# AmpAura

AmpAura Roca G2 Hybrid Energy Storage System
User Manual

## Disclaimer

Read this user manual carefully before using the product to ensure that you completely understand the product and can correctly use it. After reading this user manual, keep it properly for future reference. Improper use of this product may cause serious injury to yourself or others, or cause product damage and property loss. Once you use this product, it is deemed that you understand, approve and accept all the terms and content in this document. AmpAura is not liable for any loss caused by the user's failure to use this product in compliance with this user manual.

In compliance with laws and regulations, AmpAura reserves the right to final interpretation of this document and all documents related to this product. This document is subject to changes (updates, revisions, or termination) without prior notice. Please visit AmpAura's official website to obtain the latest product information.

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## Contents

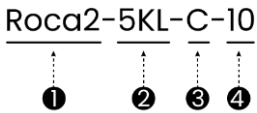
# 1 Introduction

## 1.1 Purpose of this Document

Thank you for choosing the Roca2 Series Battery Energy Storage System (BESS). This user manual provides a detailed description of the Roca2 Series, including product features, structural characteristics, functions, installation, and more. Please read the instructions carefully before using the product and keep this manual in an easily accessible place.

## 1.2 Model Description

The model description is as follows (take Roca2-5KL-C-10 as an example):




| No. | Description |
|---|---|
| ❶ | Roca2: Roca2 series. |
| ❷ | 5KL: Output power, 5 kW. L stands for low voltage. |
| ❸ | C: LCD display (E: LED display). |
| ❹ | 10: Total battery capacity, 10.24 kWh. |

## 1.3 Safety Precautions

Safety signs in this manual:

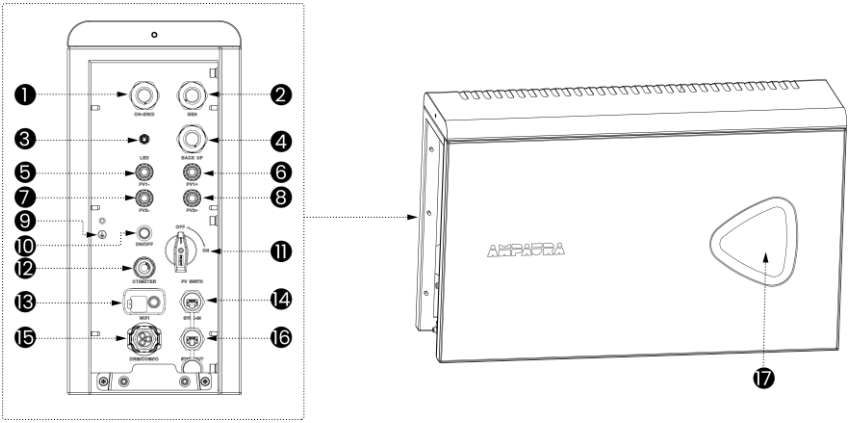
| | |
|---|---|
| **DANGER** | DANGER indicates high-risk potential hazards that, if not avoided, may lead to death or serious injury. |
| **WARNING** | WARNING indicates moderate-risk potential hazards that, if not avoided, may lead to death or serious injury. |
| **CAUTION** | CAUTION indicates low-risk potential hazards that, if not avoided, may lead to minor or moderate injury. |
| **NOTE** | NOTE provides valuable tips on the best operation of our products. |

## 1.4 Acronyms and Abbreviations

| | |
|---|---|
| **A** | |
| AC | Alternating current |
| APP | Application |
| AUX | Auxiliary |
| **B** | |
| BAT | Battery |
| BESS | Battery energy storage system |
| BMS | Battery management system |
| **C** | |
| CT | Current transformer |
| **D** | |
| DC | Direct current |
| **E** | |
| EMS | Energy management system |
| **I** | |
| INV | Inverter |
| **P** | |
| PF | Power factor |
| PV | Photovoltaic |
| **S** | |
| SOC | State of charge |
| SOH | State of health |

# 2 Product Overview

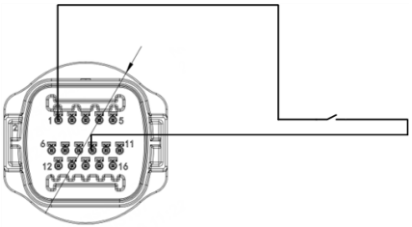
## 2.1 Inverter Interface



| No. | Description | No. | Description |
|---|---|---|---|
| ❶ | Grid connector | ❷ | Generator connector |
| ❸ | LED connector | ❹ | Backup connector |
| ❺ | PV 1 negative input | ❻ | PV 1 positive input |
| ❼ | PV 2 negative input | ❽ | PV 2 positive input |
| ❾ | Grounding connection | ❿ | On/Off switch |
| ⓫ | PV switch | ⓬ | CT/Meter connector |
| ⓭ | Wi-Fi port | ⓮ | Sync-in |
| ⓯ | DRM/COM/IO connector | ⓰ | Sync-out |
| ⓱ | LCD/LED display | | |

**NOTE**

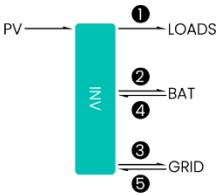
Connect Pin 1 and Pin 9 to enable DRM. The inverter currently only DRM0 are function al.In the DRM0 mode, the inverter is in the state of “ Turn off ” .



## 2.2 Working Modes

The inverter offers multiple working modes according to different requirements.

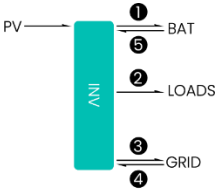
### 2.2.1 Self Consumption




Solar energy from PV panels will be utilized in this order:

| | |
|---|---|
| ❶ | First to power the connected loads. |
| ❷ | Then to charge the battery. |
| ❸ | Any excess will be fed into the grid. |
| ❹ | If solar energy is not sufficient to power all connected loads, the battery will supply power to the loads. |
| ❺ | If the battery runs low, the grid will step in to meet the demand. |

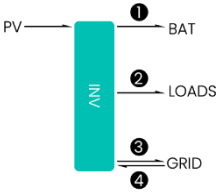
### 2.2.2 Battery Priority




Solar energy from PV panels will be utilized in this order:

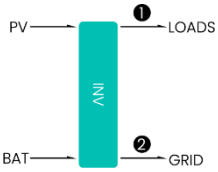
| | |
|---|---|
| ❶ | First to charge the battery. |
| ❷ | Then to power the connected loads. |
| ❸ | Any excess will be fed into the grid. |
| ❹ | If solar energy is not sufficient to charge battery and supply loads, the grid will take over to meet the demand. |
| ❺ | The battery serves as a backup power source only in case of a grid failure. As long as the grid is functioning properly, the battery will not be used to supply power to the loads. |

### 2.2.3 Peak Shifting




During charge period, solar energy will be utilized in this order:

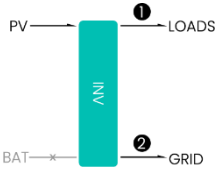
| | |
|---|---|
| ❶ | First to charge the battery. |
| ❷ | Then to power the connected loads. |
| ❸ | Any excess will be fed into the grid. |
| ❹ | If solar energy is not sufficient to charge battery and supply loads, the grid will supply all the connected loads with solar energy together. |




During discharge period, solar energy will be utilized in this order:

❶ First to power the connected loads.

❷ If solar energy is sufficient to supply loads, and if there's still some extra energy from solar energy, then the excess power and battery will deliver the energy to the grid at the same time.




In the period of no charge or discharge, solar energy will be utilized in this order:

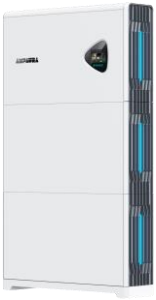
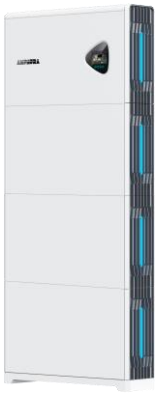
❶ First to power the connected loads.

❷ Any excess will be fed into the grid.

**NOTE**

You can set the charging and discharging periods and power levels through the inverter's screen or AmpAura app.

## 2.3 Product Specifications

| System | | | |
|---|---|---|---|
| Product model | Roca2-5KL-C-10<br>Roca2-5KL-E-10 | Roca2-5KL-C-15<br>Roca2-5KL-E-15 | Roca2-5KL-C-20<br>Roca2-5KL-E-20 |
| Appearance |  |  |  |
| Qty of inverters | 1 | 1 | 1 |
| Qty of batteries (XCD BAT 5.0) | 2 | 3 | 4 |
| Battery total energy | 10.24 kWh | 15.36 kWh | 20.48 kWh |
| Rated output power | 5 kW | | |
| Weight | 153 kg | 210.1 kg | 267.3 kg |

| | | | |
|---|---|---|---|
| Dimensions (mm) | 740*1280*200 | 740*1680*200 | 740*2080*200 |
| IP Rating | IP65 | | |
| Type of inverter | Non-isolated | | |
| Protection class | Class I | | |
| Pollution degree | PD3 for external, PD2 for internal | | |
| Overvoltage categories | OVC II for DC, OVC III for AC | | |
| Power factor | 0.8 leading – 0.8 lagging | | |
| Operating temperature | –20°C to +45°C | | |
| Storage temperature | –20°C to +60°C | | |
| Relative humidity | 0% RH to 95% RH | | |
| Operating altitude | ≤2000 m | | |
| Running noise | <70 dB | | |
| Cooling | Forced air cooling | | |
| Mounting | Wall bracket | | |
| Display | LCD&LED & App | | |
| Communication | RS485/WiFi/Dry contact/BLE | | |
| Country of origin | Made in China | | |
| Certifications | EN 62109, EN 61000, IEC 62040, EN 50549, AS/NZS 4777.2, CEC, RoHS IEC 62619, IEC 63056, IEC 60730, UN38.3 | | |
| Warranty | 10-year<br>*Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. | | |
| **Inverter Module** | | | |
| PV Input | | | |
| Max input power | 6 kW | 10 kW | |
| Max input current | 16 A * 2 | | |
| Max input DC voltage | 500 V | | |
| Min input DC operating voltage range | 70 V to 450 V | | |
| Input start-up voltage | 200 V | | |
| Nominal voltage | 360 V– | | |
| MPPT voltage range | 70 V– to 450 V– | | |
| Max MPPT input current | 2 * 16A | | |
| Max MPPT short-circuit current | 2 * 20 A | | |
| Number of MPPT trackers | 2 | | |
| Max voltage of open circuit | 500 V– | | |
| Method of active anti-islanding | Frequency shift<br>Power variation | | |

| | |
|---|---|
| AC Grid | |
| Input voltage range | 170 V~ to 265 V~ (L/N/PE) |
| Rated input voltage | 230 V~ |
| Rated input frequency | 50 Hz |
| Rated output power | 5 kW |
| Peak output power | 6.5 kW |
| Max grid continue input current | 34 A |
| Max grid continue output current | 26 A |
| Max grid output apparent power | 5 kVA |
| Rated output voltage | 220 V~ / 230 V~ / 240 V~ |
| Rated output power | 22 A |
| Rated AC frequency | 50 Hz |
| Short circuit current (Icc) | 400 A (1ns) |
| AC grid connection type | Single-phase |
| Generator Input | |
| Input voltage range | 170 V~ to 265 V~ (L/N/PE) |
| Rated input voltage | 230 V~ |
| Max continuous input current | 26 A |
| Rated input frequency | 50 Hz |
| Short-circuit current | 400 A (1ns) |
| EPS Output (Backup) | |
| Rated output power | 5 kW |
| Rated AC output current | 22 A |
| Rated output voltage | 230 V~ (L/N/PE) |
| Rated output frequency | 50 Hz |
| Max output current | 26 A |
| Rated output apparent power | 5 kVA |
| Peak power | 6.5 kW |
| Short-circuit current | 400 A (1ns) |
| Transfer time | < 10ms |
| THDU | <3%@100% R Load |
| Load start capability | 60 A |
| Efficiency | |
| MPPT tracking efficiency | 99.9% |
| Max inverter efficiency | 98% |
| Battery Module | |
| Model | XCD BAT 5.0 |

| | |
|---|---|
| Battery chemistry | LFP (LiFePO4) |
| Rated battery voltage | 51.2 V⎓ |
| Rated charge/discharge current | 100 A |
| Voltage range | 43.2 V⎓ to 57.6 V⎓ |
| Continuous charge current | 100 A |
| Continuous discharge current | 100 A |
| Max short-circuit current | 160 A |
| Charging temperature | 0°C to +45°C |
| Discharging temperature | −20°C to +45°C |
| Rated energy | 5.12 kWh |
| Rated capacity | 100 Ah |
| Rated power | 2500 W |
| Depth of discharge (DoD) | 90% adjustable |
| Dimensions (mm) | 740*400*200 |
| Weight | 57.1 kg |

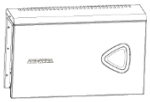
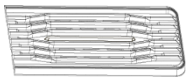
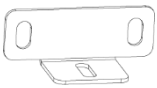
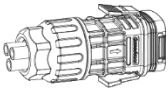
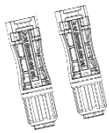
# 3 Installation

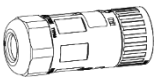
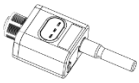
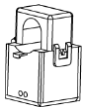
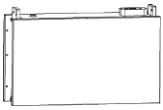
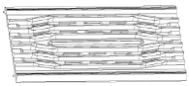
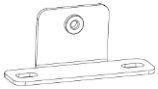
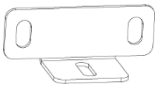
## 3.1 Check for Physical Damage

Make sure the inverter remains undamaged during shipping. If you notice any visible issues, such as holes and cracks, reach out to your dealer as soon as possible.

## 3.2 Scope of Delivery

Open the package and take out the product, then verify the accessories first. The list of included accessories is provided below. Contact your dealer if the scope of delivery is incomplete or damaged.

| Inverter | | | |
|---|---|---|---|
|  |  |  |  |
| Inverter x1 | Mounting Base x1 | Side Cover Plate x2 | Mounting Bracket x2 |
|  |  |  |  |
| Wall Bracket x2 | COM 16-pin Connector x1 | PV+ Connector x2 | PV- Connector x2 |

| | | | |
|---|---|---|---|
|  |  |  |  |
| M6*60 Expansion Bolt x8 | AC Connector x2 | Backup Connector x1 | CT Connector x1 |
|  |  |  |  |
| M5*10 Screw x12 | M5*10 Screw (without washer) x4 | Stick Logger x1 | Position Plate x1 |
|  |  |  | |
| M5*10 Phillips Screw x2 | CT Sensor x1 | User Manual x1 | |
| Battery Pack | | | |
|  |  |  |  |
| Battery Pack x1 | Side Cover Plate x2 | Mounting Bracket x1 | Wall Bracket x1 |
|  |  | | |
| M5*10 Screw x9 | M6*60 Expansion Bolt x2 | | |

## 3.3 Mounting

### 3.3.1 Requirements for Mounting

The BESS is built for outdoor use (IP65 rating). Please make sure the installation site complies with the following conditions:

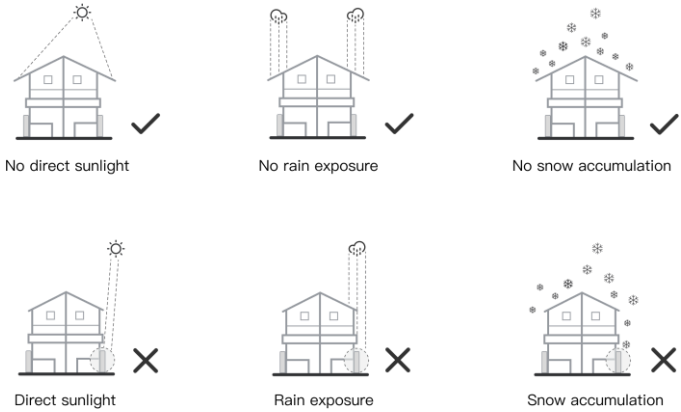
- Not in direct sunlight.
- Not in areas where highly flammable materials are stored.
- Not in potential explosive areas.
- Not in the cool air directly.
- Not near the television antennas or antenna cables.
- Not higher than altitude of about 2000m above sea level.
- Not in environment of precipitation or humidity (>95%).
- The installation environment should be free from salt spray. Although the pollution level is high, the medium does not contain harmful gases or substances that could corrode metal or destroy insulation.
- Under good ventilation conditions.
- The slope of the wall should be within ±5°.
- Do not install it in dusty places such as deserts.

- The wall hanging the inverter should meet the following conditions:
  - Solid brick/concrete, or a mounting surface of comparable strength.
  - Inverter must be supported or reinforced if the wall's strength isn't enough (such as wooden wall, the wall covered by a thick decorative layer).

**NOTE**

The BESS is hot when it is running. If installed indoors, please ensure good indoor ventilation and avoid significant indoor temperature rise by 4°C while the BESS is running. Otherwise, the BESS will be derated.

If installed outdoors, please AVOID direct sunlight, rain exposure, snow accumulation during installation and operation.




### 3.3.2 Recommended Clearances and Ventilation Requirements

To ensure safe and reliable operation, it is essential to maintain adequate clearance from surrounding structures and heat sources. The specific requirements are listed below:

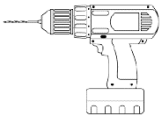
- **Clearance from wall:** Maintain a distance of 35 - 50 mm between the BESS and any wall.
- **Clearance from floor:** Install above a hard surface with no minimum clearance required (0 mm).
- **Clearance from ceiling/roof:** Allow at least 900 mm of space above the BESS.
- **Distance from heat sources:** Keep the BESS at least 1,000 mm away from any source of heat.
- **Ventilation requirements:** Ensure the BESS is installed in a well-ventilated area. Good ventilation means there should be ample airflow to prevent heat build-up. Avoid installing the BESS in confined spaces, locations exposed to excessive heat, or areas with the potential accumulation of toxic gases.

### 3.3.3 Mounting Procedure

**Tools:**

Before mounting the product, make sure to prepare the necessary tools such as crimping pliers, screwdrivers, hand wrenches and drills, utility knife, etc. in advance.

Crimping Pliers

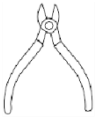


Hand Drill

Screwdriver

Utility Knife

Heat Gun



Wire Cutters

Hydraulic Pliers

Wire Strippers

Cable Ties

Heat-shrink Tubing

Torque Wrench

Marker

Rubber Mallet

Hex Key

Tape Measure

Bubble or Digital Level

**Personal Protective Equipment:**

Safety Helmet

Safety Goggles

Anti-dust Mask

Insulated Gloves

Insulated Shoes

Protective Gloves

**WARNING**

- Servicing of batteries should be performed or supervised by personnel knowledgeable about batteries and the required precautions.
- Before installing the battery pack, please clean the base connector to ensure it is dry, clean, free of dust, and any foreign objects. Failure to do so may result in damage to the equipment.
- Do not dispose of batteries in a fire. The batteries may explode.
- Do not open or damage batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
- A battery can present a risk of electrical shock and high short-circuit current. The following precautions should be observed when working on batteries:
  - Remove watches, rings, or other metal objects.
  - Use tools with insulated handles.
  - Wear rubber gloves and boots.
  - Do not lay tools or metal parts on top of batteries.
  - Disconnect charging source prior to connecting or disconnecting battery terminals.
- When replacing batteries, replace with the same type and number of batteries or battery packs.

**CAUTION**

To ensure the safety of personnel and prevent damage to the inverter, please observe the following guidelines during handling and transport:

- At least two people are required for handling and transporting the inverter.
- Avoid any bumps, impacts, or drops during handling.
- It is recommended to use professional handling and transport equipment.

**NOTE**

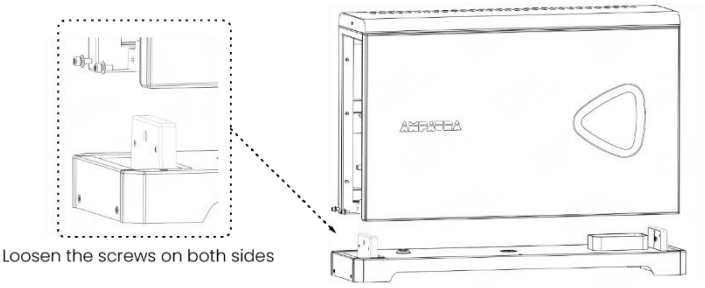
During installation, please refer to the table below for the minimum clearance and ventilation requirements:

| Requirement | Description |
|---|---|
| From wall | 35–50 mm |
| From floor (hard surface) | 0 mm |
| From ceiling/roof | >900 mm |
| From heat source | >1000 mm |
| Ventilation | Well-ventilated area |

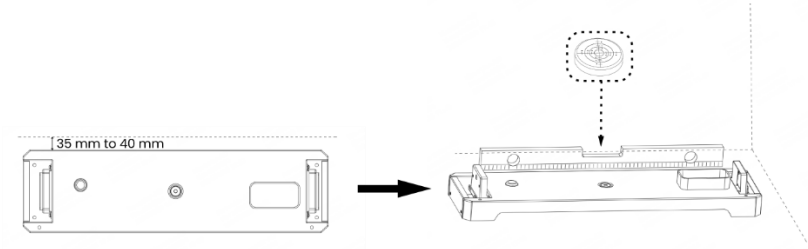
*Please refer to 3.3.2 Recommended Clearances and Ventilation Requirements for more details.

**Mounting Steps**

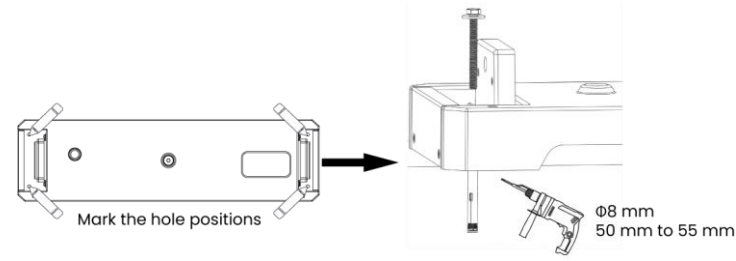
Step 1 Loosen the screws on both sides to separate the mounting base from the inverter, then place the base in front of the wall.



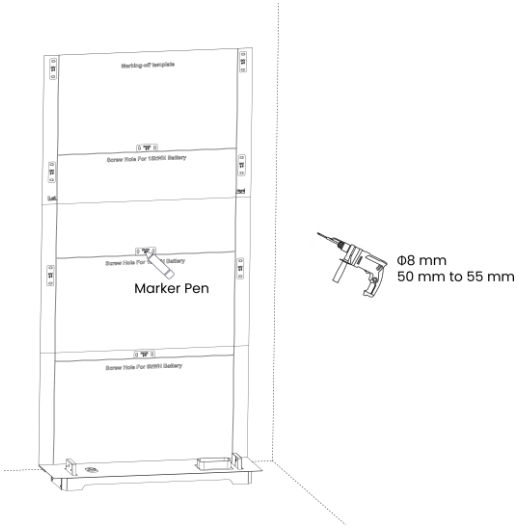

Step 2 Maintain a distance of 40mm between the mounting base and the wall surface. The 40mm distance is a recommendation. You may adjust it as necessary, within a range of 35mm to 40mm. Then, use a level tool to ensure the mounting base is level (the bubble in the level should be centered).




Step 3 Mark the hole positions, drill the holes with a hand drill, and secure using expansion bolts.



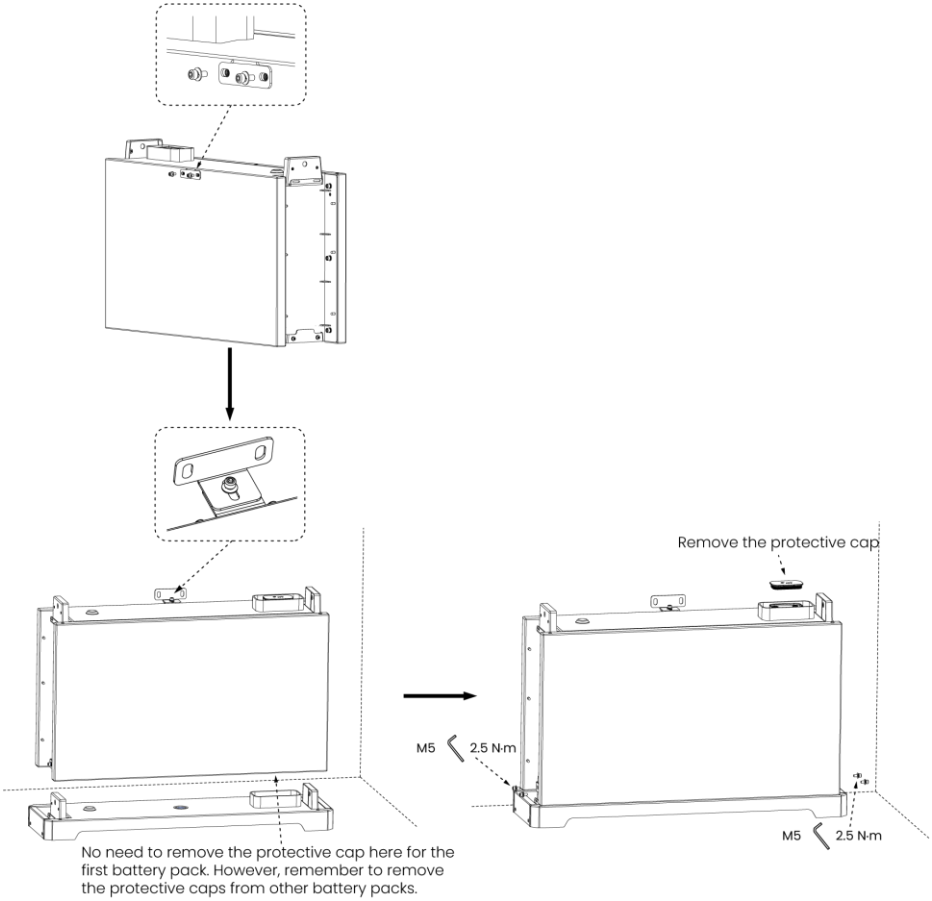
Step 4 Attach the position plate to the wall, mark the positions for the fixing holes, and drill the holes using a hand drill.



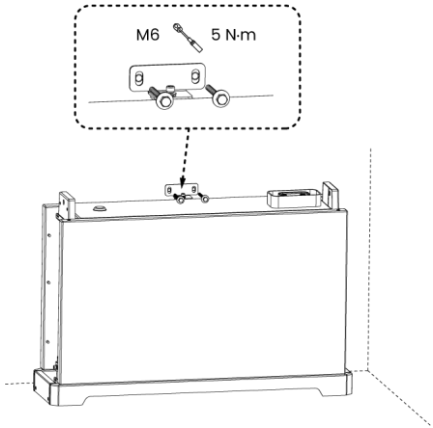

Step 5 Once the mounting base is securely fixed, you can begin mounting the battery packs. Start by installing the mounting bracket, and then place the battery module onto the base bracket and secure it with M5 screws on both sides.

**NOTE**

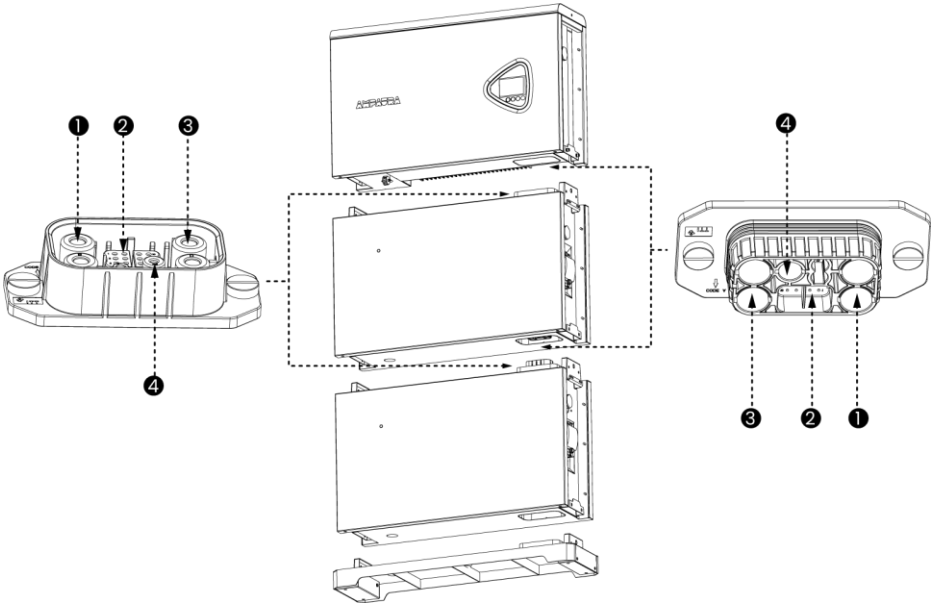
When installing the battery packs, make sure to remove the protective caps from both the top and bottom connectors. However, note that you do not need to remove the bottom protective cap from the battery pack at the bottom.




Step 6 Mount the battery pack on the wall.



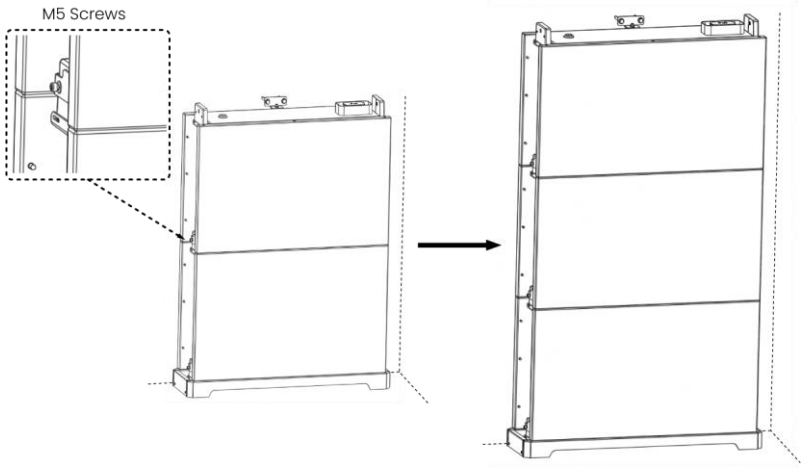
Step 7 Repeat Step 5 and Step 6 to mount any additional battery packs.



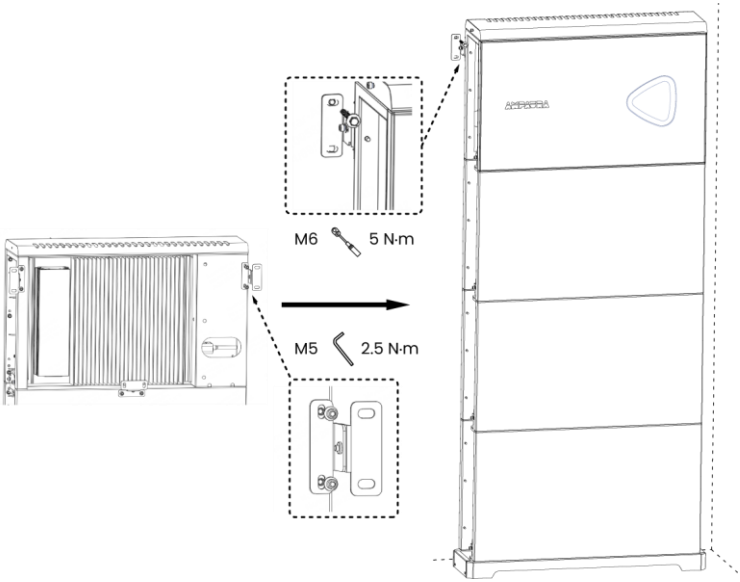
| No. | Meaning |
|---|---|
| ❶ | BAT- |
| ❷ | Communication interface |
| ❸ | BAT+ |
| ❹ | PE |

**NOTE**

- For floor installation of Roca2, please use a crane to install the 3rd battery pack.
- If the floor is prone to stagnant water, please set up a waterproofing platform or install it on the wall.
- The equipment is heavy, do not slip off when handling the equipment to avoid the equipment falling and injuring the operator.
- Battery pack is forbidden to be used after falling, please buy a new one.
- Do not drag the equipment during installation.



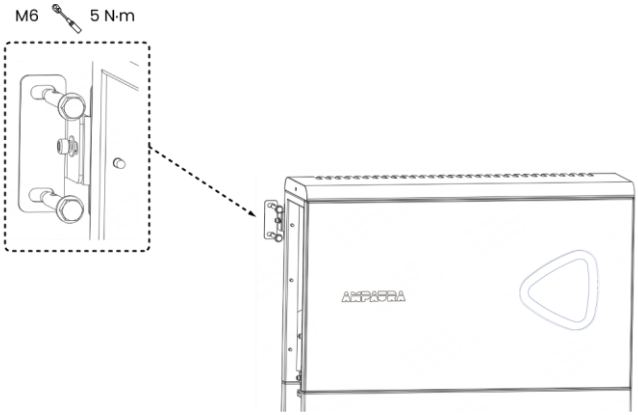

Step 8 Install the wall bracket for the inverter, then mount the inverter and secure it with M5 screws on both sides.




**NOTE**

Install the battery packs and inverter sequentially from bottom to top. After securing each module with side connectors, proceed to install the next module.

Step 9 Mount the inverter on the wall.




## 3.4 Electrical Connection

**DANGER**

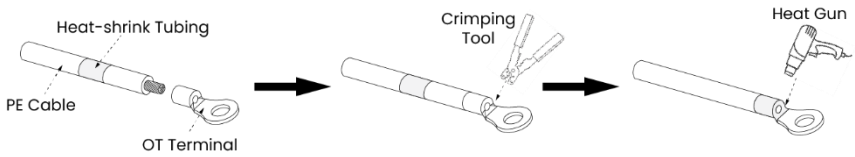
- Prior to connecting any cables, confirm that every circuit breaker linked to the inverter and battery packs, as well as all associated switches, are turned to the OFF position. Neglecting this precaution may expose you to high voltage, leading to the risk of electric shock from the energy storage system.
- Make certain to turn off the PV switch and deactivate all AC and BAT circuit breakers within the energy storage system before performing any electrical connections. Ensure these components remain inactive during the process.

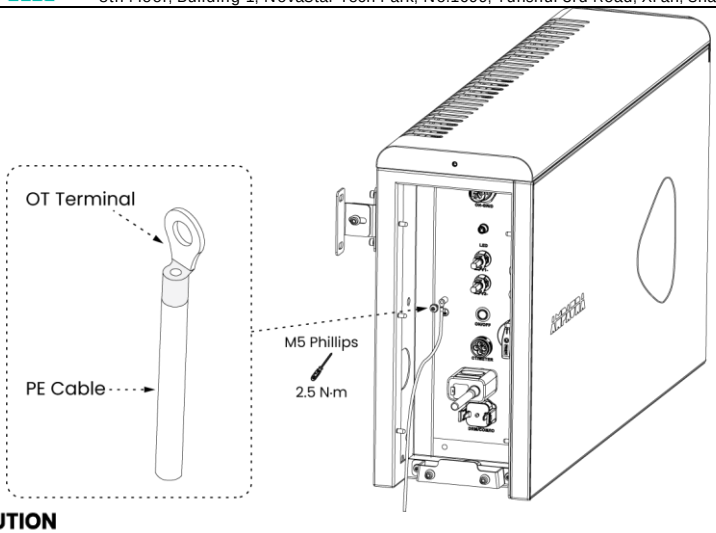
**WARNING**

- Cable connection should be performed exclusively by certified electricians.
- Operation personnel are required to wear appropriate personal protective equipment (PPE) while handling cable connections.

### 3.4.1 Connecting Additional Grounding

A grounding bar can be found on the left side of the inverter. Prepare OT terminals and remove the insulation from the grounding cable (wire gauge: 10 $mm^2$ Cu). Insert the exposed end of the cable into the ring terminal lug and secure it with a crimping tool. Finally, attach the OT terminal to the grounding bar.






**CAUTION**

*The device gives an alarm if there is a grounding fault. If the AC side is poorly grounded or not grounded, APP and the LED/LCD screen show up fault code" F324" .The inverter can't start to generate until the earth fault is resolved.

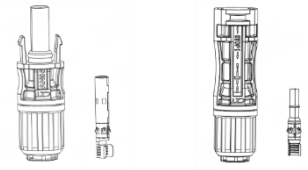
### 3.4.2 Connecting PV Input Cables

**DANGER**

- Make sure the AC switch linked to the inverter and the PV SWITCH on the inverter are turned OFF before connecting the PV input cables, as neglecting this precaution may lead to electric shocks.
- When exposed to sunlight, the PV panel generates a dangerously high voltage. Disconnect its PV cable before establishing any DC power connections.
- Ensure the polarity of the PV array's output matches the "PV+"/"PV-" indicators prior to making connections.
- Prior to connecting the PV input cables, confirm that the resistance between the positive and negative terminals of the PV string and earth is MΩ level. Do not ground the positive or negative terminals of the PV array.
- Do not engage in connecting or disconnecting a PV string or module within a PV string while the inverter is operational. Doing so can result in electric shocks.

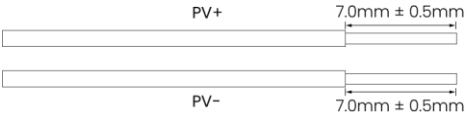
**Connection Steps**

Step 1 Separate the PV connector and terminal.

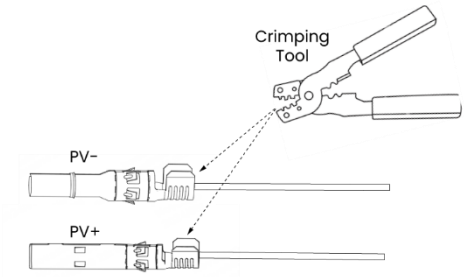


PV+ PV-

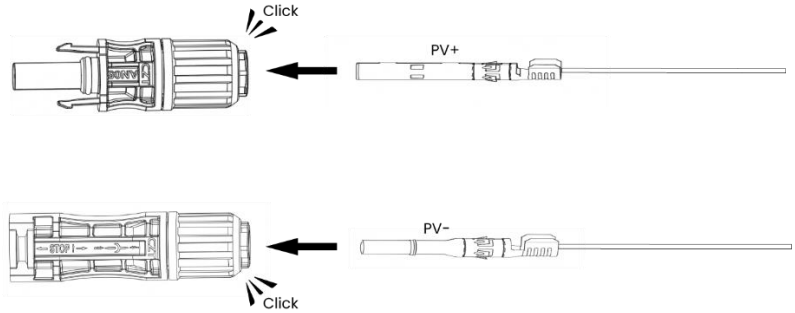
Step 2 Strip the PV cables (wire gauge: 12 AWG for PV+, 10 AWG for PV-) to a length of 7.0mm ± 0.5mm.



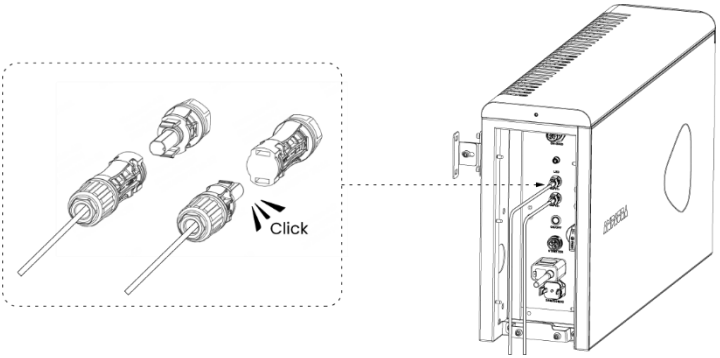

Step 3 Insert the stripped end into the terminal and clamp it with crimping pliers. After crimping, the terminal clamp should not be deformed and both sides should be symmetrical. The conductor should be visible on the connecting side or crimping side.




Step 4 Insert the crimped terminal into the connector until you hear or feel a "click" sound.



Step 5 Plug the PV connector into the corresponding socket on the inverter and make sure you hear or feel a "click" sound. Check the connection to ensure it is secure by gently pulling back on the male and female ends of the connector.




### 3.4.3 Connecting AC Cables (Back-up)

**WARNING**

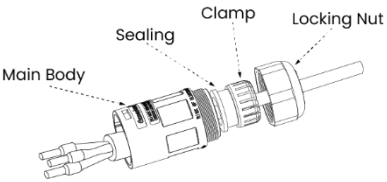
- Always ensure the inverter is completely disconnected from any power sources prior to i nstallation, operation, or maintenance tasks.
- Avoid connecting the backup terminal to the inverter's grid connector.
- The inverter requires a dedicated grid/backup circuit breaker to guarantee safe disconn ection.
- To protect the inverter and allow for safe disconnection, a 35 A circuit breaker should be installed.
- F-type RCDs can be selected for use in actual operation to ensure safety.

However if an external residual current device (RCD) (type F is recommended) is mandatory, the switch must be triggered at a residual current of 300 mA (recommended).
RCD of other specifications can also be used according to local standard.

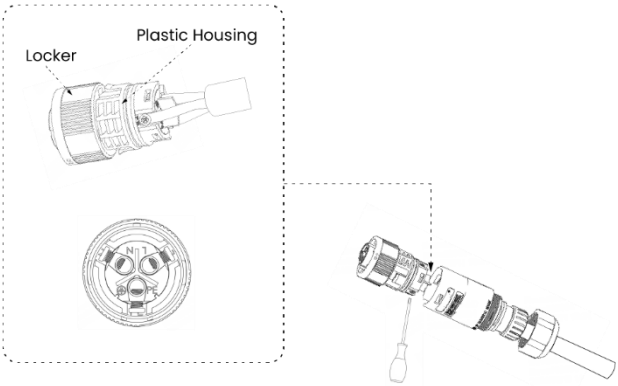
**Connection Steps**

Step 1 First, strip the AC cable (wire gauge: 10 AWG). Then, trim the L and N conductors so that they are each 5 mm shorter than the grounding conductor. This way, if there's any tensile strain, the grounding conductor will be the last one to be pulled from the screw terminal.

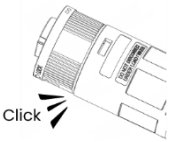

Step 2 Insert the cable into the connector.



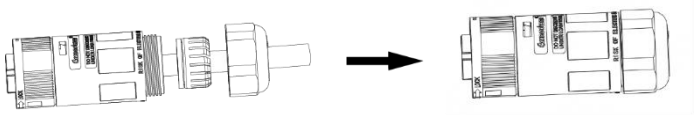
Step 3 Crimp the wire and tighten the screw to a torque of 0.8 ± 0.1 N·m.



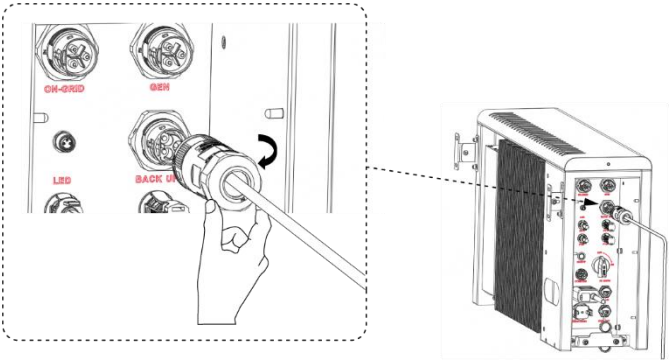

Step 4 Insert the plastic housing into the main body and make sure you hear or feel a "click" sound.




Step 5 Place the sealing and the clamp into the main body, then screw the locking nut into the main body with a torque of 2.5 ± 0.5 N·m.



Step 6 Plug the connector into the corresponding socket on the inverter, ensuring the lock rotates in the direction marked "LOCK."




**NOTE**

After wiring, conduct a test to ensure the connections are correct and secure.

### 3.4.4 Connecting Grid Cables

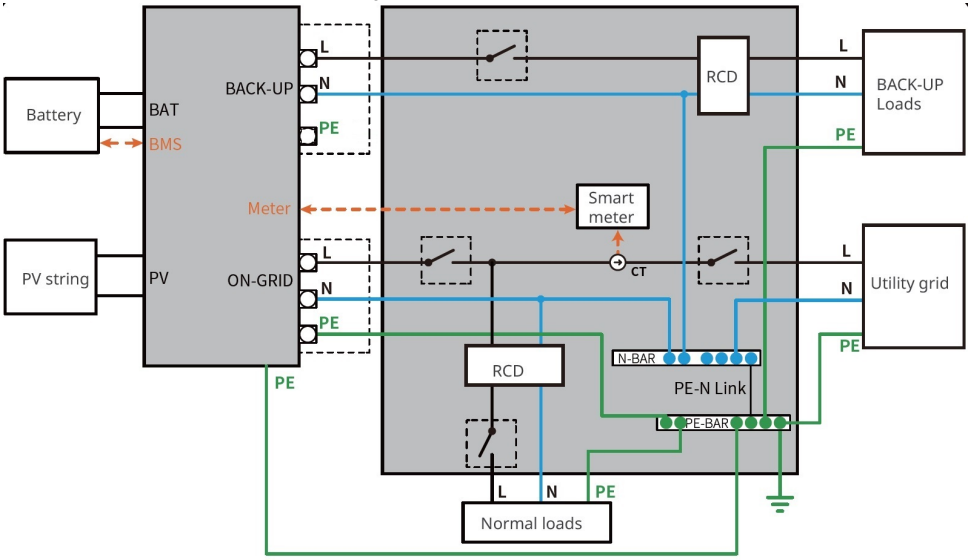
**WARNING**

- Always ensure the inverter is completely disconnected from any power sources prior to installation, operation, or maintenance tasks.
- Avoid connecting the grid terminal to the inverter's backup connector.
- The inverter requires a dedicated grid/backup circuit breaker to guarantee safe disconnection.
- To protect the inverter and allow for safe disconnection, a 35 A circuit breaker should be installed.
- F-type RCDs can be selected for use in actual operation to ensure safety.

**NOTE**

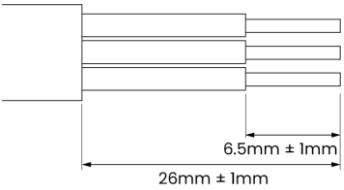
For Australia, New Zealand and South Africa, the neutral cable of Grid side and Back-up side must be connected together.

However if an external residual current device (RCD) (type F is recommended) is mandatory, the switch must be triggered at a residual current of 300 mA (recommended).
RCD of other specifications can also be used according to local standard.

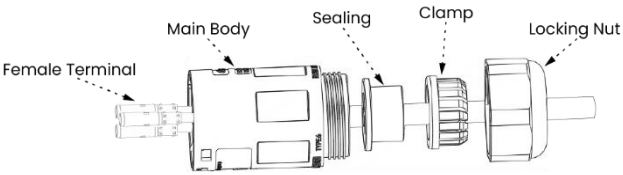



**Connection Steps**

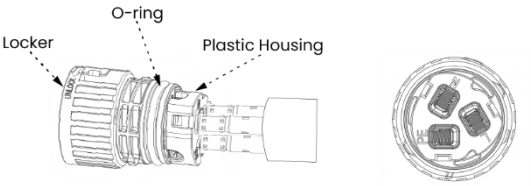
Step 1 Strip the cable (wire gauge: 8 AWG) according to the figure below.



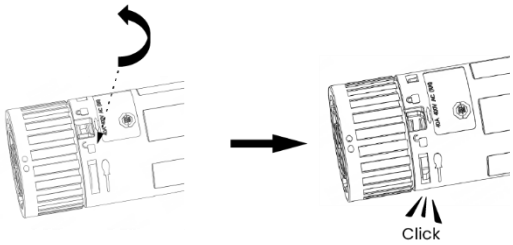

Step 2 Crimp the wires and attach the cable to the parts.



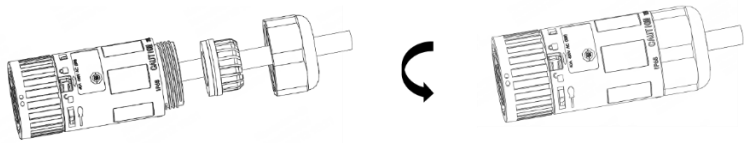

Step 3 Push each of the three female terminals firmly into the plastic housing.



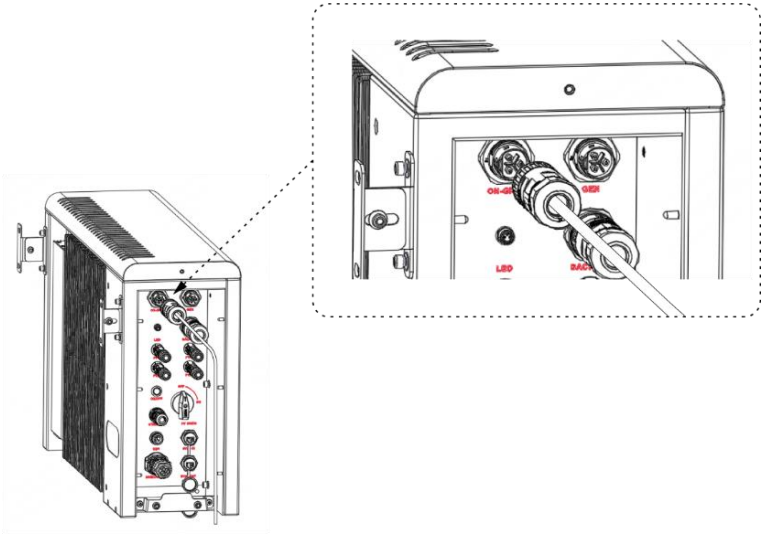
Step 4 Insert the housing into the main body, then rotate the locker outward by 15° to secure.




Step 5 Place the sealing and clamp into the main body, then tighten the locking nut to a torque of 2.5 ± 0.5 N·m.



Step 6 Plug the connector into the corresponding socket on the inverter.



**NOTE**

After wiring, conduct a test to ensure the connections are correct and secure.

### 3.4.5 Connecting Generator Cables

**WARNING**

- Always ensure the inverter is completely disconnected from any power sources prior to i nstallation, operation, or maintenance tasks.
- The inverter requires a dedicated grid/backup circuit breaker to guarantee safe disconn ection.
- To protect the inverter and allow for safe disconnection, a 35 A circuit breaker should be installed.
- F-type RCDs can be selected for use in actual operation to ensure safety.

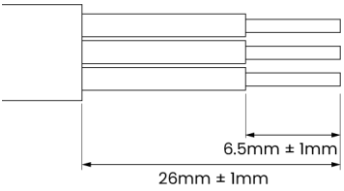
**NOTE**

Generator and grid connections are mutually exclusive. If you enable generator connection, grid connection will be disabled by default, and vice versa.

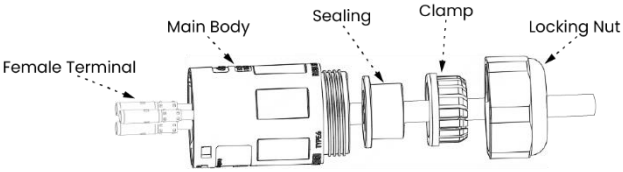
However if an external residual current device (RCD) (type F is recommended) is mandatory, the switch must be triggered at a residual current of 300 mA (recommended).
RCD of other specifications can also be used according to local standard.

**Connection Steps**

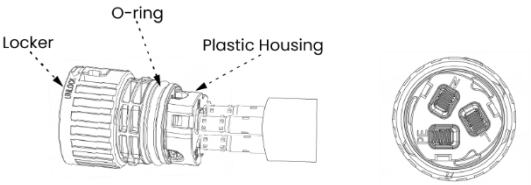
Step 1 Strip the generator cable (wire gauge: 10 AWG) according to the figure below.



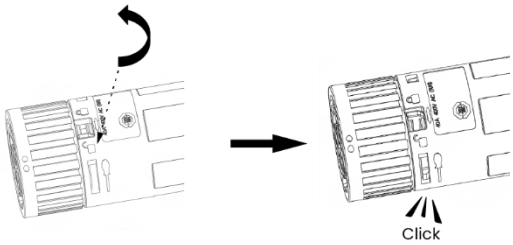

Step 2 Crimp the wires and attach the cable to the parts.



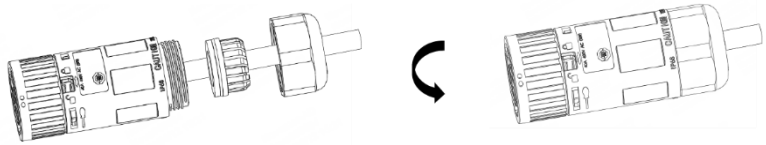

Step 3 Push each of the three female terminals firmly into the plastic housing.



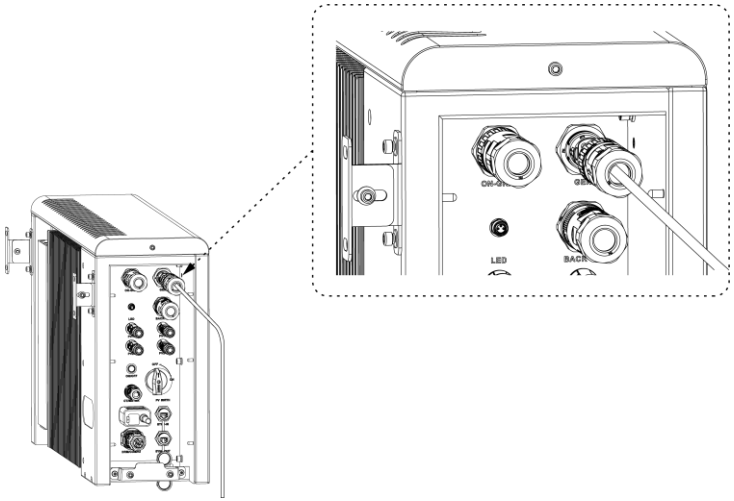
Step 4 Insert the housing into the main body, then rotate the locker outward by 15° to secure.




Step 5 Place the sealing and clamp into the main body, then tighten the locking nut to a torque of 2.5 ± 0.5 N·m.



Step 6 Plug the connector into the corresponding socket on the inverter.



**NOTE**

After wiring, conduct a test to ensure the connections are correct and secure.

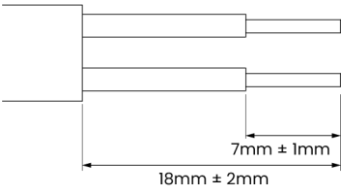
### 3.4.6 CT Connection

**NOTE**

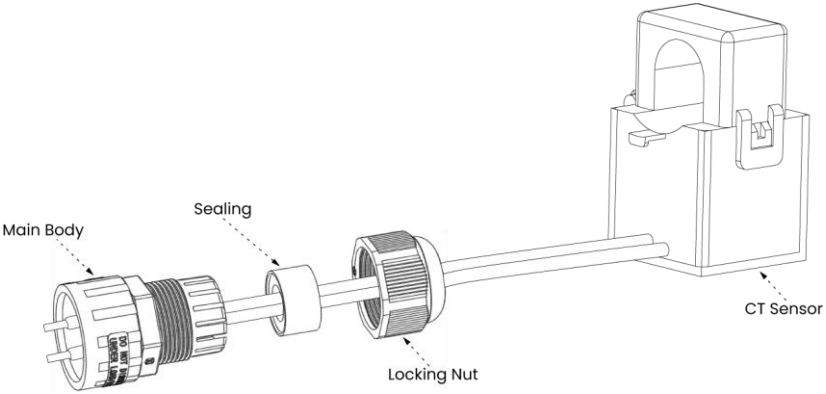
If CT is not installed or installed incorrectly, some of the inverter functions such as "Self Consumption" or "Peak Shifting" will not be available.

**Connection Steps**

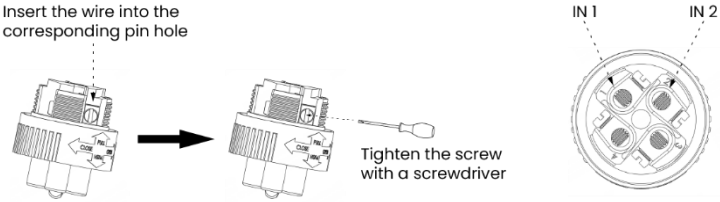
Step 1 Strip the CT cable (wire gauge: 24 AWG) according to the figure below.



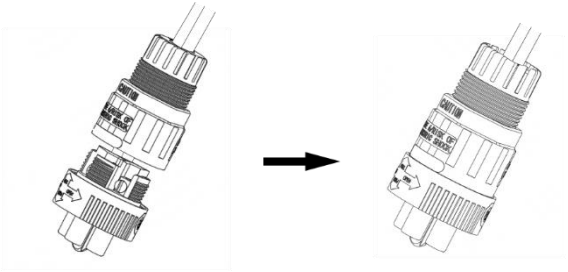

Step 2 Insert the stripped end of the cable into the connector.



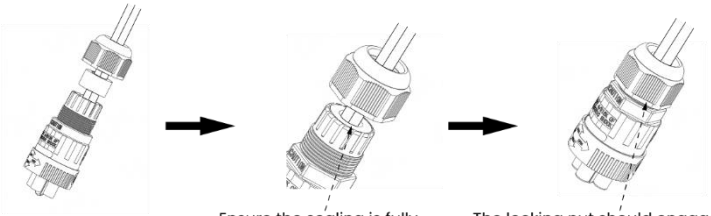

Step 3 Crimp the wire according to the figure below and tighten the screw to a torque of 0.6 ± 0.1 N·m.



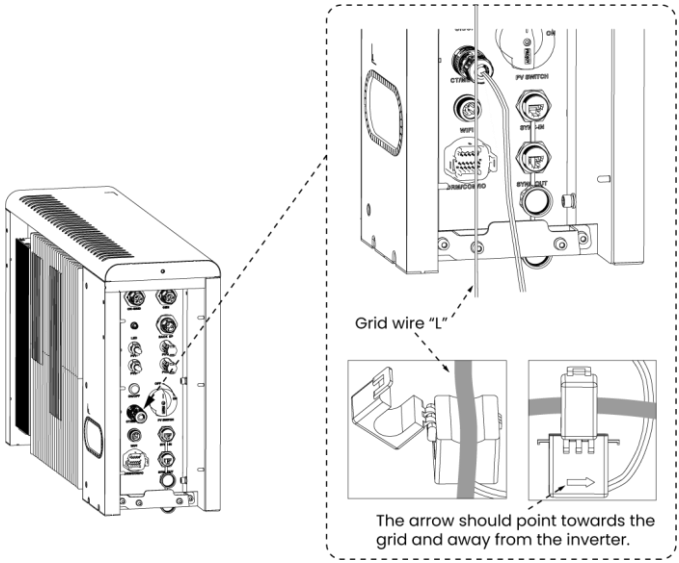
Step 4 Screw the main body into the plastic housing with a torque of 1.2 ± 0.2 N·m



Step 5 Insert the sealing into the main body, then screw the locking nut into the main body with a torque of 1.5 ± 0.3 N·m.



Step 6 Thread the live wire coming from the grid connector through the CT sensor, making sure to follow the direction of the arrow shown in the diagram (the arrow should point towards the grid and away from the inverter). Secure the clip, then plug the CT connector into the appropriate socket on the inverter.



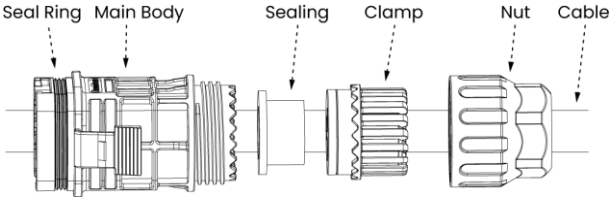

**NOTE**

You can place the external CT sensor inside the fuse box.

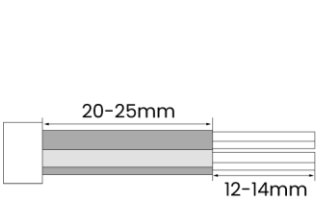
### 3.4.7 DRED Connection

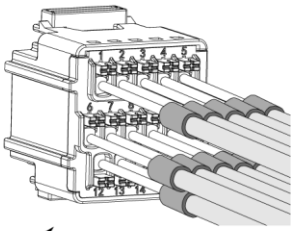
The system can operate alongside a Demand Response Enabling Device (DRED). Refer to below for DRED connection.

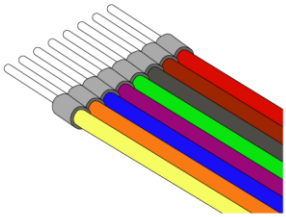
Step 1 Insert the cable (wire gauge: 24 AWG) into the connector.



Step 2 The cable is stripped to expose 12-14 mm of the wires. Then, insert the wires into the pins and secure them using a crimping tool. Finally, position the pins into the plastic housing as illustrated in the figure below.

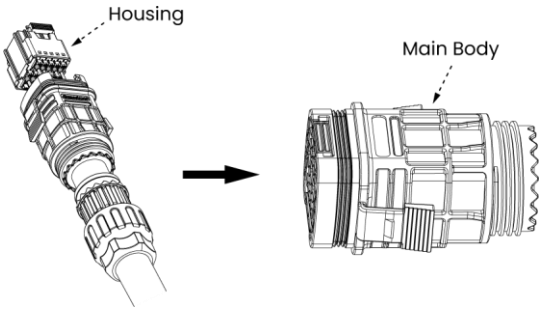


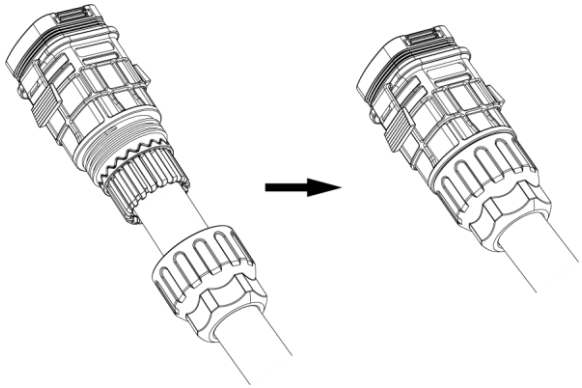


| Pin Assignment | | |
|---|---|---|
| No. | Color | No. |
| 1 | Black | 9 |
| 2 | Brown | 10 |
| 3 | Red | 11 |
| 4 | Orange | 12 |
| 5 | Yellow | 13 |
| 6 | Green | 14 |
| 7 | Blue | 15 |
| 8 | Purple | 16 |

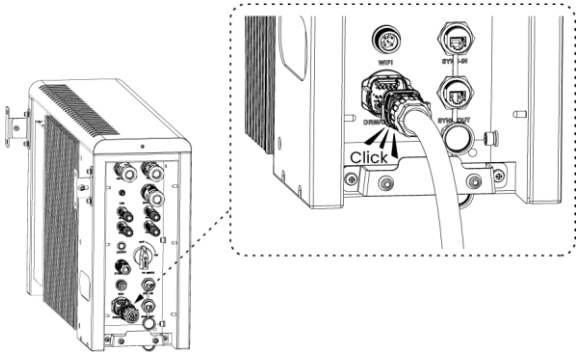
Step 3 Push the plastic housing into the main body.



Step 4 Push the sealing into the clamp, and then push the clamp into the main body. Finally, tighten the locknut to a torque of 2.5±0.5 N·m.

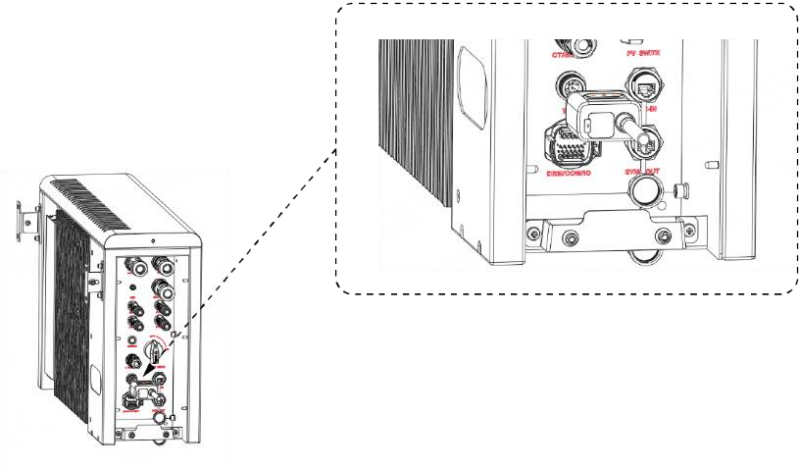


Step 5 Plug the connector into the corresponding socket on the inverter.



### 3.4.8 Install Stick Logger

Insert the stick logger into the corresponding socket on the inverter.



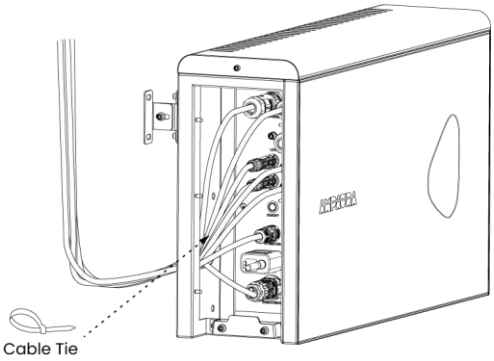
### 3.4.9 Organizing the Cables

**DANGER**

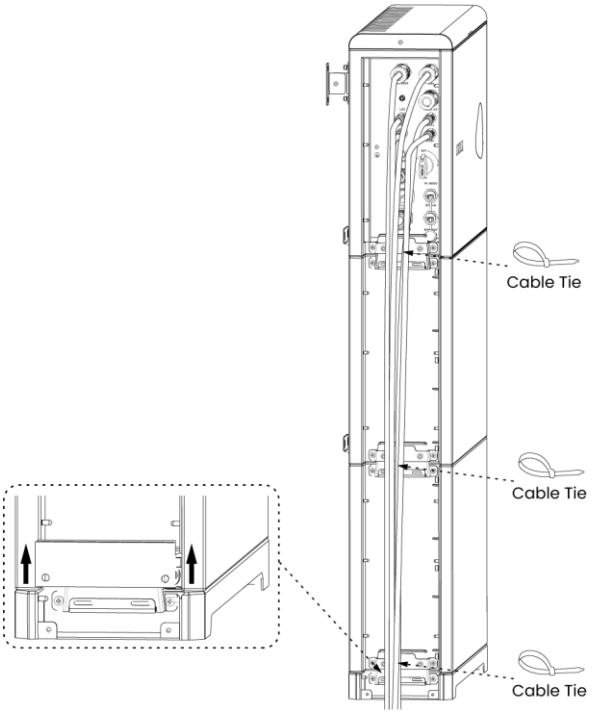
- Before connecting cables, ensure that DC Switch is in the OFF state, and the front switch of the AC line is off.
- Do NOT perform operations on the equipment with power on. Before operation, please make sure all power supplies to the equipment have been disconnected, including
- Do not leave construction residues, for example, cut cores of cables, in or around the equipment, such as, in terminals and in or around fans.

Once all electrical wiring is completed, the cables can be organized using the following two methods:

**Method 1:** Route the cables through the outlet at the back of the inverter.



**Method 2:** Remove the outlet baffle on the base.



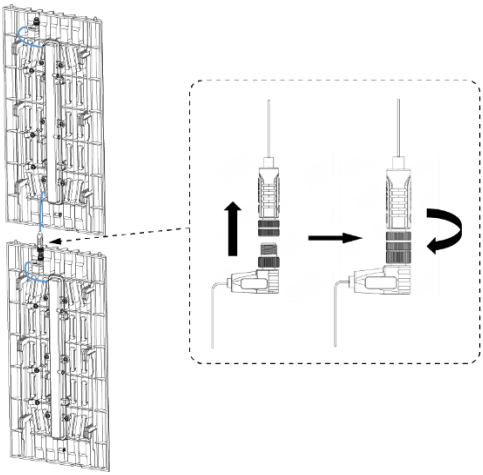
### 3.4.10 Install Side Cover Plates

**NOTE**

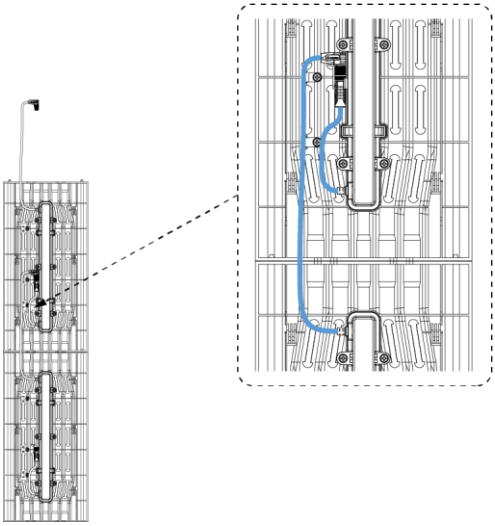
Before installing the side cover plates, remove the protective caps from the connectors, but keep the protective caps on the lowest plates on both the left and right sides intact to ensure waterproofing.

**Installation Steps**

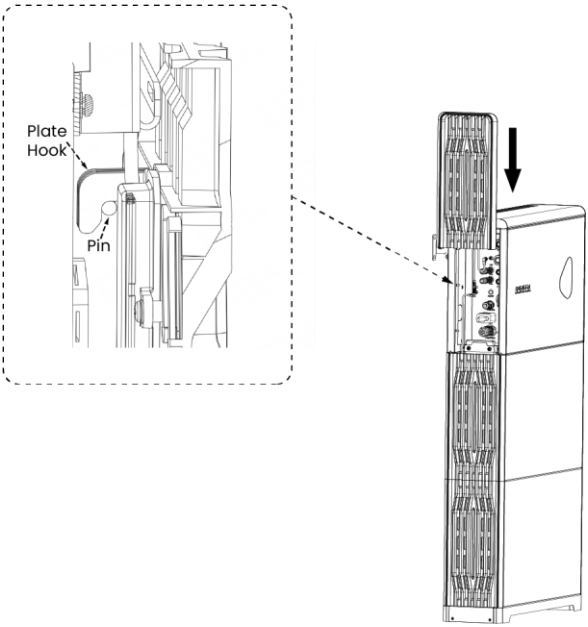
Step 1 Take two side cover plates and connect their plugs as shown in the figure below.



Step 2 After connecting the plugs, arrange the wires neatly into the cable slot as illustrated in the figure below.

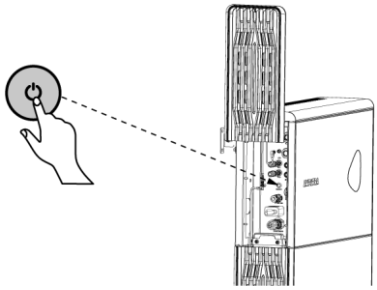


Step 3 Install the side cover plates onto the BESS. Make sure the plate hooks are secured onto the pins.



Step 4 Repeat step 1 to step 3 for any additional side cover plates.

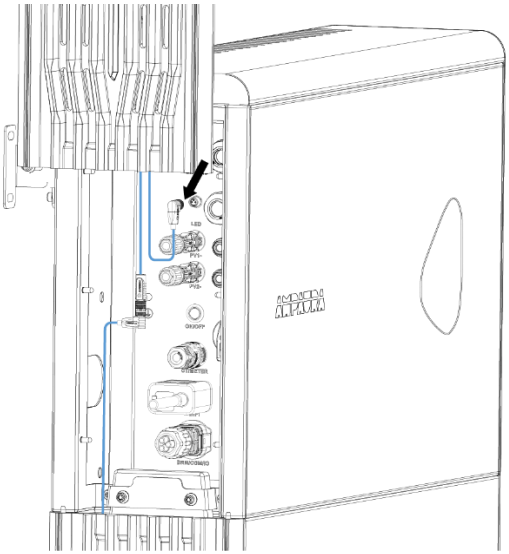
Step 5 Before installing the final side cover, ensure all electrical connections are secure. After confirming, press the on/off switch to power on the BESS. Once the BESS is operational, proceed to Step 6.



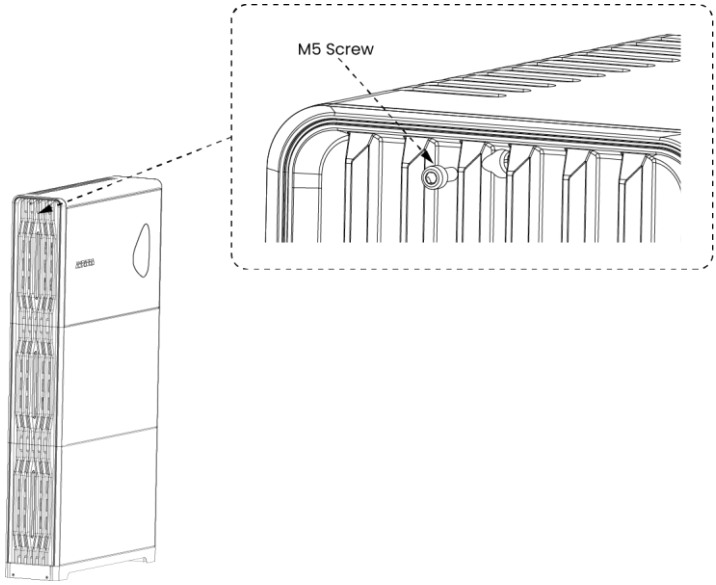
**NOTE**

To shut down the BESS, simply press and hold the on/off switch for 3 seconds or longer.

Step 6 When installing the plate for the inverter, insert the last plug into the corresponding socket on the inverter.



Step 7 After installation, secure the plate for the inverter with an M5 screw.



# 4 Inverter Operations

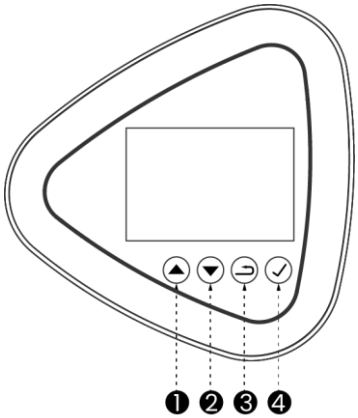
## 4.1 Inverter LCD Display

**NOTE**

This section applies to the Roca2-5KL-C inverter.

**WARNING**

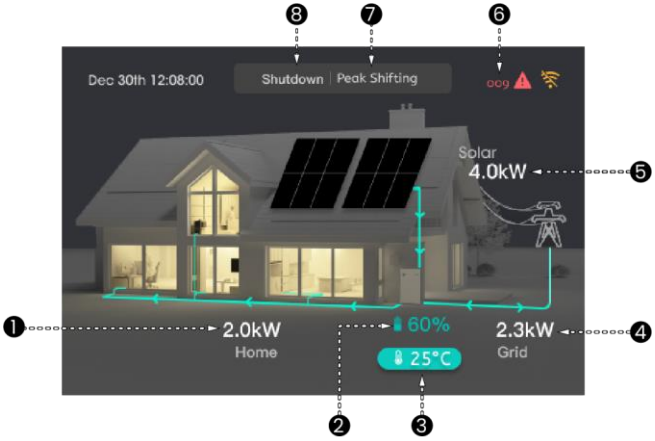
The inverter does not support the connection of multiple individual machines in parallel to form a multiple-machine system.




| No. | Description |
|---|---|
| 1 | Up button: Move the cursor up or increase the value. |
| 2 | Down button: Move the cursor down or decrease the value. |
| 3 | Return button: Go back from the current menu or cancel the current function. |
| 4 | Confirm button: Confirm the selection. |

### 4.1.1 Home Screen

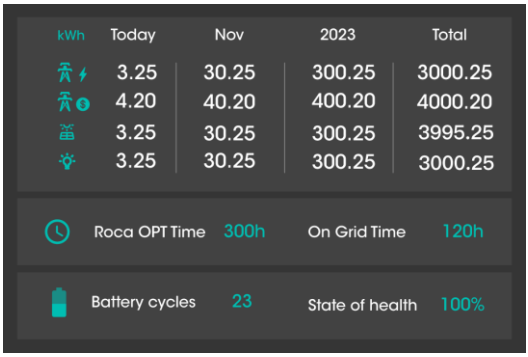
The home screen shows the inverter's overall status, with the following information displayed:




| No. | Description |
|---|---|
| ❶ | Indicates the current load power. |
| ❷ | Indicates the remaining battery percentage. |
| ❸ | Indicates the inverter temperature. |
| ❹ | Indicates the grid power. |
| ❺ | Indicates the PV panel power. |
| ❻ | Indicates the alarm and fault status. |
| ❼ | Indicates the current work mode. |
| ❽ | Indicates the grid-connection status. |

### 4.1.2 Overview

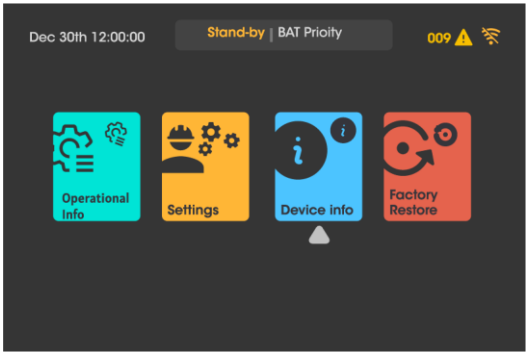
On the home screen, press the down button to activate the overview screen, which displays the following information.



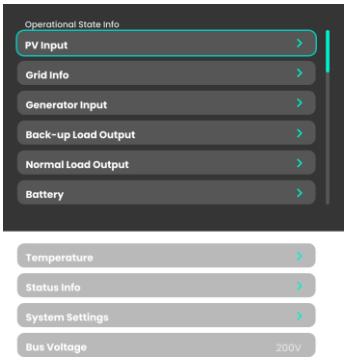

| Icon | Description |
|---|---|
| | Indicates the energy from the power grid. |
| | Indicates the energy feed to the power grid. |
| | Indicates the solar energy generated. |
| | Indicates the energy consumed by the loads. |

### 4.1.3 Navigation Screen

On the home screen, press the confirm button to enter the navigation screen, which includes four options: **Operational Info**, **Settings**, **Device Info**, and **Factory Restore**.

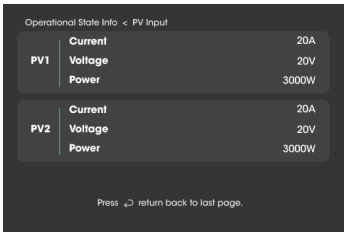


### 4.1.3.1 Operational Info

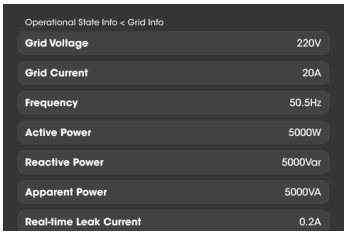



Operational Info contains the following menus:

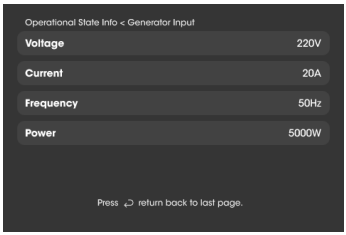
- PV Input
- Grid Info
- Generator Input
- Back-up Load Output
- Normal Load Output
- Battery
- Temperature
- Status Info
- System Settings
- Bus Voltage



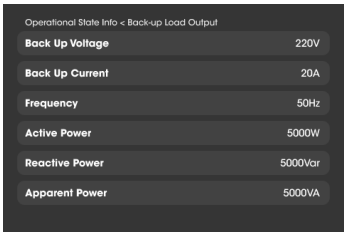

Select **Operational Info** > **PV Input** to view the current, voltage, and power of PV input.



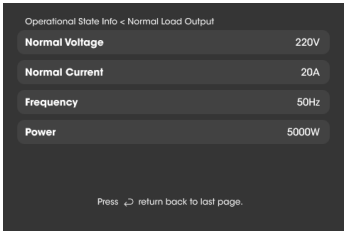

Select **Operational Info** > **Grid Info** to view grid voltage, current, frequency, active power, reactive power, apparent power, and leak current.



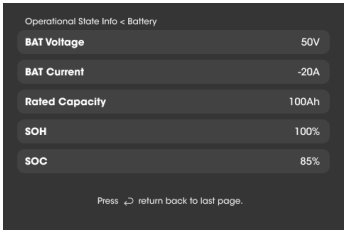

Select **Operational Info** > **Generator Input** to view the voltage, current, frequency, and power of generator input.



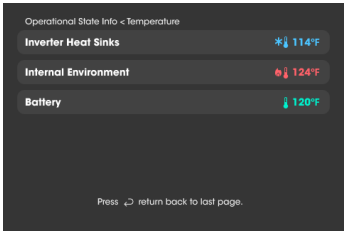

Select **Operational Info** > **Back-up Load Output** to view the back-up voltage, current, frequency, active power, reactive power, and apparent power.



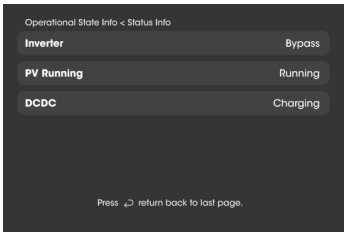

Select **Operational Info** > **Normal Load Output** to view the normal load voltage, current, frequency, and power.



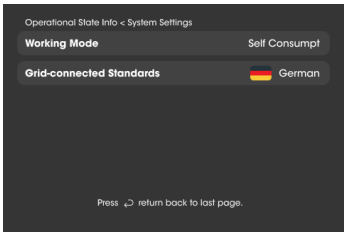

Select **Operational Info** > **Battery** to view the battery voltage, current, capacity, SOH, and SOC.




Select **Operational Info** >**Temperature** to view the inverter heat sinks, internal environment, and battery temperatures.




Select **Operational Info** > **Status Info** to view the inverter status, PV running status, and DCDC status.

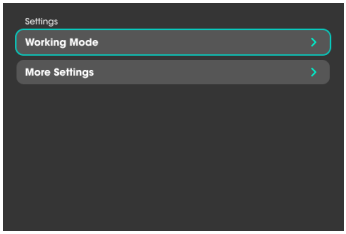



Select **Operational Info** > **System Settings** to view the current working mode and grid standard.

**NOTE**

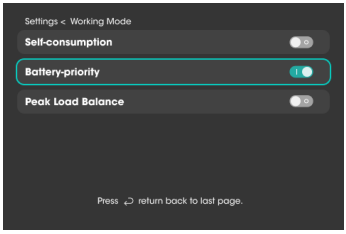
This interface is only for viewing the system settings. To set the working mode and grid standard, please refer to 4.1.3.2 Settings.

### 4.1.3.2 Settings




Settings contains the following menus:

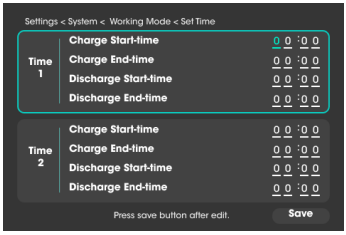
- Working Mode
- Dbg Power Ctrl Mode
- More Settings



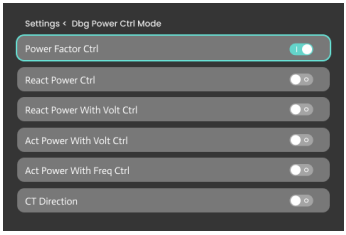

Select **Settings** > **Working Mode** to set the inverter working mode.

**NOTE**

You can only activate one working mode at a time.



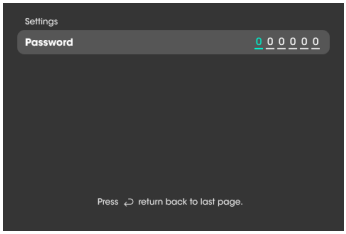

If you set the working mode to **Peak Shifting**, you will be redirected to the Set Time screen, where you can set the start and end times for the charge/discharge periods.




Select **Settings** > **Dbg Power Ctrl Mode** to set power quality response modes.

**NOTE**

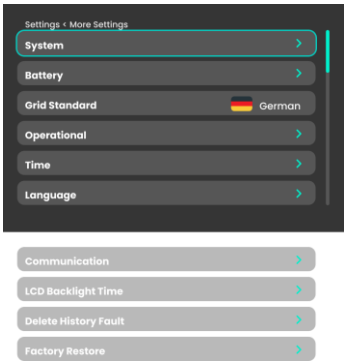
Please do not modify the regional settings related to the power quality response mode and grid protection.




Select **Settings** > **More Settings** and you will need to enter the password to continue.

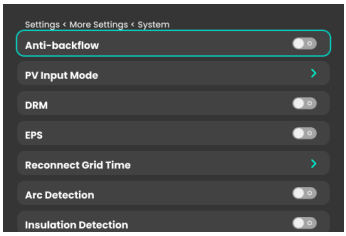
**NOTE**

The default password is a 6-digit number derived from the first 5 digits of the serial number (SN), which correspond to the manufacturing date. For example, if the initial 5 digits of the SN are 25103, the default password is 250103. For manufacturing dates in October, November, and December, the following alphabetic representations are used within the serial number: 'a' for October, 'b' for November, and 'c' for December. Consequently, if the SN is 25a12, the corresponding password is 251012; if it is 25b25, the password is 251125.

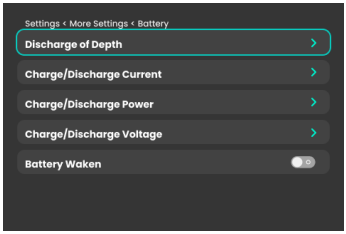



More Settings contains the following menus:

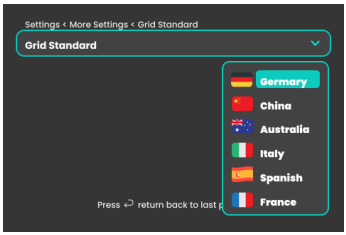
- System
- Battery
- Grid Standard
- Operational
- Time
- Language
- Communication
- LCD Backlight Time
- Delete History Fault
- Factory Restore



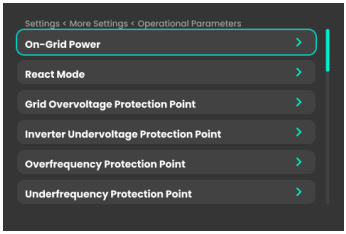

Select **Settings** > **More Settings** > **System** to configure the system settings for Anti-backflow, PV Input Mode, DRM, EPS, Reconnect Grid Time, Arc Detection, and Insulation Detection.



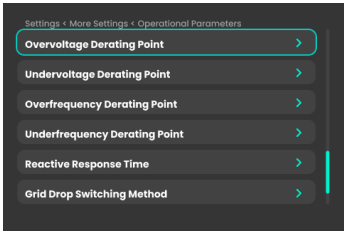

Select **Settings** > **More Settings** > **Battery** to configure the battery settings for Discharge of Depth, Charge/Discharge Current, Charge/Discharge Power, Charge/Discharge Voltage, Battery Woken.

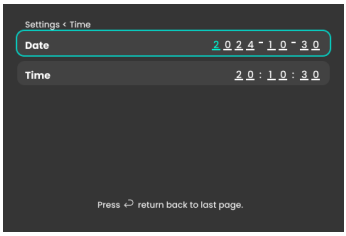



Select **Settings** > **More Settings** > **Grid Standard** to set the grid standard.

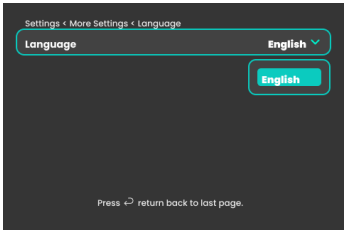



Select **Settings** > **More Settings** > **Operational** to configure the operational parameters for On-Grid Power, React Mode, Grid Overvoltage Protection Point, Inverter Undervoltage Protection Point, Overfrequency Protection Point, Underfrequency Protection Point, Overvoltage Derating Point, Undervoltage Derating Point, Overfrequency Derating Point, Underfrequency Derating Point, Reactive Response Time, and Grid Drop Switching Method.

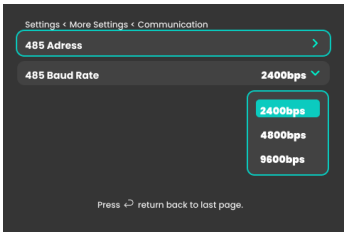


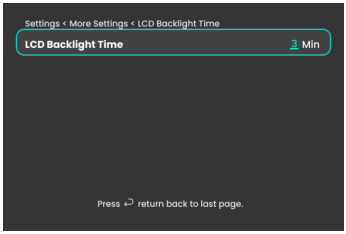

Select **Settings** > **More Settings** > **Time** to set the **Date** and **Time** of the system.



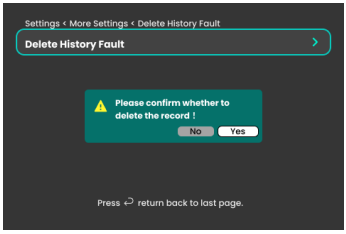

Select **Settings** > **More Settings** > **Language** to set the system language. Currently, the only available language option is English.



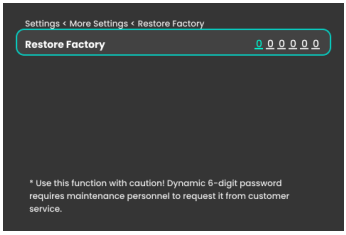

Select **Settings** > **More Settings** > **Communication** to configure the communication settings for **485 Address** and **485 Baud Rate**.




Select **Settings** > **More Settings** > **LCD Backlight Time** to adjust the LCD backlight duration.




Select **Settings** > **More Settings** > **Delete History Fault** to clear the device fault history.

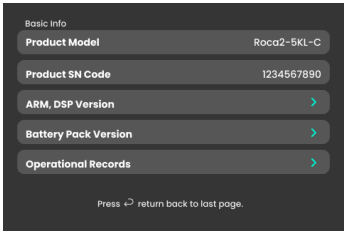



Select **Settings** > **More Settings** > **Restore Factory** to reset the settings to factory defaults.

**NOTE**

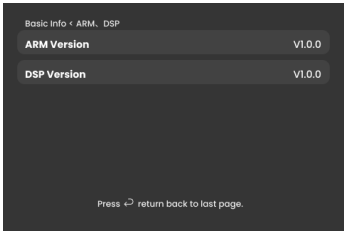
The default password is a 6-digit number derived from the first 5 digits of the serial number (SN), which correspond to the manufacturing date. For example, if the initial 5 digits of the SN are 25103, the default password is 250103. For manufacturing dates in October, November, and December, the following alphabetic representations are used within the serial number: 'a' for October, 'b' for November, and 'c' for December. Consequently, if the SN is 25a12, the corresponding password is 251012; if it is 25b25, the password is 251125.

### 4.1.3.3 Device Info

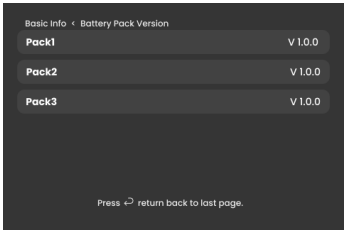



Device Info contains the following information or menus:

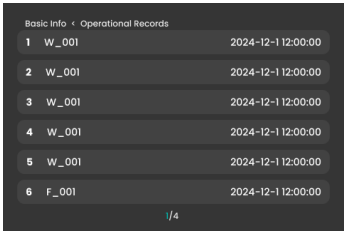
- Product Model
- Product SN Code
- ARM, DSP Version
- Battery Pack Version
- Operational Records




Select **Device Info** > **ARM, DSP Version** to view the ARM and DSP version number.




Select **Device Info** > **Battery Pack Version** to view the battery firmware version.




Select **Device Info** > **Operational Records** to view the operational records of the inverter.

**NOTE**

For more details about the error code, please refer to 4.1.3.4 Error Code.

#### 4.1.3.4 Error Code

Kindly refer to the detailed information below for a comprehensive understanding of the error codes and their meanings.

| Error Code | Description |
|---|---|
| W000 | Low grid voltage |
| W001 | High grid voltage |
| W002 | Low grid frequency |
| W003 | High grid frequency |
| W004 | PV 1 not connected |
| W005 | PV runaway |
| W006 | Low battery voltage |
| W007 | High battery voltage |
| W008 | Overload alarm |
| W009 | High leakage current |
| W010 | Fan failure |
| W011 | Reverse polarity on R_CT |
| W012 | Reverse polarity on S_CT |
| W013 | Reverse polarity on T_CT |
| W014 | PV 2 not connected |
| W100 | MOS overtemperature grade 1 |
| W101 | Cell undervoltage grade 1 |
| W102 | Cell overvoltage grade 1 |
| W106 | Discharge overcurrent grade 1 |
| W107 | Charge overcurrent grade 1 |
| W108 | Cell low temperature grade 1 |
| W109 | Cell overtemperature grade 1 |
| W110 | Excessive temperature difference grade 2 (excessive NTC temperature difference in battery cells) |
| F005 | Battery undervoltage |

| | |
|---|---|
| F014 | Soft start timeout |
| F015 | Inverter output short-circuited |
| F016 | Low bus voltage |
| F017 | High bus voltage |
| F018 | Bus short-circuited (soft start failed) |
| F019 | Hardware failure (sensor, relay failure) |
| F020 | Inverter overcurrent |
| F021 | High DC component |
| F022 | Cabinet overtemperature |
| F023 | Heat sink overtemperature |
| F024 | CMPSS hardware overcurrent fault in inverter inductance: 50A |
| F025 | Battery discharge overcurrent |
| F026 | Battery charge overcurrent |
| F028 | Inverter output abnormal |
| F030 | Overload 1 |
| F031 | Overload 2 |
| F032 | Low inverter voltage |
| F033 | Inverter overvoltage |
| F034 | Battery overvoltage |
| F035 | R-phase CT disconnection |
| F063 | Communication error between BMU and BCU |
| F100 | MOS overtemperature grade 2, MOS overtemperature grade 3 |
| F101 | Cell undervoltage grade 2, cell undervoltage grade 3 |
| F102 | Cell overvoltage grade 2, cell overvoltage grade 3 |
| F103 | Battery pack total voltage undervoltage |
| F104 | Battery pack total voltage overvoltage |
| F105 | Excessive cell voltage difference |
| F106 | Discharge overcurrent grade 2, discharge overcurrent grade 3 |

| | |
|---|---|
| F107 | Charge overcurrent grade 2, charge overcurrent grade 3 |
| F109 | Cell overtemperature grade 2, cell overtemperature grade 3 |
| F110 | Excessive temperature difference (excessive temperature difference in battery cells NTC) |
| F111 | SOH low grade 1, SOH low grade 2, SOH low grade 3 |
| F112 | Battery voltage sensor failure |
| F113 | Battery temperature sensor failure |
| F114 | SPI flash failure |
| F115 | EEPROM failure |
| F116 | RTC failure |
| F117 | Charging short-circuited |
| F118 | Discharging short-circuited |
| F119 | Precharge timeout failure |
| F120 | Heating film short-circuited failure |
| F121 | Open-circuit detection failure |
| F122 | Discharge/Precharge/Charge MOS adhesion failure |
| F123 | Precharge MOS cannot be closed |
| F124 | Charge MOS cannot be closed |
| F125 | Discharge MOS cannot be closed |
| F126 | MOS temperature sensor failure |
| F127 | Battery pack 1 communication failure |
| F128 | Battery pack 2 communication failure |
| F129 | Battery pack 3 communication failure |
| F130 | Battery pack 4 communication failure |
| F131 | BMS shutdown |
| F132 | BMS failure |
| F200 | Arc detected in channel 1 |
| F201 | Arc detected in channel 2 |
| F202 | Arc detected in channel 3 |

| | |
|---|---|
| F203 | Arc detected in channel 4 |
| F204 | Arc detected in channel 5 |
| F205 | Arc detected in channel 6 |
| F206 | Arc detected in channel 7 |
| F207 | Arc detected in channel 8 |
| F208 | Channel 1 resistance low failure |
| F209 | Channel 2 resistance low failure |
| F210 | Channel 3 resistance low failure |
| F211 | Channel 4 resistance low failure |
| F212 | Channel 5 resistance low failure |
| F213 | Channel 6 resistance low failure |
| F214 | Channel 7 resistance low failure |
| F215 | Channel 8 resistance low failure |
| F300 | Communication error between monitoring board and PCS |
| F301 | Communication error between monitoring board and BMS |
| F302 | Communication error between monitoring board and arc detection board |
| F303 | Failed to send firmware to DSP during the upgrade process |
| F304 | Failed to send firmware to arc detection board during the upgrade process |
| F305 | Failed to send firmware to BMS during the upgrade process |
| F306 | Failed to send firmware to battery pack BMS during the upgrade process |
| F307 | Failed to verify monitoring card firmware package during the upgrade process |
| F308 | Failed to decompress firmware package during the upgrade process |
| F309 | Failed to verify the overall firmware package during the upgrade process |
| F310 | Failed to send upgrade command to BMS during the upgrade process |
| F311 | Failed to send upgrade command to DSP during the upgrade process |
| F312 | Failed to send upgrade command to arc detection board during the upgrade process |
| F313 | Monitoring card misaddressed the BMS |

| | |
|---|---|
| F314 | Failed to send PCS reset during the upgrade reset process |
| F315 | Failed to send ARC reset during the upgrade reset process |
| F316 | Failed to send BMS reset during the upgrade reset process |
| F317 | PCS reset failed during the upgrade reset process |
| F318 | ARC reset failed during the upgrade reset process |
| F319 | BMS reset failed during the upgrade reset process |
| F320 | Failed to send monitoring card reset to PCS during the upgrade reset process |
| F321 | Failed to send monitoring card reset to ARC during the upgrade reset process |
| F322 | Failed to send monitoring card reset to BMS during the upgrade reset process |
| F323 | Other upgrade error |
| F324 | System grounding fault. PE cable not grounded. |

# 5 APP Operation

You can control the Roca2 BESS using the AmpAura app. Android users can download the app from major application markets such as Google Play, while iOS users can search *AmpAura* in the App Store. Alternatively, you can scan the QR code below to download the AmpAura app.

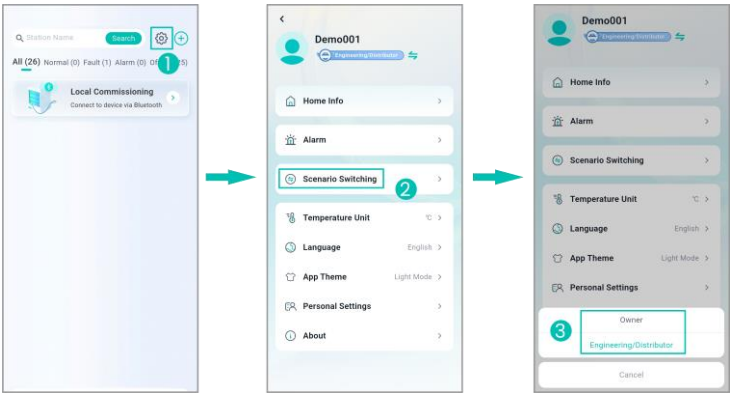
Scan the QR code to download the AmpAura App

- Device Management
- Device Control
- Operation Monitoring
- Firmware Update

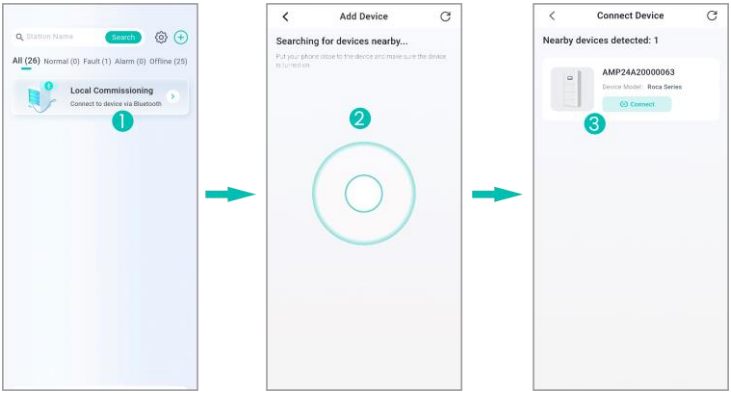
## 5.1 Creating a New System

**For Distributor**

Step 1 Open the AmpAura app and log in using an account with distributor permissions. Before continuing, make sure you've set your profile to **Engineering/Distributor** in the app settings.

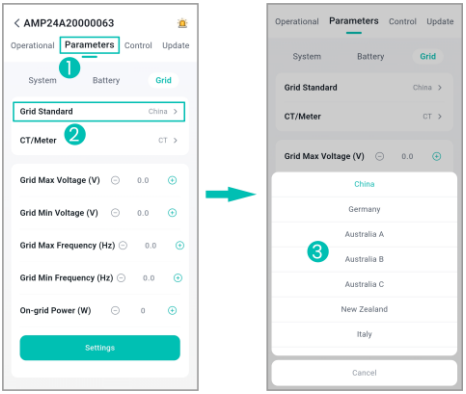


Step 2 Tap **Local Commissioning**. The app will begin searching for nearby equipment—please wait until your equipment is detected.

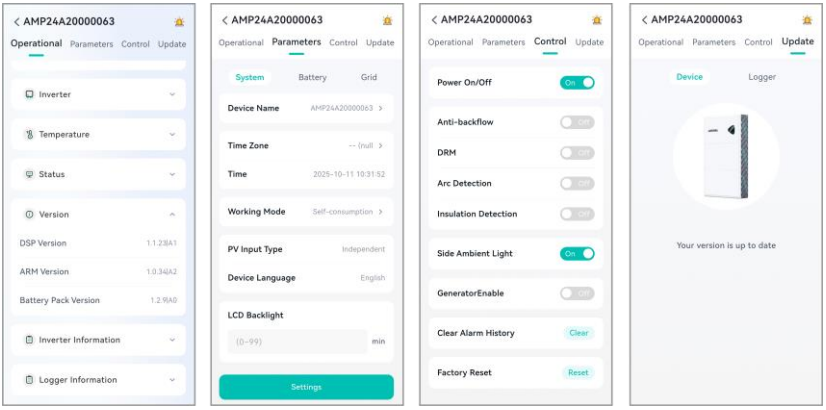



Step 3 Tap the equipment you want to commission to begin the setup process.

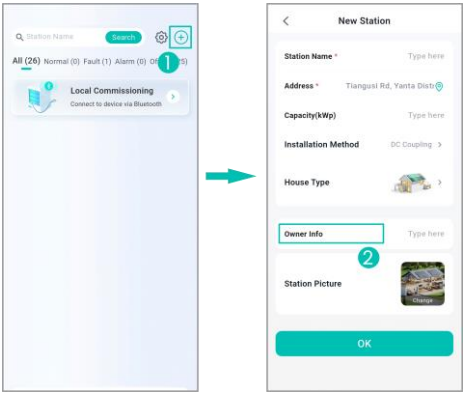
- To set the grid standard, go to **Parameters** > **Grid** > **Grid Standard**.



- Here you can also configure other necessary parameters for the BESS operation, or update the firmware using the **Operational**, **Parameters**, **Control**, or **Update** tabs.



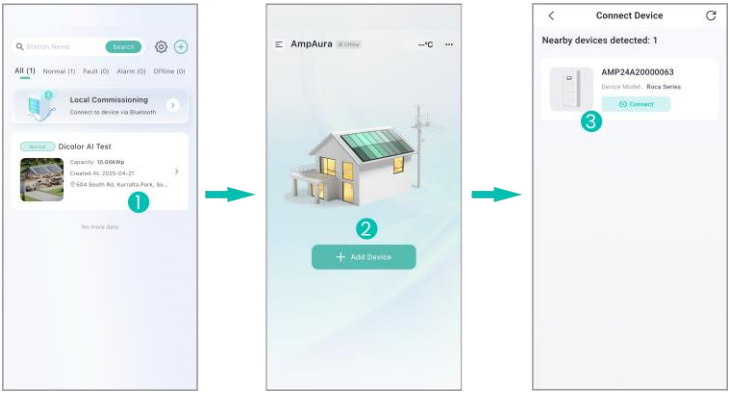

Step 4 Once commissioning is complete, tap the ⊕ button to create a new power station. Enter the owner's phone number and email address linked to their account. This will authorize and transfer ownership of the station to the specified owner.




**NOTE**

Ensure that the owner has downloaded the AmpAura app and created an account before linking the power station to them.

Step 5 After the new power station is created, follow the illustrated instructions below to add the BESS to the station.

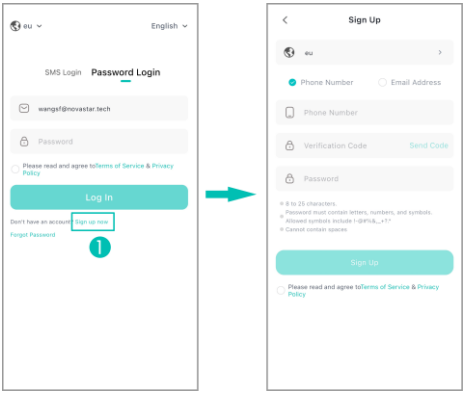



**NOTE**

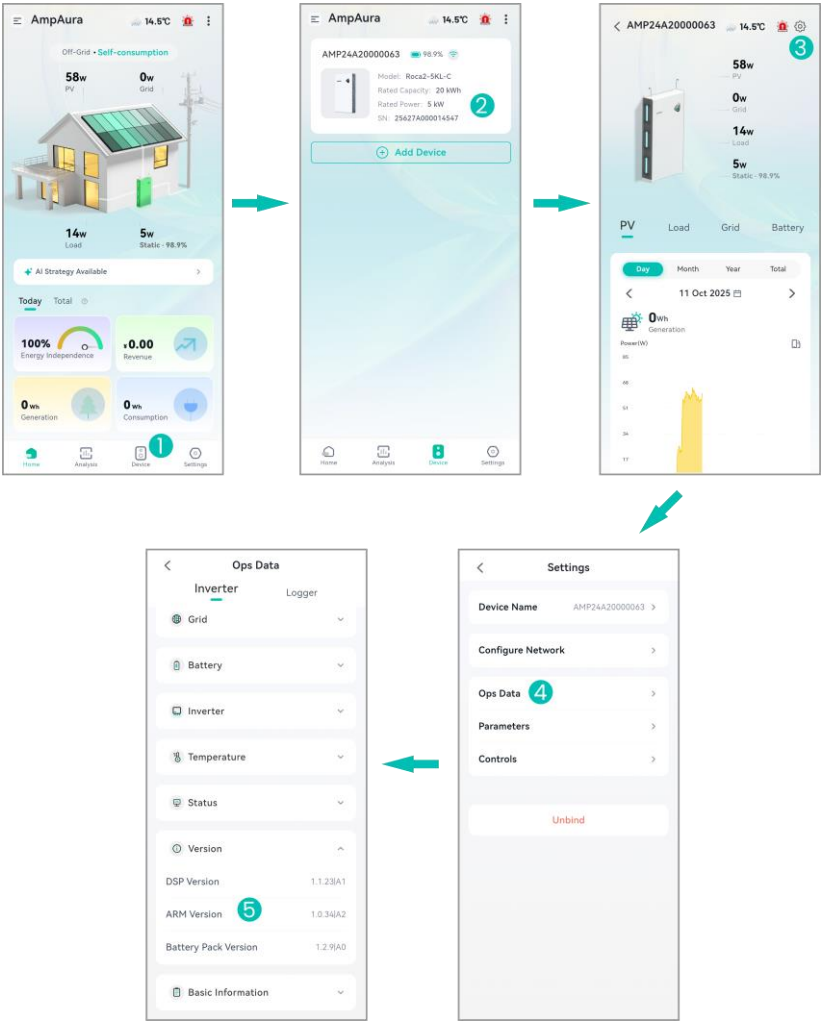
When adding the BESS, select the Wi-Fi network you want it to connect to. The system will automatically configure the network settings and complete the device binding process. Once complete, the BESS will appear in the station device list.

## For BESS Owner

Step 1 Download the AmpAura app and sign up to create a new account.



Step 2 After your distributor has finished setting up your BESS and linked the power station to your account, you'll be able to manage your BESS using the AmpAura app. Below is an example for checking the BESS firmware version.




For more detailed instructions, please refer to *AmpAura App User Manual*

# 6 System Maintenance

## 6.1 Routine Maintenance

To ensure the long-term running of the BESS, users are advised to perform routine maintenance according to this section.

| Inspection | Inspection Method | Power-off Required | Maintenance Cycle |
|---|---|---|---|
| System cleaning | Check the decorative side cover regularly for shielding and dirt. If so, clean it up. Do not use tools that may cause electric shock or insulation damage, such as wire brushes during the cleaning process. | Yes | Once every three months |
| System running state | • Check whether the equipment is damaged or deformed.<br>• Listen for any abnormal noises during the operation of the equipment.<br>• When the equipment is running, check whether the equipment parameters are correctly set. | No | Once every six months |

## 6.2 System Power-on/Power-off

**DANGER**

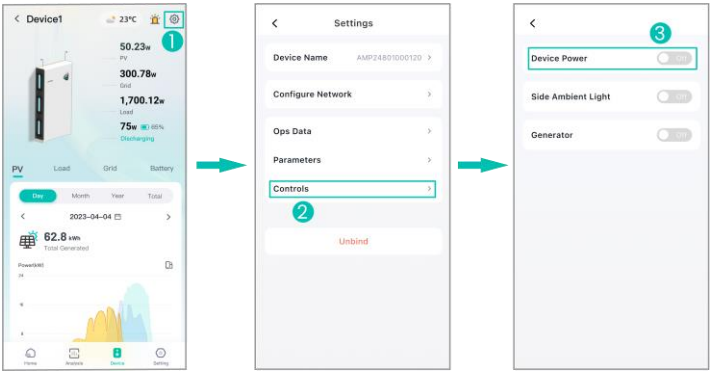
**High Voltage and Hazards:** Wear personal protective equipment such as insulating gloves, insulating shoes, and safety hats while operating the equipment. Do not wear conductive accessories such as metal bracelets, rings, or necklaces.

### 6.2.1 System Power-off

Step 1 Power the BESS off in the App or manually.

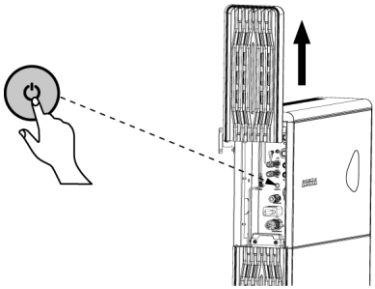
**App Operation**

Open the AmpAura App and navigate to the device overview screen. Tap the ⚙ icon in the top right corner, select **Controls**, and then switch off **Device Power** to turn off the BESS.




**Manual Operation**

Follow the figure below to remove the top-left side cover, and press the on/off switch button.



**NOTE**

Press and hold for more than 3s to turn on or off the power. An interval of more than 10s is needed between power-on and power-off.

Step 2 Disconnect the AC (back-up) connector on the inverter.

Step 3 Turn the PV switch on the inverter to the off position.

**WARNING**

There is residual current and the equipment is hot immediately after being powered off. Operating the equipment immediately upon power off may lead to electric shock or burns.

### 6.2.2 System Power-on

Step 1 Turn PV switch on the inverter to the on position.

Step 2 Reconnect the AC (back-up) connector on the inverter.

Step 3 Power the BESS on in the App or manually. For details, see Step 1 in System Power-off.

## 6.3 Low SOC

The self-discharge characteristic of battery pack will cause power loss. If the equipment is not charged for a long time, it may be damaged due to overdischarge of power. When the battery is low, charge the equipment in time.

Under normal circumstances, the equipment can charge itself according to the running condition. If the equipment cannot be charged, please contact your sales agent in time and deal with it within the specified time. If the battery capacity is lost or irreversible damage is caused due to the delay, AmpAura will not be liable.

- When the battery power is greater than or equal to 10%, charge within 30 days.
- When the battery power is less than or equal to 0% and less than 10%, charge within 7 days.

Scenarios that may cause a charge failure (including but not limited to):

- The PV side has no input, and the power grid side is powered off for a long time.
- The BESS is faulty.
- Parameters are not set correctly.

## 6.4 Emergency Treatment

### 6.4.1 Emergency Measures for Fire

**DANGER**

- Please shut down the BESS or disconnect the main power switch when it is safe.
- The high temperature may distort or damage the battery pack, resulting in electrolyte overflow or toxic gas leakage. Do not go near the battery pack and wear protective equipment.
- If the fire is small, use carbon dioxide or ABC dry powder extinguisher to extinguish the fire.
- If the fire is spreading, evacuate the building or equipment area immediately and call the fire department. Re-entry to burning buildings is prohibited.
- Do not contact with high voltage components during fire fighting, otherwise it may lead to the risk of electric shock.
- After extinguishing the fire, do not use the equipment, please contact your sales agent.

### 6.4.2 Emergency Measures for Flood

**DANGER**

- Please shut down the BESS or disconnect the main power switch when it is safe.
- If the battery pack is submerged, do not touch it to avoid the danger of electric shock.
- After the flood waters recede, do not use the equipment. Please contact your sales agent.

### 6.4.3 Emergency Measures for Battery Pack Exceptions

**DANGER**

- When the battery pack has abnormal odor, electrolyte leakage, or heat, do not touch it, and contact professional personnel immediately. Professionals must wear protective equipment such as goggles, rubber gloves, gas masks, and protective clothing to protect themselves.
- The electrolyte is corrosive and contact may cause skin irritation or chemical burns. In case of accidental contact with electrolyte, take the following measures immediately:
  - Inhalation: Evacuate the contaminated area, keep fresh air circulating, and seek immediate medical help.
  - Eye contact: Flush eyes with plenty of water for at least 15 minutes. Do not rub eyes. Seek medical help immediately.
  - Skin contact: Wash the contact area with plenty of soapy water and seek medical help immediately.
  - Ingestion: Induce vomiting and seek medical help immediately.
- Do not continue to use abnormal battery packs, please contact your sales agent.

### 6.4.4 Emergency Measures for Battery Pack Drops or Impacts

- If there is an obvious odor, smoke, or fire, keep away from the equipment immediately and contact professional personnel.
- Do not use the battery pack if it has been dropped or hit. Please contact your sales agent.

**Statement**

Thank you for choosing AmpAura product. Please note that AmpAura may make improvements and/or modifications to this document at any time and without prior notice to ensure accuracy and reliability. If you encounter any difficulties while using the product or have any suggestions, please do not hesitate to reach out to us using the contact information provided in this document. We will make every effort to resolve any issues you may encounter and carefully consider and implement any suggestions you provide.

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www.ampaura.tech

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