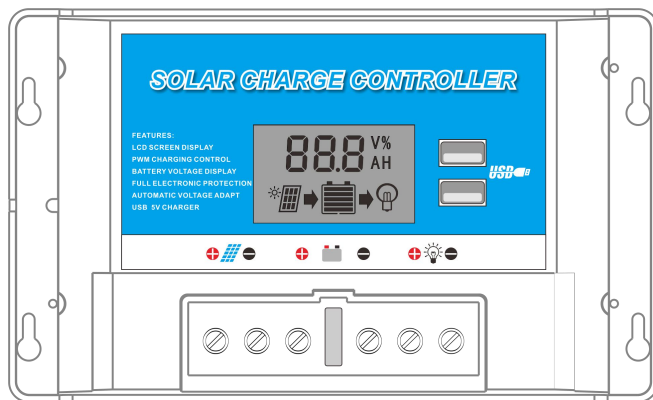


User's Manual



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

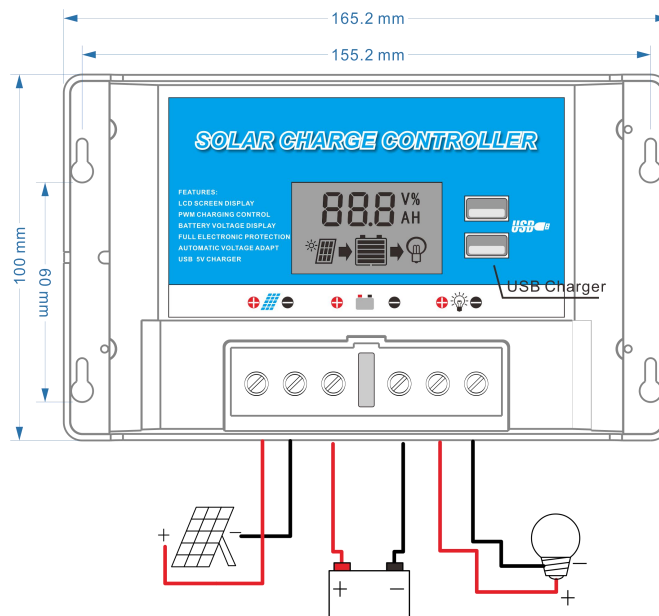
1. Build-in industrial micro controller.
2. LCD display, with 5V Dual USB charger for IPHONE, IPAD, ANDROID.
3. PWM charge management.
4. Build-in short-circuit protection, open-circuit protection, reverse protection, over-load protection.
5. Dual mosfet Reverse current protection, low heat production.

SYSTEM CONNECTION

1. Connect the battery to the charge regulator - plus and minus.
2. Connect the solar panel 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

The diagram shows the LCD display with labels for 'voltage', 'hour', 'digital display', 'solar panel', 'charge on: equalization/buck', 'flinking: float', 'battery', 'load', and 'output'. The display shows '88.8 V%' and '88.8 AH'.	
12.3 V	Display the battery voltage
	This icon will be on when solar panel voltage is higher than battery voltage, and it will start charging.
	Battery power icon
	If this icon flashes means the battery voltage is too low and the output will be cut off until the battery voltage rises to 12.6V



Iron on means output is good.

TROUBLE SHOOTING

Situation	Probable cause	Solution
Charge icon not on when sunny	Solar panel opened or reversed	Reconnect
Load icon off	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
	Fuse blow	Change fuse

TECHNICAL PARAMETER

MODEL	CY-X02- 1210/1220/1230	CY-X02- 2410/2430/2430	CY-X02- 4810/4820/4830
Batt voltage	12V	24V	48V
Charge current	10A/20A/30A	10A/20A/30A	10A/20A/30A
Discharge current	10A/20A/30A	10A/20A/30A	10A/20A/30A
Max Solar input	<50V		<80V
Buck charge	14.5V		
Float charge	13.7V		
Discharge stop	10.7V		
Discharge reconnect	12.6V		
USB output	5V/3A	N/C	
Self-consume	<10mA		
Control mode	PWM		
Operating temperature	-35~+60 ℃		
Size/Weight	165*100*45mm /320g(30A)/240g(10A/20A)		

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

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