

# Solar Charge Controller Users Manual GTR121

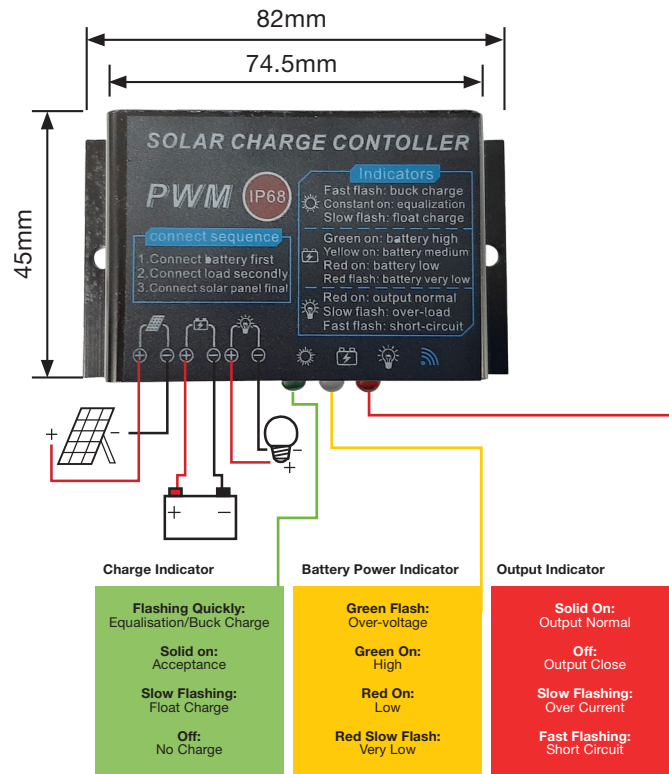


## Product Features:

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

## Safety Instructions:

1. Make sure your battery has enough voltage for the solar charge controller to recognise the battery type before first installation
2. The battery cable should be as short as possible to minimise loss.
3. The solar charge controller is only suitable for lead acid batteries: OPEN, AGM, GEL  
*It is not suited for nickel metal hydride, lithium ions or other battery types.*
4. The solar charge controller is only suitable for regulating solar modules.  
*Never connect another charging source to the charge regulator.*



## System Connection:

1. Connect the battery to the solar charge controller: plus (+) and minus (-).  
It will auto adapt the battery type
2. Connect the solar panel to the solar charge controller: plus (+) and minus (-).
3. Connect your DC powered device to the charge regulator: plus (+) and minus (-)

**The reverse order applies when uninstalling!**

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

## System Mode:

These settings have been factory set inside the controller.  
Contact our staff for more information.

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 1-13 hours
D2D	Dusk to dawn (have delay)
System	Load always output (unless the battery is low)
Debug	Dusk to dawn (no delay)

## Troubleshooting:

Situation	Probable Cause	Solution
Charge LED not 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
	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			
Equilisation	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 x 45 x 21mm / 120g			