voltage	60V
Current	10A

Discharging

Discharge Mode	Manually, Day/Nigith Auto Switch, Schedule
Load Type	12/24V Auto
Output Voltage	Battery Voltage
Output Current	10A

Remote Management

RS485 Output	YES
Cloud Management	YES (Comes with 1 year free subscription of Linovision RemoteMonit.com cloud, also supports 3rd party cloud integration)

General

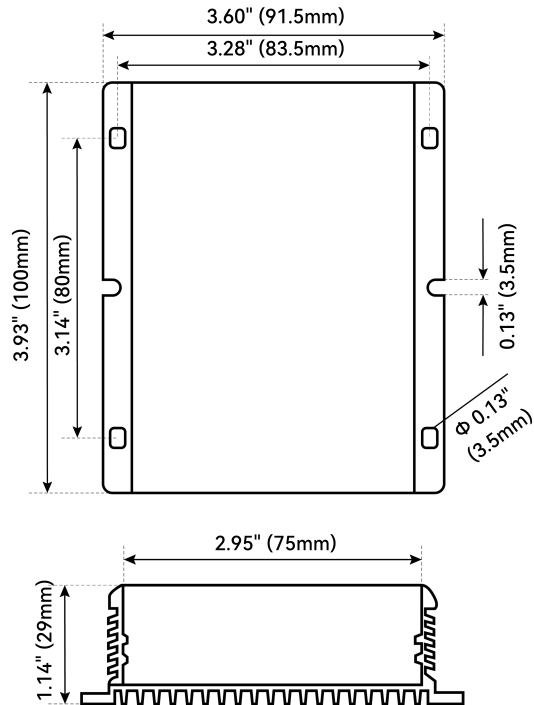|	
Typical Efficiency	>98%
Self-Consumption	≤14mA
Dimension	100 x 91.5 x 29mm (or 3.94 x 3.6 x 1.14 inch)
Waterproof Grade	IP67
Net Weight	1.12 lbs or 510g
Work Temperature	-40℃ ~+55℃ (or -40℉ to 131℉)

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Interface

- Temperature Sensor
- RS485 Connection
- DC12V Output
- Battery Connector (XT60)
- Solar Panel Connector (MC4)

Cable Connection — Indicator

RS485 · Temp Sensor · IR

MPPT Charging Advantages

Typical Battery Voltage Range

Maximum Power Point

CURRENT

0   10   15   17   VOLTAGE

Current / Voltage in 12V system

MPPT Maximum Power Point

Traditional Controller Operating Range

Power

0   10   15   17   VOLTAGE

Power / Voltage in 12V system

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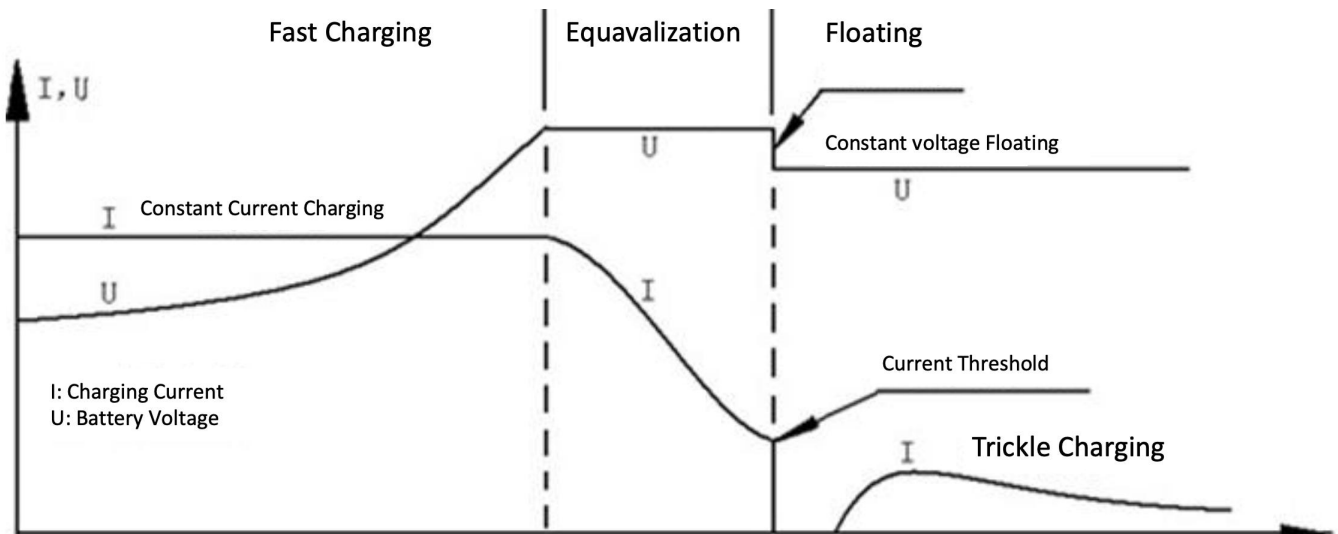
Dimension

4 Stage Charging for Gel or Lead Acid batteries

- **Trickle Charging** – starting with small current to protect battery
- **Fast Charging** – maximize charging efficiency and limit PV panel votage to battery voltage
- **Equavalization** – constant voltage charging to prevent over charging
- **Floating** – charging with small current to maintain battery capacity

4 Stage Charging for Lithium batteries

- **Trickle Charging** – starting with small current to protect battery
- **Fast Charging** – maximize charging efficiency and limit PV panel votage to battery voltage
- **Constant Voltage Charging** – constant voltage charging to prevent over charging
- **Pausing** – stop charging when charging current is low enough (around 0.02C to 0.07C)
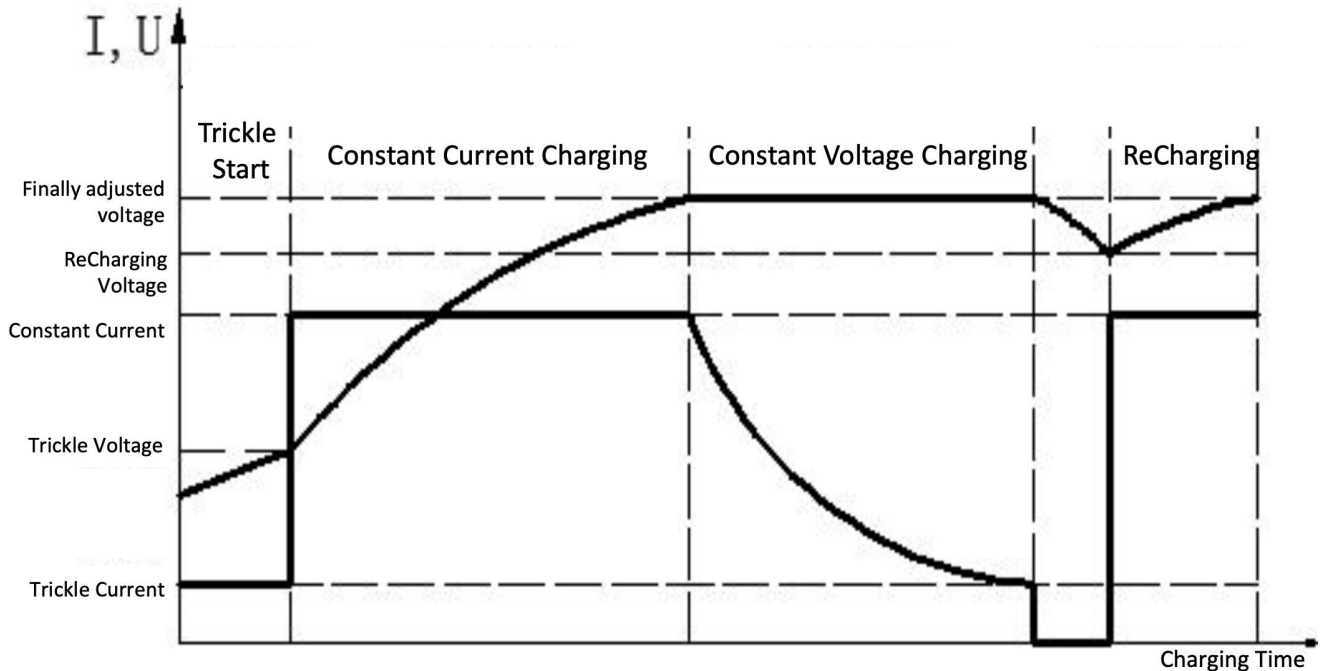
Discharging Modes

- **Manually Turn ON/OFF**– via IR remote (Purchased separately) or from Linovsiion RemoteMonit Cloud
- **Day/Night Auto Switch**– By monitoring the PV input voltage, the controller knows if it is day or night and then turn ON or off the output automatically and set delay.
- **Schedule ON/OFF** – Users can set up to 6 schedules per day to control the discharge status
- **Test Mode**– Similar to Day/Light Switch but without delay settings

💡 *By default the controller is in 24hr ON Schedule mode*

Protections

The system is well designed to protect battery and load devices.

Protection		Description
	PV Short Circuit	If the PV array input of a short circuit , the controller will disconnect the associated circuitry; When the short circuit condition clears , the charge will automatically recovery
	PV Current is too high	The controller will automatically cut off the PV input
	Load Failure	Detet if there is short circuit o open circuit failure when a load device is connected, prompt with LED Flashing. And if the failure is over 7 minutes, the controller will only try the 2nd day.
	Over Charge Protection	If the charging voltage is too high, the controller will automatically cut off the charging circuit to protect battery.
	Over Discharge Protection	When the battery voltage is too low, the controller will cut off the load output, and will restore output when the battery voltage is up.
	Battery Polarity Protection	There is protection for battery reverse polarity connection. It continue to work after the correction.
	Temperature Sensor Failure Protection	If the temperature sensor is out of work, the controller set default temperature at 25 °C or 77 °F.

Connection Instructions

1. To start using this solar controller, please connect load devices (such as security cameras, LED light) first before connecting to battery.

2. The solar controller is pre-programed with these settings.
    *   Battery type: LiFePO4 4S Lithium battery
    *   Load output: 24hr continuous output
    *   Baud rate: 9600 (2023 version is 2400)
    *   RS485 address: 11 (2023 version is 1)

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Recommended bundles for remote management

IOT-C101
Industrial Serial Device Server to Convert RS232 and RS485 Modbus to Ethernet
Purchase Link.

IOT-R51W
Industrial 4G LTE Cellular Router with Virtual SIM and RS485 ModBus
Purchase Link.

Linovision RemoteMonit CLOUD

All customers purchased Linovision Solar-CMP10A and IOT-C101/IOT-R51W bundle will have 1 year free subscription of Linovision RemoteMonit.com CLOUD.