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. LED display, auto memory function, IP57 protection.
3. Fully 4-stage PWM charge management.
5. Dual mosfet Reverse current protection, low heat production.

FEATURES

1. Connect the battery to the charge regulator - plus and minus, it will auto adapt the battery type.
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!

SYSTEM MODE

The mode has been set inside the controller before exit the factory. Do ask for further more information from your distributor.

<table>
<thead>
<tr>
<th>mode</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light-open</td>
<td>Load on after sunset and closed after 1-13hour</td>
</tr>
<tr>
<td>*delay</td>
<td></td>
</tr>
<tr>
<td>D2D</td>
<td>Dusk to Dawn (have delay)</td>
</tr>
<tr>
<td>System</td>
<td>Load always output (unless battery is low)</td>
</tr>
</tbody>
</table>

TROUBLE SHOOTING

<table>
<thead>
<tr>
<th>Situation</th>
<th>Probable cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charge LED not on</td>
<td>Solar panel opened or</td>
<td>Reconnect</td>
</tr>
<tr>
<td>when sunny</td>
<td>reversed</td>
<td></td>
</tr>
<tr>
<td>Load LED off</td>
<td>Mode setting wrong</td>
<td>Set again</td>
</tr>
<tr>
<td></td>
<td>Battery low</td>
<td>recharge</td>
</tr>
<tr>
<td>Load LED slow flashing</td>
<td>Over load</td>
<td>Reduce load watt</td>
</tr>
<tr>
<td>Load LED slow flashing</td>
<td>Short circuit protection</td>
<td>Auto reconnect</td>
</tr>
<tr>
<td>Power off</td>
<td>Battery too low/reverse</td>
<td>Check battery/connection</td>
</tr>
</tbody>
</table>

SYSTEM CONNECTION

TECHNICAL PARAMETER

<table>
<thead>
<tr>
<th>MODEL</th>
<th>5A-12V</th>
<th>5A-12V-L</th>
<th>5A-12V-ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batt voltage</td>
<td>6V/12V</td>
<td>auto adapt</td>
<td></td>
</tr>
<tr>
<td>Charge current</td>
<td>5A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge current</td>
<td>5A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max Solar input</td>
<td>22V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charge drop</td>
<td>&lt;0.2V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge drop</td>
<td>&lt;0.25V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equalization</td>
<td>14.8V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk</td>
<td>14.5V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>14.2V PWM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Float</td>
<td>13.8V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charge reconnect</td>
<td>13.0V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge stop</td>
<td>11.2V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge reconnect</td>
<td>12.6V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-consume</td>
<td>&lt;10mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage of open light</td>
<td>Solar panel 8V (delay 10s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage of close light</td>
<td>Solar panel 8V (delay 60s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature compensation</td>
<td>N/C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-35~+60 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size/Weight</td>
<td>60x25x18mm/50g</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*all red color voltage /2 while using 6V system.
*Product specifications are subject to change without prior notice.