XTM 690249 20A PWM Solar Controller Instruction Manual

XTM 690249 20A PWM Solar Controller

Toensure correct operation,please carefully read the manual before installation.

Contents

SAFETY INFORMATION

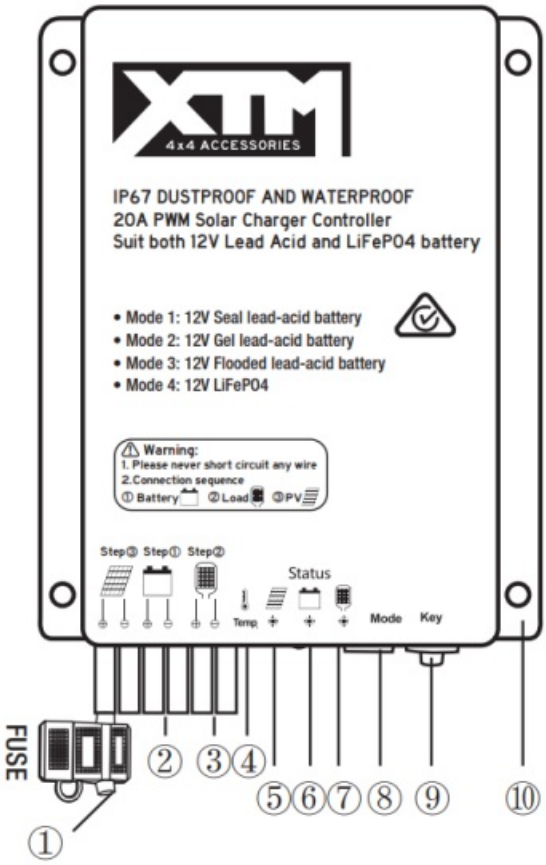
- Read all of the instructions in the manual before installation.
- DO NOT disassemble or attempt to repair the controller.
- Install external fuse or breakers as required.
- Do disconnect the solar module and fuse/breakers near the battery before installing or moving the controller.
- Power connections must remain tight to avoid excessive heating from a loose connection.
- Only charge batteries that comply with the parameters of controller.
- Battery connection may be wired to one battery or a bank of batteries.
- Risk of electric shock, the solar panel(PV) and load can produce high voltages when the controller is working.

MAIN FEATURES

- The design of IP67 waterproof level and aluminum shell helps effectively prevent corrosion.
- 12V system voltage.
- LED numeric display and waterproof keys are easy to use.
- An upgraded 3-stage PWM charging algorithm applies an equalizing charge to the battery every week, effectively preventing the battery from non-equalization and sulfation and therefore extending the battery's service life.
- Charging program options are available for 12 volt Sealed, Gel, flooded lead-acid and LiFePO4 (Lithium) batteries.
- An external temperature sensor helps deliver high-precision temperature compensation.
- Parameter setting of power-down saving functions eliminate the need for repeated setting, making operation easy and convenient.
- Various kinds of mode indicators. Mode 1: Seal lead-acid battery, Mode 2: Gel lead-acid battery, Mode 3: Flooded lead-acid battery, Mode 4: LiFePO4-4S.
- Overcharge, over-discharge and overload protection, as well as short-circuit and reverse-connection protection.
- TVS (Transient Voltage Suppressor) lightning protection.

INSTALLATION AND WIRING

1. Solar Module Terminals With Fuse
2. Battery Terminals With Fuse
3. Load Terminals With Fuse
4. Temperature Sensor
5. Charging Status LED Indicator
6. Battery Status LED Indicator
7. Load Indicator
8. Mode Display
9. Key Press Switch
10. Aluminum Housing

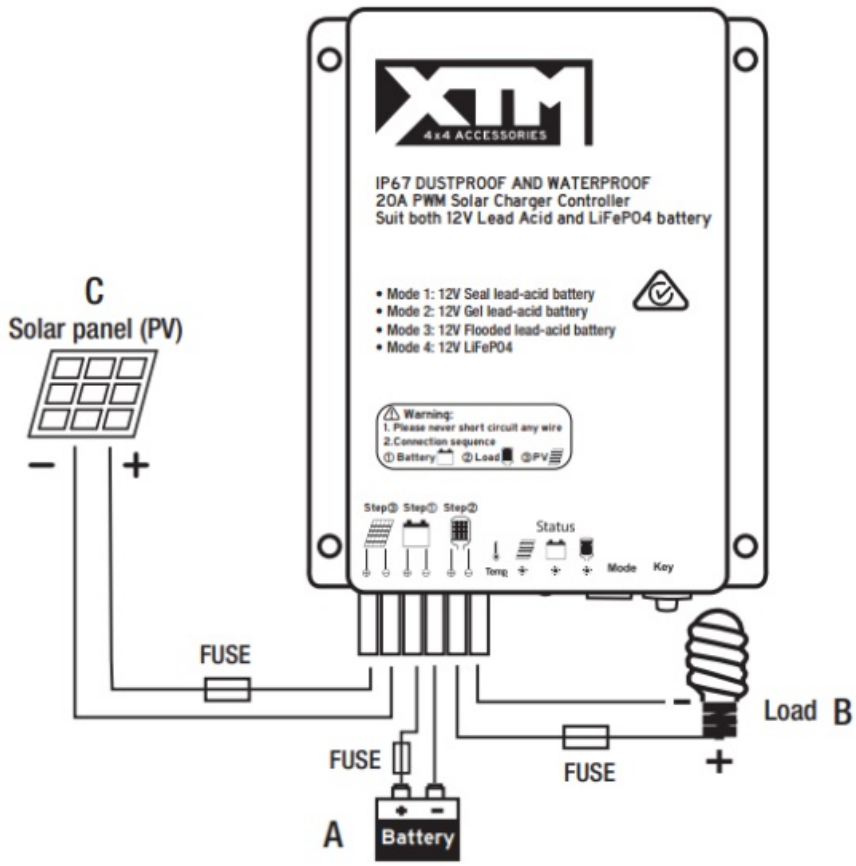


CONNECTION PROCEDURE

A. The XTM controller is designed for use on 12V systems. During actual use, connect the battery first, and the controller starts operation after automatically recognizing the battery voltage.
B. Connect the loads “+” and “-” terminals. Connect the load leads to the controllers load output terminal, and the current shall not exceed the controllers rated current. Larger loads are required to be connected directly to the battery.
C. Connect the solar panel(PV) “+” and “-” terminals. If there is sunlight, the solar panel indicator lights up; otherwise, check whether the connection is correct.
D. Compatible with 12 volt sealed, gel, flooded and lifepo4 (lithium) batteries

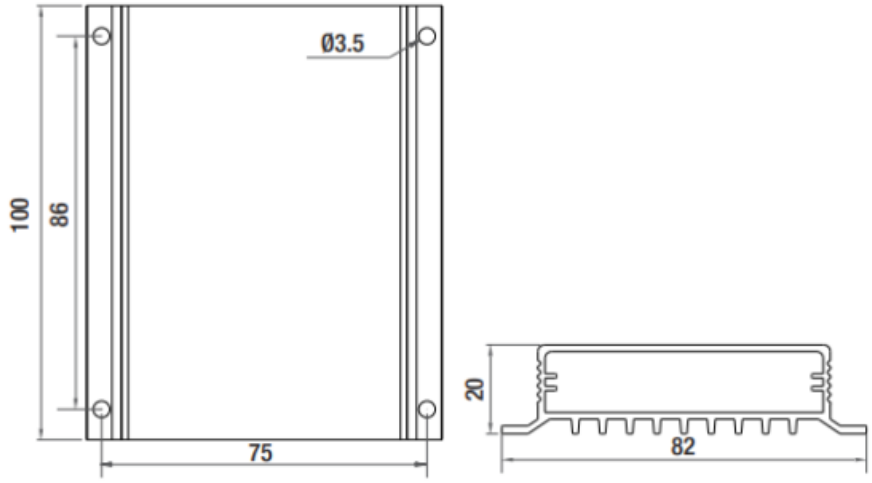
INCORRECT CONNECTION WILL DAMAGE THE CONTROLLER.

The wiring is shown below:



MOUNTING

We highly recommend you place the battery and the controller in the same environment.



Installation of controller should be mounted to a solid platform and dimensions are as follows:

SL2420
Overall dimension: 82x100x20(mm)
Installation dimension: 86×75(mm)
Installation hole diameter: 3.5(mm)

SUGGESTION FOR USE

- When the controller is powered on, it automatically recognizes the battery voltage. During using, connect the

battery first, and make sure the connection is sound and reliable.

- As the controller generates heat during operation, it is advised to install it in an environment with good ventilation conditions.
- The controller measures the ambient temperature and makes compensation to battery charging based on the measurement.
- The cable size will depend on the type of conductor (copper or aluminium) and the length distance from the solar panel (PV) to the controller. Consult a cable size chart for correct identification.
- It’s important to fully charge the battery regularly. We highly recommend you fully charge your battery once a month otherwise battery performance may be impacted.

INDICATORS DESCRIPTION AND OPERATION

Indicator	Status	Instruction
Solar panel (PV)	On Solid	Solar panel (PV) connection normal but low voltage (irradiance) from s olar panel(PV), no charging
	Off	NO solar panel(PV) voltage (night time) or solar panel(PV) connection problem
	Slowly Flashing	Charging
	Fast Flashing	System over Voltage
BATT	On Solid	Normal
	Off	No connection
	Double Flashing	Full
	Slowly Flashing	Under voltage
	Fast Flashing	Over discharged
LOAD	On Solid	Load ON
	Off	Load OFF
	Slowly Flashing	Over Load
	Fast Flashing	Short Circuit

SETTING METHODS

Operation

Step 1: Long press key press switch for 3 seconds, the mode number will flash.
Step 2: When indicator flash, press key switch to select suitable mode number. Mode number shows battery type as below table.
Step 3: Press key switch for 3 seconds to confirm battery type.
Step 4: Controller will re-start automatically.

- The key can be used to operate switching on/off the load. Short press for on/off.
- Default setting for loading is off.

Mode	Battery
1	Seal lead-acid battery
2	Gel lead-acid battery
3	Flooded lead-acid battery
4	LiFePO4-4S

TROUBLESHOOTING

Symptoms	Causes and solutions
While sunlight is present, the solar panel (PV) indicator does not light up.	Check whether the solar panel (PV) is connected and contact is good and reliable.
The solar panel (PV) charging indicator is flashing quickly.	System overvoltage. Check whether the battery voltage is too high.
The solar panel (PV) indicator is off and battery voltage is normal, but there is no output.	The load will be switched on automatically after one minute.
The battery indicator does not light up.	The battery may be failing to supply power. Check wherther the battery is correctly connected.
The battery indicator is flashing quickly and there is no output.	The battery is over-discharged and will recover when recharged adequately.
The load indicator is flashing slowly and there is no output.	The load power exceeds the rated power. Reduce power-cosuming devices and long press the key to recover.
The load indicator is flashing quickly and there is no output.	The load is short-circuited. After removing the problem, long press the key to recover.
The load indicator is steady on and there is no output.	Check whether the power-cosuming devices are connected correctly and reliable.
Other symptoms	Check whether the wiring is sound and reliable and system voltage(12V only) is correctly recognized.

TECHNICAL SPECIFICATIONS

Battery type	Sealed	GEL	Flooded	LiFePO4-4S
System current	20A			
No-load loss	10mA			
Solar energy input voltage	<55V			

System voltage	12V			
Overvoltage protection	17.0 V	17.0 V	17.0 V	16.6V
Equalizling charging voltage	14.6 V	—	14.8 V	—
Battery type	Sealed	GEL	Flooded	LiFePO4-4S
Boost charging voltage	14.4 V	14.2 V	14.6 V	—
Floating charging voltage	13.8 V	13.8 V	13.8 V	—
Overcharge voltage	—	—	—	14.6V
Overcharge recovery	—	—	—	13.6V
Boost charging recovery voltage	13.2 V	13.2 V	13.2 V	—
Over-discharge recovery voltage	12.5 V	12.5 V	12.5 V	12V
Undervoltage	12.0 V	12.0 V	12.0 V	11.2V
Over-discharge voltage	11.0 V	11.0 V	11.0 V	10V
Temperature compensation	-4.0 mv/˚C/2V	-4.0 mv/˚C/2V	-4.0 mv/˚C/2V	—
Equalizing charging duration	1hour	—	1hour	—
Boost charging duration	4hours	4hours	4hours	—
Overload protection	1.25 times of rated current: 30 seconds; 1.5 times of rated current: 5 seconds			
Short circuit protection	Over three times of rated current			
Operating temperature	-35˚C to +65˚C			

Protection degree	IP67
Weight	300g
Dimensions	82x100x20(mm)

DISCLAIMER

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 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.

Customer Support

PLU: 690249 CODE: SL2420
Manufactured & packaged for SRGS PTY LTD
ABN 23 113 230 050
6 Coulthards Avenue
Strathpine QLD 4500, Australia
MADE IN CHINA

Documents / Resources

	XTM 690249 20A PWM Solar Controller [pdf] Instruction Manual 690249, 690249 20A PWM Solar Controller, 20A PWM Solar Controller, PWM Solar Controller, Solar Controller, Controller

References

- User Manual