SJY
赛骄阳

User Manual for Energy Storage Multi functional Portable Battery

SJY Multi-functional portable energy storage battery.
It is suitable for a variety of occasions.

Directory

1.introduction

Dear customer, thank you very much for using the SJY multifunctional portable energy storage all-in-one machine series products. We sincerely hope that this product can meet your needs, and we also hope that you can provide more valuable feedback on the performance and functionality of the product. We will continue to improve.

1.1 Range of Application

This manual is applicable to the Saijiaoyang multifunctional portable energy storage all-in-one machine product, with the following product models:

SJY-C096-24100	3.2KVA-24V

The product should be used in compliance with local standards, laws and regulations, because any noncompliance with the use may lead to personal injuries and property loss.

The drawings provided in this Manual are used to explain the concepts related to the product, including product information, installation guide, electrical connection, system debugging, safety information, common problems and maintenance, etc.

The internal parameters of this product have been adjusted before delivery. No internal parameters can be changed without permission. Any unauthorized changes to the settings will invalidate the warranty, and the Company will not be liable for any loss resulting therefrom.

This Manual and other related documents are an integral part of the product and should be kept properly for onsite installation personnel and related technical personnel to consult.

2.Product Introduction

2.1 Product Overview & Features

The multifunctional portable energy storage all-in-one machine is a new type of hybrid solar energy storage inverter control all-in-one machine that integrates solar energy storage, mains charging energy storage, and AC sine wave output. It adopts DSP control and advanced control algorithms, and has the characteristics of high response speed, high reliability, and high industrialization standards. There are four charging modes available: solar only, mains priority, solar priority, and mains&solar; There are two output modes to choose from: inverter and mains power, to meet different application needs.

The solar charging module uses the latest optimized MPPT tracking technology to quickly track the maximum power of the photovoltaic array in any environment Rate point, real-time access to the maximum energy of the solar panel, and MPPT voltage range is wide. AC-DC charging module adopts advanced control algorithm to realize full digital voltage and current double closed-loop control, which has high control precision and small size. Ac voltage input range is wide, input/output protection function is complete, stable and reliable to achieve battery charging and protection. DC-AC inverter module is based on full digital intelligent design, adopts advanced SPWM technology, outputs pure sine wave, converts direct current Ac, suitable for household appliances, power tools, industrial

equipment, electronic audio and video and other AC load. The product uses segment LCD screen display Meter, real-time display of the system's operating data and operating status. The comprehensive electronic protection function ensures the whole system is safer and more stable.

Peculiarity：

1.Adopt full digital voltage and current double closed loop control, advanced SPWM technology, output pure sine wave.

2.It has two output modes of mains bypass and inverter output, with uninterrupted power supply function.

3.There are 4 charging modes to choose from: solar only, mains priority, solar priority, hybrid charging.

4.Advanced MPPT technology, efficiency up to 99.9%.

5.Wide MPPT voltage range.

6.With solar energy and AC power activated lithium battery function.

7. LCD screen design, 3 LED indicators, dynamic display of system data and operating status.

8.With power saving mode function, reduce no-load loss.

9.Intelligent adjustable fan, efficient heat dissipation, prolong system life.

10.With a number of protection functions, 360° all-round protection.

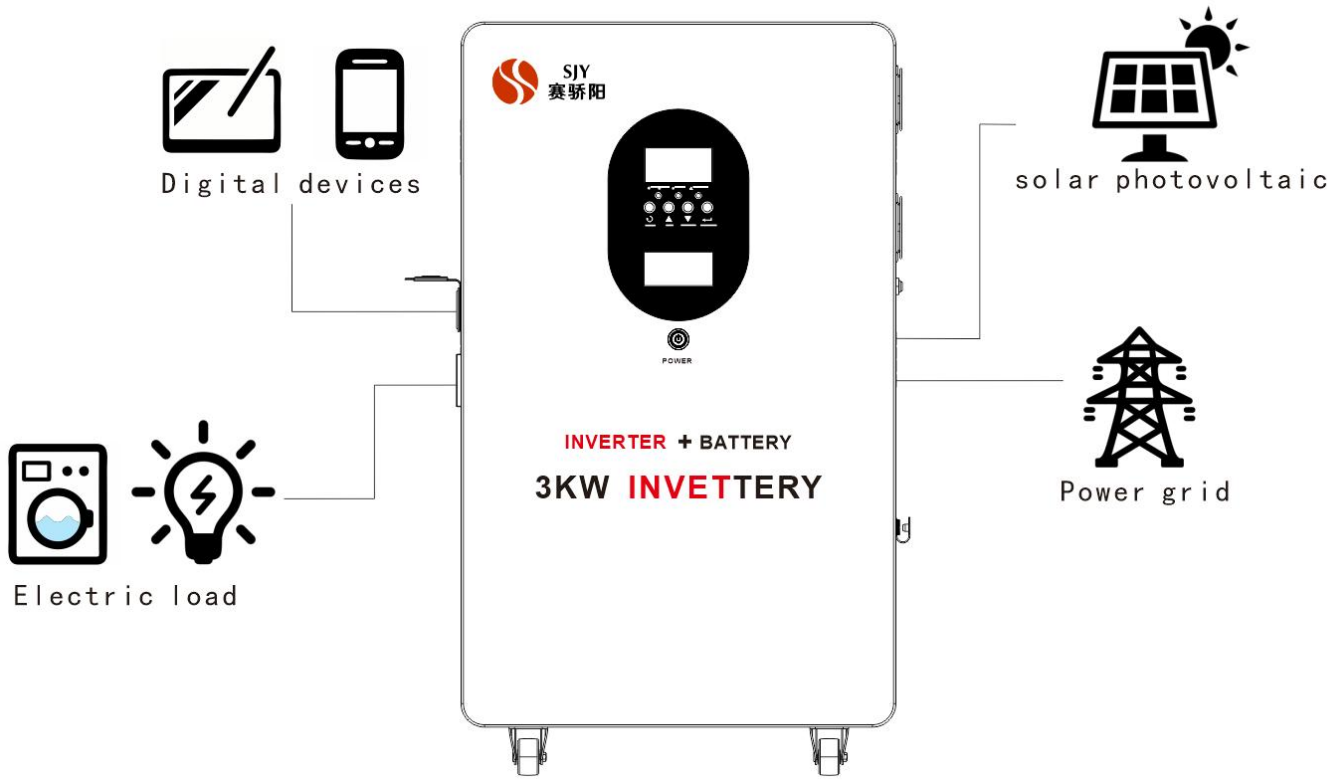
11. It has complete short circuit protection, over and under voltage protection, overload protection, backfill protection and so on.

12.With hybrid on-load function: when the battery is not connected, the photovoltaic and the mains can supply power to the load at the same time (no battery must be connected to the mains), and when the battery is full.

13.Built-in 5KWH intelligent energy storage battery system.

2.2 Basic system introduction

The following figure shows the system application scenario of this product. A complete system consists of the following parts:



1.Photovoltaic modules: convert light energy into direct current energy, charge the battery through the all-in-one machine, or directly invert into alternating current to power the load.

2.Mains: Connected to the AC input, it can supply power to the load and charge the battery. If you do not connect the mains or power. The motor, the system can also operate normally, at this time the load power supply is provided by the battery and photovoltaic modules.

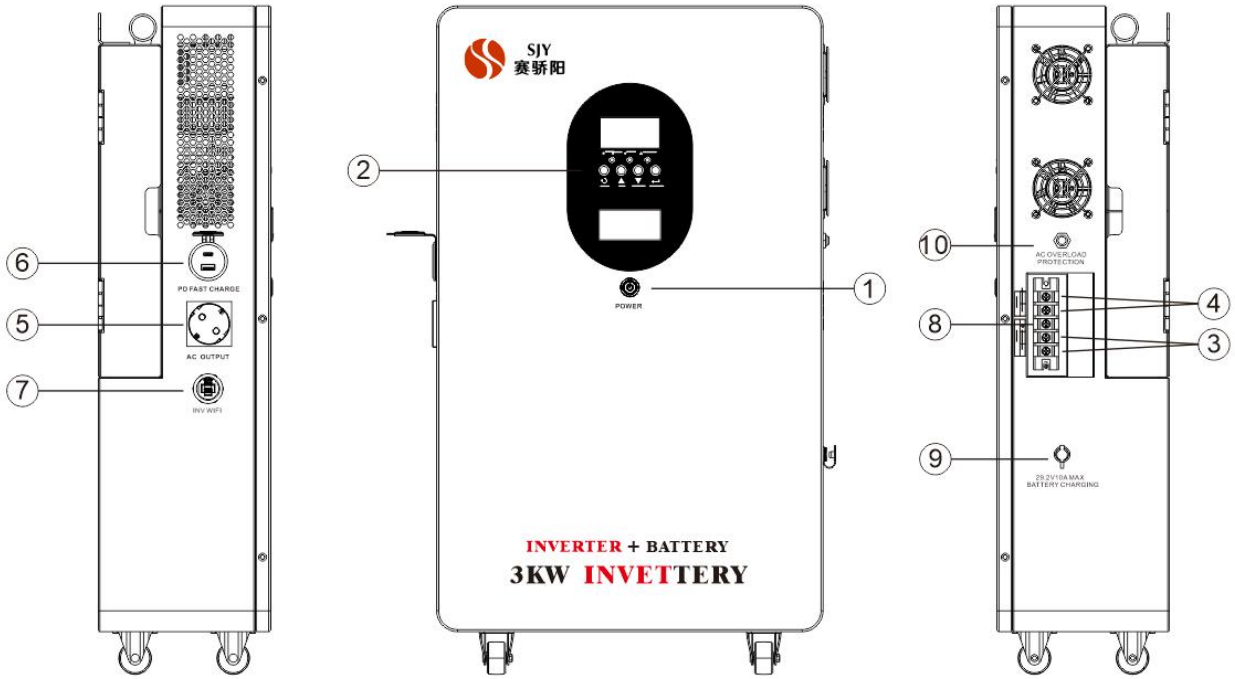
3.Battery: The role of the battery is to ensure the normal power consumption of the system load when the solar energy is insufficient and there is no mains power.

4.Home load: It can access a variety of home and office loads, including refrigerators, lamps, TV sets, fans, air conditioners and other AC loads.

5.Reverse control integrated machine: energy conversion device for the whole system.

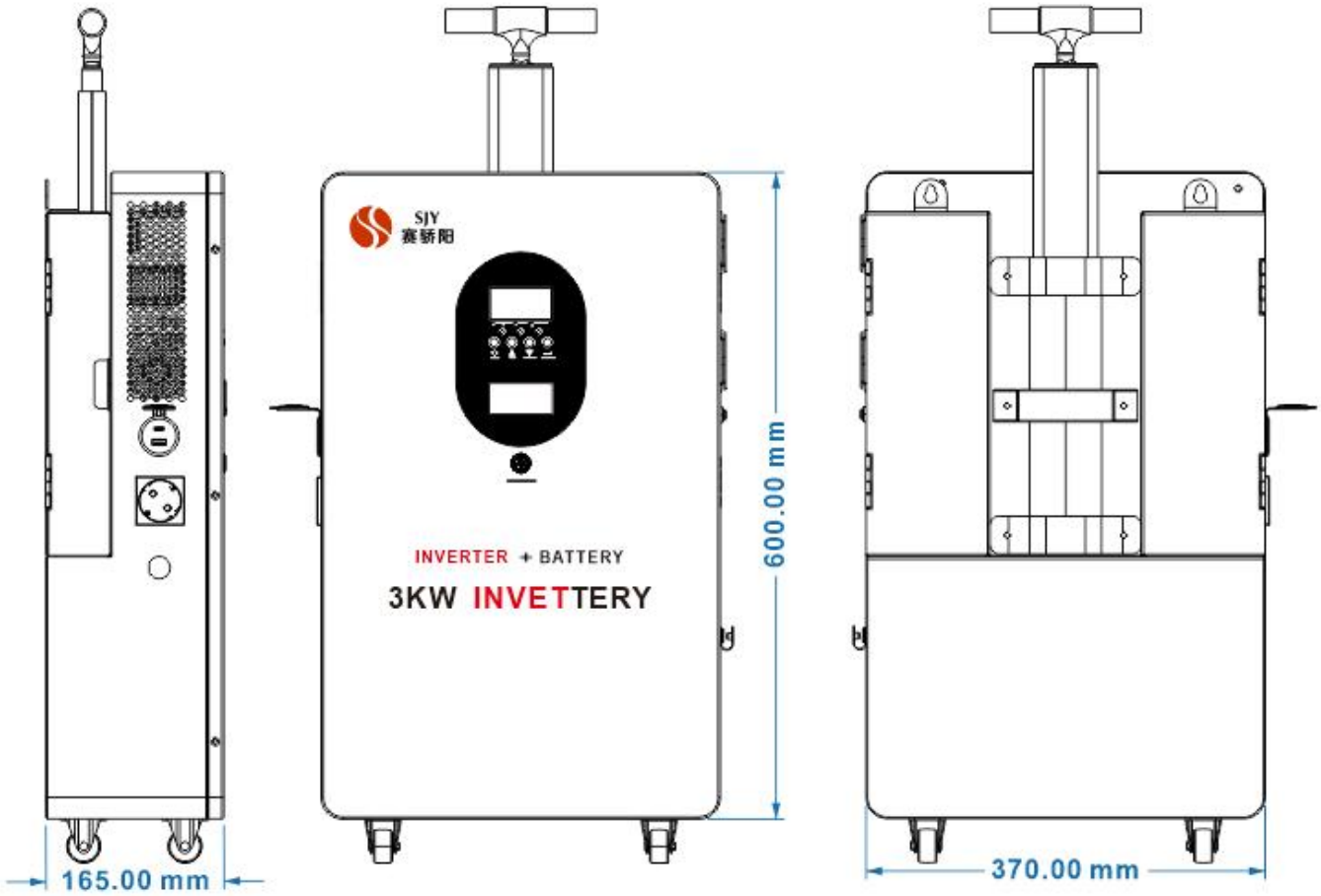
The specific system cable connection mode depends on the actual application scenario.

2.3.Product features



①	Power switch	⑥	PD fast charging
②	Control button	⑦	WIFI module interface
③	AC input	⑧	GND
④	Photovoltaic input	⑨	Battery charging interface
⑤	AC output	⑩	overload protection

2.4.Dimension figure



3.Installation and precautions

3.1 Before installation, read this manual carefully to familiarize yourself with the installation procedure.

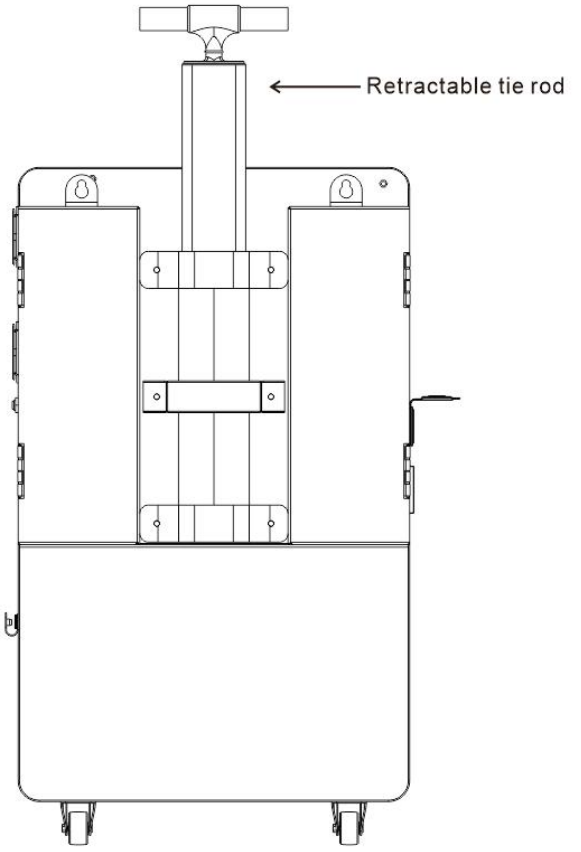
- Multi functional portable energy storage all-in-one machine is suitable for various occasions. When installing or using it, it is necessary to leave sufficient space around for heat dissipation; Do not install or place the all-in-one machine and lead-acid liquid battery in the same enclosed space for a long time to avoid the acidic gas generated by the battery during operation corroding the all-in-one machine.

- Virtual connection points and corroded wires may cause significant heating, melting of wire insulation, burning of surrounding materials, and even fire Disaster, so when charging or connecting devices, the connectors should be tightened and the wires should be securely fastened with zip ties to avoid loose connectors caused by wire shaking during mobile applications.

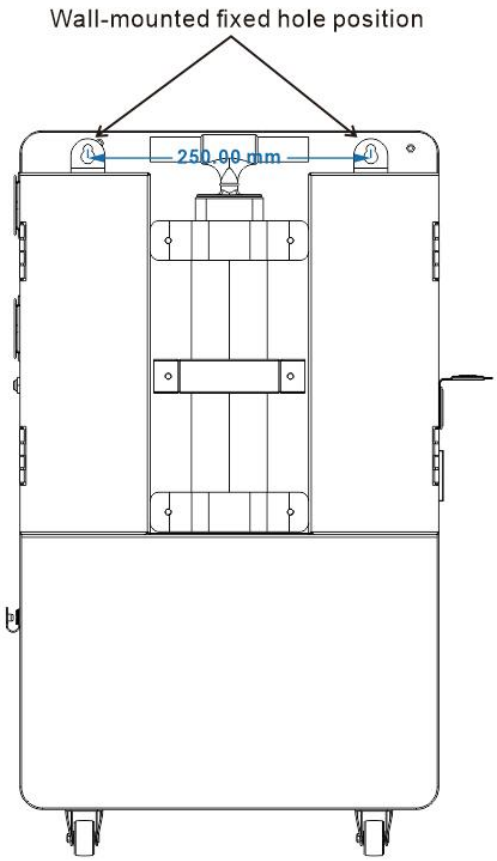
- The system connection line is selected according to the current density not greater than 5A/mm 2.
- Outdoor installation or use should avoid direct sunlight and rainwater infiltration.
- After the power switch is turned off, there is still a high voltage inside the appliance. Do not open or touch the internal components until the capacitor is discharged Off operation.
- Do not install the machine in a humid, greasy, flammable and explosive environment, or a large amount of dust.
- The mains input and AC output are high voltage cables. Do not touch the cables.
- When the fan is working, do not touch it to prevent injury.
- Load device Input power supply Ensure that the appliance is the only input device. Do not use it in parallel with other input AC power supplies Damaged.

4.Basic usage

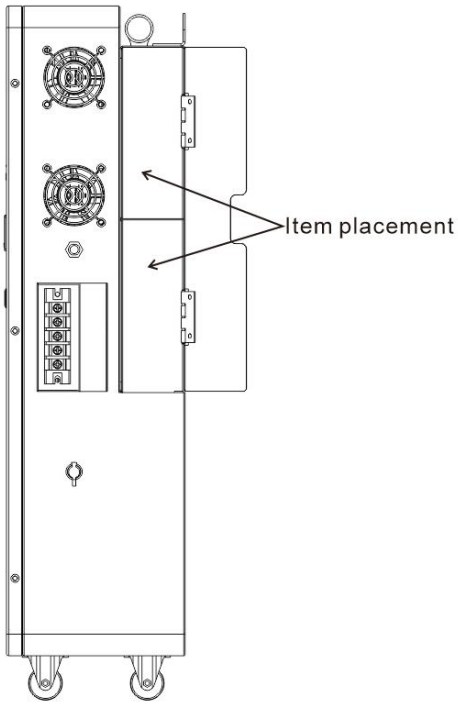
4.1.1 The company's portable energy storage all-in-one machine comes with a retractable pull rod, which is suitable for a variety of outdoor places and is convenient for travel



4.1.2 When you don't need to go out, you can fix it on the wall with screws (pay attention to fix it firmly to avoid unnecessary losses caused by smashing people)



4.1.2 The left and right of the lever are magnetic item placement bins, which can be used to place personal belongings (note that the items should not be electrified)



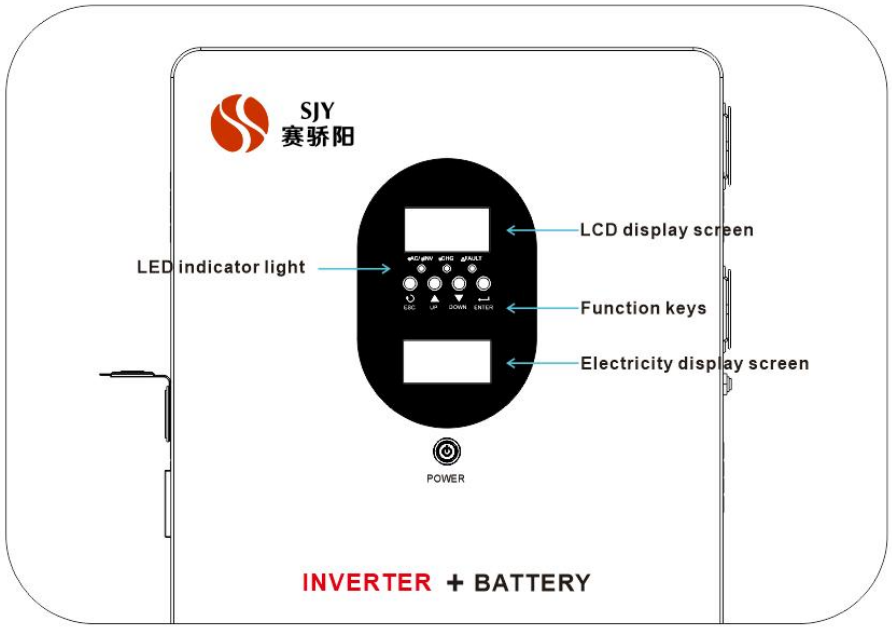
5.setting instruction

5.1 Power ON/OFF

When the all-in-one machine is placed in a safe position, simply press the on/off button (located on the casing) to turn on the unit, and the LCD display screen located above will light up ten seconds after startup.

5.2 Operation and Display Panel

As shown in the image below, the operation and display panel is located on the front panel of the inverter. It includes 3 indicator lights, 4 function keys, and an LCD display to indicate operating status and input/output power information, and a capacity display to show real-time charge and voltage



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

5.3 LCD Display Icons

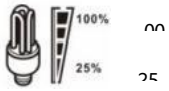
Icon	Function description
Input Source Information	
AC	Indicates the AC input.
PV	Indicates the PV input

	Indicate input voltage,input frequency,PV voltage,charger current (if PV in charging for 2.2KVA models),charger power,battery voltage.
Configuration Program and Fault Information	
	Indicates the setting programs.
	Indicates the warning and fault codes Warning:  flashing with warning code. Fault:  lighting with fault code
Output Information	
	Indicate output voltage,output frequency,load percent,load in VA,load in Watt and discharging current.
Battery Information	
	Indicates battery level by 0-24%,25-49%,50-74%and 75-100%in battery mode and charging status in line mode.

In ACmode,it will present battery charging status.

Status	Batter 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.

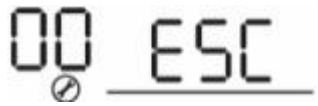
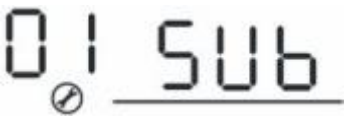
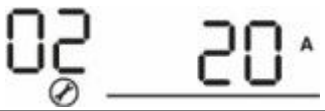
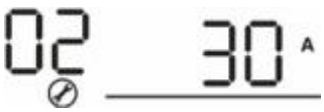
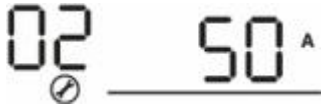
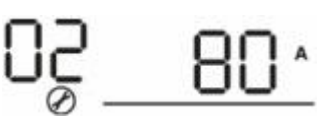
In battery mode,it will present battery capacity.		
Load Percentage	Battery Voltage	LCD Display
Load >50%	<1.85V/cell	
	1.85V/cell ~1.933V/cell	
	1.933V/cell ~2.017V/cell	
	>2.017V/cell	
Load<50%	<1.892V/cell	
	1.892V/cell~1.975V/cell	
	1.975V/cell ~2.058V/cell	
	>2.058V/cell	

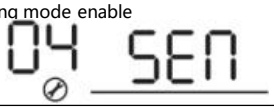
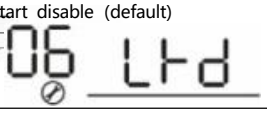
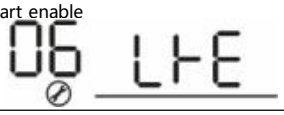
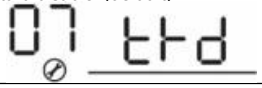
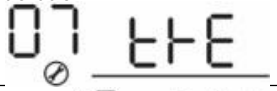
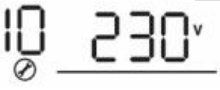
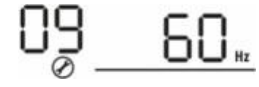
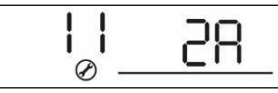
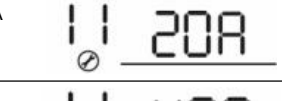
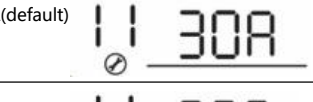
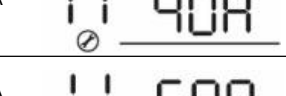
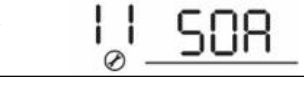
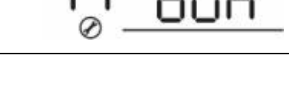
Load Information				
OVERLOAD	Indicates overload.			
	Indicates the load level by 0-24%,25-49%,50-74%and 75-100%.			
	0%~24%	25%~49%	50%~74%	75%~100%
				
Mode Operation Information				
	Indicates unit connects to the mains.			
	Indicates unit connects to the PV panel.			
	Indicates load is supplied 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.			

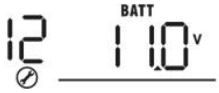
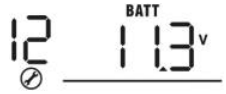
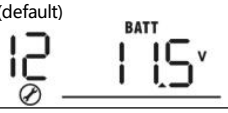
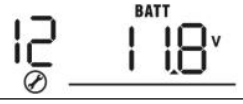
5.4 LCD Setting

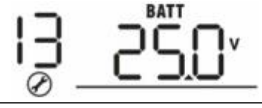
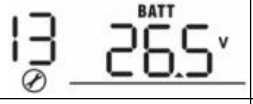
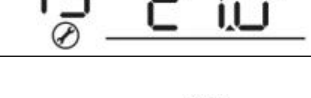
After pressing and holding ENTER button for 3 seconds, the unit will enter setting mode. Press "UP" or "DOWN" button to select setting programs. And then, press "ENTER" button to confirm the selection or ESC button to exit.

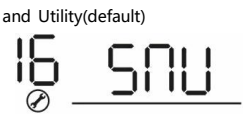
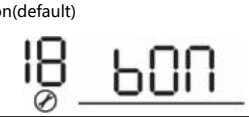
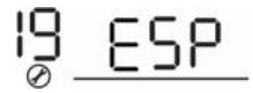
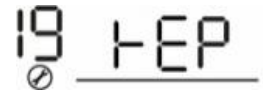
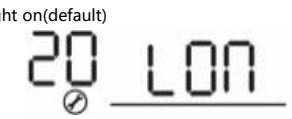
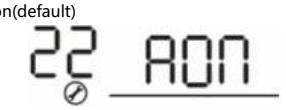
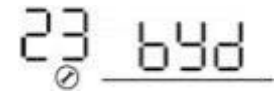
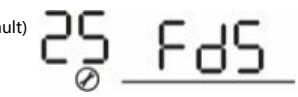
Setting Programs:

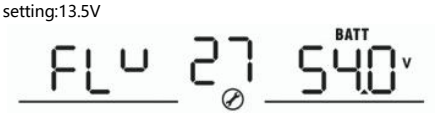
Program	Description	Selectable option	
00	Exit setting mode	Escape 	
01	Output source priority: To configure load power source priority	SUB priority (default) 	Solar energy provides powerto the loads as first prioity. If solar energy is not sufficient to power all connected loads,utility will supply power to the loads at the same time Battery provides power to the loads only when any one condition happens -Solar energy and utility is not available. -Solar energy is not sufficient and utility is not available
		SBU priority 	Solar energy provides power to the loads as first priority. If solar energy is not sufficient to power all connectedloads,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.
02	Maximum charging current: To configure total charging current for solar and utility chargers.(Max.charging current =utility charging current + solar charging current)	10A 	20A 
		30A 	40A 
		50A 	60A(default) 
		70A 	80A 

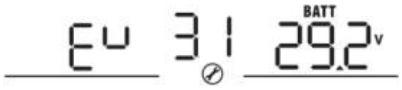
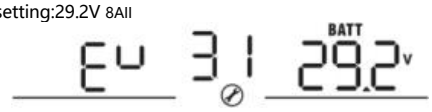
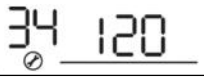
03	AC input voltage range	Appliances (default) 	If selected,acceptable AC input voltage range will be within 90-280VAC
		UPS 	If selected,acceptable AC input voltage range will be within 170-280VAC
04	Power saving mod enable/disable	Saving mode disable (default) 	If disabled,nomatter connected load is low orhigh,the on/off status of inverter output will not be effected
		Saving mode enable 	If enabled,the output of inverter will be off when connected load is pretty low or not detected.
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	Output voltage	220V 	230V(default) 
		240V 	
09	Output frequency	50Hz(default) 	60Hz 
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.	2A 	10A 
		20A 	30A(default) 
		40A 	50A 
		60A 	

12	Setting voltage point back to utility source when selecting "SBU priority"	Available options in 3.2KVA24Vmodel:	
		22.0V 	22.5V 
		23.0V(default) BATT 	23.5V 
		24.0V 	24.5V 
		25.0V 	25.5V 
		Available options in 2.2KVA12V model	
		11.00 	11.3V 
		11.5V (default) 	11.8V 
		12.0V 	12.3V 
		12.5V 	12,8V 

13	Setting voltage point back to battery mode when selecting "SBU priority"	Available options in 3.2KVA24Vmodel:	
		Battery fully charged 	24V 
		24.5V 	25V 
		25.5V 	26V 
		26.5V 	27V(default) 
		27.5V 	28V 
		28.5V 	29V 
		Available options in 2.2KVA 12Vmodel	
		Battery fully charged 	12.0V 
		12.3V 	12.5V 
		12.8V 	13.0V 
		13.3V 	13.5V(default) BATT 
		13.8V 	14.0V 
		14.3V 	14.5V 

<table>
<tr><td rowspan="5">16</td><td rowspan="5">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>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 or Power saving mode,only solar energycan charge battery.Solar energy wil 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>
<tr><td rowspan="2">19</td><td rowspan="2">Auto return to default display screen</td><td>Return to default display Screen(default)
  </td><td>If selected,no matter how users switch display screen,it will automatically return to default display screen (Input voltage/output voltage)after no button is pressed for 1 minute</td></tr>
<tr><td>Stay at latest screen
  </td><td>If selected,the displayscreen will stay at latest screen user finally switches</td></tr>
<tr><td>20</td><td>Backlight contro</td><td>Backlight on(default)
  </td><td>Backlight off
  </td></tr>
<tr><td>22</td><td>Beeps while primary source is interrupted</td><td>Alarm on(default)
  </td><td>Alarm off
  </td></tr>
<tr><td>23</td><td>Overload bypass:
When enabled,the unit will transfer to line mode if overload occurs in battery mode</td><td>Bypass disable (default)
  </td><td>Bypass enable
  </td></tr>
<tr><td>25</td><td>Record Fault code</td><td>Record enable
  </td><td>Record disable(default)
  </td></tr>
</table>

26	Bulk charging voltage (C.V voltage)	2.2KVA12V default setting:14.1V 
		3.2KVA24V defaultsetting:28.2V 
		If self-defined is selected in program 5,this program can be set up.Setting range is from 12.5V to 14.6V for 2.2KVA12Vmodel and 25.0Vto 29.2V for 3.2KVA24V model.Increment of each click is 0.1V.
27	Floating charging voltage	2.2KVA12V default setting:13.5V 
		3.2KVA24Vdefault setting:27.0V 
		If self-defined is selected in program 5,this program can be set up.Setting range is from 12.5Vto 14.6V for 2.2KVA12Vmodel and 25.0Vto29.2V for 3.2KVA24V model.Increment of each click is 0.1V.
29	Low DC cut-off voltage	2.2KVA12V default setting:10.5V 
		3.2KVA24V default setting:21.0V 
		If self-defined is selected in program 5,this program can be set up.Setting range is from 10.0Vto12.0V for 2.2KVA12Vmodel and 20.0Vto 24.0V for 3.2KVA24V model.Increment of each click is 0.1V.Low DC cut-off voltage will be fixed to setting value no matter what percentage of load is connected.
33	Battery equalization	  (default)
		If*Flooded"or "User-Defined"is selected in program 05,this program can be set up.

<table>
<tr><td rowspan="4">34</td><td rowspan="4">Battery equalization voltage</td><td colspan="2">2.2KVA default settig :14.6V
  </td></tr>
<tr><td colspan="2">Setting range is from 12.5V to 15V.Increment of each click is0.1V.</td></tr>
<tr><td colspan="2">3.2KVA default setting:29.2V
  </td></tr>
<tr><td colspan="2">Setting range is from 25.0V to29.5V.Increment of each click is 0.1V.</td></tr>
<tr><td>35</td><td>Battery equalized time</td><td>60min(default)
  </td><td>Setting range is from 5min to 900min. Increment of each cick is 5min.</td></tr>
<tr><td>36</td><td>Battery equalized timeout</td><td>120min (default)
  </td><td>Setting range is from 5min to 900min. Increment of each click is 5 min.</td></tr>
<tr><td>37</td><td>Equalization interval</td><td>30days(default)
  </td><td>Setting range is from 0 to 90 days. Increment of each click is 1 day</td></tr>
<tr><td rowspan="2">39</td><td rowspan="2">Equalization activated immediately</td><td>Enable
  </td><td>Disable (default)
  </td></tr>
<tr><td colspan="2">If equalization function is enabled in program 33,this program can be set up.If "Enable"is selected in this program,it's to activate battery equalization immediately and LCD main page willshows E9If"Disable"is selected,it wll cancel equalization function until next activated equalization time arrives based on program 37setting.At this time,wE9"wil not be shown in LCD main page</td></tr>
</table>

5.5 The battery level display is used

- U/D button function:

1. After the screen is asleep, wake up by pressing the U/D button for a short time.

2. When the backlight is off, wake up the backlight by pressing the U/D button.

3. In the menu interface and parameter value adjustment interface, short press the U/D button to move the menu item down or the parameter value '-' Operate.

- SET button function:

1. In the normal display process, by short-pressing the SET button, the voltage, current, power percentage, and capacity can be switched and displayed.

2. When the backlight is off, wake up the backlight by short pressing the SET button.

3. In the normal display interface, press and hold the SET button to enter the menu interface, and under the menu interface, press and hold SET again to enter the parameter value view or adjustment interface.

4.In the menu interface or parameter value adjustment interface, short press the SET button to move the menu item up or the parameter value '+' operation.

- Key Operation Instructions:

1. Short press: Press the button for about 1 second and then lift it.

2. Long press: Press the button for about 3 seconds and then lift it.

3. Under the menu interface, by pressing the U/D button (down) or the SET button (up), the current menu is in P-1Cycle through to P-8.

4.This product has no return and save buttons, after entering the menu or modifying the parameters, there is no button operation within 5S, it will be automatic Save the current parameter value and return to the previous level.

- Backlit display status:

The backlight turns off automatically after 25S when there is no operation (P-7 is not equal to 0).

- The communication status is abnormal:

In the normal interface, when there is an abnormality in communication (the communication address does not correspond, the terminal or communication cable is abnormal, etc.), the left battery frame is displayed as empty, and the value position on the right scrolls left and right to display '---'.

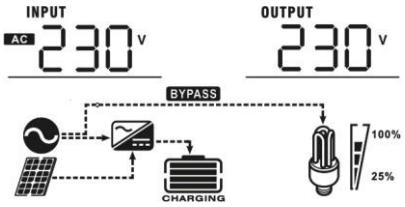
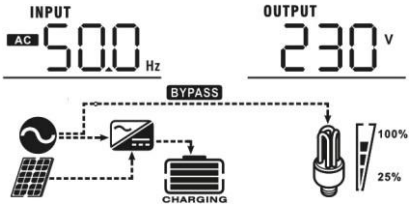
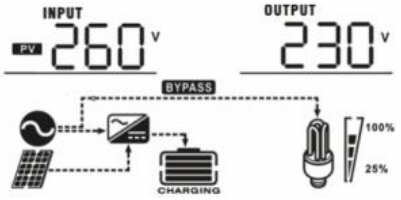
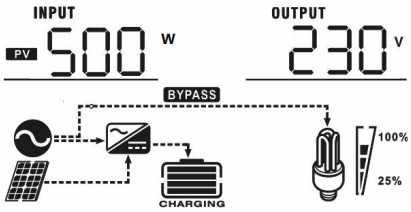
- Hibernated:

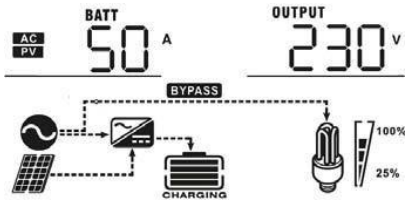
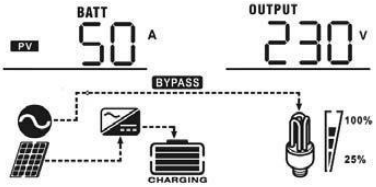
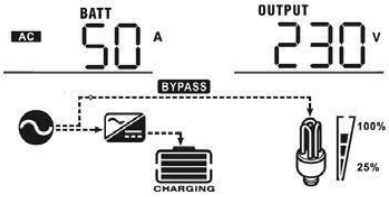
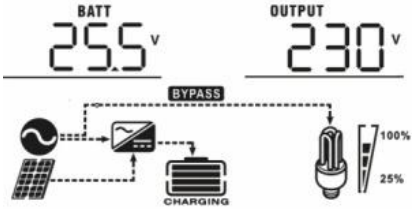
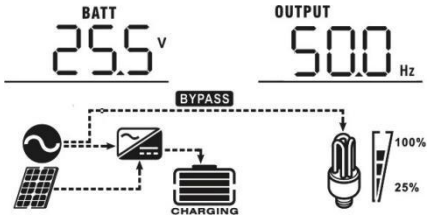
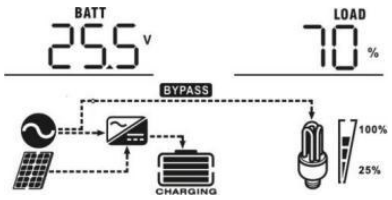
The product backlight and display are turned off and enter a low-power mode.

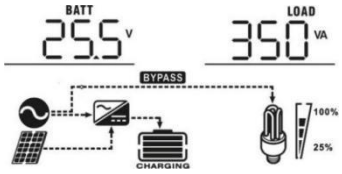
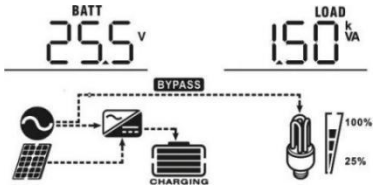
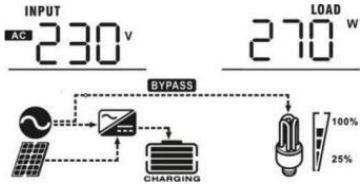
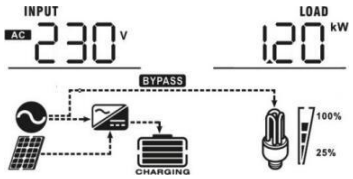
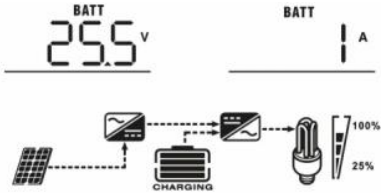
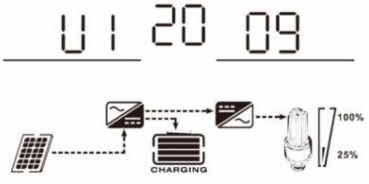
6. work pattern

6.1 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, MPPT charging current, MPPT charging power, charging current, charging power, battery voltage, output voltage, output frequency, load percentage, load in VA, load in Watt, DC discharging current, main CPU Version and second CPU Version.

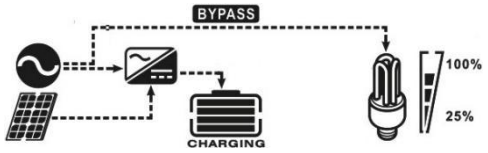
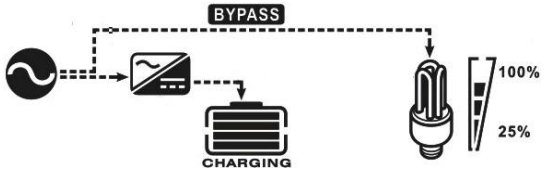
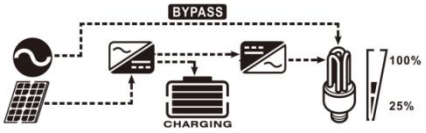
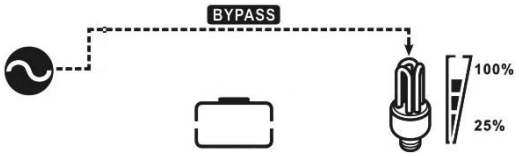
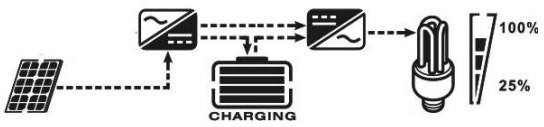
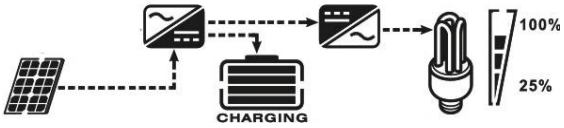
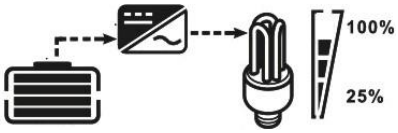
Selectable information	LCD display
Input voltage/Output voltage (Default Display Screen)	Input Voltage=230V, output voltage=230V 
Input frequency	Input frequency=50Hz 
PV voltage	PV voltage=260V 
PV Power	PV Power=500W 

Charging current	AC and PV charging current=50A  PV charging current=50A  AC charging current=50A 
Battery voltage and output voltage	Battery voltage=25.5V, output voltage=230V 
Output frequency	Output frequency=50Hz 
Load percentage	Load percent=70% 

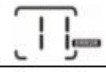
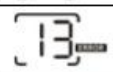
Load in VA	When connected load is lower than 1kVA, load in VA will present xxxVA like below chart.  When load is larger than 1kVA (≧1KVA), load in VA will present x.xkVA like below chart. 
Load in Watt	When load is lower than 1kW, load in W will present xxxW like below chart.  When load is larger than 1kW (≧1KW), load in W will present x.xkW like below chart. 
Battery voltage/DC discharging current	Battery voltage=25.5V、discharging current=1A 
CPU version checking	CPU version 2011 

6.2 Operating Mode Description

Operation mode	Description	LCD display
Standby mode: The inverter is not turned on yet but at this time, the inverter can charge battery without AC output. Power saving mode: If enabled, the output of inverter will be off when connected load is pretty low or not detected.	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 Errors are caused by inside circuit error or external 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="4">Line Mode</td><td rowspan="4">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 battery is connected, solar energy will charge battery as first priority.if solar energy is sufficient for charging, solar and the utility will provide the loads.
 
</td></tr>
<tr><td>Power from utility.
 
</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>
</table>

6.3 Fault Reference Code

Fault Code	Fault Event	Icon on
01	Fan is locked when inverter is off	
02	Over temperature	
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	
11	Main relay failed	
13	Solar charger stops due to high PV voltage	
51	Over current or surge	
52	Bus voltage is too low	
53	Inverter soft start failed	
55	Over DC voltage in AC output	
57	Current sensor failed	
58	Output voltage is too low	

6.3 Warning Indicator

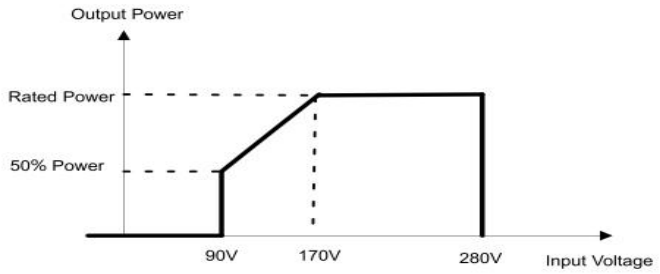
Warning Code	Warning Event	Audible Alarm	Icon flashing
01	Fan is locked when inverter is on.	Beep three times every second	
03	Battery is over-charged	Beep once every second	
04	Low battery	Beep once every second	
07	Overload	Beep once every 0.5 second	
10	Output power derating	Beep twice every 3 seconds	

7.Technical parameters

7.1 Battery Pack Information：

Product model	SJY-C096-24100
Rated voltage	25.6V
Rated capacity	100Ah
Rated energy	2.56kWh
Max. charging current	50A @25℃
Max. discharging current	150A
Peak discharging current	160A（3S）
Screen	LCD Screen
Battery type	LFP
Life cycle（80%DOD,0.5C,25℃）	4000 Cycles
Max.charging voltage	29.2V
Over discharge voltage	21.6V
Communication interfaces	built-in-CAN/RS485
Storage time /temperature	6 months @25℃;3 months @35℃;1 months @45℃;
Charging temperature range	0 ~ 55℃

7.2 Inverter Mode Specifications

INVERTER MODEL	3.2KVA-24V
Input Voltage Waveform	Sinusoidal (utility or generator)
Nominal Input Voltage	230Vac
Low Loss Voltage	170Vac±7V (UPS); 90Vac±7V(Appliances)
Low Loss Return Voltage	180Vac±7V(UPS); 100Vac±7V(Appliances)
High Loss Voltage	280Vac±7V
High Loss Return Voltage	270Vac±7V
Max AC Input Voltage	300Vac
Nominal Input Frequency	50Hz/60Hz (Auto detection)
Low Loss Frequency	40±1Hz
Low Loss Return Frequency	42±1Hz
High Loss Frequency	65±1Hz
High Loss Return Frequency	63±1Hz
Output Short Circuit Protection	Circuit Breaker
Efficiency (Line Mode)	>95%(Rated R load,battery full charged)
TransferTime	10ms typical (UPS); 20ms typical(Appliances)
Output power derating: When AC input voltage drops to 170V, the output power will be derated.	

7.3 Inverter information

Model number	3.2KVA-24V
Rated Output Power	3200VA/3000W
Output Voltage Waveform	Pure Sine Wave
Output Voltage Regulation	230Vac±5%
Output Frequency	50Hz
Peak Efficiency	94%
Overload Protection	5s@150%lo ad;10s@110% ~ 150%lo ad
Surge Capacity	2*rated power for 5 seconds
Nominal DC Input Voltage	24Vdc
Cold Start Voltage	23.0Vdc
Low DC Warning Voltage @lo ad<50% @load >50%	22.0Vdc 21.0Vdc
Low DC Warning Return Voltage @load<50% @load >50%	22.5Vdc 22.0Vdc
Low DC Cut-off Voltage @load<50% @load ⩾50%	20.5Vdc 20.0Vdc
High DC Recovery Voltage	29Vdc
High DC Cut-off Voltage	31Vdc
No Load Power Consumption	<35W

8.Warranty Period &Product Liability

The shelf life of the energy storage machine is 36 months from the date of shipment. The internal battery should be energized to charge and activate you at least once within 3 months of idleness. The company will not be responsible for any damage to the battery performance due to prolonged idleness.

The company promises that if it is proved that the defect of the energy storage machine is caused in the manufacturing process of our company, the company is responsible for the replacement of the storage machine by the storage machine, and if the problem is caused by the abuse or misuse of the user, it will not be replaced.

If the following circumstances occur, the company has the right not to perform quality assurance：

- ◆ The whole machine and components have exceeded the free warranty period.
- ◆ Transport damage.
- ◆ Improper installation, modification or use.
- ◆ Operate in very harsh environments beyond those described in this manual.
- ◆ Machine failure or damage caused by installation, repair, alteration or disassembly not authorized by the company or other personnel.
- ◆ Any installation and use beyond the scope specified in the relevant international standards.
- ◆ Damage caused by abnormal natural environment caused by the above situation product failure, the customer requires maintenance services.

After the judgment of the company's service agency, it can provide paid maintenance services.

9.System maintenance

In order to maintain the best long-term performance, it is recommended to check the following items twice a year.

1.Make sure the airflow around the unit is not blocked and remove any dirt or debris from the radiator.

2.Check all exposed wires for insulation damage caused by sun exposure, friction with other objects around, dry rot, insects or rodents, etc. Repair or replace wires if necessary.

3.Verify that the instructions and display are consistent with the operation of the equipment, note any faults or incorrect displays and take corrective action if necessary.

4.Check all terminals for signs of corrosion, insulation damage, high temperature, or burning/discoloration, and tighten the terminal screws.

5.Check for dirt, nesting insects and corrosion and clean as required

6.If the arrester fails, replace it in time to prevent lightning damage to the fusioncube or other devices.

Warning：Electric shock danger! Before performing the preceding operations, ensure that all power supplies for the fusioncube are disconnected and the capacitor power is off Check or operate accordingly!

The company shall not be liable for any damage caused by:

①Damage caused by improper use or use in an unsuitable place.

②The open circuit voltage of the PV module exceeds the maximum allowable voltage.

③Damage caused by the working environment temperature exceeding the limit working temperature range.

④Disassemble and repair the all-in-one machine.

⑤Damage caused by force majeure: damage occurred during transportation or loading and unloading.

⑥ Please use it normally under the following conditions, otherwise it will overheat, catch fire, reduce performance or shorten life.

Environmental conditions：

Charge： 0 ~ + 50℃ Discharge： -20 ~ +60℃

Within 30 days of preservation Within 90 days of preservation