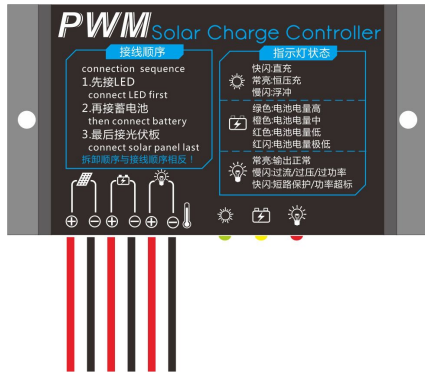


User's Manual



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

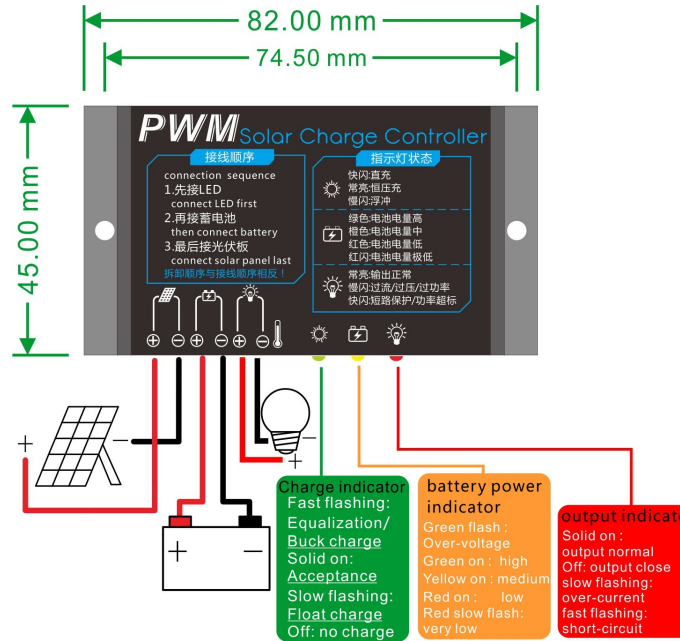
1. Build-in industrial micro controller.
2. LED display, auto memory function, IP68 protection.
3. Fully 4-stage PWM charge management.
4. Build-in short-circuit protection, open-circuit protection, reverse protection, over-load protection.
5. Dual mosfet Reverse current protection, low heat production.

SYSTEM CONNECTION

1. Connect the battery to the charge regulator - plus and minus. It will auto adapt the battery type.
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!



SYSTEM MODE

The mode has been set inside the controller before exit the factory. Do ask for further more information from your distributor.

mode	description
Charge only	Only use the charge function of the controller. Load output is forever closed
Light-open +delay	Load on after sunset and closed after 1-13hour
D2D	Dusk to Dawn (have delay)
System	Load always output (unless battery is low)
debug	Dusk to Dawn (no delay)

TROUBLE SHOOTING

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

TECHNICAL PARAMETER

MODEL	IR205	IR210	IR215	IR220
Batt voltage	12V/24V auto adapt			
Charge current	5A	10A	15A	20A
Discharge current	5A	10A	15A	20A
Max Solar input	41V			
Charge drop	<0.2V			
Discharge drop	<0.25V			
Equalization	14.8V			
Bulk	14.5V			
Acceptance	14.2V PWM			
Float	13.8V			
Charge reconnect	13.0V			
Discharge stop	11.2V			
Discharge reconnect	12.6V			
Self-consume	<10mA			
Voltage of open light	Solar panel 8V (delay 10s)			
Voltage of close light	Solar panel 8V (delay 60s)			
Temperature compensation	N/C			
Operating temperature	-35~+60 °C			
Size/Weight	82*45*21mm /120g			

***all red color voltage X2 while using 24V system.**

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