# Anker SOLIX X1 Power Module_X1-H(3.68~6)K-S_Manual

# INSTALLER GUIDE

# 1. About This Guide

## 1.1 Purpose

This document provides guidance for installing the Anker SOLIX X1 Power Module X1-H(3.68~6)K-S series or hybrid single-phase power modules.

## 1.2 Product Overview

The following table lists the Anker SOLIX X1 Power Module models to which this document applies.

| | |
|---|---|
| **Product Name** | Anker SOLIX X1 Power Module |
| **Short Form** | Power module |
| **Product Models** | X1-H3.68K-S, X1-H4.6K-S, X1-H5K-S, X1-H6K-S |
| **Description** | **X1**: Product series |
| | **H**: Product category (Hybrid inverter) |
| | **(3.68~6)K:** Power level (3.68 kW, 4.6 kW, 5 kW, 6 kW) |
| | **S**: Type of AC power distribution (Single-phase) |
| **Specifications** | 220 / 230 / 240 VAC |

## 1.3 Intended Audience

This guide is intended for:

- Sales engineers
- System engineers
- Technical support engineers

# 2. Unboxing

## 2.1 Check Before Installation

### Check the Outer Packing

Before unpacking the equipment, check the outer packing for damage, such as holes and cracks, and check the equipment model. If any damage is found or the model is not what you requested, do not unpack the equipment and contact the dealer as soon as possible.

### Check Deliverables

After unpacking the equipment, check that the deliverables are intact and complete, and free from any obvious damage. If any item is missing or damaged, contact the dealer.

## 2.2 In the Power Module Box

| No. | Item | Specifications | Amount |
|---|---|---|---|
| 1 | Power Module | X1-H3.68K-S / X1-H4.6K-S / X1-H5K-S / X1-H6K-S | 1 |
| 2 | WLAN Dongle | DG-WF-H | 1 |
| 3 | Power Sensor | 100×36×65.5 mm, DDSU666 (100 A) | 1 |
| 4 | Floor Mounting Base | 670×150×75 mm | 1 |
| 5 | Wall Mount Bracket | 575×65×26 mm | 1 |
| 6 | Left Side Cover | 319×118.5×28 mm | 1 |
| 7 | Right Side Cover | 319×118×28 mm | 1 |
| 8 | Left-Side Wire Cover | 78.9×54×51.6 mm | 1 |
| 9 | Right-Side Wire Cover | 157.2×66.9×21.6 mm | 1 |
| 10 | PV Connector (+) | 63×18.85 mm | 2 |

| | | | |
|---|---|---|---|
| 11 | PV Connector (-) | 69×18.85 mm | 2 |
| 12 | Male Dust Cap | Black, 10.6×7.6×3.8 mm | 1 |
| 13 | Female Dust Cap | Black, 19.3×25×8.3 mm | 1 |
| 14 | RJ45 Connector with 2×120Ω Resistors | 8 Pins, Black, 2×120Ω Resistors | 1 |
| 15 | 20-Pin Terminal Block | 20 Pins, 41.9×27.1×13.25 mm | 1 |
| 16 | 3-Pin Terminal Block | 3 Pins, 22.5×11.3×7.6 mm | 1 |
| 17 | AC Connector (Grid) | 3 Pins, Black, 76.7×32.2 mm | 1 |
| 18 | AC Connector (Backup) | 3 Pins, Grey, 76.7×32.2 mm | 1 |
| 19 | RS485 Cable | 8 m | 1 |
| 20 | RJ45 Connector | RJ45, 8 Pins | 3 |
| 21 | Ring Terminal | RNB5.5-5 | 1 |
| 22 | Insulated Tube Terminal (COM) | Length: 16 mm | 25 |
| 23 | Insulated Tube Terminal (Meter) | Length: 15 mm | 2 |
| 24 | AC Wire Sleeve Terminal | Length: 19.5 mm | 11 |
| 25 | Heat Shrink Tubing | Black, Caliber: 8 mm, Length: 25 mm | 1 |
| 26 | Module Interlocker | 38×17×2.5 mm | 2 |
| 27 | M5×14mm Bolt | M5×14 mm | 6 |
| 28 | M6×50mm Expansion Bolt | M6×50 mm | 2 |
| 29 | Shim | 118×40×7 mm | 1 |
| 30 | M12 Flat Washer | M12 | 3 |

| | | | |
|---|---|---|---|
| 31 | Packing List | / | 1 |
| 32 | Quick Installation Guide | / | 1 |
| 33 | Inspection Report | / | 1 |
| 34 | Positioning Card | / | 1 |
| 35 | Safety Instructions | / | 1 |
| 36 | WLAN Dongle Safety Instructions | / | 1 |

## 2.3 Optional Accessories and Service Parts

The following accessories must be ordered separately.

**Wall Mount Kit**

| Item | Specifications | Amount |
|---|---|---|
| Bracket Holder | / | 2 |
| Battery Module Base (For Wall Mounting) | / | 1 |
| Left Base Baffle | / | 1 |
| Right Base Baffle | / | 1 |
| Screw | M8×70 mm | 4 |
| Screw | M4×10 mm | 8 |

**Top Cover Kit**

| Item | Specifications | Amount |
|---|---|---|
| Battery Module Top Cover | For Anker SOLIX X1 Battery Module | 1 |
| Top Cover Baffle | / | 2 |
| Module Interlocker | 38×17×2.5 mm | 2 |

| | | |
|---|---|---|
| Bolt | M4×10 mm | 4 |
| Screw | M5×14 mm | 4 |
| Wedge Shim | / | 2 |

**2nd Column Battery Module Accessory Kit**

| Item | Specifications | Amount |
|---|---|---|
| RJ45 Connector | 8 Pins | 2 |
| Positive DC Power Connector | For 8 mm² Cable | 2 |
| Negative DC Power Connector | For 8 mm² Cable | 2 |
| Ring Terminal | RNB5.5-5 | 2 |
| Heat Shrink Tubing | Black, Caliber: 8 mm, Length: 25 mm | 2 |
| Screw | M5×14 mm | 2 |

**Power Sensor Kit**

| Item | Specifications | Amount |
|---|---|---|
| Power Sensor | 100×72×65 mm, DTSU666 (250 A) | 1 |
| Current Transformer | / | 1 |

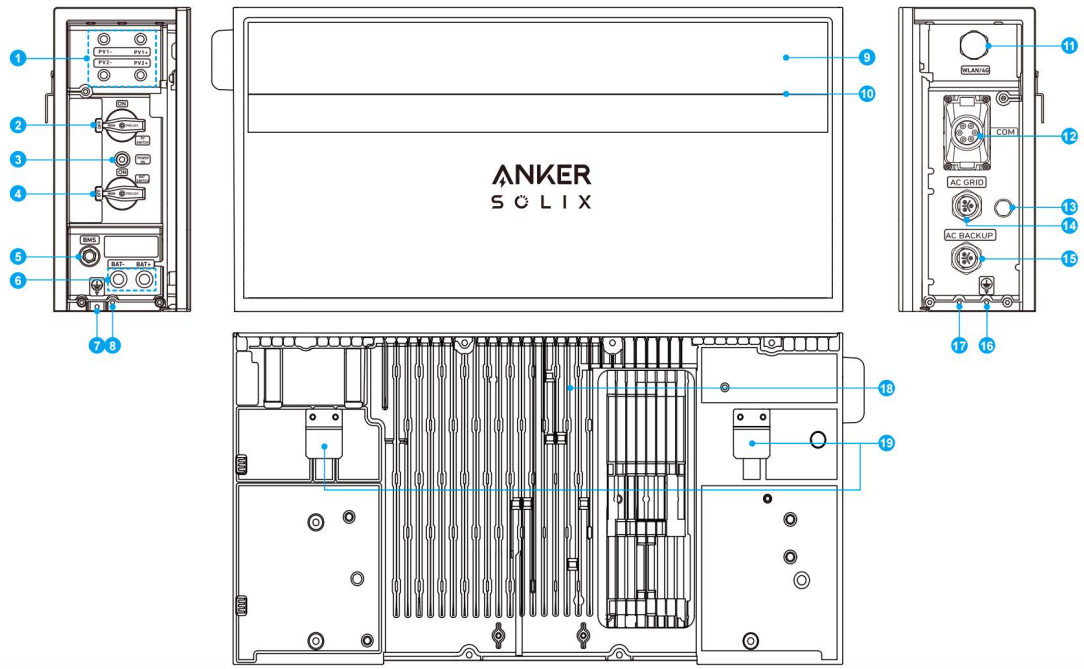
The service parts listed below can be ordered separately and replaced during field installation by following the instructions provided in this guide.

| Item | Specifications |
|---|---|
| Left Side Cover | For Power Module |

| | |
|---|---|
| | 319×118.5×28 mm |
| Right Side Cover | For Power Module<br>319×118×28 mm |
| Left-Side Wire Cover | For Power Module<br>78.9×54×51.6 mm |
| Right-Side Wire Cover | For Power Module<br>157.2×66.9×21.6 mm |
| Wall Mount Bracket | 575×65×26 mm |
| Side Cover | For Anker SOLIX X1 Battery Module<br>360×117.4×21.8 mm |

# 3. At a Glance

Figure: Appearance of Anker SOLIX X1 Power Module X1-H(3.68~6)K-S.




1. PV power ports (PV1+ / PV1–, PV2+ / PV2–)
2. PV switch
3. Black start button

4. BAT switch
5. BMS port
6. DC power ports (BAT+ / BAT–)
7. Internal ground point
8. Screw hole for locking modules
9. LED screen
10. Status light
11. WLAN/4G port
12. Communication ports / terminals *
13. Breather valve
14. AC grid port
15. AC backup port
16. External ground point
17. Screw hole for locking modules
18. Heat sink
19. Wall-mount cleats

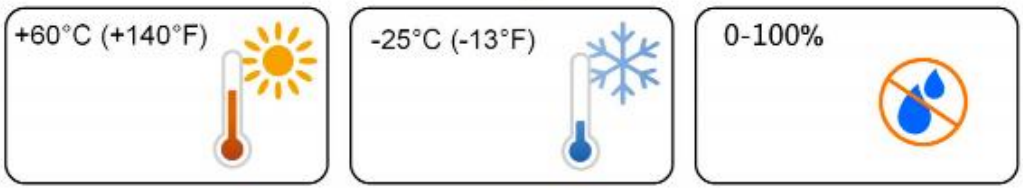
* For the layout and function description of communication ports and terminals, refer to Appendix B. Communication Ports and Terminals.

# 4. Pre-Installation

## 4.1 Select an Installation Site

1. **Environment Requirements**

- Do not place the modules near a wall facing the maximum sunlight direction (usually south for the northern hemisphere, or north for the southern hemisphere) or in an area exposed to direct sunlight, fire, or explosive materials.
- Ensure the site is protected from potential hazards such as floods.
- The maximum operating altitude is 4,000 m.
- The power module with protection rating IP66 can be installed both indoors and outdoors.
- The ambient temperature and relative humidity must meet the following requirements.




- Do not install equipment in living spaces or habitable areas of dwelling units, such as living rooms.
- Do not install the equipment outdoors in salt-affected areas to prevent corrosion. These areas typically include regions within 300 (± 50) meters of the coast or prone to sea breezes*. In such areas, install the equipment indoors or in a sheltered location.

  *Note: Regions prone to sea breezes may vary depending on weather conditions (e.g., typhoons, monsoons) and terrain features (e.g., dams, hills).

2. **Load-Bearing Requirements**

The Anker SOLIX X1 Power Module supports up to six Anker SOLIX X1 Battery Modules (Model: X1-B5-H). The power and battery modules can be installed on either the floor or wall.

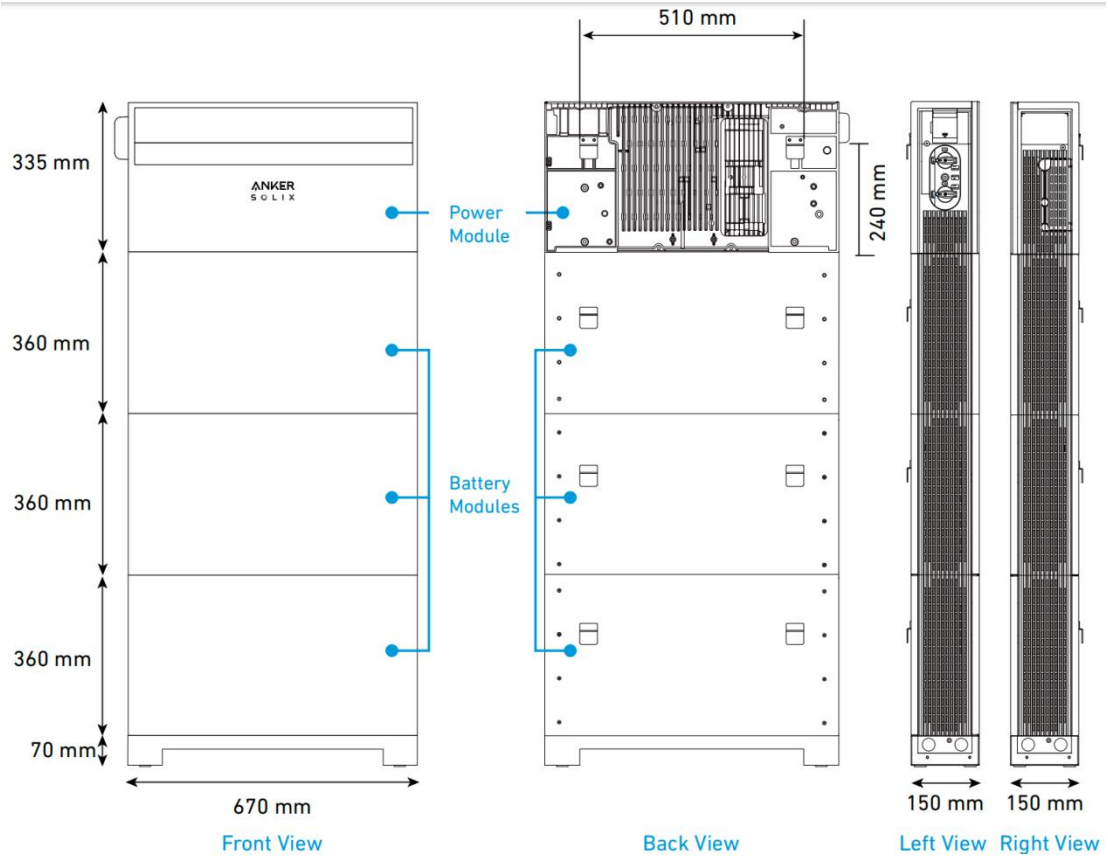
- **Concrete / Masonry**: Minimum strength requirements are 18 MPa for concrete, 12 MPa for clay brick, and 11 MPa for masonry. Use the expansion bolts (M6×50 mm, included) to fully embed them into the wall. Prior to mounting, inspect the surface and avoid using weak compositions.
- **Blocking / Wood Studs**: Mount the modules directly onto the wood studs, which should be spaced 508 mm, 406 mm, or 304 mm apart. Use the self-tapping screws (M8×70 mm, not included) to fully embed them into the studs.
- **Other Types of Walls**: Verify that the selected walls meet the load bearing requirements and choose appropriate screws. For wall mounting, choose a wall capable of supporting the full weight of the equipment.
  - Power module: 19 kg
  - Battery module: 51 kg

## 4.2 Measure the Distance

Utilize the dimensions provided in the figures below to reserve sufficient spacing for heat dissipation and safety isolation, and plan for a short and efficient conduit run.

1. **Equipment Dimensions**

Figure: Dimensions.




## 2. Installation Space

Install the equipment at least 300 mm from the wall on both sides and more than 500 mm from the ceiling. When installing two columns of modules, leave a distance of 300 mm to 600 mm between the two columns.

Figure: Installation space for floor-mounted modules.

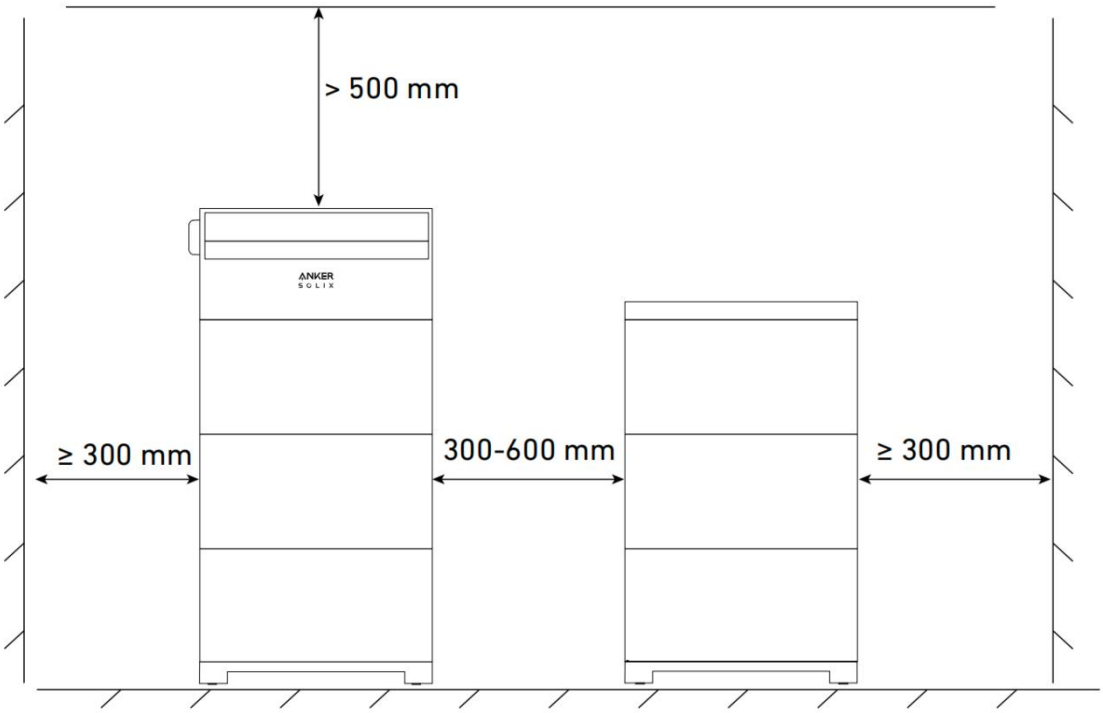
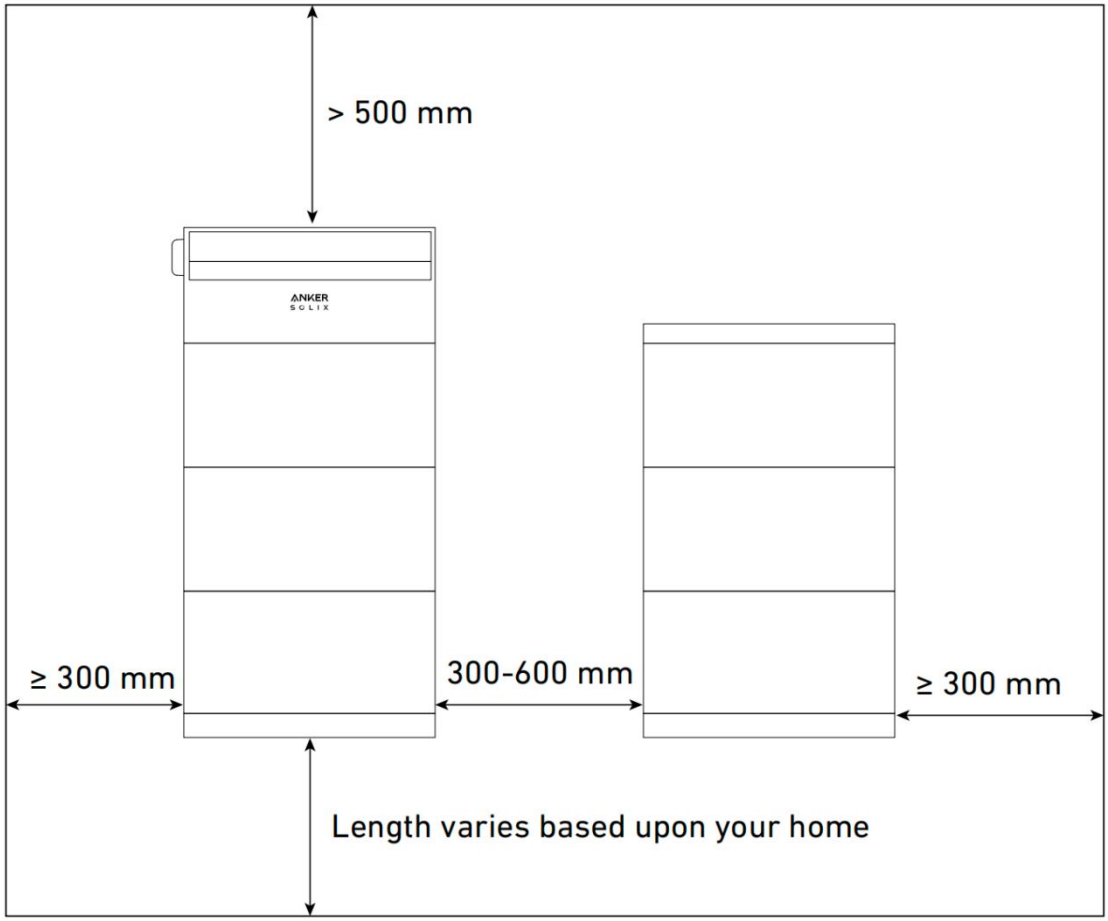
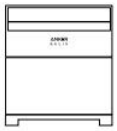
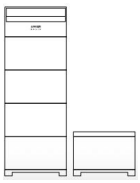



Figure: Installation space for wall-mounted modules.



3. **Stacking Requirements**

Stack no more than one power module and four battery modules per column.

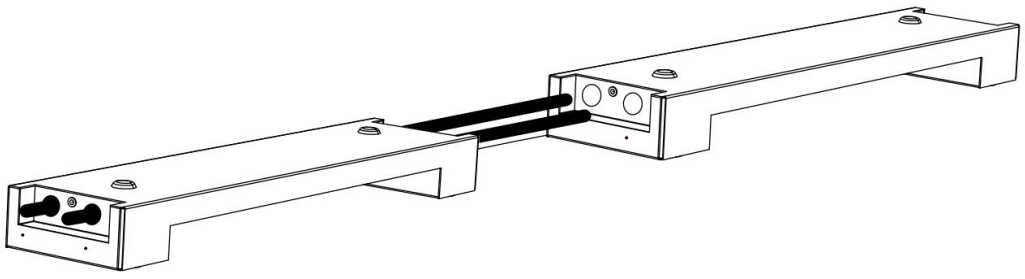
| | | | | | | |
|---|---|---|---|---|---|---|
| **Stacking** |  |  |  |  Or  |  Or  |  Or  |
| **Battery Module** | ×1 | ×2 | ×3 | ×4 | ×5 | ×6 |
| **Energy Capacity** | 5 kWh | 10 kWh | 15 kWh | 20 kWh | 25 kWh | 30 kWh |

## 4.3 Plan Conduit Run

When connecting two columns of modules, it is recommended to follow the instructions below.

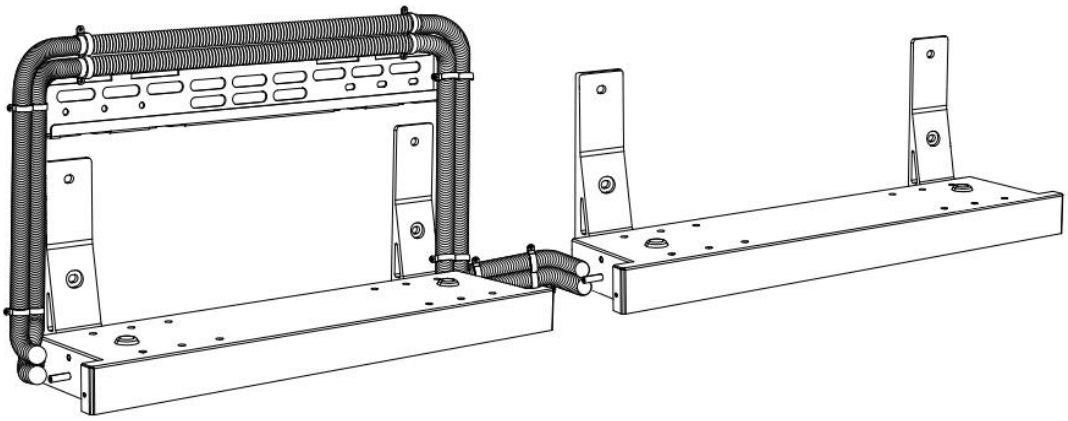
- For floor mounting, route cables into the second column from the inside of the battery module base in the first column.

Figure: Conduit run for floor mounting.



- For wall mounting, route cables into the second column from the back of the first column.

Figure: Conduit run for wall mounting.

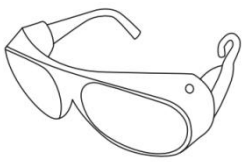


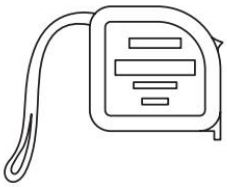
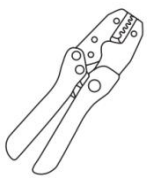
## 4.4 Prepare Tools and Supplies

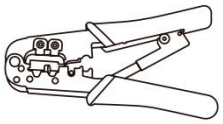
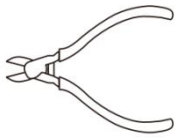
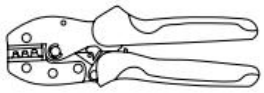
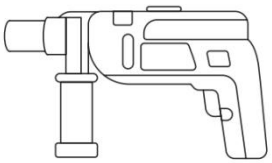
The following tools and supplies are not included in the package. Ensure that you have them ready before proceeding with the installation and electrical connections.

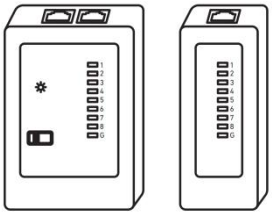
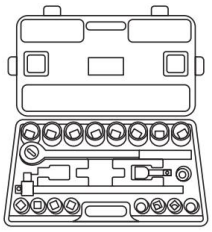
## Required Tools

⚠ Use appropriate personal protective equipment (PPE) and follow safe electrical work practices.

| **Personal Protective Equipment** | |
|---|---|
| Protective Gloves | Insulated Gloves |
|  |  |
| Dust Mask | Safety Goggles |
|  |  |

| | |
|---|---|
| Protective Footwear | Safety Hat |
|  |  |
| **Measuring Instruments** | |
| Level | Metal Tape Measure |
|  |  |
| **Installation and Wiring Tools** | |
| Marker | Heat Gun |
|  |  |
| Wire Stripper | OT Terminal Crimper |
|  |  |
| Disassembly Tool | RJ45 Crimping Tool |

| | |
|---|---|
|  |  |
| Pliers | Rubber Mallet |
|  |  |
| Flathead Screwdriver | Cable Cutter |
|  |  |
| Solar Crimping Tool | Power Drill |
|  |  Drill Bit: 10 mm |
| Tube Terminal Crimper | No. 1 Phillips Screwdriver |
|  |  |
| Cable Tester | Torque Wrench |

| | |
|---|---|
|  |  <br>Cross Socket Bits: PH1 / PZ1 (M4), PH2 / PZ2 (M5)<br>Hex Socket: 10 mm (M6), 13 mm (M8) |

## Required Supplies

You need to prepare necessary cables or conduits for more complicated connection requirements. Make sure the cables or conduits meet the local electrical regulations. All cables are rated minimum 90°C.

| **Function** | **Cable / Conduit** | **Specifications** |
|---|---|---|
| Connection Between Two Module Columns | GND Cable | 6 mm², Minimum 600 V Rating, Copper |
| | Positive DC Power Cable | 8 mm² Minimum 600 V Rating, Copper |
| | Negative DC Power Cable | 8 mm², Minimum 600 V Rating, Copper |
| | RJ45 Signal Cable | Cat 5 or Higher, 5-6 mm in Diameter, 8-Conductor, Shielded (Recommended) |
| | Cable Conduit | • For floor-mount installation: rigid metal conduits, inner diameter of 20 mm, outer diameter of 25 mm, 304 stainless steel<br>• For wall-mount installation: flexible metal conduits, inner diameter of 15 mm, outer diameter of 20 mm, 304 stainless steel |

| | | |
|---|---|---|
| Connection from Power Module to PV Panels | Positive PV Cable | 4-6 mm², 5.5-7.5 mm in Outer Diameter, Minimum 600 V Rating, Copper |
| | Negative PV Cable | 4-6 mm², 5.5-7.5 mm in Outer Diameter, Minimum 600 V Rating, Copper |
| Connection from Power Module to AC Grid / Backup Loads | 3-Conductor AC Power Cable | 7-12.5 mm in Outer Diameter<br>• L Conductor: 6 mm², Minimum 300 V Rating, Copper<br>• N Conductor: 6 mm², Minimum 300 V Rating, Copper<br>• PE Conductor: 6 mm², Minimum 300 V Rating, Copper |
| Connection Between PV-Side Power Sensor and Grid-Side Power Sensor (Only for Retrofitting) | RS485 Signal Cable | 5.5±0.5 mm in Outer Diameter, 2-Wire (485+ and 485-), 0.2 to 0.5 mm² |
| Connection Between Grid and Power Sensor | AC Power Wires | • L Wire: 6 mm², Minimum 300 V Rating, Copper<br>• Neutral Wire: 6 mm², Minimum 300 V Rating, Copper |
| Internet Connection Through Ethernet | RJ45 Signal Cable | Cat 5 or Higher, 5-6 mm in Diameter, 8-Conductor, Shielded (Recommended) |

# 5. Installation

You can mount the modules on a floor support or to the wall. The procedures describe the installation of one power module and six battery modules (power module and three battery modules in the first column; another three battery modules in the second column) as an example.

• Leave a minimum of 300 mm of workspace on either side of the equipment.

- If the baseboard is thicker than 70 mm, mount the modules to the wall.

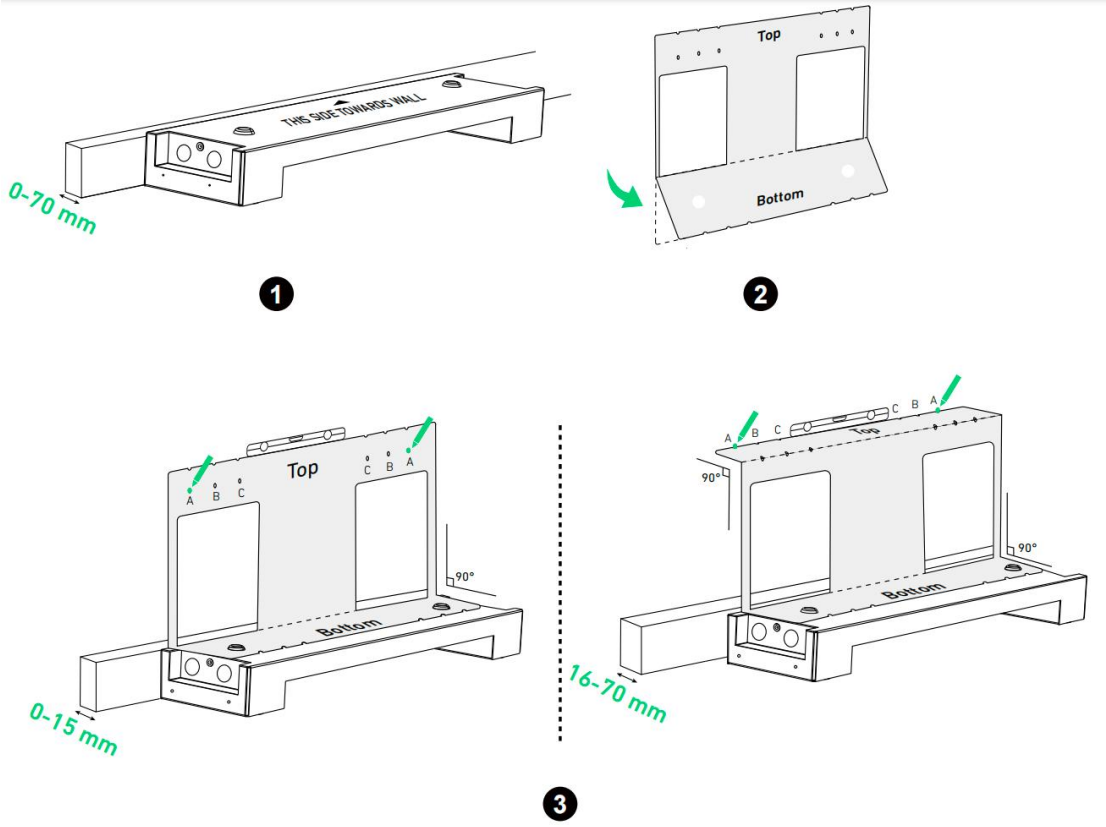
## Floor Mounting

**Step 1: Mark pilot holes for the first module.**

1. Position the battery module base (for floor mounting) on a level surface against the wall or the baseboard.
2. Fold the positioning card (included) along the crease.
3. Align the card with the top of the battery module base and use a level to ensure it is horizontal. Verify spacing and mark a hole on each side to secure the first module.

- If there is no baseboard or the baseboard is 0-15 mm thick, fold the positioning card only along the bottom crease.
- If the baseboard is 16-70 mm thick, also fold the positioning card along the top crease and move the battery module case so that the top edge of the card touches the wall at a 90-degree angle.

Figure: Mark pilot holes for the first module.

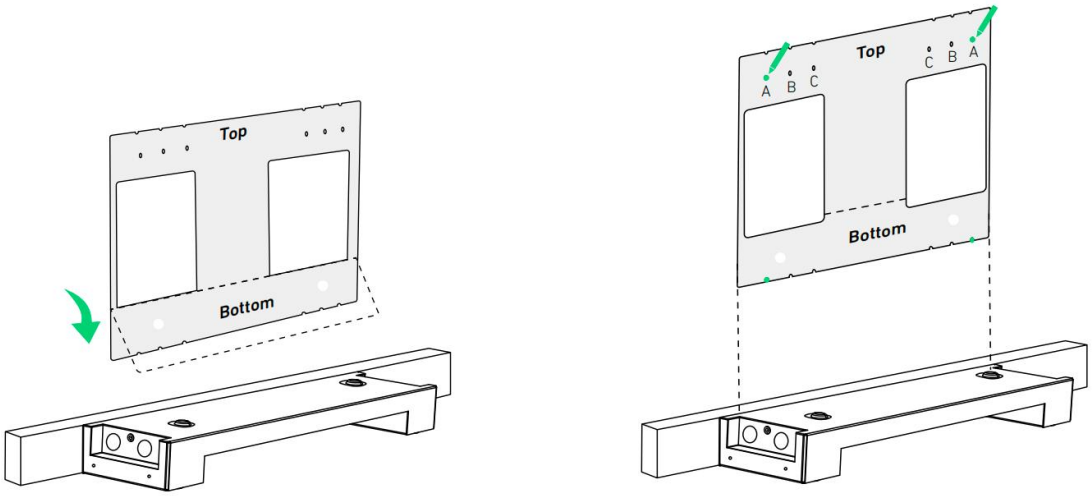


If anchoring to a wall with studs, select position A for studs spaced 508 mm apart, position B for studs spaced 406 mm apart, or position C for studs spaced 304 mm apart.

**Step 2: Mark pilot holes for the remaining modules.**

1. Unfold the positioning card and align the bottom row of holes with the marked holes. Choose and mark a hole on each side at the top for the second module.

Figure: Mark pilot holes for the second module.




2. Repeat the previous step to mark any remaining pilot holes as necessary.

Figure: Mark pilot holes for remaining modules.

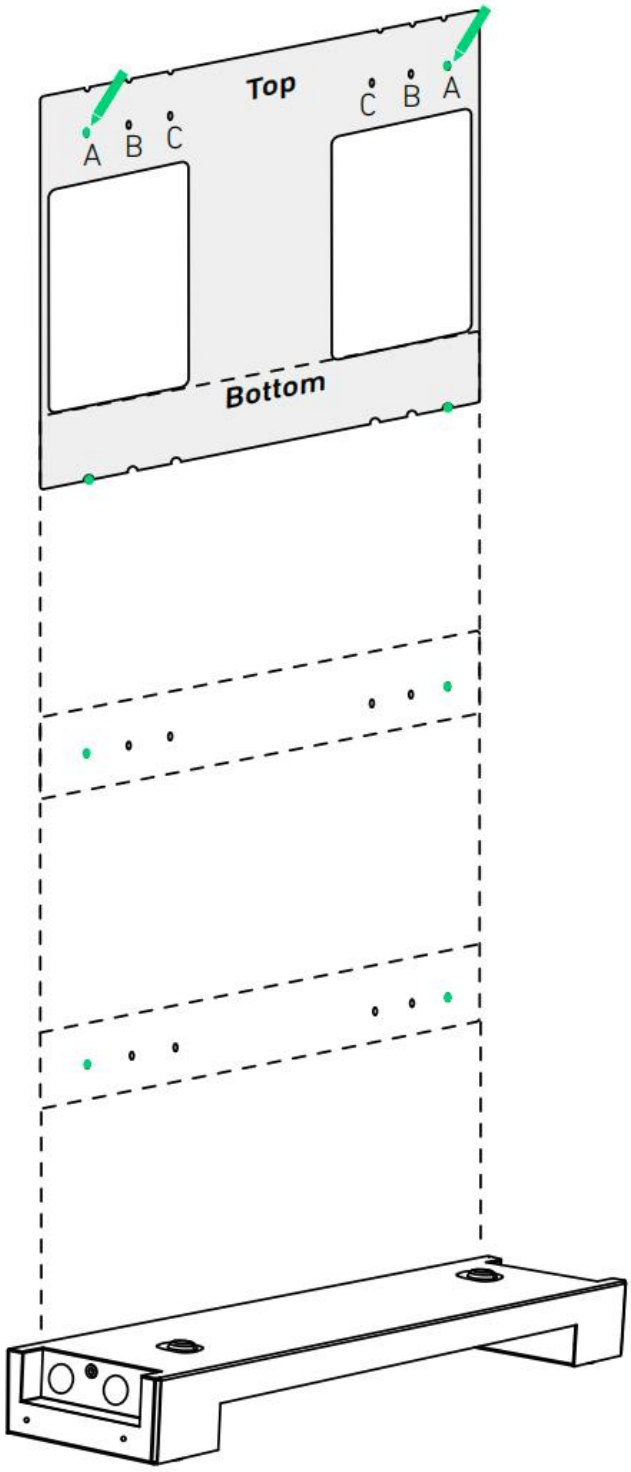
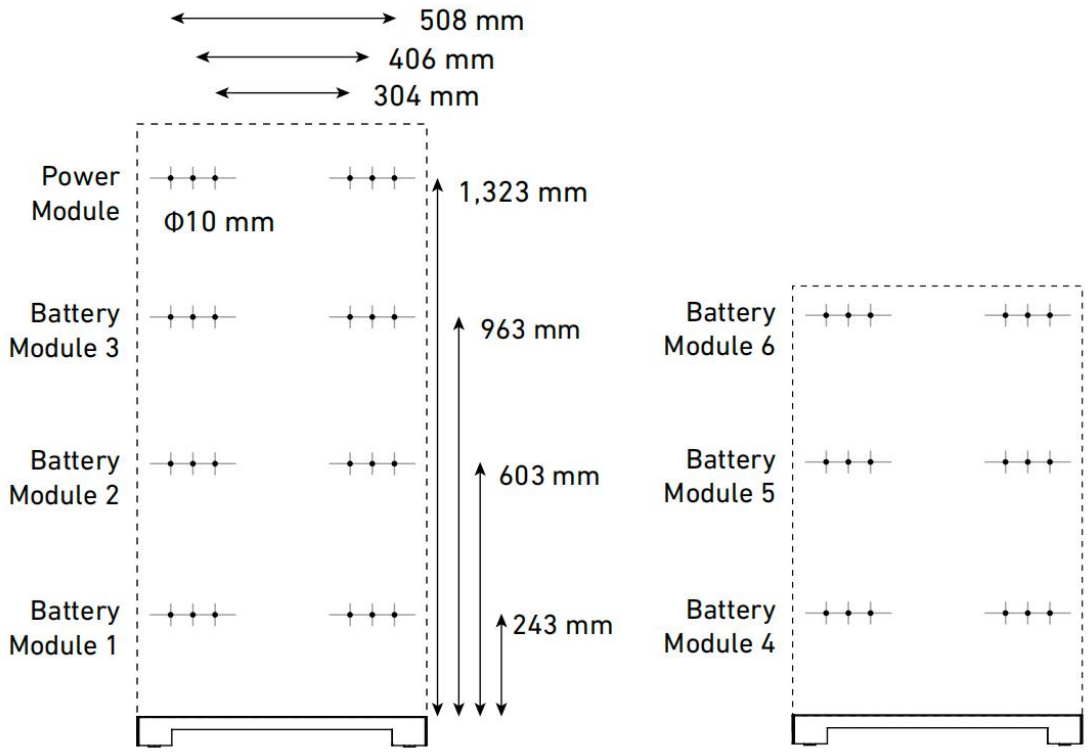



Figure: Dimensions of pilot holes.




**Step 3: Attach mount brackets to the wall.**

1. Drill the marked pilot holes in the wall (Φ10 mm, > 60 mm deep). Make sure the drill bit is aligned with the center of the holes.

2. Insert the expansion bolts (M6×50 mm, included, with screws removed) into the pilot holes. Make sure the bolts are flush with the wall.

3. Check the baseboard and position the mount bracket properly against the wall. Align the bolts with the corresponding slots of the mount bracket. Verify that the mount bracket is level and adjust as needed.

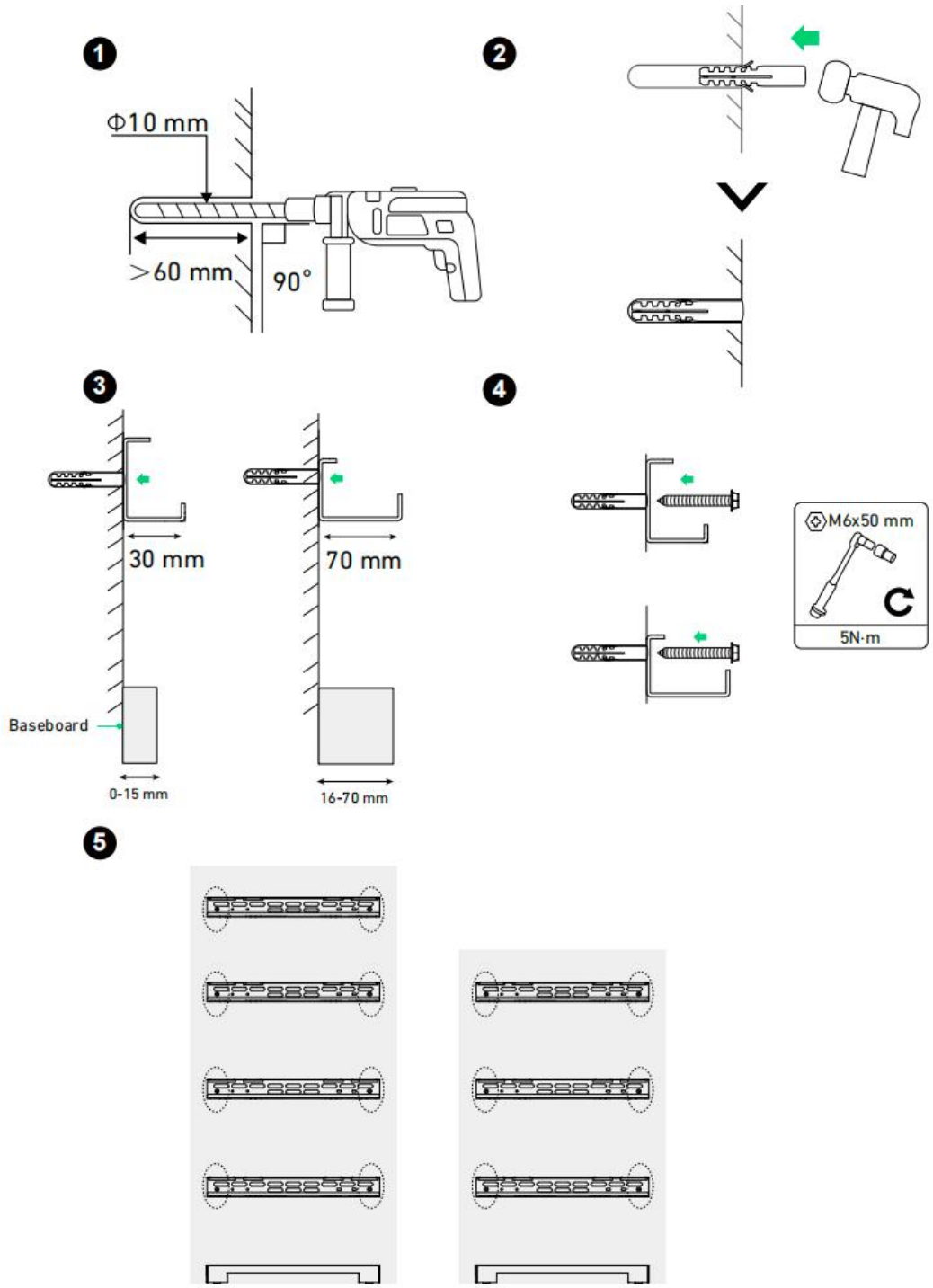
- If there is no baseboard or the baseboard is less than 15 mm thick, position the wide bar of the mount bracket against the wall.
- If the baseboard is between 16-70 mm thick, position the narrow bar of the mount bracket against the wall.

4. Drill the screws (included with the expansion bolts) clockwise into the bolts to secure the mount bracket.

5. Repeat the above steps to install all of the mount brackets onto the wall.

After drilling, clean up any shavings that have accumulated inside or outside the equipment.

Figure: Attach mount brackets to the wall.



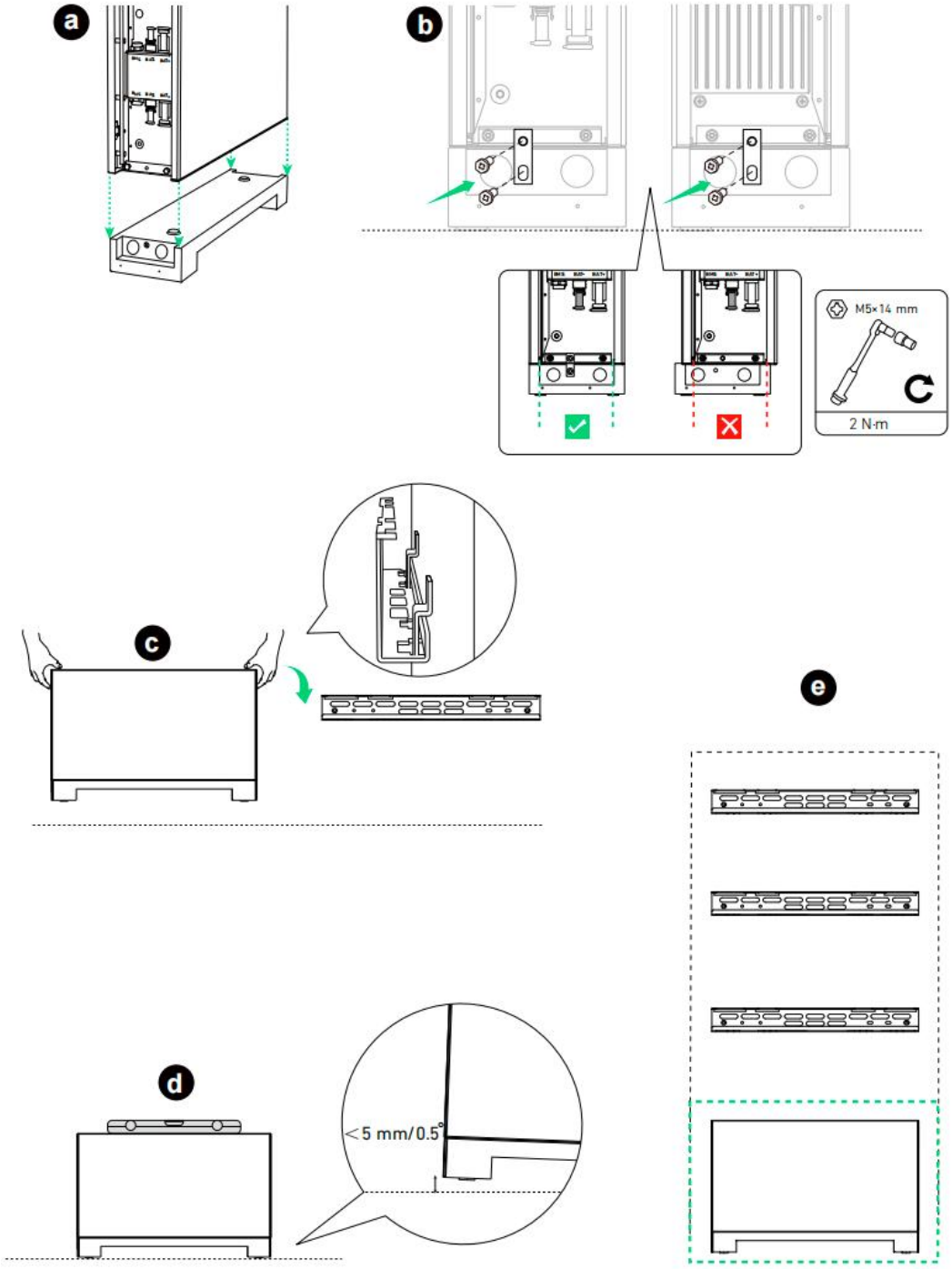

**Step 4: Mount modules onto the brackets.**

1. To ensure proper alignment, fasten the battery module base to the first battery module before hanging them onto the mount bracket.

- When securing the module interlockers, make sure that the inner edges of the battery module base and all the modules are aligned within a tolerance of 1 mm.

- Ensure that the first battery module and battery module base are level within a tolerance of +/– 0.5° horizontally. Use the flat washers (included) to fill in any gaps if necessary.

Figure: Mount the first battery module and battery module base.



2. Mount the remaining power module and battery modules from bottom to top.

After installing a module, tighten the module interlockers using the included screws (M5×14 mm), and then mount the next module.

Figure: Mount the remaining battery modules.

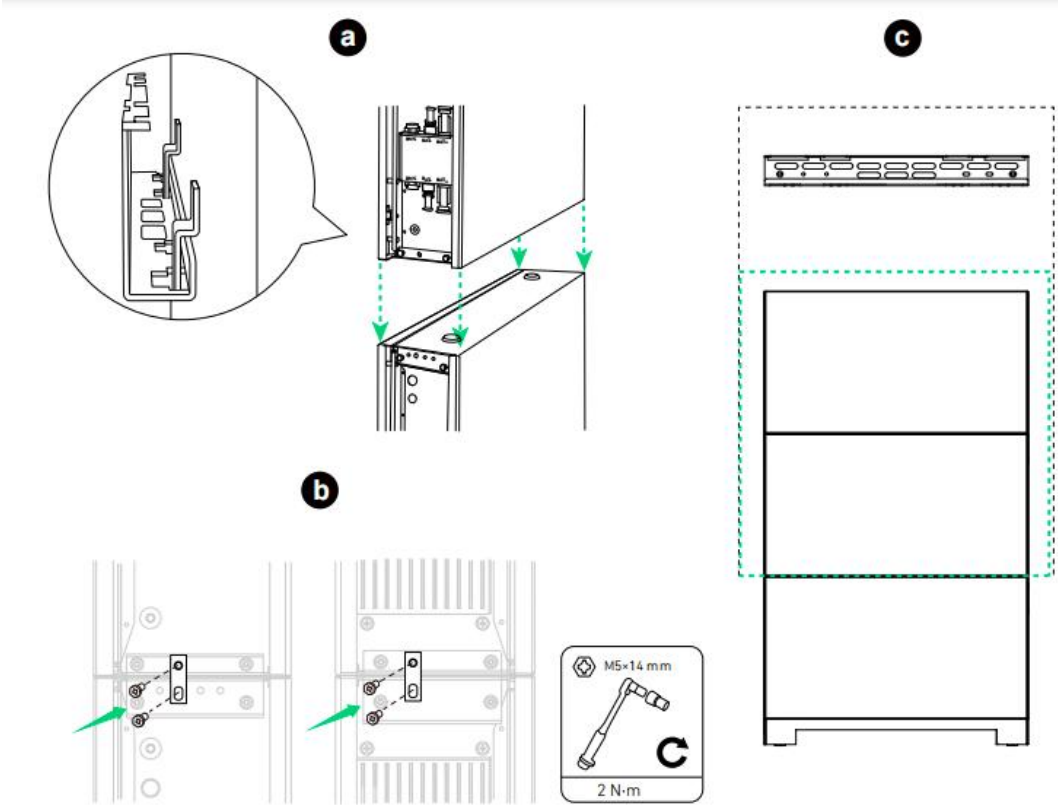
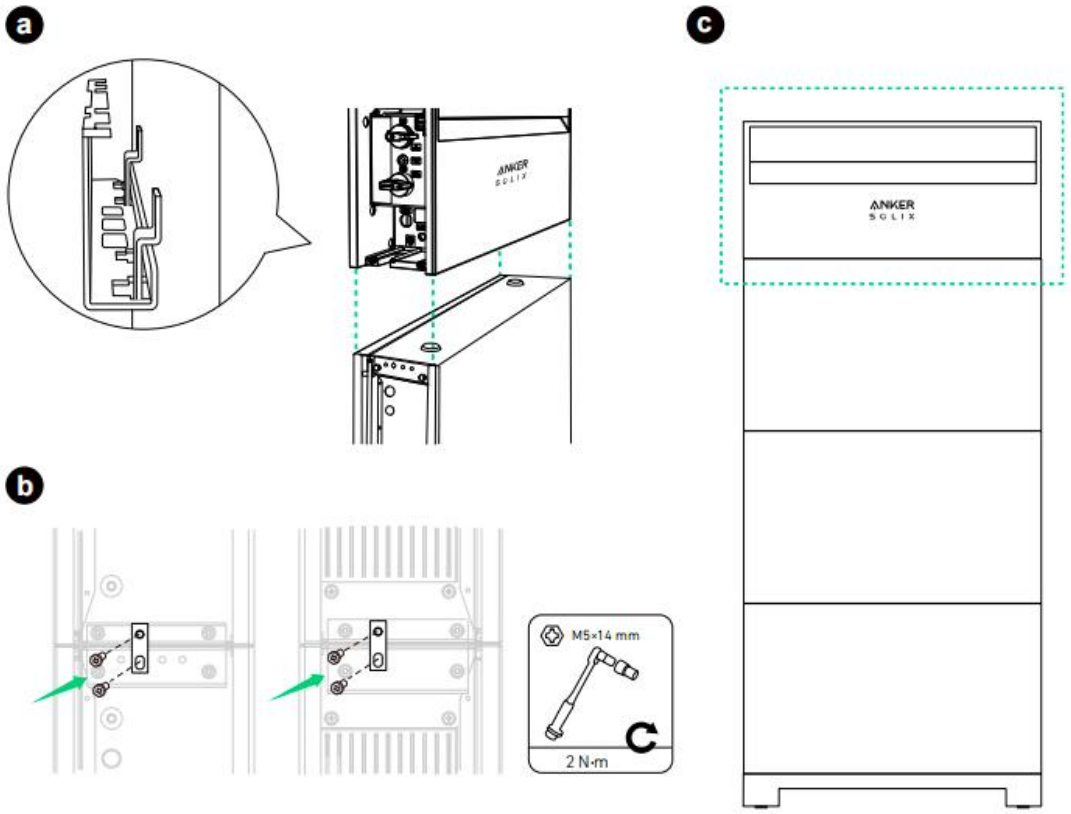
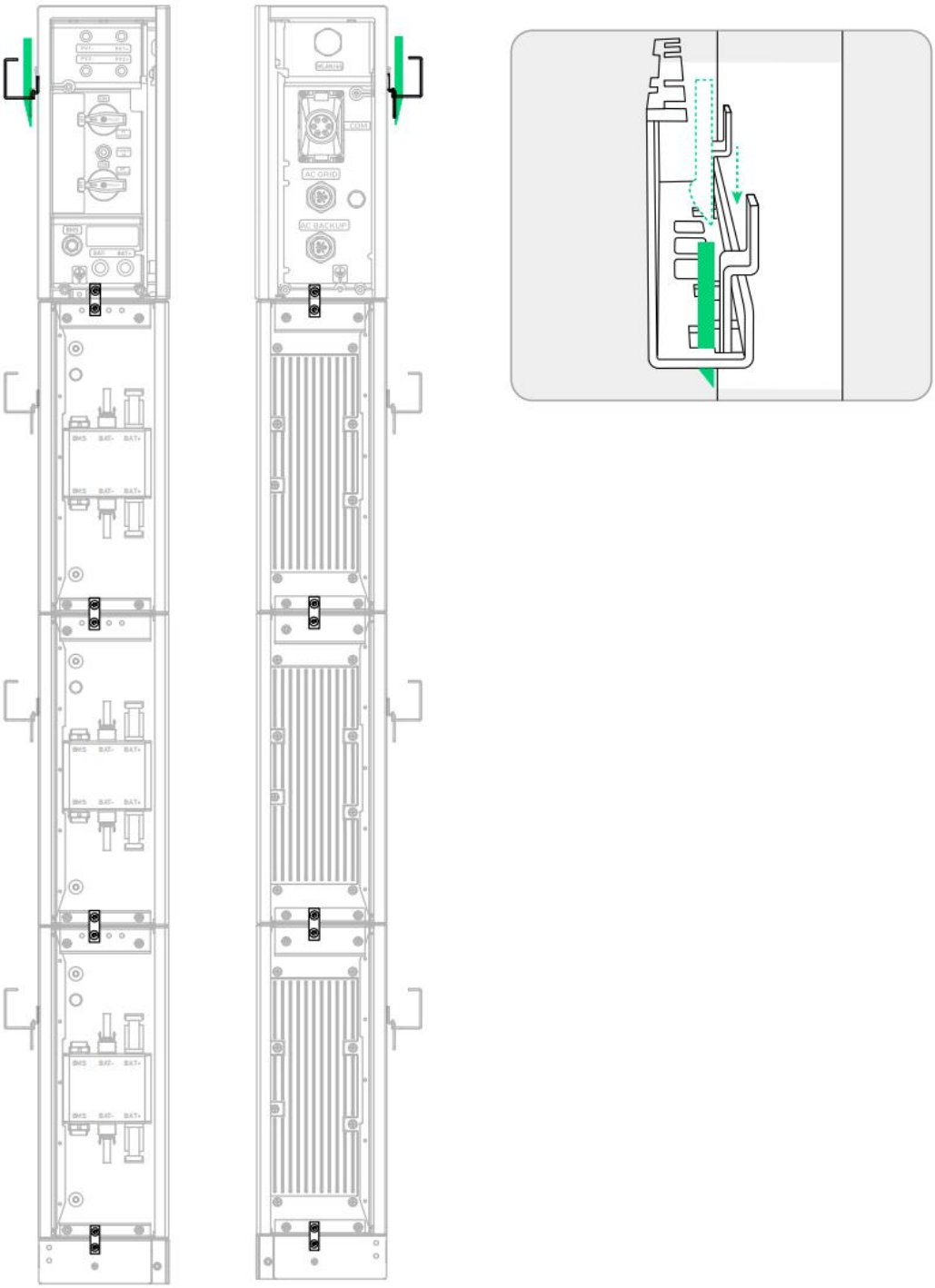



Figure: Mount the power module.



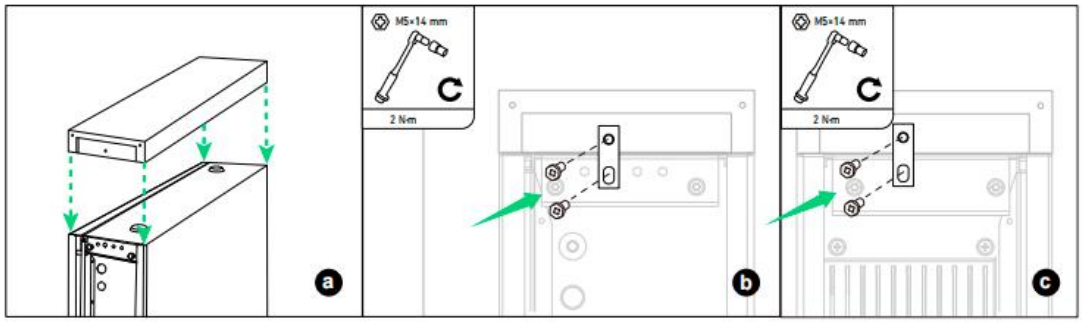

If necessary, insert the included wedge shim into the power module's mount bracket to ensure stability.

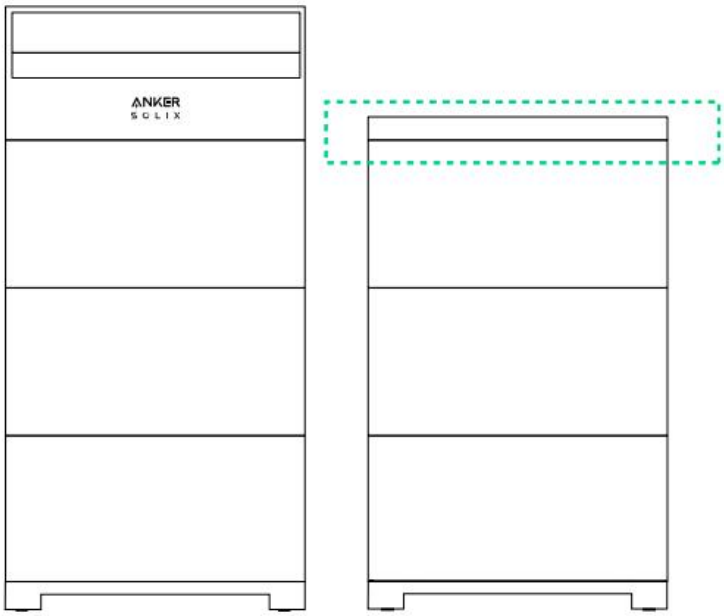
Figure: Insert the wedge shim for stability.



3. When adding the second column, attach the top cover to the top battery module using the screws (M5×14 mm, included).

Figure: Install the top cover for the second column.




## Wall Mounting

**Step 1: Install the battery module base and bracket holders on the wall.**

1. To secure the battery module base (for wall mounting) and bracket holders, verify the spacing, select a set of screw holes based on the wall conditions and tighten the screws (M4×10 mm, included).

If anchoring to a wall with studs, select position A for studs spaced 508 mm apart, position B for studs spaced 406 mm apart, or position C for studs spaced 304 mm apart.

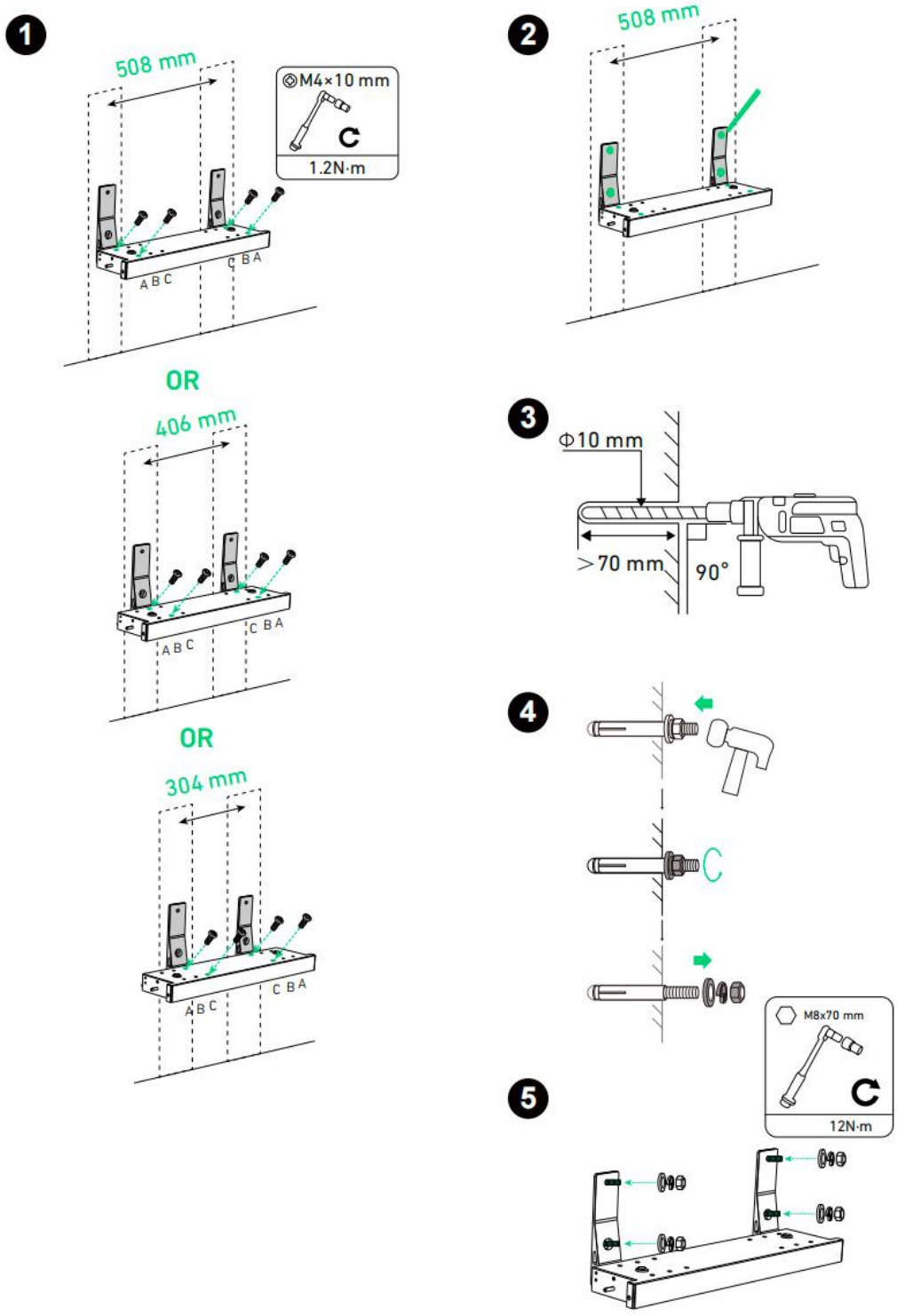
2. Position the battery module base and bracket holders on the wall, ensuring that they are level, and mark four pilot holes.

3. Drill the marked pilot holes in the wall (Φ10 mm, > 70 mm deep). Make sure the drill bit is aligned with the center of the holes.

4. Insert the expansion bolts (M8×70 mm, included) into the pilot holes and remove the washers and nuts.

5. Align the bolts with the corresponding screw holes of the bracket holders, and screw the washers and nuts into the bolts.

Figure: Install the battery module base and bracket holders on the wall.



**Step 2: Mark pilot holes on the wall.**

1. Fold the positioning card (included with the power module package) along the crease.

2. Align the card with the top of the battery module base and use a level to ensure it is horizontal.

3. Select and mark a hole on each side based on the wall conditions to secure the first module.

> If anchoring to a wall with studs, select position A for studs spaced 508 mm apart, position B for studs spaced 406 mm apart, or position C for studs spaced 304 mm apart.

4. Unfold the positioning card and align the bottom row of holes with the marked holes. Choose and mark a hole on each side at the top for the second module.

5. Repeat the previous step to mark any remaining pilot holes as necessary.

Figure: Mark pilot holes on the wall.

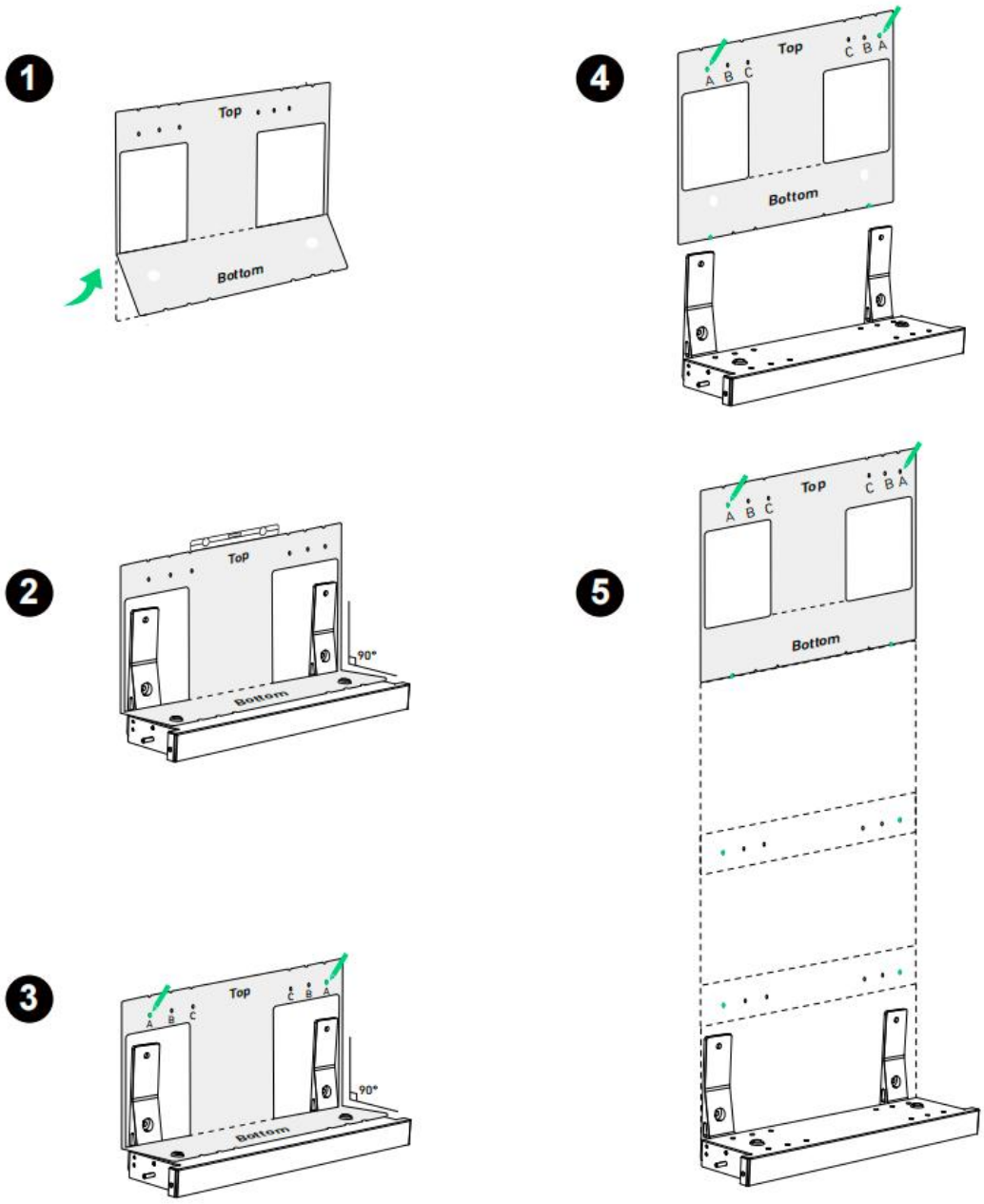
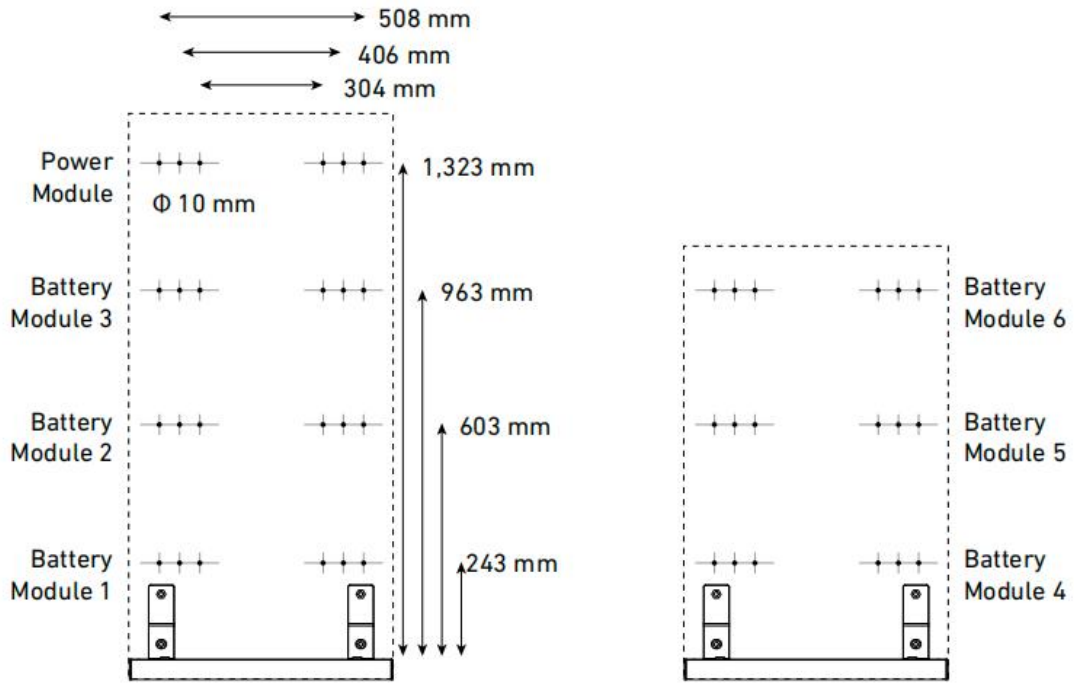



Figure: Dimensions of pilot holes.




**Step 3: Attach mount brackets to the wall.**

1. Drill the marked pilot holes in the wall (Φ10, > 60 mm deep). Make sure the drill bit is aligned with the center of the holes.

2. Insert the expansion bolts (M6×50 mm, included, with screws removed) into the pilot holes. Make sure the bolts are flush with the wall.

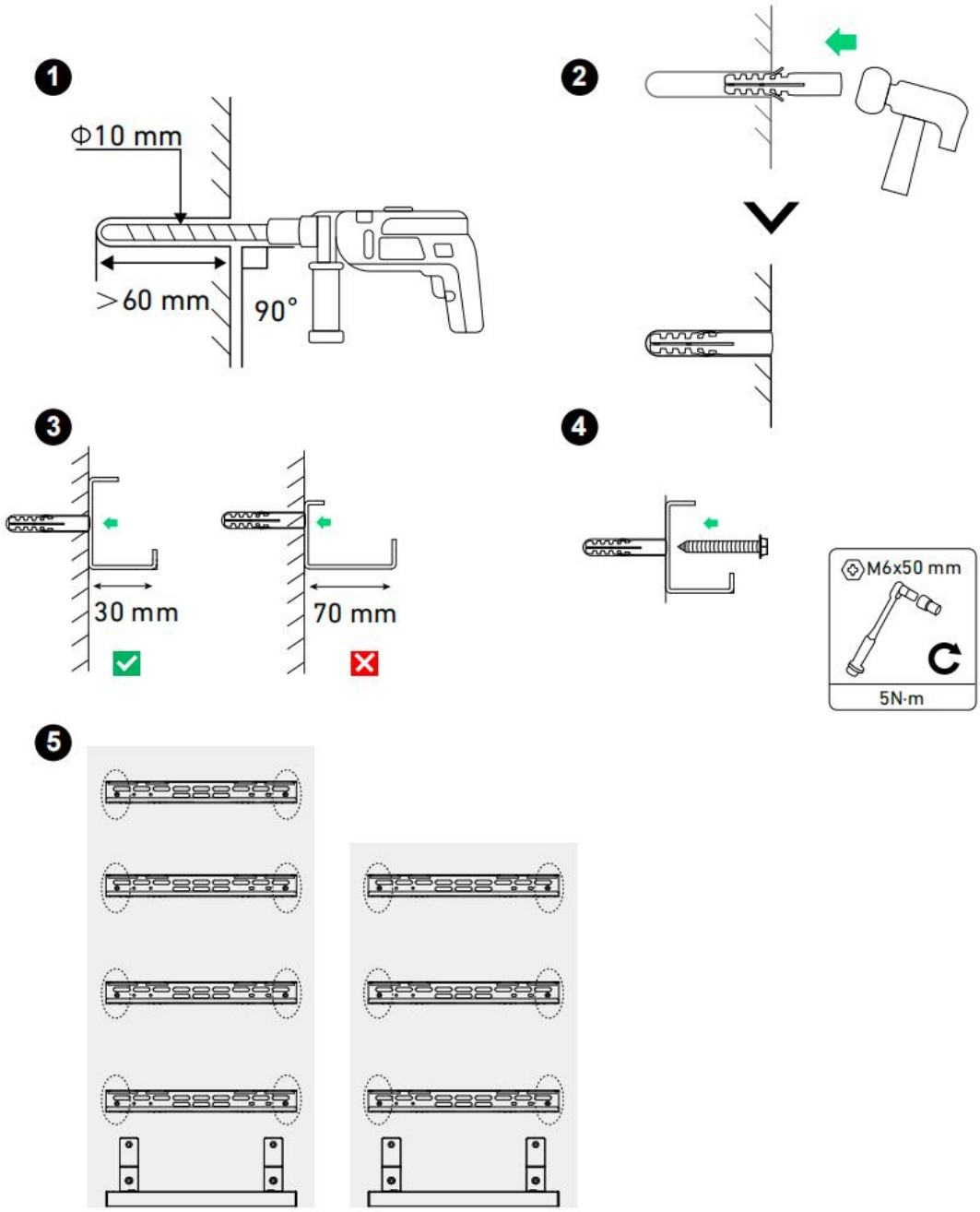
3. Position the wide bar of the mount bracket against the wall. Align the bolts with the corresponding slots of the mount bracket. Verify that the mount bracket is level and adjust as needed.

4. Drill the screws (included with the expansion bolts) clockwise into the bolts to secure the mount bracket.

5. Repeat the above steps to install all of the mount brackets onto the wall.

After drilling, clean up any shavings that have accumulated inside or outside the equipment.

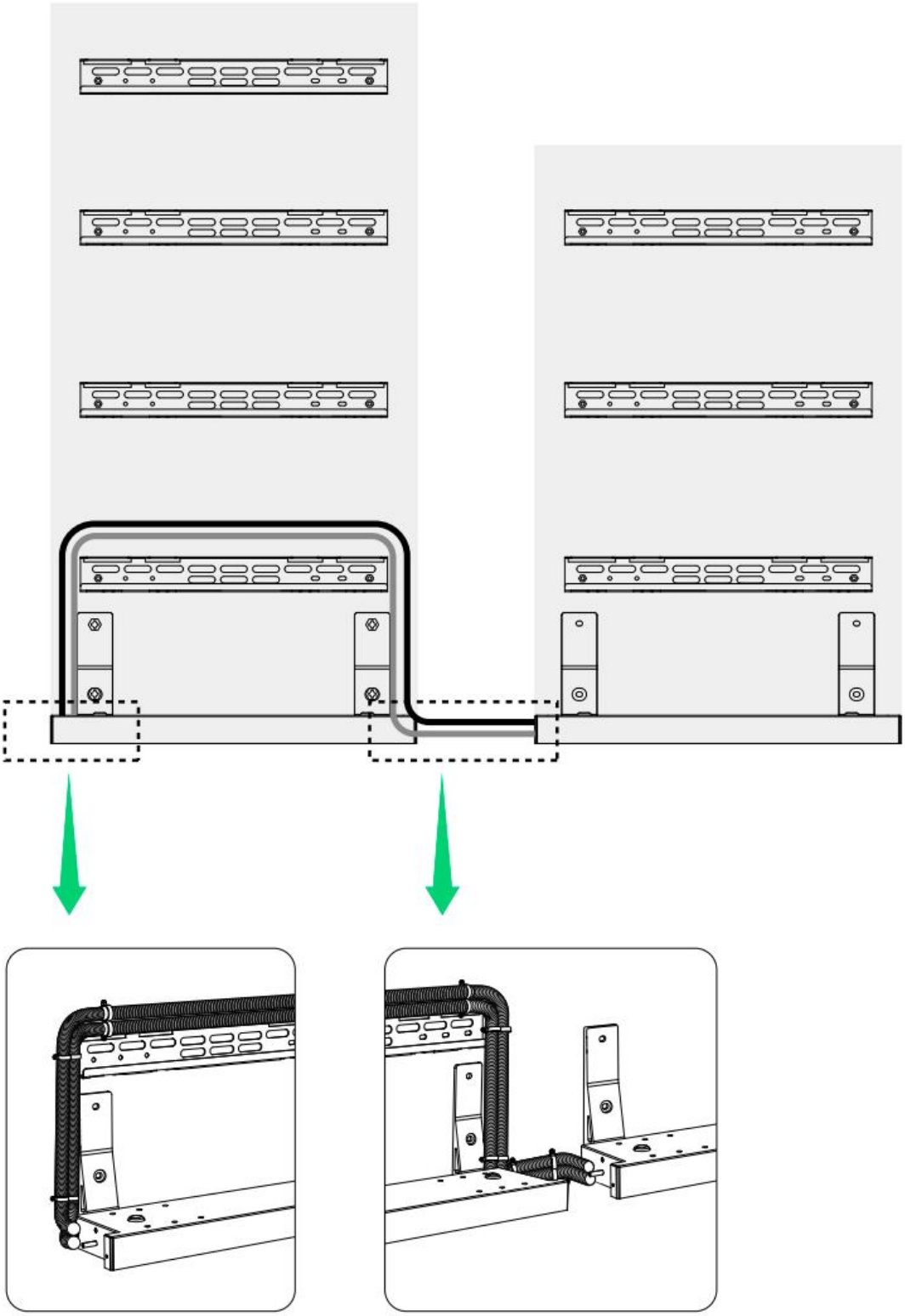
Figure: Attach mount brackets to the wall.




**Step 4: Install conduits between two columns.**

When installing two columns, run conduits from the back of the first column to the second column.

Figure: Install conduits when adding a second column.

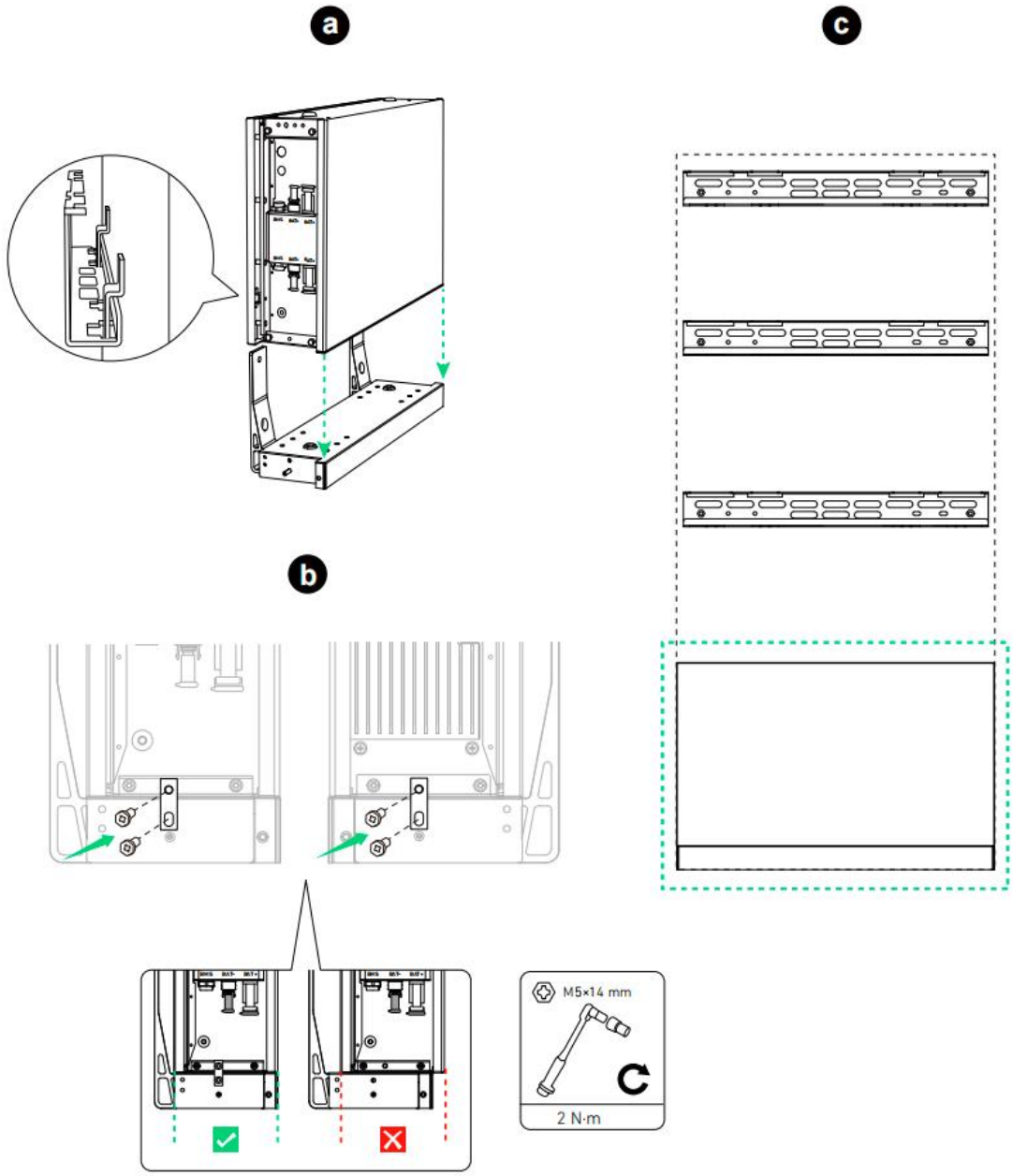


**Step 5: Mount modules onto the brackets.**

1. Hang the first battery module onto the mount bracket and fasten the module to the battery module base.

When securing the module interlockers, make sure that the inner edges of the battery module base and all the modules are aligned within a tolerance of 1 mm.

Figure: Mount the first battery module.



2. Mount the remaining power module and battery modules from bottom to top.

After installing a module, tighten the module interlockers using the screws (M5×14 mm, included), and then mount the next module.

Figure: Mount the second and third battery modules.

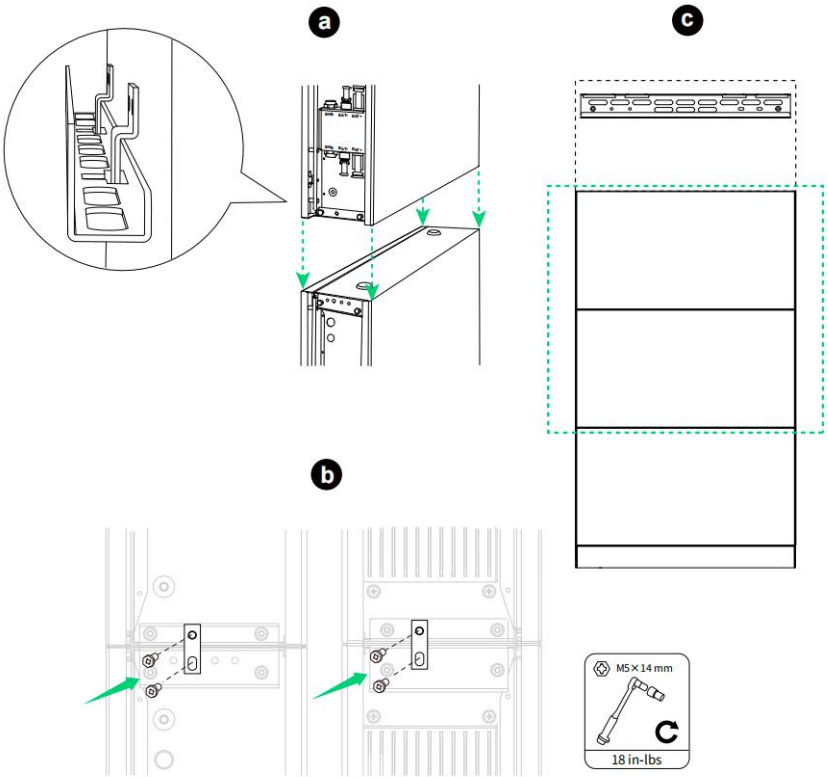
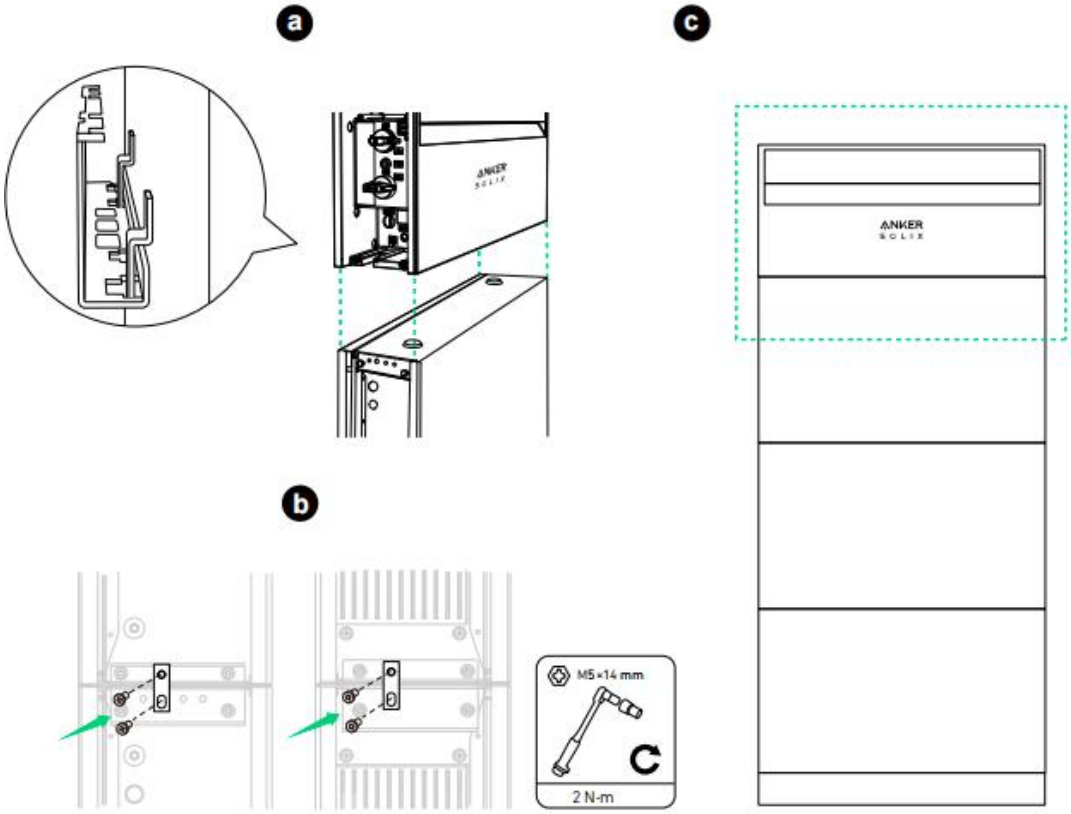


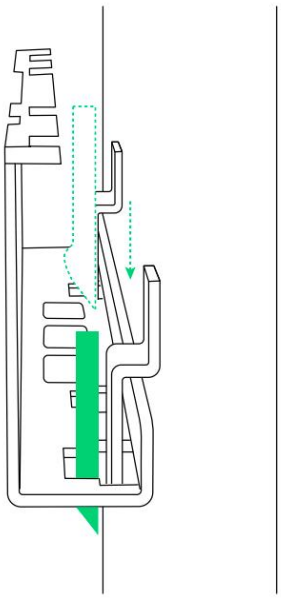

Figure: Mount the second and third battery modules.

Figure: Mount the power module.



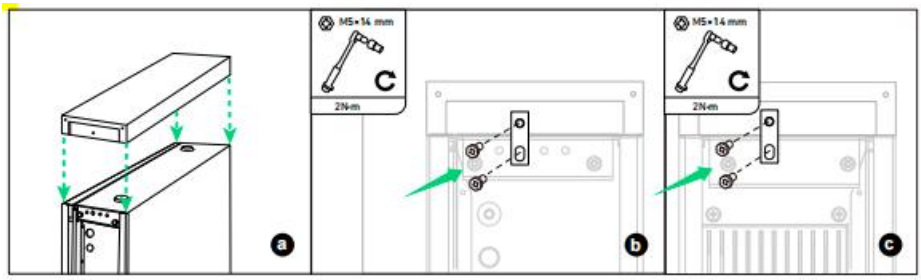

If necessary, insert the included wedge shim into the power module's mount bracket to ensure stability.

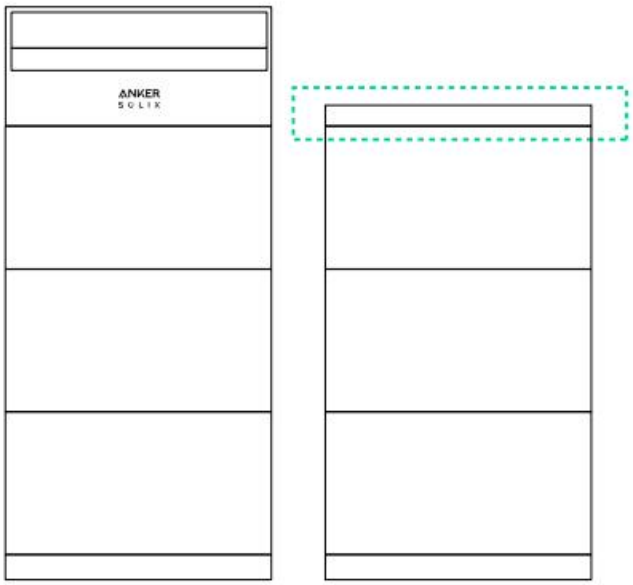
Figure: Insert the wedge shim.



3. When adding the second column, attach the top cover to the top battery module using the screws (M5×14 mm, included).

Figure: Install the top cover for the second column.




# 6. Electrical Connection

The procedures describe the electrical connection of one power module and six battery modules (power module and three battery modules in the first column; another three battery modules in the second column) as an example.

⚠
- Before connecting cables, ensure the BAT switch and the PV switch on the power module are set to OFF.
- To reduce the risk of electric shock, seal unused ports with dustproof covers[1] and then install the side covers[2].

[1] Can be pulled out directly.

[2] Can be removed with certain tools.

- Depending on local requirements, the wiring can be installed through conduits or cable glands.
- Multiple inverter combinations and/or multiple phase inverter combinations are not considered in this case.
- For the system wiring diagrams, refer to *Appendix A. System Wiring*.

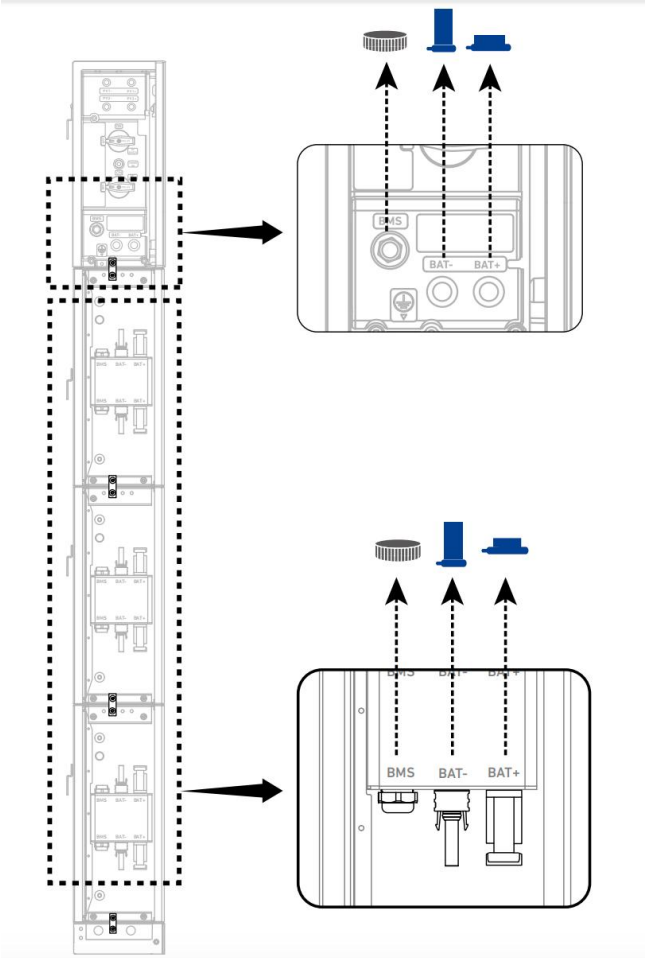
# 6.1 Connect the Power Module and Battery Modules

## Connect One Column of Modules

To connect one column, which consists of a power module and three battery modules in this example, follow the steps below.

1. Remove the dustproof plugs from all the modules' BMS ports and power ports (BAT+ and BAT-).

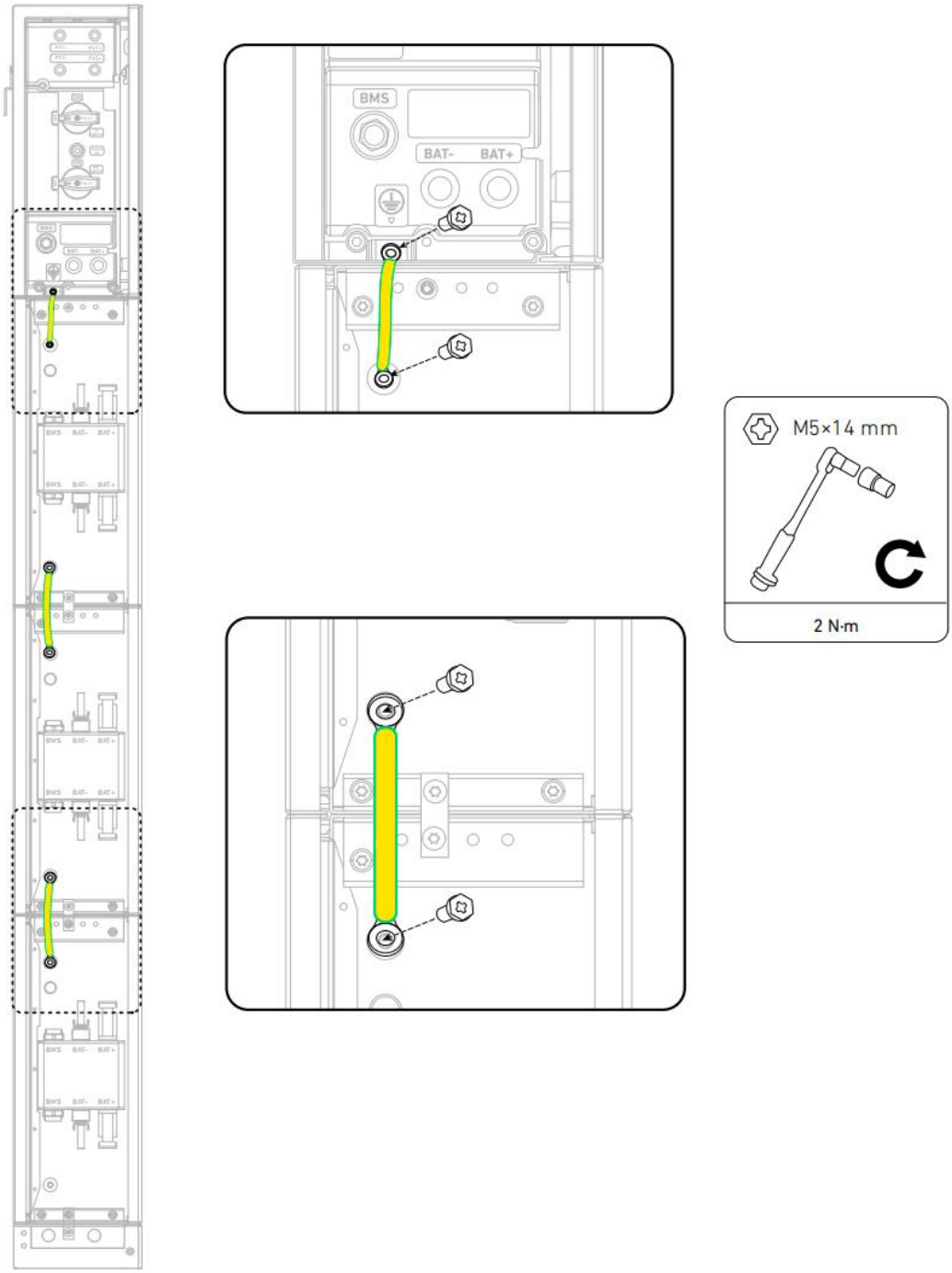
Figure: Remove dustproof plugs from modules.



2. Connect the GND cables between the modules.

Connect a GND cable (6 mm², yellow/green, included) to the internal ground ports of each two vertically adjacent modules, and secure the cables using the screws (M5×14 mm, included).

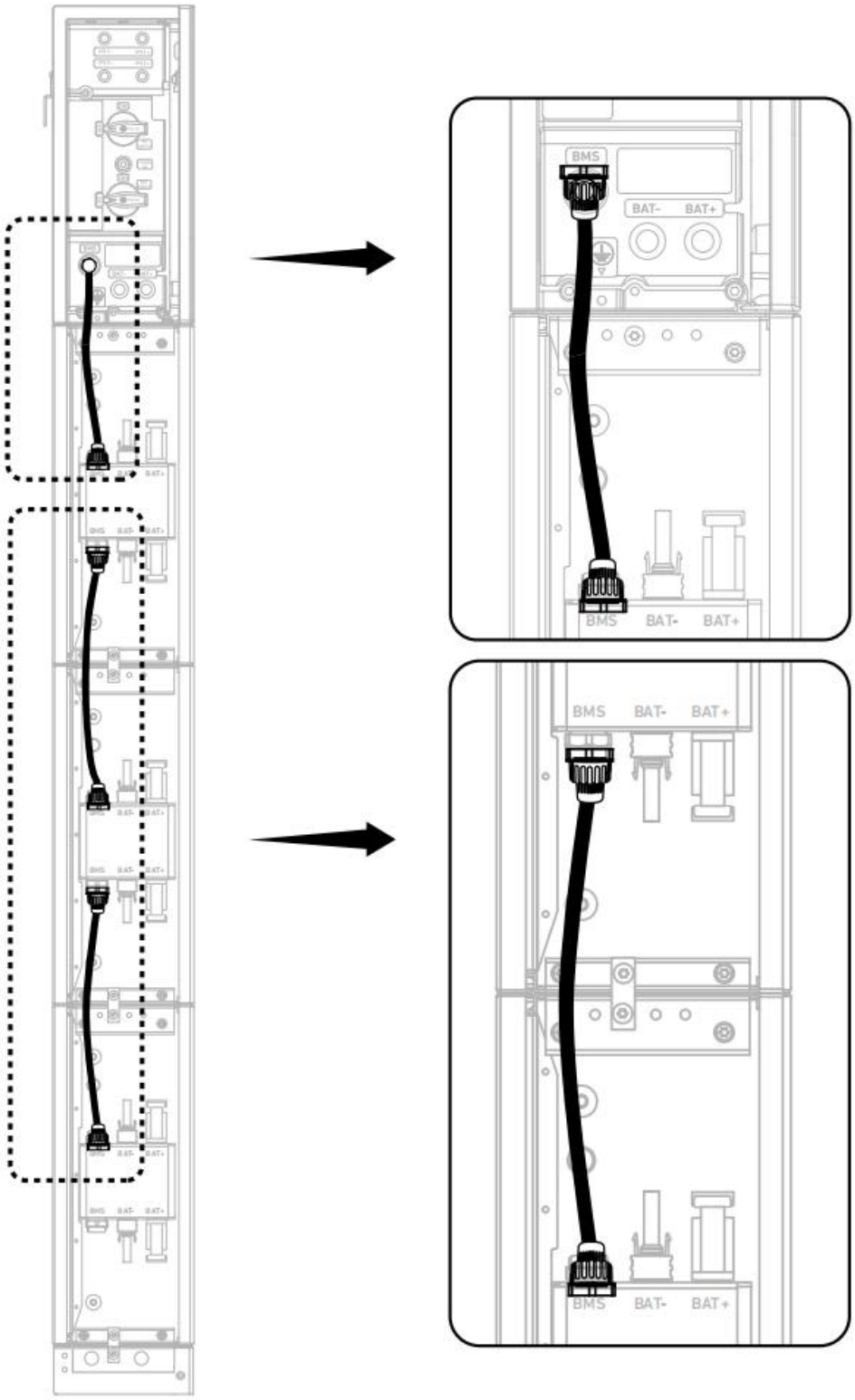
Figure: Connect GND cables between modules.



3. Connect the RJ45 signal cables between the modules.

Connect an RJ45 signal cable (black, included) to the BMS ports of each two vertically adjacent modules. To do this, loosen the locking caps, insert the cable into the BMS ports, and rotate the locking caps to secure.

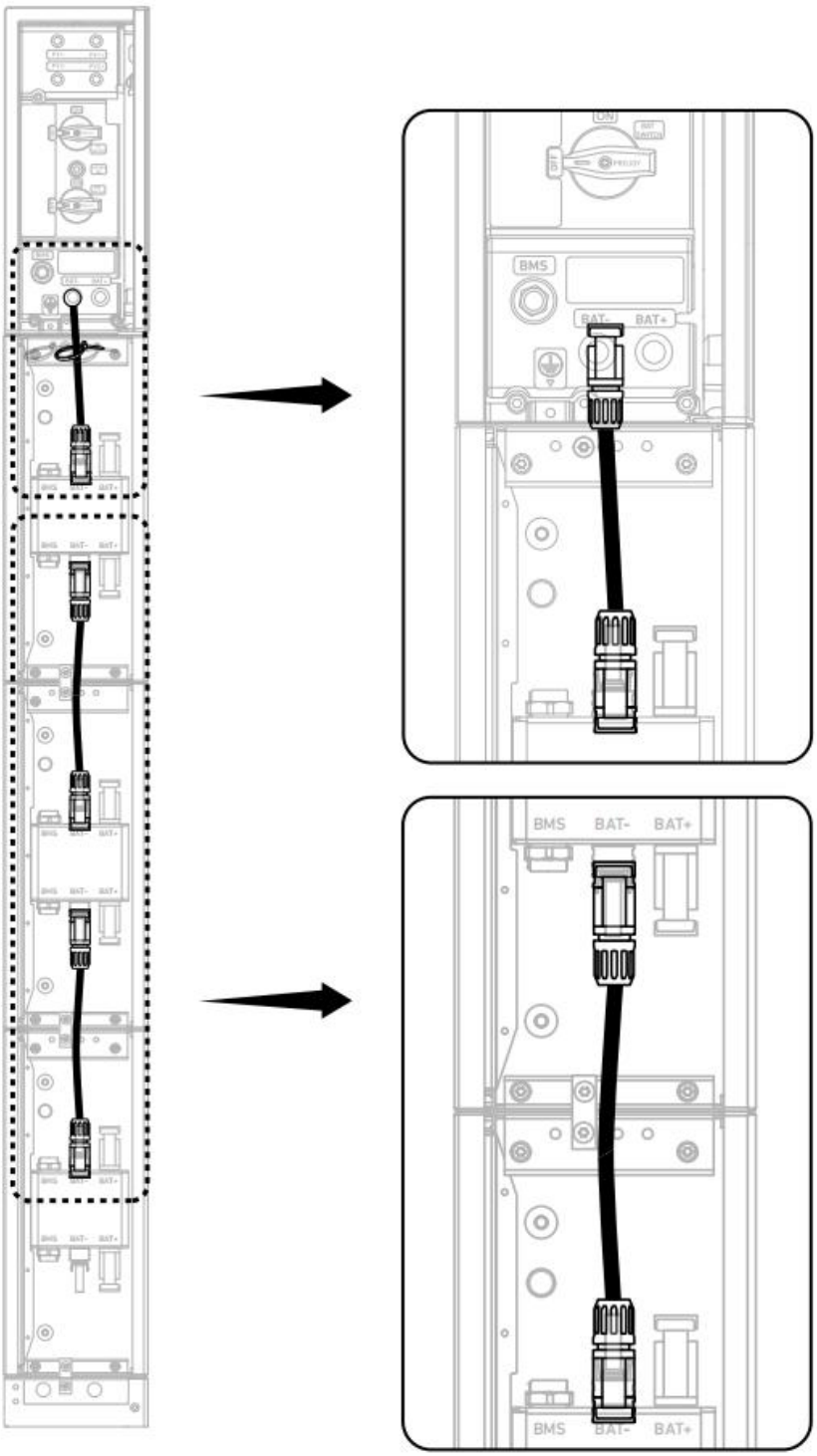
Figure: Connect RJ45 signal cables between modules.



4. Connect the negative DC power cables between the modules.

Connect a negative DC power cable (black, included) to the BAT- ports of each two vertically adjacent modules.

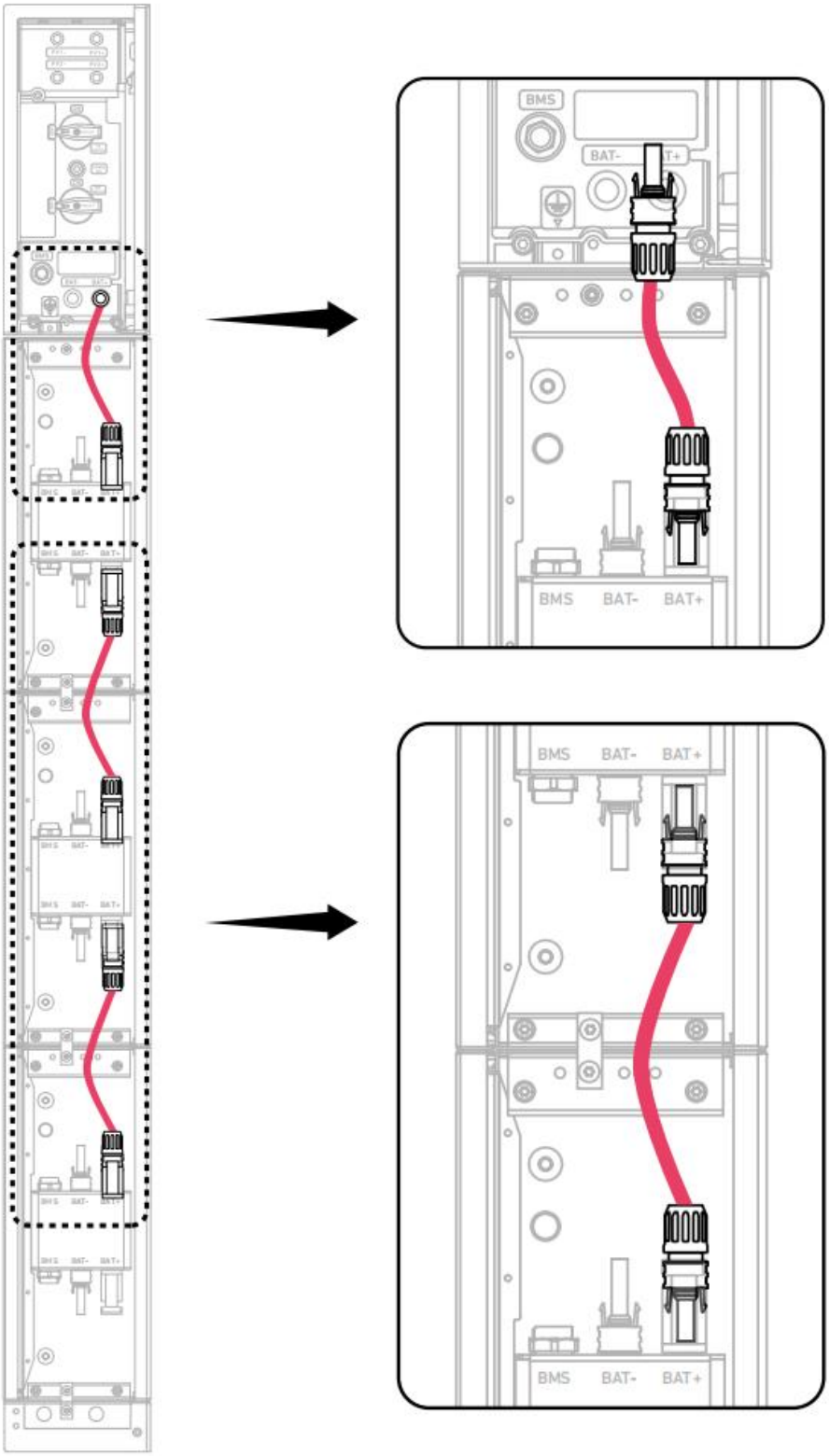
Figure: Connect negative DC power cables between modules.



5. Connect the positive DC power cables between the modules.

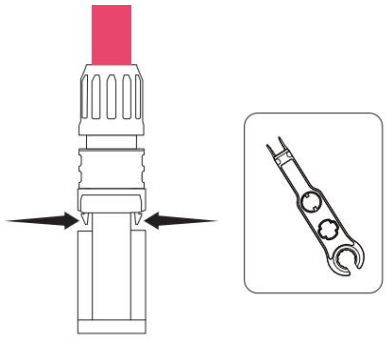
Connect a positive DC power cable (red, included) to the BAT+ ports of each two vertically adjacent modules.

Figure: Connect positive DC power cables between modules.



Use a disassembly tool (not included) to remove the connected DC power cables.

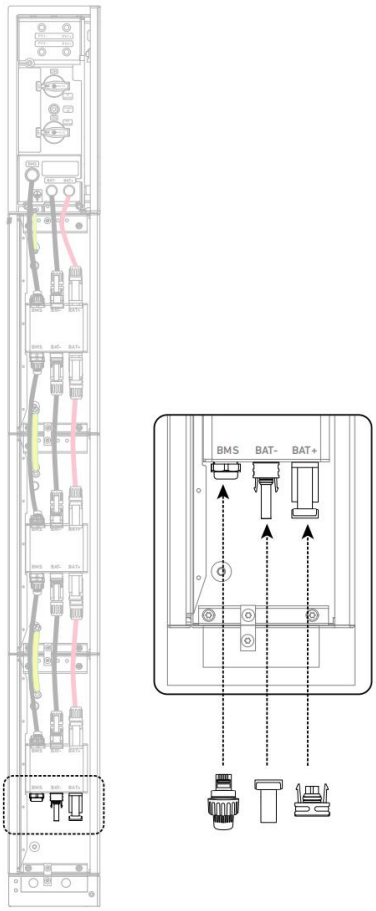
Figure: Disconnect the DC power cables.



6. Seal unused ports.

On the bottom battery module, insert an RJ45 connector (with 2×120Ω terminating resistor, included) into the BMS port, a female dustproof cap (included) into the negative DC power port (BAT-), and a male dustproof cap (included) into the positive DC power port (BAT+).

Figure: Seal unused ports.



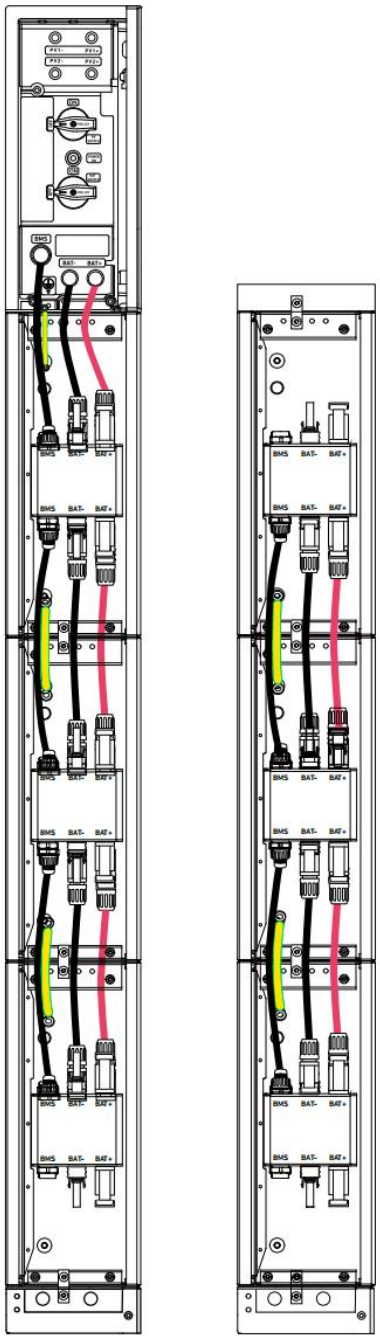
## Connect Two Columns of Modules

To connect two columns, which consist of a power module and six battery modules in this example, follow the steps below.

1. Connect cables between vertically adjacent modules.

Install the GND, RJ45 signal, and DC power cables. Refer to the *Connect One Column of Modules* section for detailed instructions.

Figure: Connect cables between adjacent modules.



2. Connect cables between the bottom modules.

① Thread cables through conduits.

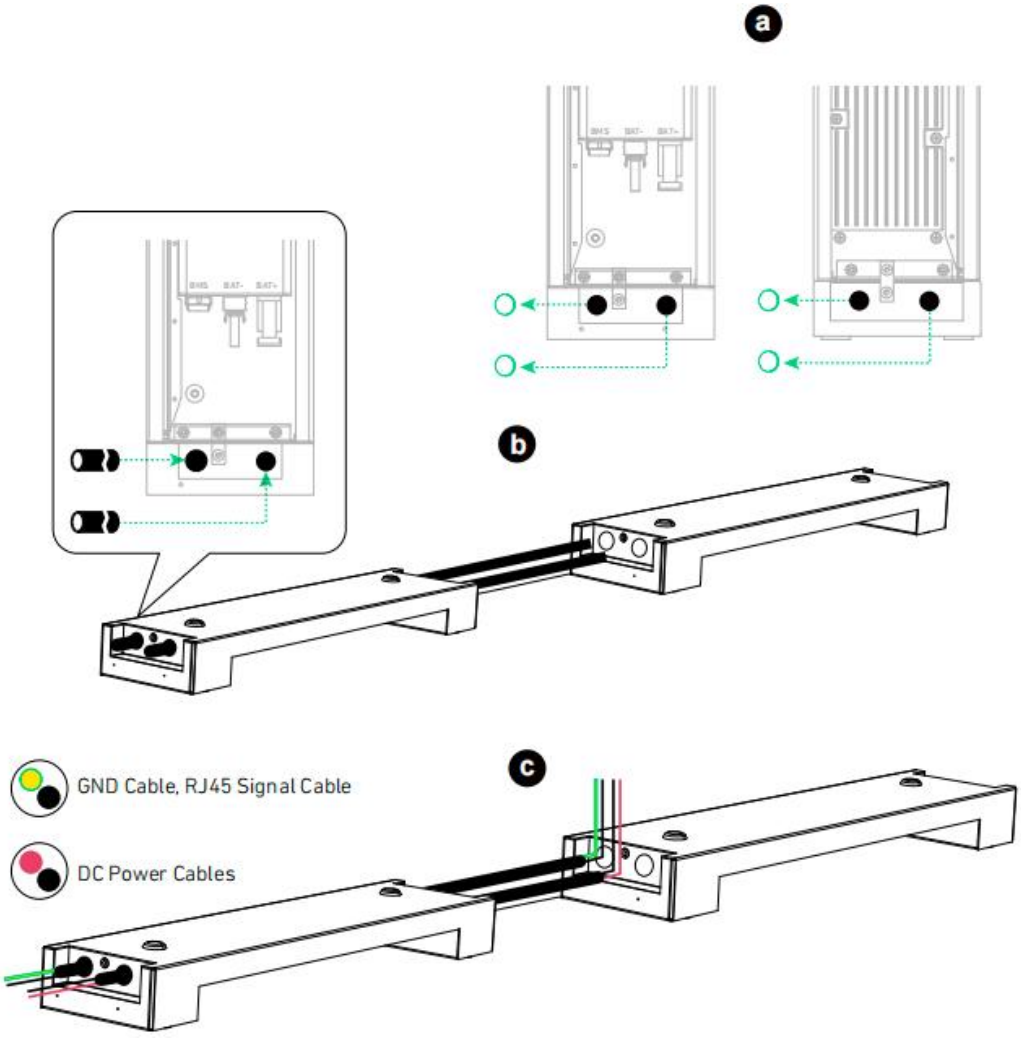
**Floor-Mounted Modules**

a. Remove the cable knockouts from the battery module base in the first column.

b. Insert a cable conduit (DN25, not included) into each opening.

c. Thread a GND cable (6 mm², yellow/green, not included) and a signal cable (Cat 5 or higher, 5-6 mm in diameter, not included, shielding recommended) through the cable conduit near the wall. Thread a positive DC power cable (10 mm², red, not included) and a negative DC power cable (10 mm², black, not included) through the outward cable conduit.

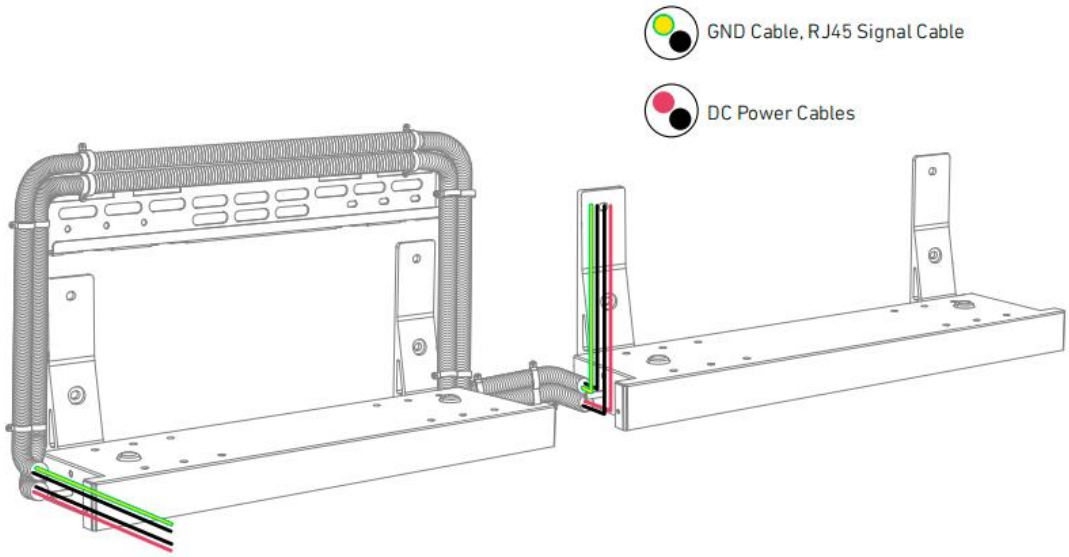
Figure: Thread cables through conduits for floor mounting.



**Wall-Mounted Modules**

Thread a GND cable (6 mm², yellow/green, not included) and a signal cable (Cat 5 or higher, 5-6 mm in diameter, not included, shielding recommended) through the upper conduit. Thread a positive DC power cable (10 mm², red, not included) and a negative DC power cable (10 mm², black, not included) through the lower conduit.

Figure: Thread cables through conduits for wall mounting.




② Assemble the GND cable and RJ45 signal cable.

**To assemble the GND cable:**

a. Strip the insulation layers from both ends.

b. Insert the heat shrink tubing (included) and ring terminals (included).

c. Crimp the ring terminals onto the GND cable.

d. Wrap the crimping area with the heat shrink tubing using a heat gun.

**To assemble the RJ45 signal cable:**

a. Insert the signal cable into the RJ45 cable glands, and strip the insulation layers from both ends.

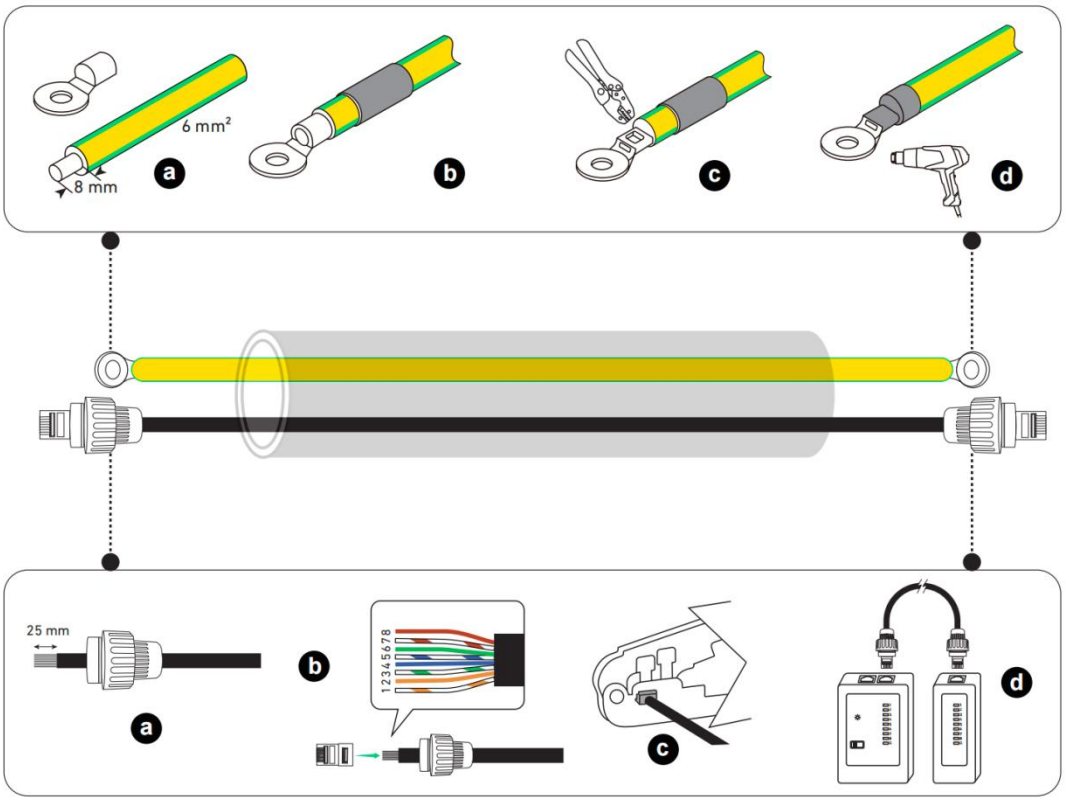
b. Insert the wires into the RJ45 connectors (included) in the EIA/TIA 568B order.

| From Bottom to Top (Clip Faces Away): | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Pin | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Wire Color | Orange-White | Orange | Green-White | Blue | Blue-White | Green | Brown-White | Brown |

c. Crimp the RJ45 connectors using the RJ45 crimping tool.

d. Use a cable tester to verify proper wiring and continuity.

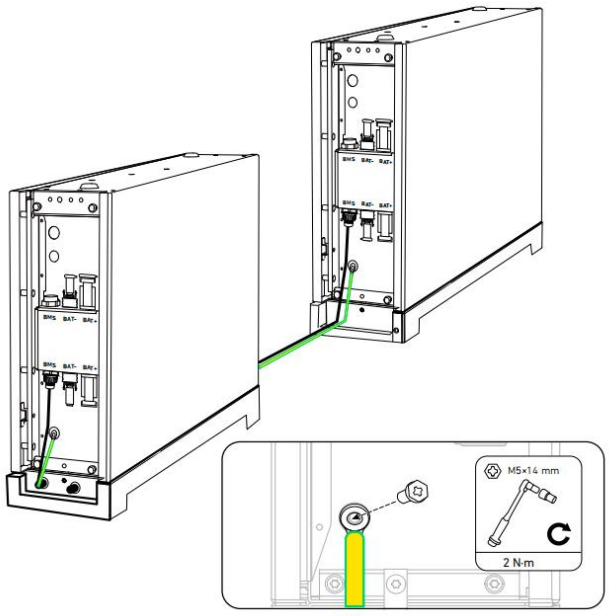
Figure: Assemble the GND cable and RJ45 signal cable.




③ Install the GND cable and RJ45 signal cable.

On the bottom battery modules in both columns, connect the GND cable to the ground points and the RJ45 signal cable to the BMS ports.

Figure: Install the GND cable and RJ45 signal cable.



④ Assemble the positive and negative DC power cables.

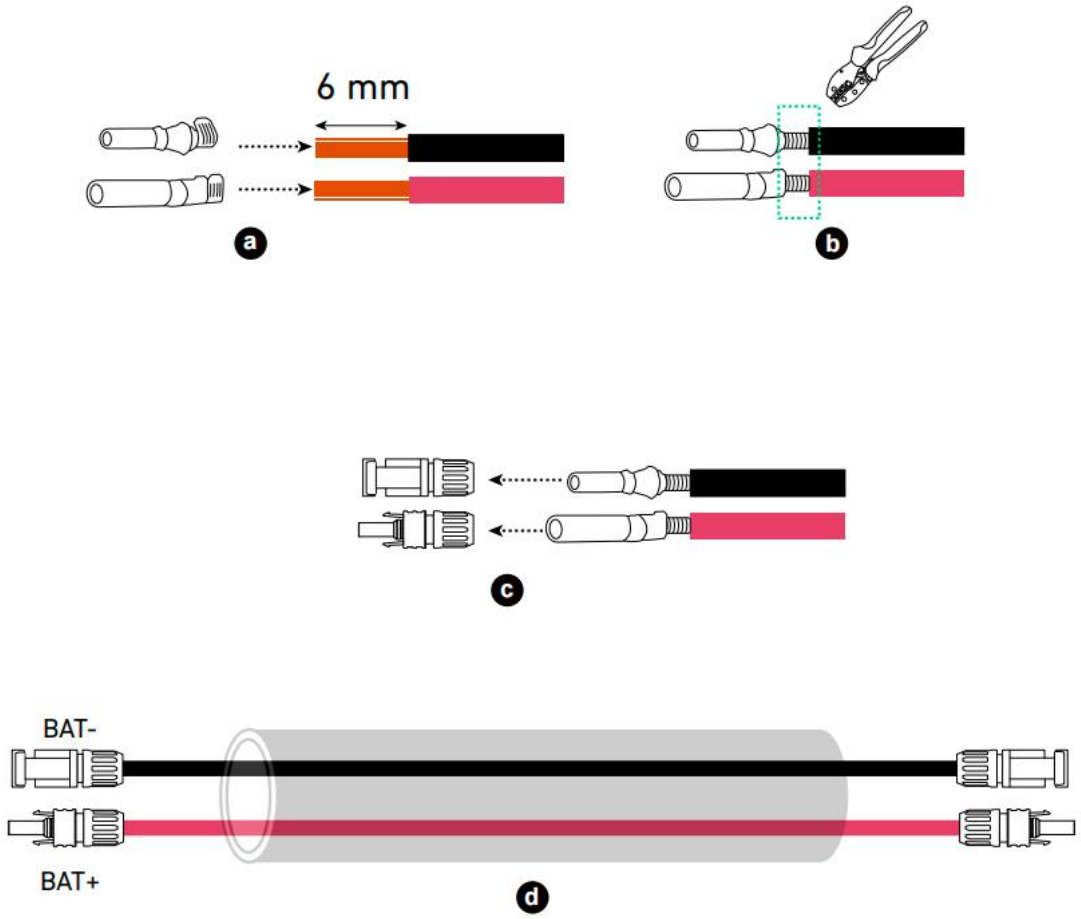
a. Strip the insulation layers from both ends.

b. Crimp the positive and negative metal terminals (not included) onto the corresponding cables. Make sure the terminals are securely attached and cannot be pulled out.

c. Insert the positive and negative metal terminals into the corresponding DC power connectors (not included). You should hear a click when they are properly connected.

d. Tighten the locking nuts to secure the connection.

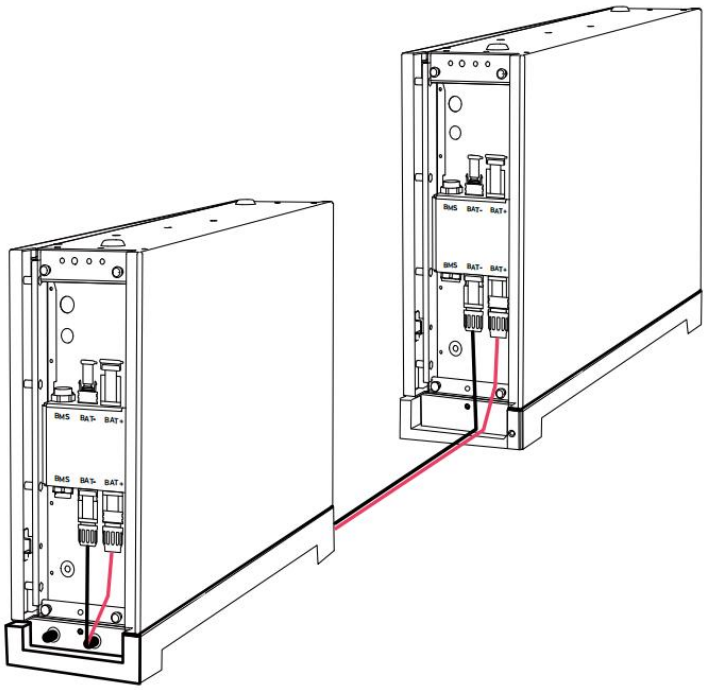
Figure: Assemble the DC power cables.




⑤ Install the positive and negative DC power cables.

On the bottom battery modules in both columns, connect the negative DC power cables (black) to the negative power ports (BAT-) and the positive DC power cables (red) to the positive power ports (BAT+).

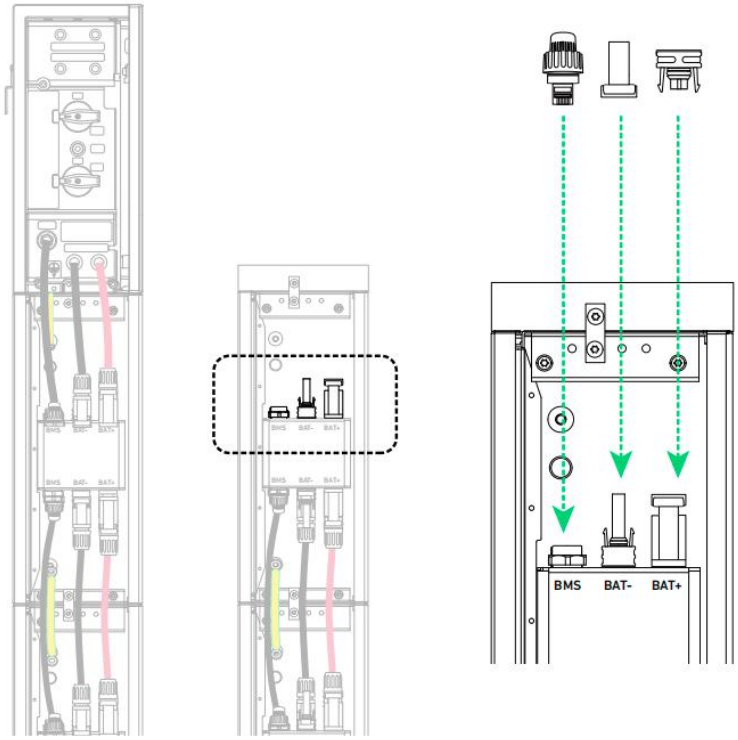
Figure: Install the DC power cables.




3. Seal unused ports.

On the top battery module in the second column, insert an RJ45 connector (with 2×120Ω terminating resistor, included) into the BMS port, a female dustproof cap (included) into the negative DC power port (BAT-), and a male dustproof cap (included) into the positive DC power port (BAT+).

Figure: Seal unused ports.



## 6.2 Connect to the External Ground

Connect a GND cable from the power module to the external ground point.

① Strip the insulation layer of a GND cable (6 mm², not included).

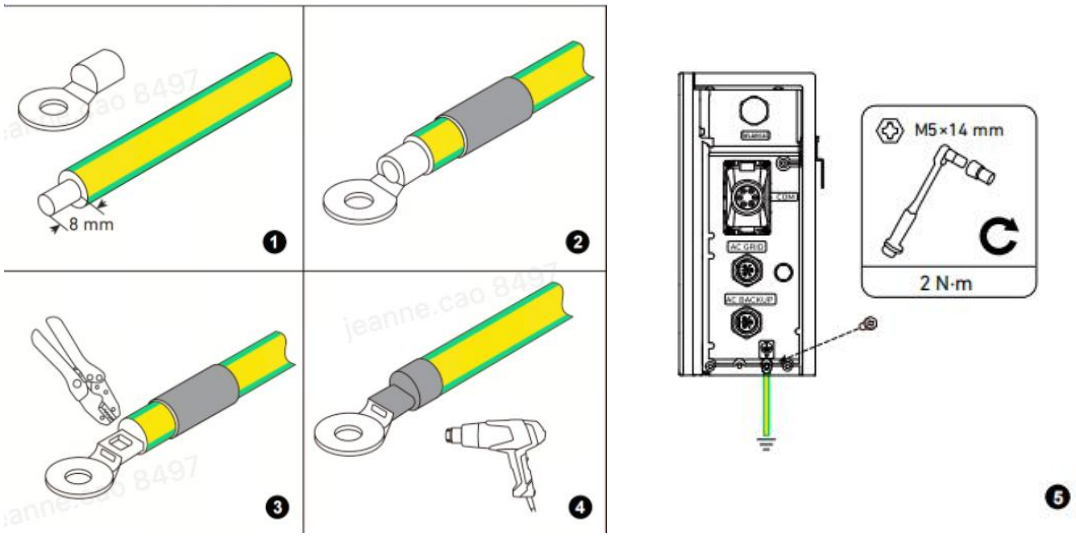
② Insert a heat shrink tubing (included) and a ring terminal (included) into the GND cable.

③ Crimp the ring terminal onto the GND cable.

④ Wrap the wire crimping area with the heat shrink tubing using a heat gun.

⑤ On the right side of the power module, connect the GND cable to the external ground port and secure the GND cable's ring terminal using the screw (M5×14 mm, included).

Figure: Assemble and install the GND cable.




## 6.3 Connect to PV Panels

- Connect the power module to ungrounded PV arrays.
- We recommend using PV cables with a conductor cross section of 4 to 6 mm² and an outer diameter of 5.5 to 7.5 mm.
- Ensure that the PV cables have been connected to the PV panels.
- Ensure that the PV input does not exceed the specified limits.

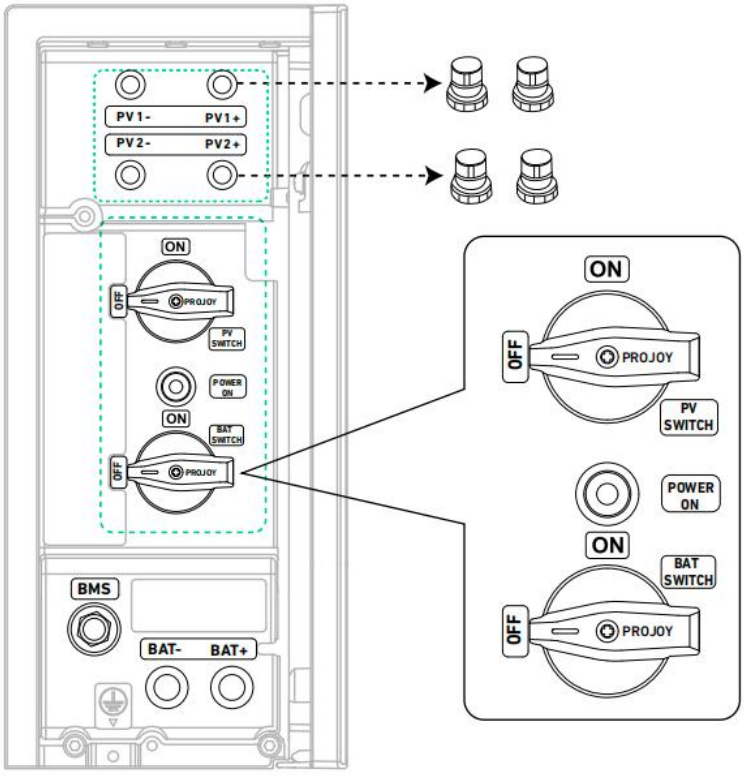
- The PV panels can be grounded.

| PV Input Limits | X1-H3.68K-S | X1-H4.6K-S | X1-H5K-S | X1-H6K-S |
|---|---|---|---|---|
| Maximum Open Circuit Voltage | 600 V | 600 V | 600 V | 600 V |
| Minimum Open Circuit Voltage | 60 V | 60 V | 60 V | 60 V |
| Maximum Short Circuit Current | 20 A | 20 A | 20 A | 20 A |
| Maximum Power per String | 7.36 kW | 9.2 kW | 10 kW | 12 kW |

The following procedure uses connecting to one PV input as an example.

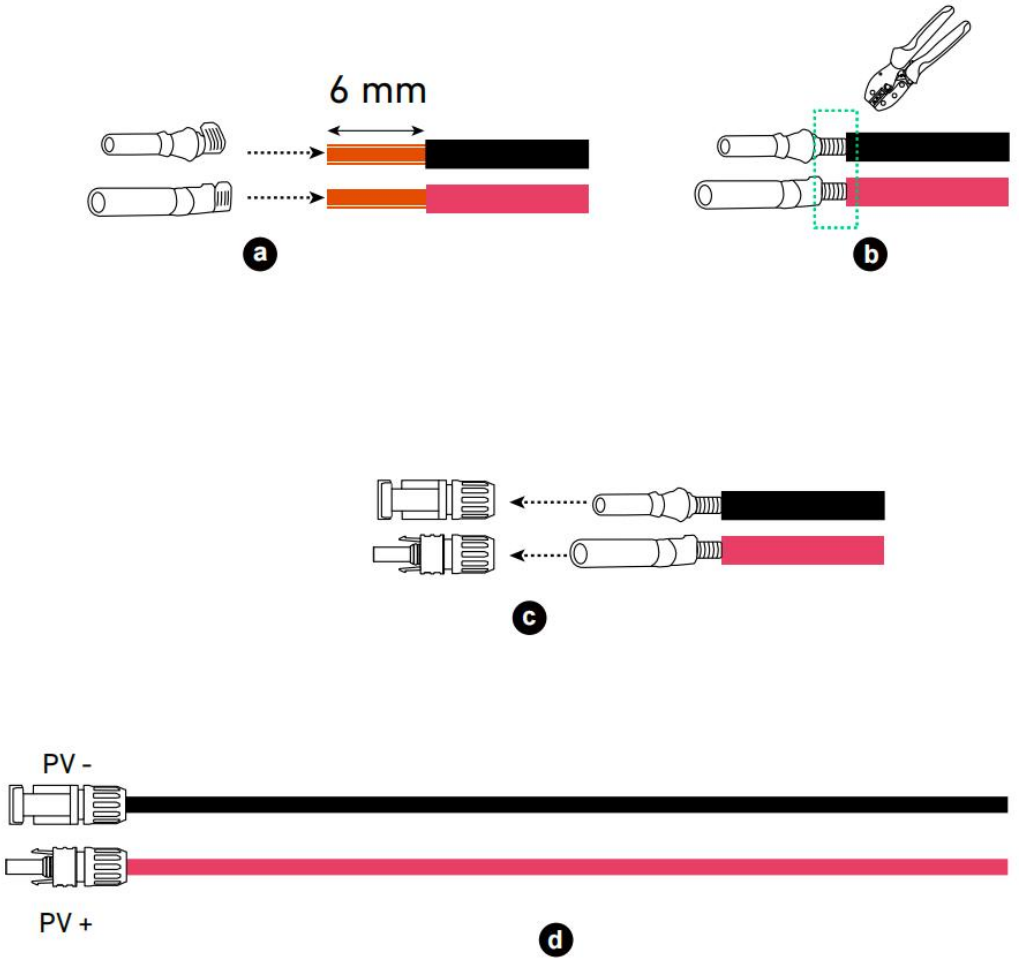
1. Turn off the PV switch and remove the dustproof plugs from one pair of PV power ports (PV1+ and PV1–, or PV2+ and PV2–).

Figure: Turn off the PV switch and remove the dustproof plugs of PV power ports.



2. Strip the insulation layers on the ends of the positive and negative PV cables (not included). Crimp the positive and negative metal terminals (included) onto the corresponding cables. Make sure the terminals are securely attached and cannot be pulled out. Insert the positive and negative metal terminals into the corresponding PV connectors (included). You should hear a click when they are properly connected. Tighten the locking nuts to secure the connection.

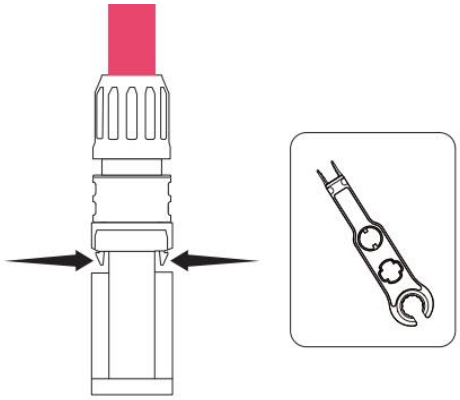
Figure: Assemble the PV cables.




3. Connect the positive PV connector to a positive PV power port (PV1+ or PV2+) and the negative PV connector to a negative PV power port (PV1– for PV1+, or PV2– for PV2+).

Use a disassembly tool (not included) to remove the connected PV cables.

Figure: Disconnect the PV cables.



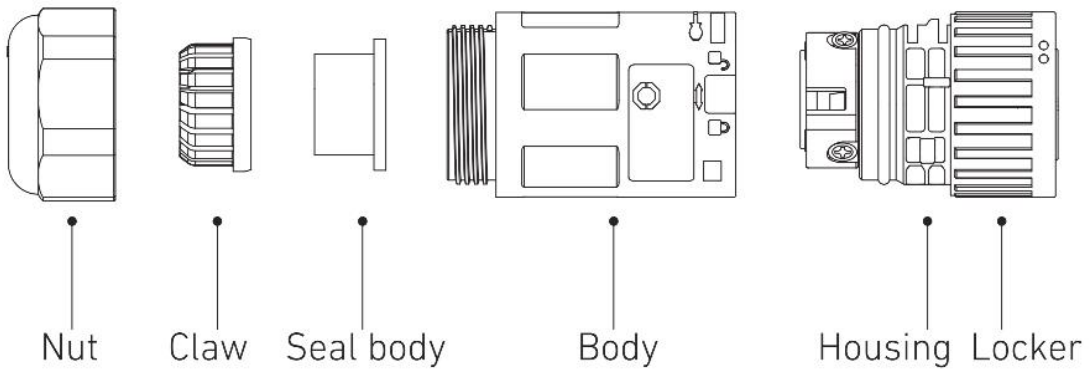
## 6.4 Connect to the Grid and the Backup Loads

- AC power cables with 7-12.5 mm outer diameter and 6 mm² conductors are recommended.
- Ensure that the cable lengths do not exceed the maximum lengths allowed.

| Cross-Sectional Area | Maximum Cable Length Allowed | | | |
|---|---|---|---|---|
| | **X1-H3.68K-S** | **X1-H4.6K-S** | **X1-H5K-S** | **X1-H6K-S** |
| 6 mm² Cables | 70 m | 44 m | 35 m | 28 m |

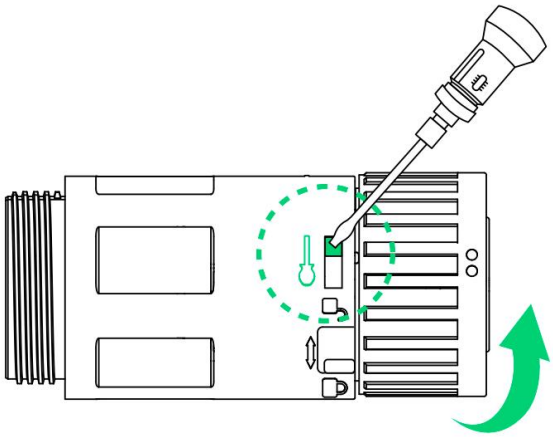
1. Disassemble the AC grid connector (female, included).

Figure: Disassemble the AC grid connector.



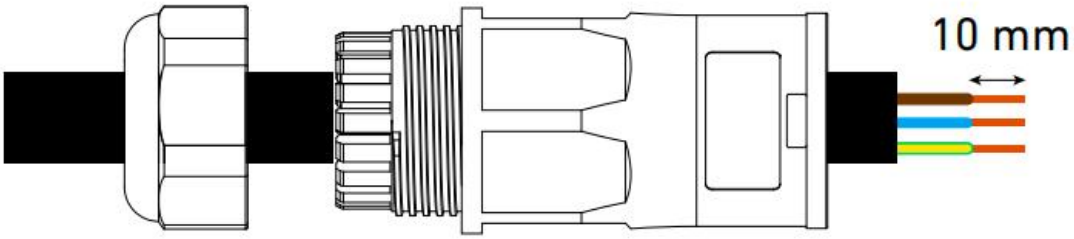
To separate the body from the locker, depress the buckle and turn the body to the unlock icon.

Figure: Separate the body from the locker.



2. Route a 3-conductor AC power cable (7-12.5 mm in outer diameter, not included) through the nut and body. Then, strip the insulation layers from the conductors.

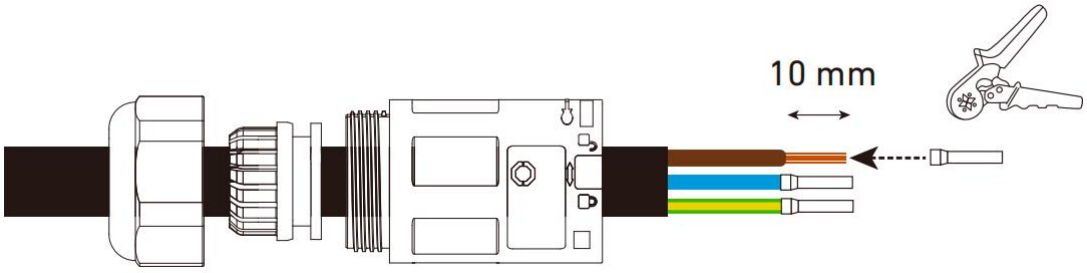
Figure: Route a 3-conductor AC power cable.




Wiring colors may vary by country or region.

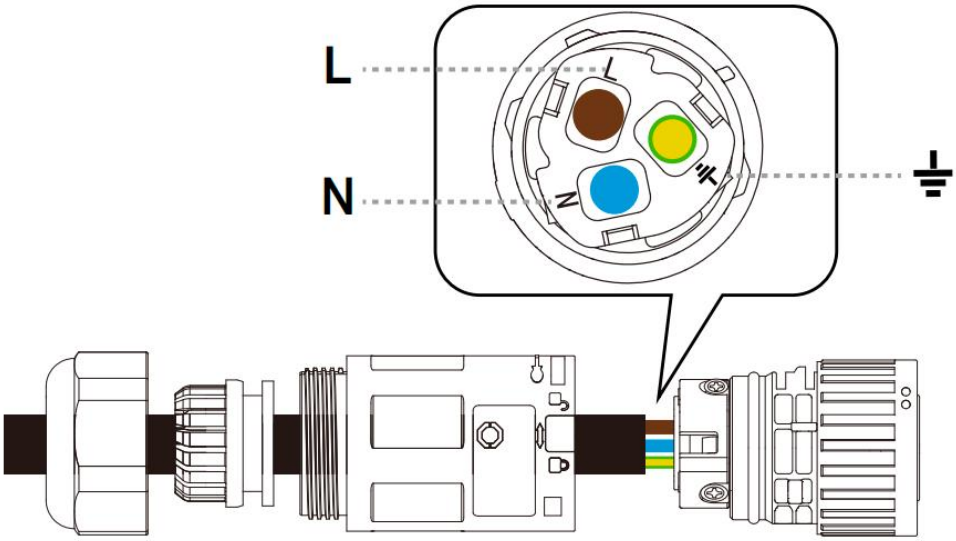
3. Insert and crimp the wire sleeve terminals (included).

Figure: Insert and crimp the wire sleeve terminals.



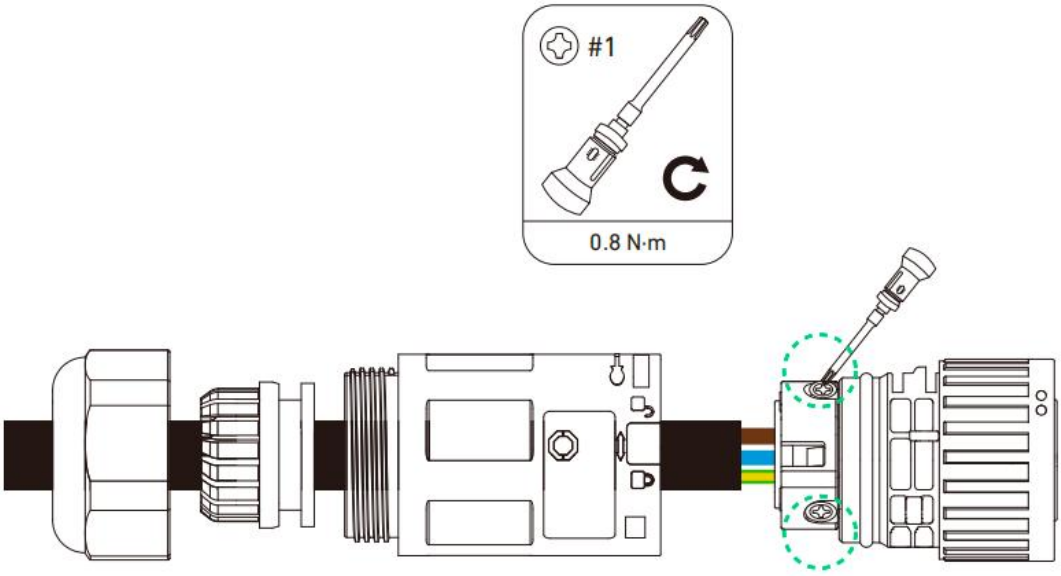
4. Connect the live, neutral, and PE conductors to the sockets labelled L, N, and PE respectively.

Figure: Connect conductors to the sockets on the housing.



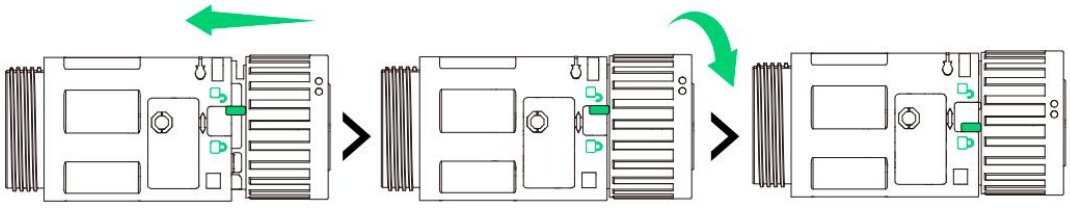

5. Tighten the three screws on the housing with a No. 1 Phillips screwdriver.

Figure: Tighten the screws on the housing.



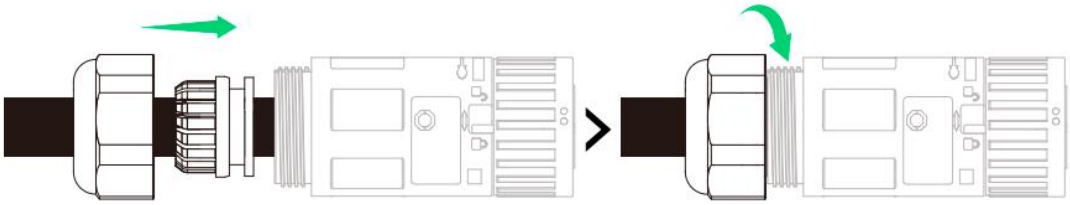
6. Align the locker and the body, and rotate the locker until you hear a click.

Figure: Reassemble the AC grid connector.



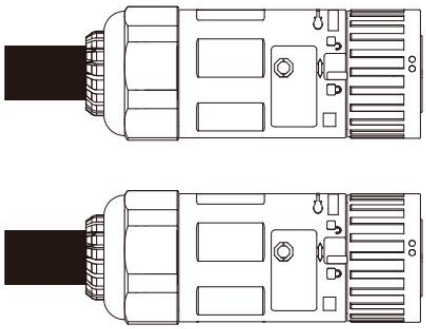
7. Tighten the nut to secure the cable.

Figure: Tighten the nut of the AC grid connector.



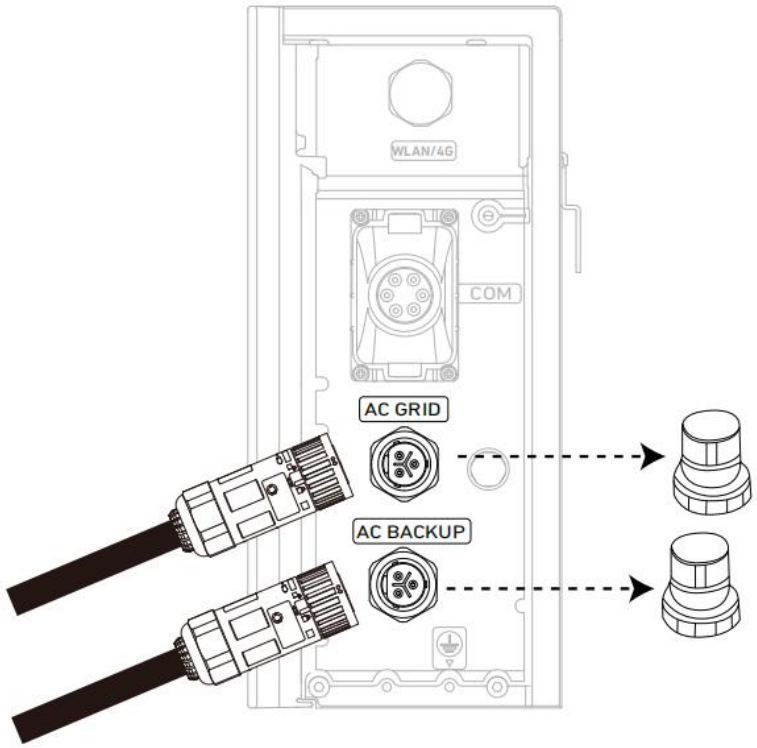
8. Repeat steps one to seven to assemble the AC backup connector (male, included).

Figure: Assembled AC connectors.



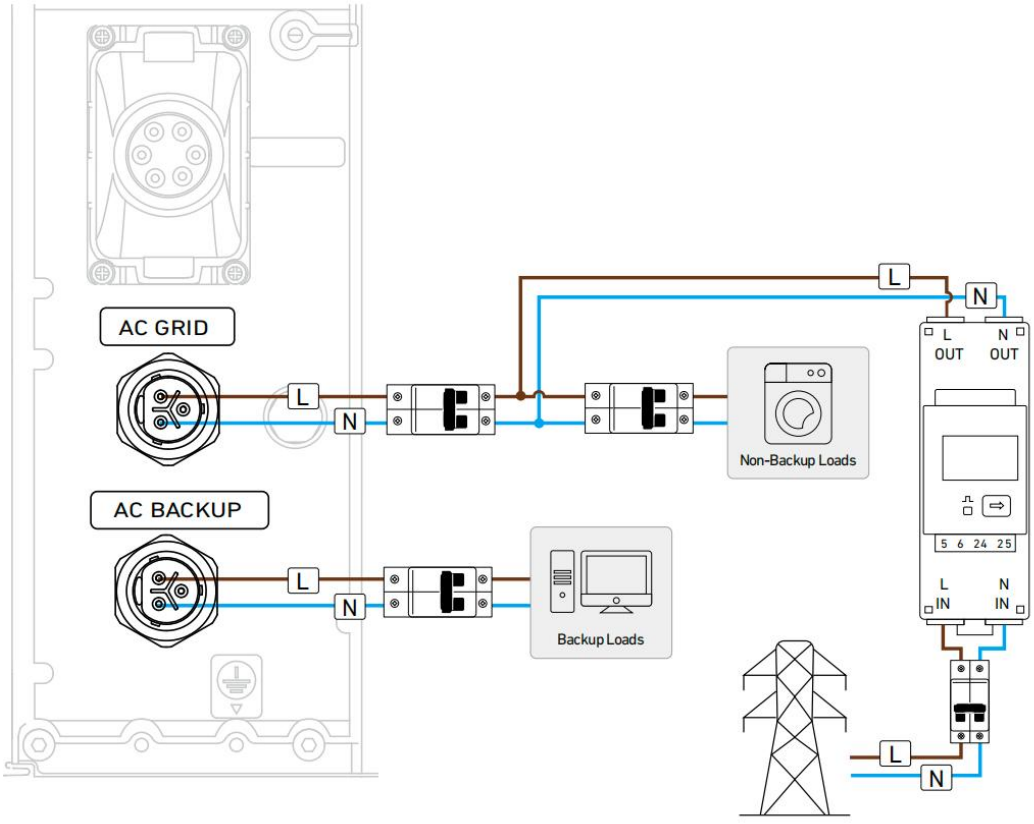
9. Remove the dustproof covers from the AC power ports. Then, insert the AC grid connector (female) to the AC grid port, and insert the AC backup connector (male) to the AC backup port. Rotate the locker in the locking direction to tighten the connectors.

Figure: Install AC connectors.




10. Connect the AC grid cable to the main panel, and the AC backup cable to the subpanel.

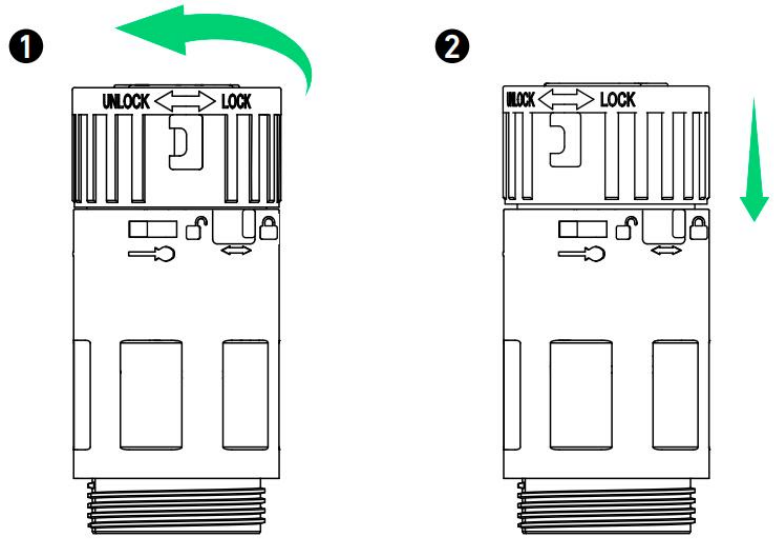
Figure: Connect to the grid and backup loads.



For the grid connection, we recommend the use of a C40 circuit breaker or a circuit breaker with a higher rated current in the main panel.

To remove the AC grid or AC backup connector, turn the locker in the unlock direction and pull out the connector.

Figure: Remove the AC connectors.




- The power module uses the AC backup port as the off-grid port, which is separate from the grid-interactive port (AC grid port).
- In Australia and New Zealand, an E-N link must be created between the neutral bar and the earth bar in the distribution box. Do not connect the PE conductor of the AC backup port to the earth bar.
- In other countries, there is no connection between the neutral bar and the earth bar. Connect the neutral and PE conductors according to the local electrical code when the power module is in off-grid mode.

Figure: Electrical connections between the power module and the grid / backup loads (Australia / New Zealand).

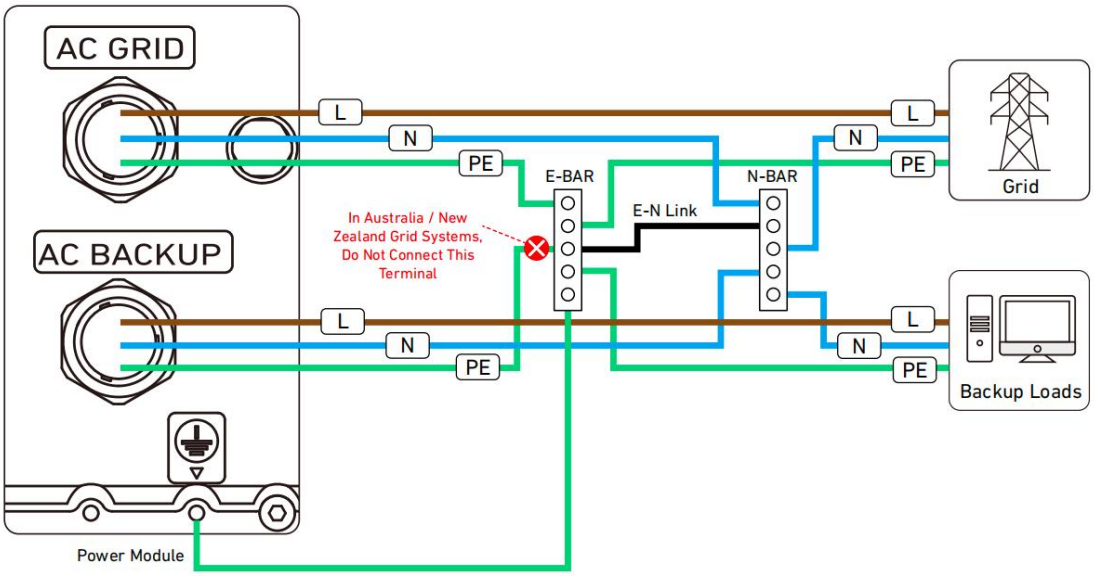
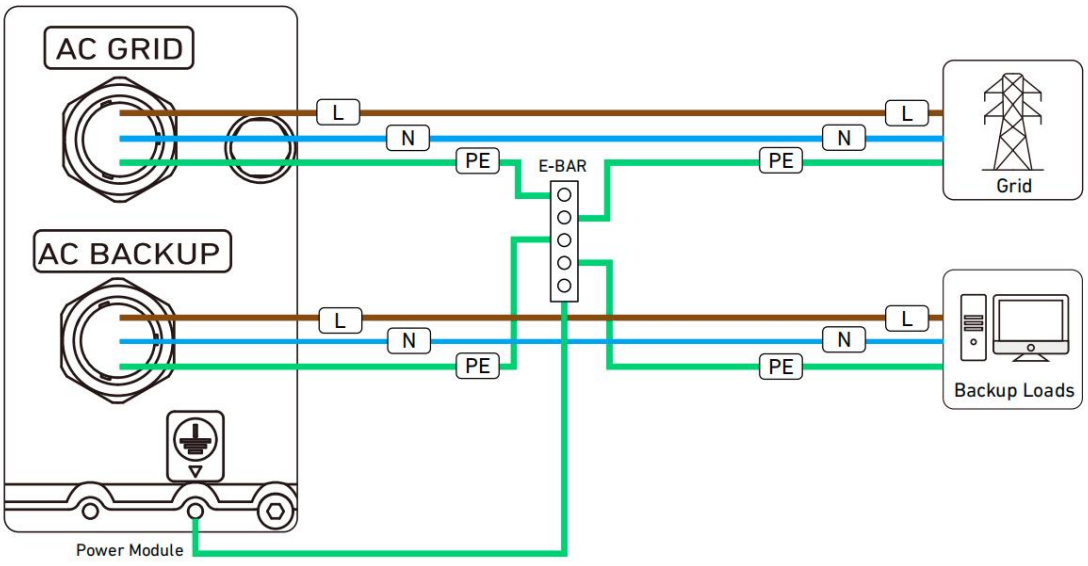



Figure: Electrical connections between the power module and the grid / backup loads (UK & EU).




## 6.5 Connect to the Power Sensor

**Backflow Prevention Measures:**

- The Anker SOLIX X1's anti-reverse flow measures include real-time power monitoring through communication between the power module and the power sensors (Model: DDSU666 or DTSU666), with software and hardware interventions to prevent power from feeding back into the grid.
- Software approaches adjust discharge currents, while hardware

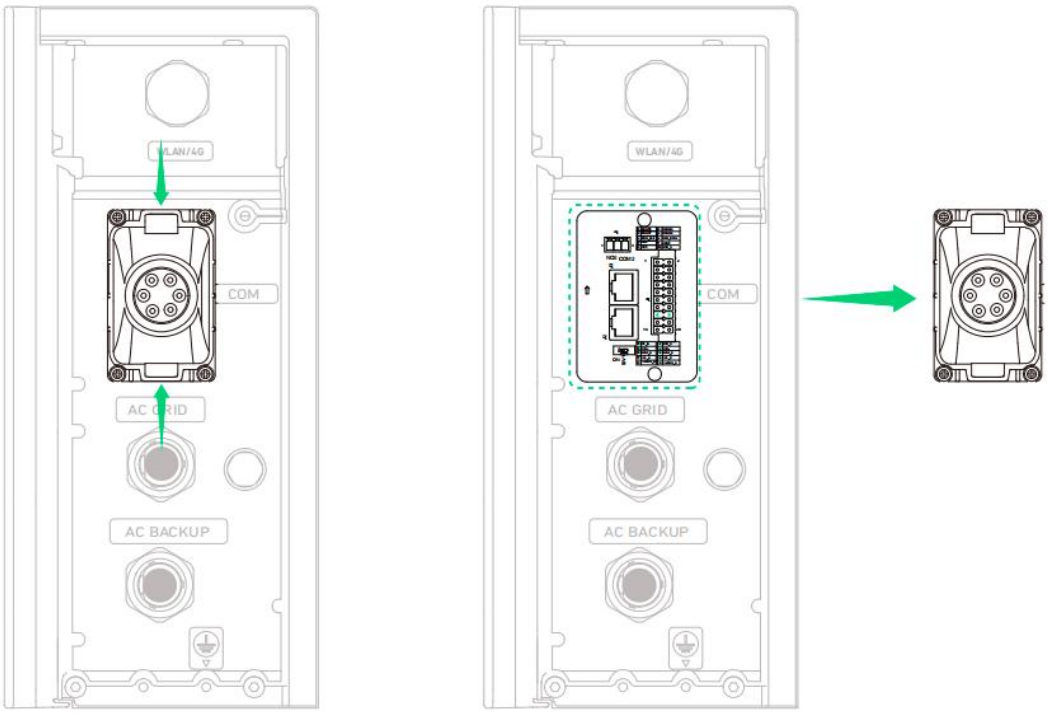
solutions involve shutting down and disconnecting from the grid. In the event of communication failures, the power module will automatically shut down and disconnect from the grid until normal operations can be safely resumed.

**Using Power Sensors:**

- If the energy storage system is a new installation with no existing PV system, only one power sensor is required on the grid side. If the energy storage system is added to an existing PV system, two power sensors are required, one on the PV side and one on the grid side.

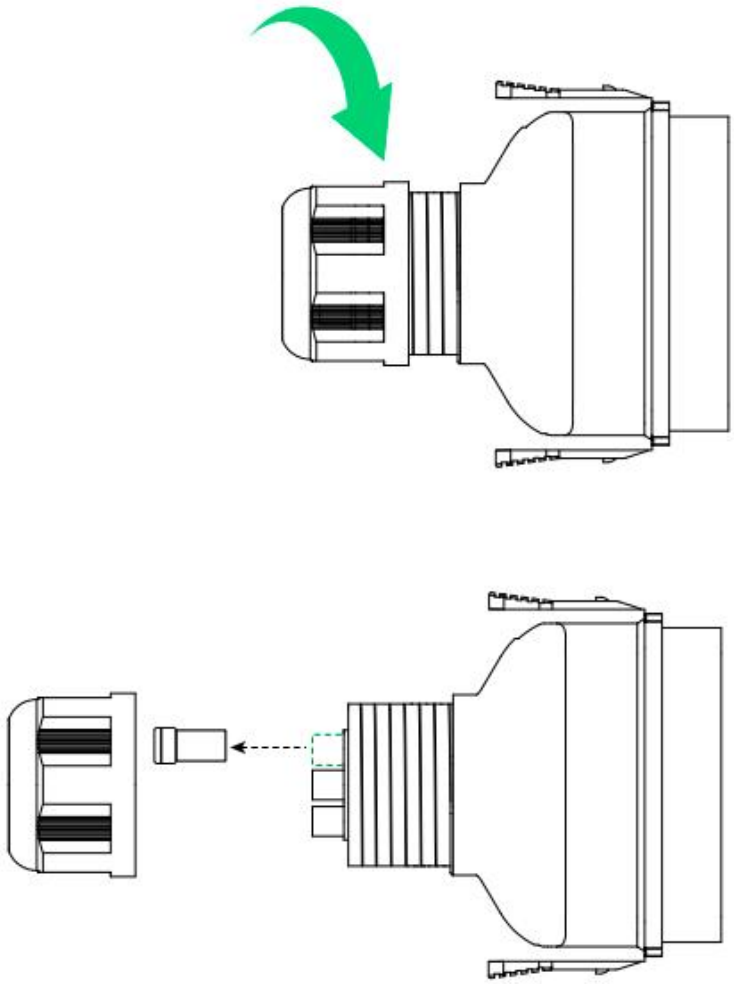
1. Remove the wiring compartment cover by pressing the clips on both sides.

Figure: Remove the wiring compartment cover.



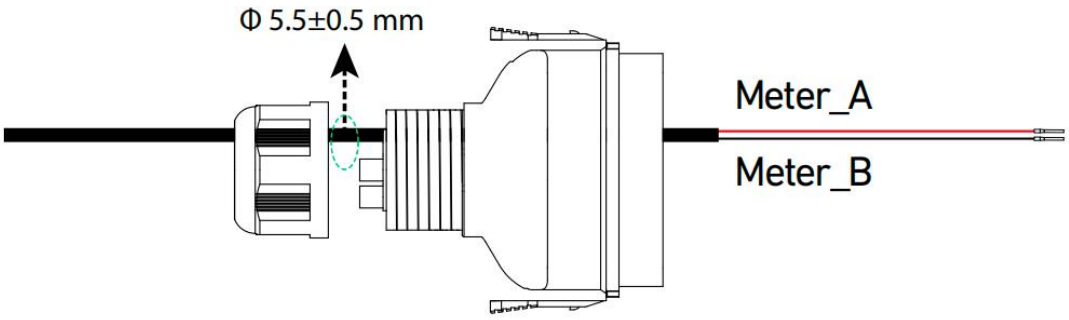

2. Rotate to remove the locking cap from the wiring compartment cover and take out a waterproof plug.

Figure: Take out a waterproof plug.



3. Route the 2-wire signal cable (5.5±0.5 mm in outer diameter, included) through the locking cap and wiring compartment cover.

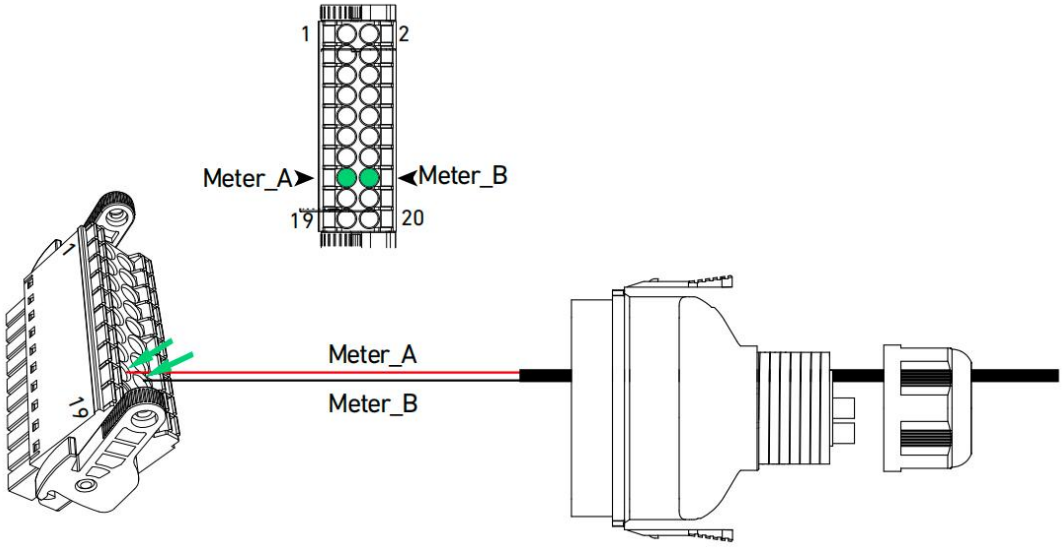
Figure: Route the 2-wire signal cable.




Recommended RS485 wires are 0.2-0.5 mm² in conductor cross section.

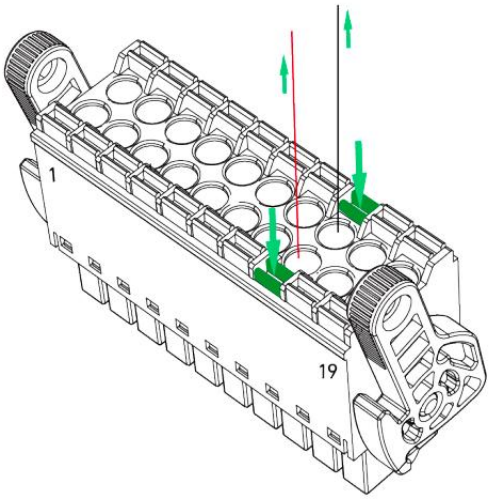
4. Insert the two wires (labelled Meter_A and Meter_B, with tube terminals) into slots 15 and 16, respectively, of the 20-pin terminal block connector (included). Make sure the wires are fully inserted into the slots and cannot be easily pulled out.

Figure: Insert signal wires into slots 15 and 16.



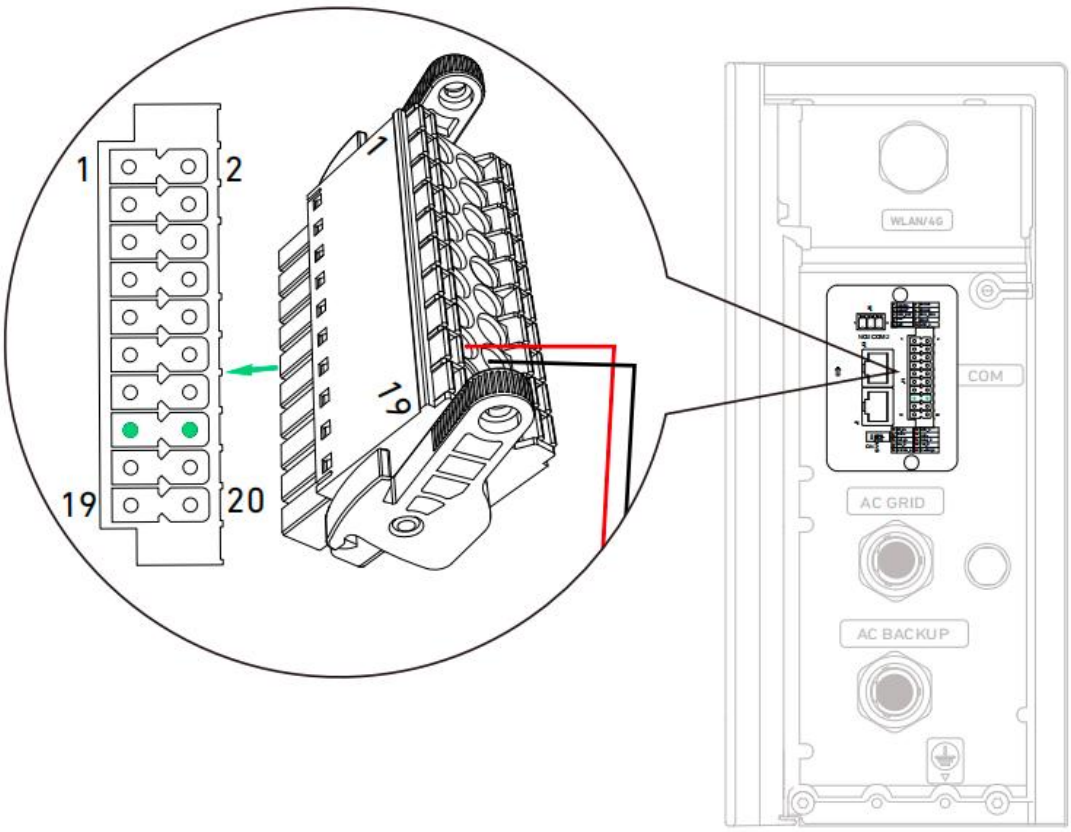

To remove the wires, depress the actuator buttons next to slots 15 and 16 and pull the wires out.

Figure: Remove wires from the 20-pin terminal block connector.



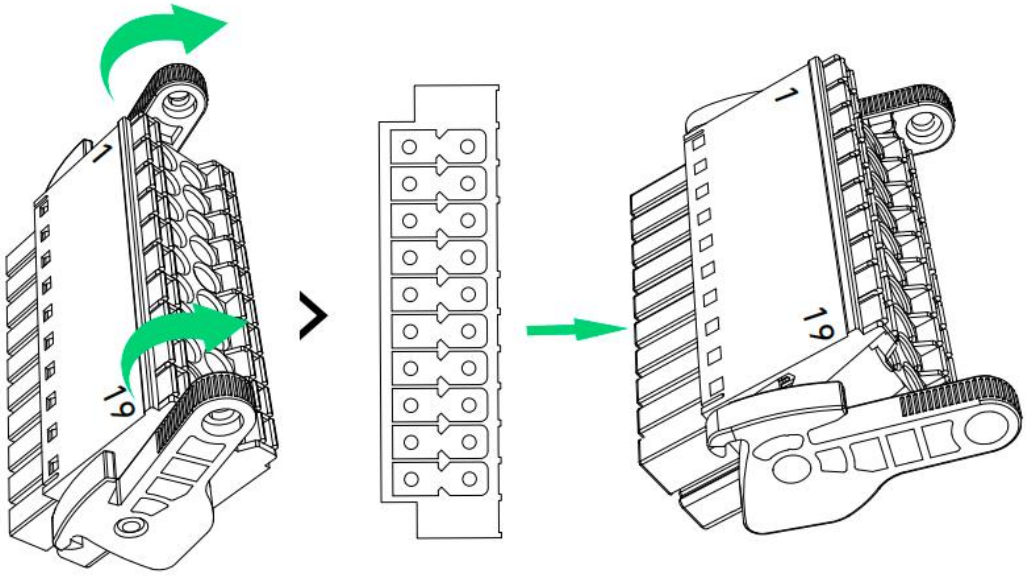

5. Hold the terminal block connector with slots 1 and 19 to the left, and push it into the terminal block socket labelled J1 to click in place.

Figure: Push the terminal block connector into the socket.



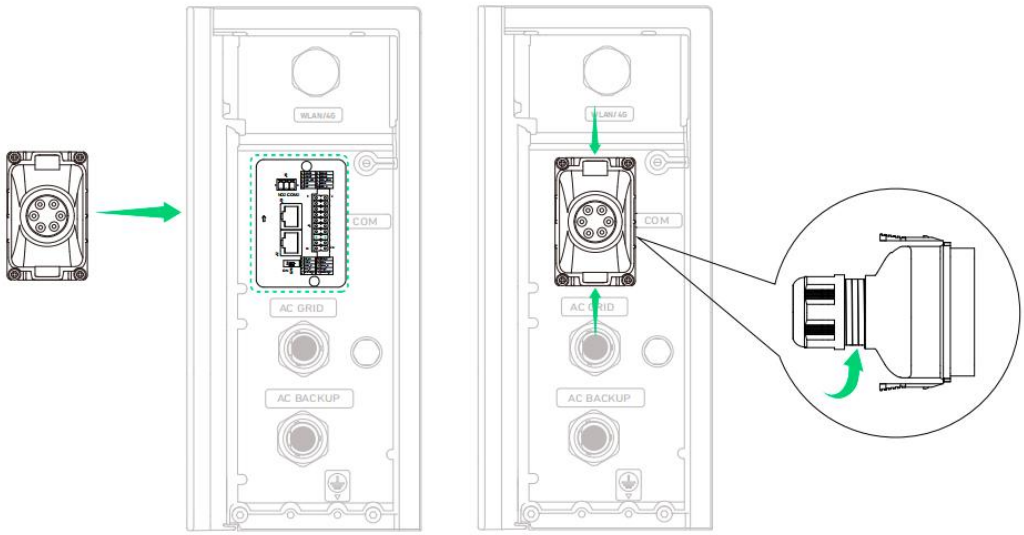

To remove the terminal block connector, turn the lever locks to loosen the connector and pull the connector out of the socket.

Figure: Remove the terminal block connector.



6. Insert the wiring compartment cover by pressing the clips on both sides and tighten the locking cap.

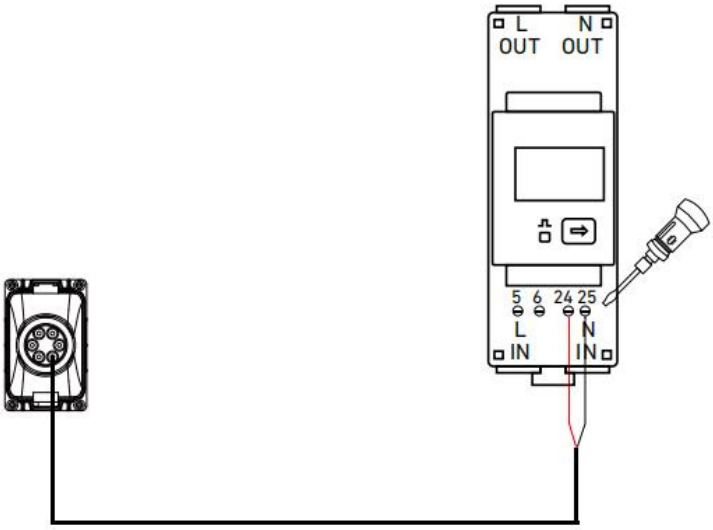
Figure: Put back the wiring compartment cover.




7. Insert the other ends of the Meter_A and Meter_B wires into the RS485-24-A and RS485-25-B terminals on the grid-side power sensor (Model: DDSU666, 100A, included), and tighten the screws.

- The power sensor provided in the package can measure currents up to 100 A. If the current range exceeds 100 A, use DTSU666 (250 A) instead, which can be ordered from Anker SOLIX.
- If you are retrofitting an existing PV system, skip this step and go to the next.

Figure: Insert the other ends of the signal wires.



8. Connect power wires to the grid-side power sensor.

⚠ Before this operation, ensure that the grid-side circuit breaker is disconnected.

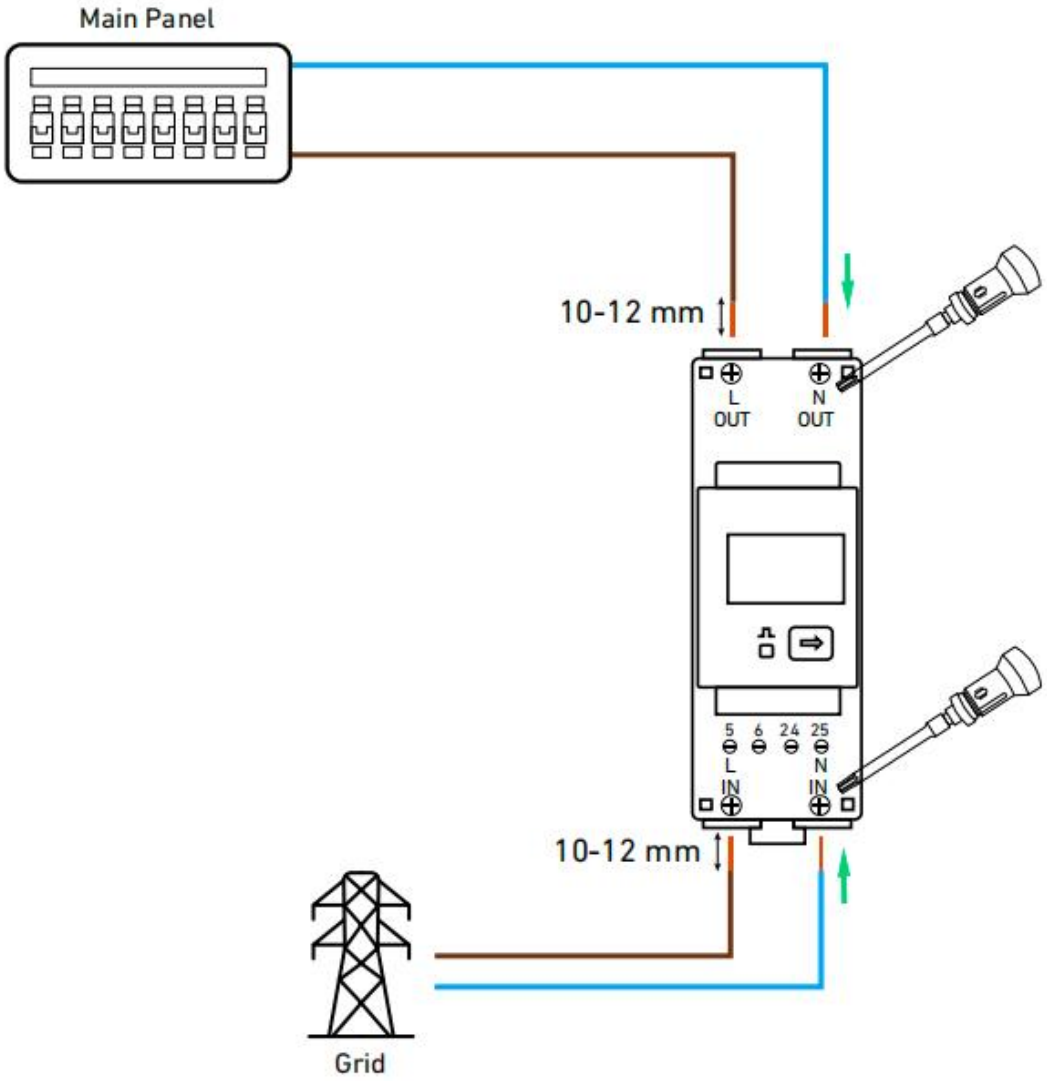
① Cut the live and neutral wires on the grid side.

② Strip the insulation layers from both cut ends of the wires.

③ Insert the live and neutral wires near the main panel into the L IN and N IN terminals respectively and tighten the screws.

④ Insert the live and neutral wires near the grid into the L OUT and N OUT terminals respectively and tighten the screws.

Figure: Connect power wires to the grid-side power sensor.



If you are building a new system, the power sensor connection is complete. If you are retrofitting an existing system, continue with the steps below to connect another power sensor (Model: DDSU666, included).

9. (Only for Retrofitting) Connect the power sensor on the side of the existing PV system to the power module.

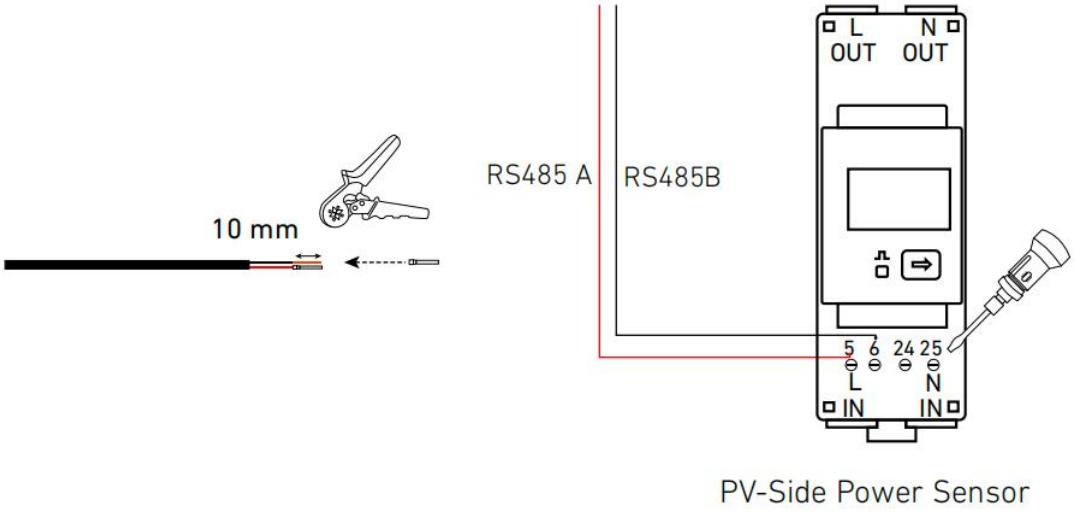
**On the PV side:**

① Prepare a signal cable (0.2-0.5 mm² in conductor cross section). Strip the insulation layers from the RS485 A and RS485 B wires.

② Crimp the tube terminals (16 mm, included) onto the wires.

③ Insert the RS485 A and RS485 B wires into the RS485-5-A2 and RS485-6-B2 terminals on the PV-side power sensor respectively and tighten the screws.

Figure: Connect a signal cable to the PV-side power sensor.




**On the grid side:**

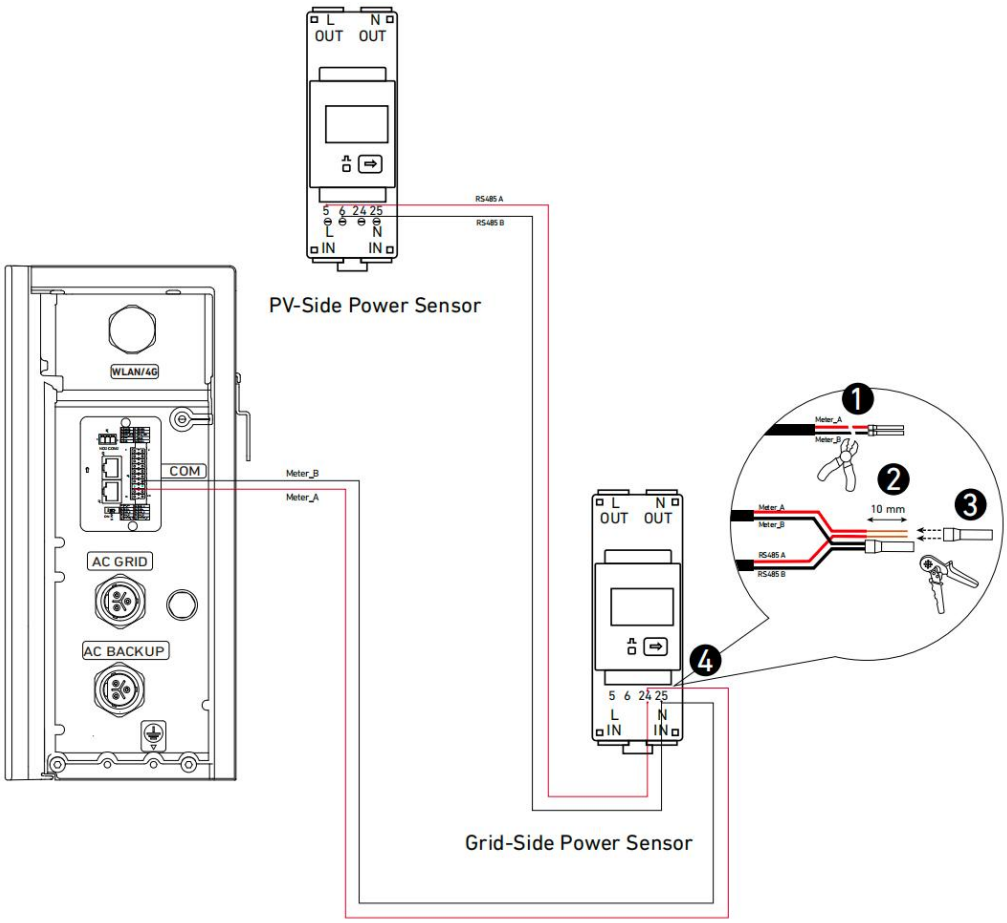
① Cut the tube terminals and strip the insulation layers from the other ends of the Meter_A and Meter_B wires connected to the power module.

② Strip the insulation layers from the other ends of the RS485 A and RS485 B wires connected to the PV-side power sensor.

③ Twist the two RS485 A wires and crimp the tube terminal (15 mm, included) onto the wires. Crimp the two RS485 B wires in the same way.

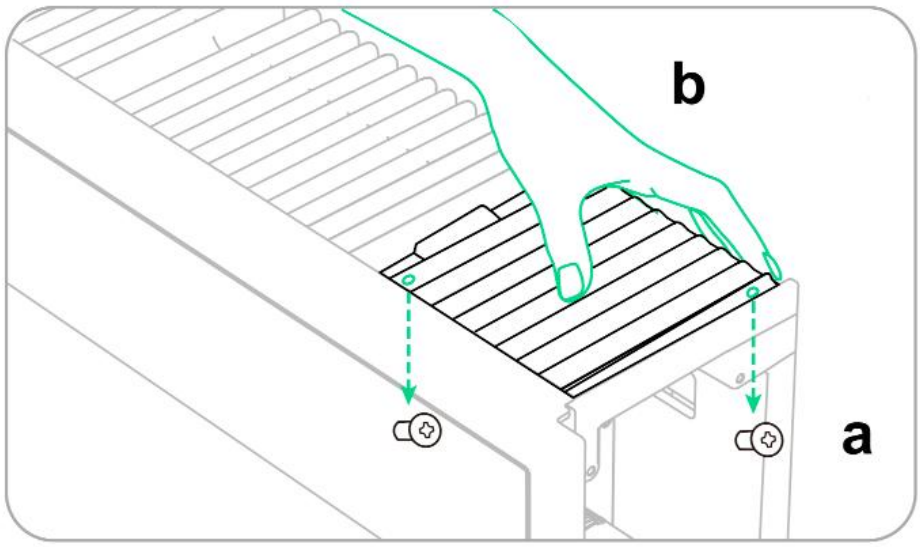
④ Insert the A and B wire tube terminals into the RS485-24-A and RS485-25-B terminals on the grid-side power sensor respectively and tighten the screws.

Figure: Connect signal cables to the grid-side power sensor.

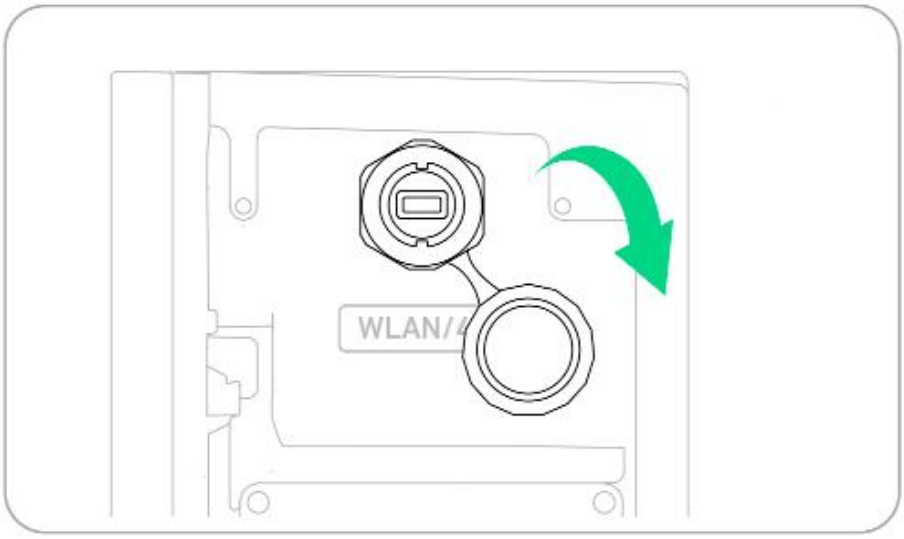



## 6.6 Connect to the Internet

① Remove the panel from the upper right of the power module. Keep the two screws (M3×8 mm) for later reinstallation.



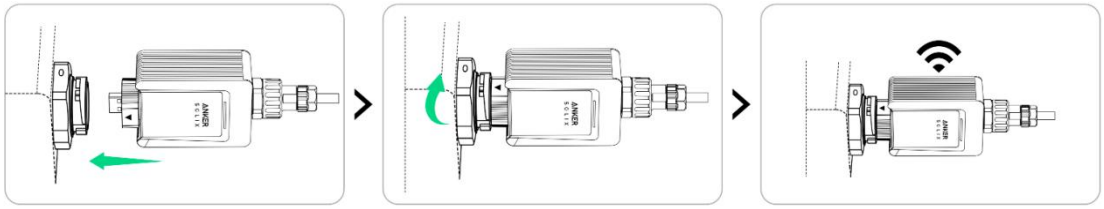
② Open the WLAN/4G port cover on the right side of the power module.




③ Install the appropriate dongle according to the networking methods.

**Option 1: Connect via Wi-Fi.**

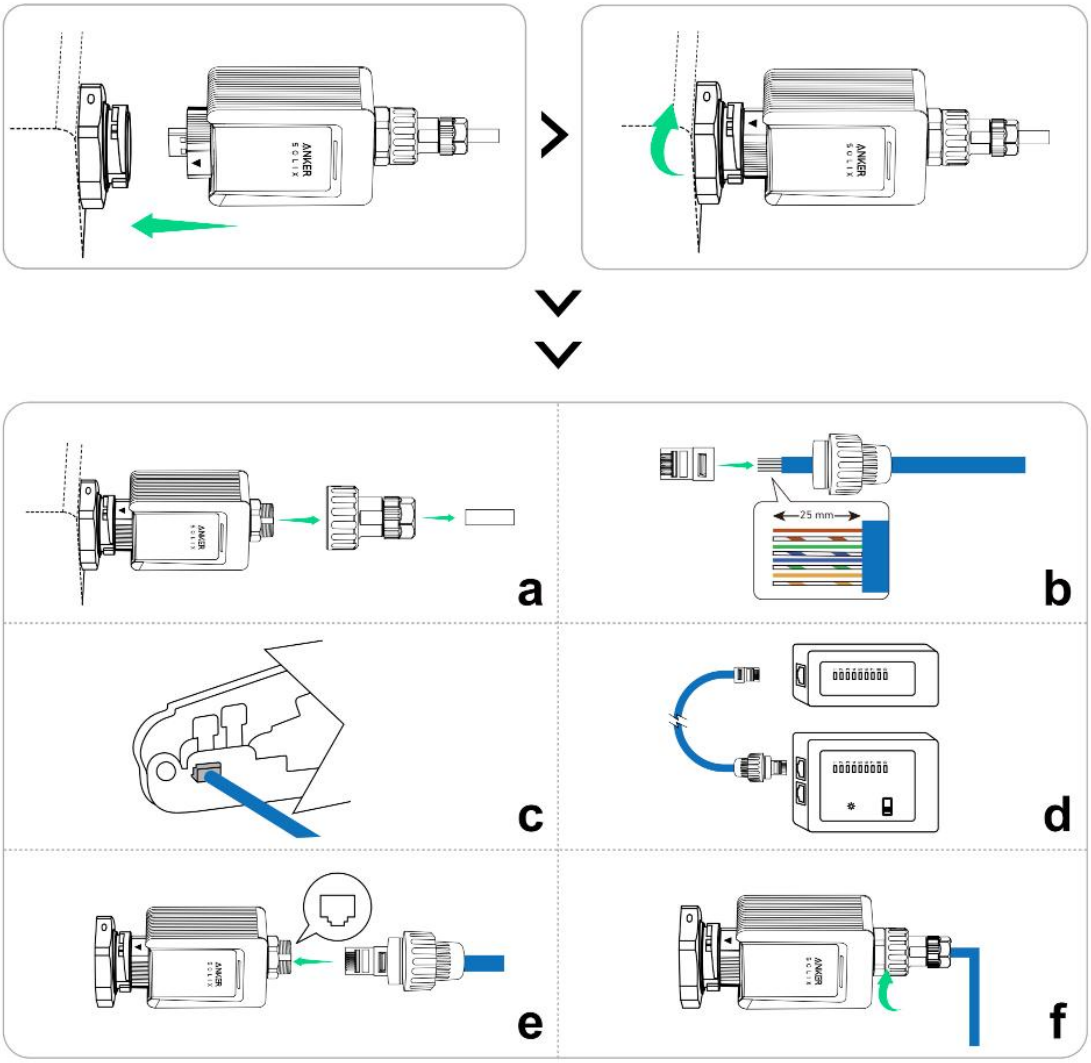
Insert the WLAN dongle (DG-WF-H, included) into the WLAN/4G port.



**Option 2: Connect via Ethernet.**

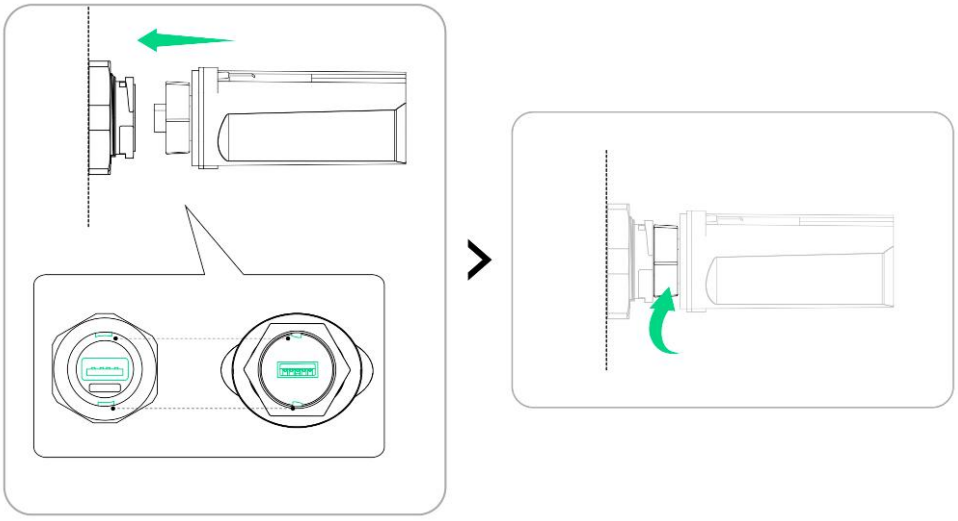
Plug an Ethernet cable (Cat 5 or higher, 5-6 mm in diameter, not included, shielding recommended) into the WLAN dongle (DG-WF-H, included).

| **From Bottom to Top (Clip Faces Away):** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Pin** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **Wire Color** | Orange-White | Orange | Green-White | Blue | Blue-White | Green | Brown-White | Brown |

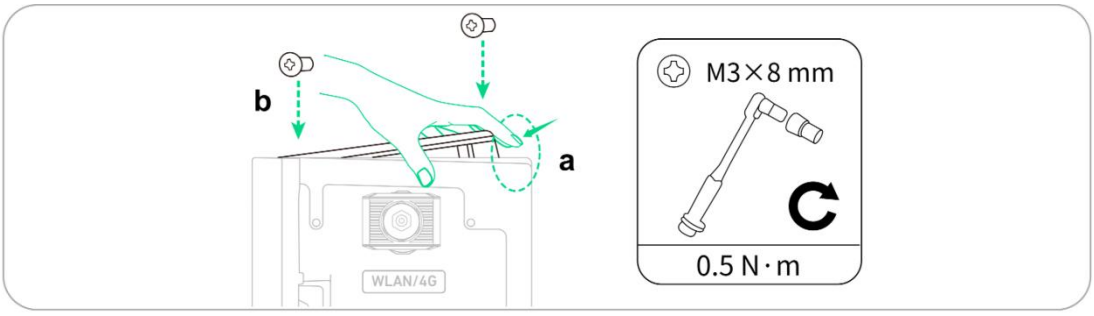



**Option 3: Connect via 4G.**

Insert the Mobile dongle (VCB-5106L6-WB-AK, not included) into the WLAN/4G port.



④ Press the back of the panel to reinstall it, and then tighten the screws (M3×8 mm).




⑤ After installing the dongle, configure the Internet settings in the Anker SOLIX Professional app. For detailed instructions, refer to Step 2: Configure System Network.

## 6.7 Connect to the External RCD

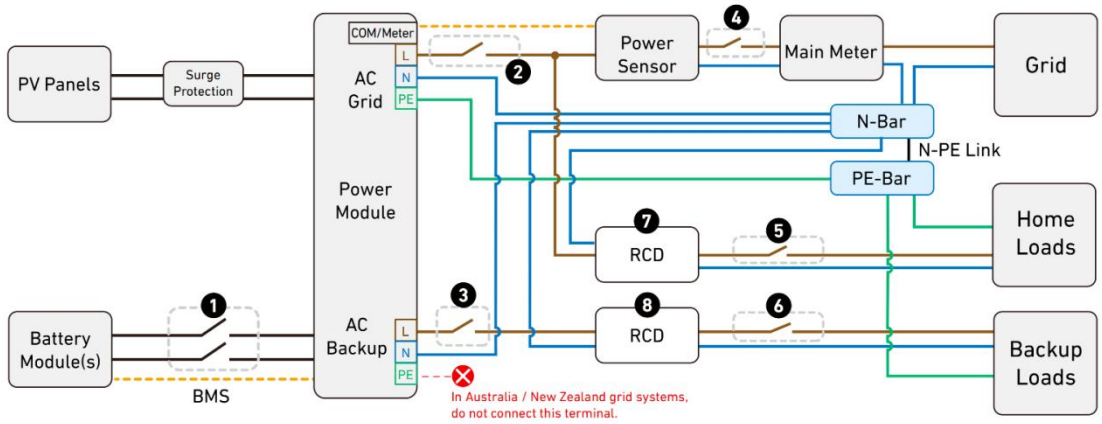
**Residual Current Monitoring Device**

The power module includes an integrated universal current-sensitive residual current monitoring unit. This unit will disconnect the power module from the mains power immediately if a fault current with a value exceeding the limit is detected.

If an external Residual Current Device (RCD) is mandatory, the external RCD must meet the requirements of Type B and triggered at a residual current of 300 mA (recommended), or it can be set to other values according to local regulations. For example, in Australia, the power module can use an additional 30 mA (Type B) RCD in installations.

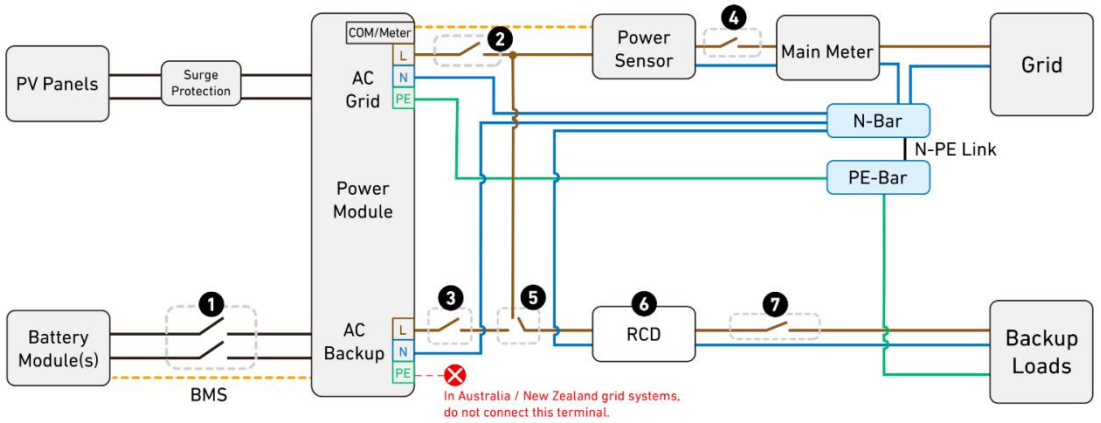
| | |
|---|---|
| **RCD Type** | B |
| **Action Current** | 300 mA |
| **Rated Continuous Current** | ≥ 50 A |
| **Rated Voltage** | L+N+PE ≥ 400 Va.c. |

Figure: Wiring diagram 1 (Australia / New Zealand).




| 1 | 2/3/6 | 4/5 | 7/8 |
|---|---|---|---|
| DC Breaker<br>• 32 A / 1500 V | AC Breaker<br>• Minimum Rated Voltage: 230 Va.c.<br>• Rated Current: Depends on loads, 25 A to 63 A | AC Breaker<br>• Minimum Rated Voltage: 230 Va.c.<br>• Rated Current: Depends on loads | RCD<br>• Action Current: 30 mA |

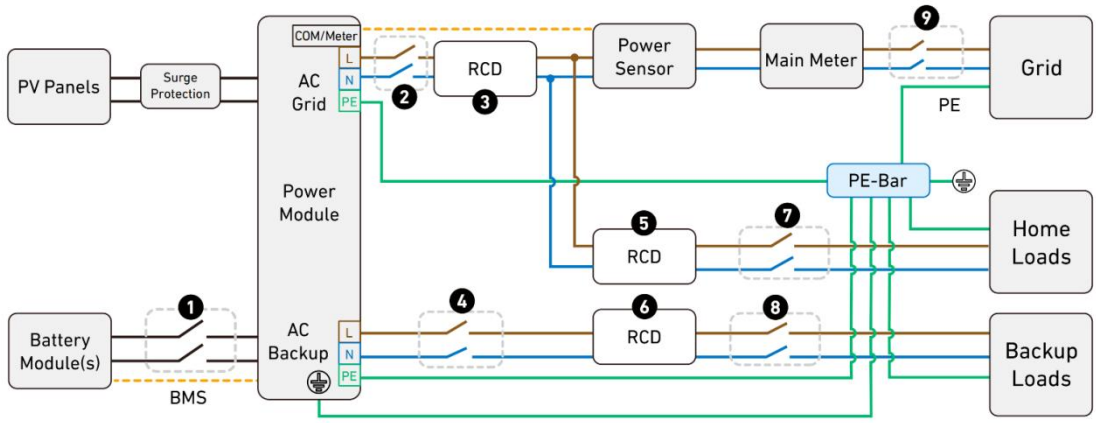
Figure: Wiring diagram 2 (Australia / New Zealand).




| 1 | 2/3 | 4/7 | 5 | 6 |
|---|---|---|---|---|
| DC Breaker<br>• 32 A / 1500 V | AC Breaker<br>• Minimum Rated Voltage: 230 Va.c. | AC Breaker<br>• Minimum Rated Voltage: 230 Va.c. | Manual Changeover Switch<br>• 63 A / | RCD<br>• Action Current: 30 mA |

| | | | | |
|---|---|---|---|---|
| | • Rated Current: Depends on loads, 25 A to 63 A | • Rated Current: Depends on loads | 230 V | |

Figure: Wiring diagram (UK / EU).



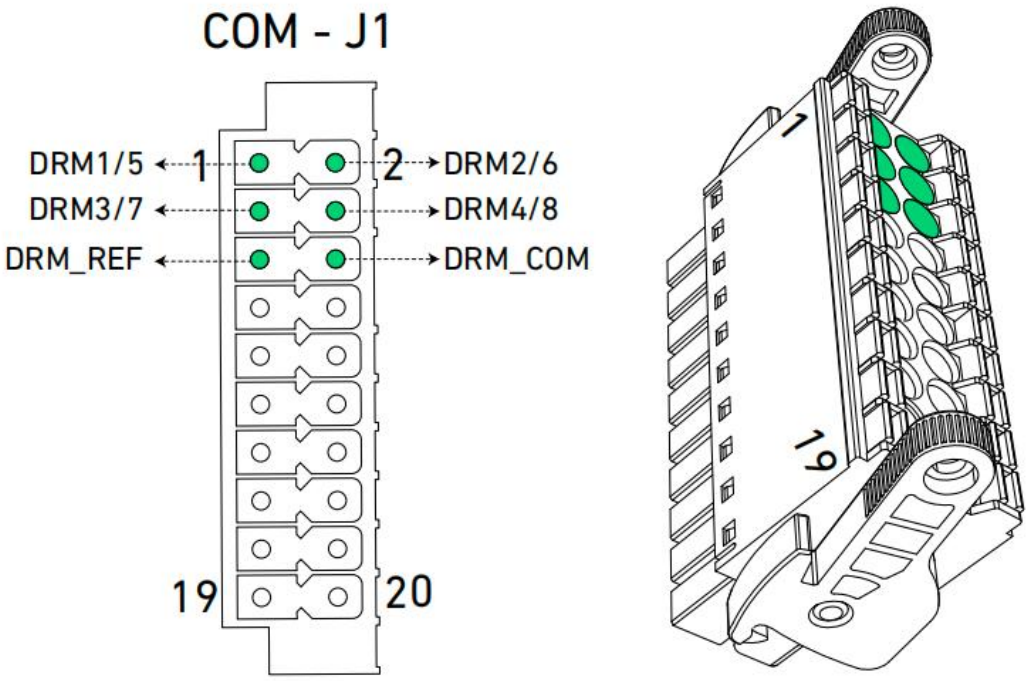

| 1 | 2/4 | 7/8/9 | 3 | 5 6 |
|---|---|---|---|---|
| DC Breaker<br>• 32 A / 1500 V | AC Breaker<br>• Minimum Rated Voltage: 230 Va.c.<br>• Rated Current: Depends on loads, 25 A to 63 A | AC Breaker<br>• Minimum Rated Voltage: 230 Va.c.<br>• Rated Current: Depends on loads | RCD<br>• Action Current: 300 mA | RCD<br>• Action Current: 30 mA |

## 6.8 Connect to the Power Control Device

⚠ Connect the power module to a power control device according to the local standard and requirements for grid stability and remote system control by the grid.

Connect the power module to a power control device using the DRM terminals and the 20-pin terminal block connector (included).

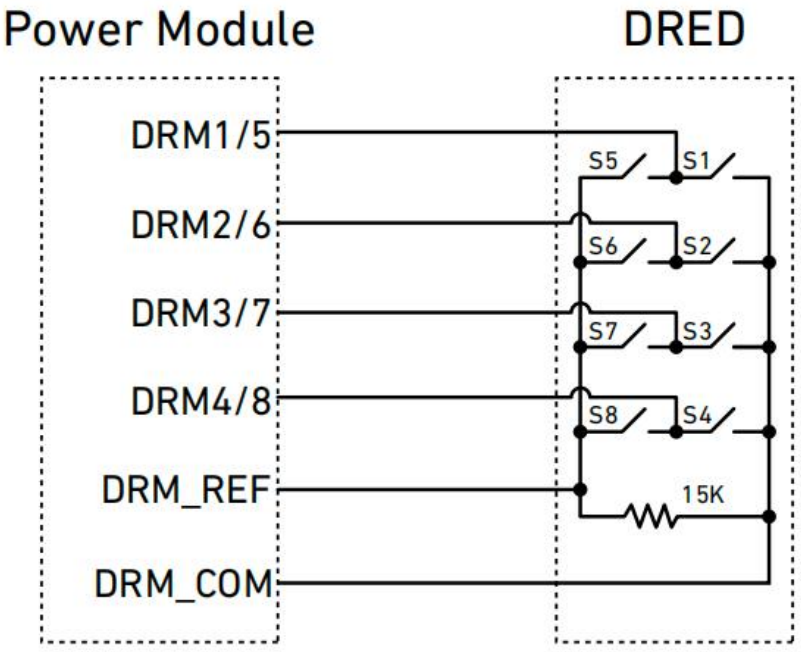
Figure: DRM terminals and the terminal block connector with DRM pins.




Refer to the appropriate wiring diagram and switch table to help connect.

## Demand Response Enabling Device (DRED)

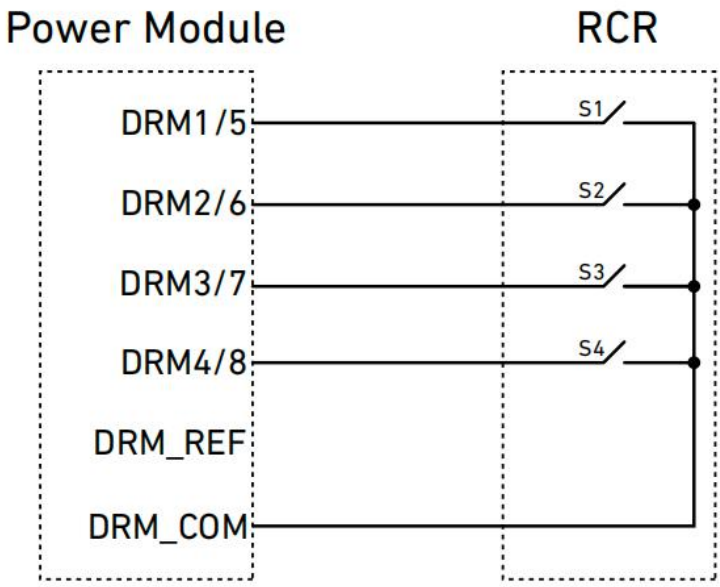
Figure: Connect the power module and the DRED.



| Demand Response Mode | Switch State |
|---|---|
| DRM0 | Close S1 and S5 |
| DRM1 | Close S1 |
| DRM2 | Close S2 |
| DRM3 | Close S3 |
| DRM4 | Close S4 |
| DRM5 | Close S5 |
| DRM6 | Close S6 |
| DRM7 | Close S7 |
| DRM8 | Close S8 |

## Ripple Control Receiver (RCR)

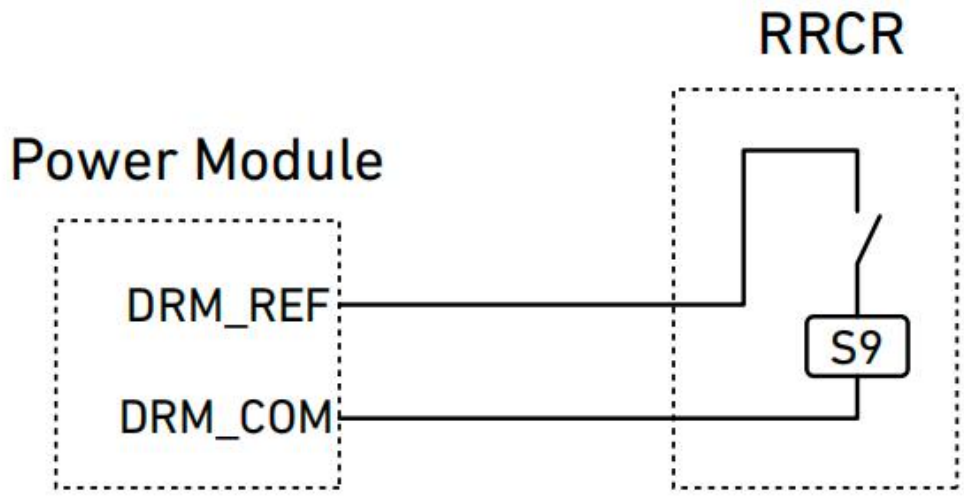
Figure: Connect the power module and the RCR.



| Output Power (in % of the Rated AC Output Power) | Switch State | S1 | S2 | S3 | S4 |
|---|---|---|---|---|---|
| 100% | Close S1 | 1 | 0 | 0 | 0 |
| 60% | Close S2 | 0 | 1 | 0 | 0 |
| 30% | Close S3 | 0 | 0 | 1 | 0 |
| 0% | Close S4 | 0 | 0 | 0 | 1 |

## Radio Ripple Control Receiver (RRCR)

Figure: Connect the power module and the RRCR.




| Terminal | Description | Connected to (RRCR) |
|---|---|---|
| DRM_REF | GND | S9 - Relay 1 output |
| DRM_COM | Relay contact 1 input | S9 - Relay 1 output |

| DRM_COM | Active Power | Power Drop Rate | Cos(ψ) |
|---|---|---|---|
| 1 (close) | 100% | / | 1 |
| 0 (open) | 0% | ＜5s | 1 |

## 6.9 Connect to the Heat Pump

Connect to an SG-ready heat pump to convert excess solar energy into thermal energy.

① Prepare the cables along with the tube terminals and terminal block connectors as specified below.

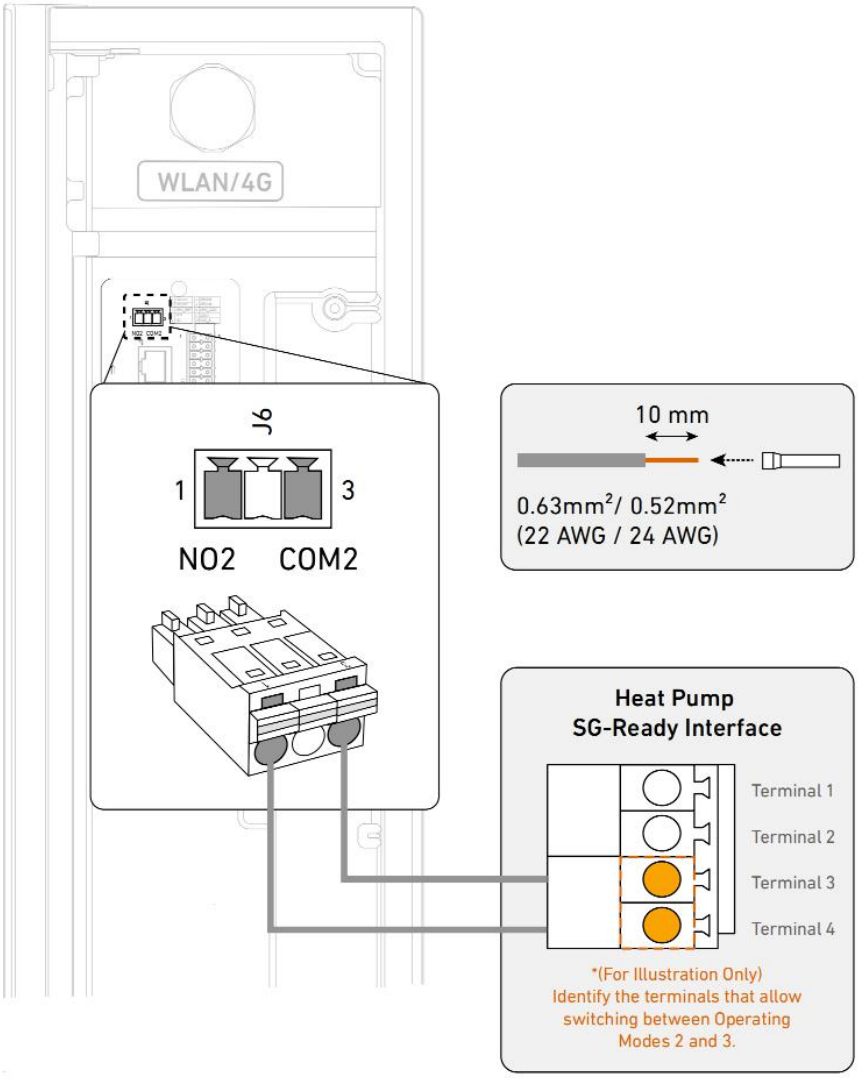
| Terminal | Cable | Strip Length | Tube Terminal | Terminal Block Connector | Maximum Length |
|---|---|---|---|---|---|
| NO2 | Recommended: 0.63 mm² (22 AWG), not included<br>*Optional: 0.52 mm² (24 AWG), not included | 10 mm | For 0.63 mm² (22 AWG) cables, included | 3-pin, included | 20 m |
| COM2 | | | | | |

② Check the heat pump manual to determine which terminals control mode switching. They should enable the heat pump to switch between Operating Modes 2 and 3.

| SG-Ready Heat Pump | |
|---|---|
| **Operating Mode 2** | The heat pump operates in standard mode. |
| **Operating Mode 3** | The heat pump operates in a mode that boosts the heating temperature. |

③ Connect the designated terminals on the heat pump to the NO2 and COM2 terminals on the power module.

Figure: Connect to the heat pump.



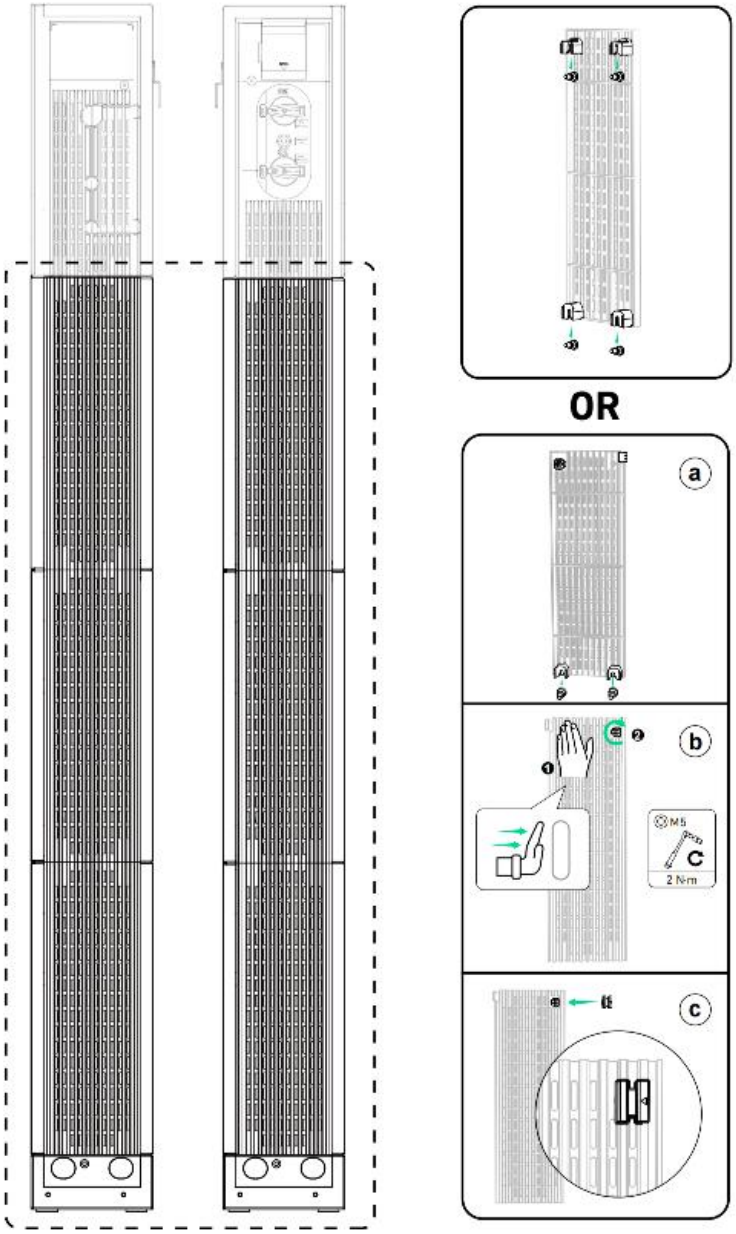

- Once the electrical connections are completed, the heat pump must be configured either by the installer using the Anker SOLIX Professional app or by the user using the Anker app.
- To set up the heat pump in the Anker SOLIX Professional app, refer to Step 3: Configure External Device.

## 6.10 Attach Side Covers and Baffles

1. Install the side covers* to the battery modules from the bottom up.

*The side covers may vary due to batch variations.

Figure: Install the side covers to the battery modules.



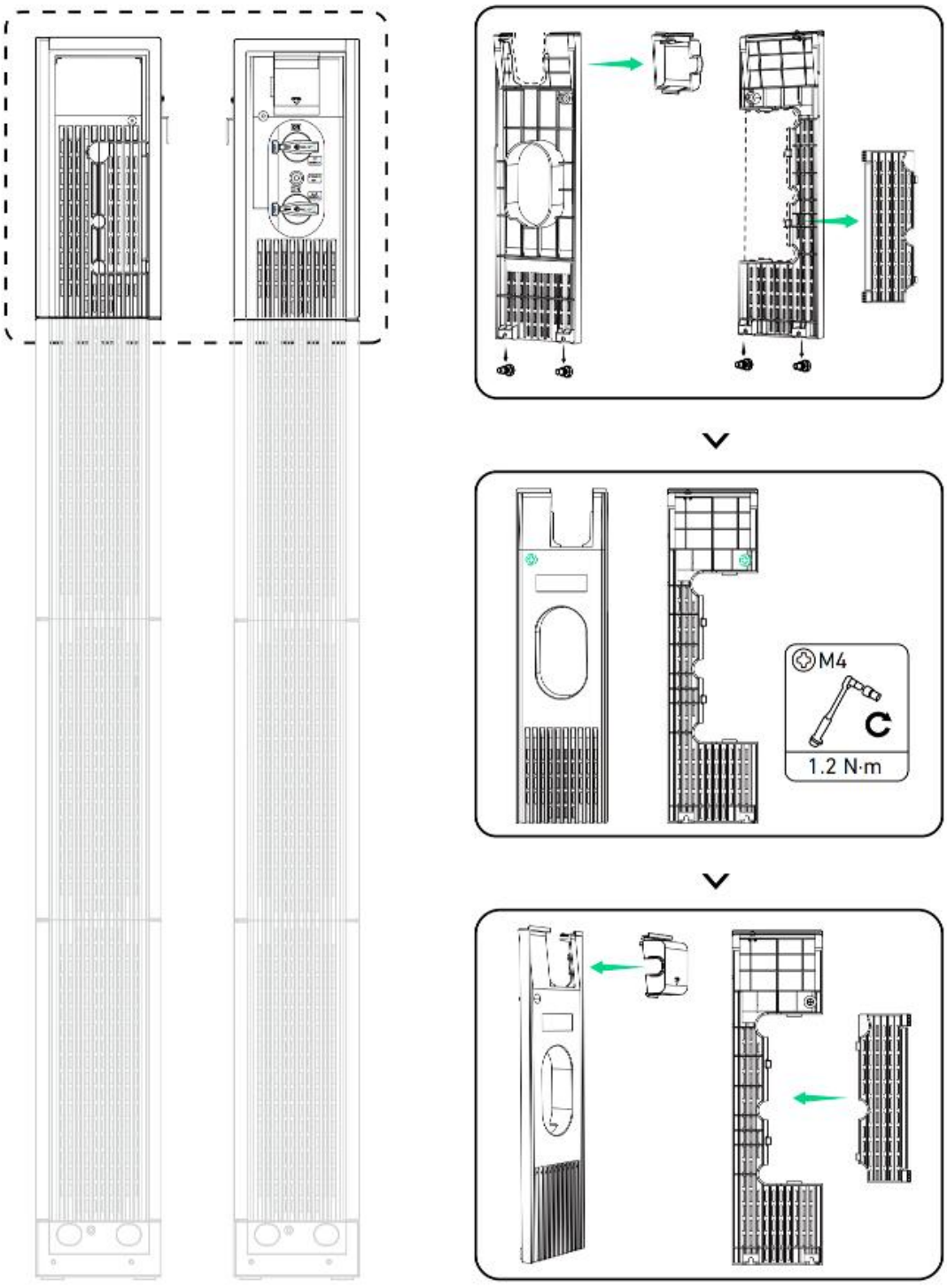

2. Install the side covers to the power module.

① Remove the left-side and right-side wire covers from the side covers. Align the side cover notches with the protruding parts of the power module, and push the covers down to click in place.

② Fasten the captive screws (M4) on the top of both side covers.

③ Attach the wire covers to the slots of the side covers.

Figure: Install the side covers to the power module.

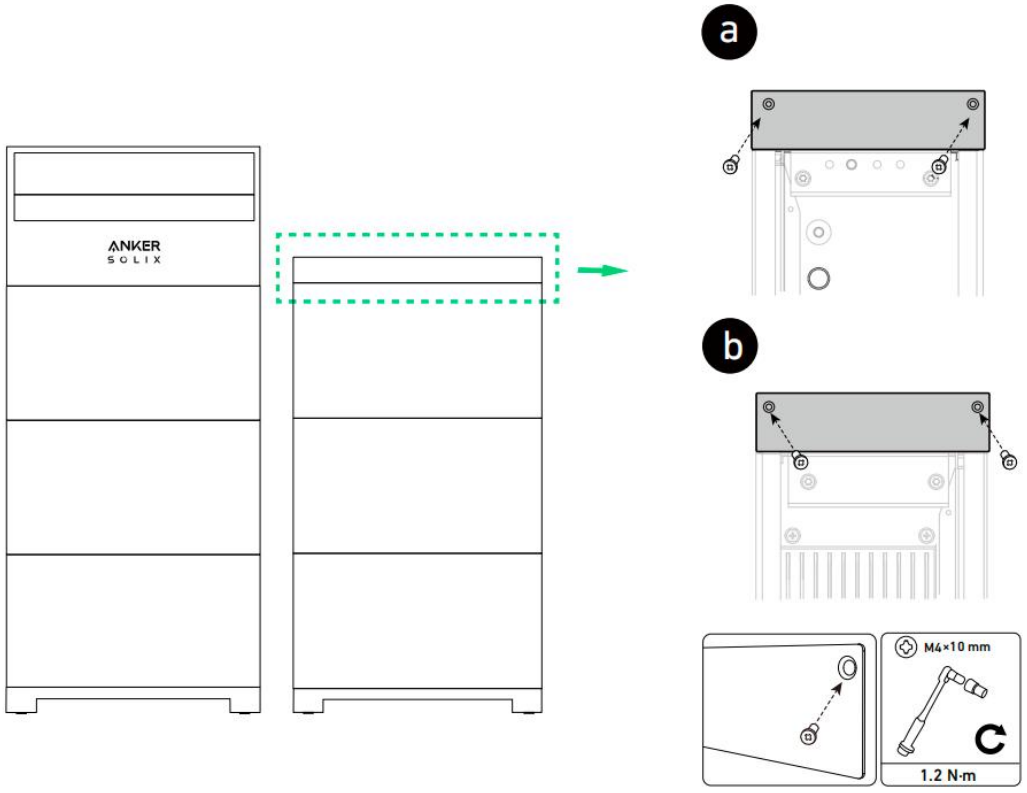


3. Attach the baffles to the modules.

If you are installing two columns of modules, attach the baffles for a clean aesthetic.

① Attach the top cover baffles to the top battery module in the second column. Make sure the baffle side with the countersunk holes face outward and tighten the screws.

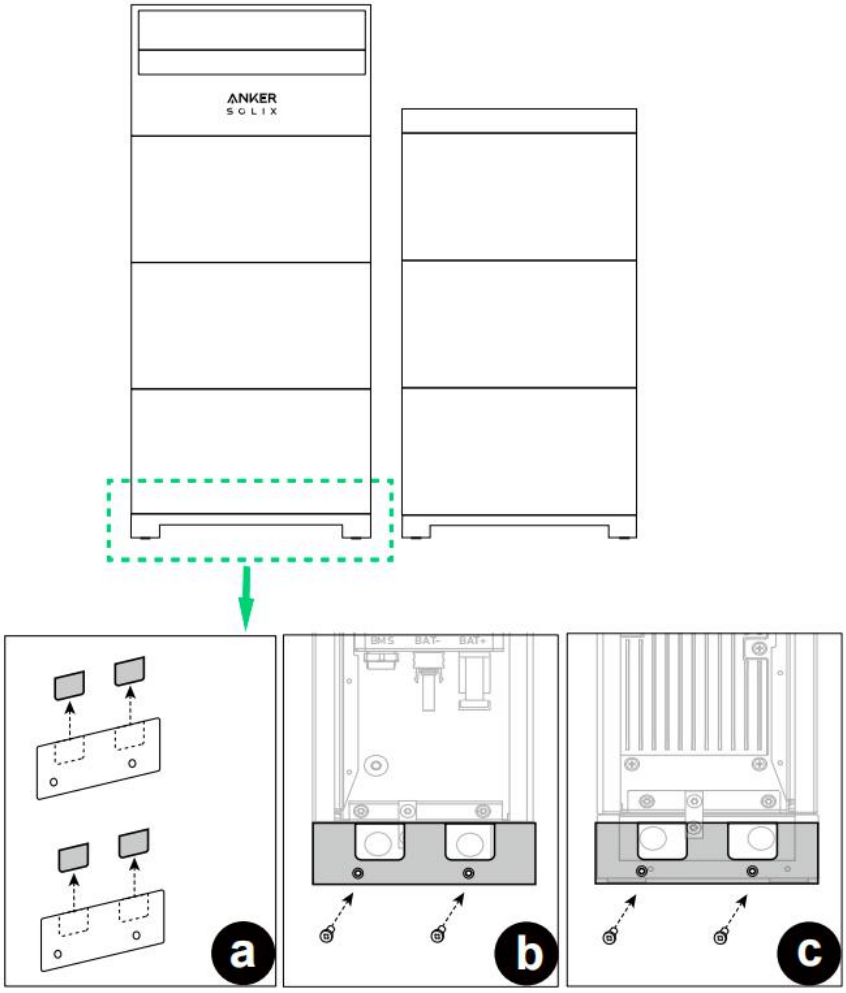
Figure: Attach the top cover baffles to the top battery module in the second column.




② Attach the base baffles to the battery module base in the first column. Make sure the baffle side with the countersunk holes face outward and tighten the screws.

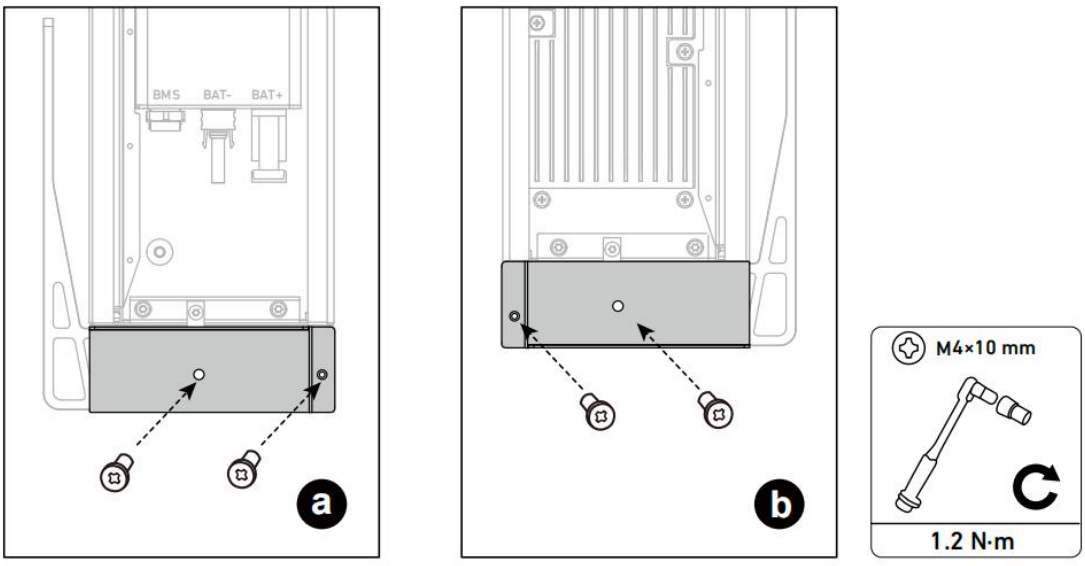
**Floor-Mounted Modules**

Figure: Attach the base baffles to battery module base in the first column.




**Wall-Mounted Modules**

Figure: Attach the base baffles to battery module base in the first column.



# 7. Commissioning

## 7.1 Verify Hardware Installation

| Item | Acceptance Criteria |
| --- | --- |
| Installation | • The installation is correct and reliable.<br>• The installation space is proper, and the installation environment is clean and tidy. |
| Cable routing | • The DC power cables, grounding cables, and signal cables are connected correctly, securely, and reliably.<br>• Cables are routed properly. |
| Terminals and ports | • Unused terminals and ports are locked by waterproof or dustproof caps. |
| Switch | • The BAT switch and the PV switch are OFF.<br>• All switches connected to the energy storage system are OFF. |

## 7.2 Power On the System

Power on the system before commissioning in the Anker SOLIX Professional app.

1. Toggle the BAT switch of the power module to ON.
2. Close the circuit breaker between the power module and the grid.
3. Toggle the PV switch of the power module to ON.

## 7.3 Use the Anker SOLIX Professional App

The UI images shown are for illustration only and may not match the actual display, which can vary depending on the software version.

### Download and Install the App

The Anker SOLIX Professional app will guide you through the commissioning process.

1. Download the Anker SOLIX Professional app from the App Store (iOS devices) or Google Play (Android devices), or by scanning the QR code.

2. Log into the app using the installer's account. Please check your email to get the account name and initial password.

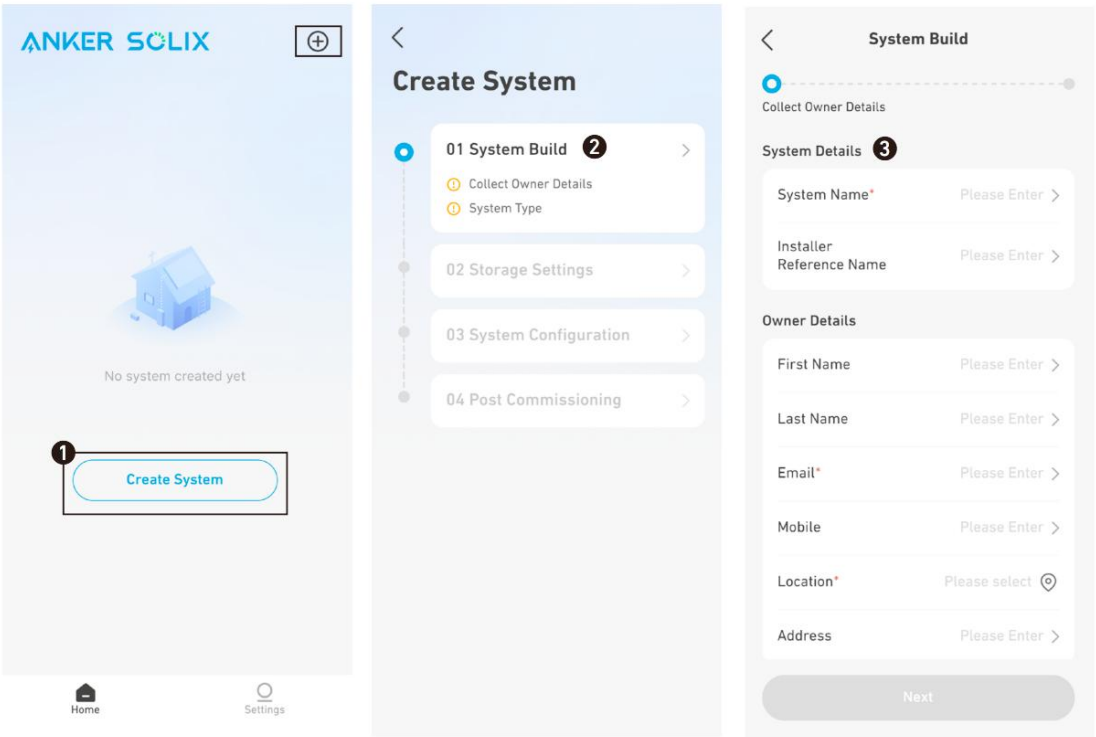
# Build System

## Step 1: Collect Owner Details

① On the Home screen, tap **Create System** or the plus icon on the top right.

② Go to **System Build**.

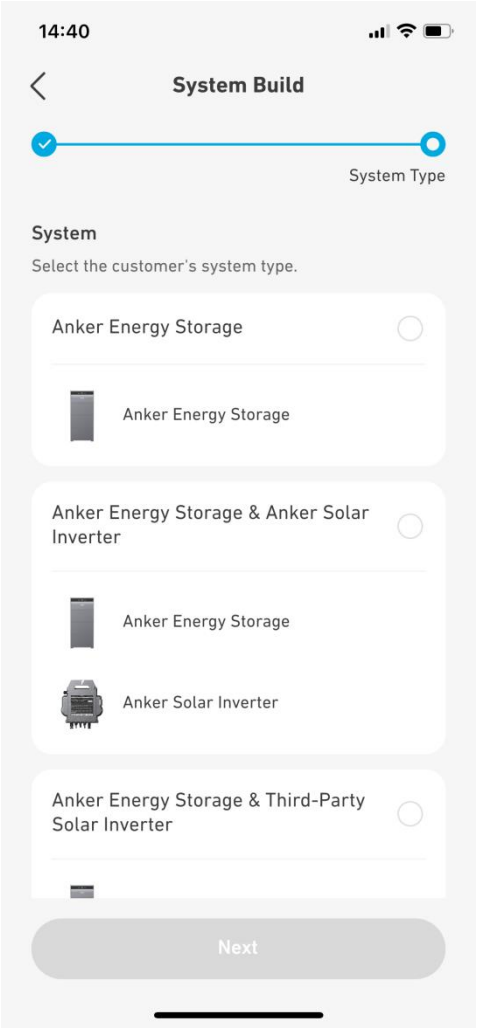
③ Input the system and owner information.



## Step 2: Select System Type

Select the appropriate system type.

| System Type | Does System Include Solar Inverter | Inverter Brand |
| --- | --- | --- |
| Anker Energy Storage | No | / |
| Anker Energy Storage & Anker Solar Inverter | Yes | Anker SOLIX |
| Anker Energy Storage & Third-Party Solar Inverter | Yes | Others |



# Configure Storage

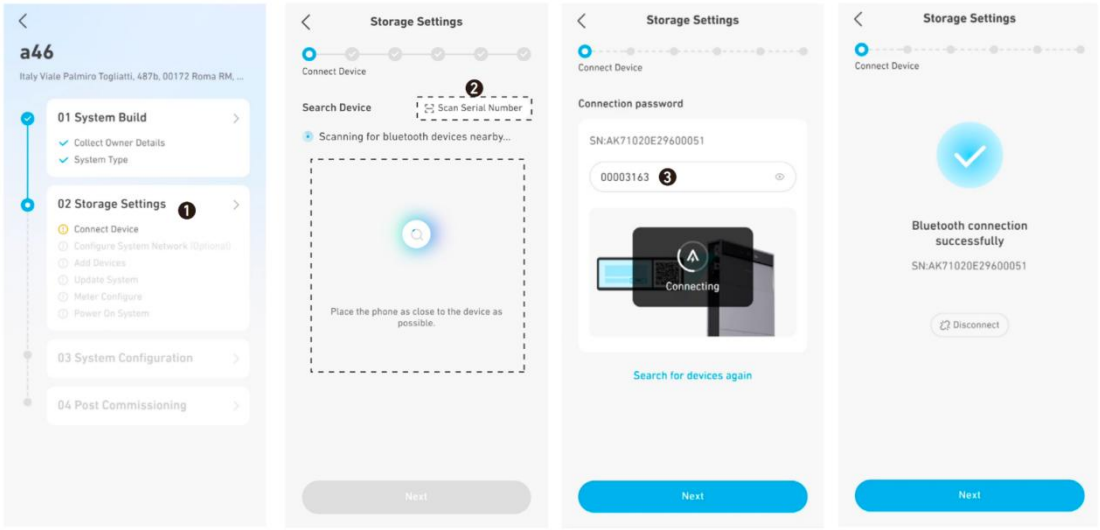
## Step 1: Connect Device

Connect the power module to the Anker SOLIX Professional app via Bluetooth.

① Go to **Storage Settings**.

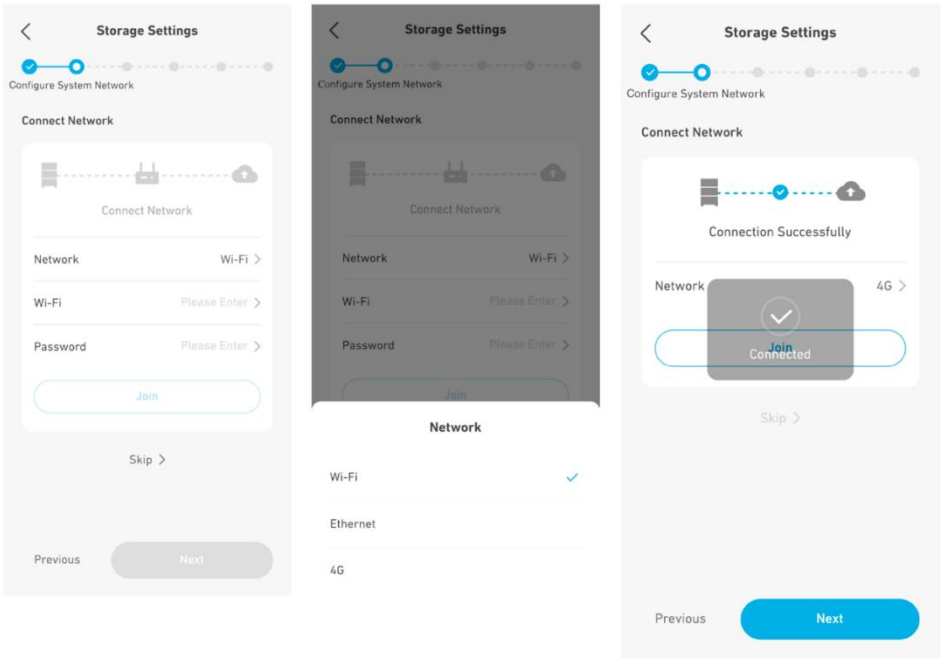
② Select the power module from the Bluetooth device list or scan the barcode on the power module's label.

③ Enter the password located below the barcode.




## Step 2: Configure System Network

Configure the Internet connection using Wi-Fi, Ethernet, or 4G.

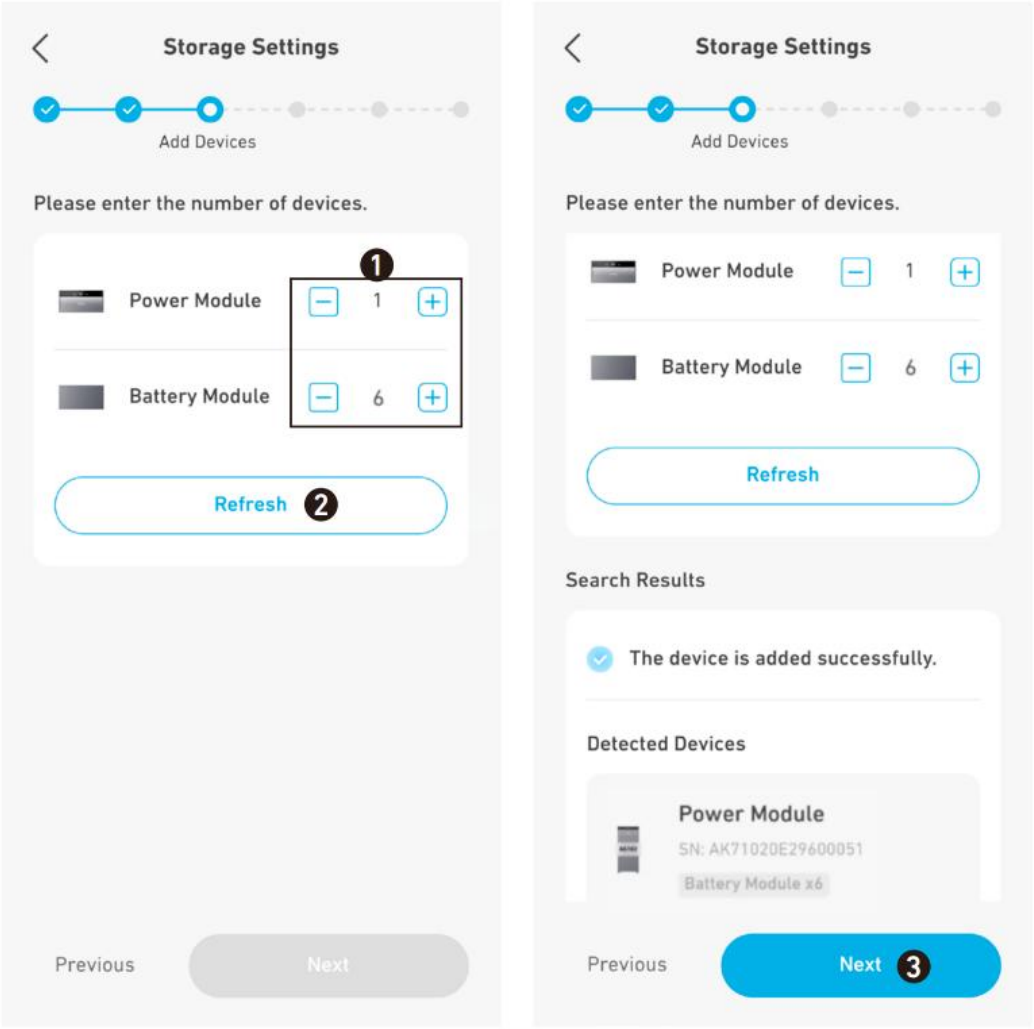


## Step 3: Add Devices

① Manually input the numbers of the power modules and battery modules.

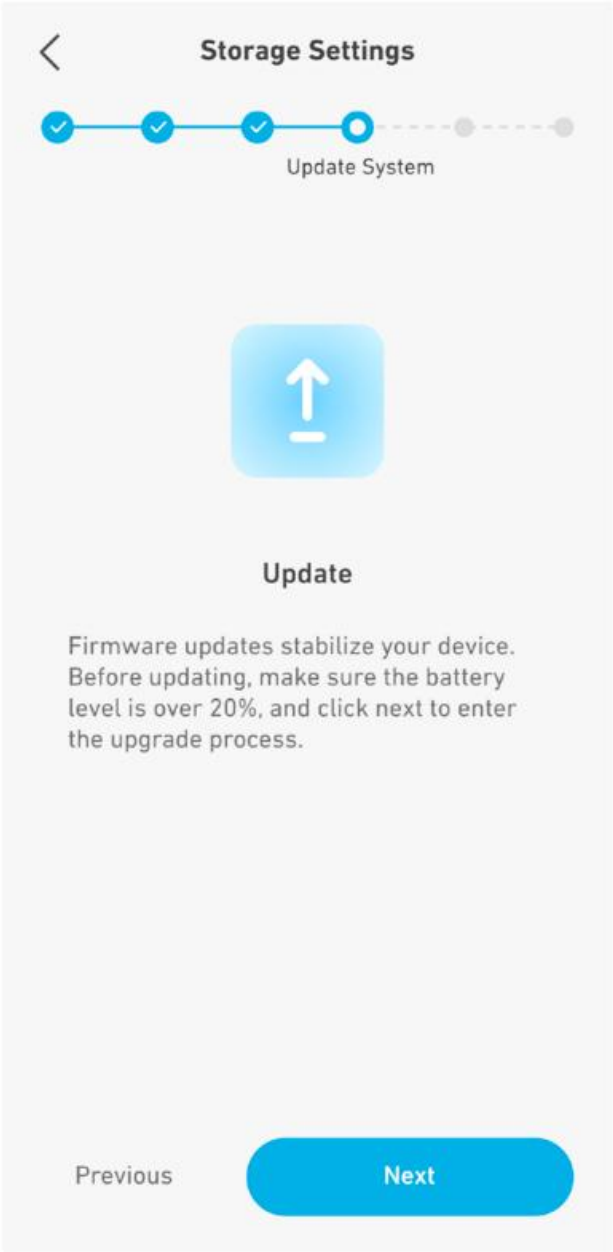
② Tap **Refresh** to search for the devices automatically.

③ Select **Next** to move on when you see the message "The device is added successfully." If the detected numbers do not match the input numbers, change the input numbers and tap **Refresh** again.



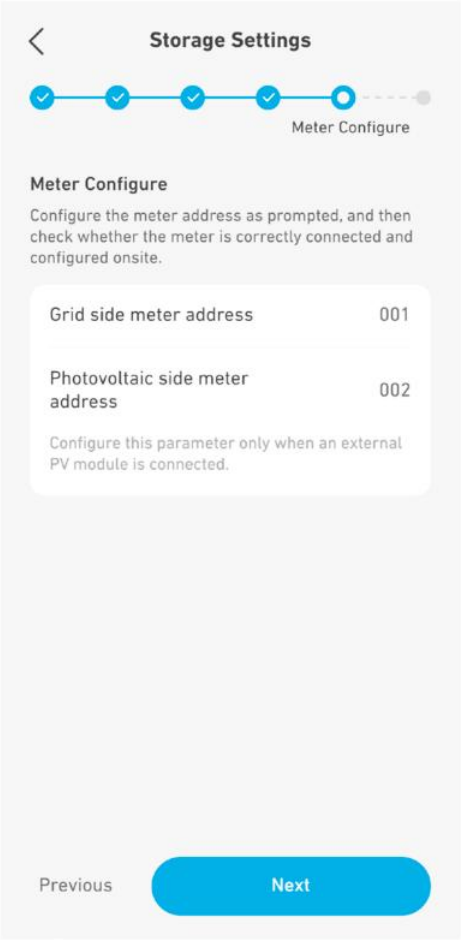
## Step 4: Update Firmware

Update the firmware to the latest version.



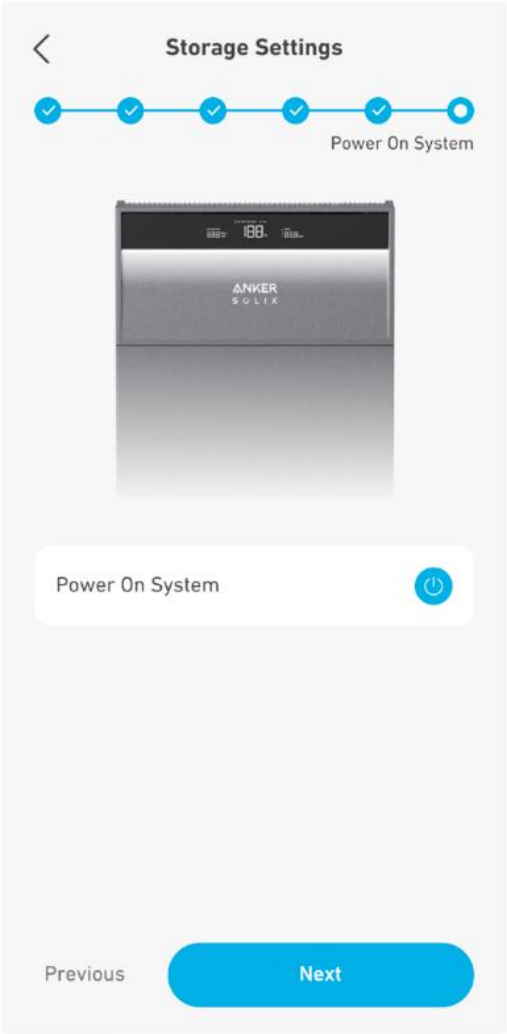
## Step 5: Configure Meter

Configure the meter address, and then check whether the meters are correctly connected and configured onsite.




## Step 6: Power On System

Tap to power on the system, and tap **Next**. If the system is already on, tap **Next** directly.




## Configure System

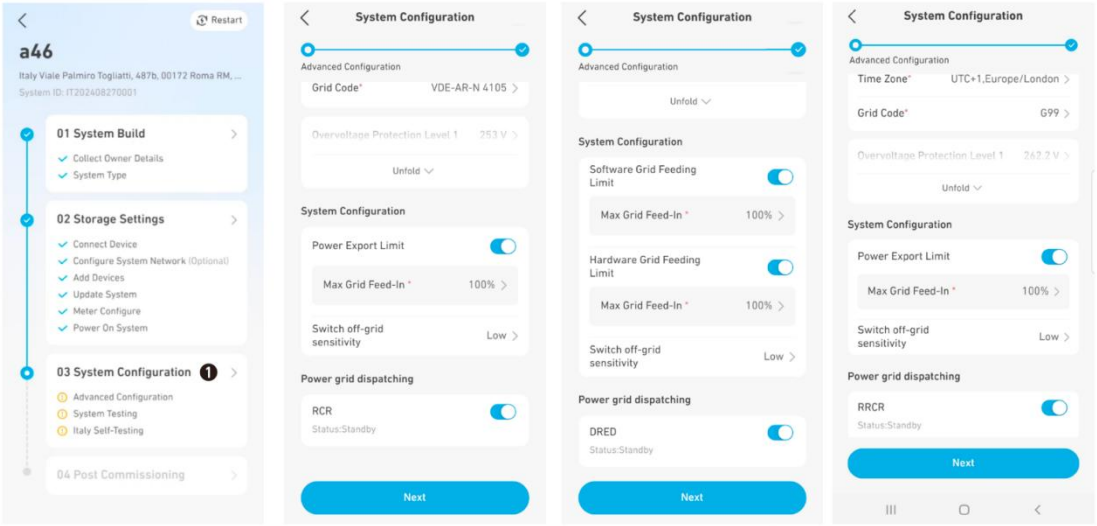
### Step 1: Advanced Configuration

Tap **System Configuration** and complete the settings.

| | |
|---|---|
| **Grid Connection Setup** | **Time Zone**: Set the local time zone. |
| | **Grid Code**: Select the grid code of the country or region where the power module is used.<br>(Australia) When the time zone is set to Australia, select the applicable grid code. Please contact your electricity grid operator for which region to use.<br>• AS-NZS 4777.2_A: Australia A<br>• AS-NZS 4777.2_B: Australia B |

| | |
|---|---|
| | • AS-NZS 4777.2_C: Australia C<br>• AS-NZS 4777.2_NZ: Australia and New Zealand |
| **Overvoltage and Undervoltage Protection** | Specify thresholds and duration for level-1 and level-2 voltage protection. |
| **System Configuration** | (United Kingdom / European Union)<br>**Power Export Limit**: When the PV and energy storage system produces power more power than the loads can consume, reverse current may feed into the grid. To avoid this, enable the power export limit and enter the maximum grid feed-in value.<br><br>(Australia)<br>**Soft Grid Feeding Limit**:<br>When the feed-in power reaches the set limit, the system will continue feeding at the set limit.<br>Set the feed-in power limit as a percentage of the system rating. For example, if the system rating is 6 kW and the percentage is set to 20%, the feed-in power limit is 6 x 20% = 1.2 kW. When the feed-in power reaches 1.2 kW, the system will continuously feed power to the grid at 1.2 kW.<br><br>**Hard Grid Feeding Limit**:<br>When the feed-in power reaches the set limit, the system will stop feeding and go off-grid.<br>Set the feed-in power limit as a percentage of the system rating. For example, if the system rating is 6 kW and the percentage is set to 20%, the feed-in power limit is 6 x 20% = 1.2 kW. When the feed-in power reaches 1.2 kW, the system will stop feeding power to the grid and go off-grid. |
| | **Switch Off-Grid Sensitivity**: Set the sensitivity level for switching between On-Grid and Off-Grid modes.<br>• Select **High** (default) for optimal user experience. It takes no more than 10 ms for the system to switch between On-Grid and Off-Grid modes. During this process, the loads operate normally.<br>• Select **Low** when performing Low Voltage Ride-Through (LVRT) or High Voltage Ride-Through (HVRT) detection according to local codes. It takes several seconds for the system to switch |

| | |
|---|---|
| | between On-Grid and Off-Grid modes. During this process, the backup loads will turn off. They need to be manually turned on when the system goes on-grid. |
| **Power Grid Dispatching** | This feature enables the flow of electricity between the system and the grid, allowing for both import and export. The toggle switch is off by default. Turn it on if the power module is connected to the appropriate power control device. The power control device may vary by country.<br>• RCR (Germany)<br>• DRED (Australia)<br>• RRCR (United Kingdom) |




## Step 2: Perform System Test

① Select **Start** to perform the system test.

② If system testing is successful, tap **Next** to proceed. If system testing fails, follow the on-screen troubleshooting instructions and tap **Retry**.

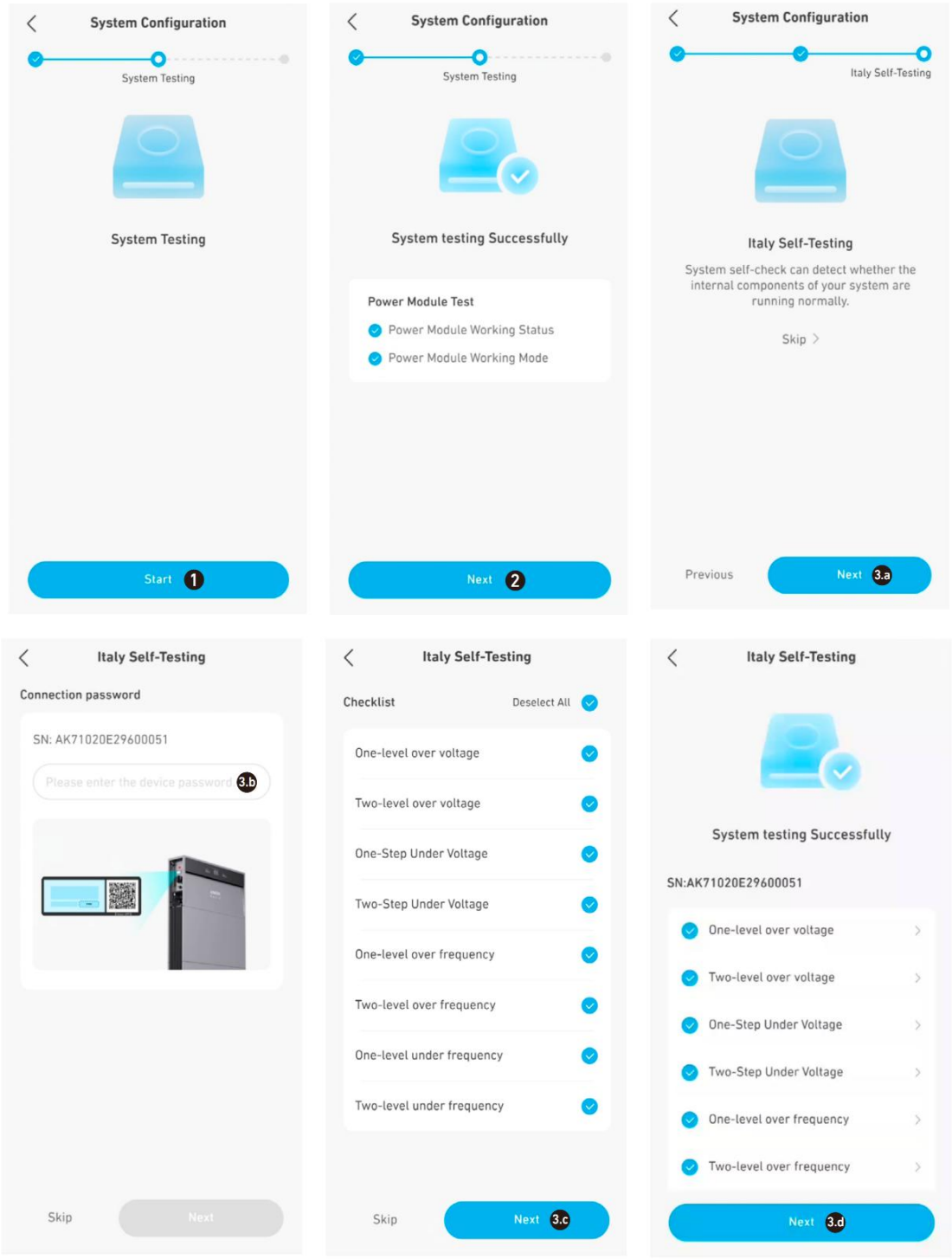
③ Perform Italy self-testing (Italy only).

a. Tap **Next** to start Italy self-testing.

b. Enter the password located below the power module's barcode.

c. Select the items to be tested.

d. Tap **Next** to proceed only when all the selected items pass. If any self-test item fails, check and retest the failed item.



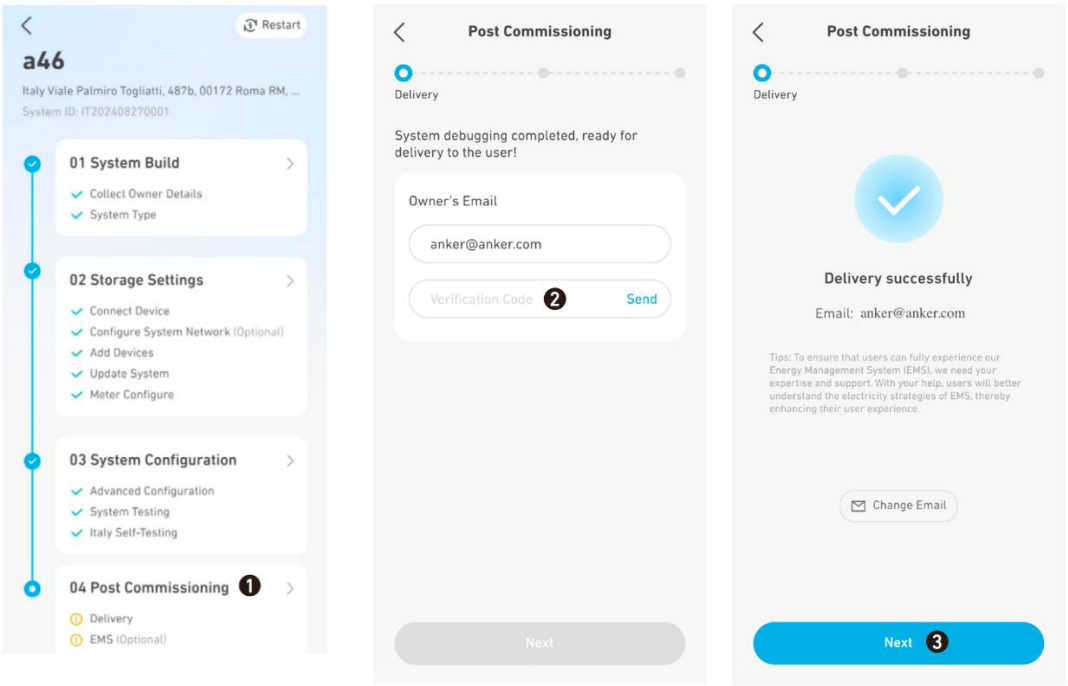

# Post Commissioning

## Step 1: Delivery

① Tap **Post Commissioning**.

② Enter the owner's e-mail and the verification code.

③ The owner account is created once you see the prompt "Delivery successful." Tap **Next** to proceed.




## Step 2: Energy Management

① Choose one work mode from the following.

- **Self-Consumption:** Maximize the use of solar power and reduce grid power consumption.

  Note: This mode requires a PV system.

- **Time of Use:** The battery will charge when electricity prices are low and discharge when they're high.

- **Off-Grid:** Power your home with solar power and stored battery energy when the grid goes down.

  Note: Anker SOLIX X1's off-grid mode is incompatible with the Sunlight Backup mode of the Enphase microinverter. Disable Sunlight Backup mode before using Anker SOLIX X1 off-grid.

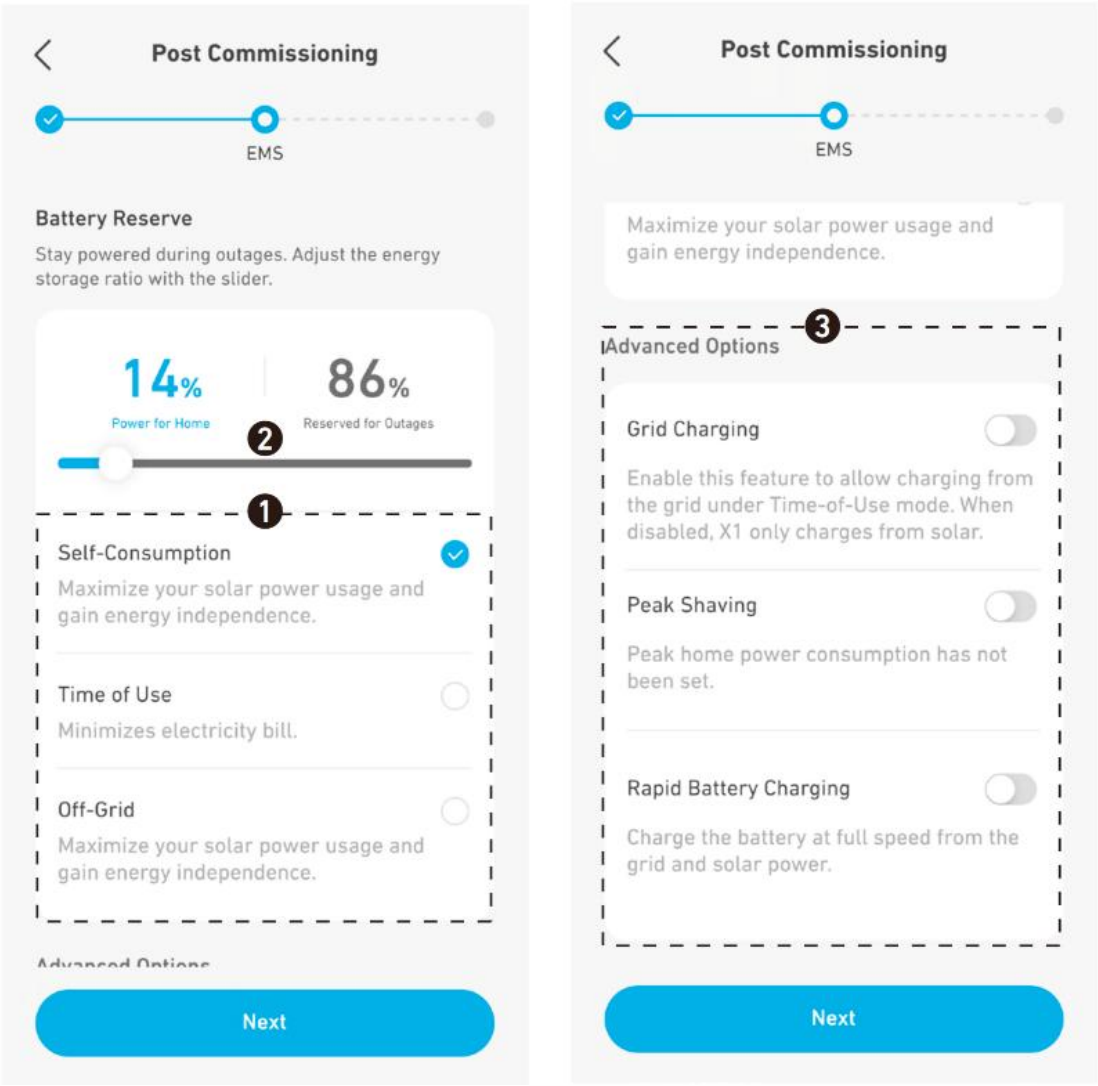
② Set backup reserve by adjusting the slider.

- To allow more capacity for the **Self-Consumption** mode or **Time of Use** mode, set a lower reserve percentage.

- To reserve more energy for outages or if they are frequent in the user's area, set a higher reserve percentage.

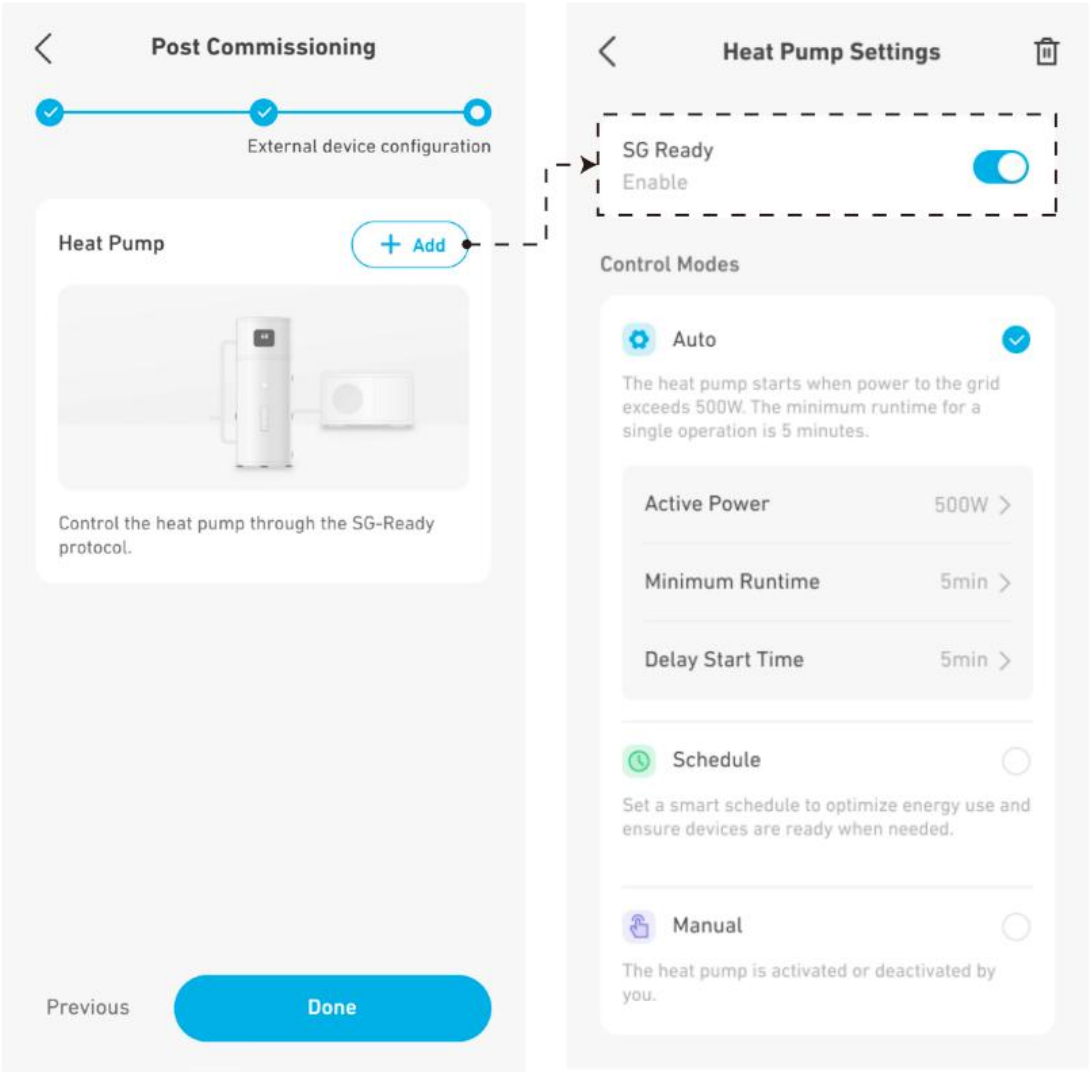
③ Select advanced options.

- **Grid Charging:** Turn on to charge battery modules from the grid. Turn off to charge battery modules only from solar power.
- **Peak Shaving:** Set the peak power to prevent tripping or an increase in grid charges (in some areas).
- **Rapid Battery Charging**: Charge the battery modules at full speed using both grid and solar power.



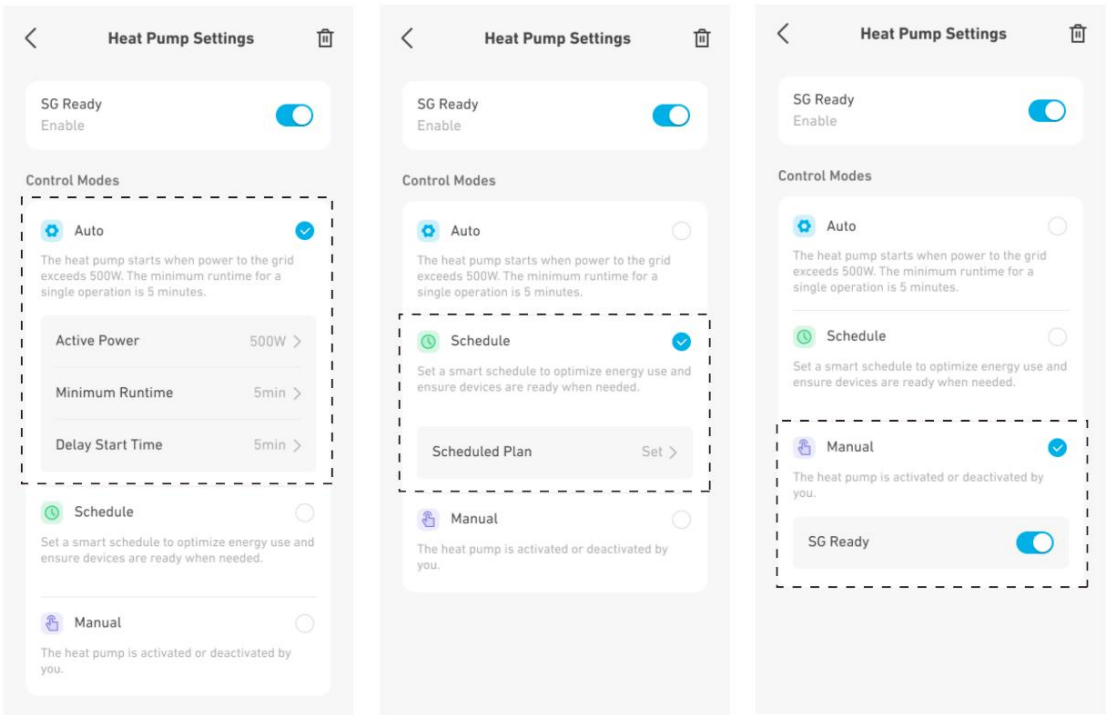

## Step 3: Configure External Device

① If necessary, add the heat pump to the system and enable the heat pump function.




② Select a control mode from the options below.

- **Auto Mode**: The heat pump starts up when the solar power supplied to the grid exceeds the rated power of the heat pump.
  - Active Power: Enter the rated power of the heat pump.
  - Minimum Runtime: Set the minimum ON duration of the heat pump to avoid rapid ON/OFF cycles.
  - Delay Start Time: Set the minimum OFF duration of the heat pump to avoid rapid ON/OFF cycles.
- **Schedule Mode**: The heat pump operates according to a predefined schedule. You can customize up to four time periods for weekdays and weekends respectively.
- **Manual Mode**: Enable this mode to manually turn the heat pump on or off.

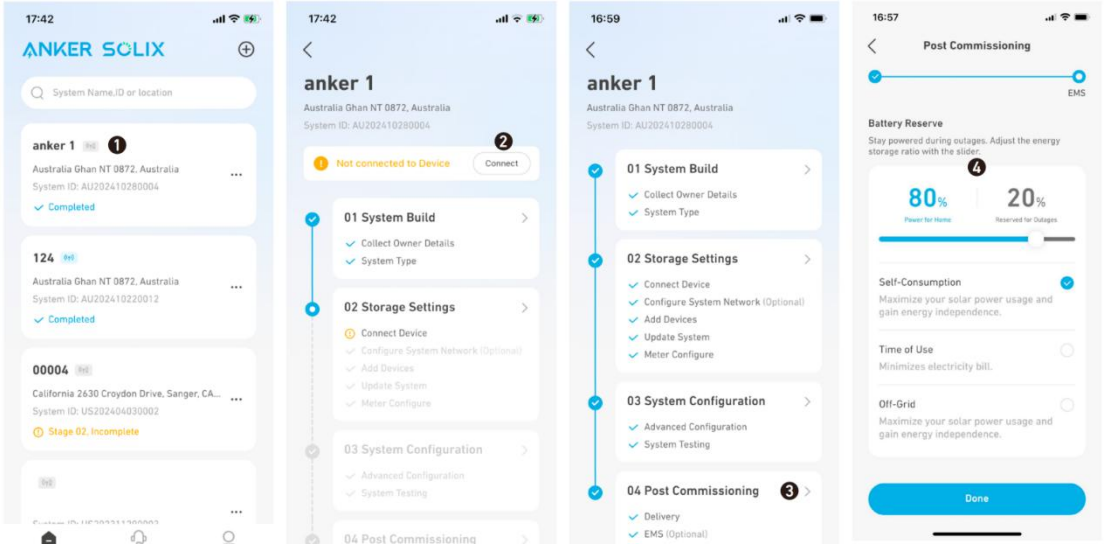



# Manage System

## View and Modify System Settings

To view and modify system settings after commissioning, follow these steps:

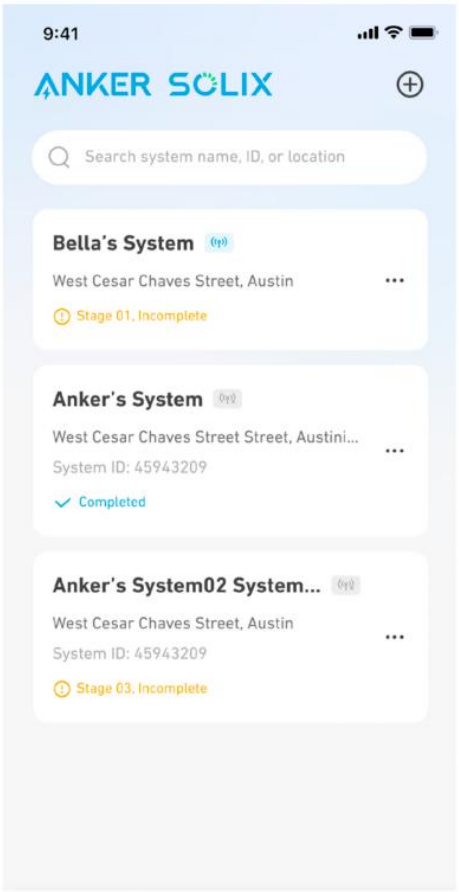
1. Tap the system name from the list on the home screen.
2. If the power module is disconnected from the app, reconnect via Bluetooth. Enter the password located under the power module's barcode.
3. Select the items you want to view or modify.
4. Make the necessary changes to the system settings.



## Check Commissioning Status

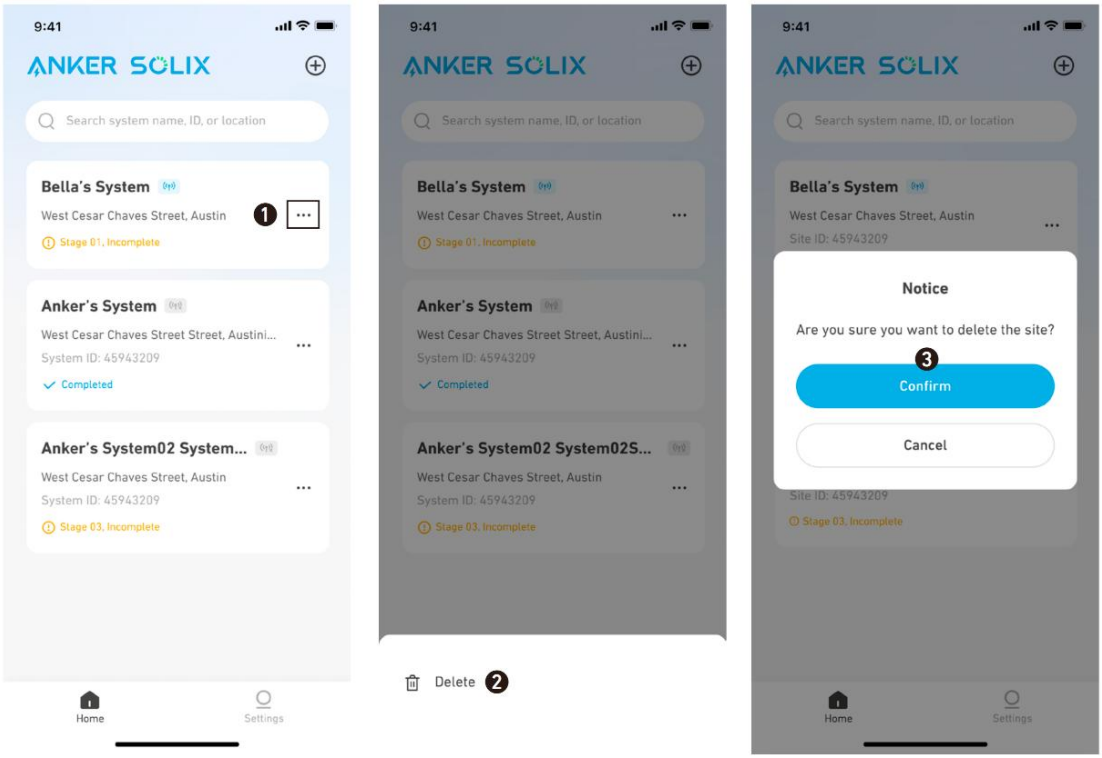
Check the commissioning status under the system name on the home screen.

- **Incomplete**: Tap the corresponding system name to continue with the commissioning process.
- **Completed**: The system commissioning has been completed.




## Delete System

If necessary, delete a system that has not completed commissioning.

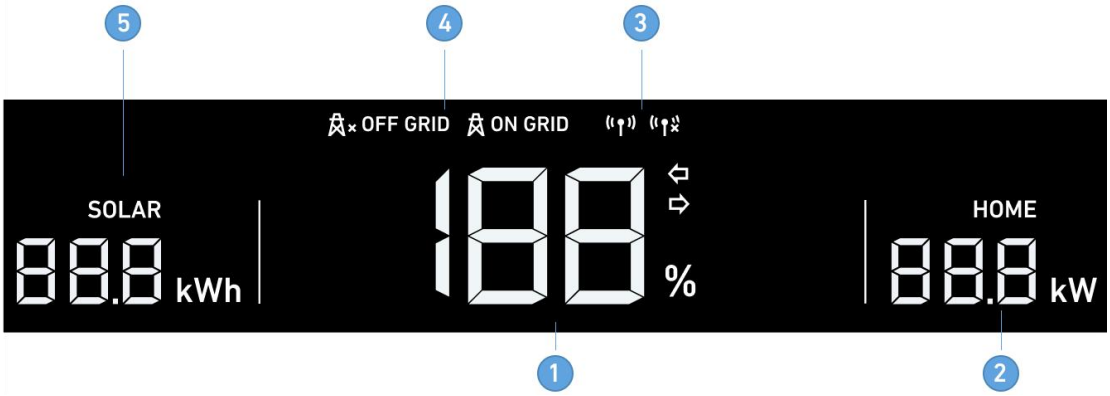


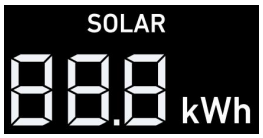

After commissioning, please inform the owner that the equipment can only be turned off using the Anker app until grid connection approval is granted. Once approval is complete, the equipment can be turned on and off using the Anker app.

# 8. Screen and Light Guide

## 8.1 LED Screen Guide

The LED screen will show you the working status of the system.



| | | |
|---|---|---|
| **① Battery** |  <br>Overall Battery Level | |
| |  <br>Recharging |  <br>Discharging |
| **② Home Loads** |  <br>Home Load Power | |
| **③ Internet** |  <br>Connected to the Internet |  <br>Disconnected from the Internet |
| **④ Grid** |  <br>On Grid |  <br>Off Grid |
| **⑤ Solar** |  <br>Cumulative Solar Energy for the Day | |

## 8.2 Status Light Indication

The power module's light bar will indicate the system status.

|  | **Light Bar** | **Status** |
|---|---|---|
| | Flashing white once, and then steady white | Powered on |
| | Flashing white | Configuring or connecting to |

| | | |
|---|---|---|
| | | the Internet |
| | Steady white | On-Grid mode |
| | Steady blue | Off-Grid mode |
| | Flashing blue | Battery low in Off-Grid mode |
| | Flashing red | Malfunction |
| | Flashing white in sequence | Firmware upgrading |

# 9. System Maintenance

## 9.1 Power Off the System

To power off the system:

1. Toggle the PV switch of the power module to OFF.
2. Press the black start button of the power module for 8 seconds.
3. Disconnect the circuit breaker between the power module and the grid.
4. Toggle the BAT switch of the power module to OFF.

⚠
- After the system powers off, residual electricity and heat may still cause electric shocks and burns. Wait for at least 2 minutes after powering off the system before performing any operations.
- Only qualified professionals or trained personnel are allowed to operate and maintain the equipment.
- To force a startup of the power module, press the black start button for 3 seconds. To force a shutdown of the power module, press the same button for 8 seconds.

## 9.2 Routine Maintenance

To ensure the energy storage system operates properly for an extended period, it is recommended to perform routine maintenance.

⚠ Power off the system before cleaning it, connecting cables, and ensuring grounding reliability.

| Check Item | Check Method | Maintenance Interval |
| --- | --- | --- |
| System cleanliness | Check periodically that the heat sinks are free from obstacles and dust. | Once every 6 to 12 months |
| System running status | • Check that the battery is not damaged or deformed.<br>• Check that the battery does not produce abnormal sound during operation.<br>• Check that the battery parameters are correctly set when the battery is running. | Once every 6 months |
| Electrical connection | • Check that cables are securely fastened.<br>• Check that cables are intact, and that in particular, the parts touching the metallic surface are not scratched.<br>• Check that unused terminals and ports are locked by waterproof or dustproof caps. | The first inspection is 6 months after the initial commissioning. From then on, the interval can be 6 to 12 months. |
| Grounding reliability | Check that ground cables are securely connected. | The first inspection is 6 months after the initial commissioning. From then on, the interval can be 6 to 12 months. |
| Firmware version | Check that the firmware is updated to the latest version via the app. | Once every 6 months |

## 9.3 Troubleshooting

Once a system fault is detected, you will receive push notifications via the Anker SOLIX Professional app, Anker SOLIX Professional (O&M Portal), or email.

Please refer to the notifications for troubleshooting measures. If you require further assistance, please contact Anker Customer Service.

# 10. Customer Service

support@anker.com

(UK) +44 (0) 1616 056 301

(DE) +49 (800) 000 2522

(AU) +61 1800 929 112

(IT) +39 800 776 561

10-Year Limited Warranty

Please visit ankersolix.com/warranty for full warranty details.

# 11. Product Information

## 11.1 Nameplates

Figure: Nameplate (X1-H3.68K-S).

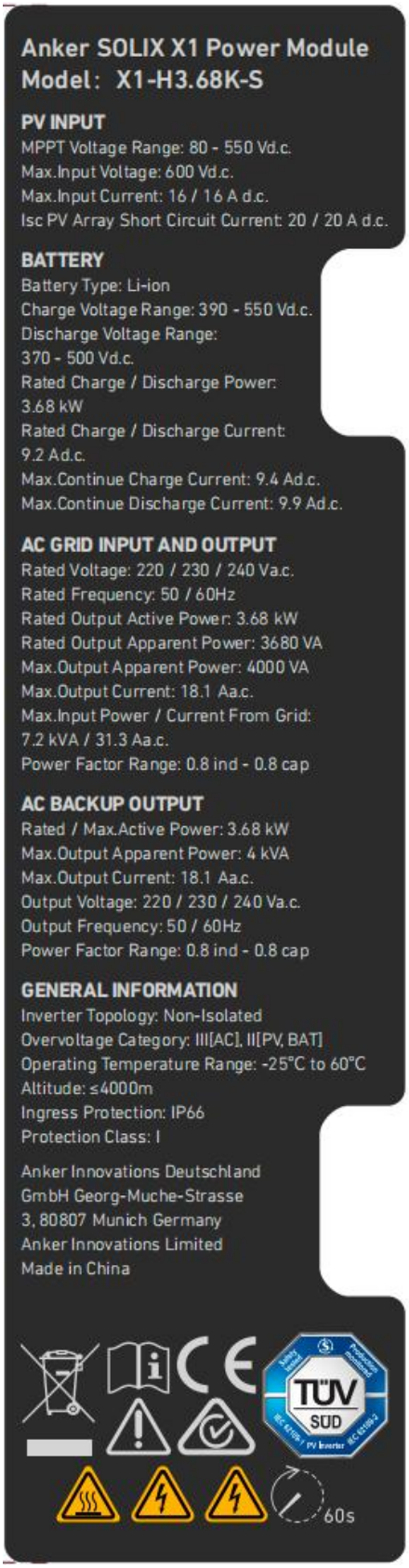



Figure: Nameplate (X1-H4.6K-S).

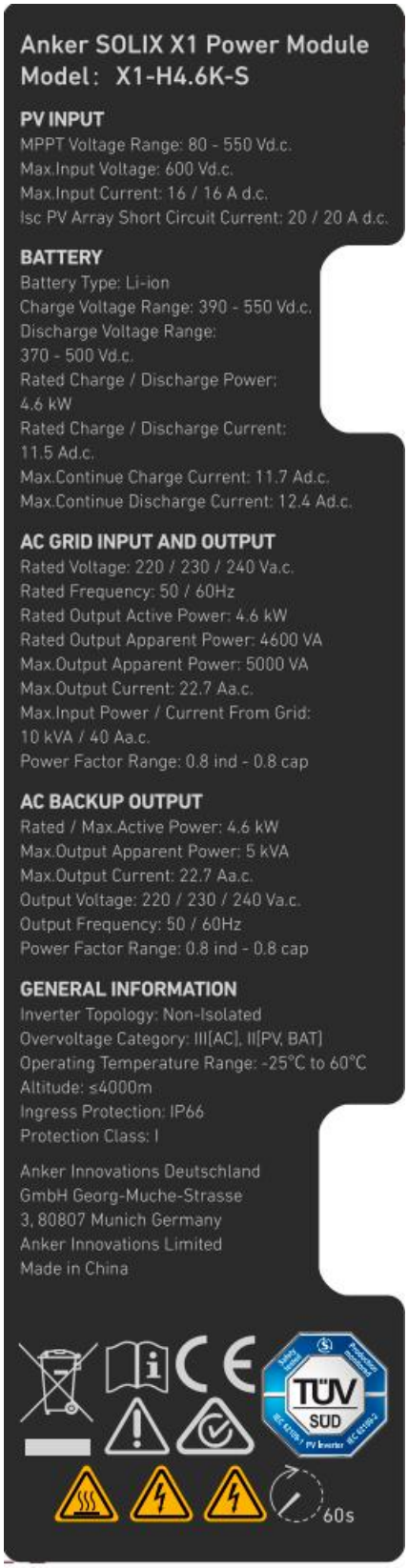


Figure: Nameplate (X1-H5K-S).

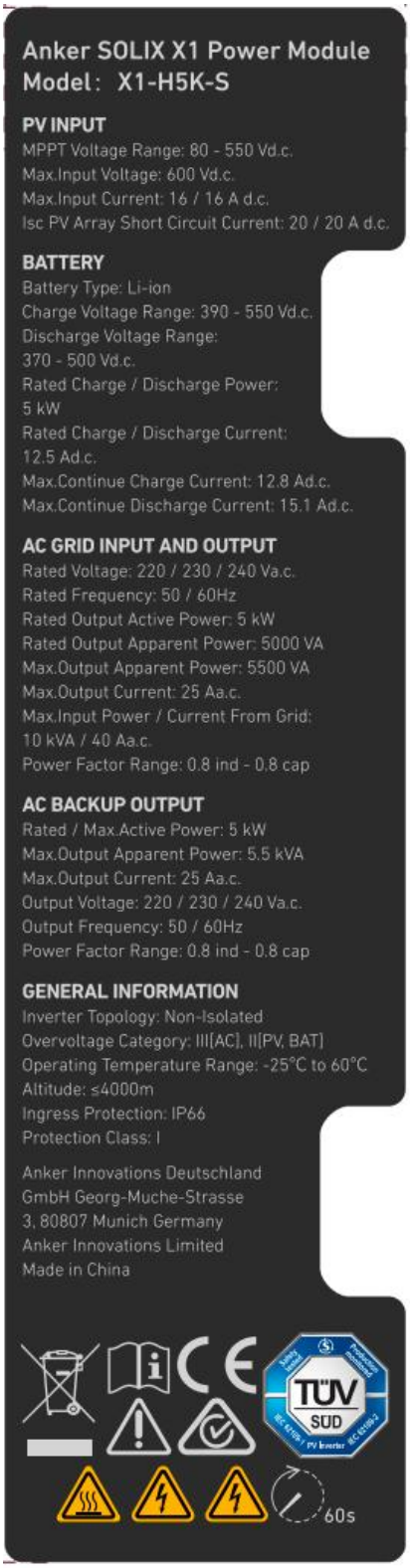



Figure: Nameplate (X1-H6K-S).

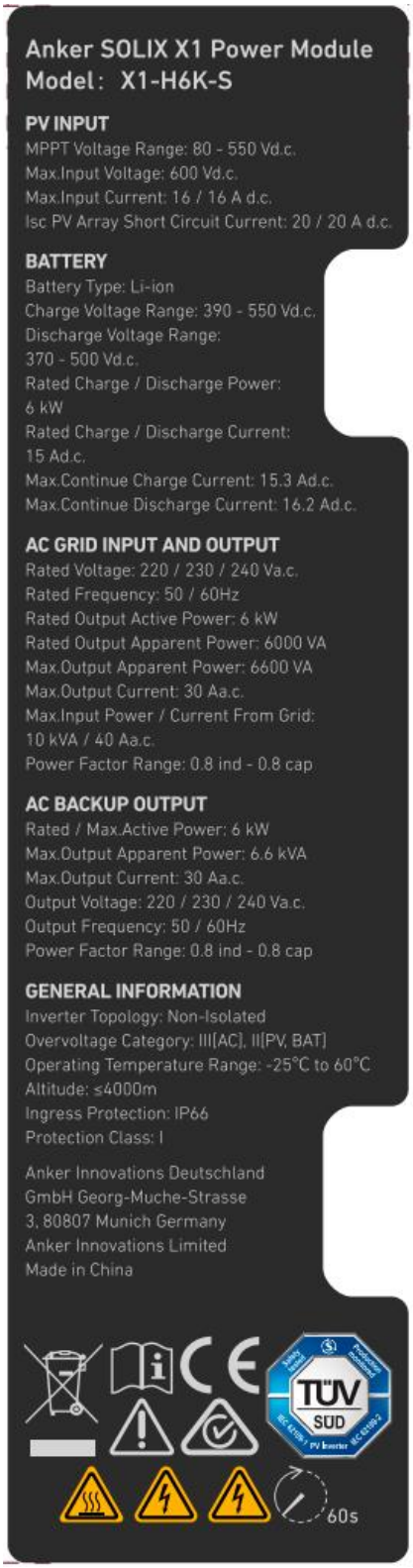
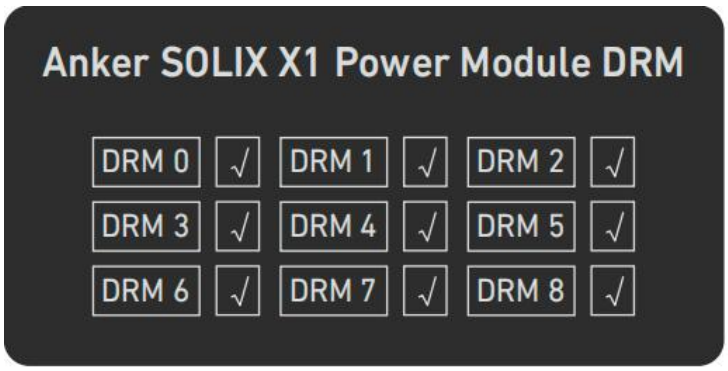


Figure: DRM label (X1-H3.68K-S / X1-H4.6K-S / X1-H5K-S / X1-H6K-S).




## 11.2 Specifications

Specifications are subject to change without notice.

| | | | | |
|---|---|---|---|---|
| **Product Name** | Anker SOLIX X1 Power Module | | | |
| **Model Name** | X1-H3.68K-S | X1-H4.6K-S | X1-H5K-S | X1-H6K-S |
| **PV INPUT** | | | | |
| **MPPT Voltage Range** | 80 - 550 Vd.c. | 80 - 550 Vd.c. | 80 - 550 Vd.c. | 80 - 550 Vd.c. |
| **Max. Input Voltage** | 600 Vd.c. | 600 Vd.c. | 600 Vd.c. | 600 Vd.c. |
| **Max. Input Current** | 16 / 16 Ad.c. | 16 / 16 Ad.c. | 16 / 16 Ad.c. | 16 / 16 Ad.c. |
| **Isc PV Array Short Circuit Current** | 20 / 20 Ad.c. | 20 / 20 Ad.c. | 20 / 20 Ad.c. | 20 / 20 Ad.c. |
| **BATTERY** | | | | |
| **Battery Type** | Li-ion | Li-ion | Li-ion | Li-ion |
| **Charge Voltage Range** | 390 - 550 Vd.c. | 390 - 550 Vd.c. | 390 - 550 Vd.c. | 390 - 550 Vd.c. |
| **Discharge Voltage Range** | 370 - 500 Vd.c. | 370 - 500 Vd.c. | 370 - 500 Vd.c. | 370 - 500 Vd.c. |
| **Rated Charge / Discharge Power** | 3.68 kW | 4.6 kW | 5 kW | 6 kW |
| **Rated Charge / Discharge Current** | 9.2 Ad.c. | 11.5 Ad.c. | 12.5 Ad.c. | 15 Ad.c. |
| **Max. Continue Charge Current** | 9.4 Ad.c. | 11.7 Ad.c. | 12.8 Ad.c. | 15.3 Ad.c. |
| **Max. Continue Discharge Current** | 9.9 Ad.c. | 12.4 Ad.c. | 15.1 Ad.c. | 16.2 Ad.c. |
| **AC GRID INPUT and OUTPUT** | | | | |

| | | | | |
|---|---|---|---|---|
| **Rated Voltage** | 220 / 230 / 240 Va.c. | 220 / 230 / 240 Va.c. | 220 / 230 / 240 Va.c. | 220 / 230 / 240 Va.c. |
| **Rated Frequency** | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz |
| **Rated Output Active Power** | 3.68 kW | 4.6 kW | 5 kW | 6 kW |
| **Rated Output Apparent Power** | 3.68 kVA | 4.6 kVA | 5 kVA | 6 kVA |
| **Max. Output Apparent Power** | 4 kVA | 5 kVA | 5.5 kVA | 6.6 kVA |
| **Max. Output Current** | 18.1 Aa.c. | 22.7 Aa.c. | 25 Aa.c. | 30 Aa.c. |
| **Max. Input Power / Current From Grid** | 7.2 kVA/31.3 Aa.c. | 10 kVA/40 Aa.c. | 10 kVA/40 Aa.c. | 10 kVA/40 Aa.c. |
| **Power Factor Range** | 0.8 ind - 0.8 cap | 0.8 ind - 0.8 cap | 0.8 ind - 0.8 cap | 0.8 ind - 0.8 cap |
| **AC BACKUP OUTPUT** | | | | |
| **Rated / Max. Active Power** | 3.68 kW | 4.6 kW | 5 kW | 6 kW |
| **Max. Output Apparent Power** | 4 kVA | 5 kVA | 5.5 kVA | 6.6 kVA |
| **Max. Output Current** | 18.1 Aa.c. | 22.7 Aa.c. | 25 Aa.c. | 30 Aa.c. |
| **Output Voltage** | 220 / 230 / 240 Va.c. | 220 / 230 / 240 Va.c. | 220 / 230 / 240 Va.c. | 220 / 230 / 240 Va.c. |
| **Output Frequency** | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz |
| **Power Factor Range** | 0.8 ind - 0.8 cap | 0.8 ind - 0.8 cap | 0.8 ind - 0.8 cap | 0.8 ind - 0.8 cap |
| **GENERAL INFORMATION** | | | | |
| **Inverter Topology** | Non-Isolated | | | |
| **Overvoltage Category** | III[AC],II[PV,BAT] | | | |
| **Operating Temperature Range** | -25℃ to 60℃ | | | |
| **Relative Humidity** | 0% to 100% | | | |
| **Altitude** | ≤ 4000 m | | | |
| **Ingress Protection** | IP66 | | | |
| **Protection Class** | I | | | |
| **Pollution Degree** | PD3 (External), PD2 (Internal) | | | |
| **Decisive Voltage Class (DVC)** | OVC Ⅱ (For PV and Battery Side), OVC Ⅲ (For Mains Side) | | | |

Note: When applying AS/NZS 4777.2:2020, the rated voltage is 230 Va.c., the rated frequency is 50 Hz, and the power factor range is 0.8 inductive (under-excited) to 0.8 capacitive (over-excited).

# 12. Safety Information

## 12.1 IMPORTANT SAFETY INSTRUCTIONS

**Symbols**

| Symbol | Description |
|---|---|
|  | **Caution**<br>Indicates a low-risk hazard. Failure to avoid this hazard could result in minor or moderate injury. |
|  | **Warning**<br>Indicates a hazard with a moderate level of risk. Failure to avoid this hazard could result in death or serious injury. |
|  | **Danger**<br>Indicates a highly risky hazard. Failure to avoid this hazard could result in death or serious injury. |
|  | **Refer to Operating Instructions**<br>Indicates that users should refer to operating or installation instructions before proceeding. |
|  | **Risk of Electric Shock from Stored Energy**<br>Indicates discharge time is 2 minutes from de-energization. |
|  | **Risk of Electric Shock**<br>Indicates components that present risk of electrical shock. |

| | |
|---|---|
|  | **Caution, Hot Surface**<br>Indicates that equipment surfaces may be hot and pose a burn risk. |
|  | **PE Conductor Terminal**<br>Indicates a terminal that allows the electrical connection of conductors for earthing or grounding purposes. |

## General Information

**SAVE THESE INSTRUCTIONS** - This document contains important instructions that must be followed during installation, use, and maintenance.

| | |
|---|---|
|  | Read instructions carefully before performing any operation on the equipment. |

Do not make any changes or create settings that are not described in this document. If physical injury, loss of data, or damage is caused by failure to follow instructions, the warranty does not apply.

## Personal Safety

| | |
|---|---|
|  | To reduce the risk of burns, do not touch the equipment surfaces as they may be hot. |
|  | Never touch the enclosure of operating equipment. |

- Ensure that power is off during installation. Do not install or remove a cable with the power on.
- Non-standard and improper operations on the energized equipment may cause fire, electric shocks, or explosion, resulting in property damage, personal injury, or even death.
- Before operations, remove conductive objects such as watches, bracelets, bangles, rings, and necklaces to prevent electric shocks.
- During operations, use dedicated insulated tools to prevent electric shocks or short circuits.
- Do not make contact with other conductors, or indirect contact with power supply equipment through damp objects.
- Do not power on the equipment until it has been installed or confirmed by a

professional.

- Only qualified professionals or trained personnel are allowed to install, operate, and maintain the equipment.
- If there is a probability of personal injury or equipment damage during operations on the equipment, immediately stop the operations, report the case to the supervisor, and take feasible protective measures.
- Do not touch the energized equipment, as the enclosure may be hot.

**Electrical Safety**

| | |
|---|---|
|   | Do not disconnect under load! |
|   | Use conductors with insulation rated for at least 90 ℃ / 194℉. |
|   | Do not wire when energized. |
|   | Risk of electric shock. Terminals on the line and load sides may be energized when circuit breakers are in the open position. |
|   | Risk of electric shock from stored energy. Start maintaining the equipment at least 2 minutes after the equipment disconnects from all external power supplies. |

- Before installation, ensure that the equipment is intact. Otherwise, electric shocks or fires may occur.
- Non-standard and improper operations may result in fire or electric shocks.
- Prevent foreign matter from entering the equipment during operations.
- Do not route cables behind the air intake and exhaust vents of the equipment.
- For the equipment that needs to be grounded, install the ground cables first when installing the equipment and remove the ground cables last when removing the equipment.
- Before installing or removing power cables, the equipment and its switches must be disconnected.
- Do not damage the grounding conductors.
- The equipment terminals are used for electrical connections only.
- Ensure that the power module is connected to external breakers for the AC output circuit and the battery circuit.

- Ensure that all electrical connections comply with local electrical standards.
- Obtain approval from the local electric utility company before using the equipment in grid-tied mode.
- Ensure that the cables you prepared meet local regulations.
- The maximum operating temperature for the included cables is 221 ℉ / 105°C.
- Use dedicated insulated tools when performing high-voltage operations.
- Before making electrical connections, switch off the disconnector on the upstream device to cut off the power supply if people may contact energized components.
- Before connecting a power cable, check that the label on the power cable is correct.
- If the equipment has multiple inputs, disconnect all the inputs before operating the equipment.

**Environmental Requirements**

- Do not expose the equipment to flammable or explosive gas or smoke. Do not perform any operation on the equipment in such environments.
- Do not store any flammable or explosive materials near the equipment.
- Install the equipment in an area far away from liquids and in a well ventilated environment.
- To prevent fire due to high temperature, ensure that the ventilation vents or heat dissipation system are not blocked when the equipment is running.

**Mechanical Safety**

- Do not drill holes into the equipment.
- Wear goggles and protective gloves when drilling holes.
- When moving the equipment by hand, wear protective gloves to prevent injuries.
- Clean up any debris that may have accumulated within or around the equipment after drilling.
- Be cautious to avoid injury when moving heavy objects.

**Commissioning**

- When the equipment is powered on for the first time, ensure that professional personnel set parameters correctly. Incorrect settings may result in inconsistency with local certification and affect the normal operation of the equipment.

## Maintenance and Replacement

| | |
|---|---|
|   | Disconnect all sources of supply before servicing. |
|   | Replace only with the same ratings and type of a fuse. |
|   | Disconnect supply before changing a fuse. |
|   | Only certified professionals are allowed to install and maintain the battery and external power supplies. Establish secure earth connections to mitigate high touch current before connecting to the power supply. |
|   | Do not disassemble the equipment without authorization. Tampering with the equipment will invalidate the warranty. |

- High voltage generated by the equipment during operation may cause an electric shock, which could result in death, serious injury, or serious property damage.
- Prior to maintenance, power off the equipment and strictly comply with the safety precautions in this document and relevant documents.
- After powering off the equipment, wait for at least 2 minutes before disassembling any cables or components.
- Maintain the equipment with proper tools, testing equipment, and sufficient knowledge of this document.
- Turn off the equipment switches when maintaining the electric devices or power distribution devices connected to the equipment.
- Place temporary warning signs or erect fences to prevent unauthorized access to the maintenance site.
- If the equipment is faulty, contact your dealer.
- The equipment can be powered on only after all faults are rectified. Failing to do so may escalate faults or damage the equipment.

## 12.2 Notice

### Declaration of Conformity

Hereby, Anker Innovations Limited declares that this equipment is in compliance with Directives 2014/30/EU & 2011/65/EU. The full text of the EU declaration of conformity is available at the following internet address: https://support.anker.com/s/articleRecommend?otherType=Anker_EN_Extemal_Manual_and_Download&secondType=doc.

License Holder: Anker Innovations Limited

### UK PSTI Statement

Hereby, Anker Innovations Limited declares that this device is in compliance with The Product Security and Telecommunications Infrastructure (Security Requirements for Relevant Connectable Products) Regulations 2023. For the Statement of Compliance, visit the Web site https://www.anker.com/uk/psti-related.

The following importer is the responsible party (contract for EU matters):

Anker Innovations Deutschland GmbH I Georg-Muche-Strasse 3, 80807 Munich, Germany

The following importer is the responsible party (contract for UK matters):

Anker Technology (UK) Limited I GNR8, 49 Clarendon Road, Watford, Hertfordshire, WD17 1HP, United Kingdom

Not permitted on aircraft.

This symbol means the product must not be discarded as household waste, and should be delivered to an appropriate collection facility for recycling. Proper disposal and recycling helps protect natural resources, human health, and the environment. For more information on the disposal and recycling of this product, contact your local municipality, disposal service, or the shop where you bought this product.

Anker Innovations Limited | Unit 56, 8th Floor, Tower 2, Admiralty Centre, 18 Harcourt Road, Hong Kong

# 13. Appendices

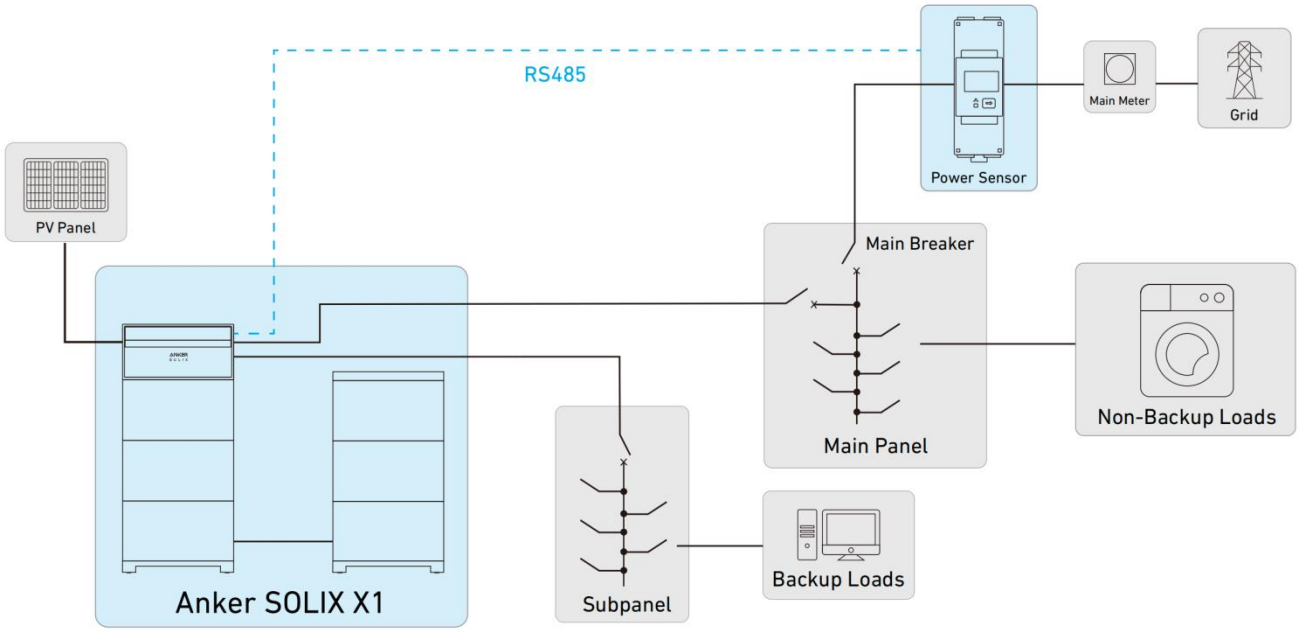
## Appendix A. System Wiring

These diagrams are for illustration purposes only and represent sample site layouts to show system layout and metering. Please note that they depict common configurations and are not the only allowable ones. They should not be considered complete plan sets.

### New-Build Scenario

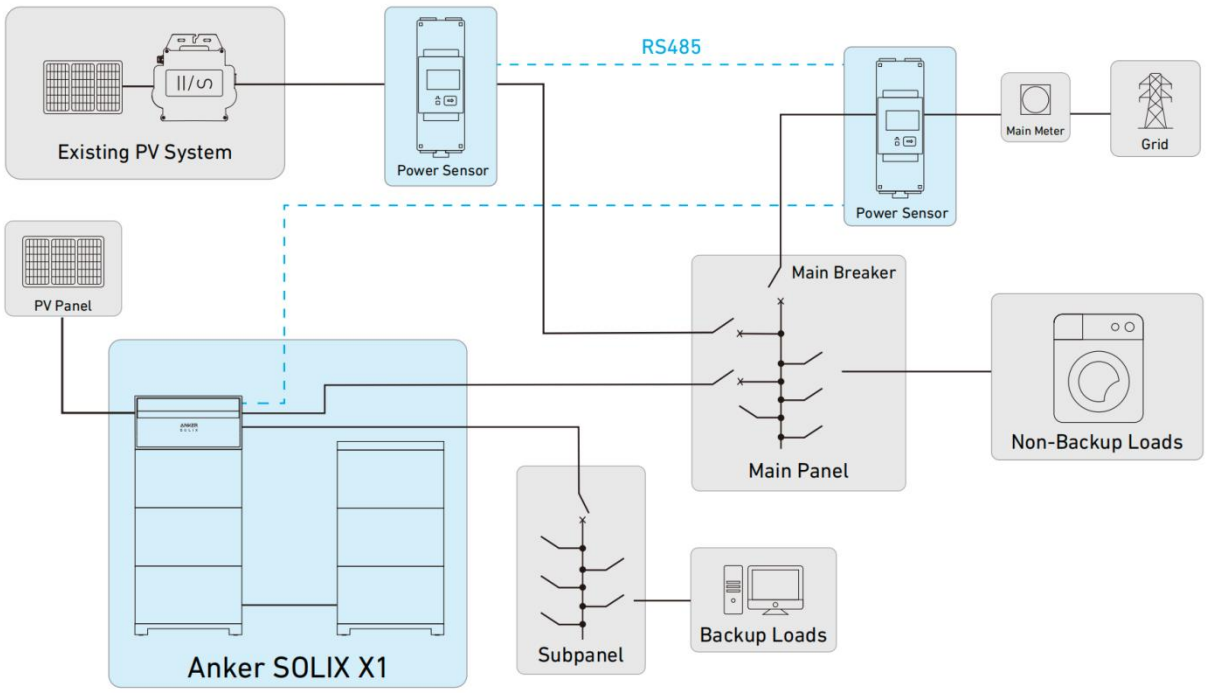
The following diagram shows the wiring for a new system.

Figure: New system wiring.

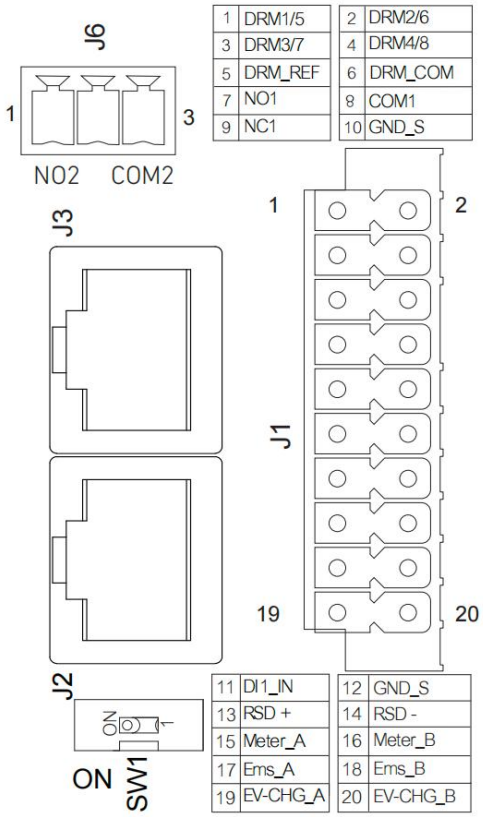


## Retrofit Scenario

Figure: Retrofitted system wiring.




# Appendix B. Communication Ports and Terminals



| Terminal/Port | | | Definition |
|---|---|---|---|
| J1 | 1 | DRM1/5 | DRM Terminals |
| | 2 | DRM2/6 | |
| | 3 | DRM3/7 | |
| | 4 | DRM4/8 | |
| | 5 | DRM REF | |
| | 6 | DRM COM | |
| | 7 | NC1 | Dry Contacts for Heat Pump 1 |
| | 8 | COM1 | |
| | 9 | NC1 | |
| | 10 | GND_S | Shield Grounding |
| | 11 | DI1 IN | Emergency Stop Digital Input |
| | 12 | GND_S | Shield Grounding |
| | 13 | RSD_+ | Rapid Shutdown Devices |
| | 14 | RSD_- | |
| | 15 | Meter_A | Communication for Power Sensors |
| | 16 | Meter_B | |
| | 17 | Ems_A | Communication for Energy Management Systems |
| | 18 | Ems_B | |
| | 19 | EV-CHG_A | Communication for EV Charging |
| | 20 | EV-CHG_B | |
| J2 | / | RJ45 | Parallel Connection of Power Modules |
| J3 | / | RJ45 | |
| J6 | / | NO2 | Dry Contacts for Generators, Loads, and Heat Pump 2 |
| | / | COM2 | |

# USER GUIDE

## 1. About This Guide

This document provides information and use instructions about the Anker SOLIX X1 Power Module X1-H(3.68~6)K-S series or hybrid single-phase power modules.

## 2. Product Introduction

### 2.1 Product Overview

**Function**

The Anker SOLIX X1 Power Module X1-H(3.68~6)K-S series (power module for short) is a hybrid single-phase power module that offers a comprehensive solution for home energy storage.

The power module can integrate with solar panels to convert excess energy into electricity, charge the batteries to store the energy in the batteries, and control the batteries to supply power to the loads. Without solar, the power module can control multiple battery modules to charge during low-cost electricity hours and discharge during high-cost electricity hours.

**Model**

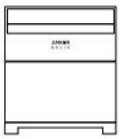
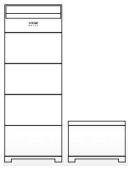
The following table lists the Anker SOLIX X1 Power Module models to which this document applies.

| | |
|---|---|
| **Product Name** | Anker SOLIX X1 Power Module |
| **Short Form** | Power module |
| **Product Models** | X1-H3.68K-S, X1-H4.6K-S, X1-H5K-S, X1-H6K-S |
| **Description** | **X1**: Product series |
| | **H**: Product category (Hybrid inverter) |
| | **(3.68~6)K**: Power level (3.68 kW, 4.6 kW, 5 kW, 6 kW) |

| | |
|---|---|
| | **S**: Type of AC power distribution (Single-phase) |
| **Specifications** | 220 / 230 / 240 VAC |

**Battery Capacity**

The Anker SOLIX X1 Power Module supports up to six Anker SOLIX X1 Battery Modules (Model: X1-B5-H). The following table lists the stacking examples and corresponding energy capacity.

| **Stacking** |  |  |  |  Or  |  Or  |  Or  |
|---|---|---|---|---|---|---|
| **Battery Module** | ×1 | ×2 | ×3 | ×4 | ×5 | ×6 |
| **Energy Capacity** | 5 kWh | 10 kWh | 15 kWh | 20 kWh | 25 kWh | 30 kWh |

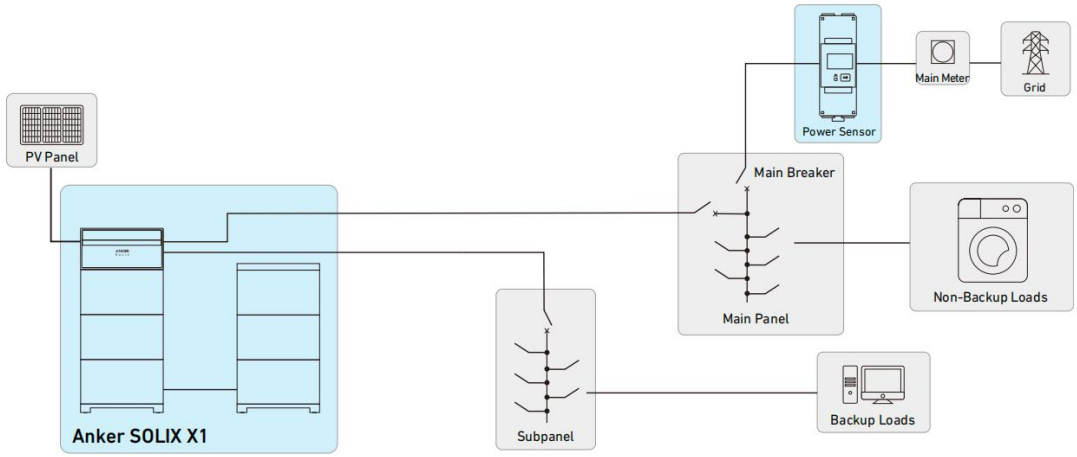
## 2.2 System Layout

The Anker SOLIX X1 Power Module applies to energy storage systems with partial home backup. The system stores energy from the grid or solar power and powers selected loads during a grid outage.

## New-Build Scenario

The following diagram shows the wiring for a new system.

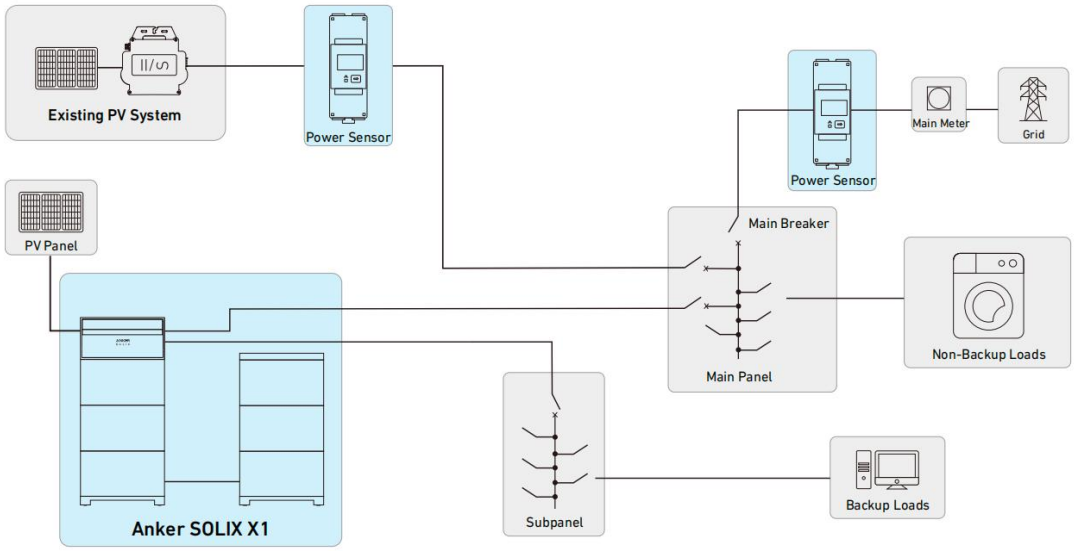
Figure: New system wiring.




## Retrofit Scenario

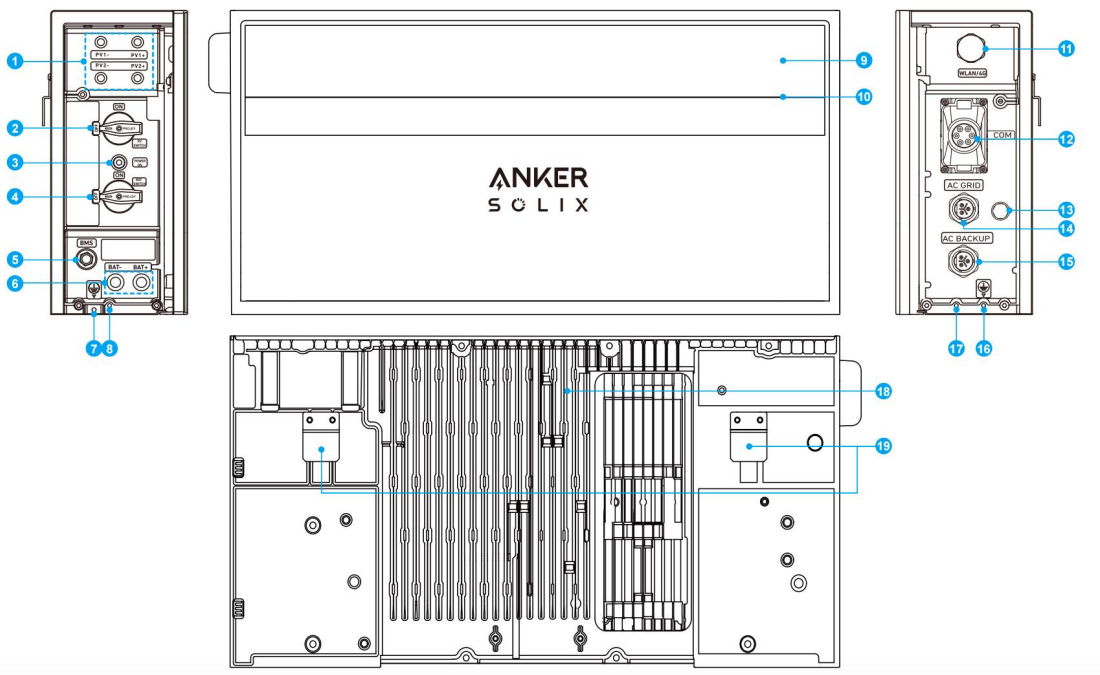
The following diagram shows the wiring for a retrofitted system.

Figure: Retrofitted system wiring.




## 2.3 Product Appearance

Figure: Appearance of Anker SOLIX X1 Power Module X1-H(3.68~6)K-S.



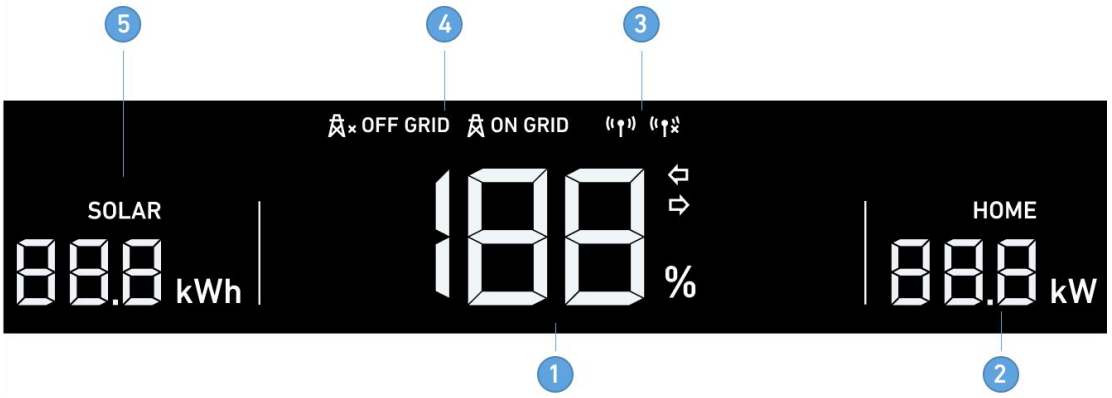

| | |
|---|---|
| 1. PV power ports (PV1+ / PV1–, PV2+ / PV2–) | 2. PV switch<br>• Toggle ON to power on the connected PV system.<br>• Toggle OFF to power off the connected PV system. |
| 3. Black start button<br>• To force a startup of the power module, press the black start button for 3 seconds.<br>• To force a shutdown of the power module, press the same button for 8 seconds. | 4. BAT switch<br>• Toggle ON to power on the connected battery modules.<br>• Toggle OFF to power off the connected battery modules. |
| 5. BMS port | 6. DC power ports (BAT+ / BAT–) |
| 7. Internal ground point | 8. Screw hole for locking modules |
| 9. LED screen | 10. Status light |
| 11. WLAN/4G port | 12. Communication ports / terminals |
| 13. AC grid port | 14. Breather valve |
| 15. AC backup port | 16. External ground point |

| | |
|---|---|
| 17. Screw hole for locking modules | 18. Heat sink |
| 19. Wall-mount cleats | |

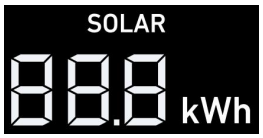
# 3. Screen and Light Guide

## 3.1 LED Screen Guide

The LED screen will show you the working status of the system.




| | | |
|---|---|---|
| **① Battery** |  Overall Battery Level | |
| |  Recharging |  Discharging |
| **② Home Loads** |  Home Load Power | |
| **③ Internet** |  Connected to the Internet |  Disconnected from the Internet |

| | | |
|---|---|---|
| ④ **Grid** |  <br>On Grid |  <br>Off Grid |
| ⑤ **Solar** |  <br>Cumulative Solar Energy for the Day | |

## 3.2 Status Light Indication

The power module's light bar will indicate the system status.

| Light Bar | Status |
|---|---|
| Flashing white once, and then steady white | Powered on |
| Flashing white | Configuring or connecting to the Internet |
| Steady white | On-Grid mode |
| Steady blue | Off-Grid mode |
| Flashing blue | Battery low in Off-Grid mode |
| Flashing red | Malfunction |
| Flashing white in sequence | Firmware upgrading |

# 4. Anker App for Smart Control

The UI images shown are for illustration only and may not match the actual display, which can vary depending on the software version.

The Anker app enables remote control of your system with the following features:

- **Remote access**: Remotely power the system on / off, adjust electricity

strategies, activate emergency backup power, and more.

- **Real-time monitoring**: Track current power usage, generation, and storage.
- **Intuitive interface**: Easily understand energy data by home scenes and topology.
- **Instant alerts**: Receive notifications of system issues for quick resolution.

## 4.1 Access Anker App (User)

① Download the Anker app from the App Store (iOS devices) or Google Play (Android devices), or by scanning the QR code.

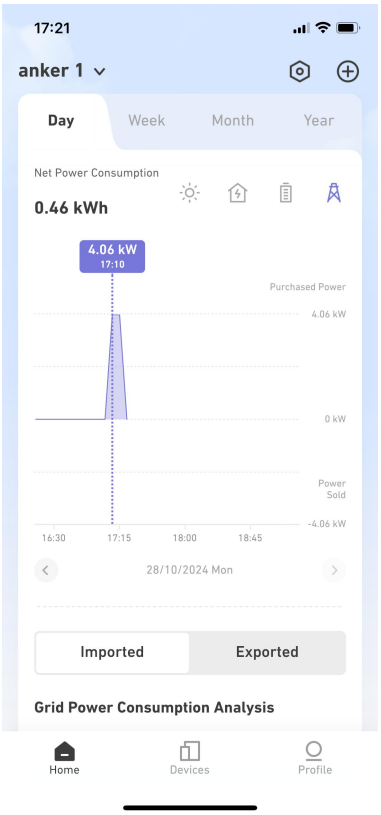
② Log into the app. If you have not previously created an account, check the email to get your account name and initial password.

## 4.2 Check Energy Data

The home screen provides insight into your home's energy use and generation.

- **Real-time energy flow**: Learn how the grid, solar system, and battery modules work together to power your home.


- **Energy graphs over time**: View energy graphs by components of your energy system. The timescale can be set to day, week, month, or year.



## 4.3 Customize Work Mode

Work modes change the way your power module transfers power. Select your preferred work mode to meet your home's specific energy needs.

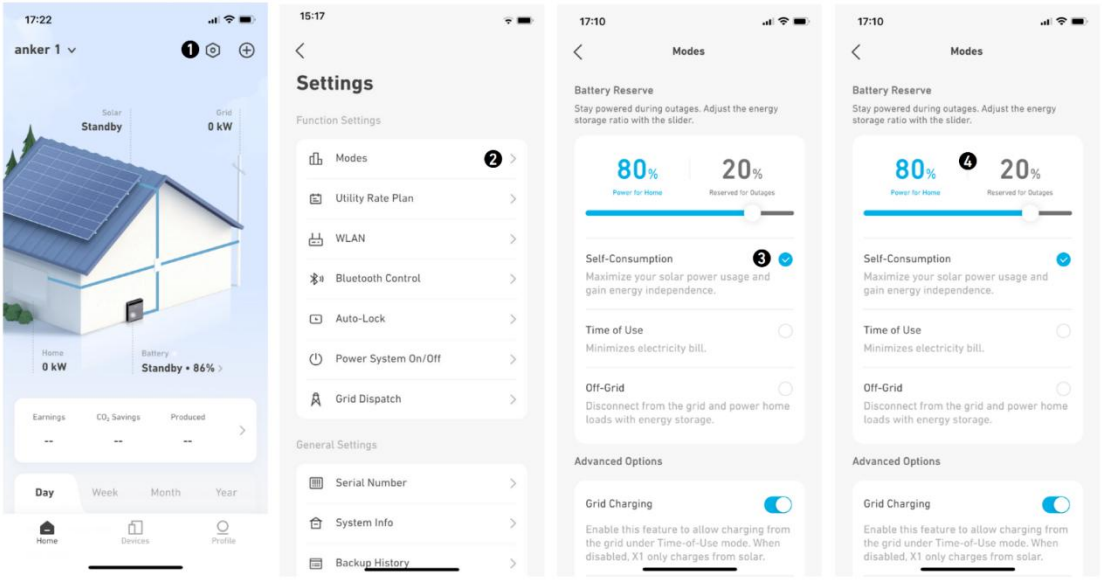
1. Tap the settings icon in the top right corner of the home screen.
2. Open the **Modes** menu.
3. Choose one work mode from the following.

| | |
|---|---|
| **Self-Consumption** | Increase your home's reliance on solar power and reduce dependence on the grid.<br>• When you produce enough solar power to offset your home's consumption and fully charge the battery modules, any excess solar power will export to the grid.<br>• When you consume more power than what's available from your solar system and stored in the battery modules, you will import power from the grid. |
| **Time of Use** | The battery modules will charge when utility rates are the lowest, and power your home when utility rates are the highest. Make sure to edit your utility rate plan for weekdays and weekend. |
| **Off-Grid** | Power your home with solar power and the stored battery energy when the grid goes down.<br>*The Anker SOLIX X1's off-grid mode is incompatible with the Sunlight Backup mode of the Enphase microinverter. It is necessary to disable the Sunlight Backup mode of the Enphase microinverter before using the Anker SOLIX X1's off-grid mode. |

4. Set backup reserve by adjusting the slider at the top of the screen.

• If you prefer to open more capacity for self-consumption mode or time-of-use mode, you can set a lower reserve percentage.

• If you prefer to reserve more energy for use during a grid outage, or if your area is more prone to outages, you can set a higher reserve percentage.

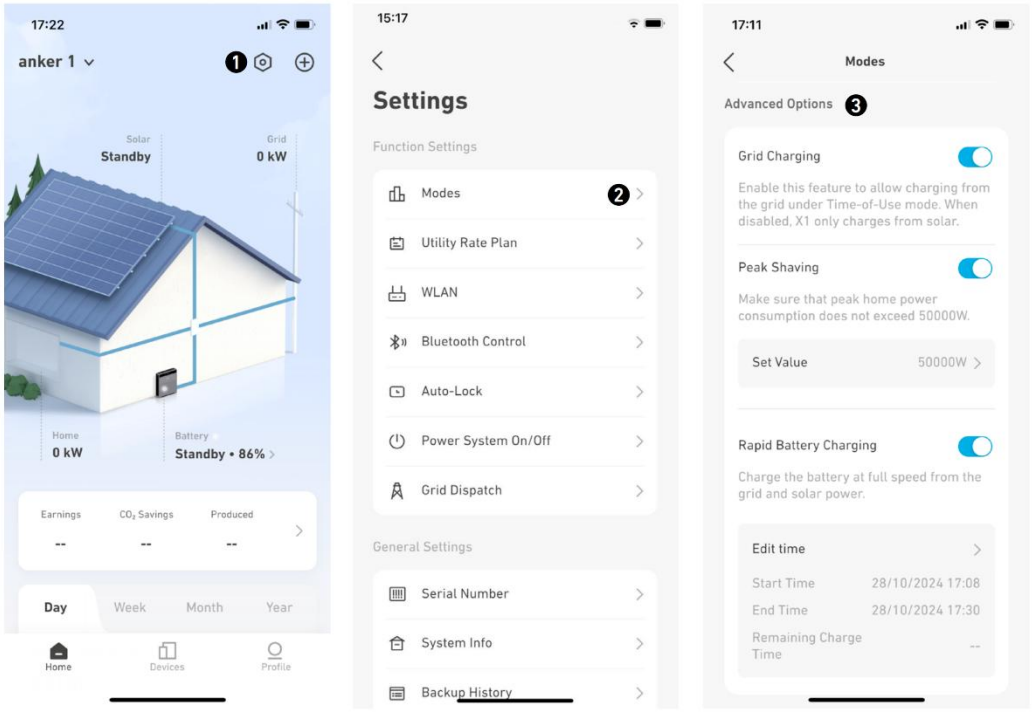



## 4.4 Set Advanced Options

There are three advanced options that impact how the energy storage system exports and imports power to and from the grid.

1. Tap the settings icon in the top right corner of the home screen.
2. Open the **Modes** menu.
3. Scroll down to set the advanced options.

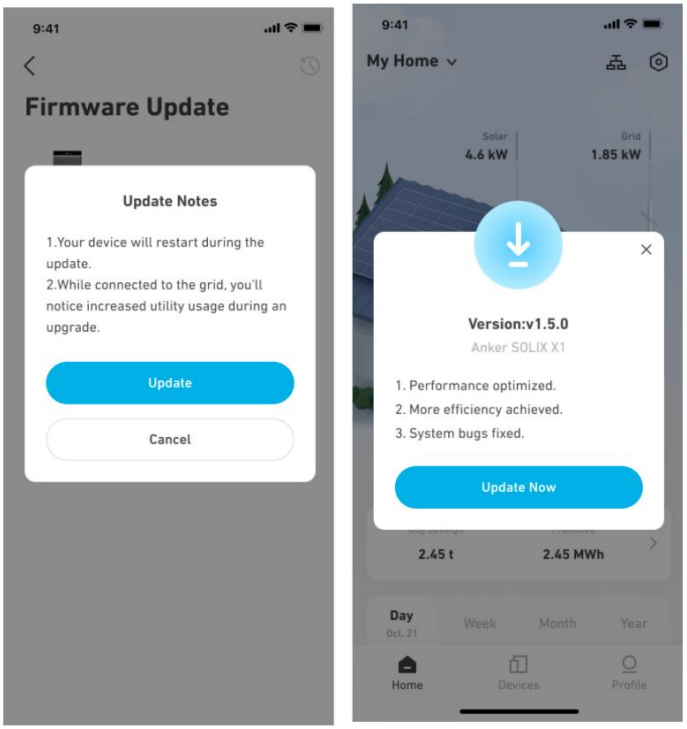
| | |
|---|---|
| **Grid Charging** | Turn on to allow the grid to charge battery modules. Turn off to charge the battery modules only from solar power. |
| **Peak Shaving** | Activate to smooth out peak loads and reduce overall charges on the grid. This is achieved by utilizing the stored battery energy. |
| **Rapid Battery Charging** | Charge the battery modules at full speed using both grid and solar power. |



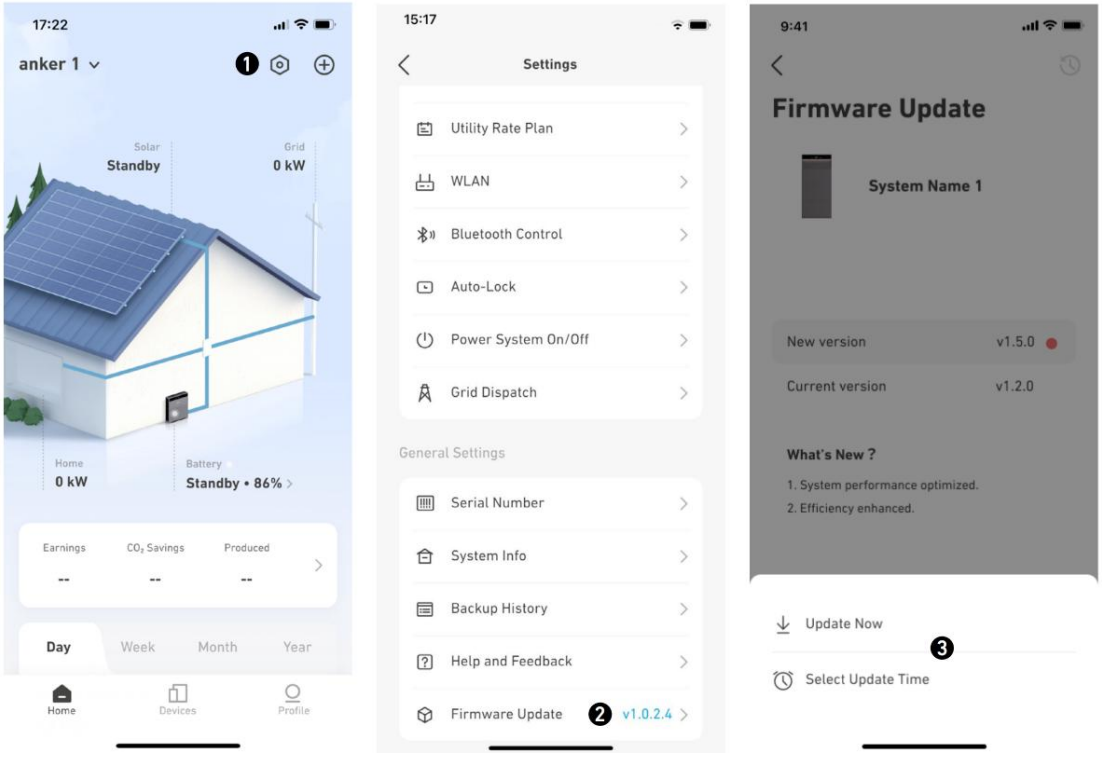

## 4.5 Firmware Upgrade

To ensure your system can achieve optimal performance and use all the latest features, it is recommended to upgrade the firmware from time to time.

1. Pay close attention to upgrade prompts from the app. Once you receive a notification, we encourage you to proceed with the manual upgrade immediately to ensure your software is always up to date.



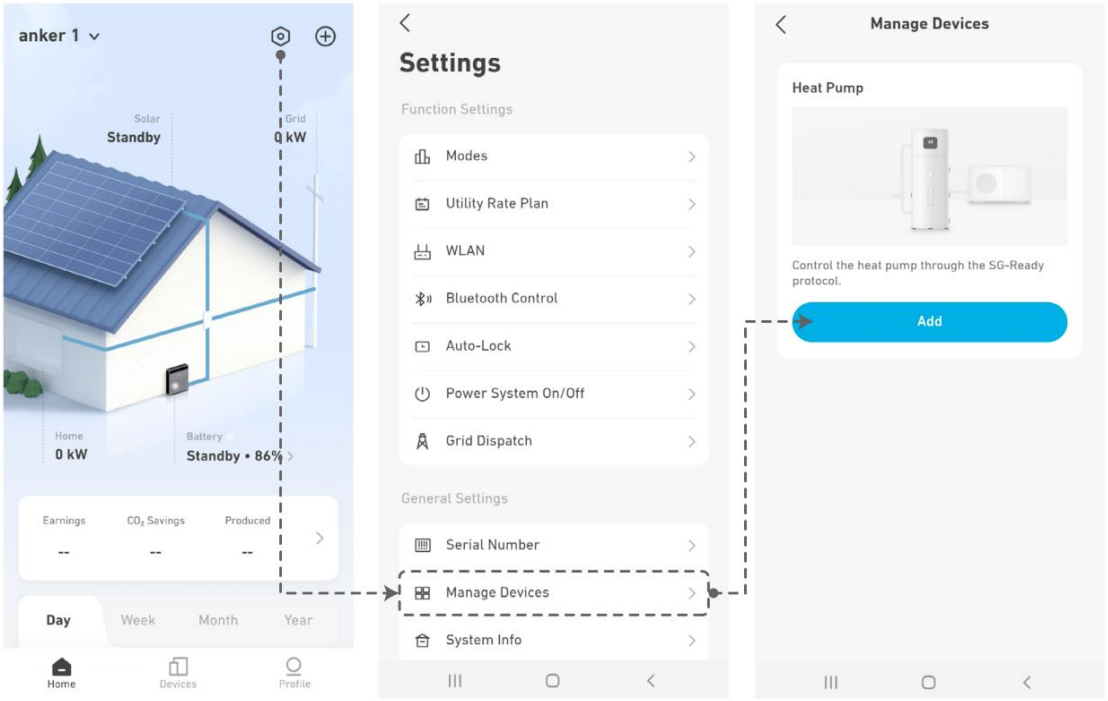
2. To view the firmware version or check for firmware updates, go to **Settings** > **Check for upgrade**. If there's a new version, simply follow the on-screen instructions to complete the upgrade. You may choose **Upgrade Now** or **Select Upgrade Time**.



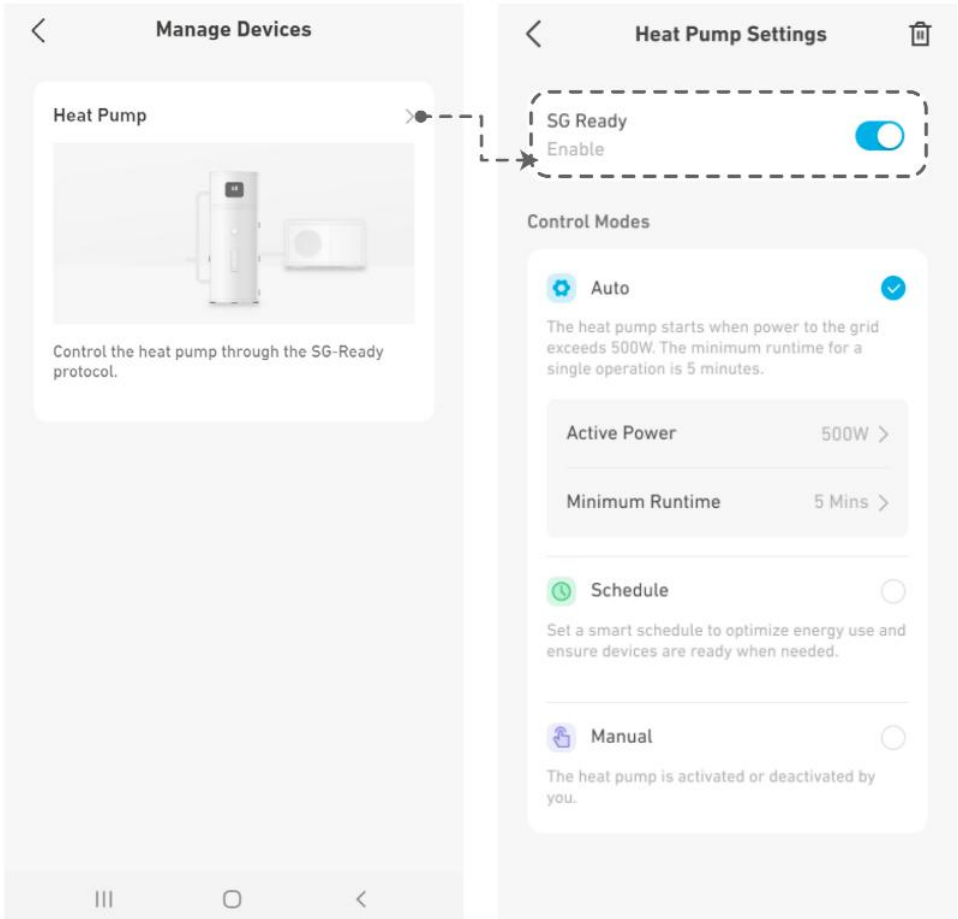

## 4.6 Control the Heat Pump

After the installer completes the electrical connections, you can set up how your SG-ready heat pump works using the Anker app.

1. Add the heat pump to the system.

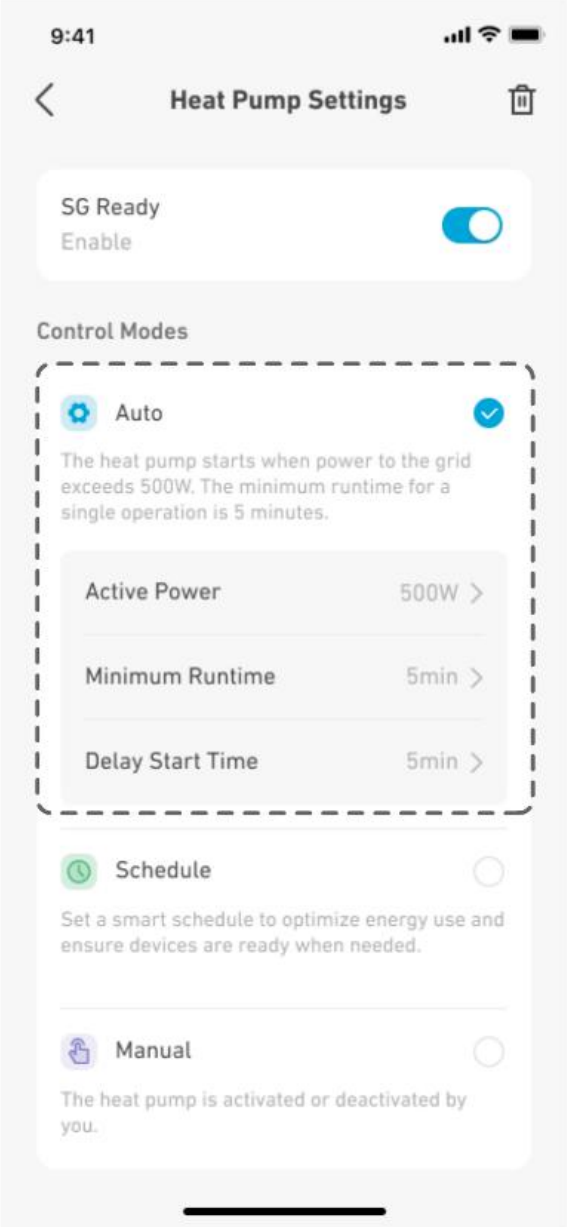



2. Enable the heat pump function. You may be prompted to update the firmware to the latest version.



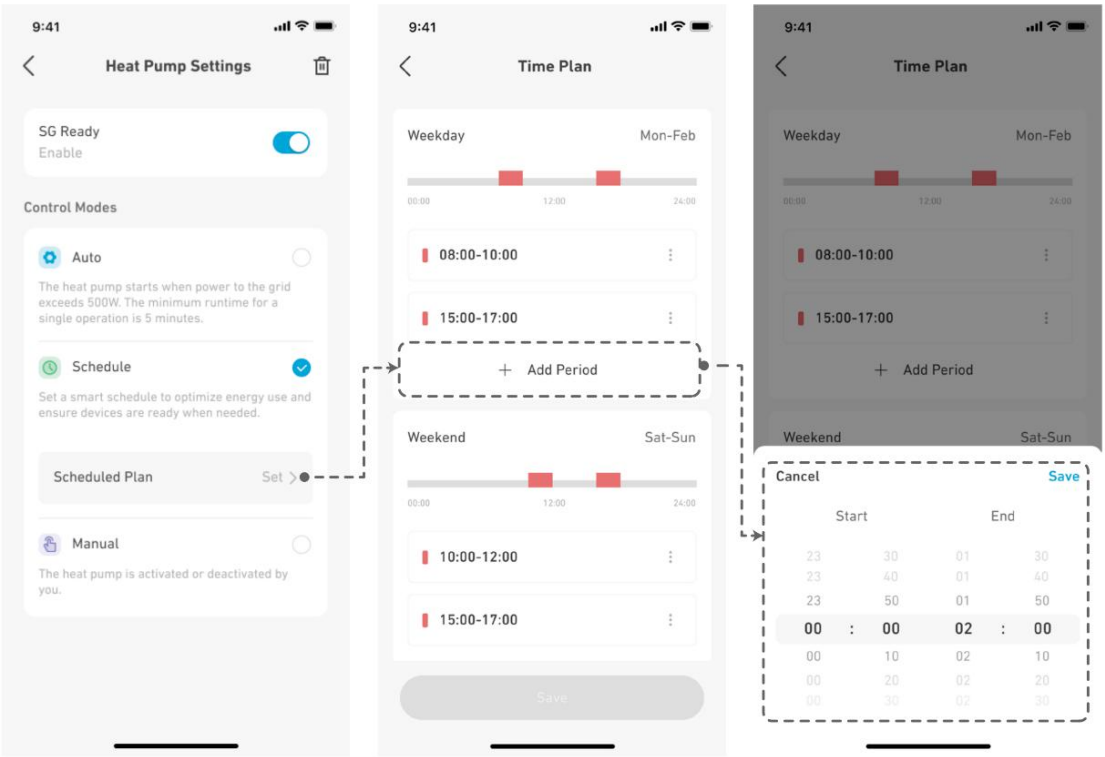
3. Select and configure the control mode.

- **Auto Mode**: The heat pump starts up when the solar power supplied to the grid exceeds the rated power of the heat pump.
  - Active Power: Enter the rated power of the heat pump.
  - Minimum Runtime: Set the minimum ON duration of the heat pump to avoid rapid ON/OFF cycles.

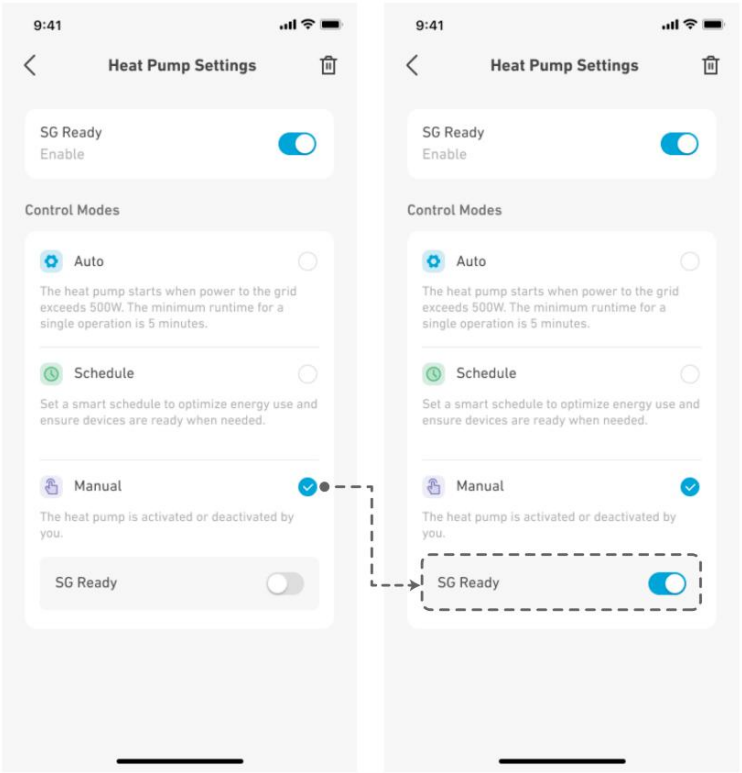


- **Schedule Mode**: The heat pump operates according to a predefined schedule.

  You can customize up to four time periods for weekdays and weekends respectively.




- **Manual Mode**: Enable this mode to manually turn the heat pump on or off.



## 4.7 Others

You can find more advanced settings on the Settings screen.

| | |
|---|---|
| **Grid Dispatch** | (For Germany and Australia Only) Grid Dispatch allows electricity to flow between your system and the grid, enabling both import and export. This feature is set up by the installer in the Anker SOLIX Professional app. |

# 5. Maintenance

## 5.1 Power On / Off the System

To power on the system:

1. Toggle the BAT switch of the power module to ON.
2. Close the circuit breaker between the power module and the grid.
3. Toggle the PV switch of the power module to ON.

To power off the system:

1. Toggle the PV switch of the power module to OFF.
2. Press the black start button of the power module for 8 seconds.
3. Disconnect the circuit breaker between the power module and the grid.
4. Toggle the BAT switch of the power module to OFF.

- After the system powers off, residual electricity and heat may still cause electric shocks and burns. Wait for at least 2 minutes after powering off the system before performing any operations.
- Only qualified professionals or trained personnel are allowed to operate and maintain the equipment.
- To force a startup of the power module, press the black start button for 3 seconds. To force a shutdown of the power module, press the same button for 8 seconds.

## 5.2 Routine Maintenance

To ensure the energy storage system operates properly for an extended period, it is recommended to perform routine maintenance.

⚠ Power off the system before cleaning it, connecting cables, and ensuring grounding reliability.

| Check Item | Check Method | Maintenance Interval |
| --- | --- | --- |
| System cleanliness | Check periodically that the heat sinks are free from obstacles and dust. | Once every 6 to 12 months |
| System running status | • Check that the battery is not damaged or deformed.<br>• Check that the battery does not produce abnormal sound during operation.<br>• Check that the battery parameters are correctly set when the battery is running. | Once every 6 months |
| Electrical connection | • Check that cables are securely fastened.<br>• Check that cables are intact, and that in particular, the parts touching the metallic surface are not scratched.<br>• Check that unused terminals and ports are locked by waterproof or dustproof caps. | The first inspection is 6 months after the initial commissioning. From then on, the interval can be 6 to 12 months. |
| Grounding reliability | Check that ground cables are securely connected. | The first inspection is 6 months after the initial commissioning. From then on, the interval can be 6 to 12 months. |
| Firmware version | Check that the firmware is updated to the latest version via the app. | Once every 6 months |

## 5.3 Troubleshooting

⚠ Only qualified professionals or trained personnel are allowed to install, operate, and maintain the equipment.

You will receive push notifications from the Anker app once a system fault is detected. Please have the following information available when contacting Anker.

- Owner name
- Phone number or email address (the best way to contact you)
- Serial numbers
- Brief description of the issue

For instance, if a ground fault is detected, the Anker app will send a notification, the light bar will turn red, and the power module screen will show 'EE.' which meets the Earth Fault alarm requirements of AS/NZS 5033.

# 6. Emergency Handling

In the event of any threat to health or safety, always begin with these two steps before addressing the other suggestions below:

1. Immediately contact the fire department or other relevant emergency response team.
2. Notify all people who might be affected and ensure that they can evacuate the area.


Only perform the suggested actions below if it is safe to do so.

## 6.1 Fire

- Please shut down the equipment 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 touch or come into contact with high voltage components during fire fighting, due to the risk of electric shock.
- After extinguishing the fire, do not use the equipment, please contact your installer.

## 6.2 Flood

- Please shut down the equipment or disconnect the main power switch when it is safe.
- If the battery module 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 installer.

## 6.3 Battery Malfunction

- When the battery module 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 the 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: Seek medical help immediately.
- Do not continue to use abnormal battery modules, please contact your installer.

## 6.4 Battery Falling or Strong Impact

- If there is an obvious odor, smoke, or fire, keep away from the equipment

immediately and contact professional personnel.

- Do not use the battery module if it has been dropped or hit. Please contact your installer.

**In all cases, once the situation is stable, contact the Anker Customer Service.**

# 7. Customer Service

support@anker.com

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(DE) +49 (800) 000 2522

(AU) +61 1800 929 112

(IT) +39 800 776 561

10-Year Limited Warranty

Please visit ankersolix.com/warranty for full warranty details.