# User's Manual


## SAFETY INSTRUCTIONS

1.Make sure your battery has enough voltage for the controller to recognize the battery type before first installation.

2.The battery cable should be as short as possible to minimize loss.

3.The regulator is only suitable for lead acid batteries:OPEN,AGM,GEL it is not suited for nickel metal hydride,lithium ions or other batteries.

4.The charge regulator is only suitable for regulating solar modules. Never connect another charging source to the charge regulator.

## PRODUCT FEATURES

1.Build-in industrial micro controller.

2.One-key setting,digital display.

3.Fully 4-stage PWM charge management.

4.Build-in short-circuit protection,open-circuit protection,reverse protection,over-load protection.

5. Reverse current protection,low heat production.

## SYSTEM CONNECTION

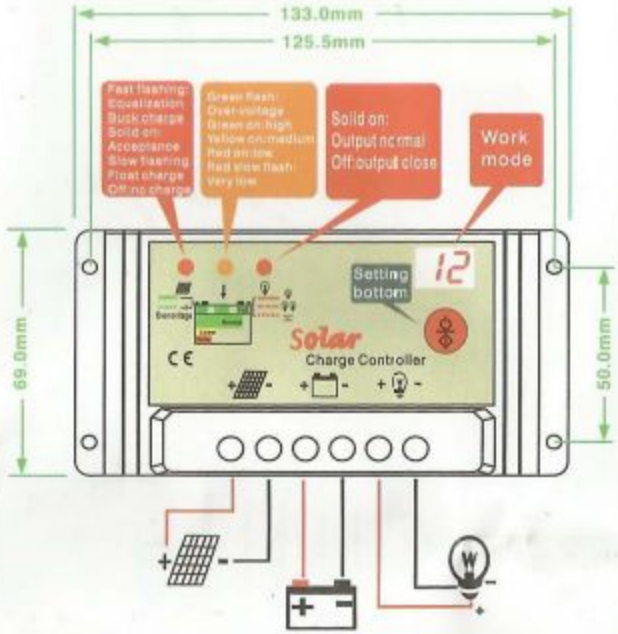
1.Connect the battery to the charge regulator-plus and minus.it will show<1>if it detects 12V battery,<2>if it detects 24V battery.

2.Connect the photovoltaic module to the regulator-plus and minus.

3.Connect the consumer to the charge regulator-plus and minus.

The reverse order applies when deinstalling!

An improper sequence order can damage the controller!




## SETTING/SYSTEM MODE

Press the setting button to activate the mode display,press the button for 3 seconds,and select the desired mode.

| Display | Mode | Description |
|---|---|---|
| 0 | Charge only | Only use the charge function of the controller.Load output is forever closed |
| 1-13 | Light-open +delay | Load on after sunset and closed after 1-13hour |
| L | D2D | Dusk to Dawn(have delay) |
| C | System | Load always output(unless battery is low) |
| H | Hand | Open the load manually |
| d | Debug | Dusk to Dawn(no delay) |

Note: when the screen flashes on the <FU>, the description has been in the heat, over current, or lost.Out of short circuit protection, this time should be reduced load or eliminate the short circuit, after entering the protection, the exception solution In addition to the system will delay a period of time to open the output.

## TROUBLE SHOOTING

| Situation | Probable cause | Solution |
|---|---|---|
| Charge LED not on when sunny | Solar panel opened or reversed | Reconnect |
| Load LED off | Mode setting wrong | Set again |
| | Battery low | Recharge |
| Screen flashing <FU> | Load flow, output short circuit | Reduce the load or remove the short circuit |
| Power off | Battery too low/reverse | Check battery/connection |

## TECHNICAL PARAMETER

| MODEL | RBL-003 | | | | |
|---|---|---|---|---|---|
| Batt voltage | 12V/24V auto adapt | | | | |
| Current | 5A | 10A | 15A | 20A | 30A |
| Max Solar input | 41V | | | | |
| Charge drop | <0.2V | | | | |
| Discharge drop | <0.25V | | | | |
| Equalization | 14.6V | | | | |
| Bulk | 14.4V | | | | |
| Acceptance | 14.2V PWM | | | | |
| Float | 13.8V | | | | |
| Charge reconnect | 13.0V | | | | |
| Discharge stop | 10.8V | | | | |
| Discharge reconnect | 12.6V | | | | |
| Self-consume | <10mA | | | | |
| Voltage of open light | Solar panel 8V(Light lights delay) | | | | |
| Voltage of close light | Solar panel 8V(Light off delay) | | | | |
| Temprature compensation | N/C | | | | |
| Operating temperature | -35 ~ +60 C | | | | |
| Size/Weight | 133*70X35mm/150g | | | | |

*All red color voltage x2 while using 24V system

*This instruction is a general manual, such as a slight difference in the physical.

*Product specifications are subject to change without prior notice