

INSTRUCTIONS 10AMP SOLAR CHARGE REGULATOR

12
MONTH
WARRANTY



PLU:539242 CODE:TPS-1012

Manufactured and packaged for SRGS PTY LTD
ABN 23 113 230 050

751 Gympie Road, Lawnton, Queensland 4501, Australia
MADE IN CHINA

RIDGE 4X4
RYDER
ACCESSORIES

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1. Safety / Warning

- Do NOT disassemble or attempt to repair the regulator.
- Power connections must remain tight to avoid excessive heating from a loose connection.
- Only charge 12V batteries that comply with the parameters of the regulator.
- Battery connection may be wired to one battery or a bank of batteries.
- Keep in a dry well-ventilated area, these regulators are NOT waterproof and should not be fitted to the underside of the panel. The warranty will be void if this instruction is ignored.

2. First Aid & Batteries

- For advice, contact the Poisons Information Centre in Australia (PH: 13 11 26) or the National Poisons Centre in New Zealand (PH: 0800 764 766)
- If battery acid makes contact with the skin or clothing, wash immediately with soap and water.
- If battery acid makes contact with the eyes, hold eyelids apart and flush the eye continuously with fresh running water for at least 15 minutes or until the Poisons information centre advises you to stop.
- If battery acid is swallowed, do not induce vomiting. Drink a glass of water and seek medical assistance.

o Load Short Circuit Protection

Load will be switched off when load short circuit (≥ 3 times rated current) happens. User has to clear short circuit, then press the button or repower the regulator.

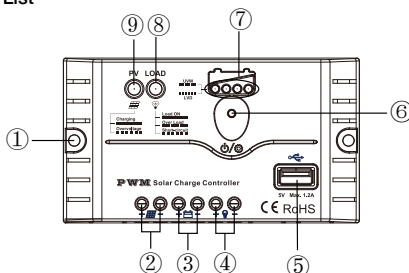
o High Voltage Transients Protection

The regulator is protected against small high voltage transients. In lightning prone areas, additional external suppression is recommended.

4. Technical Specifications

Nominal system voltage	12VDC
Rated charge current	10A
Rated discharge current	10A
Battery input voltage range	8V~16V
Max. PV open circuit voltage	30V
Self-consumption	12V \leq 5mA
Charge Circuit Voltage Drop	≤ 0.13 V
USB Output Port	5VDC/1.2A
Working environment temperature	-35°C~+55°C
Humidity	$\leq 95\%$ N.C.
Mounting hole size	$\Phi 4.5$

5. Diagramm / Parts List



①	Mounting Hole $\Phi 4.5$	⑥	Button
②	PV Terminals	⑦	Battery status LED indicator
③	Battery Terminals	⑧	Load status LED indicator
④	Load Terminals	⑨	Charging status LED indicator
⑤	USB Output Port		

3. Features & Benefits

- Support 3 charging options: Flooded (Lead acid), Gel and Sealed/ Absorbed Glass Mat (AGM) batteries.
- Battery status LED indicator indicates battery situation.
- The USB will provide power supply that can charge small electronic devices.
- Battery type and load output can be set via button.
- Extensive Electronic protection.
 - Battery Over Voltage Protection**
When the battery voltage reaches to the set point of Over Voltage Disconnect Voltage (OVD), the regulator will stop charging the battery to protect the battery from being over charged.
 - Battery Over Discharge Protection**
When the battery voltage reaches to the set point of Low Voltage Disconnect Voltage (LVD), the regulator will stop discharging the battery to protect the battery from being over discharged.
 - Load Overload Protection**
Load will be switched off when 1.25 times rated current overload happens. User has to reduce load appliance, then press the button or repower the regulator.

Battery Voltage Control Parameters

Below parameters are in 12V system at 25 C.

Battery Type	SEALED/AGM	GEL	FLOODED (LEAD ACID)
Over Voltage Disconnect Voltage	16.0V	16.0V	16.0V
Charging Limit Voltage	15.0V	15.0V	15.0V
Over Voltage Reconnect Voltage	15.0V	15.0V	15.0V
Equalize Charging Voltage	14.6V	-	14.8V
Boost Charging Voltage	14.4V	14.2V	14.6V
Float Charging Voltage	13.8V	13.8V	13.8V
Boost Reconnect Charging Voltage	13.2V	13.2V	13.2V
Low Voltage Reconnect Voltage	12.6V	12.6V	12.6V
Under Voltage Warning Reconnect Voltage	12.2V	12.2V	12.2V
Under Voltage Warning Voltage	12.0V	12.0V	12.0V
Low Voltage Disconnect Voltage	11.1V	11.1V	11.1V
Discharging Limit Voltage	10.6V	10.6V	10.6V
Equalize Duration	120Mins	-	120Mins
Boost Duration	120Mins	120Mins	120Mins

6. Wiring Guide

- Connect battery clamps wire to battery, pay attention to the "+" and "-".
- After powering the regulator, check the Battery LED indicator on the regulator, it will be on solid green. Otherwise please refer to chapter 8.

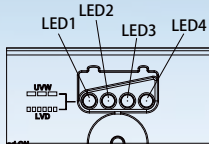
7. Regulator - Indicators

- Charging and load status indicator

Indicator	Color	Status	Instruction
Charging status LED indicator	Green	On Solid	In Charging
	Green	OFF	No Charging
	Green	Fast Flashing	Battery Over Voltage
Load status LED indicator	Green	On Solid	Load ON
	Green	OFF	Load OFF
	Green	Slowly Flashing	Load over load
	Green	Fast Flashing	Load short circuit

NOTE: Overcharge indicator light can also indicate when the battery is fully charged.

(2) Battery status indicator



LED1	LED2	LED3	LED4	Battery Status
Slowly Flashing	x	x	x	Under voltage
Fast Flashing	x	x	x	Over discharge
Battery LED indicator status during voltage is up				
○	○	x	x	$12.8V < U_{bat} < 13.4V$
○	○	○	x	$13.4V < U_{bat} < 14.1V$
○	○	○	○	$14.1V < U_{bat}$
Battery LED indicator status during voltage is up				
○	○	○	x	$12.8V < U_{bat} < 13.4V$
○	○	x	x	$12.4V < U_{bat} < 12.8V$
○	x	x	x	$U_{bat} < 12.4V$

NOTE: ① "○" LED indicator on; "x" LED indicator off.

8. Troubleshooting

Problem /Indication	Possible Causes	Suggested Solution
No LED Indicator illuminated on regulator	Solar panel disconnection	Confirm that Solar panel and battery wire connections are correct and tight
No LED Indicator illuminated on regulator	Battery voltage maybe less than 8V	Measure battery voltage with the multimeter. Min.8V can start up the regulator
Charging status LED indicator flashing fast	Battery over Voltage	Check if battery voltage is higher than OVD, and disconnect the Solar panel
LED1 flashing fast	Battery over discharged	When the battery voltage is restored to or above LVR point (low voltage reconnect voltage), the load will recover
Load status LED indicator flashing fast	Load short circuit	① Check loads connection carefully and clear the fault. ② Press the button or restart the regulator.
Load status LED indicator slowly flashing	Load over load	① Please reduce the number of electric equipment. ② Press the button or restart the regulator.
Overcharge light is on	Battery is fully charged	The regulator will automatically cut off the charging circuit, do not need other actions.

Setting Operation

(1) Load ON/OFF Setting

When the regulator is powered on, press the button to control the load output.

NOTE: The USB will output when the load is on.

(2) Battery Type Setting

Operation:

Step 1: Enter setting mode by pressing button for 5 seconds until the battery status LEDs are flashing.

Step 2: Select the desired mode by pressing button.

Step 3: The mode will be saved automatically without any operation for 5 seconds and LED will stop flashing.

Battery Type Indicator

LED1	LED2	LED3	Battery type
○	x	x	SEALED/AGM
○	○	x	Gel
○	○	○	Flooded (Lead acid) (Default)

NOTE: "○" LED indicator on "x" LED indicator off

9. Disclaimer

This warranty does not apply under the following conditions:

- Damage from improper use or use in an unsuitable environment.
- User disassembly or attempted repair the regulator without permission.

10. Warranty

This product is guaranteed against defects for a period of 12 months from date of purchase. This warranty is provided by Super Cheap Auto Pty Ltd ACN 085 395 124 (Supercheap Auto) of 751 Gympie Rd Lawnton QLD 4501 Ph (07) 3482 7500. Supercheap Auto will offer a repair, replacement product or store credit if the product is assessed as being defective during the warranty period.

To claim under this warranty, take this product to the Front Service Desk of your nearest Supercheap Auto store. For store locations, visit www.supercheapauto.com.au (AUS) or www.supercheapauto.co.nz (NZ). You will need your receipt or proof of purchase. Additional information may be requested of you to process your claim. Should you not be able to provide proof of purchase with a receipt or a bank statement, identification showing your name, address and signature may be required to process your claim.

This product may need to be sent to the manufacturer to assess the defect before determining any claim. Faults or defects caused by product modification, misuse and abuse, normal wear and tear or failure to follow user instructions are not covered under this warranty.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Any expenses incurred relating to the return of this product to store will normally have to be paid by you. For more information contact your nearest Supercheap Auto store.

The benefits to the consumer given by this warranty are in addition to other rights and remedies of the Australian Consumer Law in relation to the goods and services to which this warranty relates.