

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

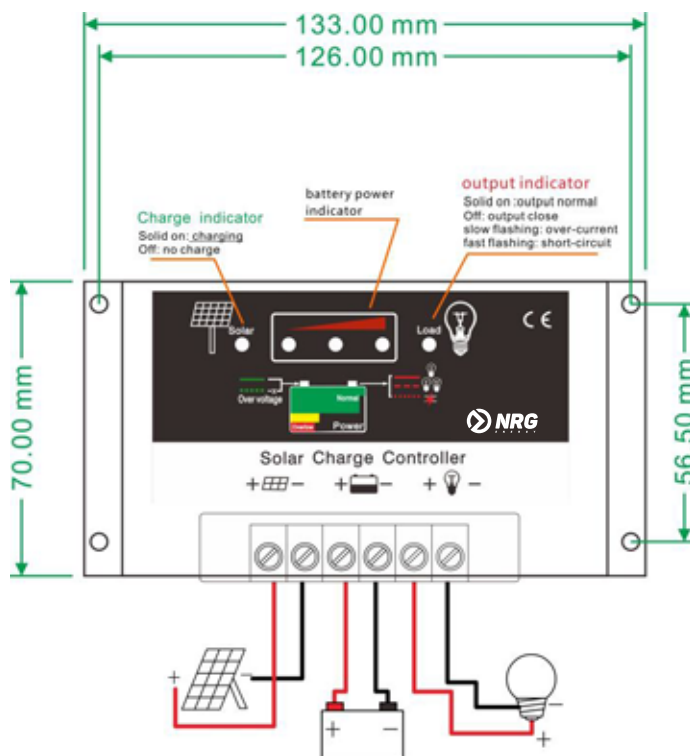
1. Build-in industrial micro controller.
2. Input and output LED display, a simple 3-stage battery capacity indicator.
3. Fully 4-stage PWM charge management.
4. Build-in short-circuit protection, open-circuit protection, reverse protection, over-load protection.
5. Dual mosfet Reverse current protection, low heat production.

SYSTEM CONNECTION

1. Connect the battery to the charge regulator - plus and minus. it will detect the battery voltage and goes to charging progress.
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!



TROUBLE SHOOTING

Situation	Probable cause	Solution
Charge LED not on when sunny	Solar panel opened or reversed	Reconnect
Load LED off	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	CSP-5-1224			
Batt voltage	12V		12V/24V	
Charge current	5 A	20A	5 A	20A
Discharge current	5 A	20A	5 A	20A
Max Solar input	42V			
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			
Temperature compensation	N/C			
USB output	N/C		N/C	
Operating temperature	-35~+60			
Size/Weight	133*70*35mm /150g			

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

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