

# MANUAL RS-PWM30

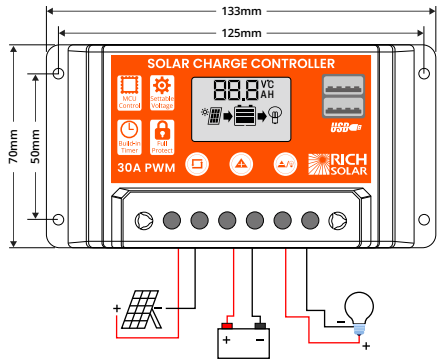
## SAFETY INSTRUCTIONS

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, lithium ions and LiFePO4 battery.
  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. Large LCD display, all adjustable parameter.
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 solar 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!

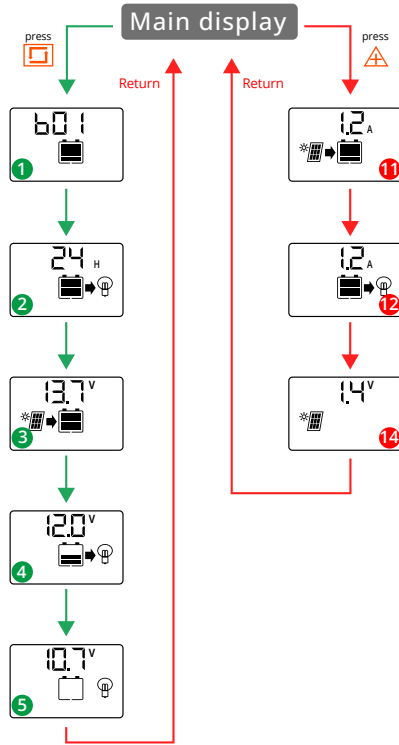
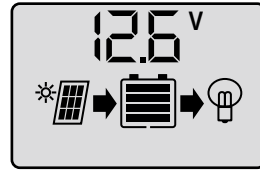
## KEY FUNCTION

F1: click to enter setting NO.1~10.  
F2: hold 5s to reset and restore factory setting.

F1: click to enter setting NO.11~14.  
F2: hold 5s to reset.

F1: click to control output manually.  
F2: click to exit if an error happened.

## DISPLAY



NO.1	Battery type B01-General lead-acid (default) B02=35 X 3.7V 11.1V lithium ion Battery B04-B06 has multi-stage charging process. Setting: Hold left key until number flash, click[+/-]to adjust, and hold
NO.2	Load output timer control [24H] - output turn on all the time. [0H] - output turn on only during Dusk to Dawn (D2D). [1-23H] - output turn on after sunset and turn off after 1-23H. Attn: No matter which is selected, output will turn off when battery is in a LVD condition. Setting method: same as above one.
NO.3	Charge voltage setting Different battery types have different maximum charging voltage. Consult your battery supplier for more information. Default setting is recommended. The setting is the same as above.
NO.4	Low voltage re-connect (LVR) setting When a low voltage disconnect happens, the controller will wait until the voltage raise more then this voltage, then it will re-connect

the load again.  
Default setting is recommended. The setting is the same as above.

NO.5 Low voltage disconnect (LVD)setting.  
When battery voltage is lower than this voltage, the controller will cut off the output automatically. Default setting is recommended. The setting is the same as above.

NO.11 Charging ampere display. (only for some model)

NO.12 Discharging ampere display. (only for some model)

NO.14 Real time PV voltage display.

## UNUSUAL DISPLAY

Battery low voltage warning .  
To prevent damage of the battery, Output automatic disconnect when battery voltage drop below LVD voltage and automatic re-connect if raise above LVR voltage.  
Press to ignore for one time and force to work again.

Battery high voltage warning .  
To prevent damage of the load equipment, Output automatic disconnect when battery voltage raise above HVD voltage and automatic re-connect if drop below HVR voltage.  
Press to ignore for one time and force to work again.

High temperature warning .  
when the temperature of the controller exceeds 80°C, it will enter stand-by mode and stop charging or discharging until the temperature falls to 70°C.  
Press to ignore for one time and force to work again.

PV over-voltage warning .  
In order to protect the internal circuit,Charging automatic stop when PV voltage exceed 50V and automatic recover when voltage drop below 45V. (for 12V/24V system)

## FAQ

**Q: Why the controller is not showing charging when I connect the solar panel?**

A: Please carefully check the solar panel wires are connected correctly, and there is no reverse. The PV voltage should be higher than the voltage of the battery, any sewage or shadow on the PV will cause the voltage drop. Please use a 18v PV to charge a 12V battery under normal circumstances.

**Q: Why is my charging current very small?**

A: Use more solar panel and stronger sun light will increase the charging current, otherwise, using the wrong PV voltage or sewage and shadow on the PV will reduce the charging current. In addition, when the battery voltage is high it will enter float charging mode, also the charging current will become smaller.

**Q: Why my consumer is off?**

A: It could be wrong working mode, like setting the work mode to D2D, but you are asking why my consumer is off during the daytime or battery is not enough and a low-voltage disconnect has happened or your consumer is broken. To check that, you can directly connect your consumer to the battery to see if it is working, please carefully check the wires and so.

**Q: The solar power stored is not enough to supply the consumer**

A: If the power generated by the solar panel is less than the consumer used, the consumer will have to get the power from the battery storage and day by day, it will cause a LVD finally at some moment. Please use more solar panel and add more battery capacity to prevent cloudy or rainy day, or you can reduce the watt of the consumer or working time to balance the system.

**Q: Why my battery runs out of power very quickly after it is fully charged?**

A: Your battery could have been used for a very long time, and after few hundred of cycling, its dying. A dying battery will not have the capacity to keep the electricity. Run a simple test like this, when your charge your battery, the voltageraise very quickly and when you discharge it again, it drops very quickly, this means you should change your battery.

## TECHNICAL PARAMETER

System Voltage	12V/24Vauto		
MAX.PV input	<50V		
Rated current	10A	20A	30A
USB output	5V/2A		
Charge control	PWM		
Standby lost	<15mA@12V		<10mA@LVD
Working temp	-20~+60 °C		
Size/Weight	133*70*33mm /150g		

## VOLTAGE PARAMETER

Battery type	B01	B02	B03
	General Lead acid	Li- ion	LiFePO4
HVD	16V	16V	16V
HVR	15V	15V	15V
Bulk (Absorption)	13.7V	12.3V	14.0V
Equalize	-	-	-
Float	13.7V	12.3V	14.0V
Charge return	13V	12V	13V
LVR	12.0V	10.5V	12.0V
LVD	10.7V	9.5	11.2V

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

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