User's Manual

Safety Attentions

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 inthe 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 consupply instead of solar panel to connet the controller.

Product Features

- Simple button operation
- Adjuatable charging and discharging control
- Load overcurrent/short-circuit protection
- Various load mode
- 5V/2A USB (WP20D/WP30D)
- Support Lead-acid battery and lithium battery charging and discharging

- 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





1.Get the tools and cables ready. Select the appropriate cable to ensure that the current density is less

dentification of the battery voltage level) ,then connect the solar panel. After the controller completes

troller; please do not connect the load over rated current ;please do not use AC/DC switching power

- Battery over discharge/overvoltage/low voltage
 - Battery reverse discharge protection
 - Solar panel/Battery reverse connect protection

Inteligent 3-stage PWM charging mode

- LCD display screen with backlight function 12/24/36/48V full automatic indentification
 - Reverse light control mode



PO 8







ON/OFF

DOWN(-)





6 load mode



10A/20A System Connection

owsing

Press menu to browse

et Paramete

interface 2-7 long pres

enu to enter setting and us

g (up) (down) to set the pa

meter.After confirming,

different interface

USB





4 low-voltage recovery

13.8 ^v

2 float/recovery voltage

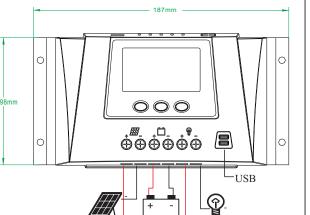
144 \

absorption charge/constan

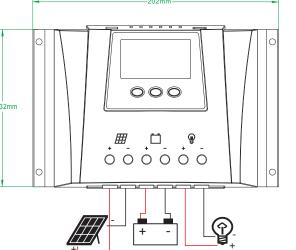
12.5



30A/40A System Connection



50A/60A/80A 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
- 2. 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

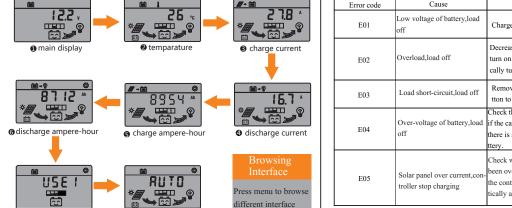
There are four control modes for load.(1)nomal control mode,(2)light control on and delayed off mode,(3)light control mode,(4)reverse light control mode. The delayed duration can be

Following are the working introduction for each mode:

		event	
Load mode	dark	setting time	dawn
4H nomal control mode	-	-	-
~23H light control on and elayed off mode	Load on	Load off	Load off
H light control mode	Load on	-	Load off
H reverse light control node	Load off	-	Load on
		10.00	

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

30A/40A/50A/60A/80A Display/Setting



auto-indentify of system voltage

(the interface dose not appear











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

low-voltage recovery

battery type ng press menu for 5 seconds to set the battery type g recovery voltage float voltage et Paramete n main interface 1 sl oress menu to enter the oop interface. Within 50 econds without any opation and the controller absorption voltage is no error ,the interface cut-off voltage vill jump to the interface 1 when there is an error he interface will auto jump error code display interlow-voltage protection cut-off current This symbol means that the interface can be set ▲ This symbol means that the interface can not be set

30A/40A/50A/60A/80A Error Code and Solution

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 automati- cally 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		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	Solar panel over current,con- 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.

Technology Parameters

Input Voltage \$50V \$100V	Solar Input	Model Rated Current	10A/20A	30A	40A	50A	60A	80A		
	•	Input Voltage				(1		to)		v

3-stage charging(bulk charge, absorption charge, float charge

	Lead-acid batteries	Sealed	Sealed GEL Flood USE1				ŀ	WOIR
ncid	Float voltage	13.8V	13.8V	13.8V	13.8V (9~15Vadjustable)			Di
es	Absorpion voltage	14.4V	14.0V	14.6V	14.4V (9~15V adjustable)		ļ	-
	Absorption time		2h					W
	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)

	Lithium batteries	3.7-3	3.7-4	3.2-4	3.2-5	USE2
thium	Constant voltage	12.6V	16.8V	14.4V	18.0V	14.4V(9~17V adjustable)
	Cut-off charge current		2A(0.1A	~30 A adjustabl	e)	
	Recorvery charge voltage	12.0V	16.0V	13.6V	17.0V	13.6V(9~17V adjustable)

	Y 1 11	Lithium Battery					
Batteries Type	Lead-acid batteries	3.7-3	3.7-4	3.2-4	3.2-5	USE1	
Low-voltage protection	10.7V(9~15V adjustable)	9.9V	13.2V	11.2V	14.0V	11.2V(9~1 adjustable	
Low-voltage recovery	12.6V(9~15V adjustable)	11.1V	14.8V	12.8V	16.0V	12.8V(9~1 adjustable	
Over-voltage protection	16.0V		18.5V				
Over-voltage recovery	15.5V	18.0V					
USB power	5V USB , tl	the maxium output current is 2A					

tage l	Indentify	Range	Of	Batt

oltage	Lead-acid	· · · · · · · · · · · · · · · · · · ·						
batteries		3.7-3	3.7-4	3.2-4	3.2-5	USE2		
12V	≤ 17V	≤14.6V	≤18.8V	≤16.4V	≤20V	≤ 16.4V		
24V	≤ 30V	≤26.2V	≤34.6V	≤29.8V	≤37V	≤29.8V		
36V	≤40.8V	≤38.2V	≤50.8V	≤43.6V	≤54.4V	≤43.6V		
48V	>40.8V	> 38.2V	>50.8V	> 43.6V	> 54.4V	> 43.6V		

Lithium Battery

Aax wire size	6mm ² (AWG #9) /16mm ² (AWG#5) /25mm ² (AWG#3)
king temperature	-20 °C ~50 °C
age temperature	-30 °C ∼70 °C
rking humidity	10%~90%, no condensation
	10A/20A: 166*88*38mm
Dimension	30A/40A: 187*98*50mm
	50A/60A/80A: 202*132*61mm
Weight	270g/370g/665g/730g
W-+	IP30

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

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

b01 : Sealed lattery

b 04 : Lithium battery custom type

b 00 : Lead-acid battery custom type