



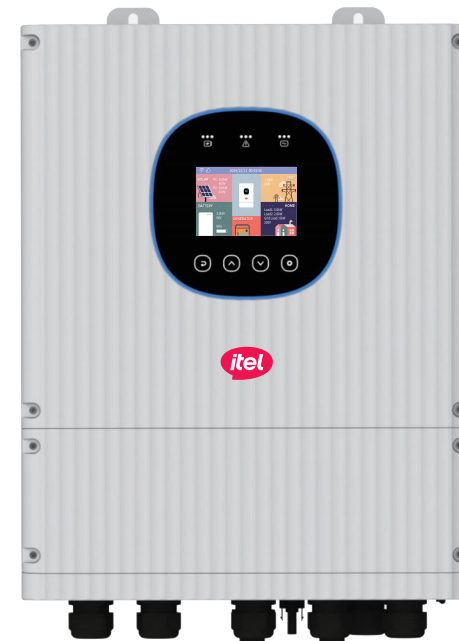
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User Guide

Hybrid Inverter

IHY-6K6L1C



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ABOUT THIS MANUAL

Purpose

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

Scope

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



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 marks 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 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 wiring before attempting any maintenance 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. 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.

WARNING MARKS

Warning marks inform users of conditions which can cause serious physical injury or death, or damage to the device. They also tell users how to prevent the dangers. The warning marks used in this operation manual are shown below:

Mark	Name	Instruction	Abbreviation
 Danger	Danger	Serious physical injury or even death may occur if not follow relevant requirements.	
 Warning	Warning	Physical injury or damage to the device may occur if not follow relevant requirements.	
 Forbid	Electrostatic sensitive	Damage may occur if relevant requirements are not followed.	
 Hot	High temperature	Do not touch the base of the inverter as it will become hot.	
Note	Note	The procedures taken for ensuring proper operation.	Note

INTRODUCTION

This is a multi-function inverter/charger, combining functions of inverter, MPPT solar charger and battery charger to offer uninterruptible power support with portable size. It's 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.

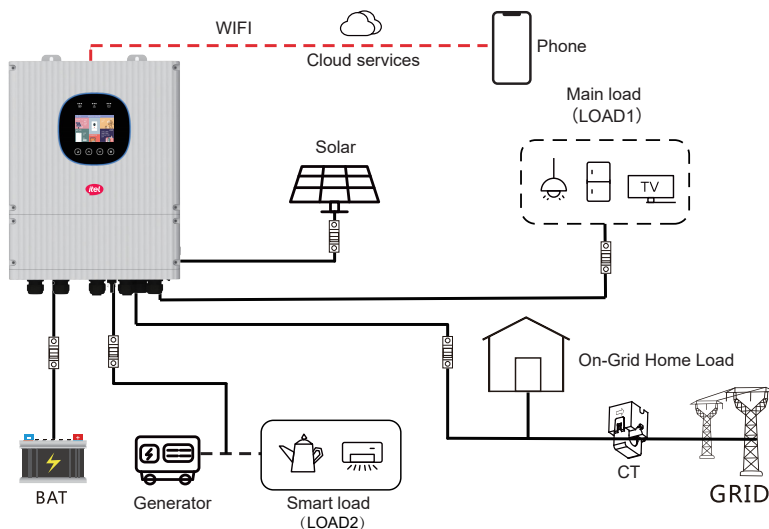
Features

- Pure sine wave inverter
- Built-in 2 MPPT solar charge controller
- Configurable input voltage range for home appliances and personal computers via LCD setting
- Configurable battery charging current based on applications via LCD setting
- Configurable AC/Solar Charger priority via LCD setting
- Compatible to mains voltage or generator power
- Auto restart while AC is recovering
- Overload/Over temperature/Short circuit protection
- Inverter running without battery
- Lithium battery activation function
- Parallel connection quantity up to 12 units model (Battery must be connected)
- Intelligent fan control greatly reduces fan noise
- Dual output

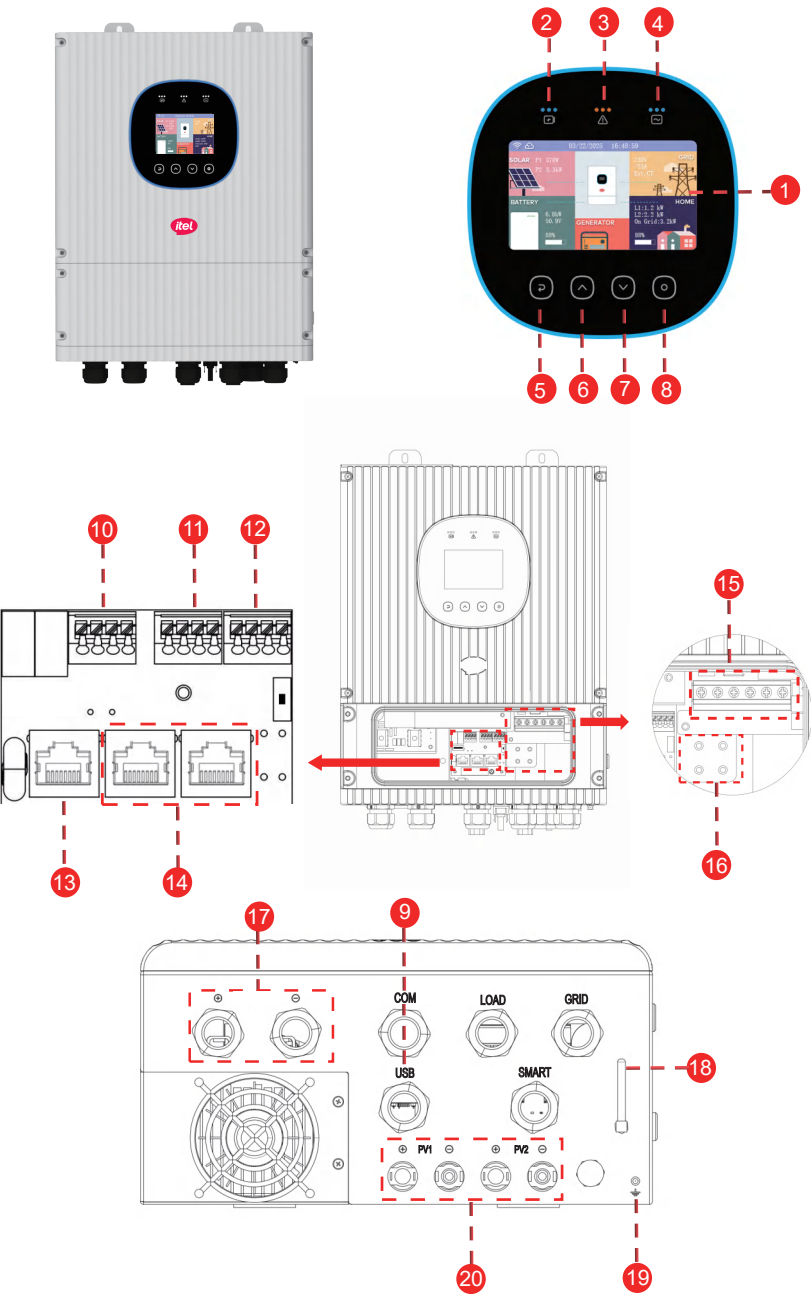
Basic System Diagram

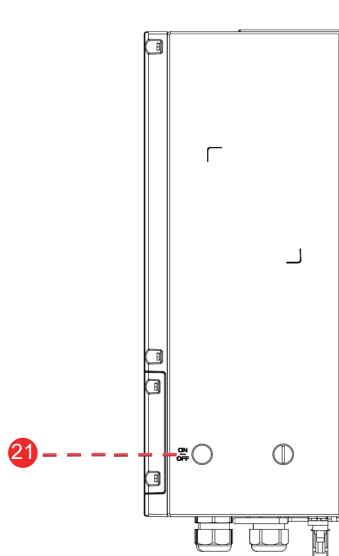
The following illustration shows basic application for this inverter/charger.

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.



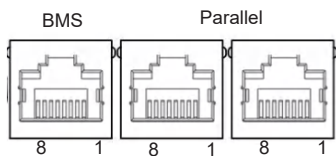
PRODUCT OVERVIEW





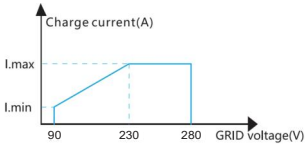
- | | |
|------------------------------|---------------------------------|
| 1.LCD display | 12.METER/485 and CT port |
| 2.Battery indicator | 13.BMS port |
| 3.Fault or warning indicator | 14.Parallel connection-CAN port |
| 4.AC output indicator | 15.AC output port |
| 5.ESC button | 16.Grounding busbar |
| 6.UP button | 17.Battery connection port |
| 7.DOWN button | 18.Antenna |
| 8.Enter | 19.Grounding terminal |
| 9.USB2.0 port | 20.PV input connection port |
| 10.DO port | 21.ON/OFF Switch |
| 11.DI port | |

13 14 Order of the communication port



NO.	Parallel	BMS
1	—	485B
2	—	485A
3	—	NTC+
4	CANH	CANH
5	CANL	CANL
6	—	NTC-
7	—	485A
8	—	485B

Line mode specifications	
Model	IHY-6K6L1C
Rated output power	6000W/6000VA
Max. output power	6600W/6600VA
Nominal DC input voltage	48V
Battery Voltage Range	40-60V
Input voltage waveform	Sinusoidal (utility or generator)
Input Type	Single-phase
Nominal input voltage	230Vac
Low line voltage disconnect	85Vac/175Vac
Low loss voltage re-connect	90Vac/180Vac
High line voltage disconnect	285Vac
High line voltage re-connect	280Vac
Max. AC input voltage	280Vac
Nominal input frequency	50/60Hz
Low line frequency disconnect	42Hz
Low line frequency re-connect	43Hz
High line frequency disconnect	65Hz
High line frequency re-connect	64Hz
Output voltage waveform	As same as input waveform
Efficiency(Line mode)	>95%
Transfer time(Single unit)	10ms typical(UPS);20ms typical(Appliances)
Transfer time(Parallel)	50ms typical
Pass through without battery	Yes
Max.Bypass overload current	50A
Max.Bypass input current	50A
Max.Inverter/Rectifier current	30A
Max.Bypass input power	10kW

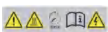
Utility charge mode specifications			
Model	IHY-6K6L1C		
Nominal input voltage	230Vac		
Input voltage range	90-280Vac		
Nominal output voltage	Depend on battery type		
Max. Grid charge current	140A		
Charge current regulation	1A-140A (Adjustable unit is 1A)		
Over charge protection	NO		
Grid charging current (I.max/I.min)Relationship between battery charging current and grid voltage.			
Solar charging & Grid charging			
Max.PV open circuit voltage		500V	
PV voltage range	60-500V		
Max.Input power		13200W	
Max.PV1 Input power		6600W	
Max.PV2 Input power		6600W	
Max.Solar charging current		140A	
13200W full-load voltage range		PV>330V	
Max.Charging current(PV+Grid)		140A	
Max.Charging Power(PV+Grid)		7000W	
Max.Input current		20A/20A	
Short-circuit current		27A/27A	
Min.Startup voltage		60V	
Charge algorithm			
Algorithm	Three stage: CC(Constant current stage)-> CV(Constant voltage stage)-> Float FV(Constant voltage stage)		
Battery type setting	Battery Type	CC/CV	Float
	AGM	56.4	54
	Lithium	Adjustable, up to 60V	
	Self-defined		
	Flood	58.4	54

Inverter mode specifications	
Model	IHY-6K6L1C
Rated output power	6000W/6000VA
Max. output power	6600W/6600VA
Nominal DC input voltage	48V
Output voltage waveform	Pure sine wave
Nominal output voltage	220Vac/230Vac/240Vac
Nominal output frequency(Hz)	50/60Hz
Parallel capability	12
Peak efficiency	95%
Over-Load capability	10s@≥150%Load; 30s@120%~150%Load
Surge rating	2*rated power for 5s
Capable of starting electric	Yes
Output short circuit protection	Yes
General specifications	
Operating temperature	-25°C ~ 60°C
Noise	≤55dB
Permissible altitude	≤3000m
Net weight(kg)	≤14.5kg
Gross weight(kg)	≤16.5kg
Product size(W*D*H)	330*170*479mm
Package dimension(L*W*H)	535*425*260mm
Ingress protection(IP) rating	IP66

INSTALLATION

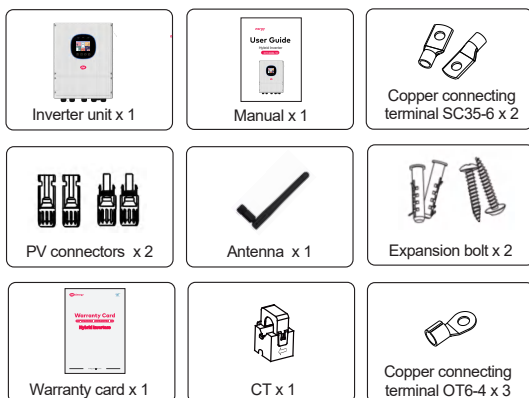
Safety Guidance

Warning marks inform users of conditions which can cause serious physical injury or death, or damage to the device. They also tell users how to prevent the dangers. The warning marks used in this operation manual are shown below:

	• After receiving this product, first confirm the prooduct package intact. If any question, contact the logistic company or local distributor immediately. • the installation and operation of inverter must be carried out by professional technicians who have received professional training and thoroughly familiar with all the contents in this manual and the safety requirements of the electrical system.
	Do not carry out connection/disconnection, unpacking inspection and unit replacement operation on the inverter when power source is applied. Before wiring and inspection, user must confirm the breakers on DC and AC side of inverter are disconnected and wait for at least 5 minutes.
	• Ensure there is no strong electromagnetic interference caused by other electronic or electrical devices around the installation site. • Do not refit the inverter unless authorized. • All the electrical installation must conform to local and national electrical standards.
	Do not touch the housing of the inverter or the radiator to avoid scald as they may become hot during operation.
	Ground with proper technics before operation.
	Do not open the surface cover of the inverter unless authorized. The electronic components inside the inverter are electrostatic sensitive. Do take proper anti-electrostatic measures during authorized operation.
	The inverter needs to be reliably grounded.
	Ensure that DC and AC side circuit breakers have been disconnected and wait least 5minutes before wiring and checking

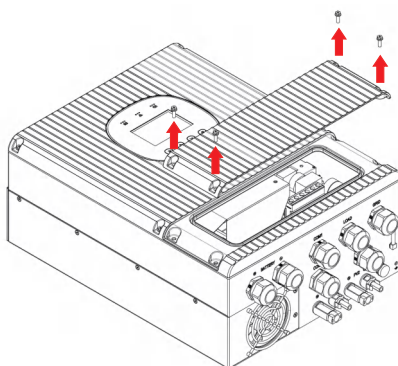
Unpacking and Inspection

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:

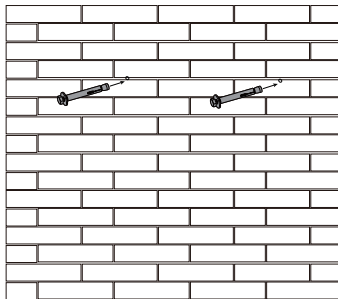
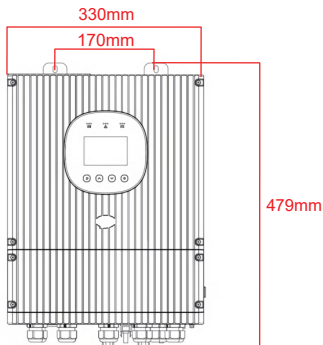


Preparation

Before connecting all wiring, please take off bottom cover by removing four screws as shown below.



- **NOTE:** Before installation, first take out the expansion bolts from the accessories. Then, according to the dimensions shown in the diagram, drill two M10 size holes on the wall. Drive the expansion bolts into the wall to a depth of 400mm - 500mm (this must be done on a solid wall). Then put up the inverter, and then lock the screw tightly.



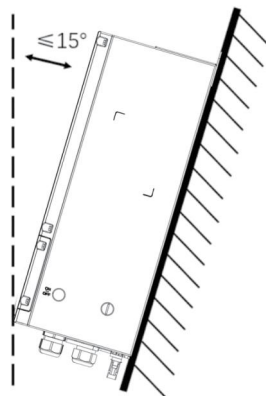
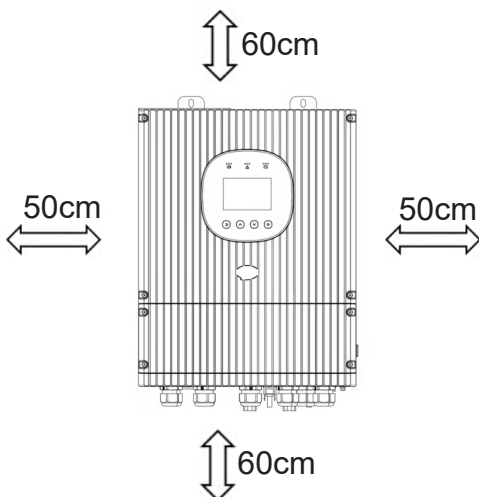
Mounting the Unit

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 all the time.
- The recommended ambient temperature is between -20°C and 45°C 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 below diagram to guarantee sufficient heat dissipation and to have enough space for removing wires.
- Up and down side at least 60cm, left and right side at least 50cm.



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



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 person.

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 and terminal size as below.

Please follow below steps to implement battery connection:

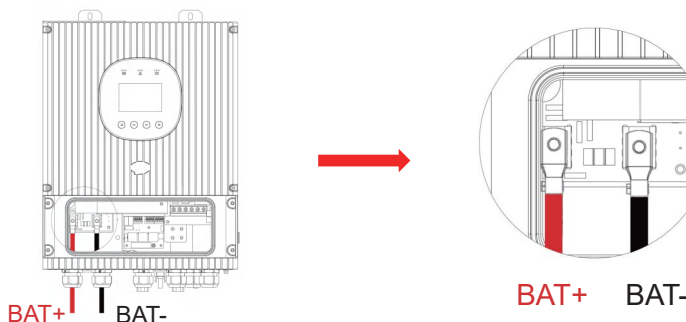
1. Assemble battery ring terminal based on recommended battery cable and terminal size.
2. Connect all battery packs as units requires. It's suggested to connect at least 200Ah capacity battery.
3. Insert the ring terminal of battery cable flatly into battery connector of inverter and make sure the bolts are tightened with torque of 3 Nm. Make sure polarity at both the battery and the inverter/charge is correctly connected and ring terminals are tightly screwed to the battery terminals.

Note: The right side of the battery polarity is the negative(-) terminal, and the left side is the positive(+) terminal.

Model	Gauge	Cable(mm ²)	Torque Value
IHY-6K6L1C	1*2AWG	35	3 Nm

Recommended circuit breaker type for battery port:

Model	Maximum Current	Recommended circuit breaker
IHY-6K6L1C	140A	2P-160A



	WARNING: Shock hazard Installation must be performed with care due to high battery voltage in series.
	CAUTION!! Do not place anything between the flat part of the inverter terminal and the ring terminal. Otherwise, overheating may occur. Do not apply anti-oxidant substance on the terminals before terminals are connected tightly. Before making the final DC connection or closing DC breaker/disconnected, be Sure positive(+) must be connected to positive(+) and negative(-) must be connected to negative(-).

AC Input/Output Connection



CAUTION!! Before connecting to AC input power source, please install a separate AC breaker, a self resetting over voltage and under voltage protector and a SPD(Surge Protection Device) 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 63A.



CAUTION!! There are three terminal block with "GRID", "EPS"and "SMART" marking. Please do not misconnect input and output connectors.

WARNING! All wiring must be performed by 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(mm ²)	Torque Value
IHY-6K6L1C	8AWG	8	1.2~1.4Nm

Recommended circuit breaker type for AC input:

Model	Maximum bypass	Recommended circuit breaker	Recommended SPD
IHY-6K6L1C	50A	2P-63A	Vc:AC275V, In:20KA(8/20uS), Imax:40KA(8/20uS).

Please follow below steps to implement AC input/output connection

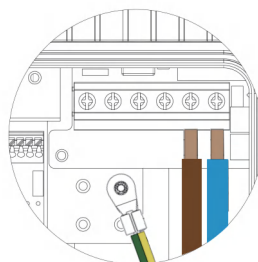
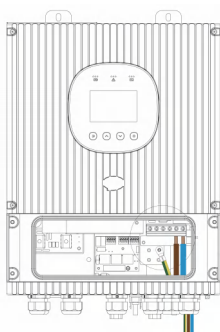
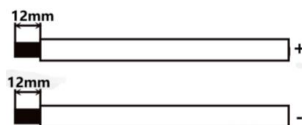
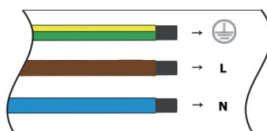
1. Before making AC input/output connection sure to turn-off DC prootector or disconnecter firstly.
2. Remove insulation sleeve 12mm for six conductors.



→Ground(yellow-green)

L→Line(brown or black)

N→Neutral(blue)



WARNING:

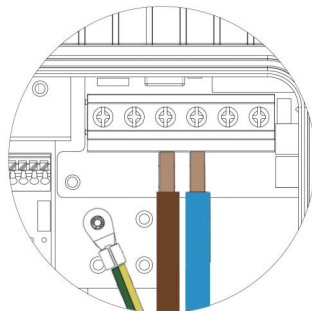
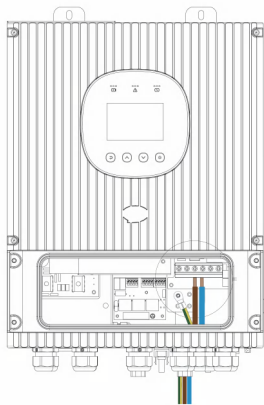
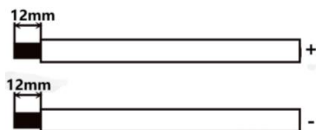
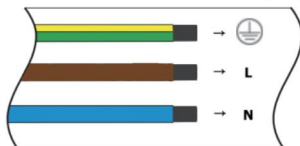
Be sure that AC power source is disconnected before attempting to hard wire it to the unit.

3. Then, Insert AC output wires according to polarities indicated on terminal block and tighten the terminal screws. Be sure to connect PE protective conductor() firstly.

 Ground(yellow-green)

L→Line(brown or black)

N→Neutral(blue)

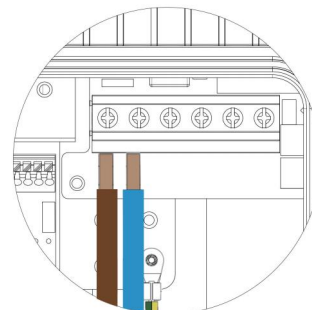
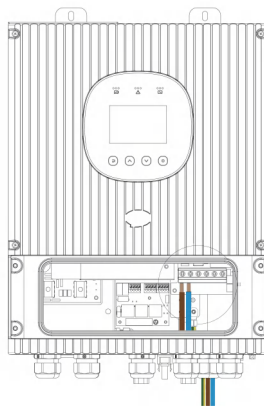
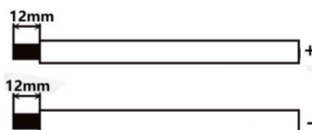
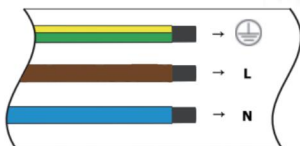


4. Then, Insert AC smart port wires according to polarities indicated on terminal block and tighten the terminal screws. Be sure to connect PE protective conductor() firstly.

 Ground(yellow-green)

L→Line(brown or black)

N→Neutral(blue)



5. Make sure the wires are securely connected.

CAUTION: Important

Be sure to connect AC wires with correct polarity. If L and N wires are connected reversely, it may cause utility short-circuited when these inverters are worked in parallel operation.

CAUTION: Appliances such as air conditioner are required at least 2~3minutes 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 of output to protect your appliance but sometimes it still causes internal damage to the air conditioner.

PV Connection



CAUTION: Before connecting to PV modules, please install separately a DC circuit breaker and a SPD(surge Protection Device)between inverter and PV modules.

WARNING! All wiring must be performed by qualified personnel.

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.

MPPT CHANNEL	Gauge	Cable(mm ²)
PV1	10AWG	5
PV2	10AWG	5

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 open circuit voltage of inverter.it is recommended that the open-circuit voltage of the PV string shall not exceed 450 V.
2. Max. power voltage (Vmp)should be during PV array MPPT voltage range.

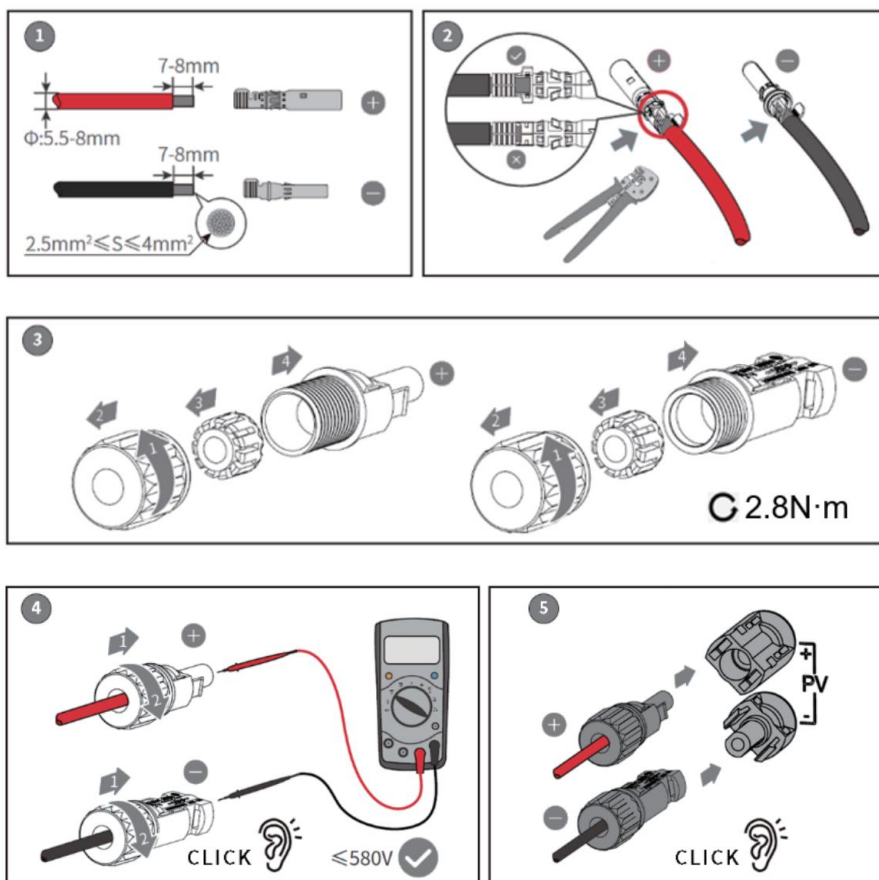
Recommended circuit breaker and SPD type for PV input:

PV	Maximum PV	Recommended circuit breaker	Recommended SPD
PV1	20A	2P-DC600V/32A	Vc: DC600V, In: 20KA(8/20uS), Imax: 40KA(8/20uS)
PV2	20A	2P-DC600V/32A	Vc: DC600V, In: 20KA(8/20uS), Imax: 40KA(8/20uS)

Solar charging mode	
Inverter model	IHY-6K6L1C
Max.PV array open circuit voltage	500V
PV array MPPT voltage range	60~425V

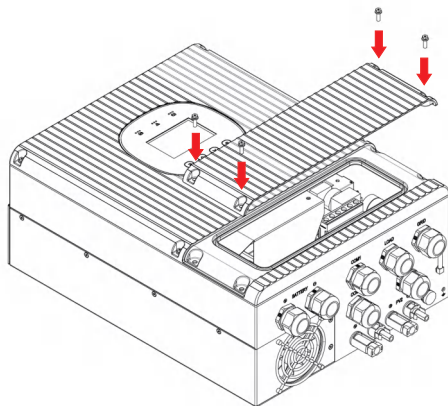
Please follow below steps to implement PV module connection:

- 1.Remove insulation sleeve 7-8 mm for positive and negative conductors
2. Fabricate PV cable connectors as indicated
3. Check whether the positive and negative poles of the PV cable are correct
4. Plug the PV cable connector into the PV interface of the device

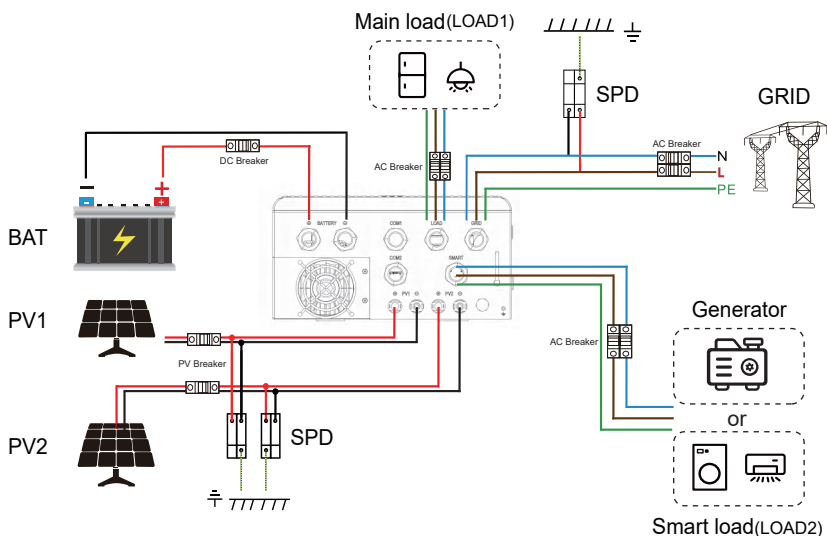


Final Assembly

After completing all the lines connections, check the wiring of each part, especially the battery, PV "+" and "-" terminals should not be connected in reverse. After the inspection is completed, please screw the bottom cover back to its original position using four screws as shown below.

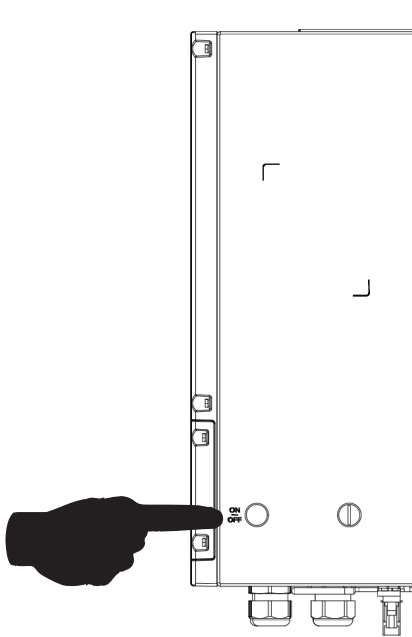


Wiring System for inverter



Note: If the battery type is a lead-acid battery, the circuit breaker must be connected.

OPERATION



Once the device is properly installed and the battery is connected properly, simply press and release the switch (located on the side of the enclosure) to turn on/off the output.

Operation and Display

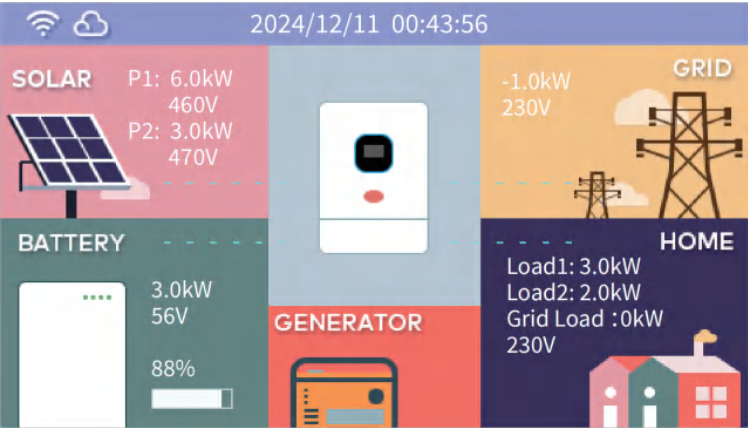
The operation and display, shown in below chart, is on the front panel of the inverter. It includes three indicators, four function keys and a LCD display, indicating the operating status and input/output power information.



Function	Icon	Description
ESC		To previous page
UP		To go to previous selection
DOWN		To go to next selection
ENTER		To confirm the selection or go to next page

LED indicator	Icon	Description
AC		When the inverter is operating normally, the blue indicator remains steady on. When there is no output, the indicator turns off.
Battery		When the battery is properly connected and the voltage is normal, the blue indicator remains steady on. When the battery is not connected, the indicator turns off.
Fault		When the inverter detects a fault, the yellow indicator remains steady on. When the inverter detects alerts , the yellow indicator flashes. When the system returns to normal, the indicator turns off.

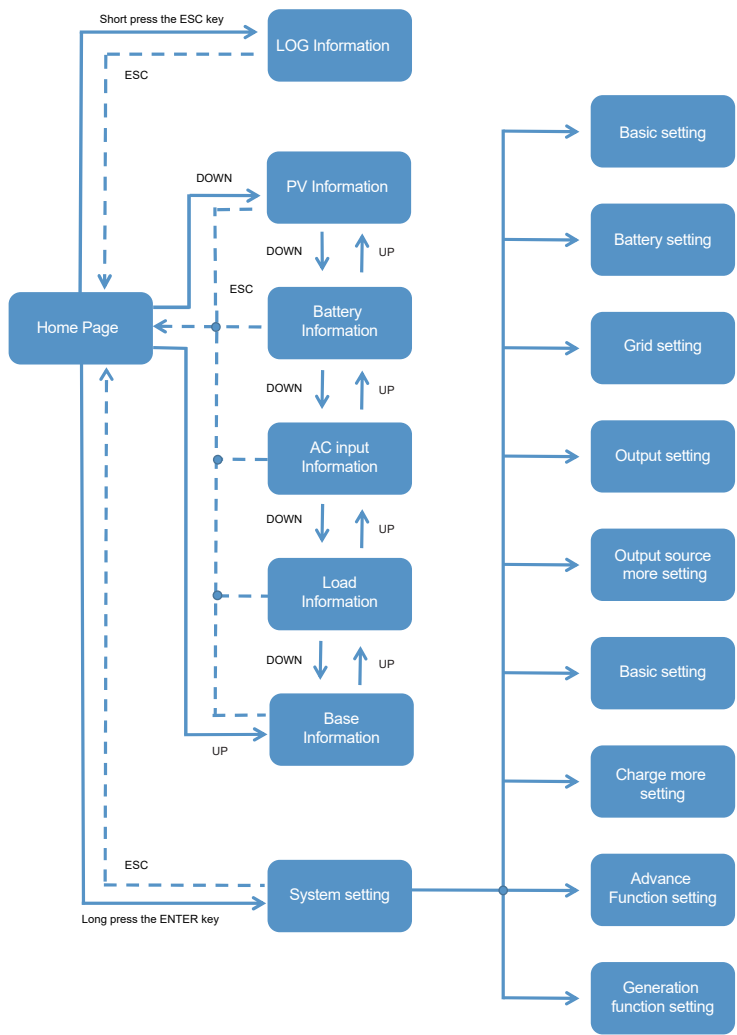
LCD Display Icons



Icon	Function description
	Indicate WIFI strength.
2024/12/11 00:43:56	Indicate date and time.
	Indicate PV1 and PV2 voltage, power.
	Indicates Grid power, voltage and connect to Ext.CT.
	Indicates Battery power, voltage and SOC (If communication with lithium).
	Indicate Generator power and voltage.
	Indicates Load power and output voltage.

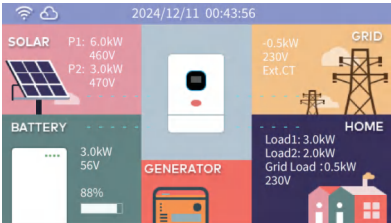
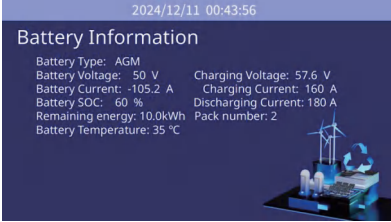
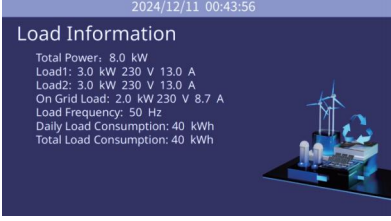
Basic Information Page

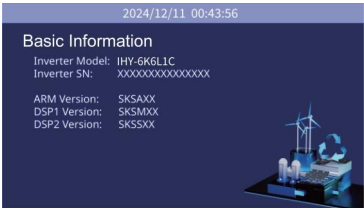
The basic information will be switched by pressing "UP" or "DOWN" key. The selectable information is switched as below order. Long press the ENTER key to enter the settings interface. Use the UP, DOWN and ENTER keys to set the parameters of the inverter. The figure below is the corresponding relationship diagram.



NOTE:The "Upgrade Information" interface is blank when no firmware upgrade has been performed. Only when using a USB drive for firmware upgrade will relevant information be displayed.

The information displayed on the main screen can be switched by using the "DOWN" and "UP"keys.

	Default interface This interface is the main interface, which mainly displays the power and voltage conditions of PV, Battery, Grid, Generator and Load. Bottom right: Load. power, and output voltage.
	PV information This interface includes PV daily and total generated, the energy, voltage and current of PV1 and PV2.
	Battery Information This interface show some battery information include battery type, battery voltage, charging voltage, battery current(The "+" sign in the battery current indicates discharge, while the "-" sign indicates battery charging)..etc; If the battery type is lithium and communication is established, then all the data on this interface will be provided by the lithium BMS.
	Grid information This interface show grid information include grid status, grid power, grid voltage, grid frequency, grid current, today and total buy or selling the energy of the power grid.
	Load information This interface show load information include load total power, the energy, voltage and current of Load1 and Load2, load frequency; on grid load power, voltage and current, daily load and total load consumption.

	Basic information This interface show inverter model, inverter SN, the version of ARM, DSP.
---	--

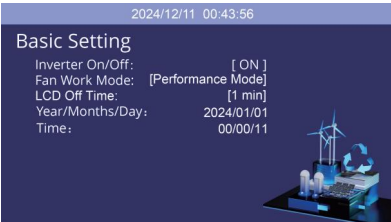
Setting Page

Long press the Enter key to enter the settings interface. Press"Up" or "DOWN"button to select setting programs. And then, press"ENTER" button to confirm the selection or "ESC" button to exit.

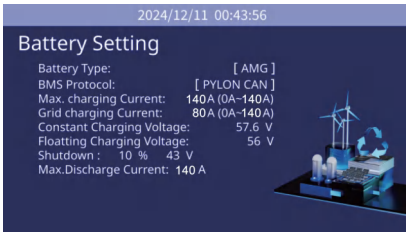
System Set up Menu

	This is System Settings page. You can enter the settings for the following parameters by pressing "DOWN", "UP" and "ENTER". Basic Setting, Battery Setting, Grid Setting, Output Setting, Output Source Mode Setting, Charging Mode Setting, Advance Function Setting, Generator Function Setting, Restore default settings.
---	---

Basic Setup Menu

	This is Basic Settings page. Fan Work Mode: Default Performance Mode Silence mode: In this mode, the fan noise is even lower, less than 45 dB. LCD off Time: Default 1min The screen will turn off automatically after 1 min of key inactivity. Year/Months/Day: Set the year, month and day by using "UP", "DOWN" and "ENTER". Time: Set the Hour, minute and second by using "UP", "DOWN" and "ENTER".
---	---

Battery Setup Menu



This is Battery Settings page.
Battery Type: Default AGM
AGM: Select this option for AGM.
No Battery: Tick this item if no battery is connected to the system.
User Define: The user selects this option when using batteries of other types.
Lib: Select this option when using lithium batteries without a BMS.
Flood: Select this option for Flood.
Lith: Select this option when using lithium batteries with BMS.

Restart the device to take effect after changing the battery type setting.
BMS Protocol: Select the BMS protocol based on the battery. It include PYLON CAN, PYLON 485.
Max.Charging Current: Setting range is from 0A to 140A.
Grid Charging Current: Setting range is from 0A to 140A.
Constant Charging Voltage: Default 57.6V, it can be adjusted according to the actual battery.
Floating Charging Voltage: Default 56V, it can be adjusted according to the actual battery.
Shutdown: If the battery type is Li, set the SOC(%); if it is a battery of other type, set the voltage(V).
Max.Discharge Current: Default 140A, Setting range is from 0 to 140A.

The following table shows the voltage points for various types of batteries.
The grey part can be modified.

	AGM	Flood	Lib	User define
CV	56.4	58.4	57.6	56.4
Float	54	54	55.2	54
CC	30	30	100	50
Shut down	42	42	47	42

Grid Setting Menu

2024/12/11 00:43:56

Grid Setting

Input range setting: [APL (90V~280V)]
Feed in enable: [enable]
Max Feed in Power: 6600W



This is Grid Settings page.

Input range setting: This setting option allows you to select the range of mains power input voltage, APL(90V~280V), UPS(180V~280V).

Feed in enable: Default disable.

Enable: Setting "enable" allows the grid to sell electricity.

Disable: Setting "disable" means no energy will be provided to the power grid side.

Max Feed in power: The power for selling electricity from the distribution network can be set.

Output Setup Menu

2024/12/11 00:43:56

Output Setting

Output Voltage: 230 V
Frequency Setting: 50 Hz
Load2 cutoff: 40 % 50 V
Load2 repower on: 50 % 51V



This is Output Settings page.

Output Voltage: Default 230V

The settings can be adjusted to change the output voltage. The selectable output voltages are 220V, 230V and 240V.

Frequency Setting: Default 50Hz

The selectable output frequency are 50Hz/60HZ.

Load2 cutoff: Set the output shutdown voltage/SOC of LOAD2. If the battery type is Li, set the shutdown SOC; if it is a battery of another type, set the shutdown voltage.

Load2 repower on: Set the output recovery voltage/SOC of LOAD2. If the battery type is Li, set the shutdown SOC; if it is a battery of another type, set the shutdown voltage.

Note: Note: The cut-off value must be lower than the repower-on value..

Output Source Mode Setup Menu

2024/12/11 00:43:56

Output Source Mode Setting

Output source: SUB
Backup threshold: 20.0% 54.0V
Battery back to dischargethreshold: 50.0% 55.0V



This is Output Source Mode Settings page.

Output source: Set up Load priority, Default SUB

SUB: Solar energy provides power to the loads as first priority. If solar energy is not sufficient to power all connected loads, solar and utility will power loads at the same time. Battery provides power to the loads only when solar energy is not sufficient and there is no utility.

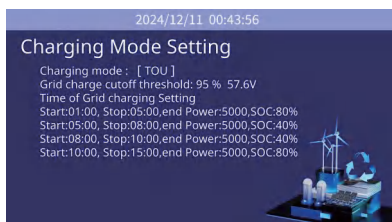
SBU: Solar energy provides power to the loads as first priority. If solar energy is not sufficient to connected loads, battery energy will supply power the loads at the sametime. Utility provides power to the loads when Battery voltagedrops to either low-level warning voltage or the setting point in Backup threshold.

Backup threshold: Set the SOC/voltage value. If the battery's SOC/voltage is lower than the set parameter, the grid will enter the charging mode.

Battery back to discharge threshold: Set the SOC/voltage value. If the battery's SOC/voltage is higher than the set parameter, the grid will stop charging.

Note: Note: The backup threshold value must be greater than the battery cut-off value.

Charging Mode Setup Menu



This is Charging Mode Settings page.

Charging mode: Default TOU

TOU: Charge according to the set charging time. Once this setting is made, the "Grid Charging Time Setting" will take effect.

CSO: Solar energy will charge battery as first priority. Utility will charge battery only when solar energy is not available.

OSO: Solar energy will be the only charger source no matter utility is available or not.

SNU: Solar energy and utility will both charge battery.

Grid charge cutoff threshold: If the Charging Mode

is not TOU, once the battery reaches the set voltage/SOC level, the power supply will stop the charging process.

Time of Grid charging Setting: If the Charging mode is set to TOU, then this setting will take effect. The charging process will be carried out according to the set start and end times. If the SOC (State of Charge) is greater than the set value, charging will be stopped even if it is within the charging period.

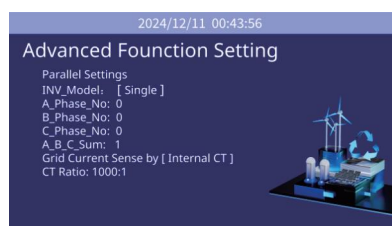
Start: 01:00, stop: 05:00, end power: 5000, SOC: 80%: Charge during the period from 01:00 to 05:00, with a charging power of 5000W. Stop charging when the SOC is greater than 80%.

Start: 05:00, stop: 08:00, end power: 5000, SOC: 40%: Charge during the period from 05:00 to 08:00, with a charging power of 5000W. Stop charging when the SOC is greater than 40%.

Start: 08:00, stop: 10:00, end power: 5000, SOC: 40%: Charge during the period from 08:00 to 10:00, with a charging power of 5000W. Stop charging when the SOC is greater than 40%.

Start: 10:00, stop: 15:00, end power: 5000, SOC:80%: Charge during the period from 10:00 to 15:00, with a charging power of 5000W. Stop charging when the SOC is greater than 80%.

Advance Function Setup Menu



This is Advance Function Settings page.

Parallel Settings

INV_Model:

Single: Select this setting option and the device will operate independently.

P Three: Selecting this setting, the device can be configured as a three-phase parallel unit, generating three-phase electricity.

P Single: Selecting this setting, the device can operate in parallel and the maximum number of concurrent machines is 12.

A_Phase_No/B_Phase_No/C_Phase_No: If you choose a three-phase parallel system, then you need to set corresponding addresses for A, B and C. For example, machine 1 is set as the first machine of phase A, and the corresponding setting item A_Phase_NO is set to 1. Machine 2 is set as the second machine of phase A, and the corresponding setting item A_Phase_NO is set to 2, etc.

A_B_C_Sum: The total number of three-phase parallel inverters, max 12,min 3.

Grid Current Sense by: Internal CT/Meter

Set up Internal CT or meter according to the actual situation.

CT Ratio: This option can be set according to the proportion of the CT

Generator Function Setup Menu

2024/12/11 00:43:56

Generator Function Setting

Generator mode: [Load2]

Cutoff threshold: 70 % 54 V

Time of Generator charging Setting

Start:00:00, Stop:00:00, cutoff: 54 V Power: 2000 W

Start:00:00, Stop:00:00, cutoff: 54 V Power: 2000 W

Start:00:00, Stop:00:00, cutoff: 54 V Power: 2000 W

Start:00:00, Stop:00:00, cutoff: 54 V Power: 2000 W

Start:00:00, Stop:00:00, cutoff: 54 V Power: 2000 W

Start:00:00, Stop:00:00, cutoff: 54 V Power: 2000 W

Time Period Number of Setting(max): 0

More Time Period Needs,Please use the APP

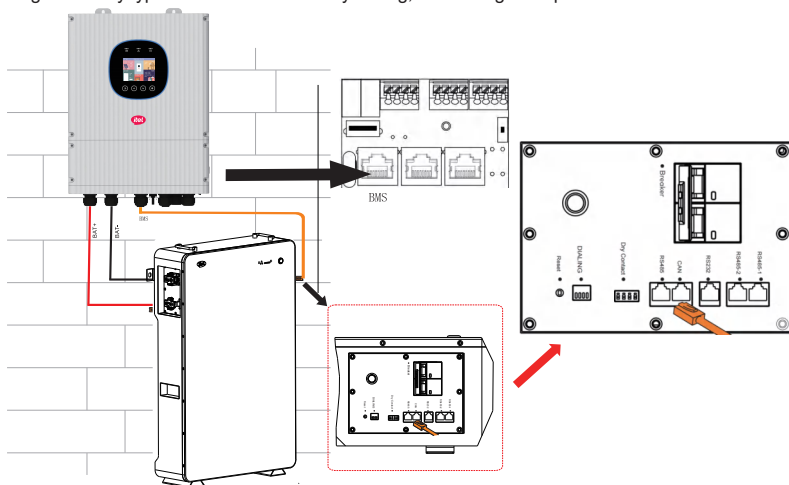
This is Generator Function/Load 2 Settings page.
Set to generator mode, SMART port can be used as generator input
Set to LOAD 2 mode, SMART port can be used as dual output port to connect non-critical loads

Time of Generator charging Setting
Start: 01:00, stop: 05:00, end power: 5000, SOC:80%:Charge during the period from 01:00 to 05:00, with a charging power of 5000W. Stop charging when the SOC is greater than 80%.
Start: 05:00, stop: 08:00, end power: 5000, SOC:40%: Charge during the period from 05:00 to 08:00, with a charging power of 5000W. Stop charging when the SOC is greater than 40%.
Start: 08:00, stop: 10:00, end power: 5000, SOC:40%: Charge during the period from 08:00 to 10:00, with a charging power of 5000W. Stop charging when the SOC is greater than 40%
Start: 10:00, stop: 15:00, end power: 5000, SOC:80%: Charge during the period from 10:00 to 15:00, with a charging power of 5000W. Stop charging when the SOC is greater than 80%

Lithium Battery Communication

It's allowed to connect lithium battery and build communication only which it has been configured.
Please follow steps to configure communication between lithium battery and inverter.

- 1.Connect power cable between lithium battery and inverter. Please pay attention to the terminals of positive and negative. Make sure the positive terminal of battery is connected to the positive terminal of inverter, and the negative terminal of battery is connected to the negative terminal of inverter.
- 2.The communication cable is bundled with lithium battery. One port is connected to the BMS port of inverter and the other one is connected to the RS485/CAN port of lithium battery.
- 3.Configure battery type to "Lith" in LCD battery setting, and setting BMS protocol.



4.Power on the lithium battery and inverter. If communication is established between them, please wait for a moment, press the "DOWN" button to flip the LCD to the battery information interface, which will display the current battery type as Li and some battery information. For example, the current SOC is 60%.

2024/12/11 00:43:56

Battery Information

Battery Type: Lith
Battery Voltage: 50 V
Battery Current: -105 A
Battery SOC: 60 %
Remaining energy: 8 kWh
Battery Temperature: 35 °C

Charging Voltage: 57.6 V
Charging Current: 140 A
Discharging Current: 140 A
Pack number



PARALLEL INSTALLATION GUIDE

This inverter can be used in parallel with two different operation modes. 1. Parallel operation in single phase with up to 12 units. The supported maximum output power is 79.2kW / 79.2kVA

Maximum 12 units work together to support three-phase equipment, 5 units support one phase maximum. The supported maximum output power is 79.2kW / 79.2kVA.

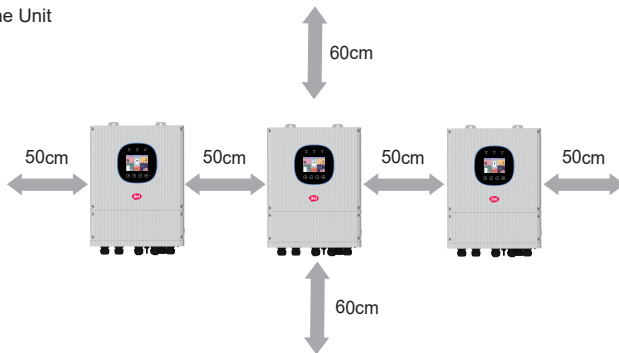
NOTE1: To ensure proper current sharing, the inverters operating in parallel on the same phase must have equal-length AC input cables and AC output cables.

NOTE2: Under parallel operation modes, battery must be connected with inverters.

NOTE3: Before starting up inverters, please connect all positive(+) and negative(-) wires of battery together.

NOTE4: Before starting up inverters, all batteries of the inverters must parallel together.

Mounting the Unit



NOTE: proper air circulation to dissipate heat, allow a clearance of approx 50cm to the side and approx 60cm above and below the unit. Be sure to install each unit in the same level.

Package Contents

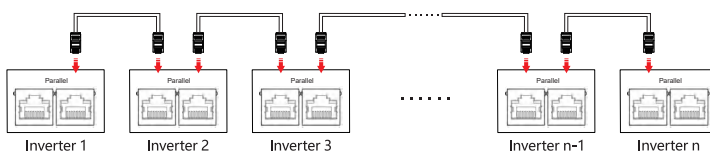
In parallel kit, you will find the following items in the package:



Parallel communication cable x 1pcs

Wiring Connection

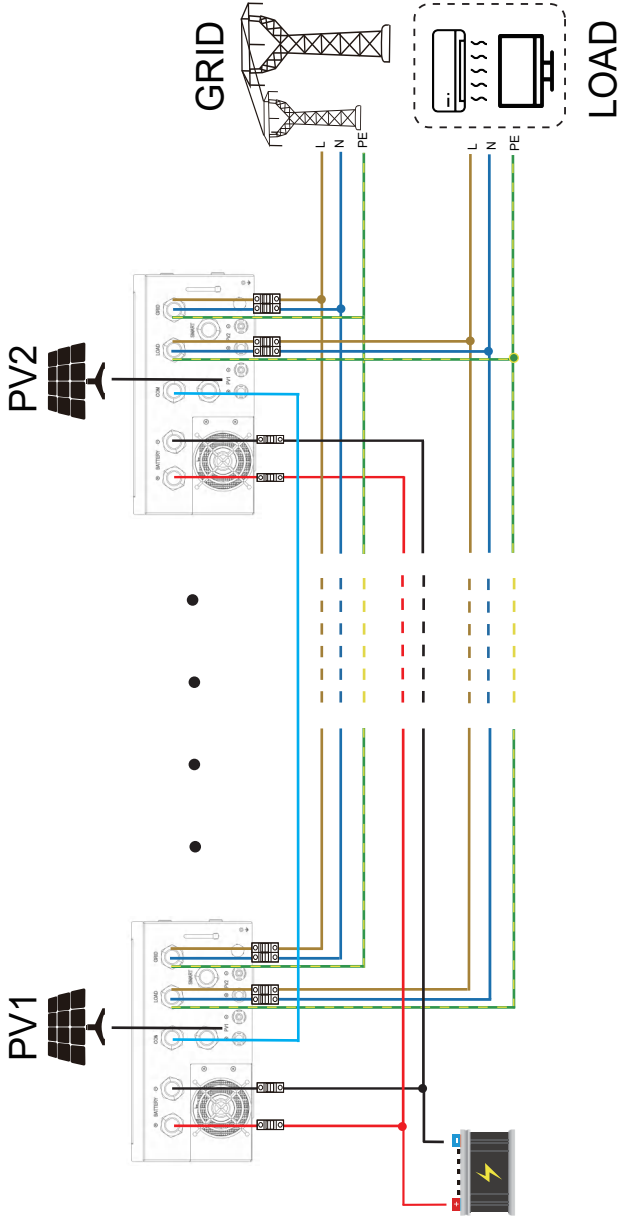
12 Inverter Communication Connection



Connect parallel communication cables one by one.

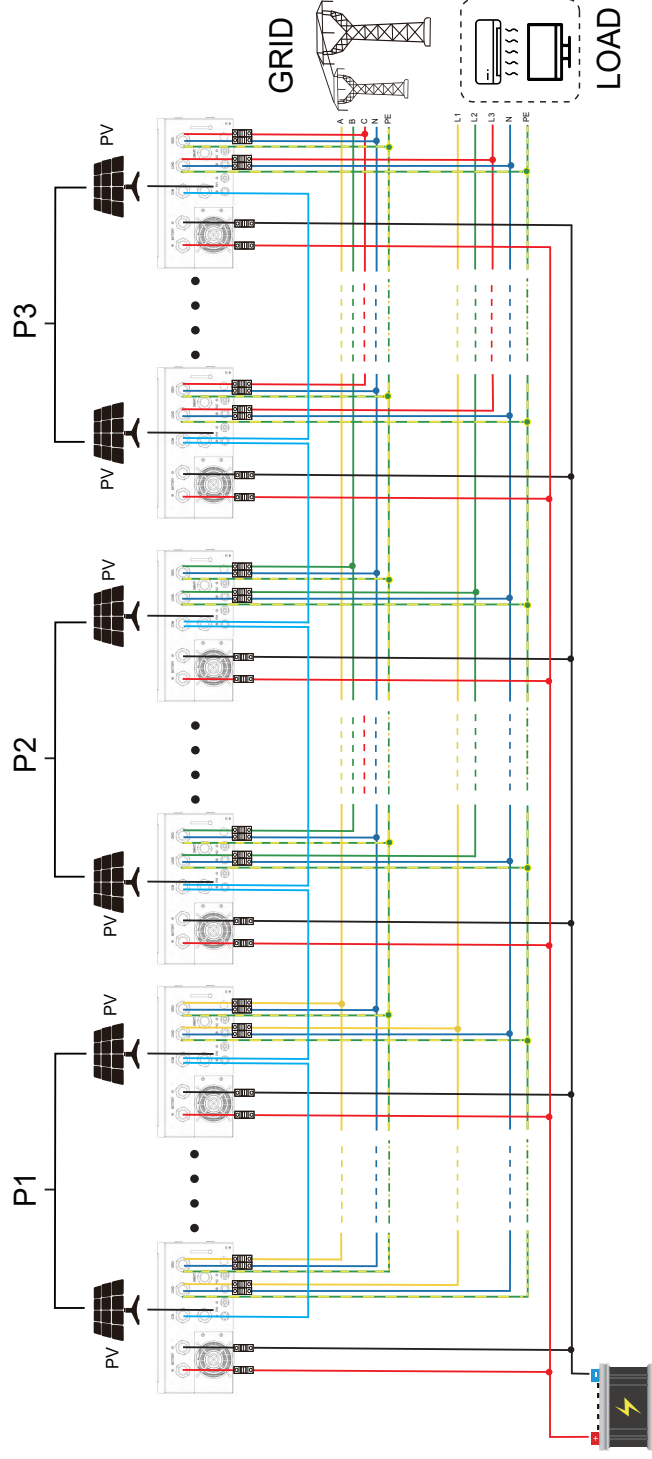
Turn on the switch at communication port for the first and last device.

Single Phase Parallel connection diagram in parallel



- NOTE:**
1. "n" is the number of parallel connections of the inverters
 2. Before starting up inverters, please connect all positive(+) and negative(-) wires of battery together
 3. AC input connected to Single-phase power grid

Three Phase Parallel connection diagram in parallel



NOTE: 1.Before starting up inverters, please connect all positive(+)and negative(-)wires of battery together
 2.Each phase is conned with at least one,a maximum of 5 parallel,and a maximum of 12 parallel three phases

Commissioning

Parallel in single phase

Step1: Check the following requirements before commissioning:Correct wire connection Ensure all breakers in Line wires of load side are open and each Neutral wires of each unit are connected together.

Step2: Turn on each unit and set "P_Single" in LCD setting program of Parallel Setting on each unit.

NOTE: To be safe, it's better to turn of switch when setting LCD program.

Step3: Select one inverter as the master and set A Phase No. to 1. The other slave inverters do not require this setting.Set the A_B_C_Sum values of all inverters to the total number of master and slave units.

Step4: Switch on all AC breakers of Line wires in AC input. It's better to have all inverters connect to utility at the same time.

Step5: If there is no more fault alarm, the parallel system is completely installed.

Step6: Please switch on all breakers of Line wires in load side. This system will start to provide power to the load.

Support three-phase equipment

Step1: Check the following requirements before commissioning:*Correct wire connection.

Ensure all breakers in Line wires of load side are open and each Neutral wires of each unit are connected together.

Step2: Turn on each unit and set "P_Three " in LCD setting program of Parallel Setting on each unit.

Note: To be safe, it's better to turn of switch when setting LCD program.

Step3:All inverters should be assigned numbers according to the phase they belong to, and the unit set to 1 in each phase is the master inverter for that phase.

A_Phase_NO(1,2...),

B_Phase_NO(1,2..),

C_Phase_NO(1,2...)

Set the A_B_C_Sum values of all inverters to the total number of master and slave units.

Step4: Switch on all AC breakers of Line wires in AC input. If AC connection is detected and three phases are matched with unit setting, they will work normally.

Step5: If there is no more fault alarm, the system to support 3-phase equipment is completely installed.

Step6: Please switch on all breakers of Line wires in load side. This system will start to provide power to the load.NOTE1: To avoid overload occurring, before turning on breakers in load side, it's better to have whole system in operation first.NOTE2: Transfer time for this operation exists. Power interruption may happen to

WARNING CODE TABLE

When warning event happens, The fault indicator light flashes yellow once every second.

Warning Information	What to do
High temperature	Strengthen ventilation, reduce installation environment temperature, and lower load
Failed to switch to grid	Check if the rated voltage and frequency settings of the inverter match the actual power grid, and confirm if there are excessive harmonics in the power grid.
Backup overload warning	Reduce inverter load.
MFC overload warning	Reduce SMART port load.
Low battery	Connect to photovoltaic or grid charging, reduce load.
Battery Comm Failed	Check whether the connections of the ports are loose. If they are loose, reconnect them.
Meter Failed	Check the communication connection between the inverter and the electricity meter.
Ext Fan Error	Check whether the fan is clogged or damaged. If clogged, clean the fan; if damaged, replace the fan.

FAULT CODE TABLE

When fault event happens, inverter will cut off output, and the fault indicator light remains constantly on in yellow.

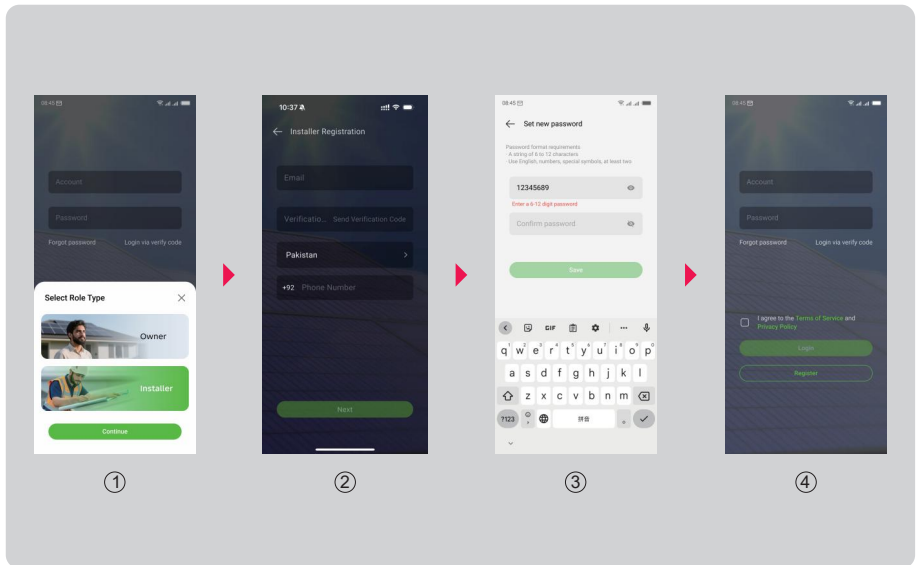
Fault Information	What to do
DSP Comm Lost	1.Turn off all the power sources, and then Restart the device. 2.If the fault still exists, please contact us for help.
Over-voltage of Bus	1.Check whether the battery voltage or PV voltage is too high. 2. Restart the device. 3.If the fault still exists, please contact us for help.
Low-voltage of Bus	1.Check whether the battery voltage or PV voltage is too low, and operate under this condition to handle extremely heavy loads. 2. Restart the device. 3.If the fault still exists, please contact us for help.
Over-voltage of battery	1.Check if the battery voltage is too high. 2. Restart the device. 3.If the fault still exists, please contact us for help.
Over-temperature of device	1. Restart the device after temperature drops. 2.If the fault still exists, please contact us for help.
Over-current of battery	1.Reduce the output load and then restart the device. 2.Seek help from us, if can not go back to normal state.
Over-voltage of PV	1.Reduce the number of series-connected solar panels appropriately to ensure that the PV voltage is within the specified range, and then restart the device. 2.If the fault still exists, please contact us for help.
Over-current of PV	1.Check if the PV wiring is normal, and then restart the device. 2. Seek help from us, if can not go back to normal state.
Over-voltage of backup A	1.Check whether the mains voltage is normal. And then restart the device. 2.Seek help from us, if can not go back to normal state.
Backup overload	1.Reduce the output load appropriately and then restart the device. 2.Seek help from us, if can not go back to normal state.
Over-current Protection	1. Check if there is a short circuit in the output of the inverter 2. If the fault still persists, please contact us for help.
Relay error	1.Reduce the output load appropriately and then restart the device. 2.Seek help from us, if can not go back to normal state.

WIFI AND APP INSTRUCTIONS

The IHY-6K6L1C is equipped with a WIFI module, so you can use the APP to monitor the operation status of the inverter. Below are the operation instructions for connecting the inverter to the network and the usage instructions for the APP.

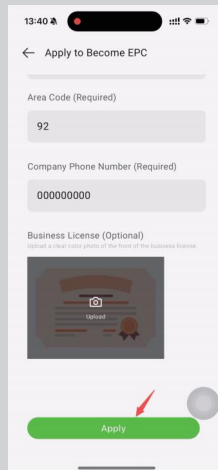
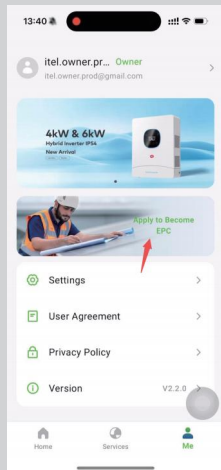
Create Installer's Account

- 1.Download the itel Energy app (from the Play Store or App Store). If you don't have an installer's account, click register.
- 2.Choose to register as an installer, fill in your email and phone number. After entering the verification code, click 'Next'.
- 3.Set your password and click"save"to complete the registration.
- 4.In the login page, enter the email and password you just used to register, and click"login".



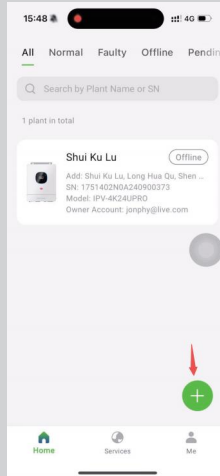
Apply to Become EPC

5. You should apply to become an EPC. Firstly, register a user account.
6. Go to the "me" page and click the "Apply to Become EPC" banner.
7. Fill in the form and click apply.
8. Waiting for qualification review. Once approved, the account will automatically switch to an installer account.



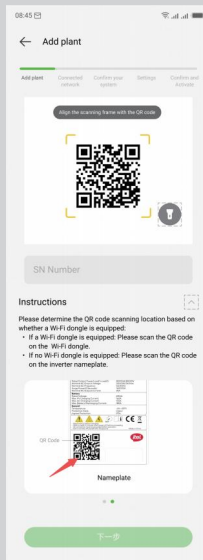
Set Up A Plant

1. In the installer or EPC account, click the "+" button to add the device.



Step 1:

Scan the QR code on the nameplate on the side of the inverter or input the SN number on the nameplate manually.



Step2:

a. Connect Bluetooth: Enable Bluetooth permission, and wait for Bluetooth to connect automatically.

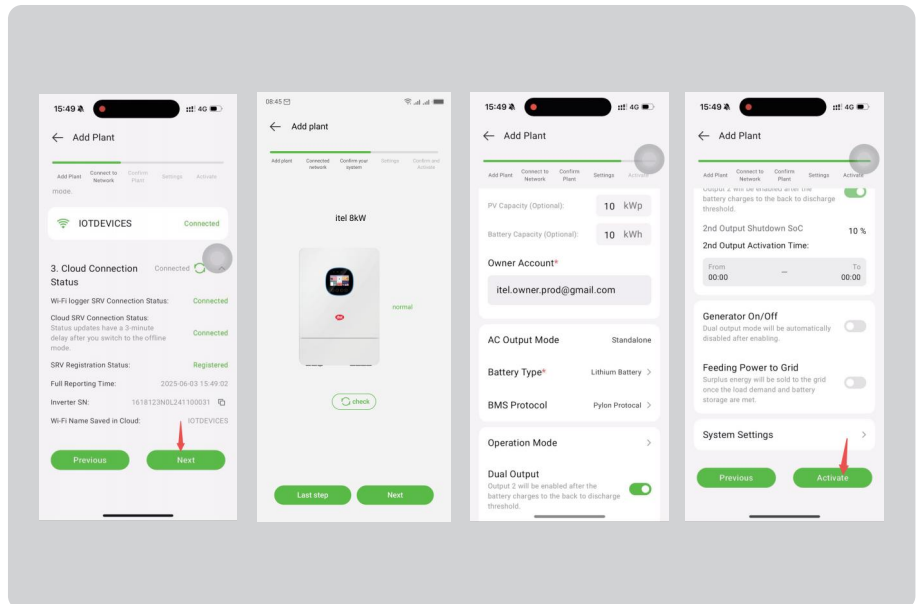
Notice: if the Bluetooth is not connected automatically, please check:

1. The SN number is correct in step 1;
2. Bluetooth should not connect to the phone system.

b. Connect Wi-Fi: Refresh the Wi-Fi list, select the Wi-Fi and enter the password, then wait for the Wi-Fi to connect.

Notice: In the iOS system and some Android models, you need to click the "+" button to manually enter the Wi-Fi info. Only 2.4Hz Wi-Fi is supported. If you wait too long for the WIFI connection, you can try to reissue or change the Wi-Fi.

c. Connect Cloud: Wait for the cloud status to show connected. Keep the WIFI and cloud status connected, then click next.



Step3

Check the status of the device. If the device has a fault, the process can not go on.

Step 4

Set some functions and parameters, fill in the PV and battery capacity if the system has. Do not forget to select the battery type and fill in the user's email to bind this device to the user.

Step 5

Check the settings and click activate. Once activated successfully, the page would jump to the list page automatically.

2.If the user's email you filled in step 4 hasn't been registered, the user will receive an email providing an initial password. Log in to the user's account, and the device can be seen.

