

# User's Manual

## 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

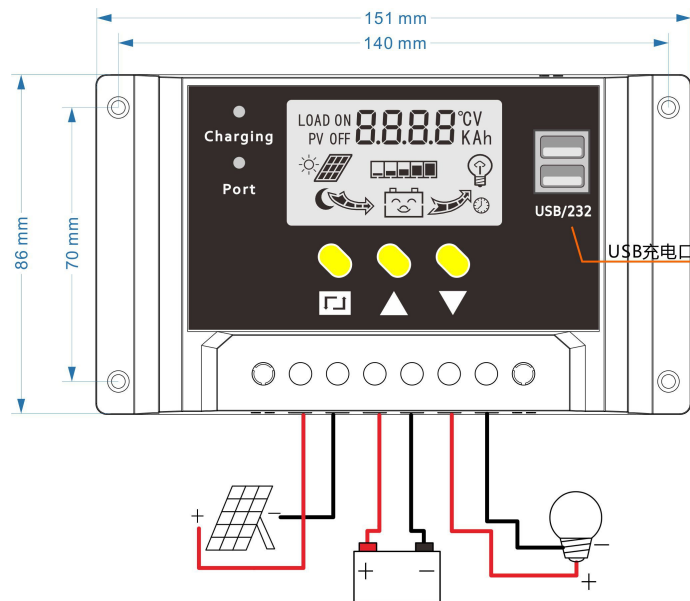
1. Build-in industrial micro controller.
2. Big LCD display, with 5V USB charger
3. PWM charge management.
4. Build-in short-circuit protection, open-circuit protection, reverse protection, over-load protection.
5. Dual mosfet Reverse current protection, low heat production.

## SYSTEM CONNECTION

1. Connect the battery to the charge regulator - plus and minus.
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!**

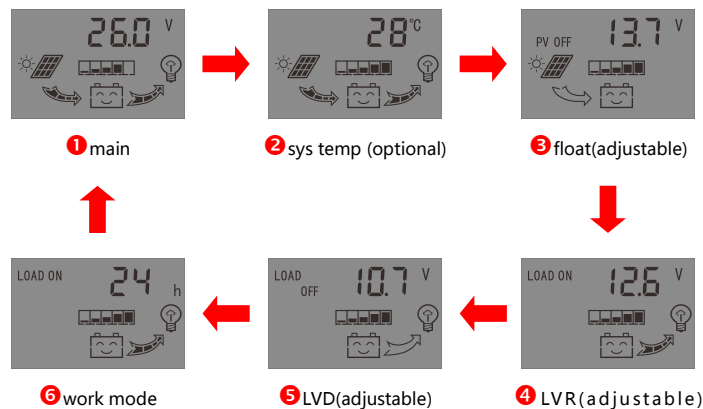
**An improper sequence order can damage the controller!**



## DISPLAY

		MENU
		UP
		DOWN
	Charging iron.	
	Discharging iron.	
	Day iron.	
	Night iron.	
	Timer iron.	
	Load iron.	
	Battery capacity iron.	
	System is working good.	
	Battery voltage is too low, output is close, when battery get recharge to LVR voltage, the output will open again.	

## MENU AND SETTING



Menu and setting:

1. press [MENU] to switch between display 1-6.
2. press [DOWN] to ON/OFF output at main display (when work mode is 24h).
3. unplug the temp sensor if you don't need temperature compensation.
4. on display 4-6, press [MENU] 5s to enter setting, while the numbers are

flashing, press [UP]/[DOWN] to choose what you need, then press [MENU] again to save and exit, or long press [DOWN] to reset.

5. work mode : [0h] - Dusk to dawn [24h] always on [1h] - [23h] light open + timer

## TROUBLE SHOOTING

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

## TECHNICAL PARAMETER

MODEL	1210	1220	1230	4810	4820	4830
Batt voltage	12V/24V auto			48V		
Charge current	10A	20A	30A	10A	20A	30A
Discharge current	10A	20A	30A	10A	20A	30A
Max Solar input	<50V			<80V		
Buck charge	14.2V					
Float charge	13.7V(factory setting)					
Discharge stop	10.7V(factory setting)					
Discharge reconnect	12.6V(factory setting)					
USB output	5V/2A					
Self-consume	<10mA					
Temperature compensation	-4mV/Cell/℃					
Control mode	PWM					
Operating range	-35~+60 ℃					
Size/Weight	150*86*35mm /200g					

**\*all red color voltage X2 ,X4 while using 24V /48V system.**

**\*Product specifications are subject to change without prior notice.**