



MPPT Solar Electric Vehicle Special Controller User Manual



Anhui JNGE Power Co., Ltd.

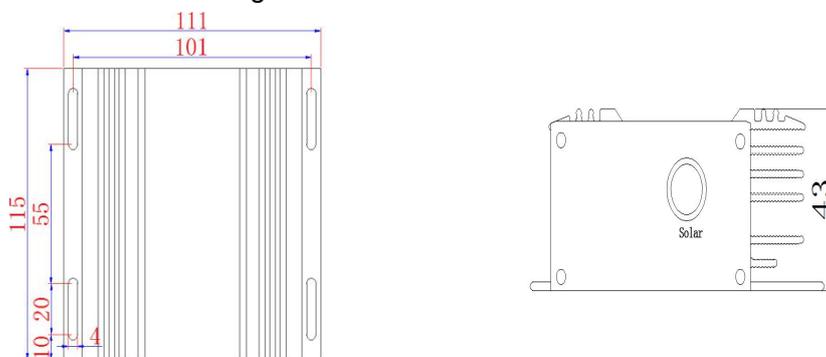
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I.main feature

1. High efficiency booster MPPT charging ways.
2. The system uses solar panel power supply, reduce the power consumption of the battery.
3. The LED status indicator, running status be clear at a glance.
4. The digital tube displays the charging current, battery voltage and photovoltaic panel input voltage in real time.
5. Complete over-charge, anti-recoil, anti-reverse, and short circuit protection.
6. One-click set battery voltage grade (48V, 60V, 72V three battery voltage grade easy one-click settings).
7. The charging constant voltage point can be set, compatible with common lead-acid batteries and lithium batteries on the market.
8. System operation design is simple, easy to use, safe and reliable.

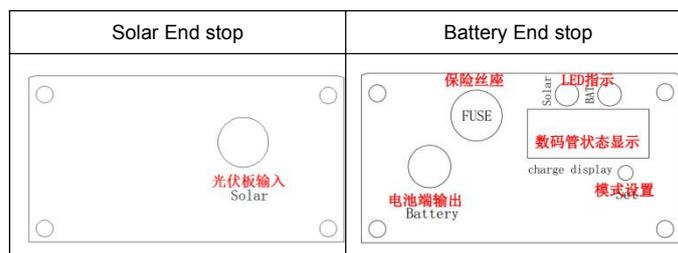
II. Installation and wiring

1、 Dimensional drawing:

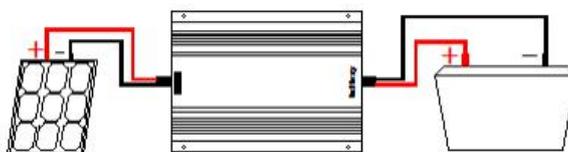


Dimensions : 115×111×43(mm) Installation size: (55~95) ×101(mm)
Install Aperture: 3.5(mm)

2、 Port description: solar and battery end baffle instruction:



- 3、 Connect the "+" polar line of the photovoltaic panel to the red line (or brown line) on the solar end of the controller (the silk screen is the photovoltaic panel end), please do not connect it in reverse. The cable on the solar (photovoltaic panel) end is $\phi 10\text{mm}$, battery The (battery) end cable is $\phi 8\text{mm}$.)
- 4、 Connect the "-" terminal of the photovoltaic panel to the black line (or blue line) on the solar end of the controller.
- 5、 Connect the (+) pole of the battery to the red wire (or brown wire) on the battery end of the controller.
- 6、 Connect the (-) pole of the battery to the black wire (or blue wire) on the battery end of the controller. After the wiring is normal, if there is sun, the controller will start to work.
- 7、 The wiring diagram is shown below:



Picture 1 Controller wiring diagram

III.Use advice

1. Please do not overload use the controller, 18V PV panels maximum power is 200W, if you have two pieces of 18V PV panels 's total power above 200W please in series use them;36V PV panels maximum power is 400W, if more than 2 pieces PV panels,please used them in parallel.(PV panels parameters: 18V PV panel's working voltage is 18 v, open circuit voltage is 22V, 36V PV panel's working voltage is 36V,open circuit voltage is 44V. please look at the PV panels on the back of the parameters then connection it.)
2. The controller will heat during operation, please installed in the ventilation and heat dissipation of the environment.
3. It is recommended to install an air switch on the battery and photovoltaic side when the system is connected, otherwise a fire will occur during the connection, which may damage the controller or other equipment.
4. The input and output of the system are isolated. Do not share the negative pole and never share the positive pole.
5. The battery cannot work or store under voltage, and it should be fully charged at least once a month, otherwise the battery will suffer permanent damage. Only when the energy entering the battery is more than the energy used by the load can the battery be fully charged. Users should keep this in mind when configuring the system.

IV.system operation and status indication

1. After the system is connected normally, if the photovoltaic panel voltage reaches the controller's starting voltage and starts to start, the LED will light up after the LED flashes 3 times and the controller will start.

2. After the system is started, the digital tube displays the battery voltage, the photovoltaic panel input voltage, and the charging current.

3. Status indication, as shown in the following table:

display content	state	statements
LED lights	Red	Solar panels to access
	Green	Battery charging
Digital tube first	b	Battery voltage
	c	Solar panels input voltage
	d	Charging current

4. parameter settings:

4. 1 Voltage level setting: After the PV is started, press and hold the "set" button for 5 seconds and release it to enter the battery voltage level setting interface, Press the "set" button to cycle through the "H48.F", "H60.F", and "H72.F" interfaces in sequence, corresponding to 48V, 60V, and 72V voltage levels, respectively. After setting the voltage level, release the button for 5 seconds to return to the main interface after setting the voltage level. The setting interface is as follows:



4. 2 Constant voltage point setting: After the PV is started, press and hold the "set" button for 10 seconds and then release it to enter the constant voltage value setting interface of the current voltage level. Each time you press the "set" button, the value increases by 0.1V, and it automatically enters the minimum value when it exceeds the maximum value. Set the over-voltage protection value. Release the button for 5 seconds to return to the main interface. The constant-voltage setting is completed. The default constant-voltage value setting interface for each voltage level is shown in the figure below.:

48V	60V	72V
F57.0	F72.0	F86.0

V.safety recommendations

1. The controller can be adaptive to the 12V and 24V PV panels, please do not use the open circuit voltage above 50V PV panels, otherwise there will be the risk of burning.
2. The controller inside not have the parts need to maintain and repair, and contains safe

- voltage higher than the human body, please don't take apart the controller.
3. Please do not use water or corrosive liquids into the controller, and they might damage the controller.
 4. Battery 48V, 60V or 72V, battery terminal voltage are both more than the human safety voltage,when you operation it, pay attention to use insulated tools, and maintain the necessary dry.
 5. The battery connect reverse or short circuit, the current is large, the controller will not damage, but the fuse will melt,accompanied by strong spark phenomenon at the same time,this time the impact on the battery and your equipment are high, please try to avoid the happening of this kind of situation.
 6. The battery may produce flammable gas, please stay away from sparks.

VI. Technical parameters

PV open circuit voltage	16V~50V		
MPPT Voltage range	16V~45V		
MPPT efficiency	≥99%		
Efficiency	≥95%		
No-load loss	< 5mA		
PV panel maximum input power	18V200W、36V400W		
Battery	48V or 60V or 72V (one-button setting)		
Overvoltage protection(Can be set by keys)	Voltage level	Settable range	Defaults
	48V	47V~67V	57V
	60V	62V~82V	72V
	72V	76V~96V	86V
Anti-reverse battery protection	Need to be replaced: F10AL250V, φ5 × 20 glass tube fuse		
Operating temperature	-25 ℃ to + 65 ℃;		
weight	0.5Kg		
size	115 × 111 × 43 (mm) (length × width × height)		

Warranty commitment: The company promises that the machine is free for one year and lifetime maintenance. Damage beyond the warranty period or damage caused by force majeure such as transportation, improper use, or man-made damage, or natural disasters are not covered by the warranty. If there are special instructions in the contract, the contract content shall prevail.