USER MANUAL

Hybrid Solar Inverter

With MPPT SCC/AC CHARGER

iXCEED 5.5K48 - D120
iXCEED 6.2K48 - D120

V:1.1

Table Of Contents

1 ABOUT THIS MANUAL

1.1 Purpose

This manual describes the assembly, installation, operation and troubleshooting of this unit. Please read this manual carefully before installations and operations. Keep this manual for future reference.

1.2 Scope

This manual provides safety and installation guidelines as well as information on tools and wiring.

2 SAFETY INSTRUCTIONS

WARNING:This chapter contains important safety and operating instructions. Read and keep this manual for future reference.

1. Before using the unit, read all instructions and cautionary markings on the unit, the batteries and all appropriate sections of this manual.
2. **CAUTION** --To reduce risk of injury, charge only deep-cycle lead acid type rechargeable batteries. Other types of batteries may burst, causing personal injury and damage.
3. Do not disassemble the unit. Take it to a qualified service center when service or repair is required. Incorrect re-assembly may result in a risk of electric shock or fire.
4. To reduce risk of electric shock, disconnect all wirings before attempting any maintenance or cleaning. Turning off the unit will not reduce this risk.
5. **CAUTION**-Only qualified personnel can install this device with battery.
6. **NEVER** charge a frozen battery.
7. For optimum operation of this inverter/charger, please follow required spec to select appropriate cable size. It's very important to correctly operate this inverter/charger.
8. Be very cautious when working with metal tools on or around batteries. A potential risk exists to drop a tool to spark or short circuit batteries or other electrical parts and could cause an explosion.
9. Please strictly follow installation procedure when you want to disconnect AC or DC terminals. Please refer to INSTALLATION section of this manual for the details.
10. One piece of 150A fuse is provided as over-current protection for the battery supply.
11. GROUNDING INSTRUCTIONS -This inverter/charger should be connected to a permanent grounded wiring system. Be sure to comply with local requirements and regulation to install this inverter.
12. NEVER cause AC output and DC input short circuited. Do NOT connect to the mains when DC input short circuits.
13. **Warning!!** Only qualified service persons are able to service this device. If errors still persist after following troubleshooting table, please send this inverter/charger back to local dealer or service center for maintenance.

3 INTRODUCTION

This is a multi-function inverter/charger, combining functions of inverter, solar charger and battery charger to offer uninterruptible power support with portable size. Its comprehensive LCD display offers user-configurable and easy-accessible button operation such as battery charging current, AC/solar charger priority, and acceptable input voltage based on different applications.

3.1 Features

- Capable to operate without Battery
- 120Vac single phase and 240Vac split phase
- Wider PV input voltage range:100V~500Vdc
- Excellent solar MPPT performance, efficiency up to 99%
- PV generated energy Total and Daily information
- Battery wake-up function
- Capable to communicate with battery BMS by RS-485 interface
- Pure sine wave inverter
- Configurable battery charging or discharging current based on applications via LCD setting
- Configurable AC/Solar Charger priority via LCD setting
- Overload/ Over temperature/ short circuit protection

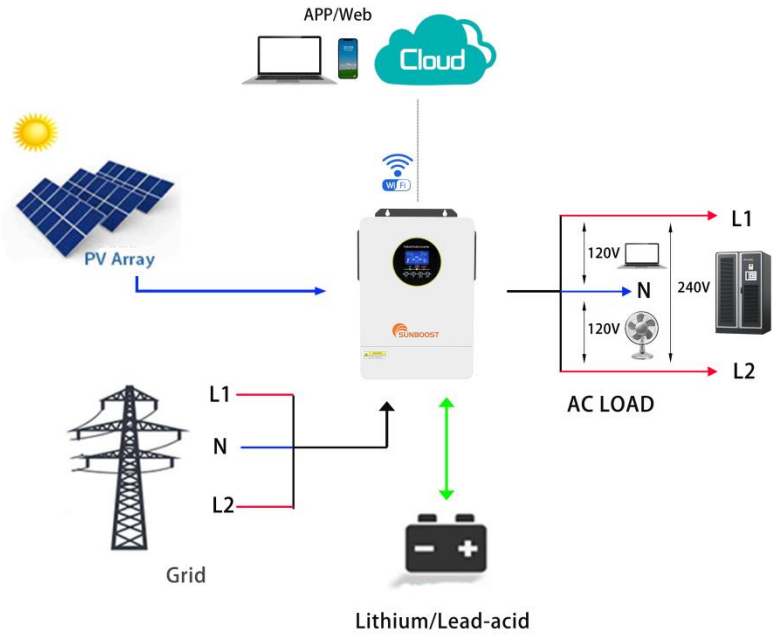
3.2 Basic System Architecture

The following illustration shows basic application for this inverter/charger. It also includes following devices to have a complete running system:

- Generator or Utility
- PV modules

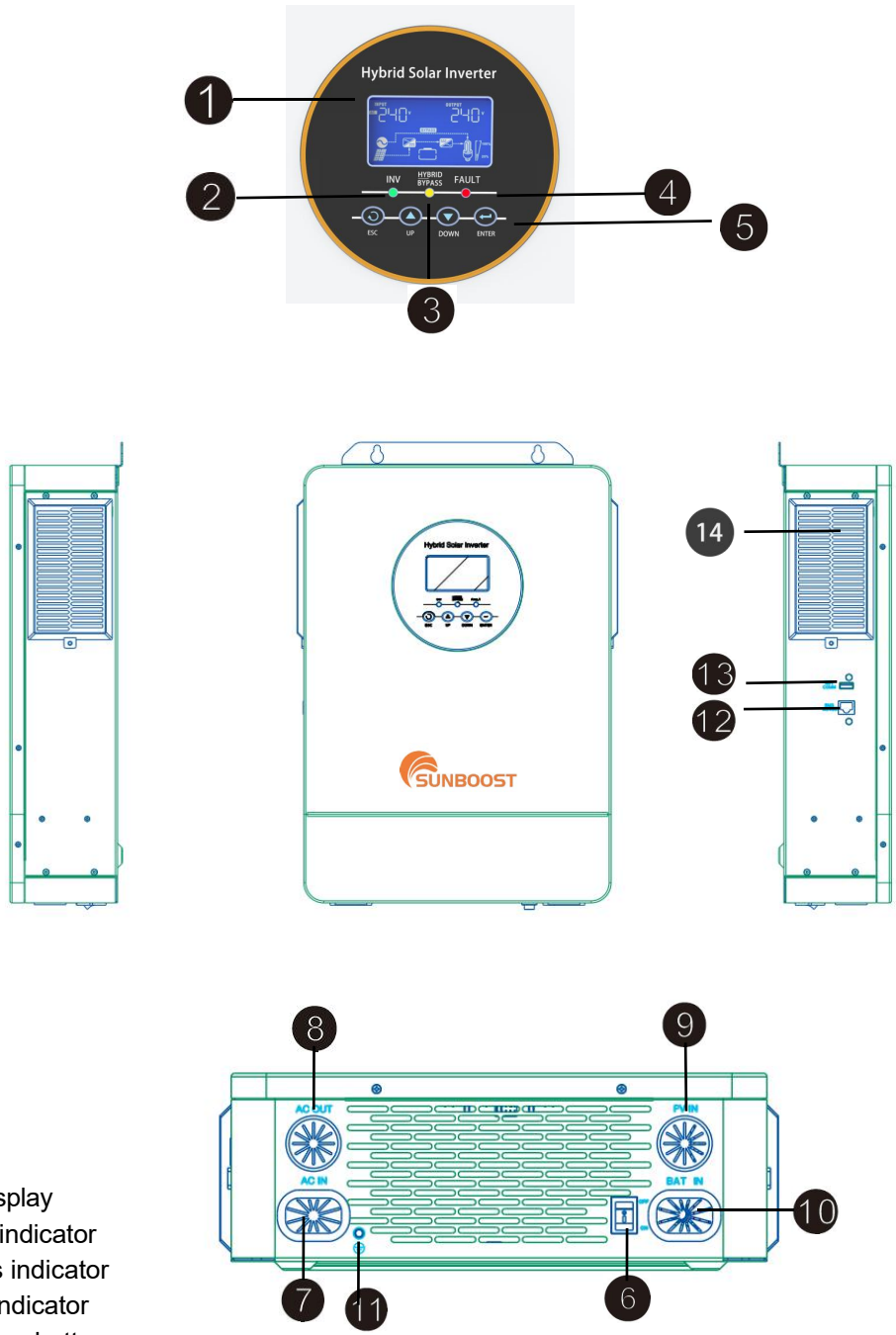
Consult with your system integrator for other possible system architectures depending on your requirements.

This inverter can power all kinds of appliances in home or office environment, including motor-type appliances such as tube light, fan, refrigerator and air conditioner.



3.3 Product overview

Figure 1 Hybrid Power System



1. LCD display
2. Status indicator
3. Bypass indicator
4. Fault indicator
5. Function buttons
6. Power on/off switch
7. AC input
8. AC split phase output
9. PV input
10. Battery input
11. Ground Screw
12. BMS RS485 communication port
13. USB communication port
14. Dust proof components

4 INSTALLATION

4. 1 Unpacking and Inspection

Before installation, please inspect the unit. Be sure that nothing inside the package is damaged. You should have received the following items inside of package:

- The unit x 1
- User manual x 1
- Screws x 4

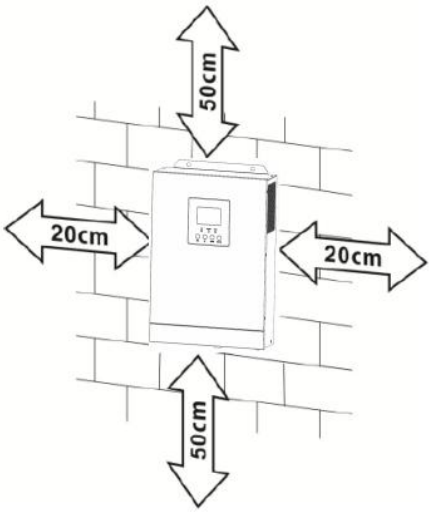
4. 2 Preparation

Before connecting all wirings, please take off bottom cover by removing as shown below.

4. 3 Mounting the Unit

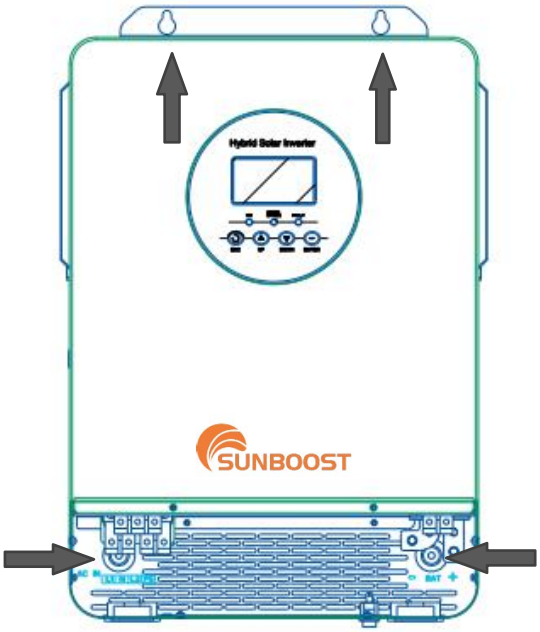
Consider the following points before selecting where to install:

- Do not mount the inverter on flammable construction materials.
- Mount on a solid surface.
- Install this inverter at eye level in order to allow the LCD display to be read at all times.
- For proper air circulation to dissipate heat, allow a clearance of approx 20 cm to the side and approx. 50 cm above and below the unit.
- The ambient temperature should be between 0℃ and 55℃ to ensure optimal operation.
- The recommended installation position is to be adhered to the wall vertically.
- Be sure to keep other objects and surfaces as shown in the diagram to guarantee sufficient heat dissipation and to have enough space for 50cm removing wires.



SUITABLE FOR MOUNTING ON CONCRETE OR OTHER NON-COMBUSTIBLE SURFACE ONLY.

Install the unit by screwing four screws. It's recommended to use M6×50 screws.



4.4 Battery Connection

CAUTION: For safety operation and regulation compliance, it's requested to install a separate DC over-current protector or disconnect device between battery and inverter. It may not be requested to have a disconnect device in some applications, however, it's still requested to have over-current protection installed. Please refer to typical amperage in below table as required fuse or breaker size.

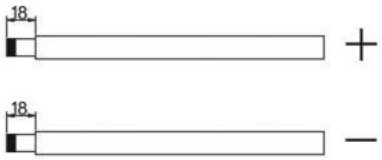
WARNING! All wiring must be performed by a qualified personnel.
WARNING! It's very important for system safety and efficient operation to use appropriate cable for battery connection. To reduce risk of injury, please use the proper recommended cable as below.

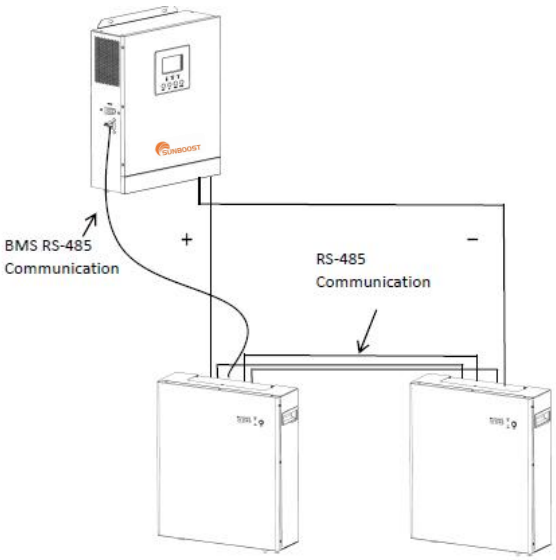
Recommended battery cable size:

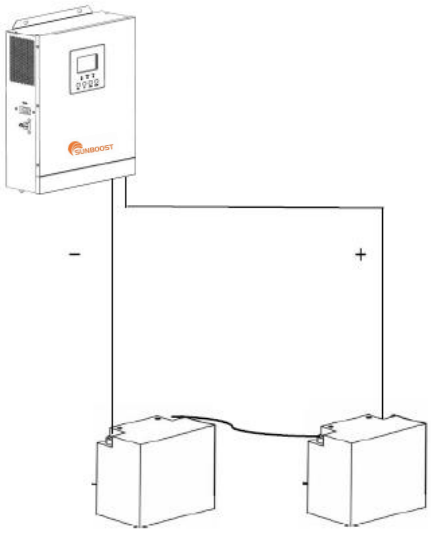
Model	Wire Size	Cable(mm²)	Torque value(max)
5.5KW/6.2KW	1x 3 AWG	25	6 N·m

Please follow below steps to implement battery connection:

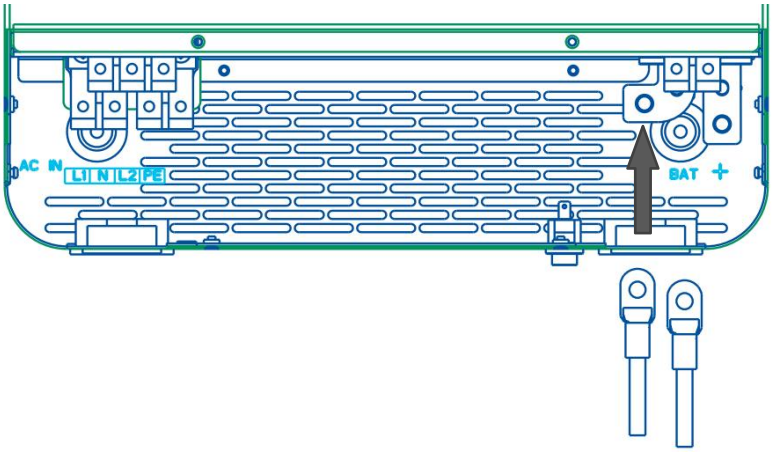
1. Remove insulation sleeve 18 mm for positive and negative conductors.
2. Suggest to put bootlace ferrules on the end of positive and negative wires with a proper crimping tool.
3. Connect all battery packs as below chart.







4. Insert the battery wires flatly into battery connectors of inverter and make sure the bolts are tightened with torque of 6 N·m in clockwise direction. Make sure polarity at both the battery and the inverter/charge is correctly connected and conductors are tightly screwed into the battery terminals.



⚠	**WARNING: Shock Hazard** Installation must be performed with care due to high battery voltage in series.

⚠	**CAUTION!!** Before making the final DC connection or closing DC breaker/disconnector, be sure positive (+)must be connected to positive(+)and negative(-) must be connected to negative (−).

4.5 AC Input/Output Connection

CAUTION!! Before connecting to AC input power source,please install a separate AC breaker between inverter and AC input power source. This will ensure the inverter can be securely disconnected during maintenance and fully protected from over current of AC input. The recommended spec of AC breaker is 50A for 5.5/6.2KW.

CAUTION!! There are two terminal blocks with "IN" and "OUT" markings. Please do NOT mis-connect input and output connectors.

WARNING! All wiring must be performed by a qualified personnel.

WARNING! It's very important for system safety and efficient operation to use appropriate cable for AC input connection. To reduce risk of injury, please use the proper recommended cable size as below.

Suggested cable requirement for AC wires

Model	Gauge	Cable(mm²)	Torque Value
5.5KW	10 AWG	6	2 N·m
6.2KW	10 AWG	6	2 N·m

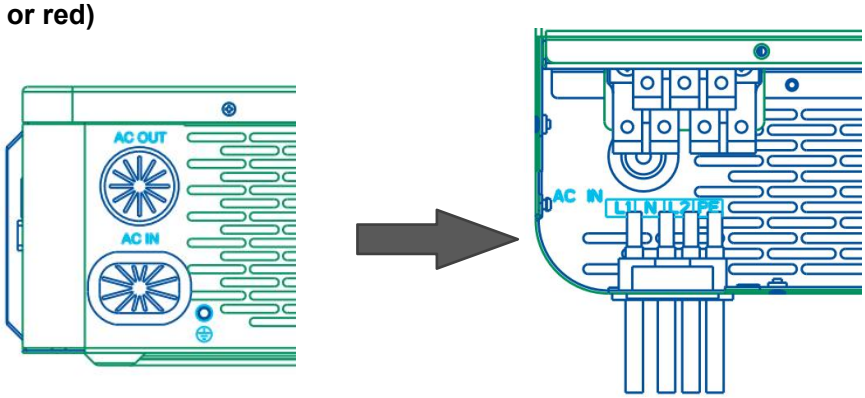
Please follow below steps to implement AC input/output connection:

1. Before making AC input/output connection, be sure to open DC protector or disconnector first.
2. Remove insulation sleeve 10mm for six conductors. And shorten phase L and neutral conductor N 3 mm.
3. Insert AC input wires according to polarities indicated on terminal block and tighten the terminal screws. Be sure to connect PE protective conductor (⏚) first.

   ⏚ → **Ground (yellow-green)**

   L1,L2→ LINE(brown or red)

   N→ Neutral(black)



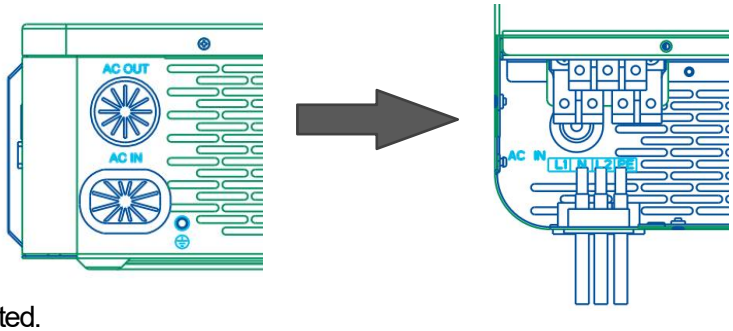
⚠	**WARNING:** Be sure that AC power source is disconnected before attempting to hardwire it to the unit.

4. Then, insert AC output wires according to polarities indicated on terminal block and tighten terminal screws. Be sure to connect PE protective conductor(⏚) first.

   ⏚ →**Ground(yellow-green)**

   L1,L2 →LINE(brown or red)

   N → Neutral(black)



5. Make sure the wires are securely connected.

CAUTION: Appliances such as air conditioner are required at least 2~3 minutes to restart because it's required to have enough time to balance refrigerant gas inside of circuits.If a power shortage occurs and recovers in a short time, it will cause damage to your connected appliances. To prevent this kind of damage,please check manufacturer of air conditioner if it's equipped with time-delay function before installation. Otherwise,this inverter/charger will trig overload fault and cut off output to protect your appliance but sometimes it still causes internal damage to the air conditioner.

4.6 PV Connection

CAUTION: Before connecting to PV modules, please install separately a DC circuit breaker between inverter and PV modules.

WARNING! It's very important for system safety and efficient operation to use appropriate cable for PV module connection. To reduce risk of injury, please use the proper recommended cable size as below.

Model	Wire Size	Cable(mm²)	Torque value(max)
5.5kW/6.2kW	1x 12AWG	4	1.2 N·m

PV Module Selection:

When selecting proper PV modules, please be sure to consider below parameters:

1. Open circuit Voltage (Voc) of PV modules not exceeds max. PV array open circuit voltage of inverter.
2. Open circuit Voltage (Voc) of PV modules should be higher than min. battery voltage.

INVERTER MODEL	5.5kW	6.2KW
Max.PV Array Open Circuit Voltage	500Vdc	
PV Array MPPT Voltage Range	120Vdc~450Vdc	

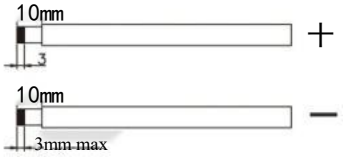
Take 550Wp PV module as an example. After considering above two parameters, the recommended module configurations are listed as below table.

Solar Panel Spec. (reference) - 550Wp - Vmp:42.1Vdc - Imp:14.3A - Voc:49.7Vdc - Isc:14.4A - Cells:72	SOLAR INPUT (Min in serial:3 pcs, max. in serial:9 pcs)	Total Voc / Vmp	Total input power
	3 pcs in serial	149.1V / 126.3V	1650W
	4 pcs in serial	198.8V / 168.4V	2200W
	5 pcs in serial	248.5V / 210.5V	2750W
	6 pcs in serial	288.2V / 252.6V	3300W
	7 pcs in serial	347.9V / 294.7V	2750W
	8 pcs in serial	397.6V / 336.8V	4400W
	9 pcs in serial	447.3V / 378.9V	4950W
	5 pieces in serial and 2 sets in parallel	248.5V / 210.5V	5500W
	6 pieces in serial and 2 sets in parallel	288.2V / 252.6V	6600W

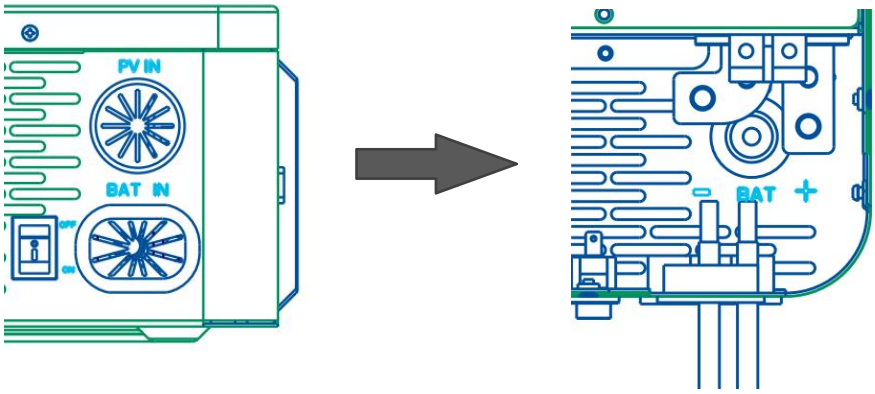
PV Module Wire Connection

Please follow below steps to implement PV module connection:

1. Remove insulation sleeve 10 mm for positive and negative conductors.
2. Suggest to put bootlace ferrules on the end of positive and negative wires with a proper crimping tool.

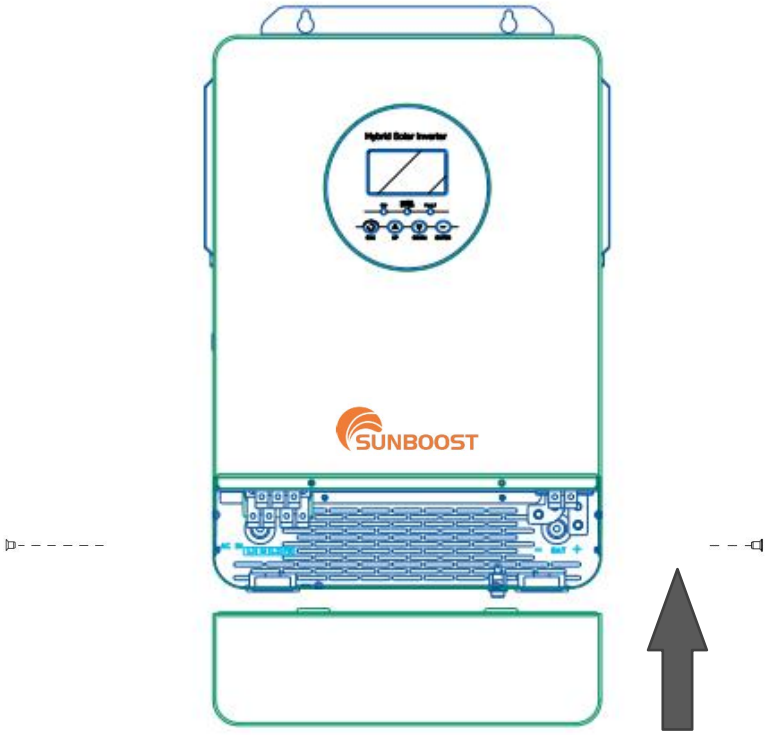


3. Check correct polarity of wire connection from PV modules and PV input connectors. Then, connect positive pole(+)of connection wire to positive pole(+)of PV input connector. Connect negative pole(-)of connection wire to negative pole(-)of PV input connector. Screw two wires tightly in clockwise direction.



4.7 Final Assembly

After connecting all wiring, please put bottom cover back by screwing four screws as shown below.



4.8 Communication Connection

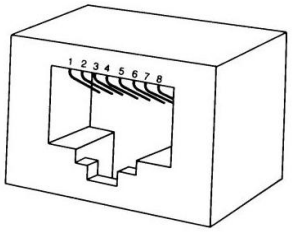
BMS RS-485 communication:

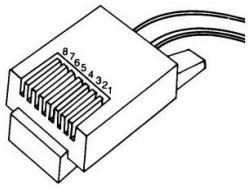
Please use supplied communication cable to connect to inverter and Lithium battery Pack's BMS RS-485,select the PYLON communication protocol,when the communication is OK, the battery icon"Li"blink( ) ,then Re-configure charging voltage, charging current,battery discharge cut-off voltage and SOC etc according to the lithium battery BMS parameters.

NOTE: 1. Configure and use lead-acid battery packs, the BMS RS-485 communication don't used,and the screen icon displays "SLA"( );

2. Below is signal definition of RS-485 Communication Terminal (RJ45 port).

RS-485 port (to BMS)	
PIN	Definition
Pin 8	RS485-B
Pin 7	RS485-A
Pin 6	GND



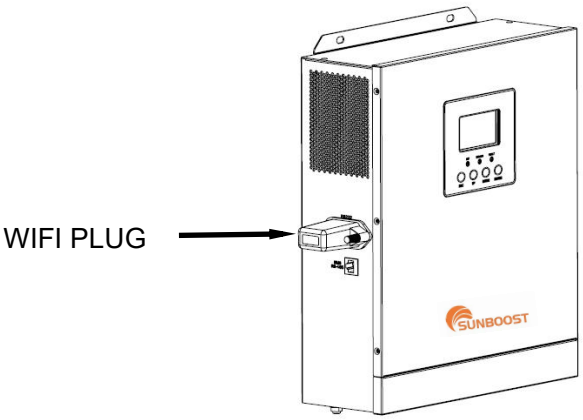


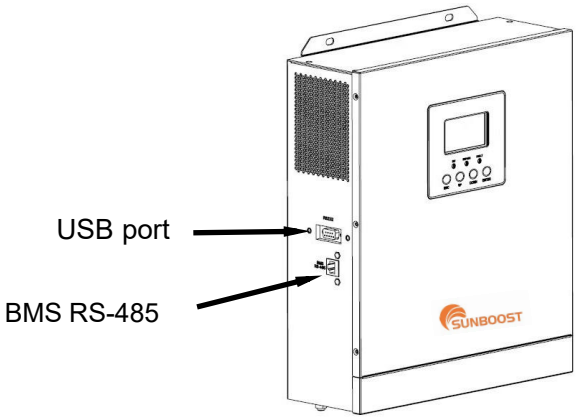
RS-232 communication:

Please use communication cable to connect to inverter and PC,then through the upper computer software to view the inverter information.

Wi-Fi cloud communication (option):

Please use supplied communication cable to connect to inverter and Wi-Fi module(or direct connect to inverter and WiFi PLUG). Download APP and installed from APP store, and Refer to "WiFi Plug Quick Installation Guideline"to set up network and registering. The inverter status would be shown by mobile phone APP or webpage of computer.

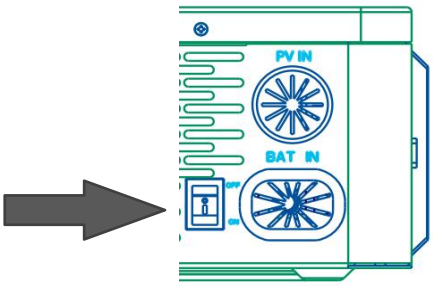




5 OPERATION

5.1 Power ON/OFF

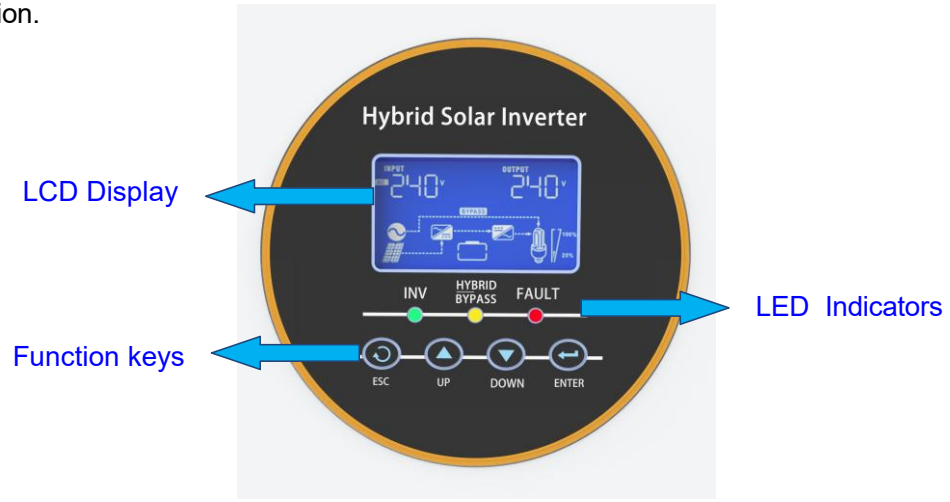
Bottom view of unit



Once the unit has been properly installed and the batteries are connected well, simply press On/Off switch (located on the button of the case) to turn on the unit.

5.2 Operation and Display Panel

The operation and display panel, shown in below chart, is on the front panel of the inverter.It includes three indicators, four function keys and a LCD display, indicating the operating status and input/output power information.



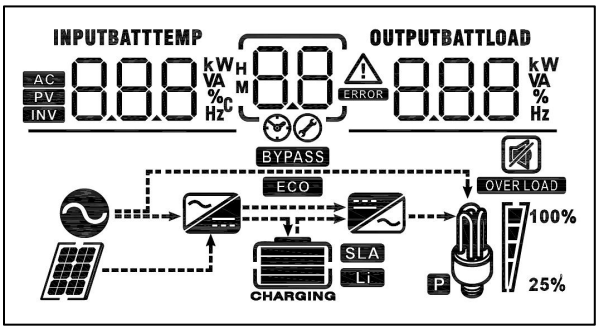
LED Indicator

LED Indicator			Messages
INV	Green	Solid On	Output is powered by PV(main) or Bat in Inverter mode.
		Flashing	Output is powered by bat(main) or PV in Inverter mode.
HYBRID BYPASS	Yellow	Solid On	Output is powered by utility in Line mode.
		Flashing	Output is powered by utility and PV/Bat in Hybrid mode.
⚠ FAULT	Red	Solid On	Fault condition occurs in the inverter.
		Flashing	Warning condition occurs in the inverter.

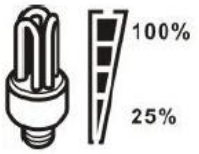
Function Keys

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 display in-turns

5.3 LCD Display Icons



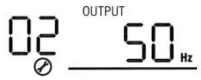
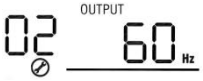
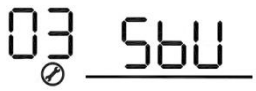
Icon	Function description
Input Source Information	
AC	Indicates the AC input or display AC parameter
PV	Indicates the PV input or display PV parameter
INV	Indicates the INV Output or display INV parameter
INPUTBATT 888 kW VA % Hz	Indicate input voltage, input frequency, PV voltage, charger current, charger power, battery voltage , PV power generation ,etc.
Configuration Program and Fault Information	
SET 88	Indicates the setting programs
88 ERROR	Indicates the warning and fault codes. Warning: 88 flashing with warning code. Fault: 88 ERROR lighting with fault code
Output Information	
OUTPUTBATTLOAD 888 kW VA % Hz	Indicate output voltage, output frequency, load percent, load in VA, load in Watt and discharging current.
Battery Information	
CHARGING	Indicates battery SOC level by 0-24%,25-49%,50-74% and 75-100% in battery mode and charging status in line mode.

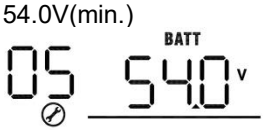
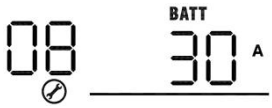
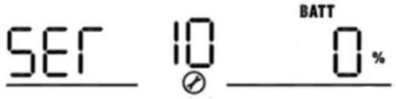
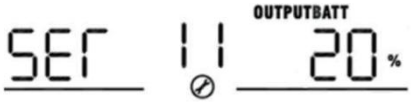
<table>
<tr><td colspan="5">Load Information</td></tr>
<tr><td>OVERLOAD</td><td colspan="4">Indicates overload.</td></tr>
<tr><td rowspan="3"> 
</td><td colspan="4">Indicates the load level by 0-24%,25-49%,50-74% and 75-100%。</td></tr>
<tr><td>0%~24%</td><td>25%~49%</td><td>50%~74%</td><td>75%~100%</td></tr>
<tr><td>  </td><td>  </td><td>  </td><td>  </td></tr>
<tr><td colspan="5">Mode Operation Information</td></tr>
<tr><td>  </td><td colspan="4">Indicates unit connects to the mains.</td></tr>
<tr><td>  </td><td colspan="4">Indicates unit connects to the PV panel,weak to strong power.</td></tr>
<tr><td> 
</td><td colspan="4">Indicates load is supplied by utility power.</td></tr>
<tr><td>  </td><td colspan="4">Indicates the utility charger or PV supply circuit is working.</td></tr>
<tr><td>  </td><td colspan="4">Indicates the DC/AC inverter circuit is working.</td></tr>
<tr><td colspan="5">Mute Operation</td></tr>
<tr><td>  </td><td colspan="4">Indicates unit alarm is disabled.</td></tr>
</table>

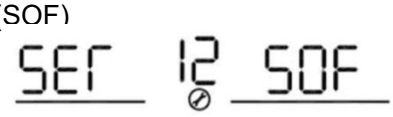
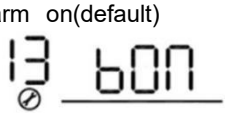
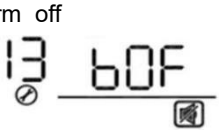
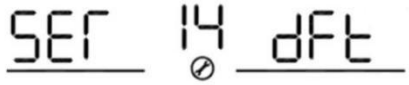
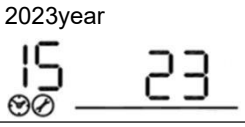
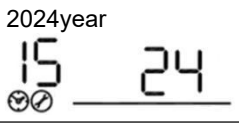
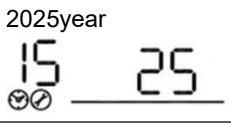
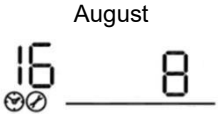
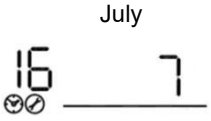
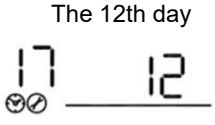
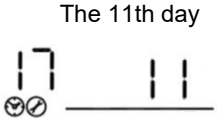
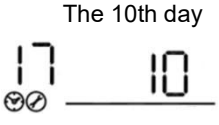
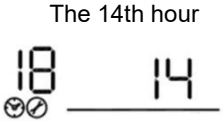
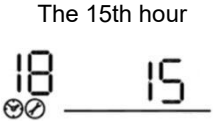
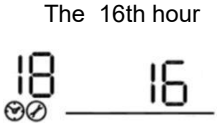
5.4 LCD Setting

After pressing and holding “ESC” and “ENTER” button together for >10 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	
01	Output voltage	220V  230V  240V(default) 	
02	Output frequency	50Hz 	60Hz(default) 
03	Output source priority: To configure load power source priority	Solar first (default) 	Solar energy provides power to loads as first priority.If solar energy is not sufficient to power all loads, battery will supply power to loads at the same time. Utility provides power to the loads only when battery SOC drops to either 60% or 80% by setting program 7.
		SBU priority 	Solar energy provides power to loads as first priority.If solar energy is not sufficient to power all loads, battery will supply power to loads together. Utility provides power to the loads only when battery SOC drops to either 20% or 40% by setting program 7.
		Utility first 	Utility and solar energy provides power to the loads as first priority. The battery will provide power to the loads only when utility power is not available.
04	Battery type (The icon is displayed on the right of the battery icon, Li---Li Battery, SLA---Lead-acid Battery)	Li Battery(default)  Lead-acid Battery  User-defined 	

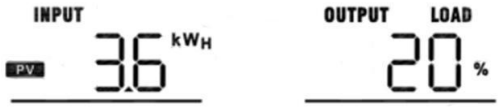
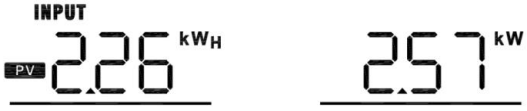
05	Maximum Battery Charging Voltage	58.4V(max.) 	57.6V（default） 
		56.0V 	54.0V(min.) 
06	Minimum Battery Discharging Voltage	48.0V(max.) 	46.2V 
		45.0V(default) 	42.0V(min.) 
07	Battery SOC Reserved for backup	Higher SOC Reserved (default) 	Lower SOC Reserved 
08	Maximum battery charging current	100A(max.) 	60A(default) 
		50A 	30A(min.) 
09	Maximum battery discharging current	120A (max.) 	100A (default) 
		70A 	50A(min.) 
10	Under voltage SOC value setting	0%(default) 	
11	Enable the second output and set the SOC value	20%(default) 	

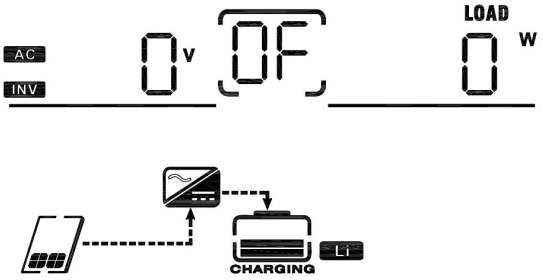
12	Enabling or disabling the grid connection function	Default Off (SOF) 
13	Alarm control	Alarm on(default)  Alarm off 
14	Restore factory setting	
15	Calendar Clock setting --Year	2023year  2024year  2025year 
16	Calendar Clock setting -- Month	September  August  July 
17	Calendar Clock setting --Day	The 12th day  The 11th day  The 10th day 
18	Calendar Clock setting --Hour	The 14th hour  The 15th hour  The 16th hour 
19	Calendar Clock setting -- Minute	The 11th minute  The 12th minute  The 13th minute 

5.5 Display information

The LCD display information may be switched in-turns by pressing "UP"or "DOWN" key, or pressing "ENTER" key to display in-turns. The selectable information is switched as below order: Output voltage / Load power，Output frequency / Load current，PV voltage / PV current, PV generated energy Today / PV power，Battery voltage / Battery SOC， Battery Charging current / Battery power， Unit temperature / Battery Discharging current ， Input AC voltage / Input AC frequency, Unit firmware Version, and calendar clock, etc.

Selectable information	LCD display
Output voltage and load power (Default Display Screen)	Output Voltage=115V,load power=3.1kW 

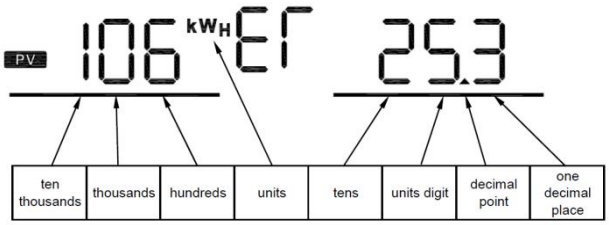
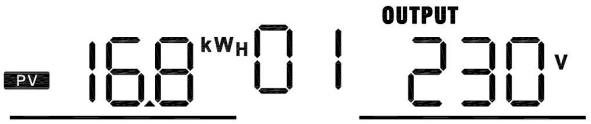
L1+L2 Outputvoltageandloadpower (DefaultDisplayScreen)	OutputVoltage=230V,loadpower=5KW 
output frequency and load current	Output frequency=60.0Hz,load current=25.0A 
L1 outputvoltageandtotalvoltage	L1.Voltage=115V,Totalvoltage=230V 
PV.Thetotalpowergeneration(left)andthesoc valueofthesecondoutput	PVtotalpowergeneration=3.6KWH,Thesecond outputis20% 
PV voltage and PV current	PV voltage=270V,PV current=9.5A 
PV generated energy Today and PV power	PV generated energy Today =2.26kWH,PV power=2.57kW 
Battery voltage and SOC	Battery voltage=51.2V,Battery SOC=65% 
Battery Charging current and Battery power	Battery Charging current=65.0A,Battery power=3.33kW

	
Temperature and Battery Discharging current	Temperature=58℃,Discharging current=75.0A 
Input AC voltage and frequency	Input AC voltage=240V,Frequency=60.0Hz 
Firmware version and power	Power=6.2kW,Firmware version=48.120 
Calendar clock:year/month/day	Year=2023,month=September,day=12th 
Calendar clock:hour/minute/second	Hour=16th,minute=02th,second=23th 
Switch off (The inverter is turned off , and No AC output. but the display is steady on,and the battery can be charged by solar energy or utility)	

5.6 PV generated energy information Display.

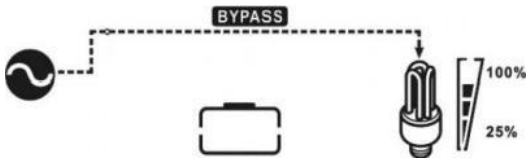
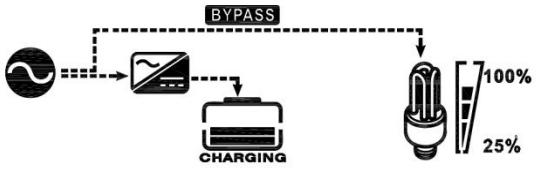
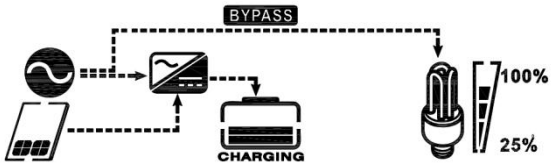
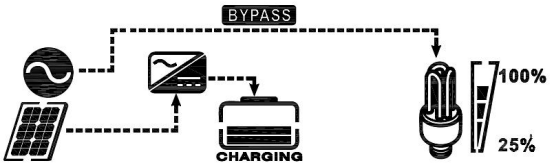
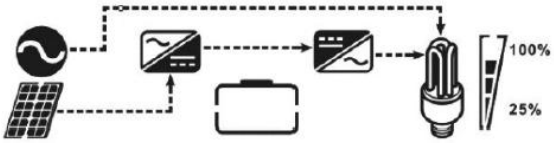
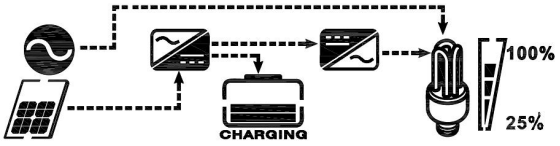
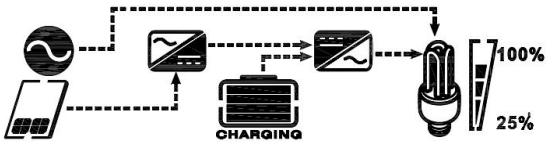
After pressing and holding "ESC”and "UP" button together for >10 seconds, the LCD will display PV generated energy information.Press "UP”or"DOWN" button to show PV generated energy Total or Daily for nearly 10days, finally press "ENTER" button to exit.

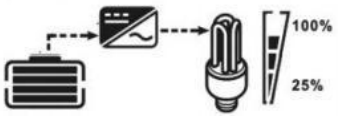
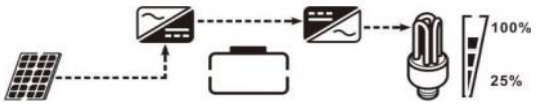
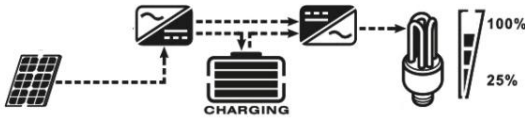
<table>
<tr><td rowspan="2">PV Total generated energy
ET： Energy Total ,ETotal

(the higher 3 digits of ETotal shown on the left, and the lower 3 digits shown on the right, so the maxium of ETotal shown at most 99999.9kWH)</td><td>PV Total generated energy=96.1kWH
  </td></tr>
<tr><td>PV Total generated energy=10625.3kWH
  </td></tr>
<tr><td rowspan="2">PV generated energy Daily</td><td>01=Today, PV generated energy=16.8kWH
  </td></tr>
<tr><td>02=Yesterday, PV generated energy=24.0kWH
 
10=9th days ago,PV generated energy=20.6kWH
  </td></tr>
</table>

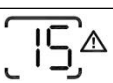
5.7 Operating Mode Description

Operation mode	Description	LCD display
Standby mode **Note:** *Standby mode: The inverter is turned off , and No AC output. but the battery can be charged by solar energy or utility.	No output is supplied by the unit but it still can charge batteries.	When switch is turned off , display "OF" on LCD. 
		No charging. 
		Charging by solar energy. 
		Charging by utility. 
Fault mode Note: *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.	No Charging. 
		Charging by solar energy. 
		Charging by utility. 

Operation mode	Description	LCD display
Bypass Mode	The load power is provided only by the mains. The battery can be charged by the mains or solar energy at this mode.	Power from utility 
		Power from utility and Charging by utility. 
		Power from utility, Charging by utility and solar energy. 
		Power from utility，and Charging by solar energy 
Hybrid Mode	The load power is provided by the mains and solar energy or battery together. The battery can be charged also by superfluous solar energy at this mode.	If the battery is not connected, solar energy and the utility will provide the loads together. 
		If the battery is weak and solar energy is not sufficient to provide the load, or "utility first" is selected , solar energy and the utility will provide the loads together and the battery is charged by extra solar energy. 
		If "solar first" or "solar and battery first" is selected and the battery SOC is higher (solar energy stored before), the battery and the utility will provide the loads together and battery is also charged by superfluous solar energy. 

Inverter Mode	The load power is provided by solar energy and battery together. The battery can be charged also by superfluous solar energy at this mode.	Power from battery only 
		Power from solar energy only 
		Power from solar energy and battery together，and battery is also charged by superfluous solar energy. 
		If "solar first" or "solar and battery first" is selected , and solar power and the battery SOC is higher, solar energy and the battery will provide the loads together ，even if the mains is OK. 

5.8 Fault Reference Code

Fault Code	Fault Event	Icon on
01	Overload time out	
02	Over temperature	
03	INV Over current	
04	Invert Short	
05	Output voltage is too high	
06	Output voltage is too low	
07	Bus voltage is abnormal	
08	Bus voltage is too high	
09	Bus voltage is too low	
10	PV Over current	
11	Fan Fail	
12	Battery voltage is too high	
13	Battery voltage is too low	
14	Battery disconnected	
15	Temperature sensor wire disconnected	

6 SPECIFICATION

MODEL	iXCEED 5.5K48-D120	iXCEED 6.2K48-D120
PV Array		
Max.PV Array Power	6600W	7200W
Max.PV Array Open-Circuit Voltage	500Vdc	
Start-up Voltage	100Vdc	
MPPT Operating Voltage Range	120-450Vdc	
MPPT Efficiency	99%	
Nominal Input Voltage	360Vdc	
Max. Input Current MPPT	18A	
Battery		
Battery Type	lead-acid /Li-ion	
Nominal Battery Voltage	48V	
Battery Voltage Range	42 - 58V	
Max. AC Charging Current	50A	
Max. PV Charging Current	100A	
Max. battery discharge current	120A	
AC Input		
Nominal Voltage	240Vac（split phase）	
Voltage Range	170-275Vac	
High Loss Voltage	280Vac±7V	
Low Loss Voltage	170Vac±7V(UPS)	
Frequency	50/60Hz(Auto sensing)	
High Loss Frequency	65Hz	
Low Loss Frequency	45Hz	
Max. Input Current	40A	
AC Output		
Nominal Voltage	120Vac (L1/N, L2/N)/240Vac(L1/L2)±5%	
Output Voltage Waveform	Pure Sine Wave	
Rated Output Power	5500VA/5500W	6200VA/6200W
Peak Output Power	8000VA	8800VA
Nominal Output Frequency	50/60Hz	
Transfer Time	10ms	
Max. PV to AC Efficiency	96.5%	
Max. Battery to AC Efficiency	93.5%	
Protection		
Over Temperature Protection	Yes	
Overload Protection	3s@≥150% load;10s@110%~150% load	
General Data		
Operating Temperature Range	-10 -- +50℃	

Safety Certification	CE
Relative Humidity	0∽95%Relative Humidity (Non-condensing)
Max. Operating Altitude	< 4000m
Cooling Method	Intelligent Fan cooling
Display	LED + LCD
Communication with BMS	RS-485
Communication with Cloud	WiFi/4G
Degree of Protection	IP21
Weight	10kg
Dimension(W*H*D)	435*107*306mm
Mounting Method	Wall Mounted

Notes：When single-phase output is used, the power is only half of the rated power.

7 TROUBLE SHOOTING

Problem	LCD/LED/Buzzer	Explanation / Possible cause	What to do
Mains power often outages, battery backup time is insufficient	The inverter works properly.	Poor battery performance or small capacity; Battery SOC is low during power outage.	Increase battery capacity; You can select "SBU" priority and set "Battery SOC Reserved "High (SoH), or select "UTL" mains priority to keep the battery SOC high in case of mains outage.
The electricity supply is stable, but the electricity bill has not decreased significantly	The inverter works properly.	Insufficient use of solar energy or batteries.	If the mains is stable, select SBU and set Battery SOC Reserved Low (SoL) to reduce mains power supply by making full use of solar power and battery energy storage.
There is no reaction after the battery is connected	No display	Battery voltage is too low; The battery polarity is reversed; The battery input is insured damaged	I. Check whether the battery connection is normal 2. Charge or replace the battery 3. Replace Insurance
After the battery is connected, it automatically shuts down during startup	The LCD/LEDs and buzzer work for 3S and then turn off	Battery voltage is too low	1. Re-charge battery. 2. Replace battery.
When the mains is connected, the LCD voltage of the inverter is 0	Input voltage is displayed as O on the LCD and green LED is flashing	Input protector is tripped	Check if AC breaker is tripped and AC wiring is connected well.
	Green LED is flashing.	Insufficient quality of AC power.	1. Check if AC wires are too thin and/or too long; 2. Check whether the mains voltage is normal or the input voltage range is set correctly.
	Green LED is flashing.	Set "Solar First" as the priority of output source.	Change output source priority to Utility first.
When the unit is turned on, internal relay is switched on and off repeatedly.	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 01	Overload error.	Reduce the connected load by switching off some equipment.
	Fault code 02	Over temperature fault: The temperature of the radiator inside the inverter exceeds 80°C.	Check whether the inlet and outlet of the inverter are blocked or the ambient temperature is too high.
	Fault code 03	The inverter overflows and internal components fail	Restart the inverter. If it does not work properly, return to the repair center.
	Fault code 04	Output short circuit	Check if wiring is connected well and remove abnormal load.
	Fault code 05	High output voltage	Restart the inverter. If it does not work properly, return to the repair center.
	Fault code 06	Low output voltage	
	Fault code 07	The bus voltage is abnormal	
	Fault code 08	The bus voltage is too high	
	Fault code 09	The bus voltage is too low	
	Fault code 10	PV over current	
	Fault code 11	Fan error	Check if wiring is connected well or replace the fan
	Fault code 12	The battery voltage is too high.	1. Check if wiring is connected well; 2. Check if spec and quality of batteries are meet requirements.
	Fault code 13	The battery voltage is too low.	
	Fault code 14	The battery not connected	