

# SOLAR CONTROLLER

## User-Manual



**Model No.:** CL12/2408LI-40W

### 1. DESCRIPTION

CL12/2408LI-40W is solar controller for LED solar street light. This solar light controller is integrated with LED driver, so the led light can't have LED driver. And this also can save the cost of Led driver. The maximum conversion efficiency reaches 96%. The output current can be adjusted for 4 time frames. With fully sealed waterproof design and wide output voltage, the product applies to most LED solar street lights.

### 2. FEATURES

- 1) Adopt the integrating technology of control and constant current, and save the cost of the LED drive power supply for users.
- 2) Wide range of output voltage applies to the LED lights of a variety of series-parallel circuits.
- 3) With the function of 4 time frames power regulation, Users can dim LED lamps' output power.
- 4) The controller adopts fully sealed waterproof design. The IP grade reaches IP67. The controller can be used in the water.

- 5) Flexible and adjustable working parameter makes the controller adapt to different solar systems.
- 6) This controller can withstand from -35℃ to 60℃ high and low temperature, so it can adapt to extreme temperature.
- 7) CL12/2408LI-40W has an optional function that the controller can automatically drop load's power when battery is lower than 12.5V/25V. This function let the lights work for longer days in rainy season.
- 8) Another optional function of CL12/2408LI-40W is the controller can adjust the working time automatically in different seasons. In winter, the working time becomes long, while in summer, the working time becomes short automatically.

### 3. INSTALLATION

- 1) Connect the lamp to the controller;
- 2) Connect the battery to the controller. At the moment, the IDLE indicator is on. After 30 seconds, the lamp is turned on;
- 3) Connect the solar panel to the controller. If at daytime, after 70 seconds, the CHARGE indicator is on and the lamp will be turned off.

### 4. NOTES

- 1) The controller is wide voltage output. Before using the controller, make sure the LED light can match the controller.
- 2) Please connecting wires in order. Wrong wire connection lead to system's misjudgment and controller's damage.

### 5. INDICATORS

| State              | Idle<br>(green) | Charge<br>(green) | Discharge<br>(red) | Remarks |
|--------------------|-----------------|-------------------|--------------------|---------|
| Idle               | on              | off               | off                | Normal  |
| Charge             | off             | on                | off                | Normal  |
| Discharge          | off             | off               | on                 | Normal  |
| finish discharging | on              | on                | off                | Normal  |

| State   | Idle<br>(green) | Charge<br>(green) | Discharge<br>(red) | Remarks  |
|---|-----------------|-------------------|--------------------|--|
| output end over power protection  | off             | on                | Slow flicker       | Abnormal. Check whether the output power is more than rated power      |
| Low voltage of Battery  | on              | on                | Slow flicker       | Normal   |
| output end open circuit protection  | on              | off               | Fast flicker       | Abnormal. please connect load first, and then connect battery          |
| output end over voltage protection  | on              | on                | Fast flicker       | Abnormal. Load voltage is higher than rated voltage.                   |
| Abnormal input voltage protection   | on              | Fast flicker      | off                | Abnormal. Check whether battery's voltage is 12V or 24V                |
| Over current protection of Charging   | off             | Slow flicker      | off                | Abnormal. Check whether solar panel is out of the range of this model. |
| unactivated   | Fast flicker    | Fast flicker      | Fast flicker       | Abnormal. Model is wrong. Please contact the manufacturer.             |
| 1) No flicker means OK;<br>2) Slow flicker (2 seconds) means recoverable error. There is no need to solve the error manually;<br>3) Fast flicker (0.5 seconds) means unrecoverable error. The error need to be solved manually. |                 |                   |                    |  |

## 6. SPECIFICATIONS

|                            |   |
|----------------------------|---|
| Model                      | CL12/2408LI-40W                           |
| Input voltage              | DC12V/24V auto identification             |
| Output voltage             | 15-70V (12V system) / 29-70V (24V system) |
| Self consumption           | Average static power consumption 8mA      |
| Max. charging current      | 8A  |
| Max. output power          | 40W                                       |
| Max. conversion efficiency | 96%                                       |
| Output current error       | ≤3%                                       |
| Output current             | 150mA - 2600mA (programmable)             |
| Max. solar panel           | 130WP (12V system) / 260WP (24V system)   |

|                                  |  |
|----------------------------------|--|
| Max. solar panel voltage         | DC55V  |
| Working temperature              | -35℃~ 60℃  |
| Charging mode                    | PWM mode   |
| Working mode                     | Light controlling, time controlling, output current adjustable in 4 time intervals |
| Over-charging protection voltage | 14.5V/29.0V (normal temperature, with temperature compensation)                    |
| Under voltage protection         | Users can set it according to their needs (factory default 11V/22V)                |
| Exit under voltage protection    | Users can set it according to their needs (factory default 12.5V/25V)              |
| Weight                           | 150g   |
| Size                             | 67mm×76mm×23mm   |

## 7. APPLICATION

12V system: Solar LED light with max. 40W LED light (LED should be 15V-70V)

24V system: Solar LED light with max. 40W LED light (LED should be 29V-70V)

## 8. SAFETY AND PROTECTION

Lightning protection, overcharge and over discharge protection, reverse polarity protection, reverse current protection at night, output end protection(open circuit, over current, over voltage, over power), and over temperature protection.

## 9. WARRANTY

Two years since the date of exfactory