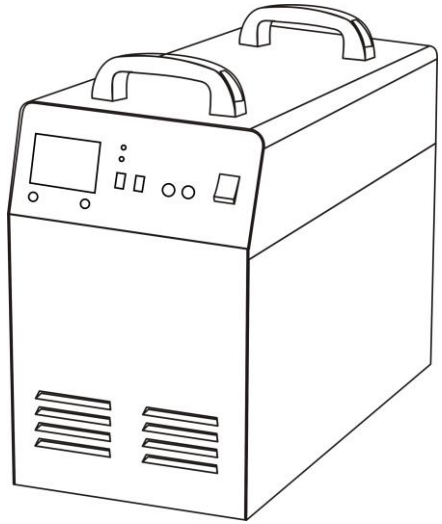
SNADI®

User Manual



Solar Inversion Power Supply System

440-802018-00-01

Error code and solution

Error code	Faulty	Solution
E01	Overcurrent of MOSFETS board	Kindly contact sales if still having this issue after restarting
E02	Output short circuit	Check whether it's overloaded seriously or shortcircuit inside applicances loaded
E03	Applicance Overloaded	Check whether it's overloaded, and remove some loads not important
E04	Inner Over-temperature	Check whether fan is working well or the air dust for cooling be blocked
E05	Overvoltage of battery	Check whether battery connection and configuration correct
E06	Battery's voltage is lower than shutdown voltage	Make sure battery be fully charged, or replace new battery
E07	Reverse connected cables between transformer with heatsink on power board	Fix the two cables after they are interchanged
E08	Start Protection when low output voltage	Kindly contact sales if still having this issue after restarting
E09	Reserved	----------
E10	Undervoltage of battery	Check the system voltage of inverter and use same data for the battery pack.

8、Technical specification sheet

Model:AL-		500W	1KW
Battery rated voltage（VDC）		12	
Inverter	Rated power（W）	500	1000
	Input voltage range（VAC）	73-138/145-275	
	Input frequency（Hz）	45-65	
	Output voltage（VAC）	110/120/220/230/240	
	Output frequency（Hz）	50/60	
	Output wave	Pure Sine Wave	
	Specification of built-in battery	1*100AH/12V	
Solar input	MPPT Voltage Range	18~100VDC	
	PV Power	420W	
	Rated charge current	30A(MAX)	
	MPPT efficiency	≥93%	
	Average charging voltage (lead acid battery)	14.2VDC	
	Floating charge voltage	13.7VDC	
DC output	Voltage for high voltage protection	16.0 VDC	
	High voltage recovery voltage	15.2 VDC	
	Low voltage recovery voltage	12.6 VDC	
	Low voltage protection voltage	11.0 VDC	
	5VDC USB output	2pcs/MAX 2A	
	12VDC output ports	2pcs/MAX 2A	
Heat dissipation/Cooling		Temperature control by intelligent exhaust fan	
Operating ambient temperature		-20 - +50℃	
Storage ambient temperature		-25 - +55℃	
Operating/Storage ambient		0-90% No condensation	
External size：W*D*H（mm）		423*260*453	
Package size：W*D*H（mm）		520*370*520	

Dear consumer

Thank you very much for choosing our products! Before using this product, please read this manual carefully, including installation, use and troubleshooting and important information and advice. Please properly keep this manual!

Contents

1、Product Features

● Excellent performance because of double CPU intelligent control technology;

● A wide range of applicable loads because of pure sine wave AC output

● The mains supply mode /battery mode can be set for flexible

● Convenient and practical 5VDC-USB output port and 12VDC output port;

● Digital LCD and LEDs for visualization of operation status of the equipment

●Overcharge protection and over discharge protection for a longer battery life;;

● Safe and reliable with intelligent exhaust fan control

●Overall automatic protection and alarms including AC output overload protection . short circuit protection . etc .

2、Installation and Storage instructions

（1） Unpacking inspection

1. Open the package, check whether the product accessories is complete, including: a host controller, a user manual

2. Check whether the device is damaged in transit, if you find damaged, please do not start machine and inform your shipper and dealer.

（2）Installation and Storage matters need attention

1. Install equipment should be operated by a professional personal, or performed by the local distributor.

2. During transportation, it need taking appropriate protective measures. When the equipment is moved to high temperature environment from low temperature environment may appear water, in order to ensure safety so it must be completely dry before use.

3. Do not expose the device to damp, flammable and explosive, dust mass and harsh environments; Do not cover and blocking the air vents, so that having good heat dissipation;

4. Battery switch on backboard should be under off state when the machine is not be used for a long time.

7、Simple fault judgment and processing

Warning: Internal of the machine has high pressure!Don't open it own, and try to do the repair or maintenance, so as not to risk electric shock!

Fault	**possible reasons**	**solution**
When the machine have enough light point-blank photovoltaic modules, "Solar" indicator light is not lit	Photovoltaic component array cable open circuit	Please check on whether both ends of the pv array wiring is correct, the contact is reliable or not.
“DC output” indicator light flash, DC no output	DC loads overload or short circuit	Check loads and connection and restart equipment
The mains supply from time to time	Input fuse damaged	Change the same fuse
Machine load time reduced	Not enough for battery charging	Make sure battery full of charge normally
The machine can’t be started	Machine overload	Removal of critical load
	Battery burn-in, and can’t be charged full	Please connect with CSR so that getting battery changing module
	The mains input line or the battery cables poor contact	Check and connect again
Starting up alarm	Battery power is not enough	Make sure battery full of power normally
	Overload	Removal of critical load
Buzzer is 2 seconds but stop 1 second	Internal over temperature alarm	Check whether the fan and cooling hole is blocked
Fan working sometimes quickly, sometimes slow	Internal temperature is higher than 45 degrees turn fast, slow turning less than 42 degrees	Normal

When you contact with maintenance personal, please provide the following information: machine model/problem happening date/complete instructions (including relative indicator light display status, equipped battery power, photovoltaic modules power, connection and other information).

6、Operating instruction

Open/Run

（1）Check the solar components which has accessed to the equipment terminal voltage and polarity are correct; Such as external expansion of the battery, battery also needs to check its terminal battery end polarity is correct

（2）Close the built-in battery on backboard breaker“⑦--Battery Switch”，if connect external expansion battery, will also make the circuit breaker connecting in series be closed stat

（3）Make breaker on solar array connecting in series be closed state, where there is sunshine on solar energy components, the "⑨-- Charge" on the front panel light is lit, the photovoltaic components with built-in controller charge for battery power;

（4）Long press the "on/off button on the panel for 2 seconds, loosen after buzzering , open communication equipment output, long press" on/off button for 2 seconds, loosen after buzzering, shut down the ac output.

Operational considerations:

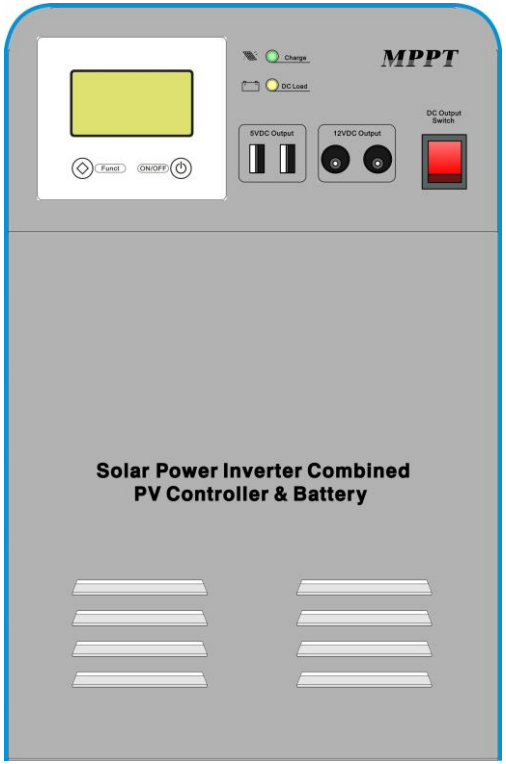
When start the equipment, please operate breaker as following sequence, first close the battery circuit breaker, and then close solar module input circuit breaker; Closing device, first disconnect the solar component input circuit breaker, and then disconnect the battery circuit breaker;

Using considerations:

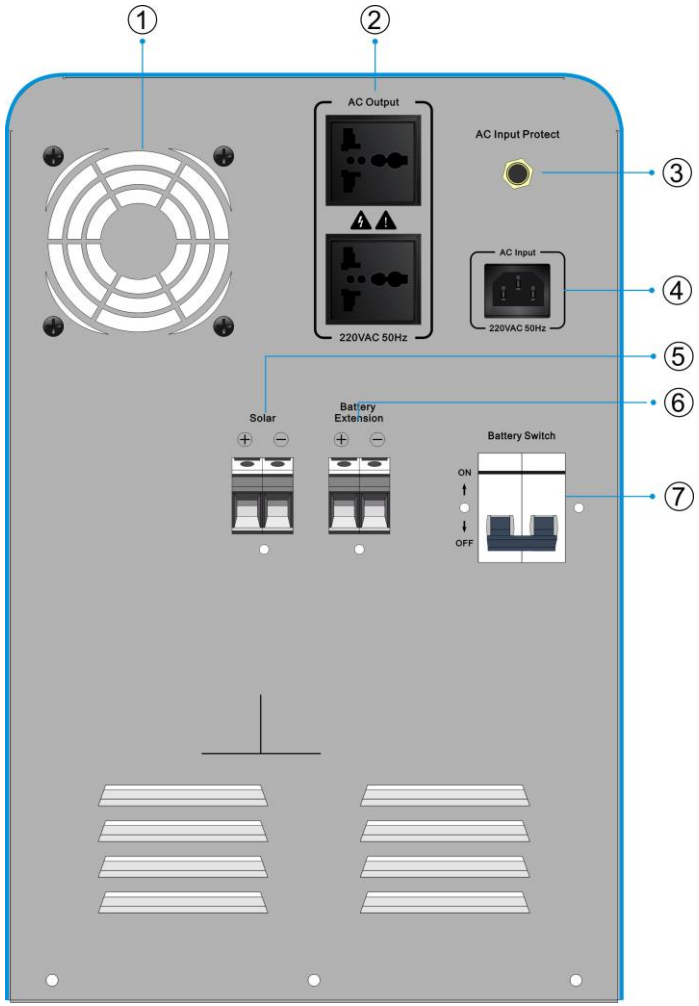
When solar module is under disconnection and not be used for long time, it should be under close state for built-in battery circuit breaker on Side panel : “⑦-Battery Switch” , it also should be disconnect its anode connection wiring circuit breaker if it have external battery pack, in order to avoid batter deep discharge loss(built-in controller has power loss when standby);

3、 Product appearance diagram and introduction

（1）Front panel diagram



（2）Backboard diagram introduction



Introduction：

①--Fan

②--AC Output (Max. 10A)

③--AC Input holder:

④--AC Input

5、Wiring steps introduction

Note: make sure the breaker on backboards is in off position, then operate the following processes;

(1)Solar module access introduction:

1.1 Connect the solar component within the rated power with right diameter wire, when sunlight hits the solar module components, with voltmeter testing, on both ends of the open circuit voltage is about 1.5 to 1.7 times of equipment rated voltage;

1.2 On the positive cable of Solar module connect a suitable breaker in series, then connect to the "⑤-- Solar" Solar module input terminal, pay attention to the process of Solar access its polarity cannot be mistake, so as not to damage the equipment. Check" system connection diagram";

(2) “⑬--12VDC Output”、“⑪--5VDC Output”Connection introduction

2.1 Confirm DC load working current can’t exceed the equipment rated current, the two “⑬--12VDC Output” DC terminal port on the front panel foreign respectively with 12 VDC, 1 amp current, two "⑪--5 VDC Output" dc port foreign respectively provide 5 VDC, 1 amp of current;

2.2 When access dc load, note its polarity can’t be wrong, it is strictly prohibited the dc port output wiring short circuit, so as not to damage the equipment;

(3)Then mains supply input connection introduction

3.1Input AC current to backboard “④--AC Input”input sockets

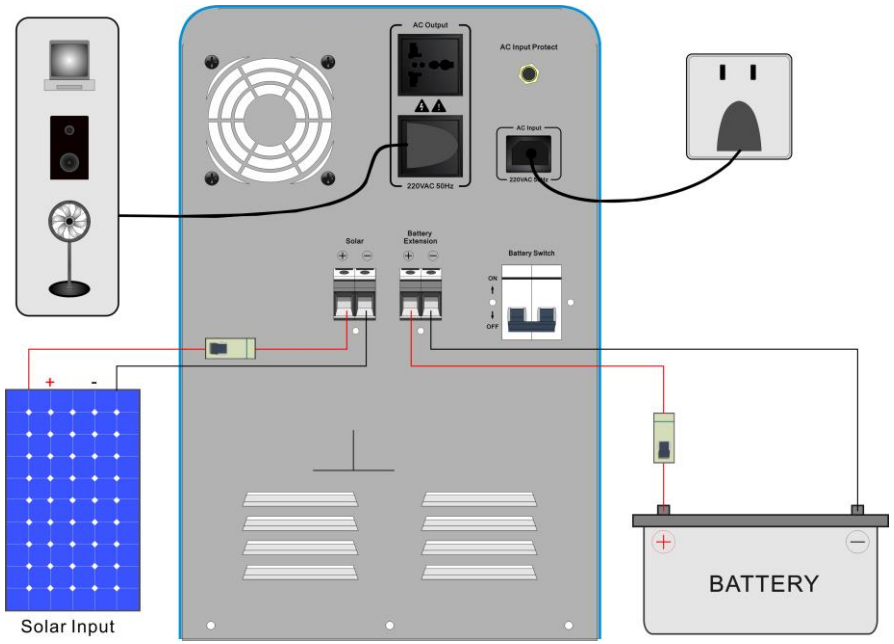
(4)External battery access instructions note

Note: the machine is with built-in battery, if it needs external battery , please operate as following steps:

4.1 Use external battery with suitable diameter wire connection, then test with voltmeter the ends of the battery voltage is about rated voltage of equipment;

4.2 put out Battery anode connections on a proper circuit breaker series, Connect in series a suitable breaker to external battery pack anode, then access to equipment “⑥—Battery” termianl pay attention to in the process of the Battery access its polarity cannot be mistake, so as not to damage to the equipment, see" system connection diagram"

4、System connection diagram



Instructions:

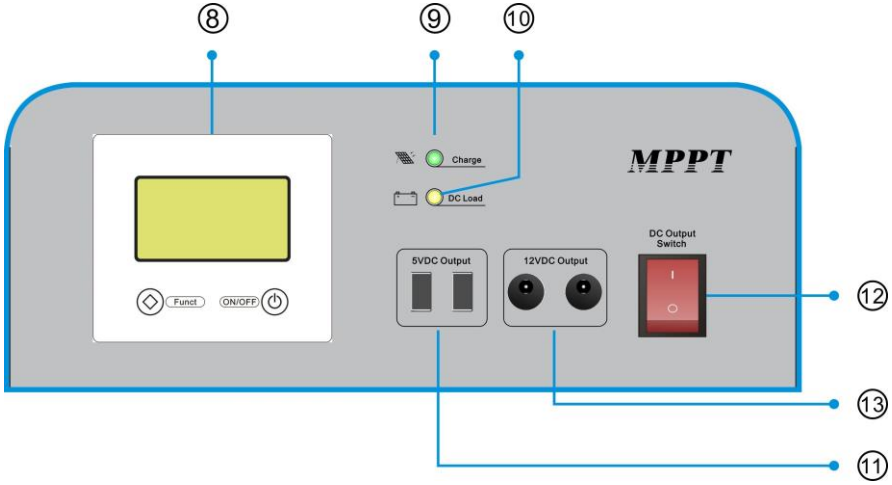
For external battery pack input switch, please select current of 2P breaker is or above 60A; For solar module input switch, please select current of breaker is or above 30A

⑤--Solar: Solar module input terminals

⑥--Battery: External battery input terminals(selectable)

⑦--Battery Switch: built - in battery switch

（3）Front panel introduction



Instructions:

⑧-- Inverter LCD display / operation interface

⑨--Charge: Solar input state indicator

⑩--DC Load: DC output indicator

⑪--5VDC Output：5VDC-USB output terminal

⑫--5VDC-USB、12VDCoutput ON/OFF switch

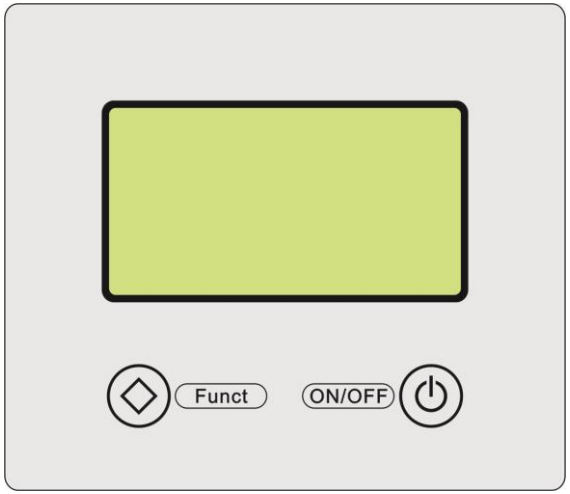
⑬--12VDC Output：12VDCoutput terminal

（4）Solar energy charge/discharge LED indicator state introduction

LED display			Introduction
Charge	Green	Light	Charge controller is in average charging
		Fast Twinkle (twice/s)	Charge controller is in charging
		Slow Twinkle (once/2s)	Charge controller is in floating charging
		Extinguish	Charge controller is in standby
Load	Yellow	Quick flashing	DC load current overload or short circuit
		Light	DC output voltage normal
		Slow Twinkle (once/2s)	DC output low voltage
		Extinguish	Power off DC output

（5）Inverter LCD display/ operation introduction

LCD display and function key operation interface can display the equipment working state, such as: input/output voltage, frequency, the mains supply mode, inversion mode, battery capacity, loads capacity, alarming reminder etc.



（9）Alarm warning instruction

Equipment normal operation	Buzzing forbid	Default state, no buzzing
	Buzzing open	Buzzer alarm 4 time per 15 seconds indicate the equipment under battery pack inverter mode.
Battery pack high voltage alarm	Buzzer alarm 4 times per second, indicate high voltage	
Battery pack low voltage alarm	Buzzer alarm 2 times per second, indicate low voltage	
Over temperature alarm	Buzzer alarm 2 seconds pause 1 second	

（10）Electric generator connection announcements

If connect electric generator, it needs operate as below:

1, Start up electric generator and after it running stable, make electric generator output power connect into the equipment input terminal, then make sure the equipment output is no-load, then start up the equipment.

2,After the equipment starting, then connect load one by one

3,We suggest electric generator capacity should be 2~3 times of this equipment

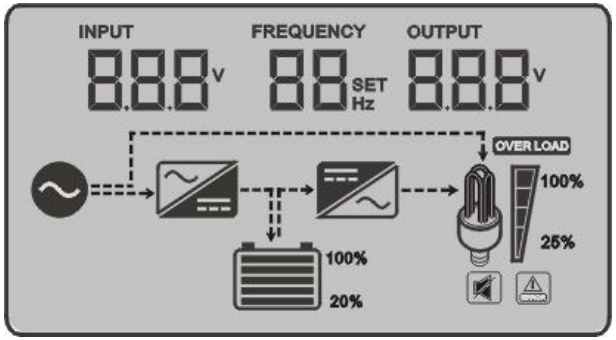
（8）Working mode introduction

Icon	Working mode	Running state
01 SET	The mains supply priority mode	After starting the inverter and the electricity input working well, inverter supply power to loads via the grid bypass regulated, and charge battery; When the grid happened abnormal such as over voltage, low-voltage, massive distortion etc, inverter can supply high quality power via inner modules to loads
03 SET	Battery priority mode	With the grid working well and battery be charged fully, the grid works standby, inverter supply power from battery to loads. When battery power drops too low to supply power, inverter supply power to loads via the grid bypass regulated but not charge battery. This mode is designed for new energy power system such as wind or solar power system.

（6）Panel key function/LCD setup introduction

<table>
<tr><td colspan="2">Function key</td><td colspan="3">Operation introduction</td></tr>
<tr><td rowspan="4">  </td><td>Mute key</td><td colspan="3">Long press for 1 second, buzzer once, stars mute state；
Long press 1 second, buzzer twice, close mute state</td></tr>
<tr><td rowspan="3">Function key</td><td colspan="3">； Long press 5 seconds, can choose 01, 03 mode cycle, after the selected mode, the machine will restart to take effect;</td></tr>
<tr><td colspan="2">The mains supply priority mode</td><td>Battery priority mode</td></tr>
<tr><td colspan="2">01 SET</td><td>03 SET</td></tr>
<tr><td rowspan="2">  </td><td rowspan="2">ON/OFF</td><td>Starting up</td><td colspan="2">Long press for 2 seconds, release after buzzer once, equipment starts output</td></tr>
<tr><td>Power off</td><td colspan="2">Long press for 2 seconds, release after internal actuationg of relay, equipment close output</td></tr>
</table>

（7） LCD display introduction



Equipment parameter introduction		
LCD display	**Function introduction**	
INPUT 888 V	AC input voltage parameter	
FREQUENCY 88 Hz	AC Output frequency parameter	
OUTPUT 888 V	AC output voltage parameter	
88 SET	Working mode selection	
	The mains supply prefered mode	Battery prefered mode
	01 SET	03 SET

Battery icon introduction		
LCD icon	State	Battery voltage/12V；*A（pcs）
	Twinkle	＜10.5V；*A
	Light	10.5～11.2V；*A
	Light	11.2～11.6V；*A
	Light	11.6～12.1V；*A
	Light	12.1～12.5V；*A
	Light	＞12.5V；*A

Load icon introduction				
LCD display	Function introduction			
OVER LOAD	Output loads overload reminder			
	0%～25%	25%～50%	50%～75%	75%～100%
				

Working mode icon introduction		
LCD display	Function introduction	
	The mains supply icon	
	AC-DC icon	
	DC-AC icon	
Buzzing icon introduction		
	Lighten	Prohibit the breezer
	Out	Open the breezer
Fault/abnormal icon reminder		
	Fault/abnormal reminder	