User's Manual

Safety Attentions

1.Get the tools and cables ready. Select the appropriate cable to ensure that the current density is less than <6A/ mm², which is conductive to reduce the cable voltage damage.

- 2. This controller will be heat when working. Please install the controller on the flat, well ventilated
- 3.In the process of connecting wires please connect the battery first (in order to ensure the correct indentification of the battery voltage level) ,then connect the solar panel. After the controller completes the battery voltage lever indentification, manually close the load output of the controller and connect the controller finally

4.In order to use security please do not use solar panels that exceed the rated current of the solar controller; please do not connect the load over rated current ;please do not use AC/DC switching power supply instead of solar panel to connet the controller.

Product Features

Inteligent 3-stage PWM charging mode

Battery reverse discharge protection

Reverse light control mode

protection

Battery over discharge/overvoltage/low voltage

Solar panel/Battery reverse connect protection

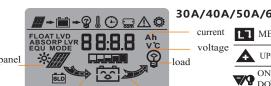
- Simple button operation
- Adjuatable charging and discharging control
- Load overcurrent/short-circuit protection
- Various load mode
- 5V/2A USB (10A/20A/30A/40A)
- Support Lead-acid battery and lithium battery charging and discharging

LCD display screen with backlight function

- 12/24/36/48V full automatic indentification
- Voltage temperature compensation
- Remote monitoring and communication function
 Accumulated amper hours • Solar controllers can be work from the solar panel when the voltage of lithium battery is 0V

LCD Display/Button





30A/40A/50A/60A: current 17 MENU



6 load mode

main display

battery type

PO 8



10A/20A System Connection

10A/20A Display/Setting

owsing

Press menu to browse

et Paramete

interface 2-7 long pres

enu to enter setting and us

ong press the menu to save

etting.In interface 1 long

ess menu restore to facto

default settings.

paramameter and exsist

different interface

13.8 ^v

2 float/recovery voltage

144 \

12.5

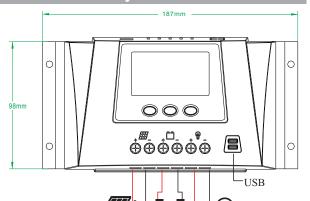
USB



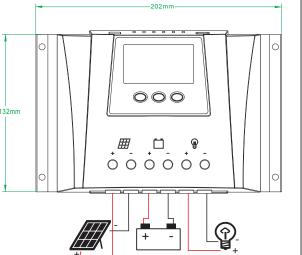


g (up) (down) to set the pa

30A/40A System Connection



50A/60A System Connection



.First,according to the diagram,connect the positive and negative electrodes of the battery to the con troller, it will auto-indentify the battery voltage

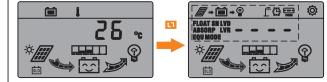
- Then connect the solar panles to the controller.
- 3. Finally, connect the positive and negative electrodes of the load to the controller, prevent reverse.
- 4. When using lithium battery with protective panel, set the voltage level to be a fixed value. Do not set the battery to be automatic indentification. In order to prevent the protection of the lithium ba-
- 5. The open-circuit voltage of the solar panels must be smaller than the maxium allowable voltage required by the lithium battery to prevent battery damage from excessive voltage.
- 6. When using the lithium battery, the short-circuit current of solar panel should be less than 0.3C (Lithium battery capacity)

ttery board from the solar input after starting the controller to indentify the error voltage.

- .When using lithium battery in the environment below 0°C, lithium battery should be work well at
- .Solar controllers do not have the equalizing function for lithium battery.So, the lithium battery mu
- 3.Please strictly connect the controller in the right order, otherwise it may damage the controller. 4. When remove the cables, please in the reverse order.

Factory Default Settings

At main loop interface 2,long press Menu till the symbols in the dotted column starts flashing,the controlling parameters will recover to the default value. Controller will restart automatically to renew the controller data



Various Working Modes For Load

There are four control modes for load.(1)nomal control mode,(2)light control on and delayed off mode,(3)light control mode,(4)reverse light control mode. The delayed duration can be Following are the working introduction for each mode:

Load mode dawn setting time 24H nomal control mode ~23H light control on and Load off Load off delayed off mode 0H light control mode -Load off CH reverse light control Load off Load on

Note: 10A/20A do not have reverse light control mode

30A/40A/50A/60A Display/Setting

auto-indentify of system voltage

et Paramete

n main interface 1 s

oress menu to enter the

oop interface. Within 50

econds without any op-

ation and the controller

s no error, the interface

vill jump to the interface

1 when there is an erro

he interface will auto jump

error code display inter-

This symbol means that the interface can be set

work mode

▲ This symbol means that the interface can not be set

(long press menu for 5 seconds to set the load mode)

Lithium battery type

battery type

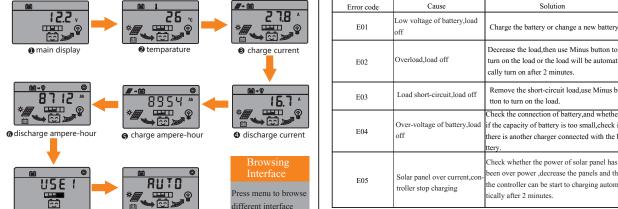
float voltage

absorption voltage

low-voltage protection

low-voltage recovery

ng press menu for 5 seconds to set the battery type



Technology Parameters

Solar	Rated Current	10A/20A	30A	40A	50A	60A		
Input	Input Voltage	≤ 50V (12V/24V Auto)		$\leq 100 V$ $(12V/24V/36V/48V Auto)$				v

g recovery voltage

cut-off voltage

cut-off current

error code interface

(the interface dose not appear

Lead-acid batteries	Float voltage	13.8V	13.8V	13.8V	13.8V (9~15Vadjustable)	
	Absorpion voltage	14.4V	14.0V	14.6V	14.4V (9~15V adjustable)	
	Absorption time		•	2h		
	Absorption recorvery voltage			12.6V		
	Limited charge voltage			15.5V		
	Temperature compensation -4mV/cell/ °C					
	3-stage charging(bulk charge,constant-voltage charge,stop charge)					

16.0V

	Lithium batteries	3.7-3	3.7-4	3.2-4				
nium eries	Constant voltage	12.6V	16.8V	14.4V				
	Cut-off charge current		2A(0.1A~30 A adjustable)					

30A/40A/50A/60A Error Code and Solution

Error code		Error code	Cause	Solution		
		E01	Low voltage of battery,load off	Charge the battery or change a new battery.		
	E02	Overload,load off	Decrease the load, then use Minus button to turn on the load or the load will be automatically turn on after 2 minutes.			
	E03	Load short-circuit,load off	Remove the short-circuit load,use Minus button to turn on the load.			
		E04	Over-voltage of battery,load off	Check the connection of battery, and whether if the capacity of battery is too small, check if there is another charger connected with the ba- ttery.		
	E05	troller stop charging	Check whether the power of solar panel has been over power ,decrease the panels and then the controller can be start to charging automa- tically after 2 minutes.			

Solar	Rated Current	10A/20A	30A	40A	50A	60A		
Input	Input Voltage		≤ 50V V/24V Auto)					
CI							- 1	

3-stage charging(bulk charge, absorption charge, float charge) GEL Dimension

3.2-5

18.0V

17.0V

USE2

14.4V(9~17V

13.6V(9~17V

Waterproof

13.6V

1 : Sealed lattery

Batteries Typ

protection

Over-voltage

Over-voltage

System

voltage

protection

Low-voltage 10.7V(9~15

Low-voltage 12.6V(9~15V)

USB power 5V USB , the maxium output current is 2A

fv Range Of Batte

3.7-4 3.2-4 3.2-5 12V ≤20V ≤16.4V 24V ≤ 30V ≤34.6V ≤29.8V ≤37V 36V ≤40.8V ≤38.2V ≤50.8V ≤43.6V ≤54.4V > 38.2V >50.8V > 43.6V > 54.4V 6mm²(AWG #9) /16mm²(AWG#5) /25mm²(AWG#3) Max wire size Working temperatu -20 °C ~50 °C Storage temperature -30 °C ~70 °C Working humidity 10%~90%, no condensation 10A/20A: 166*88*38mm 30A/40A: 187*98*50mm 50A/60A: 202*132*61mm Weight 270g/370g/665g/730g IP30

Lithium Battery

13.2V

14.8V

3.2-4

11.2V

12.8V

18.5V

18.0V

Lithium Battery

3.2-5

14.0V

16.0V

11.2V(9~17V

12.8V(9~17V

e: Above parameters apply to system 12V as an example, if 24V/36V/48V system, the voltage parameter value should*2/*3*4

te: 10A/20A controller without temperature compensation /backlight_function, without cut-off current.

00: Lead-acid battery custom type