All in One Series

HYBRID OFF-GRID SOLAR GENERATOR

User Manual

Content

Warning

This is A class inverter. It might cause slightly radio interference in daily life. And practical measure is required to take under this condition.

Preface

Thank you for the purchase of hybrid off-grid solar generator (Hereinafter referred to as inverter). Please read this manual carefully before installing and using the inverter!

Copyright

1.Installation Instructions

1-1: Open-package inspection

1. After opening the package, please check random accessories, including user manual (contains conformity certificate and warranty card) and accessories for optional functions. And check whether the inverter is still kept well after transportation, if find any broken or component missing, do not turn on the machine, feedback to the carrier and distributor.

Note:

- Please keep the packing box and packing material, can be used for next delivery if needed.
- This series of product is very heavy (check appendix as reference), please handle with care when carrying.

1-2: Installation notice

1) Install in an area of well ventilated, free of water, burning gas and corrodent.

2) Not good to put on the side, better keep good air ventilation from front panel's bottom air intake, or air outlet from back panel's fan, and side face of machine.

3) Around environment temperature should remain 0 to 40 centigrade.

4) If disassembling and operate under low temperature environment, may happen water condense, only can work till thorough dry of machine inside and outside, otherwise will be shock risk.

5) If the machine is placed for a long time, it should be confirmed that the machine is completely dry and no corrosion can be installed and used.

1-3:Installation steps

1) Environmental requirements

Open the package and place the inverter in a reasonable working environment. Refer to the “Installation Precautions” for specific requirements.

2) Wire diameter selection

Use a cable with a suitable wire diameter, which can not be lower than the national safety standard. The general wire diameter is selected according to the current density of not more than 5A/mm², and the length of the connecting wire is minimized to reduce the loss.

3) Connecting the load

Turn o ffall loads firstly, then connect the DC load to the DC output of the inverter (DC OUTPUT/USB), and connect the AC load to the AC output of the inverter (AC OUTPUT), confirming that the load polarity is not reversed, and ensure the load is lower than the standard power of the inverter.

4) Connecting PV

Connecting the PV, the PV array voltage and current should be lower than the maximum PV input voltage and current of the rated charge controller. Connect the PV cable to the circuit breaker that meets the breaking capacity, and then connect it to the PV input terminal of the inverter. Note:Be careful not to reverse the polarity.

5) Connecting to the mains

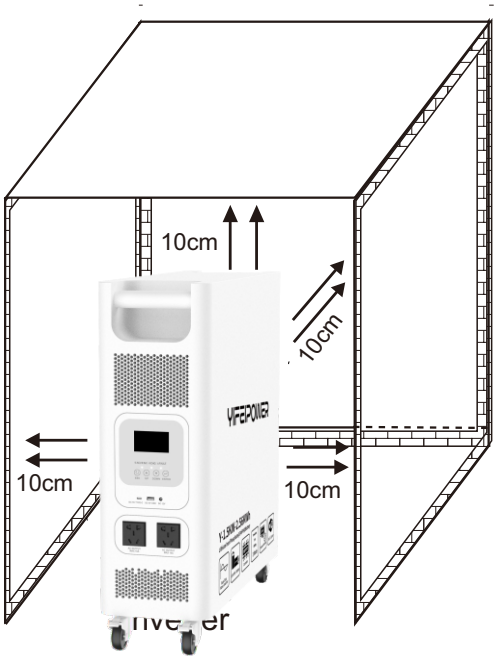
Disconnecting the grid switch firstly, connect the mains input cable to the devices which has over current protection, and then connect it to the AC input of the inverter. Be careful not to reverse the polarity.

Note:

- Before connecting the load to the machine, please turn o ffthe loads firstly.
- his product can only protect high-voltage surges with low energy. In areas with high lightning output, it is recommended to install lightning protection devices outside the PV input terminals.
- To ensure the personal safety of the user and ensure the correct use of the product, please confirm that it is properly grounded before starting the machine.
- If user want to load an inductive load such as a motor or a laser printer which operating power is too large, the inverter rated capacity should be selected according to its peak power .The load starting power is generally 2 to 3 times of its rated power.

1-4: Placement

Please leave 10cm of space for each side of inverter to keep good air circulation.



★ Avoid direct sunlight

★ Avoid dust

★ Avoid moisture and liquids

★ Avoid over heating

2. Outlook of Inverter

2-1. Y-1.5KW-2.56KWh

2-2. Y-4KW-5.12KWh

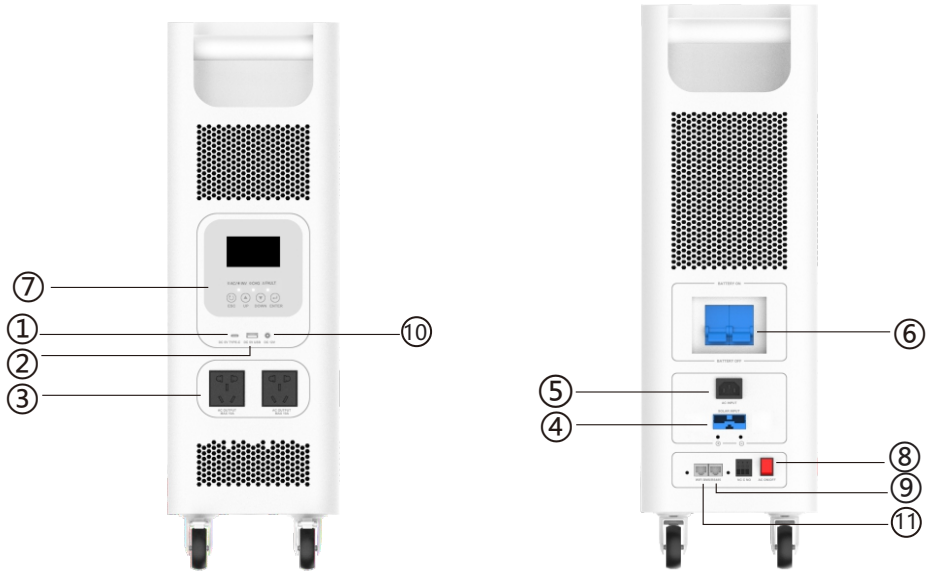
2-3. Y-6KW-10.24KWh

2-4. Y-11KW-15KWh

Note: Images may be slightly different from actual product. Please in kind prevail!

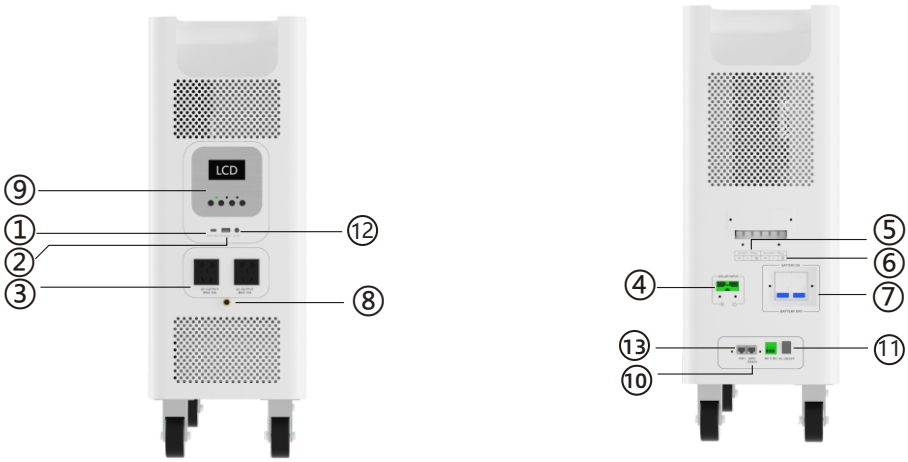
3. Front/Back Panel &LCD Screen description

3-1. Y-1.5KW-2.56KWh



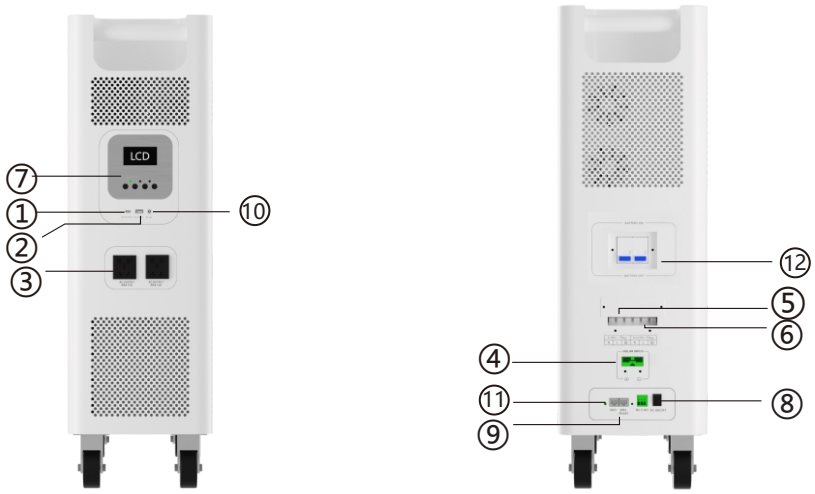
1.TYPE-C	2.USB	3.AC output socket
4.Solar input socket	5.AC input socket	6.Battery circuit breaker
7. LCD screen	8. ON/OFF	9. Communication Port
10. DC 12V	11. WIFI	

3-2. Y-4KW-5.12KWh



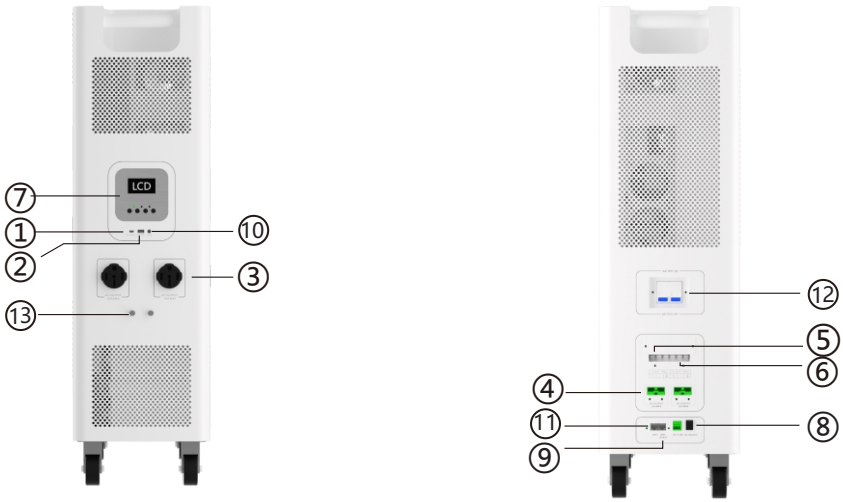
1.TYPE-C	2.USB		3.AC output socket
4.Solar input socket	5.AC input terminal block		6.AC output terminal block
7.Battery circuit breaker	8.AC input fuse		9. LCD screen
10. Communication Port	11. ON/OFF	12. DC 12V	13. WIFI

3-3. Y-6KW-10.24KWh



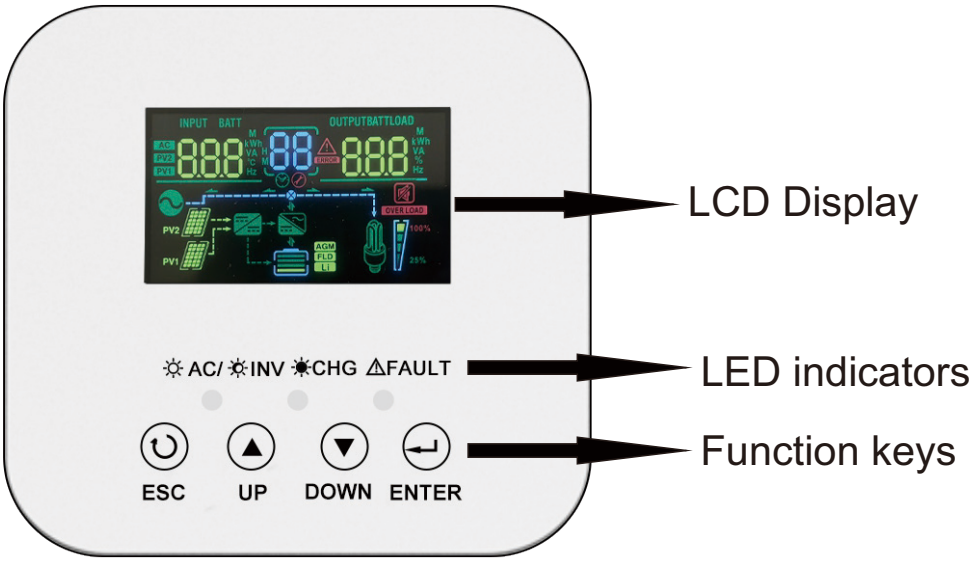
1.TYPE-C	2.USB	3.AC output socket
4.Solar input socket	5.AC input terminal block	6.AC output terminal block
7. LCD screen	8. ON/OFF	9. Communication Port
10. DC 12V	11· WIFI	12.Battery circuit breaker

3-4. Y-11KW-15KWh



1.TYPE-C		2.USB	3.AC output socket
4.Solar input socket		5.AC input terminal block	6.AC output terminal block
7. LCD screen		8. ON/OFF	9. BMS (Manufacturer's backup reserved interface)
10. DC 12V	11˙ WIFI	12.Battery circuit breaker	13.AC input Overload Protector

3-4.LCD screen description



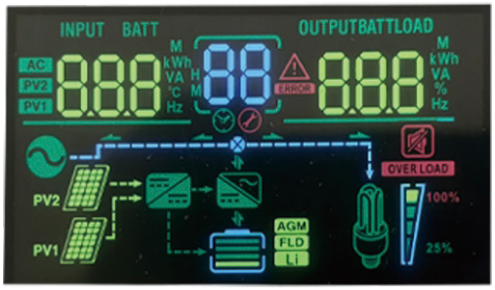
LED Indicator

LED Indicator			Messages
AC / INV	Green	Solid On	Output is powered by utility in Line mode
		Flashing	Output is powered by battery or PV in battery mode.
CHG	Green	Solid On	Battery is fully charged.
		Flashing	Battery is charging.
⚠ FAULT	Red	Solid On	Fault occurs in the inverter
		Flashing	Warning condition occurs in the inverter.

Function Keys

Function Key	Description
ESC	To exit setting mode
UP	To go to previous selection
DOWN	To go to next selection
ENTER	To confirm the selection in setting mode or enter setting mode

3-5.LCD Display Icons

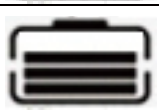


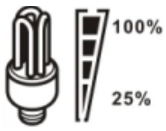
Icon	Function description
Input Source Information	
AC	Indicates the AC input.
PV	Indicates the PV input
INPUTBATT kW VA % C Hz	Indicate input voltage, input frequency, PV voltage, battery voltage and charger current,chargerpower.
Configuration Program and Fault Information	
	Indicates the setting programs.
ERROR	Indicates the warning and fault codes. Warning: flashing with warning code. Fault: ERROR lighting with fault code
Output Information	
OUTPUTBATTLOAD kW VA % C Hz	Indicate output voltage, output frequency, load percent, load in VA, load in Watt and discharging current.
Battery Information	
CHARGING	Indicates battery level by 0-24%, 25-49%, 50-74% and 75-100% in battery mode and charging status in line mode.

In AC mode, it will present battery charging status.

Status	Battery voltage	LCD Display
Constant Current mode / Constant Voltage mode	<2V/cell	4 bars will flash in turns.
	2 ~ 2.083V/cell	Bottom bar will be on and the other three bars will flash in turns.
	2.083 ~ 2.167V/cell	Bottom two bars will be on and the other two bars will flash in turns.
	> 2.167 V/cell	Bottom three bars will be on and the top bar will flash.
Floating mode. Batteries are fully charged.		4 bars will be on.

In battery mode, it will present battery capacity.

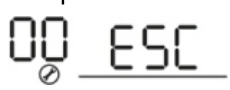
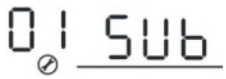
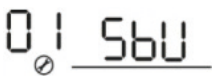
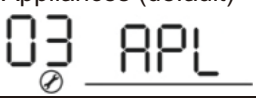
Load Percentage	Battery Voltage	LCD Display
Load >50%	< 1.85V/cell	
	1.85V/cell ~ 1.933V/cel	
	1.933V/cell ~ 2.017V/cel	
	> 2.017V/cel	
Load < 50%	< 1.892V/cell	
	1.892V/cell ~ 1.975V/cel	
	1.975V/cell ~ 2.058V/cel	
	> 2.058V/cel	

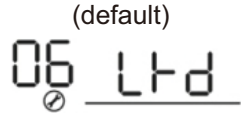
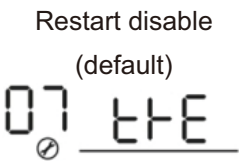
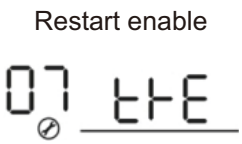
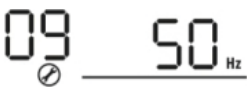
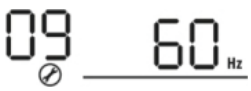
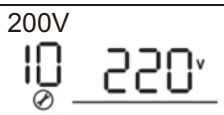
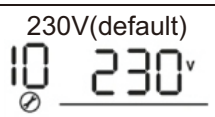
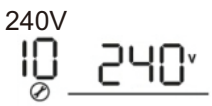
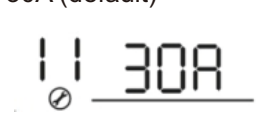
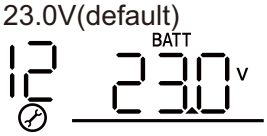
Load Information				
OVER LOAD	Indicates overload.			
	Indicates the load level by 0-24%,25-50%,50-74% and 75-100%.			
	0%~25%	25%~50%	50%~75%	75%~100%
				
Mode Operation Information				
	Indicates unit connects to the mains.			
	Indicates unit connects to the py panel.			
BYPASS	Indicates load is supplied by utility power.			
	Indicates the utility charger circuit is working			
	Indicates the DC/AC inverter circuit is working			
Mute Operation				
	Indicates unit alarm is disabled.			

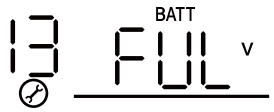
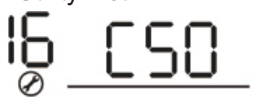
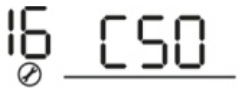
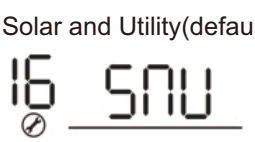
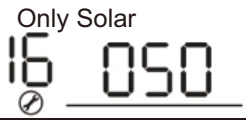
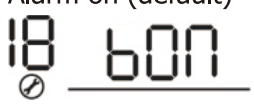
4.LCD Setting

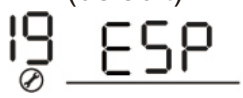
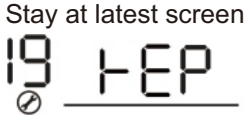
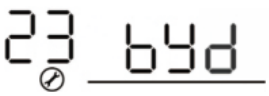
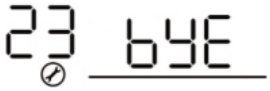
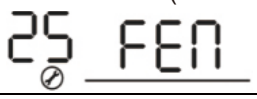
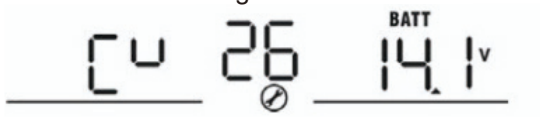
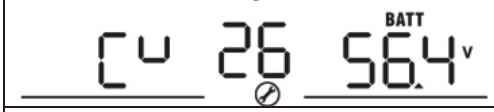
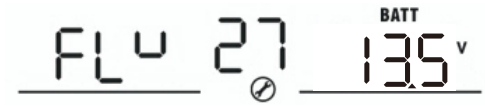
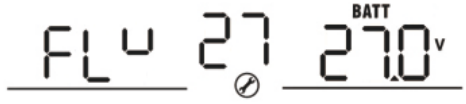
After pressing and holding ENTER button for 3 seconds, the unit will enter setting mode. Press "UP" or "DOWN' button to select setting programs. And then, press "ENTER" button to confirm the selection or ESc button to exit.

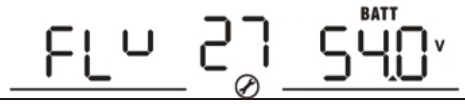
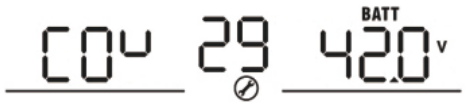
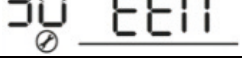
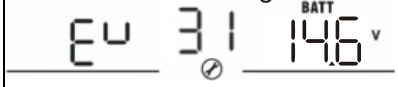
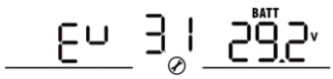
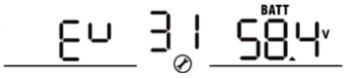
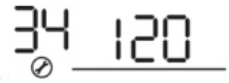
Setting Programs:

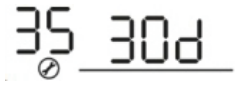
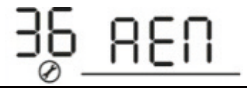
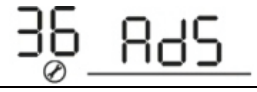
Program	Description	Selectable option	
00	Exit setting mode	Escape 	
01	Output source priority: To configure load power source priority	Solarfirst (default) 	Solarenergyprovides power to the loads as first priority. If solar energy is not sufficient to power all connected loads,Utility energy will supply power to the loads at the same time.
		SBU first 	Solarenergyprovides power to the loads as first priority. If solar energy is not sufficient to power all connected loads,battery energy will supply power to the loads at the same time. Utility provides power to the loads only when battery voltage drops to either low-level warning voltage or the setting point in program 12 or solar and battery is not sufficient.
02	Maximum charging current To configure total charging current for solar and utility chargers. (Max. charging current = utility charging current + solar charging current)	60A (default) 	Setting rangeis from 10A to 100 A Incrementofeach clickis 10A.
03	AC input voltage range	Appliances (default) 	If selected, acceptable AC input voltage range will be within 90-280VAC.
		UPS 	If selected, acceptable AC input voltage range will be within 170-280VAC
05	Battery type	AGM (default) 	Flooded 
		User-Defined 	If "User-Defined" is selected, battery charge voltage and low DC cut-off voltage can be set up in program 26, 27 and 29

06	Auto restart when overload Occurs	Restart disable (default) 	Restart enable 
07	Auto restart when over temperature occurs	Restart disable (default) 	Restart enable 
08	ECO function: System wil temporarily stop when the load is low in battery mode.	disable (default) 	
		enable 	
09	Output frequency	50Hz (default) 	60Hz 
10	Output voltage	200V 	230V(default) 
		240V 	
11	Maximum utility charging Current Note: If setting value in program 02 is smaller than that in program in 11, the inverter will apply charging current from program 02 for utility charger.	30A (default) 	Setting range is 2A,then from 10A to 60A.Increment of each click is 10A.
12	Setting voltage point back to utility source when selecting"SBU priority"in program 01.	Available optionsin1.5kwmodel:	
		11.5V(default) 	Settingrangeis from 11Vto 12.5V Incrementofeach click is 0.5V.
		Available options in 3KW model:	
		23.0V(default) 	Setting range is from 22Vto 25.5V. Increment of each click is 0.5V.
		Available options in 6.2KW model:	
		46.0V(default) 	Setting range is from 44Vto 51V. Increment of each click is 1V.

<table>
<tr><td rowspan="8">13</td><td rowspan="8">Setting voltage point backto battery mode when selecting"SBU priority"in program 01</td><td colspan="2">Available options in 1.5KW model:</td></tr>
<tr><td>Battery fully charged
  </td><td>13.5V(default)
  </td></tr>
<tr><td colspan="2">Setting range is from 12Vto 14.5V. Increment of each click is 0.5V.</td></tr>
<tr><td colspan="2">Available options in 3KW model:</td></tr>
<tr><td>Battery fully charged
  </td><td>27V(default)
  </td></tr>
<tr><td colspan="2">Setting range is from 24Vto 29V. Increment of each click is 0.5V.</td></tr>
<tr><td colspan="2">Available options in 6.2KW model:</td></tr>
<tr><td>Battery fully charged
  </td><td>54V (default)
  </td></tr>
<tr><td colspan="2">Setting range is from 48Vto 58V. Increment of each click is 1V.</td></tr>
<tr><td rowspan="6">16</td><td rowspan="6">Charger source priority:
To configure charger source priority</td><td colspan="2">If this inverter/charger is working in Line, Standby or Fault mode, charger source can be programmed as below:</td></tr>
<tr><td>Available options in 1.5KW/12v model:)
Utility first
  </td><td>Utility will charge battery as first priority.
Solar energy will charge battery only when utility power is not available.</td></tr>
<tr><td>Solar first
  </td><td>Solar energy will charge battery as first priority.
Utility will charge battery only when solar energy is not available.</td></tr>
<tr><td>Solar and Utility(default)
  </td><td>Solar energy and utility will charge battery at the same time.</td></tr>
<tr><td>Only Solar
  </td><td>Solar energy will be the only charger source no matter utility is available or not.</td></tr>
<tr><td colspan="2">If this inverter/charger is working in Battery mode only solar energy can charge battery. Solar energy will charge battery if it's available and sufficient</td></tr>
<tr><td>18</td><td>Alarm control</td><td>Alarm on (default)
  </td><td>Alarm off
  </td></tr>
</table>

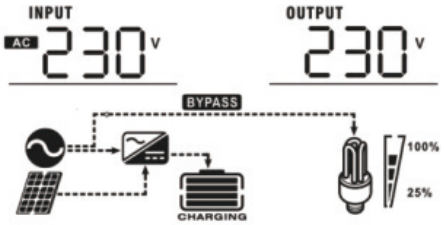
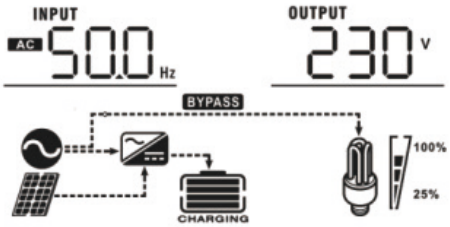
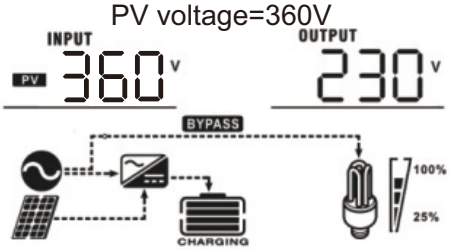
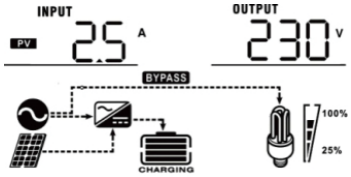
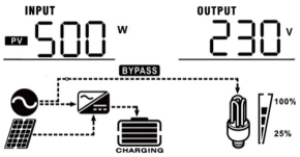
19	Auto return to default display screen	Return to default display screen (default) 	If selected, no matter how users switch display screen, it willautomatically return to default display screen (Input voltage /output voltage) after no button is pressed for 1 minute.
		Stay at latest screen 	If selected, the display screen will stay at latest screen user finally switches.
20	Backlight control	Backlight on (default) 	Backlight off 
22	Beeps while primary source is interrupted	Alarm on (default) 	Alarm off 
23	Overload bypass: When enabled, the unit will transfer to line mode if overload occurs in battery mode.	Bypass disable (default) 	Bypass enable 
25	Record Fault code	Record enable(default) 	Record disable 
26	Bulk charging voltage (C.V voltage)	1.5KW default setting:14.1V. 	
		3KW default setting:28.2V. 	
		6.2KW default setting:56.4V. 	
		If self-defined is selected in program 5,this program can be set up.Setting range is from 12.5V to 15.5V for 1.5KW model and 25V to 31.5V for 3KW model and 48V to 61V for 6.2KW model.Increment of each dick is 0.1V.	
27	Floating charging voltage	1.5KW default setting:13.5V 	
		3KW default setting:27V 	

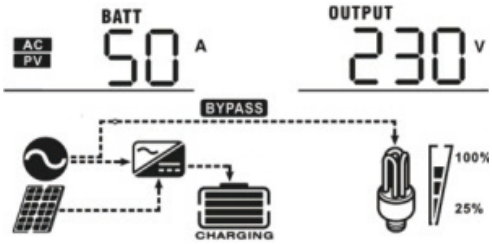
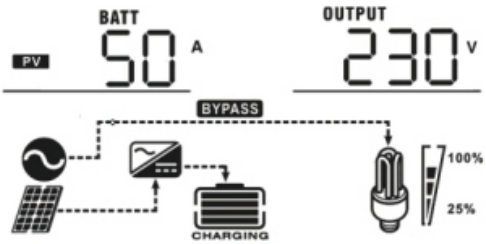
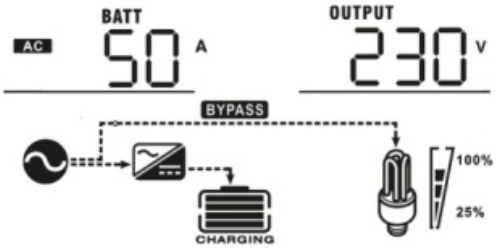
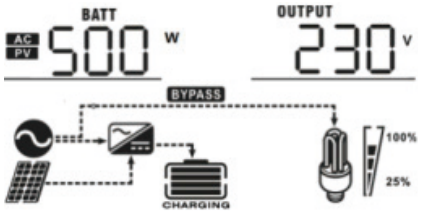
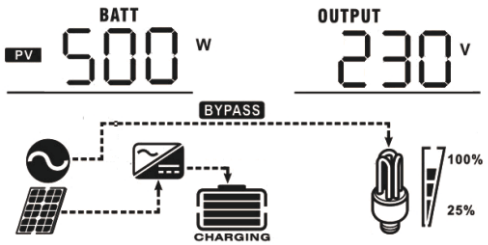
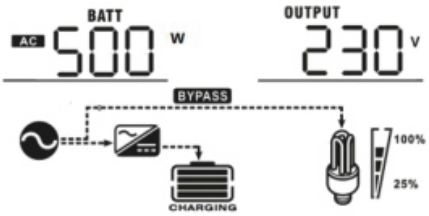
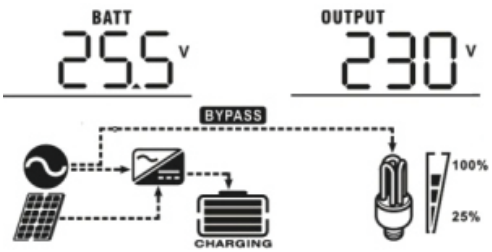
		6.2KW default setting:54V 	
28	Reset factory setting	default: 	
			
29	Low DC cut-o ffvoltage: ● If battery power is only power source availableinverter will shut down. ●If PVenergy and battery power are available,inverter will charge battery without AC output.	1.5KW default setting:10.5V 	
		3KW default setting:21V 	
		6.2KW default setting:42V. 	
		If self-defined is selected in program 5,this program can be set up.Setting range is from 10.5V to 12V for 1.5KW model and 21V to 24V for 3KW model and 42V to 48V for 6.2KW model.Increment of each dick is 0.1V.Low DC cut-o ffvoltage will be fixed to setting value no matter what percentage of load isconnected.	
30	Battery equalization	Battery equalization 	Battery equalization disable (default) 
		If“Flooded" or “User-Defined" is selected in program 05, this program can be set up.	
31	Battery equalization voltage	1.5KW default setting:14.6V. 	
		3KW default setting:29.2V. 	
		6.2KW default setting:58.4V. 	
		Setting range is from 12.5V to 15.5V for 1.5KW mode and 25V to 31.5V for 3KW mode and 48V to 61V for 6.2KW model.Increment of each click is 0.1V.	
33	Battery equalized time	60min (default) 	Setting range is from 5min to 900min. Increment of each click is 5min.
34	Battery equalized timeout	120min (default) 	Setting range is from 5min to 900 min. Increment of each click is 5 min.

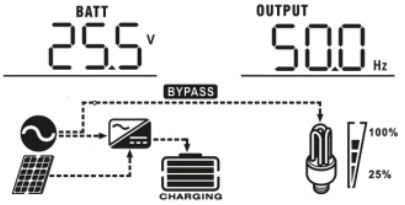
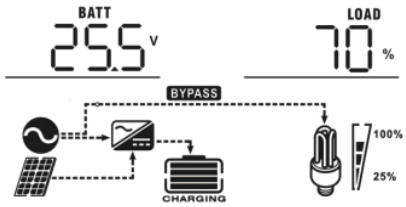
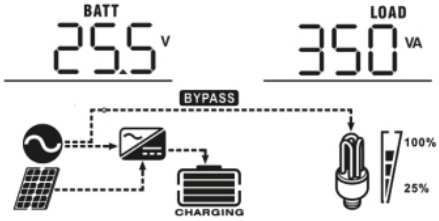
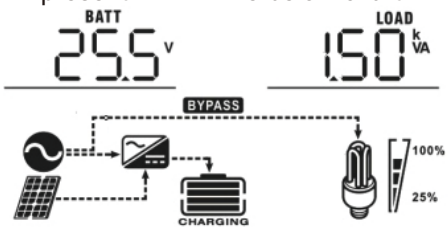
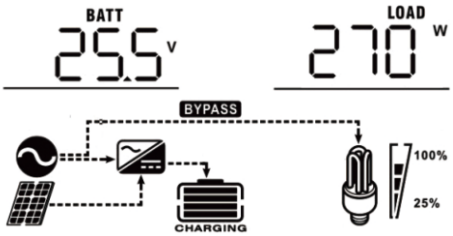
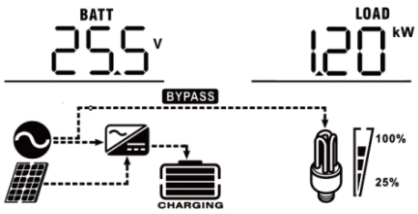
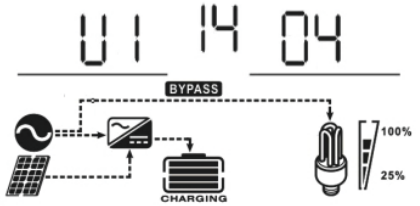
35	Equalization interval	30days (default) 	Setting range is from 0 to 90 days. Increment of each click is 1 day
36	Equalization activated immediately	Enable 	Disable (default) 
		If equalization function is enabled in program 30, this program can be set up. If “Enable" is selected in this program, it's to activate battery equalization immediately and LCD main page will shows “E9”. If "Disable" is selected, it will cancel equalization function until next activated equalization time arrives based on program 35 setting. At this time,“E9” will not be shown in LCD main page.	

5.Display Setting

The LCD display information will be switched in turns by pressing "Up" or "DOWN" key. The selectable information is switched as below order: input voltage, input frequency, PV voltage.charging current charging power, battery voltage, output voltage, output frequency, load percentage, load in VA, load in Watt, DC discharging current, main CPu Version.

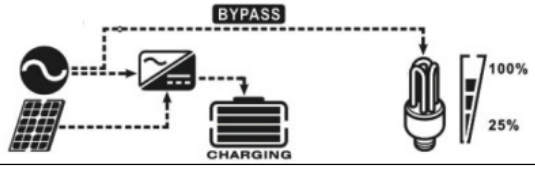
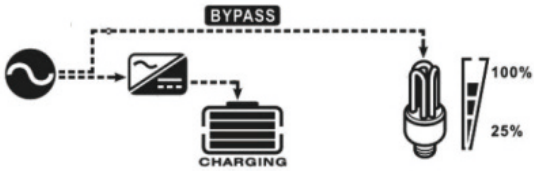
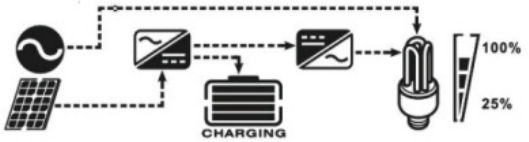
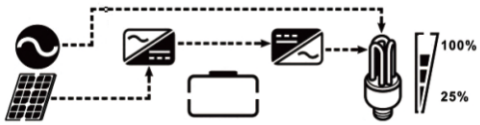
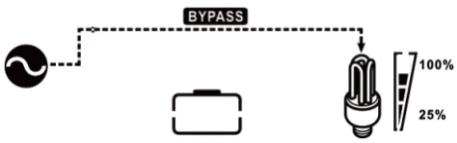
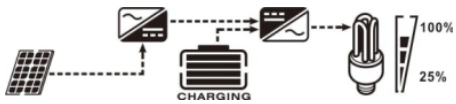
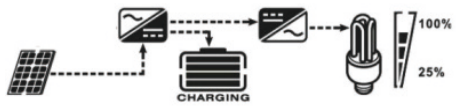
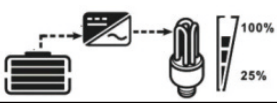
Selectable information	LCD display
Input voltage/Output voltage (Default Display Screen)	Input Voltage=230V, output voltage=230V 
Input frequency	Input frequency=50Hz 
PV voltage	PV voltage=360V 
PV current	PV current=2.5A 
PV power	PV power=500W 

Charging current	AC and PV charging current=50A  PV charging current=50A  AC charging current=50A 
Charging power	AC and PV charging power=500W  PV charging power=500W  AC charging power=500W 
Battery voltage and output voltage	Battery voltage=25.5V, output voltage=230V 

Output frequency	Output frequency=50Hz 
Load percentage	Load percent=70% 
Load in VA	When connected load is lower than 1kVA, load in VA will present xxxVA like below chart.  When load is larger than 1kVA, load in VA will present x.xkVA like below chart. 
Load in Watt	When load isower than 1kW, load in W will present xxxW like below chart.  When load is larger than 1kW, load in W will present x.xkW like below chart. 
Main CPU version checking	Main CPu version 00014.04 

6.Operating Mode Description

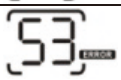
Operation mode	Description	LCD display
Standby mode **Note:** *Standby mode: The inverter is not turned on yet but at this time, the inverter can charge battery without AC output.	No output is supplied by the unit but it still can charge batteries.	Charging by utility and PV energy. 
		Charging by utility. 
		Charging by pv energy. 
		No charging. 
Fault mode Note: *Fault mode: Errors are caused by inside circuit error or externa reasons such as over temperature, output short circuited and so on.	PV energy and utility can charge batteries.	Charging by utility and PV energy. 
		Charging by utility. 
		Charging by PV energy. 
		No charging. 

<table>
<tr><td rowspan="5">Line Mode</td><td rowspan="5">The unit will provide output power from the mains. It will also charge the battery at line mode.</td><td>Charging by utility and PV energy.
 
</td></tr>
<tr><td>Charging by utility.
 
</td></tr>
<tr><td>If"SUB "is selected as output source priority and solar energy is not sufficient to provide the load, solar energy and the utility will provide the loads and charge the battery at the same time.
 
</td></tr>
<tr><td>(Available options in 6.2KW modle)
If"SUB "is selected as output source priority and battery is not connected,solar energy and the utility will provide the loads.
 
</td></tr>
<tr><td>Power from utility.(Available options in 6.2Kw modle)
 
</td></tr>
<tr><td rowspan="3">Battery Mode</td><td rowspan="3">The unit will provide output power from battery and PV power.</td><td>Power from battery and pV energy.
 
</td></tr>
<tr><td>PV energy will supply power to the loads and charge battery at the same time.
 
</td></tr>
<tr><td>Power from battery only.
 
</td></tr>
<tr><td>Battery free mode</td><td>The device will provide output power from the PV power supply</td><td>Available options in6.2KW modle
 
</td></tr>
</table>

7. Function and alarm descripion

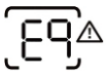
7.1Fault

The inverter enters the fault mode,the red LED light is always on and the LCD displays the fault code.

Fault Code	Fault Event	Icon on
01	Fan is locked when inverter is off..	
02	Over temperature or NTC is not connected well	
03	Battery voltage is too high	
04	Battery voltage is too low	
05	Output short circuited or over temperature is detected by internal converter components	
06	Output voltage is too high.	
07	Overload time out	
08	Bus voltage is too high	
09	Bus soft start failed	
51	Over current or surge	
52	Bus voltage is too low	
53	Over DC voltage in AC output	
55	Over DC voltage in AC output	
57	Current sensor failed	
58	Output voltage is too low	
59	PV voltage is over limitation	

7-2. Warning Descriptions

Alarm: The red LED flashes,and the LCD displays an alarm code,the inveter does not enter the failure mode.

Warning Code	Warning Event	Audible Alarm	Icon flashing
01	Fan is locked when inverter is on.	Beep three times every second	
02	Over temperature	None	
03	Battery is over-charged	Beep once every second	
04	Low battery	Beep once every second	
07	Overload	Beep once every 0.5 second	
10	Output power derating	Beep twice every 3 seconds	
15	PV is weak	Beep twice every 3 seconds	
16	High AC input(>280VAC) during BUS softstart	None	
E9	Battery equalization	None	
bP	Battery is not connected	None	

7-3. Regular error

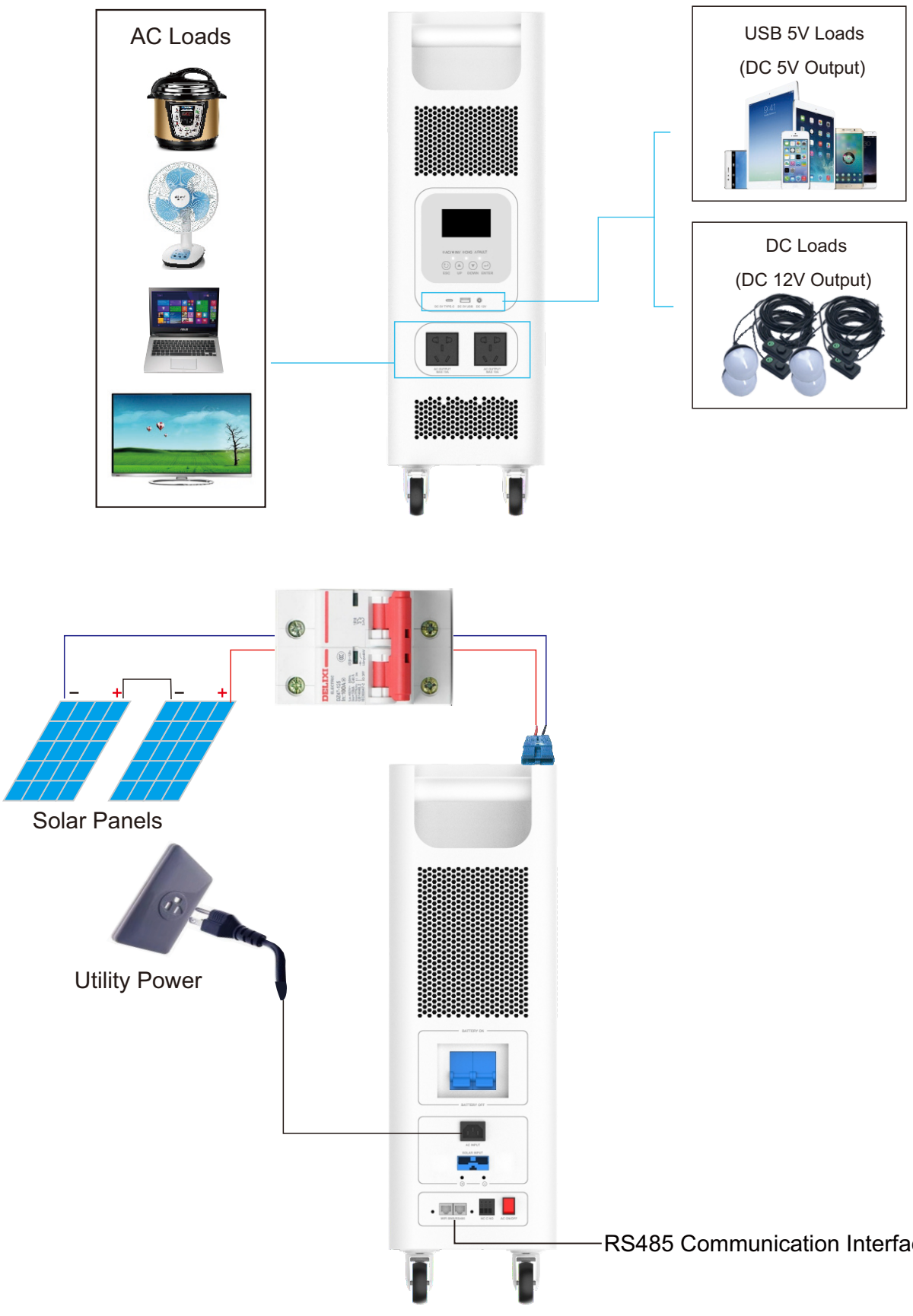
Error	Reason	Solution
Unable to boot	Low voltage in battery or overload	Charging the battery or reduce the loads
Shut down with load	Low voltage in battery or overload	Charging the battery or reduce the loads
Alarm for boot	Low voltage in battery or overload	Charging the battery or reduce the loads
Heat of connector	Poor contact	Check and fasten the screws

7-4. TROUBLE SHOOTING

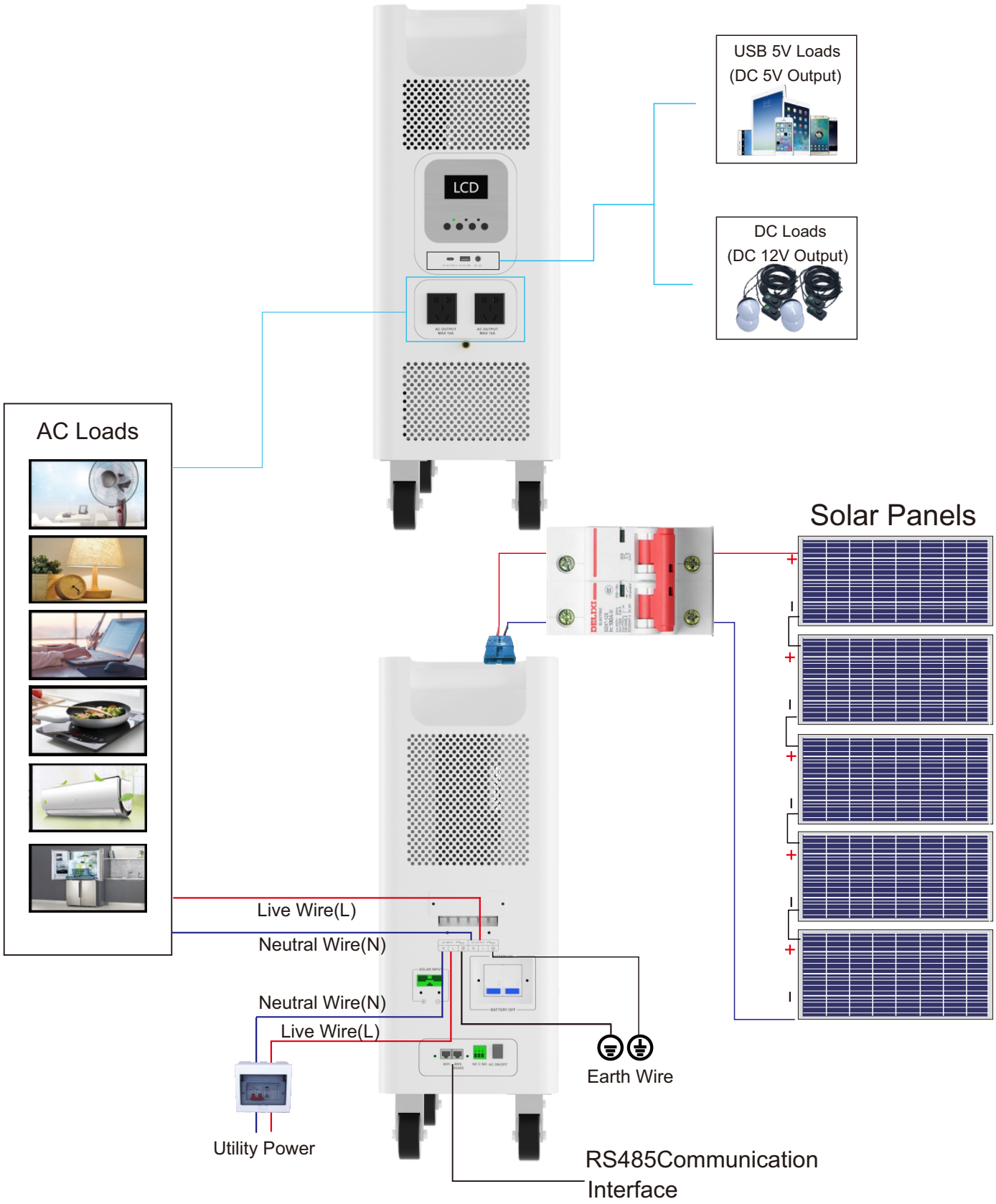
Problem	LCD/LED/Buzzer	Explanation/Possible cause	What to do
Unit shuts down automatically during startup process.	LCD/LEDs and buzzer will be active for 3 seconds and then complete off.	The battery voltage is too low (<1.91V/Cell)	1. Re-charge battery. 2. Replace battery.
No response after power on.	No indication.	1. The battery voltage is far too low.(<1.4V/Cell) 2.Internal fuse tripped	1.Contact repair center for replacing the fuse. 2.Re-charge battery 3.Replace battery.
Mains exist but the unit works in battery mode.	Input voltage is displayed as 0 on the LCD and green LED is flashing.	Input protector is tripped	Check if AC breaker is tripped and AC wiring is connected wel
	Green LED is flashing.	Insufficient quality of AC power. (Shore or Generator)	1. Check if AC wires are too thin and/or too long. 2. Check if generator (ifapplied)is working well or ifinput voltage range setting is correct.(UPS >Appliance)
	Green LED is flashing.	Set “Solar First" as the priority ofo utput source.	Change output source priority to Utility first.
When the unit ist urned on, internal relay is switched on and o ffrepeatedly.	LCD display and LEDs are flashing	Battery is disconnected.	Check if battery wires are connected well
Buzzer beeps continuously and red LED is on.	Fault code 07	Overload error.The inverter is overload 105%and time is up.	Reduce the connected load by switching o ffsome equipment.
		If PV input voltage is higher than specification,the output power will be derated.At this time,if connected loads is higher than derated output power,it will cause overload	Reduce the number of PV modules in series or the connected load.
	Fault code 05	Output short circuited.	Check if wiring is connected well and remove abnormal load.
		Temperature of internal converter component is over 120°℃.	Check whether the air flow of the unit is blocked or whether the ambient temperature is too high.
	Fault code 02	Internal temperature of inverter component is over 100°C.	
	Fault code 03	Battery is over-charged.	Return to repair center.
		The battery voltage is too high.	Check if spec and quantity of batteries are meet requirements.
	Fault code 01	Fan fault	Replace the fan.
	Fault code 06/58	Output abnormal (Inverter voltage below than 190Vac or is higher than 260Vac)	1. Reduce the connected load. 2. Return to repair center
	Fault code 08/09/53/57	Internal components failed.	Return to repair center.
	Fault code 51	Over current or surge.	Restart the unit, if the error happens again, please return to repair center.
	Fault code 52	Bus voltage is too low.	
	Fault code 55	Output voltage is unbalanced.	
	Fault code 59	PVinput voltage is beyond the specification	Reduce the number of PV modulesin series

8. Wiring

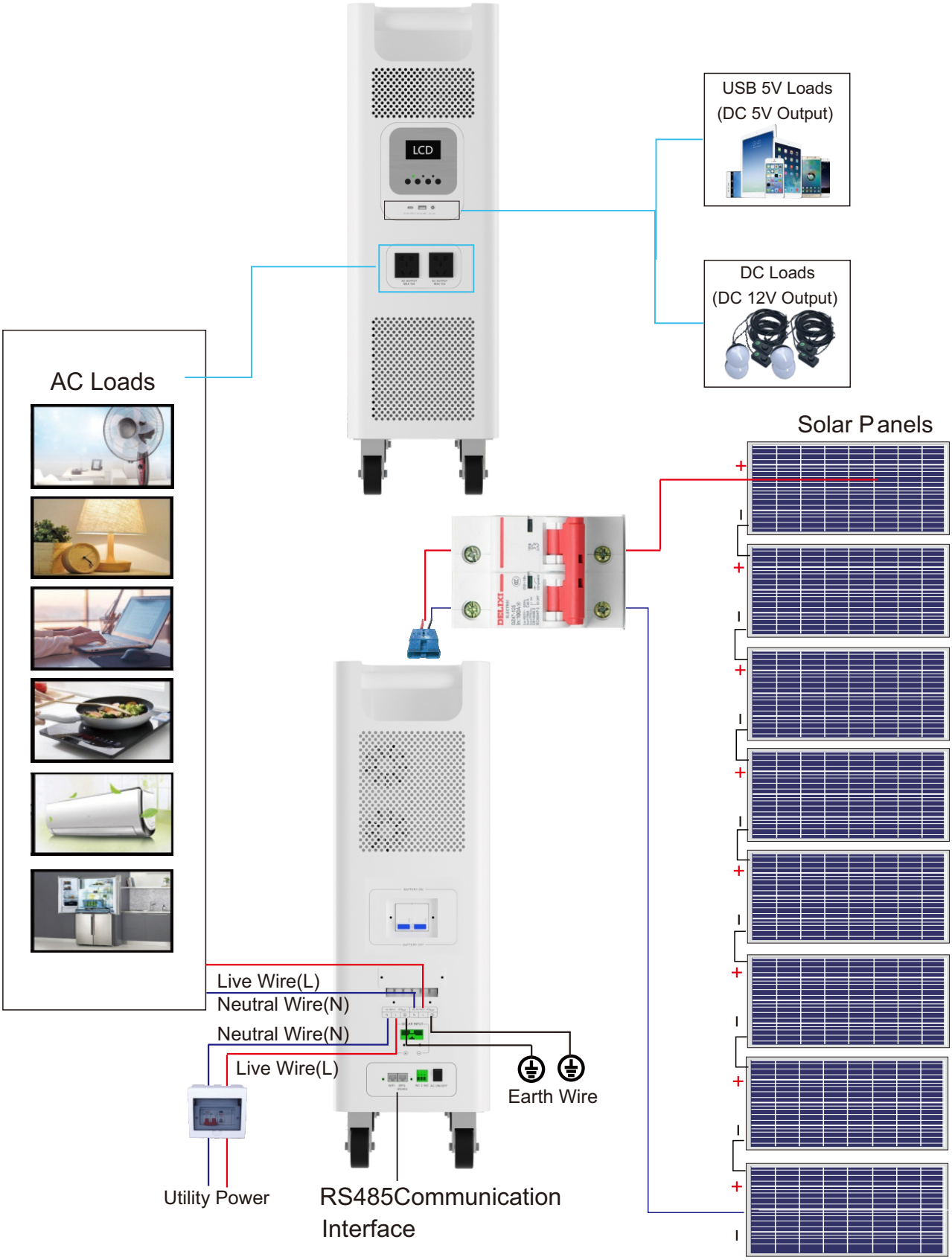
8-1. Y-1.5KW-2.56KWh



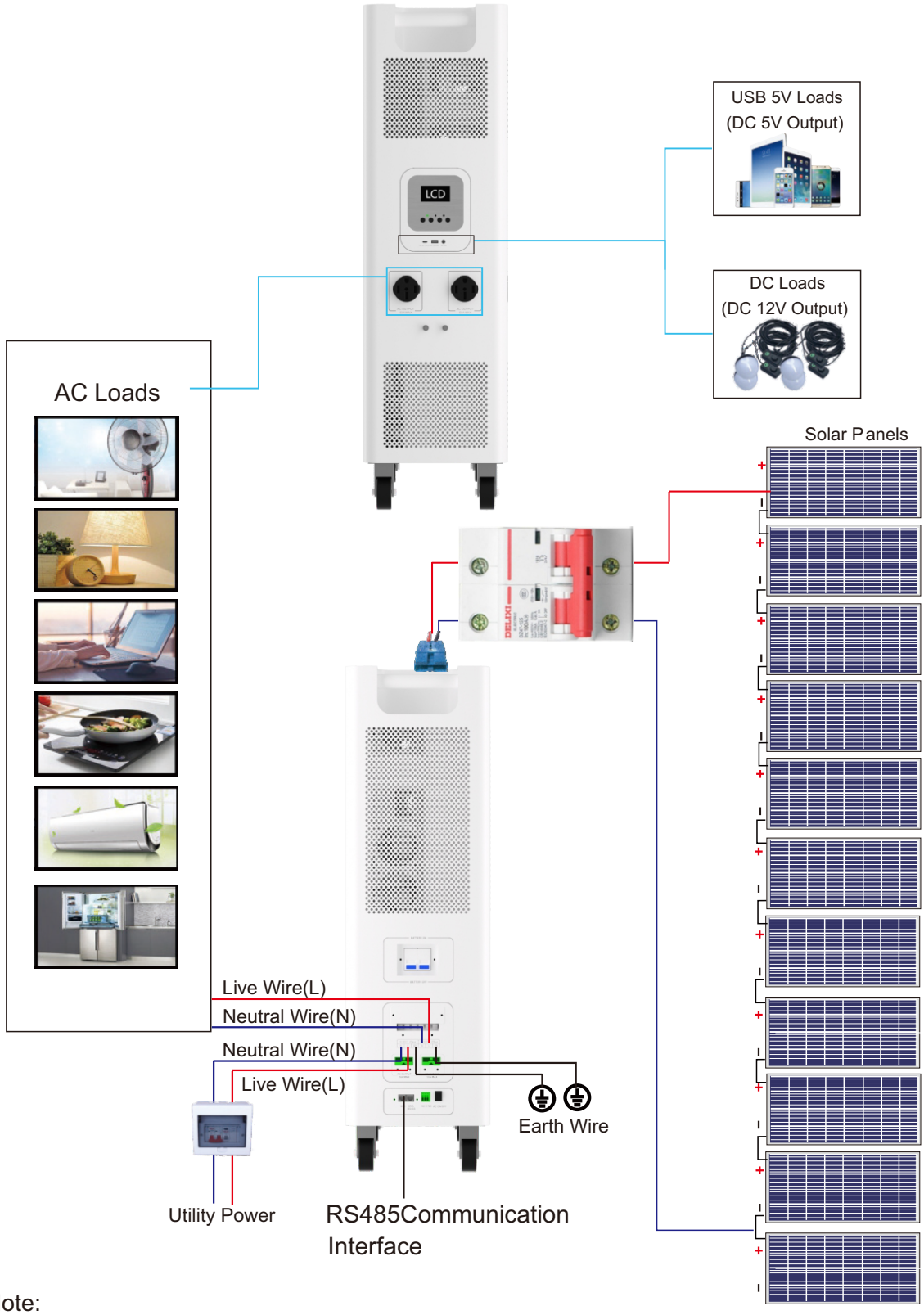
8-2. Y-4KW-5.12KWh



8-3. Y-6KW-10.24KWh



8-4. Y-11KW-15KWh



Note:

- Please avoid reverse connection while connecting batteries and PV to the inverter.
- Loads for each universal AC outlet should not exceed 1kW.
- If a generator is used as input power, the operation is as follow: start up the generator, after it runs steadily, connect and turn on inverter. When the inverterstarts to work, connect user's equipment to the AC output.
- Capacity of generator≥3 times of the rated capacity of inverte.

9. Technical specification

Model:		Y-1.5KW-2560Wh	Y-4KW-5.12KWh	Y-6KW-10.24KWh	Y-11KW-15KWH
Rated Power		1500W	3000W	6200W	6200W
Battery Voltage		12.8VDC	25.6VDC	51.2VDC	51.2VDC
Inside battery capacity		300Ah*1	300Ah*1	300Ah*1	300Ah*1
Size(L*W*Hmm)		620*260*600	780*260*630	780*260*750	780*260*950
Package Size(L*W*Hmm)		761*661*321	801*841*445	916*841*445	1116*841*445
N.W.(kg)(With battery)		35	36	90	145
G.W.(kg)(With battery)		45			
Inside MPPT Solar controller	Charging Mode	MPPT	MPPT	MPPT	MPPT
	Charging current	100A	100A	120A	120A
	PV Input Voltage Range	40V-500V	40V-500V	60V-500V	60V-500V
	Max PV Input Voltage (At the lowest temperature)	500V	500V	500V	500V
	PV Array Maximum Power	1500W	3000W	6200W	6200W
	Standby loss	≤3W			
	Maximum conversion efficiency	>98%			
Input	DC Input Voltage Range	10-15VDC	20-30VDC	40-60VDC	
	AC Input Voltage Range	170-280VAC(for personal computers)/90-280VAC(for home appliance s)			
	AC Input Frequency Range	45Hz~ 65Hz			
	Max AC charging current	60A	60A	100A	
	AC charging method	Three-stage (constant current, constant voltage, floating charge)			
Output	DC Output Voltage	DC 5V(USB) / DC 12V/Type-C			
	Efficiency(Battery Mode)	≥90%			
	Output Voltage(Battery Mode)	230VAC			
	Output Frequency(Battery Mode)	50/60Hz±1%			
	Output Wave(Battery Mode)	Pure Sine Wave			
	Efficiency(AC Mode)	>99%			
	Output Voltage(AC Mode)	230VAC±5%			
	Output Frequency(AC Mode)	Tracking Automatically			
	Output waveform distortion Battery (AC Mode)	≤3%(Linear load)			
	No load loss(Battery Mode)	≤0.8% rated power			
	No load loss(AC Mode)	≤2% rated power(charger does not work in AC mode)			
	No load loss(Energy saving Mode)	≤10W			
Protection	Battery lowvoltage alarm	12V	24V	49.6V	49.6V
	Battery lowvoltage protection	11.2V	22.4V	48.8V	48.8V
	Battery overvoltage alarm	14.4V	28.8V	57.6V	57.6V
	Battery overvoltage protection	14.6V	29.2V	58.4V	58.4V
	Overload power protection	Automatic protection (battery mode), circuit breaker or insurance (AC mode)			
	Inverter output short circuit protection	Automatic protection (battery mode), circuit breaker or insurance (AC mode)			
	Temperature protection	>90°C(Shut down output)			

Alarm	A	Normal working condition, buzzer has no alarm sound
	B	Buzzer sounds 4 times per second when battery failure, voltage abnormality, overload protection
	C	When the machine is turned on for the first time, the buzzer will prompt 5 when the machine is normal
Working Mode		AC priority/Battery(Solar) priority
Transfer Time		10ms (for personal computers)/20ms (for home appliances)
Display		LCD
Thermal method		Cooling fan in intelligent control
Communication		RS232/RS485
En	Operating temperature	-10°C~40°C
	Storage temperature	-15°C~60°C
	Noise	≤55dB
	Elevation	2000m(More than derating)
	Humidity	0%~95% (No condensation)

Above parameter revision change without notification.

10. Maintenance

1) The inverter just needs the minimum maintenance. And life of lithium battery can be preserved by frequent charge.
2) Batteries should be charged for every three months if the inverter is long-term unused.
3) Lifespan of battery normally lasts for five years. It should be replaced in advance if any battery is found in poor state. And the replacement shall be operated by the professional.
4) Batteries should be wholly replaced by the instruction of the supplier.
5) For every three months, batteries should be discharged (until the inverter shuts down) and recharged. Every charge (by standard inverter) should last at least for 12 hours.
6) Among high temperature area, batteries should be discharged and recharged forevery two months. Every charge (by standard inverter) should last at least for 12 hours.

Note:

- Please shut down the inverter and disconnect AC input before replacing batteries.
- Please do not wear metal jewelry such as ring or watch.
- Please use screwdriver with insulated handle and avoid to place tools or metal objects on batteries.
- Please avoid short circuit or reverse connection.

Warning:

1) Battery must not be put in the fire, which may cause explosion.
2) Shall not open or damage the battery. Electrolyte released will cause harm to eyes and skin and even intoxication.

Warranty Card

Customer Name: _____ Tel.: _____

Address: _____

Brand: _____ Model: _____

Serial No .: _____ Date of Purchase: _____

Bought From: _____

Invoice Number: _____ Invoice Price: _____

Warranty Instruction

- Please keep this warranty card as proof of maintenance.
- The warranty period is 1 year from the date of purchase.
- During the warranty period, under the condition of normal use and maintenance, if damage caused by the product's own quality, the company will provide free repair and replacement parts after verification.
- The company reserves the right to maintain and interpret all contents.

Free maintain won't be given under the following circumstance:

- The damage caused by the manipulation that hasn't follow the requests of the manual.
- The product has been repaired, modified by technicians other than our company's, and any internal parts of the product have been replaced by users.
- The product number has been altered or product is inconsistent with the warranty card.
- Damage caused by careless use, penetration of water or other substances into the product.
- Damage caused by accident or natural disaster.

Certi cate

Name: _____

Model: _____

Inspectors: _____

Date: _____

Products have been tested qualified by standard and permitted to deliver.