

LIGHT FOCUS CORPORATION

CI-004-02 12V/4A 50Wmax

MPPT Solar Charge Controller with LiFePO4 battery BMS for LED Street Light



Description:

- Specially designed for solar power supply system with LiFePO4 cells as storage battery.
- In-built with outstanding LiFePO4 battery BMS consisting of Voltage Balancing Unit for cells of the battery, and dispensing with PCM of the battery pack.
- With auto photovoltaic switch for day/ night driven by solar array.
- PWM signals from the control system working with the dimmer function of LED Drive for power-saving

- With capacitor-MPPT circuitry, which is hooked up with our innovative charging mode of CCP/CVP, the best for solar power system, ensuring A-plus efficiency in transforming energy from solar cells to storage battery.

Model	CI-004-02
Rated Voltage for System	12V
Nominal Storage Battery Voltage	12V
Max Input Voltage	65Voc(Max Recommended) For a-c-si / mono-c-si / poly-c-si solar panels
Max Input Current	4Amp Input current regulated, if over.
Max Output Current	4A
Length≤1m Charge Loop Drop	<0.2V
Length≤1m Discharge Loop Drop	<0.05V
Over Charge Cut-off Voltage Protection	3.85V for single cell; 15.40V for battery pack
Full Charge End Voltage	3.65V for single cell ; 14.6V for battery pack
Low Voltage Cutoff Voltage Protection	2.00V for single cell; 8.00V for battery pack
Overload Current Protection	For 500mS.
Efficiency	92~98% @ 0.2CAoutmax ,25°C
LiFePO4 Battery BMS/PCM	In-built / Voltage-Balancing Function Enable
Quiescent Shutdown Dissipation	< 15uA @ Low Voltage Cutoff Voltage Protection
No Load Loss	≤ 15mA
Max Wire Area	2.5mm ²
Working Temperature	-20°C——+75°C
Ambient Temperature	-30°C——+45°C
Storage Temperature	-30°C——+80°C
LED Indicators	Red: Charging // Green: Battery Status // Orange: Solar power in
Short Circuit Protection	Self-Recovery Fuse(PPTC)
Photo-Switch for day/night	Yes
Run Time Span Selections	Yes(as shown in table), 3-Mode with16-Stage Run Time Span
Charging Mode	CCP-CVP , Multi-stage PWM to Battery Voltage Levels

Feature:

- **Run Time Test button for lighting:**

After you selected one run time stage from 16 of the system, having pressed once the run time test button, the blue LED will play exactly the same role of the lamp, lighting on or off by minute representing the run hour of the system.

- **3-mode with 16-stage run time options covering most requirements:**

Through the rotary digital switch, you can select one from 16-stage run time options, which can fit a wide range of applications to individual requirements.

- **A wide range of solar input voltage, Max 65 Vmp (based on a regulated current):**

Under a given power efficiency, allowing higher solar panel voltage input to charge the storage battery, which entitles the smaller size wires to be used and saves wire cost.

- **Solar lighting controller over LiFePO4 battery :**

A genuine solar charge controller over LiFePO4 battery builds an effective, practical frame for your solar power supply system, made for lamps.

- **Smart MCU drives the system to operate:**

A microcontroller coordinates the operations of the whole system, organized up to overload protection, over-charge/over-discharge protection and low voltage protection.

- **Easy-to-read LED Extension Module to Solar Box(Optional) :**

LED modular indicators showing the status of the operations of the system, including solar input power, charging, discharging, battery storage, or low battery, which can be looked over from down under the box.

- **Protection from in-rush current of thunderbolts via high-value components.**

- **Blocking reverse discharge from battery to PV panel**

- **Converse polarity connection protection (self-reconnection after removal of condition)**

- **Built-in LiFePO4 battery BMS cloned with CCP/CVP of Multi-stage PWM charging mode:**

This Lithium Battery Management System named as BMS, with our innovative CCP-CVP charging mode (constant current pulse-constant voltage pulse), hooked up with capacitor-MPPT, helps integrate all of system operations and attain its higher cost-performance value.

Our technology of hanging solar control circuitry and BMS together in the device, brings the system to operate under control of safety from energy transferring , charging, discharging, energy-storing, and battery protections, still further to monitoring the load for power on real-time basis.

The frame of our solution can truly implement your project of most cost-effective solar power supply system that adherents have been longing for.

Applications:

- Solar LED Street Light
- Solar LED Garden Light
- Solar lighting system

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