

Solar MPPT Charge Controller

User Manual

Import Safety Instructions



WARNING This manual contains important safety and operating instructions that should be followed during the installation and maintenance. Please read and understand this manual before installing and using this product.

General Safety Instructions

- Please follow all the instruction and warning markings in this manual and on the controller
- Do not remove or bypass grounding pin. Make sure the surface of the controller is connected to earth.
- Please check the appearance of controller before installation. Contact your sales agent if there is any obvious damage
- Please keep the controller from moisture
- Do not leave any heavy item on the top of the controller
- To reduce the chance of short-circuits, use insulated tools when installing or working with the controller
- This controller should **ONLY** be installed and maintained by qualified professionals.
- Please keep this manual for your future reference

Content

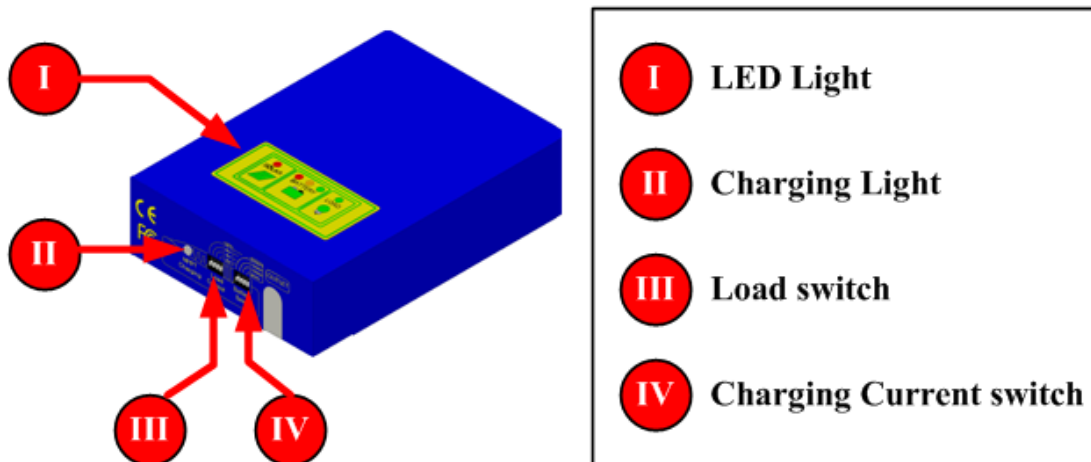
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I. Specification

PV Charge Controller Specification

Specifications Summary		
Model	KI-SC-1215A	KI-SC-2415A
Rated Power	200W	250W
MPPT Voltage Range	6~50V	
Charging Start/Stop Voltage	6V/4V	
Rated Input Current	15A	
Converter Efficiency /MPPT Efficiency	>85%/>90%	
Sleeping Mode	5Vdc @ 1min	
Max. Charging Current	16.66Amp	10.41Amp
Battery Floating Charge	13.8V±5%	27.6V±5%
Battery Pulse Charge	14.4V±5% , 1min charging per 10min	28.8V±5% , 1min charging per 10min
Battery Low Shutdown	11.5V±5%	23V±5%
Load Current	DC 16Amax, Dry Contact	
Load Management	16 Segments	
Enter Sleep Mode	10.5V±5%	21V±5%
Power Consumption	<1A@sleep Mode	
Operating Temperature	-20°C to 40°C	
Dimension (L x W x H) mm	200×142×50	
Net Weight	1.7kg	
Gross Weight	1.8kg	

II. Basic Product Layout



III. LED Status Indicator

The LED lights indicate MPPT charging, discharging, and battery status. Table 1 shows the relation between the LED lights and battery status.

Battery LED Status	Battery Status	KI-SC-1215A	KI-SC-2415A
Blinking RED	Stop Discharging	<11.5V	<23V
RED ON	Low	12V - 12.8V	24V - 25.6V
YELLOW ON	Normal	12.8V - 13.8V	25.6V - 27.6V
GREEN ON	Full	>13.8V	>27.6V

Table 1.

- **SOLAR LED Indicator (RED LED)** : This light will blink once per second when the MPPT charging is functioning.
- **LOAD LED Indicator (GREEN LED)** : This light will blink once per second when the battery is discharged.

IV. Load Switch

Load switch manages discharging time based on requirement. Our product provides 16 segments load management – please see below,

Discharge Mode(0/OFF, 1/ON)	Load Output
0000	TEST mode for 5min
0001	2 hours on at night
0010	4 hours on at night
0011	6 hours on at night
0100	8 hours on at night
0101	10 hours on at night
0110	12 hours on at night
0111	Full on
1000	TEST mode for 5min
1001	2 hours on at day
1010	4 hours on at day
1011	6 hours on at day
1100	8 hours on at day
1101	10 hours on at day
1110	12 hours on at day
1111	Full on

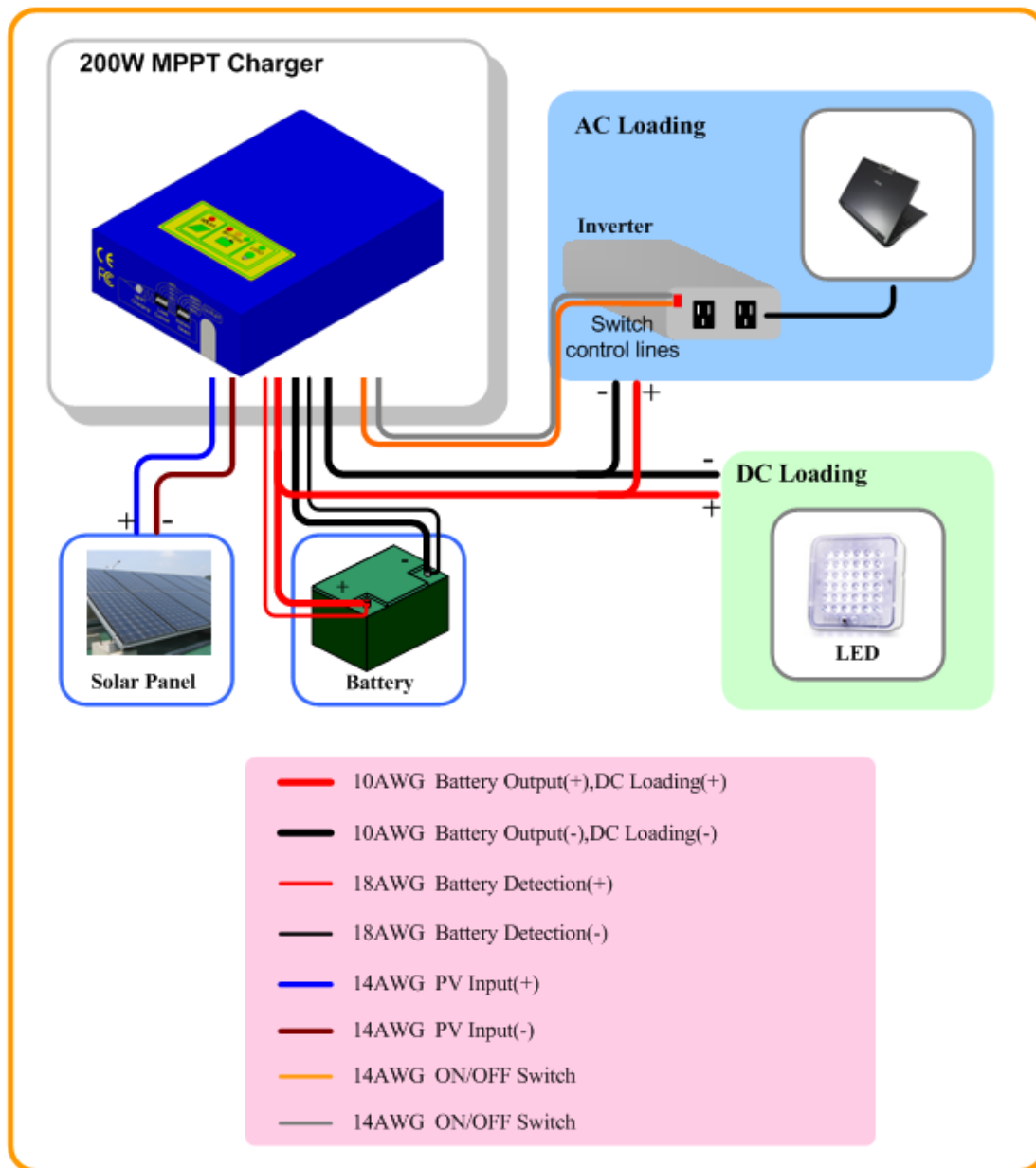
V. Charging Current Switch

The charging current switch can adjust current based on power. The set-up modes are defined as the followings,

Discharge Mode(0/OFF, 1/ON)	Charge Current
0001	5A
0010	10A
0100	15A
1000	20A
0000	25A

VI. Installation

DC Load Wiring :



Caution :

- Recommended Battery Specification: above 200Ah/12V or 100Ah/24V.
- Make sure the battery and PV panel poles (+/ -) are wired correctly.
- Be sure the voltage of batteries and PV panels is within the range given in the specifications.
- The charge controller should be installed in a cool, dry, and well ventilated area without any flammable items.
- The length of battery wires should be shorter than 5 meters.
- Before connect PV panels to the controller, make sure a battery has been installed properly and the controller can be started normally.

VII. Operation Instructions

- **Discharge Mode Options:** 16 segments available. Please refer to the Load Switch section in this manual.
 - **Day/Night Mode Detection:** the controller will switch to day/night mode based on the input voltage from PV panels. Therefore, the PV panels needs to be installed properly before this function starts to work.
 - **Day/Night Mode Switch:** It takes the controller 10 minutes to determine that it's daytime or nighttime.
 - **Day Mode:** The controller will discharge battery only during daytime.
 - **Night Mode:** The controller will discharge battery only during nighttime.
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VIII. Protection

- **Surge Protection:** Advanced MPPT charger protection from noise and surge
- **Battery Low Voltage Disconnect:** A low voltage disconnect is used to protect the battery from excessive discharge by automatically turning off a load.
- **Constant Voltage Charge:** When the battery voltage is between 13.8V and 14.4V (or between 27.6V and 28.8V based on model), the MPPT function will turn off (*). Then, the charger will enter into a floating charge mode; when the battery voltage is over 14.4V/28.8V, the controller will change to a pulse charge mode – 1 minute charging per 10 minutes.

IX. Caution

- DO NOT use PV panels or batteries that are above the rated power or not within the current/voltage tolerance of the controller, which could cause permanent damage to the controller.
- If the PV panel is not wired correctly to the controller, e.g. the positive/negative poles are wired reversely, a short circuit could happen or the fuse could burn out.
- Please unwire the input terminal, and then, batteries before removing the controller - which could be damaged permanently if those steps are followed correctly.

X. Maintenance

- The charge controller only requires little maintenance if it is used properly. Please periodically clean the controller surface with wet clothing. In addition, please keep the PV panel and battery in a good condition to ensure the whole system can function well.

* The voltage accuracy will be within $\pm 5\%$ range.

- Please contact your local service center if the controller does not function normally. Do not try to repair it by yourself or remove the warranty labels.