I: Product Introduction

Solar LCD series a kind of intelligent, multi-purpose solar charge and discharge controller

<table>
<thead>
<tr>
<th>LCD screen display</th>
<th>Battery reverse discharge protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy operation interface</td>
<td>Battery reverse polarity protection</td>
</tr>
<tr>
<td>MPPT+PWM charging mode</td>
<td>Battery under voltage protection</td>
</tr>
<tr>
<td>Parameter user can reset</td>
<td>Overload, short-circuit protection</td>
</tr>
<tr>
<td>A key to open and close the load</td>
<td>Automatic temperature compensation function</td>
</tr>
<tr>
<td>A key to restore the factory settings</td>
<td>USB 5V charging (for 500mA) for mobile phone</td>
</tr>
</tbody>
</table>

II: Installation Instructions

Installation (Installing wires, first loosen the screw counterclockwise)

1. Ready Qi installation tools and materials, and cable. Please matching suitable cable.
2. Ensure that the current density <4A/mm² this will help reduce the line pressure drop.
   Check the installation site meets the relevant safety requirements, avoid damp, dusty, flammable, explosive and corrosive gases.
3. Install the controller fixed to the vertical plane, see Section V mounting aperture and hole spacing. In order to ensure a good controller cooling conditions, the controller on the lateral side of the reserved 10cm space.
4. As shown on the right wiring sequence: load, battery, solar Battery plate is connected to the controller to ensure that the load, battery. The polarity of the solar cell panel and controller.
5. Before use: external temperature sensor probe into the left of the controller temperature probe interface probe placed in similar battery temperature. (Line extension) must be built-in devices of the external temperature probe coextensive otherwise, the controller will control parameters of the temperature compensation of the error.
6. Warning: In order to prevent accidents from occurring, install: non-professionals can not be engaged in loading and unloading operations.
III: LCD operating interface description

1. LCD graphic symbol description

LOAD ON 1 H — 23H
Load control (1 hour — 23 hours can be set)

LOAD ON 24H  24 hour—is normally open state

0h—light control mode, power supply load after dark closed after daybreak the load
24h represents a normal mode, in the case of no fault, the load is always in the power supply state.
1h—23h light control delay mode, after dark began to power the load, and delay to set the time to close the load.

CHARGING CURRENT  DISCHARGE CURRENT

VOLTAGE CHARGING STATION (can be set)

TEMPERATURE DISPLAY (around the probe)

2. Function keys:

Toggle key “+” Set parameters: “-” Set parameters: Manual switch load

<table>
<thead>
<tr>
<th>Manual load function</th>
<th>PV OFF: 88.8V</th>
<th>LOAD ON: 24H</th>
<th>LOAD ON: 88.8V</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF: 88.8V</td>
<td>LOAD ON: 88.8V (Set order (automatic cycle))</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This button can be "manually" open load or manually close the load.
Long press and hold this button for 5 seconds to restore the factory settings.
"x" error or system failure, click this button, you can troubleshoot or eliminate "x".

3. Parameter settings

≥ 5 seconds Keystrokes, parameters are saved automatically
IV. Common fault with processing methods

?- Battery under-voltage protection  🌸 Battery normal power supply

a) Undervoltage protection and handling: screen display as shown on the right indicates the battery voltage is below the undervoltage protection voltage, the controller has entered undervoltage
b) Retaining state, disconnect the load circuit. Using solar panels or charger to charge the battery when the accumulator
c) After the battery voltage reaches the undervoltage recovery voltage, the controller will restore power to the load, into normal working condition

1) Overload protection and processing methods:
The screen shown at right load circuit current is greater than the rated current or load short-circuit, overload state controller has entered. Reduce the load troubleshooting, press the button, restore power to the load

×_off System fault  ⬤_off or ⬤_on Fault has ruled out

2) To charging failure handling method
a) Solar energy to battery charging, if there is no correct configuration solar panels of power or exceed rated charging current, voltage, will appear charge fault, the checking and debugging, press the button, recoverability work.

× Charge fault  ⬤ Fault has ruled out

3) Solar panels fault and processing:

a) 24 hours in the case of sunlight, the controller is not charging, the solar energy is not connected or not connected correctly, check the solar panel to the connection cable of the controller is open, troubleshooting, recoverability work.

× No solar charge  ⬤ Are charging

V. Parameter table

<table>
<thead>
<tr>
<th>Parameters/Model</th>
<th>Mp30</th>
<th>MP50</th>
<th>MP60</th>
<th>Mp80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum power current</td>
<td>30A</td>
<td>50A</td>
<td>30A</td>
<td>80A</td>
</tr>
<tr>
<td>Installation Lin (mm²)</td>
<td>10mm²</td>
<td>15mm²</td>
<td>20mm²</td>
<td>25mm²/3AWG</td>
</tr>
<tr>
<td>Weight</td>
<td>380g</td>
<td>750g</td>
<td>800g</td>
<td>850g</td>
</tr>
<tr>
<td>Dimensions</td>
<td>188X93X50 (mm)</td>
<td>188X128X61 (mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System load loss</td>
<td>≤13mA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop Buck</td>
<td>≤100mV</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Battery float voltage: 13.8V(12V system)/27.6V(24V system)
- Battery (under voltage) protection: 10.6V(12V system)/21.2V(24V system)
- Battery (under voltage) recovery voltage: 12.6V(12V system)/25.2V(24V system)
- Charge mode: MPPT+PWM MODE
- Operating Temperature: -10°C~60°C
- Storage Temperature: -30°C~70°C
- Humidity requirements: ≤90%, No condensation
- Temperature compensation: -4mV/Cell/°C
- Temperature Probe (built components): NTC 100K thermistats
- Maximum open circuit voltage of the solar panel: 18V~24V(12V system) 36V~48V (24V system)
- Solar panels maximum open circuit voltage (V): ≤48V