Intelligent Solar Charging and discharging Controller
User s Manual

This is a compatible MPPT charge controller PWM intelligent / efficient / energy saving, he not only has efficient MPPT controller charging function to automatically track the maximum power point, 10% -30% higher than the ordinary controller charging efficiency, also has standby energy saving, more than 30% energy than ordinary controller, the standby power consumption of only 10mA-15mA.

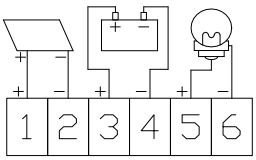
1:Product introduction

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

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

2: 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 bottom of each reserved 10cm space**

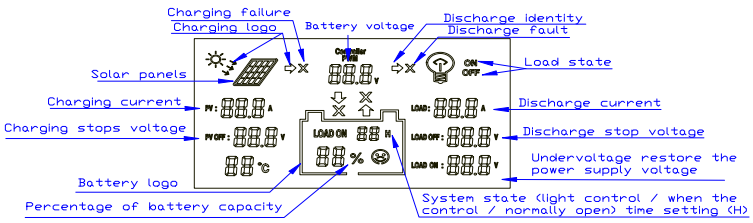
④ **As shown on the right wiring sequence: load, battery, solar**
Battery plate is connected to the controller to be taken to ensure that the load, battery, The polarity of the solar cell panel and controller

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**

3:LCD operating interface description

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.	
PV: 88.8 A *Charging current*	LOAD: 88.8 A Discharge current
PV OFF: 88.8 V *Voltage charging station (can be set)*	LOAD OFF: 88.8 V Undervoltage protection voltage (can be set)
88 °C Temperature display (around the probe)	LOAD ON: 88.8 V Undervoltage recovery voltage (can be set)

Function keys:

: Toggle key	"+"Set parameters: "plus"	"-" Set parameters: "Minus"	Manual switch 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"			

Parameter settings (≥ 5 seconds keystrokes, parameters are saved automatically)

:PV OFF:88.8V→LOAD ON:24H→LOAD OFF:88.8V→LOAD ON:88.8V (Set order (automatic cycle)	
+ Parameters "+" setting	− Parameters "-" setting
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"	

4 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

 System fault	 o r 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.k

 Charge fault	 Fault has ruled out

3) **Solar panels fault and processing:**

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

 No solar charge	 Are charging

5：Parameter table

Parameters / Model	MPPT10	MPPT20	MPPT30	MPPT40
Maximum power current	12A	20A	30A	40A
Installation Lin（mm^2）	$4mm^2$	$8mm^2$	$10mm^2$	$12mm^2$
Installation Line(AWG)	10(AWG)	8(AWG)	7(AWG)	6(AWG)
Weight	280g	300g	475g	480
Dimensions	143×89×46（mm）		187*97*61（mm）	
System load loss	≤13mA			
Loop Buck	≤100mV			

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℃~60℃
Storage Temperature	-30℃~70℃
Humidity requirements	≤90%, No condensation
Temperature compensation	-4mV/Cell/℃
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

7：(Cases) 12V system standard configuration (only applicable to our solar charge controller)

The peak voltage of the solar	18V-25V	18V-25V	18V-25V	18V-25V

cell panel （ Maximum power voltage (V))）				
Peak power of solar cell panel （Maximum power (Wp)	**50W-130W**	**100W-260W**	**200W-380W**	**≤500W**
Solar Charge Controller Model	**MPPT10**	**MPPT20**	**MPPT30**	**MPPT40**
Battery standard voltage	**12V**	**12V**	**12V**	**12V**
Battery capacity configuration	**≥100AH**	**≥200AH**	**≥300AH**	**≥400AH**
Installation Lin（mm^2）	**4mm^2**	**8mm^2**	**10mm^2**	**12mm^2**
Installation Line(AWG)	**10(AWG)**	**8(AWG)**	**7(AWG)**	**6(AWG)**