



# MAKOKNGAM

## Instruction Manual

**Sku: TruPower-CCContr-12V30A**

Solar Charge Regulator is designed to control the charging from solar panel into battery, and the power draw from the battery to outputs.

### Feature

- TPS555 Solar Charge Regulator is able to handle charge and discharge from either 12V battery or 24V battery (Different Model required).
- It provides over-charging, over-discharging, short circuit, over-load and reverse polarity protection. Therefore keep the whole solar system at proper working condition.
- This solar charge regulator uses the latest Microcomputer-chip to realize intelligence control
- PWM (pulse width modulation) charging circuit is used for higher efficiency
- Big LCD display available for easy monitoring

### Technical data:

Item	12V battery Version (TPS555-1230)	24V battery Version (TPS555-2430)
Max. Solar Input current	30A	30A
Max. Solar Voltage Input (Voc)	28V	50V
Max. load current	30A	30A
Over charge voltage	14.5V±0.2V	29V±0.2V
Over discharge voltage	10.7V±0.2V	21.4 V±0.2V
No-load loss	<18mA	<18mA
Voltage loss charging Circuit	≤0.4V	≤0.4V
Voltage loss of discharging circuit	≤0.2V	≤0.2V
Operating temperature	-25°C-60°C	-25°C-60°C

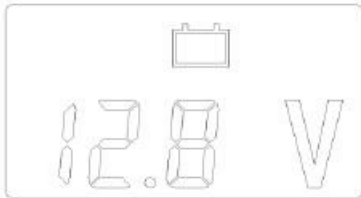
### How to Charge:

- Connect Solar module, Rechargeable battery, and Load (if any) as describe in the diagram at end of this manual
  - \* Please always connect with the sequence of: Battery → Solar module → Load
  - \* Please always disconnect with the sequence of: Solar module → Load → Battery.  
Switch off load before disconnecting.
  - \* Please make sure that the connection to this charge regulator is tight and secure.
  - \* Please make sure you connect with correct polarity (“+” for positive & “-” for negative)
  - \* Please make sure the solar panel and load connected to this charge regulator is within the limits stated in the technical data sheet above

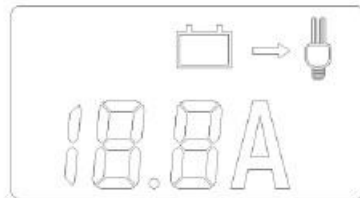


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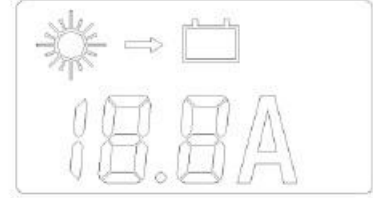
- \* Do not short circuit the lead wires, fail to do so may cause sparking or explosion
- \* Reduce the length of connecting wire whenever possible, in order to reduce power loss.
- Working status can be monitor via the LCD display. Switch “▲” is available to show data shifting between





Battery voltage






Discharge current from battery to load



Charging current from solar panel to battery

- Switch  is available to turn the load ON/OFF. When the LCD display shows sign of “” Connection to load is turned ON. But if the Over discharge protection is activated, connection will of OFF, even it shows the sign
- The charge regulator provides following protections for the whole system
  1. **Over-discharge protection:** When activated, “Low Voltage” indicator will go on, the charge regulator will shut off power output to prevent damage to the battery. In such case, Please stop using any application.
  2. **Over-charge protection:** When activated, “High Voltage” indicator will go on, the charge regulator will shut off power input from solar panel to battery. Please disconnect solar panel from the charge regulator.


### Trouble Shooting:

Problem	Possible Causes	Possible Solutions
LCD display shows no charging when Solar module is connected	<ol style="list-style-type: none"> <li>1. Reverse polarity</li> <li>2. Loose connection</li> <li>3. Not enough sun light</li> </ol>	<ol style="list-style-type: none"> <li>1. Correct connection with correct polarity</li> <li>2. Make sure connection is tight</li> <li>3. Position solar module in full sunlight</li> </ol>
Can not use Load	<ol style="list-style-type: none"> <li>1. Load switch is OFF</li> <li>2. No battery connected or battery connection loose, or reverse polarity</li> <li>3. Load polarity connection is reversed</li> <li>4. Over discharge protection activated</li> <li>5. Short circuit or over load protection activated</li> </ol>	<ol style="list-style-type: none"> <li>1. Press  until LCD shows </li> <li>2. Connect battery to charge regulator, and make sure connection is tight &amp; with correct polarity</li> <li>3. Correct reverse polarity</li> <li>4. Disconnect load, recharge battery fully</li> <li>5. Check if connection is short circuiting, and make sure the load current is not exceeding 30A.. When all are O.K., Press </li> </ol>



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## Caution:

- Do not connect battery or power source other than solar module to +  -. Else product will be damaged
- Always connect battery first, and disconnect battery last.
- Do not short circuit and/or reverse the polarity of the load, the solar panel, & the battery.
- Place the charge regulator at a cool and ventilated place. Avoid contact with water.

