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Single-phase HiOne Series

USER MANUAL

HiOne-(3.6-12)S-G3
HiOne-6B-G3
HiOne-8B-G3

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Warranty

Follow the installation instructions in this manual to ensure warranty compliance and reliability. The current warranty conditions can be accessed at ***www.hoymiles.com***.

Contact Information

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Revision History

Version	Date	Description
REV1.2	202608	• Updated 4.2 LED Indicators. • Added the new AI working mode. See 4.4.1 AI Mode. • Updated the whole home backup system diagram and partial home backup system diagram. See 5.2 Whole Home Backup System and 5.3 Partial Home Backup System. • Added the requirement for connecting a third-party PV inverter to the backup port of HiBox Gateway. See 5.2 Whole Home Backup System, 5.3 Partial Home Backup System, and Appendix 2: Application of AC Coupled System. • Added the note of ordering accessory packages. See 6.1 Unpacking. • Added the note of never installing the HiOne series in outdoor areas exposed to salt spray. See 6.2 Environmental Requirements. • Updated mechanical installation steps and illustrations. See 7 Installation Steps. • Added wiring diagrams for the whole home backup system and the partial home backup system. See 8.1.2 Whole Home Backup System and 8.1.3 Partial Home Backup System. • Updated the DRM connection and App configuration for Germany and Austria. See 8.8.2 DRM Connection and 10.3.2 Enable DRM Function. • Added the 4G DTS electrical connection. See 8.11.3 DTS-4G-G3 (4G Mode). • Updated the system power-on procedure. See 9.2 System Power-on. • Added instructions on Bluetooth pairing with HiOne inverters. See 10.1 Start Commissioning. • Updated the App self-check function. The system will automatically correct the CT direction and phase sequence. See 10.1 Start Commissioning. • Updated App setting description for EPS mode. See 10.3.1 Set Advanced Parameters. • Updated the technical data. See 13 Technical Data. • Added Appendix 1: P1 Meter App Configuration. • Added using HiOne series to retrofit a PV system. See Appendix 2: Application of AC Coupled System. • Added smart load control and heat pump control. See Appendix 3: Application of Smart Load and Appendix 4: Application of Heat Pump.
REV1.1	202603	Official Release

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1 About This Manual

1.1 Purpose

This manual provides information on the installation, electrical connections, operation, and maintenance of the HiOne series.

Please consider the following before installation:

- Carefully read this manual before operation.
- Keep this manual for reference.

1.2 Audience

This manual is intended for use by qualified persons only. Qualified persons must have the following skills:

- Knowledge of how an inverter works.
- Knowledge of how a battery works.
- Training in how to deal with the dangers and risks associated with the installation, maintenance, and use of electrical devices.
- Training in the installation, commissioning, and maintenance of electrical devices.
- Knowledge of and compliance with all applicable laws, standards, and directives.

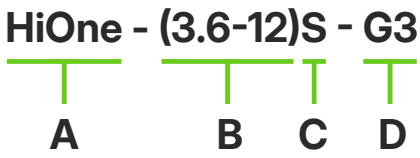
1.3 Validity

This manual is valid for:

- HiOne-(3.6-12)S-G3
- HiOne-6B-G3
- HiOne-8B-G3

NOTE

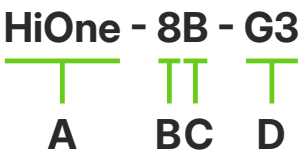
Model identifier:



[A]: Series Name (Hybrid All-in-One)
[B]: Output Power (3.6 kW-12 kW)
[C]: Product Type (Single-phase Inverter)
[D]: Generation (The Third Generation)

NOTE

Model identifier:



[A]: Series Name (Hybrid All-in-One)
[B]: Total Energy (8 kWh)
[C]: Product Type (Battery)
[D]: Generation (The Third Generation)

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2 Safety Information

Before installing, operating, commissioning, and maintaining the product, please carefully read the safety rules and usage instructions in this document as failure to do so may result in safety hazards or device damage. Safety instructions in this manual cannot cover all precautions that should be taken. Please consider the actual conditions on site when performing operations. Any damage caused by a violation of the safety instructions in this manual shall not be the responsibility of Hoymiles.

2.1 Safety Symbols

Safety symbols are used in this manual as follows:

Symbol	Description
DANGER	This symbol indicates potential risks that, if not avoided, may lead to death or serious physical injury.
WARNING	This symbol indicates potential risks that, if not avoided, may lead to personal injury or device damage.
CAUTION	This symbol indicates potential risks that, if not avoided, may lead to device malfunctions or financial losses.
NOTICE	This symbol indicates potential risks that, if not avoided, may lead to minor injury or damage to the equipment.
NOTE	This symbol indicates an important step or tip that leads to the best results but is not safety- or damage-related.

2.2 Additional Symbols

The product label contains the following symbols with their meanings described below:

Symbol	Usage
	**Caution** Failure to observe any warnings contained in this manual may result in injury.
	**Danger to life due to high voltages** Only qualified personnel can open and maintain the equipment.
	**Hot surface** Burn danger due to hot surface that may exceed 60°C.
	After the equipment is turned off, wait for at least 5 minutes before opening the equipment or touching live parts.
	**Treatment** Electrical equipment that has reached the end of life must be collected separately and returned to an approved recycling facility to comply with the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its implementation as national law. Return any devices you no longer need to an authorized dealer or an approved collection and recycling facility.

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CE	**CE mark** The product complies with the requirements of the applicable EU directives.
RoHS	**RoHS mark**
	**Observe the documentation** Read and understand all documentation supplied with the product.

2.3 Safety Instructions

To prevent personal injury and property damage and to ensure the long-term operation of the product, read this section carefully and observe all safety information at all times. Failure to observe the prescribed instructions may potentially void the manufacturer's warranty. If in doubt, please contact Hoymiles.

⚠ DANGER

Danger to life from electric shock

- Only qualified personnel are allowed to install, maintain, or replace the device.
- Qualified personnel must wear personal protective equipment (PPE) during operation.
- Attempting to service the device yourself may result in a risk of electric shock or fire and will void your warranty.
- Never insert or remove the AC connections when the device is running.
- The installation location must be inaccessible to children.
- The device should be installed away from heating devices.
- Before installation, operation, and maintenance, ensure that the upstream and downstream switches are disconnected.
- Before performing any work on the device, disconnect all power supply and wait for at least 5 minutes. The hazardous voltage will exist for up to 5 minutes after disconnection from the power supply.

⚠ WARNING

Risk of burns from hot surfaces

- The surface of the device might exceed 60°C, and touching the surface may result in burns.
- Do not touch hot surfaces before it cools down.
- All powers should be disconnected from the device before attempting any maintenance, cleaning, or working on any circuits connected to the device.
- Keep away from flammable and explosive materials to avoid fire hazard.
- The device should be installed away from humid or corrosive substances.
- When accessing the internal circuit of the device, wait for at least 10 minutes after disconnecting the power.

⚠ CAUTION

- Ensure that the existing wiring is in good condition and no wire is undersized.
- Do not disassemble any parts of the device which are not mentioned in the installation.
- Authorized service personnel must use insulated tools when installing or working with this device.

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NOTICE

- The minimum rated temperature of the wire used is 90°C (194°F).
- All electrical connections must be in accordance with local and national standards.
- Only with permission of the local utility grid company, the device can be connected to the utility grid.
- Do not open the inverter device or change any components without authorization, otherwise the warranty commitment for the device will be invalid.
- Prior to the application, please read this section carefully to ensure the correct and safe application. Please keep the user manual properly.
- The manual contains no instructions for user-serviceable parts. See Warranty for instructions on obtaining service.
- If an error occurs, contact your local distributor or qualified electricians.

2.4 EU Declaration of Conformity

Hoymiles Power Electronics Inc. hereby declares that the inverter described in this document is in compliance with the basic requirements and other relevant provisions of the following directives.

- Electromagnetic Compatibility Directive 2014/30/EU (EMC)
- Low Voltage Directive 2014/35/EU (LVD)
- Restriction of the use of certain hazardous substances Directive 2011/65/EU and its amendment directives (EU) 2015/863 (RoHS)
- Waste Electrical and Electronic Equipment Directive 2012/19/EU (WEEE)

Hoymiles Power Electronics Inc. hereby declares that the battery described in this document is in compliance with the basic requirements and other relevant provisions of the following directives.

- Electromagnetic Compatibility Directive 2014/30/EU (EMC)
- Restriction of the use of certain hazardous substances Directive 2011/65/EU and its amendment directives (EU) 2015/863 (RoHS)
- EU Battery Regulation (EU) 2023/1542.

More detailed information can be found at ***https://www.hoymiles.com***.

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3 Transportation and Storage

3.1 Transportation Requirements

Placement Requirements

- Place the products in the original packaging or specially designed transport packaging. The packaging materials should have sufficient strength and cushioning performance to prevent damage caused by collisions and squeezes during transportation.
- Secure the products firmly inside the packaging to avoid displacement during transportation. For large or heavy products, additional fixing devices may be required.
- Maintain stability and avoid sudden starts, stops, or excessive vibration during transportation.

Personnel Requirements

- Observe the safety symbols on the product packages before transportation.
- Pay attention to the weight of the products. Be cautious to avoid injury when moving. Handle the products according to the personnel quantity required by local regulations.
- Wear protective gloves and use professional handling equipment to prevent injuries.
- Hold the handle to lift the products and keep them horizontal.
- Ensure that only qualified and experienced personnel perform relevant operations.

3.2 Storage Requirements

Placement Requirements

- Keep the products in their original packaging with desiccants retained until they are ready for installation.
- To avoid personal injury or device damage, stack products carefully to prevent them from falling.
- Do not tilt or invert the package.
- Do not place heavy objects on the products, as this may damage the equipment housing or internal components.

Environmental Requirements

- The storage temperature should be between –30°C and 65°C, and the relative humidity should be between 5% and 95%, without condensing.
- Store the products in a clean and dry place to protect them from dust and moisture.
- Store the products in a well-ventilated place to ensure proper air circulation and prevent equipment overheating.
- Do not store the products in places exposed to direct sunlight, wet by rain, or with strong electric fields.
- Do not store the products in places with chemically corrosive substances or where there are pests and rodents.

Routine Maintenance

- The battery SOC should be between 45% and 50%. The battery needs to be recharged every 6 months if it is not used, and it is recommended to store it after it is first charged to 100%, then discharged to 50%, and finally powered off.
- The battery needs to be maintained at a maximum interval of 6 months.
- The requirements for the recharge interval after the battery is fully discharged are as follows.

  a) If the environmental temperature is between 45°C and 50°C, it should be recharged within 7 days;

  b) If the environmental temperature is between 35°C and 45°C, it should be recharged within 15 days;

  c) If the environmental temperature is no more than 35°C, it should be recharged within 30 days.
- When the device is unused, the battery SOC should be between 45% and 55%, and the battery output should be disconnected to prevent the battery from draining.
- During the storage period, the products should be checked regularly, and it is recommended to check the products once every three months. Replace the Packing materials damaged by insects or rodents in a timely manner.
- If the products have been stored for three months or longer, they must be fully inspected and tested by authorized personnel before being put into use.

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- Dispose of deformed, damaged, or leaking batteries directly irrespective of how long they have been stored.
- Batteries can be charged for a maximum of three times during storage. Dispose of batteries if the maximum charge times are exceeded.

NOTE

Storage time starts from the production date of the battery Module. Each battery Module has a serial number label, typically located on:

- The side or top of the Module, or
- The Module packaging.

The production date is encoded in the serial number. You can also check the production date through Hoymiles sales channels (for example, local distributors) using the serial number.

SN1	SN2	SN3	SN4	SN5	SN6	SN7	SN8	SN9	SN10	SN11	SN12
-	-	-	-	Y	Y	M	D	D	-	-	-

- **SN5-SN6: YY**= year
- **SN7: M** = month (1-9 = January to September, A = October, B = November, C = December)
- **SN8-SN9: DD** = day

3.3 Battery Charging Strategy

Under ideal storage conditions, the battery can be stored for up to 12 months. However, due to possible storage condition variations (for example, temperature fluctuations), the battery must be recharged to 40% SOC every 6 months during storage.

NOTE

If the battery is stored at 20°C to 30°C for more than 12 months, 3% to 10% of the battery capacity may be permanently lost.

If the battery has been stored for more than 12 months, recharge it before use. You can use the S-Miles Installer App to enable the Forcing Battery Charging function.

Step 1 Open the S-Miles Installer.

Step 2 Locate the plant and tap the name to open the plant homepage.

Step 3 Tap > **Working Mode**.

Step 4 Enable **Force Charge Mode** and set the parameters.

- Reserved SOC: **40%**
- Max. Charging Power: **appropriate value (up to 100%)**







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4 Product Introduction

The HiOne series is designed for residential and small C&I PV ESS systems. The hybrid inverter, battery, and EMS are integrated into one unit to provide users with a comprehensive PV ESS solution.

4.1 Product Appearance

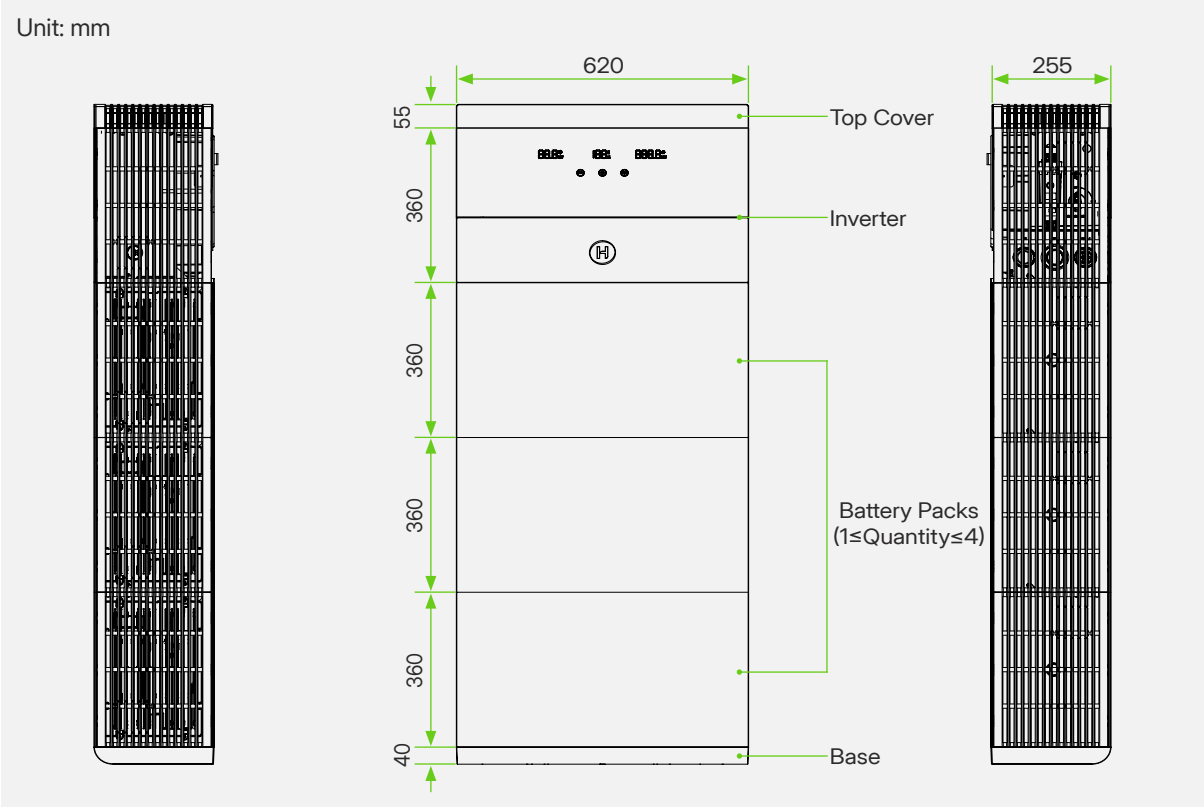


Figure 4-1 Appearance and Dimensions

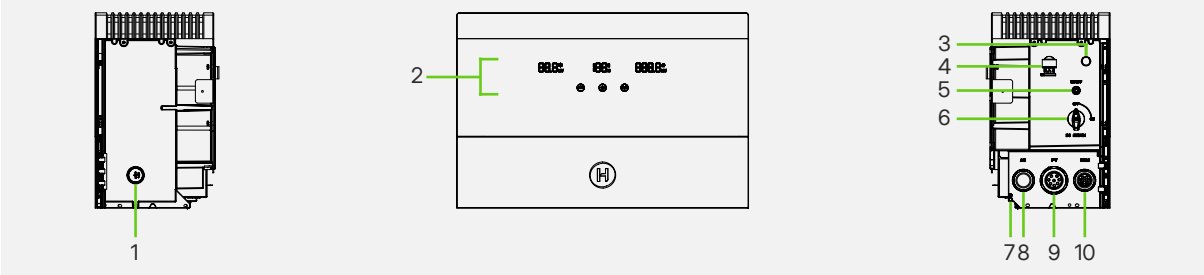


Figure 4-2 Overview

No.	Description	No.	Description
1	Cable Entry for Parallel Batteries	6	DC Switch
2	LED Indicators	7	Ground Terminal
3	Relief Valve	8	AC Cable Entry
4	Data Transfer Stick (DTS) Port	9	PV Cable Entry
5	Power Button	10	Communication Cable Entry

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4.2 LED Indicators

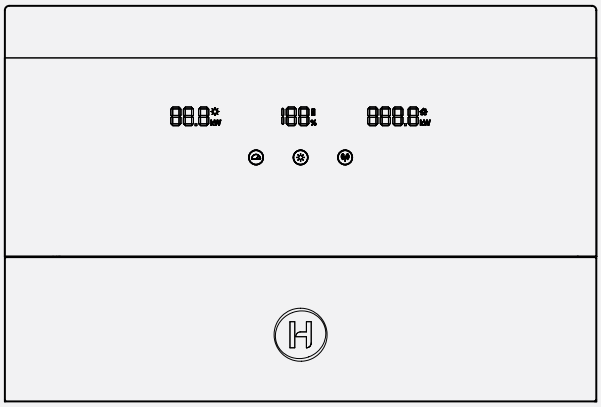


Figure 4-3 LED Indicators

Indicator		Status		Explanation
	PV		Digital readout	Real-time power generation
		/	Off	No PV power
	Battery SOC		Digital readout	Real-time SOC
		/	Off	No battery connection
	Battery Status		Solid white	Battery charging
			Flashing white	Battery connecting / disconnecting
			Solid red	Battery fault
		/	Off	Battery discharging / Standby / No battery connection
	Load Consumption		Digital readout	Real-time power consumption
			0.0 display	No load connection / Zero consumption / No meter connection
	Meter		Solid white	Normal
			Solid red	Communication fault
		/	Off	No meter connection
	State		Solid white	System normal operation / Standby
			Solid red	System fault
		/	Off	System power-off
	Internet		Solid white	Connected to network and Cloud
			Flashing white	Connecting to Cloud / System upgrading
		/	Off	No DTS connection

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4.3 Supported Power Grids

There are different ways of wiring for different grid systems. TN-S / TN-C / TN-C-S / TT are shown as follows.

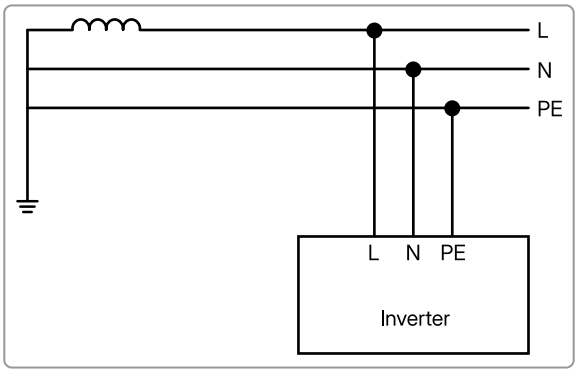


Figure 4-4 TN-S

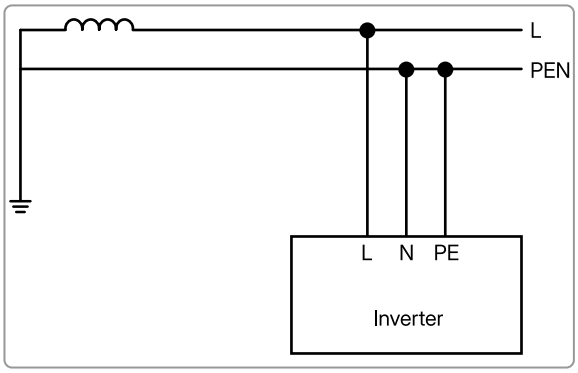


Figure 4-5 TN-C

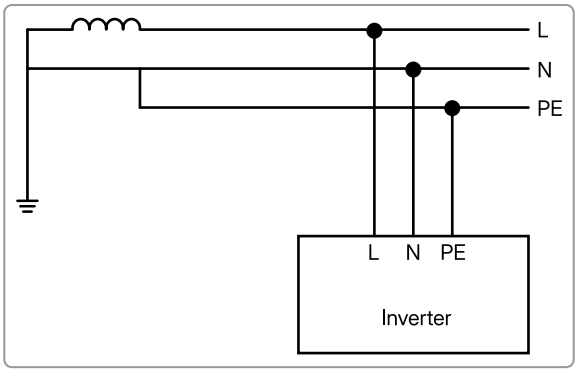


Figure 4-6 TN-C-S

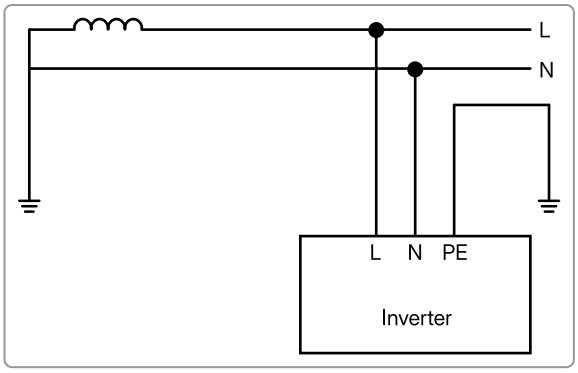


Figure 4-7 TT

4.4 Working Modes

The HiOne series provides the following working modes for you to choose according to your lifestyle and environment.

4.4.1 AI Mode

> **NOTE**
>
> The AI Mode is available only in certain countries. For details, refer to the in-app instructions.

Based on the local peak and valley electricity prices, weather data, and home consumption habits, the AI Mode can customize battery charging and discharging strategies to maximize your cost savings.

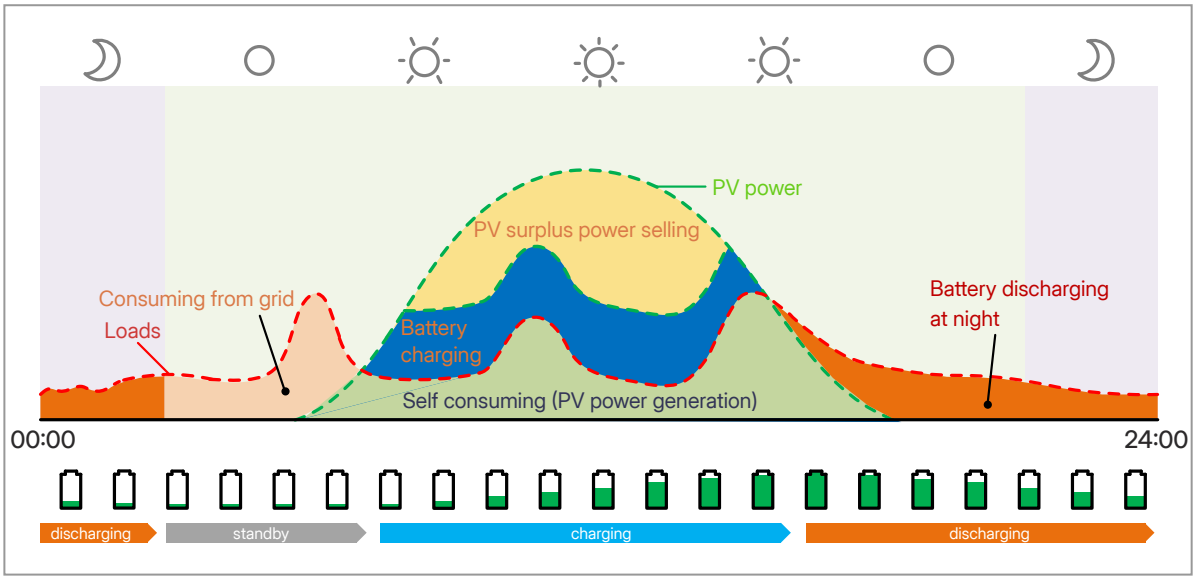


Figure 4-8 Power Flow of AI Mode

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Strategy	Description
Charge from Grid	When the electricity price is low and there is no PV generation or PV generation is insufficient, the system charges the battery from the grid to avoid buying electricity from the grid when the price is higher.
Charge from PV only	When PV generation is sufficient, the system charges the battery using PV power only, avoiding the need to draw power from the grid.
Grid Priority Supply	When the electricity price is low, the battery reserves energy and does not discharge, and the system gives priority to grid power.
Self-Consumption	The system prioritizes PV power for supplying the load and uses the battery for energy regulation when needed, reducing grid power consumption.
Discharge to Grid	When the electricity price is high, the system discharges the battery to the grid to generate revenue from electricity sales.

4.4.2 Self-consumption Mode

The Self-consumption Mode is the basic working mode, which can reduce the use of grid power.

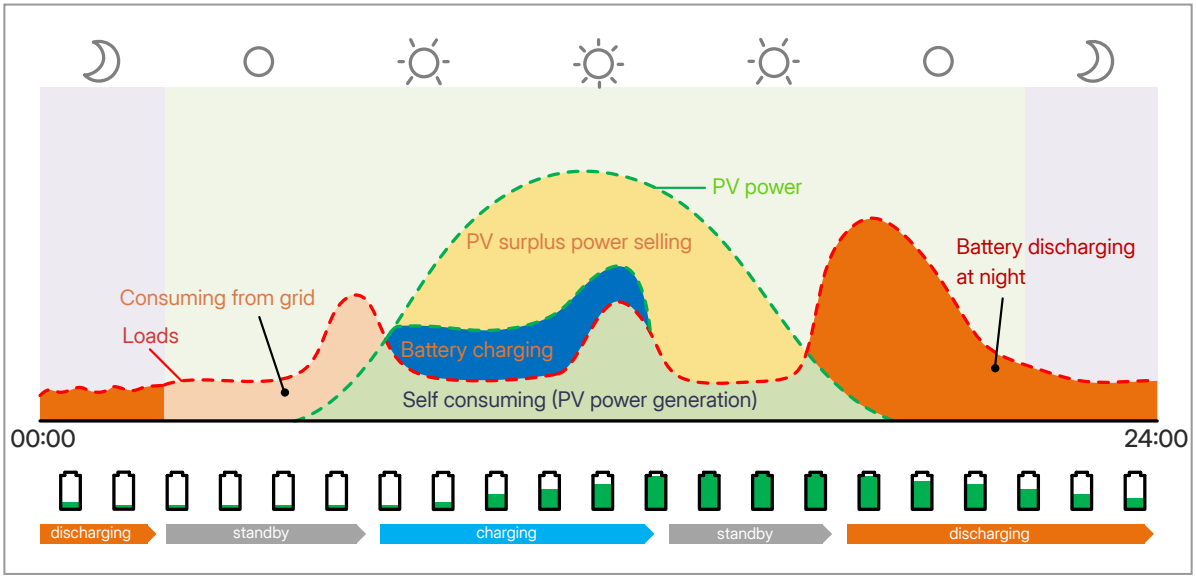


Figure 4-9 Power Flow of Self-consumption Mode

Time Period	Inverter Working Status
PV power is sufficient	(PV → Loads) > (PV → Battery) > (PV → Grid) The power generated from PV first supplies the loads, any excess power can charge the battery, and if there is still surplus power, it can be sold to the grid (or limited if necessary).
PV power is insufficient	PV + Battery + Grid → Loads The battery discharges power to the loads, and once its capacity reaches its reserved capacity, it automatically stops discharging, and the grid supplies power to the loads.

NOTE

- In order to maximize self-consumption, the grid will not charge the battery in this mode, and only the surplus PV power can charge the battery. The grid will initiate the charging process only when the battery SOC falls below the reserved capacity.
- Reserved SOC (10%-100%): The minimum battery SOC that can be reserved due to infrequent power outages. For details, refer to battery specifications.

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4.4.3 Economy Mode

The Economy Mode can maximize electricity savings by shifting the battery state to avoid using grid electricity at peak hours. In this mode, the battery can be charged or discharged according to valley or peak electricity prices time. The system will calculate the savings based on the set currency.

Time Period	Inverter Working Status
Peak Hour	(PV + Battery → Loads) > (PV + Battery → Grid) The power generated from PV and battery can simultaneously supply the loads. Any excess power is then sold to the grid (or limited if necessary). The grid power will not be used until there is no PV power or the battery SOC reaches the reserved capacity.
Off-peak Hour	(PV + Grid) → (Loads + Battery) The power from PV and grid can simultaneously supply the loads and charge the battery.
Partial-peak Hour	Its working logic is the same as "***Self-consumption Mode***".

NOTE

- Reserved SOC (10%-100%): The minimum battery SOC that can be reserved due to infrequent power outages. For details, refer to battery specifications.
- Time Setting:

  Period (1-4): Set the start and end dates of the electricity rate period.
  Time Range (2): Set time period in one week.
  Peak Hour: Set peak electricity price time and trade price.
  Off-peak Hour: Set off-peak electricity price time and trade price.
  Partial-peak Hour: Set partial-peak trade price.

4.4.4 Backup Mode

The Backup Mode is suitable for areas with frequent power outages. This mode will maintain the battery capacity at a relatively high level to ensure that the EPS loads can be used when the grid is off.

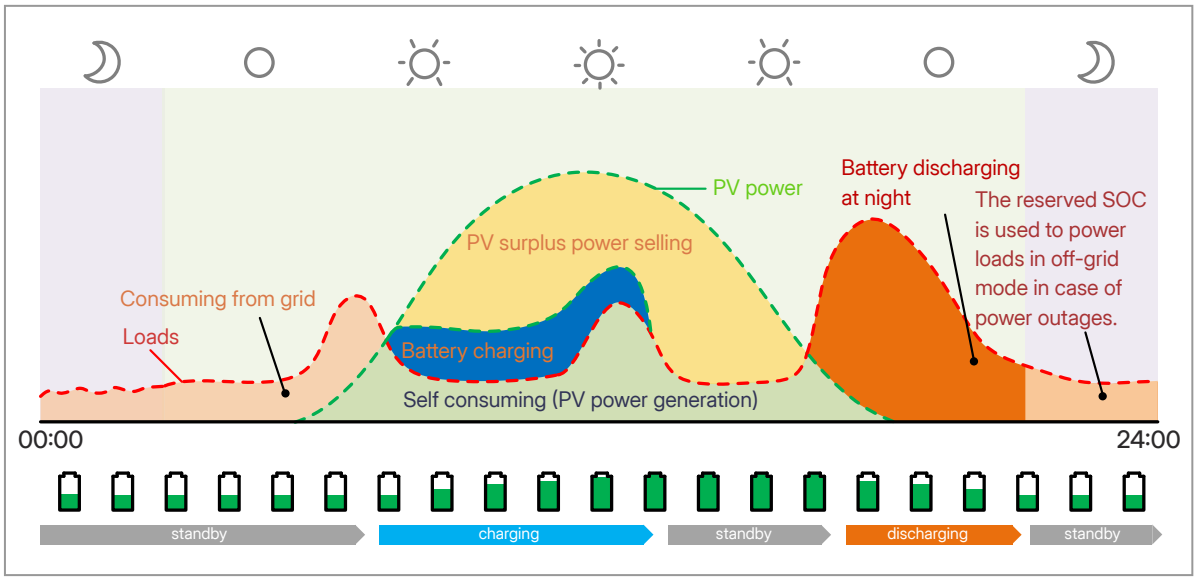


Figure 4-10 Power Flow of Full Backup Mode

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Time Period	Inverter Working Status
PV power is sufficient	(PV → Loads) > (PV → Battery) > (PV → Grid) The power generated from PV first supplies the loads. Any excess power can charge the battery, and if there is still surplus power, it can be sold to the grid (or limited if necessary).
PV power is insufficient	Battery SOC > Reserved Capacity (PV + Battery → Loads) The battery discharges power to the loads, and when its SOC reaches reserved capacity, it automatically stops discharging.
	Battery SOC ≤ Reserved Capacity (PV + Grid → Loads) The grid supplies power to the loads. The battery does not discharge until the grid outage occurs. The battery needs to be recharged to the reserved capacity after the grid is normal.

NOTE

Reserved SOC (60%-100%): The minimum battery SOC that can be reserved due to infrequent power outages. For details, refer to battery specifications.

4.4.5 Peak Shaving Mode

The Peak Shaving Mode is used to level out peak power in electricity use to maximize electricity savings. In this mode, the Peak Meter Power (the maximum power that the inverter obtains from the grid) can be set; only when PV and battery can fully power the loads, can the Peak Meter Power be limited.

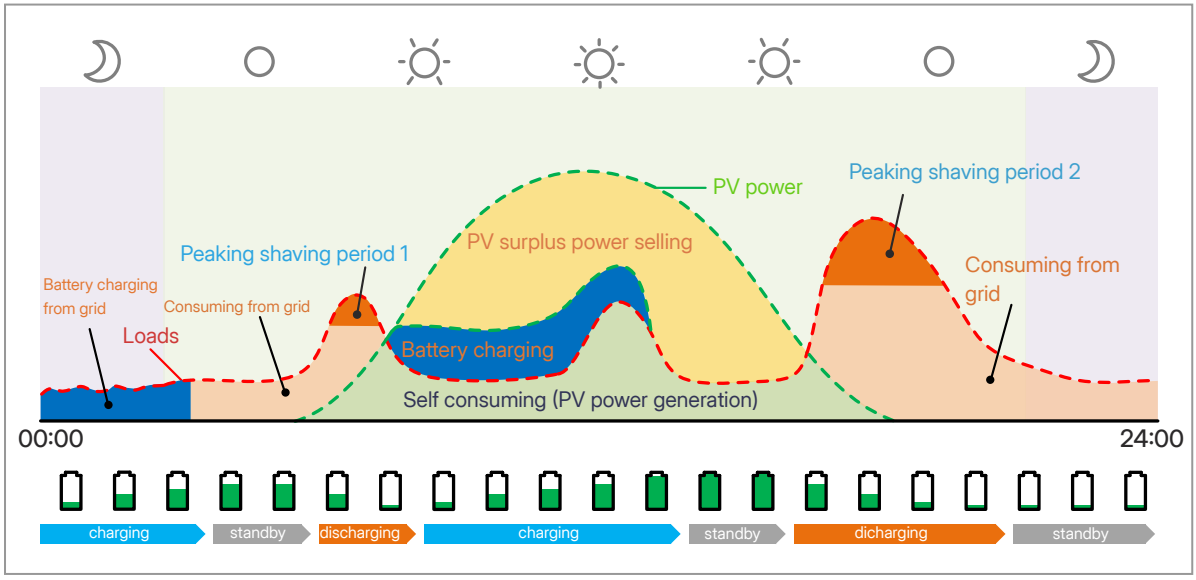


Figure 4-11 Power Flow of Peaking Shaving Mode

Time Period	Inverter Working Status
Grid Consumption Power > Peak Meter Power	PV + Battery → Loads The power generated from PV and battery can simultaneously supply the loads. The grid power will not be used until there is no PV power or the battery SOC reaches the reserved capacity.

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Time Period	Inverter Working Status
Grid Consumption Power < Peak Meter Power	Battery SOC > Peak Capacity Its working logic is the same as "***Self-consumption Mode***".
	Battery SOC ≤ Peak Capacity (PV + Grid → Loads) The grid can supply the loads and charge the battery at a power not higher than the peak meter power.

NOTE

- Reserved SOC (10%-100%): The minimum battery SOC that can be reserved due to infrequent power outages. For details, refer to battery specifications.
- Baseline SOC (10%-100%): The minimum battery SOC that can be reserved during peak meter power time.
- Peak meter power (0-60000 W): The maximum load consumption power from the grid side.

4.4.6 Time of Use Mode

The Time of Use Mode allows users to customize the charging and discharging time of the battery within eight periods. Users can set the charging and discharging time according to the local peak and valley electricity prices to save costs.

Time Period	Inverter Working Status
Charging Period	The battery will be charged from the grid at the pre-set charging power until the battery is charged to the pre-set stop charging SOC (%).
Discharging Period	The battery will discharge power to the loads and the grid at the pre-set discharging power until the battery discharges to the pre-set stop discharging SOC (%).
Other Period	Its working logic is the same as "***Self-consumption Mode***".

NOTE

- Reserved SOC (10%-100%): The minimum battery SOC that can be reserved due to infrequent power outages. For details, refer to battery specifications.
- Time period (1-8):

Charge Time	The battery can be charged at valley electricity price time.
Charge Power (0-100%)	The battery can be charged at this power.
Stop Charge SOC (0-100%)	The battery will stop charging when the battery SOC reaches this value.
Discharge Time	The battery can discharge at peak electricity price time.
Discharge Power (0-100%)	The battery can discharge at this power.
Stop Discharge SOC (0-100%)	The battery will stop discharging when the battery SOC reaches this value.

4.4.7 Off-grid Mode

The Off-grid Mode is used when the system is not connected to the grid.

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5 System Overview

5.1 Basic System

The whole system has a rich application scenario, which supports the deep integration of PV, ESS, and EV Charger.

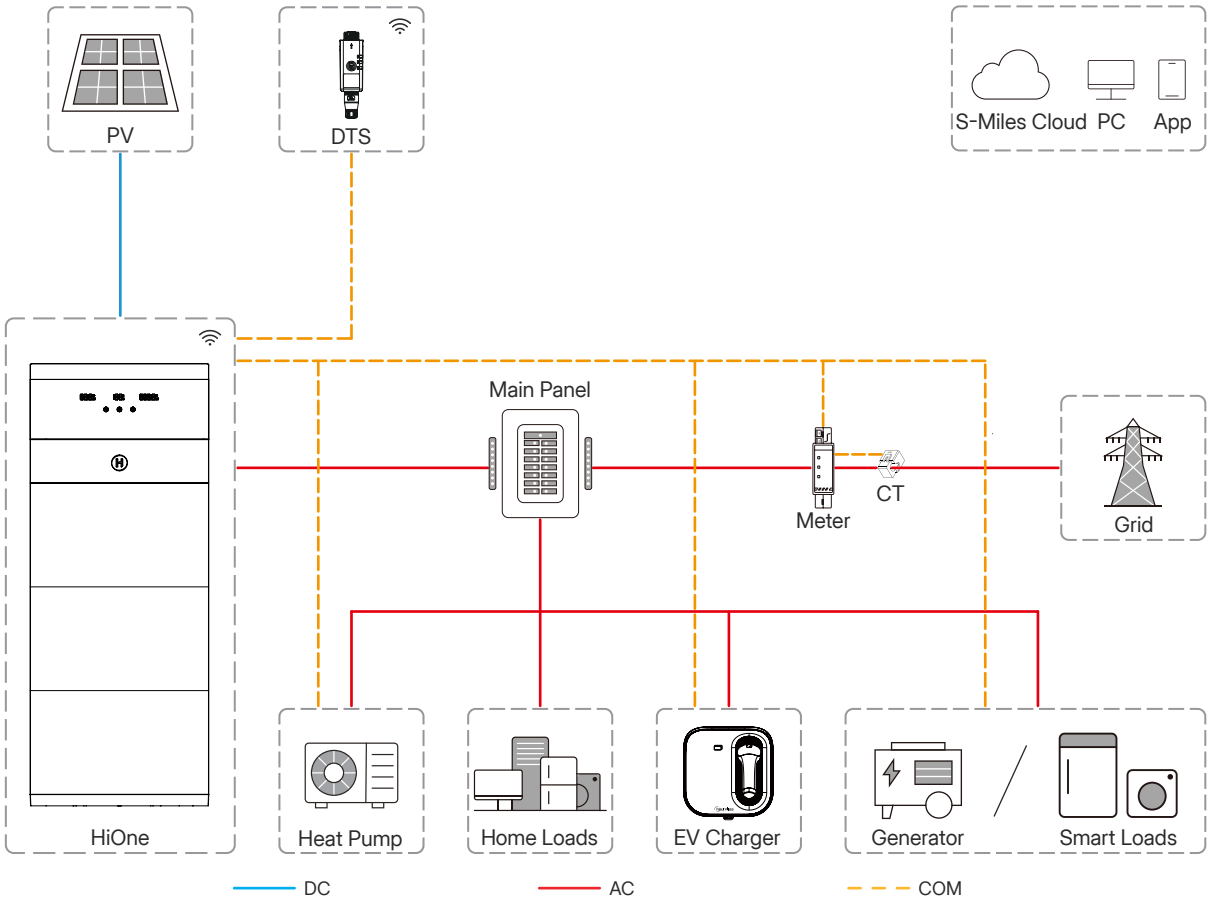


Figure 5-1 Basic System

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5.2 Whole Home Backup System

In the whole home backup system, the whole home load, smart load, generator, microinverter, and EV charger can be connected to a Hoymiles HiBox Gateway. In the event of a grid outage, other components in this energy storage system will power the loads.

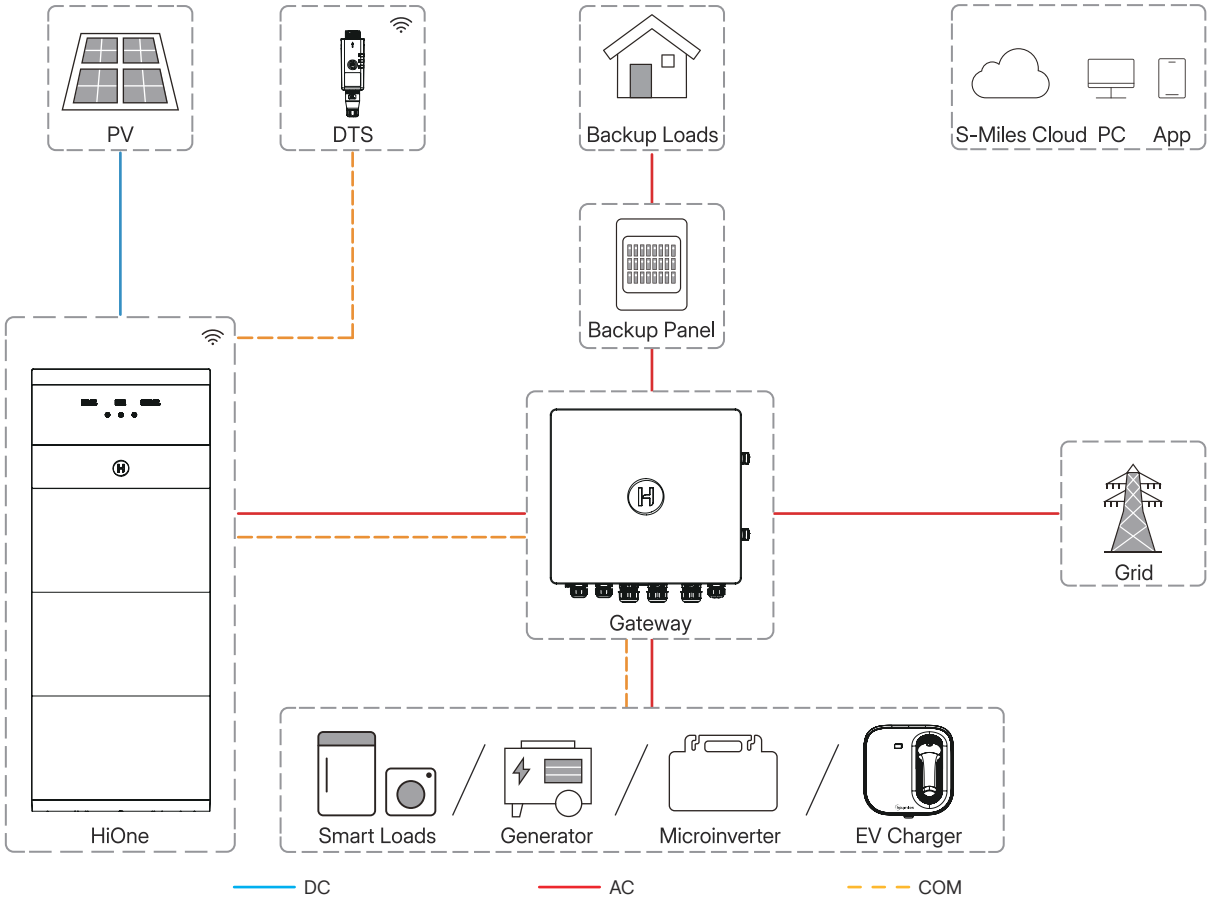


Figure 5-2 Whole Home Backup System

NOTE

If the Gateway backup port is connected to a third-party PV inverter, ensure that the power of the third-party PV inverter is less than 3 kW or the load power.

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5.3 Partial Home Backup System

In the partial home backup system, users can divide the home loads into backup loads and non-backup loads as required. All backup loads can be connected to the backup port of the HiBox Gateway, and all non-backup loads can be connected to the main panel. In the event of a grid outage, only the backup loads will be powered.

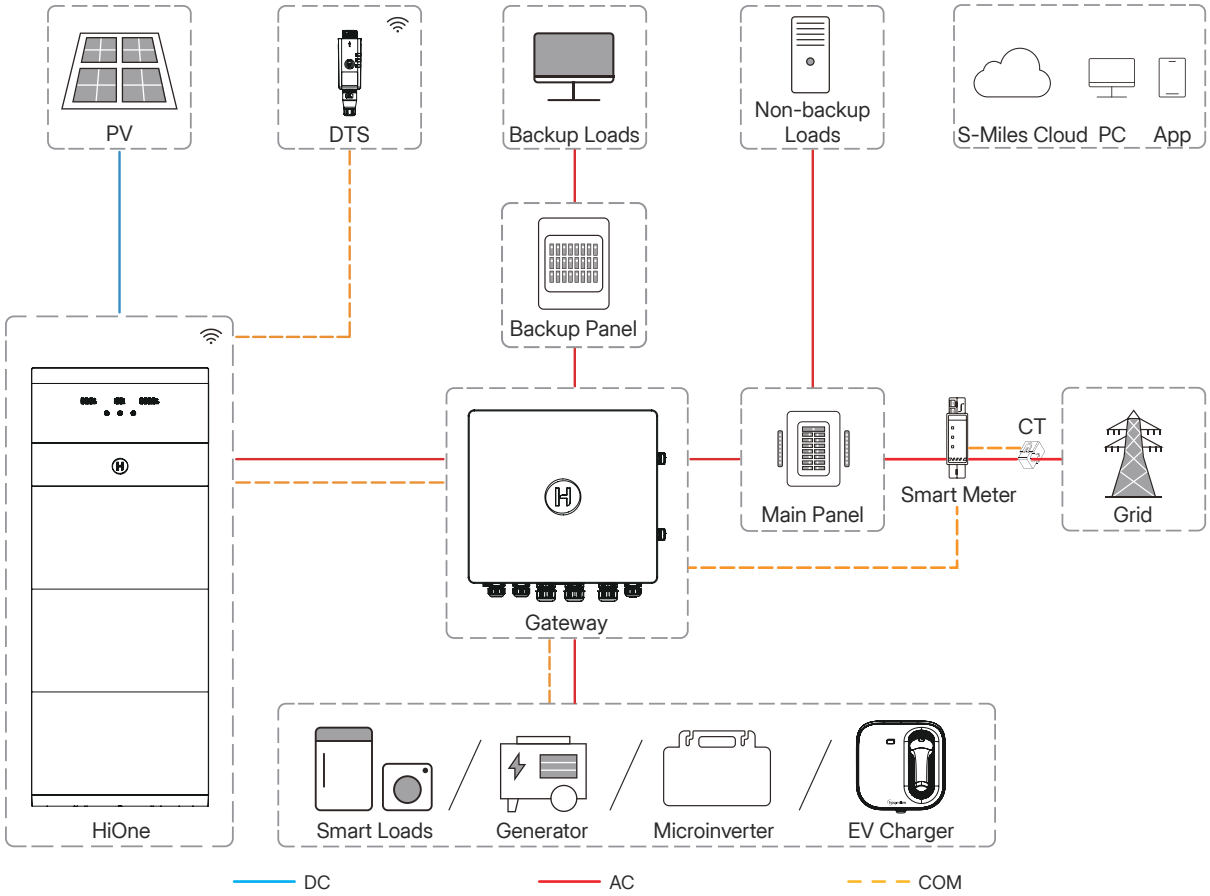


Figure 5-3 Partial Home Backup System

NOTE

If the Gateway backup port is connected to a third-party PV inverter, ensure that the power of the third-party PV inverter is less than 3 kW or the load power.

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6 Pre-installation

DANGER

Danger to life due to fire or explosion!

- Despite careful construction, electrical devices can cause fires. This can result in death or serious injury.
- Do not install the product in places containing highly flammable materials or gases.
- Do not install the product in places where there is a risk of explosion.

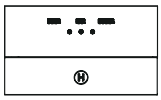
WARNING

- Make sure there is no electrical connection before installation.
- To avoid electric shock or other injuries, make sure that holes are not drilled over any electrical parts or plumbing installations.
- Qualified personnel must wear personal protective equipment (PPE) during operation.

6.1 Unpacking

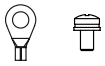
Unpack the packages and carefully take out the product and other accessories. Check if the deliverables are complete and intact after unpacking the product. Please contact your supplier if the components are missing or damaged upon receipt of the product.

HiOne-(3.6-12)S-G3 Package

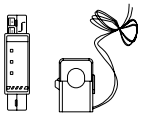

Inverter*1


Bracket*2


Expansion Screw M8*2

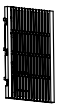

OT Terminal*2
Screw M4*8

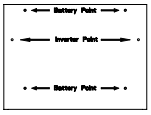

Communication Cable (5 m)*1


Single-phase Meter*1

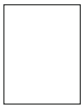

Core*2


DTS-WL-G3*1

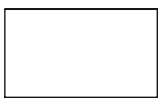

Decorative Cover*2



Positioning Board*1


Document*1

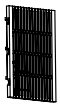
HiOne-6B-G3/HiOne-8B-G3 Package


Battery*1


Bracket*2


Expansion Screw M8*2


Screw M4*6

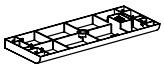

Decorative Cover*2

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Standard Accessory Package


Handle*2

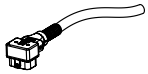

Base*1


Top Cover*1


Expansion Screw M8*4

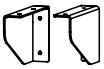
Optional Accessory Package

Tower Parallel Installation Accessories


Battery Cable


M4 Screw*5

Wall-mounting Accessories


Bracket Pair*1


Expansion Screw M8*4

NOTE

Depending on your setup, order appropriate accessories:

	Standard Accessory Package Quantity	Parallel Accessory Package Quantity	Wall-mounting Accessory Package Quantity
1 Inverter, 1–4 Batteries (Floor-standing)	1	0	0
1 Inverter, 5–8 Batteries (Floor-standing)	2	1	0
1 Inverter, 1–4 Batteries (Wall-mounting)	1	0	1
1 Inverter, 5–8 Batteries (Wall-mounting)	2	1	2

6.2 Environmental Requirements

- The product is designed with a protection degree of IP66 and can be installed indoors or outdoors.
- It is recommended to install the inverter in a location protected from direct sunlight or adverse weather conditions such as snow, rain, or lightning.
- The ambient temperature should be between -20°C and 55°C. High ambient temperatures (above 45°C) will cause power derating of the inverter.
- The relative humidity should be less than 95%, without condensing.
- The product should be installed on a solid surface that is suitable for its dimensions and weight.
- The product should be installed in an environment with good ventilation and heat dissipation conditions.
- The product should be installed far from noise-sensitive areas.
- The product should be installed far from flammable materials, corrosive chemicals, and heating devices.
- The product should be installed in a place where its enclosure and heat sink are not easy to be touched, because these parts are hot during operation.
- Salt spray can cause corrosion to the product. Do not install the product in outdoor areas exposed to salt spray. (A salt area refers to the region within 500 meters from the coast or prone to sea breeze. The regions prone to sea breeze vary with weather conditions (such as typhoons and monsoons) or terrains (such as dams and hills.)

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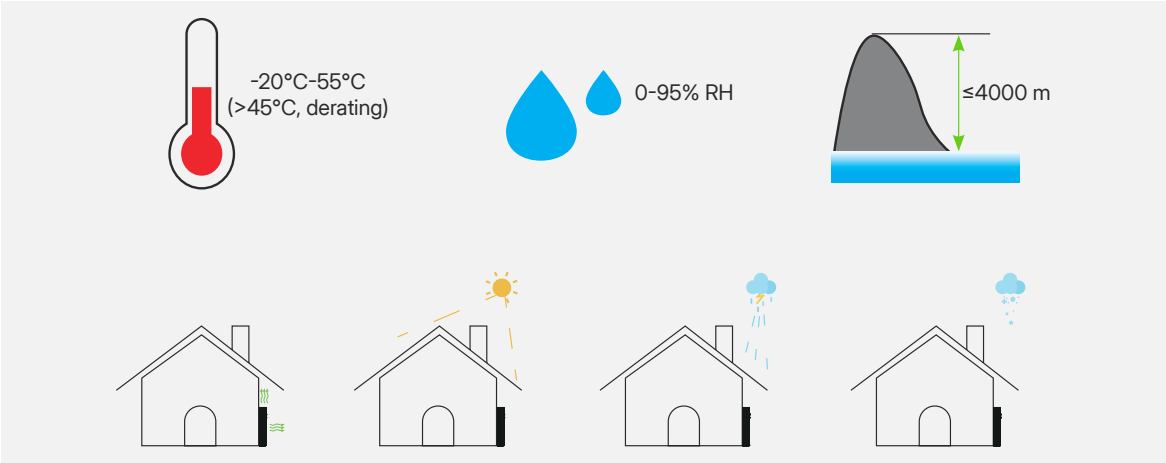


Figure 6-1 Installation Environment

6.3 Space Requirements

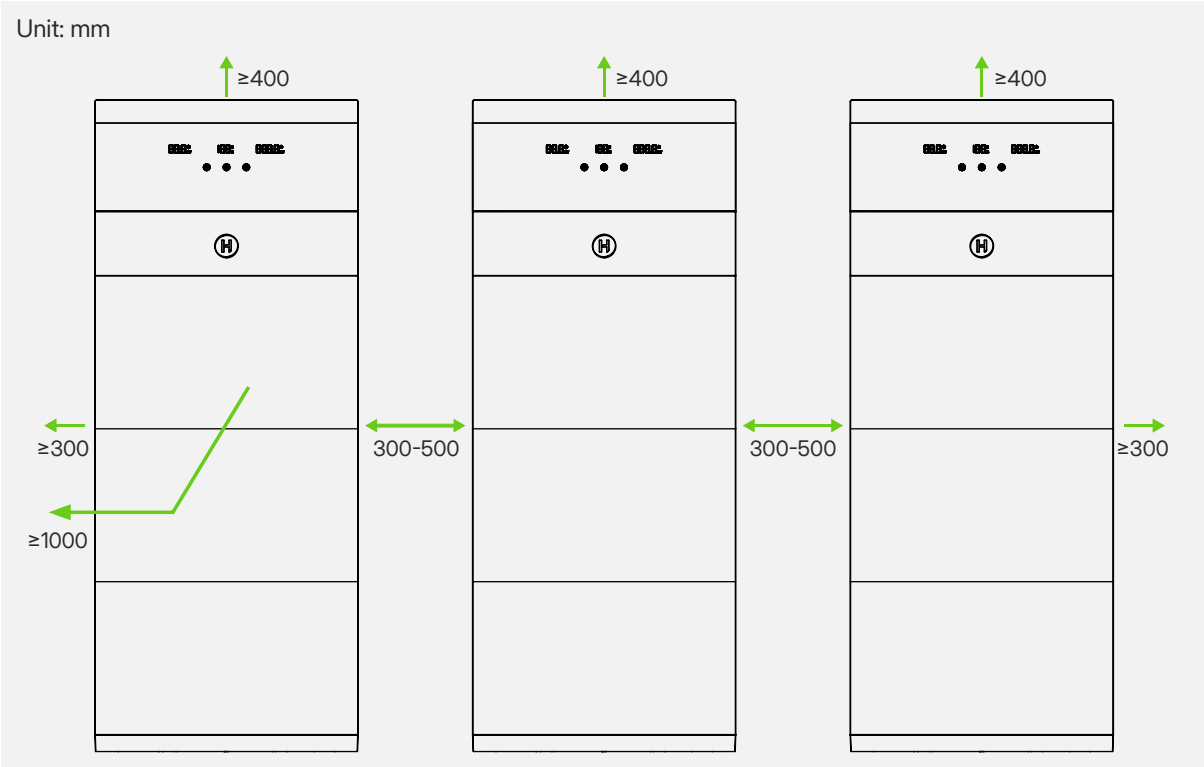
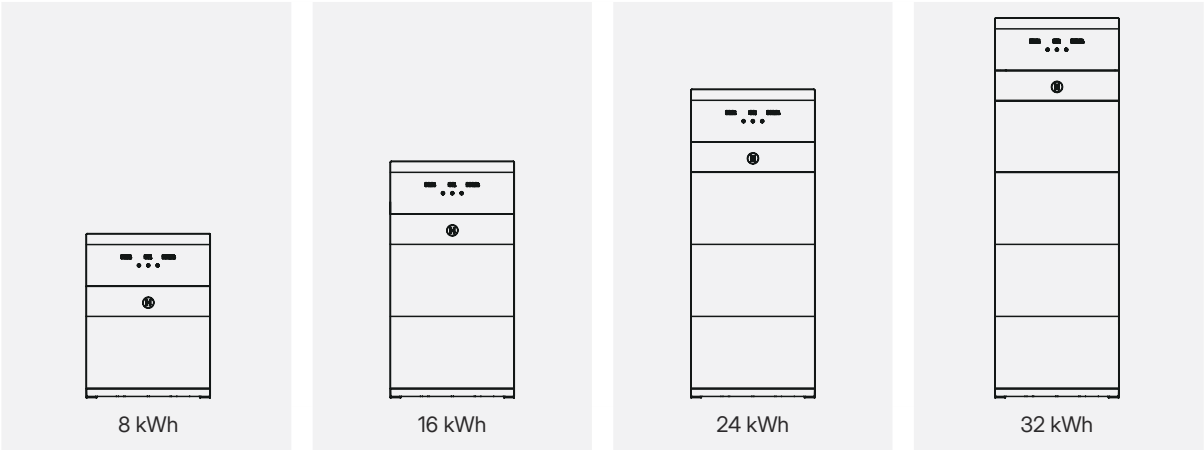


Figure 6-2 Space Requirements

6.4 Stackable Requirements



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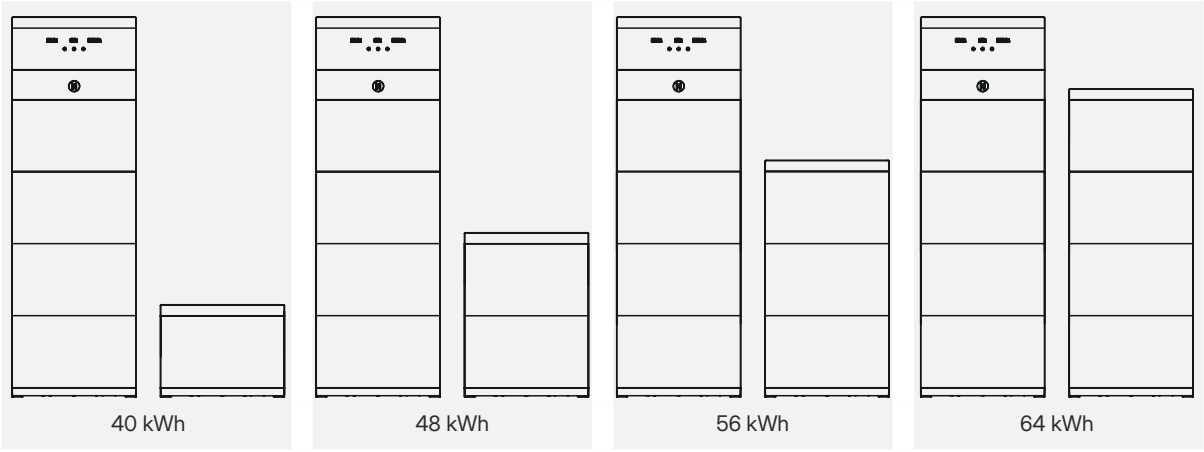
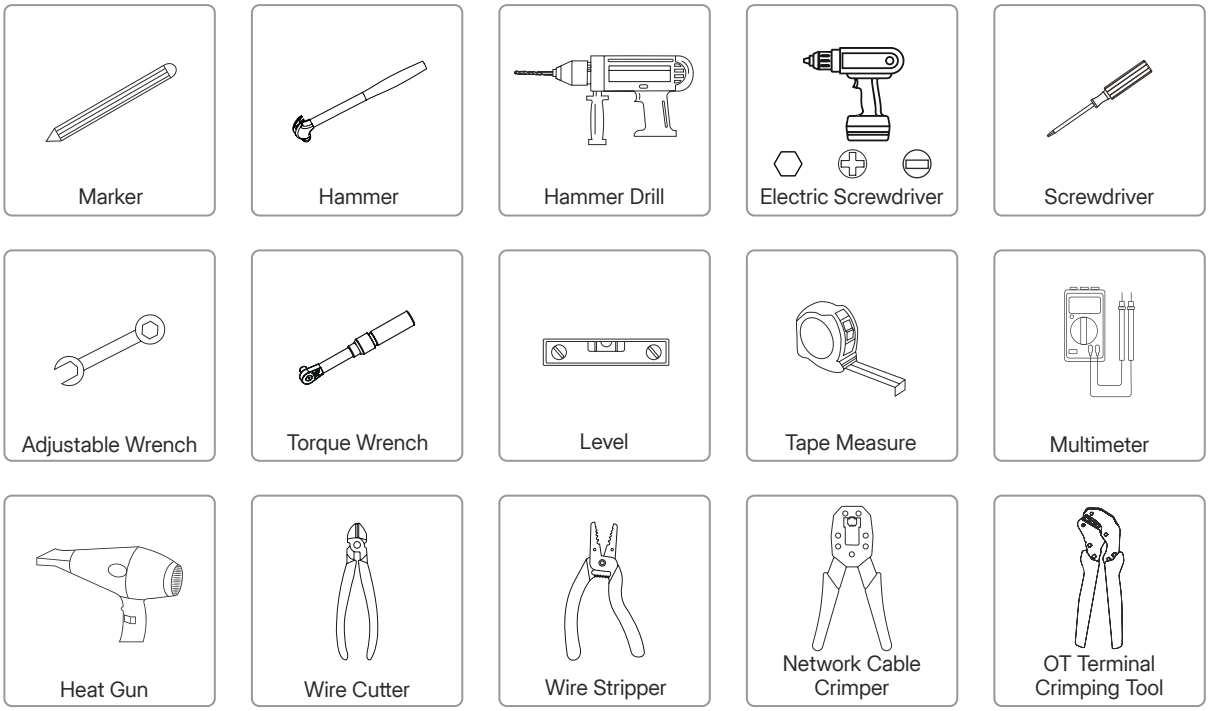


Figure 6-3 Stackable Requirements

6.5 Installation Tools



Personal Protective Equipment (PPE)



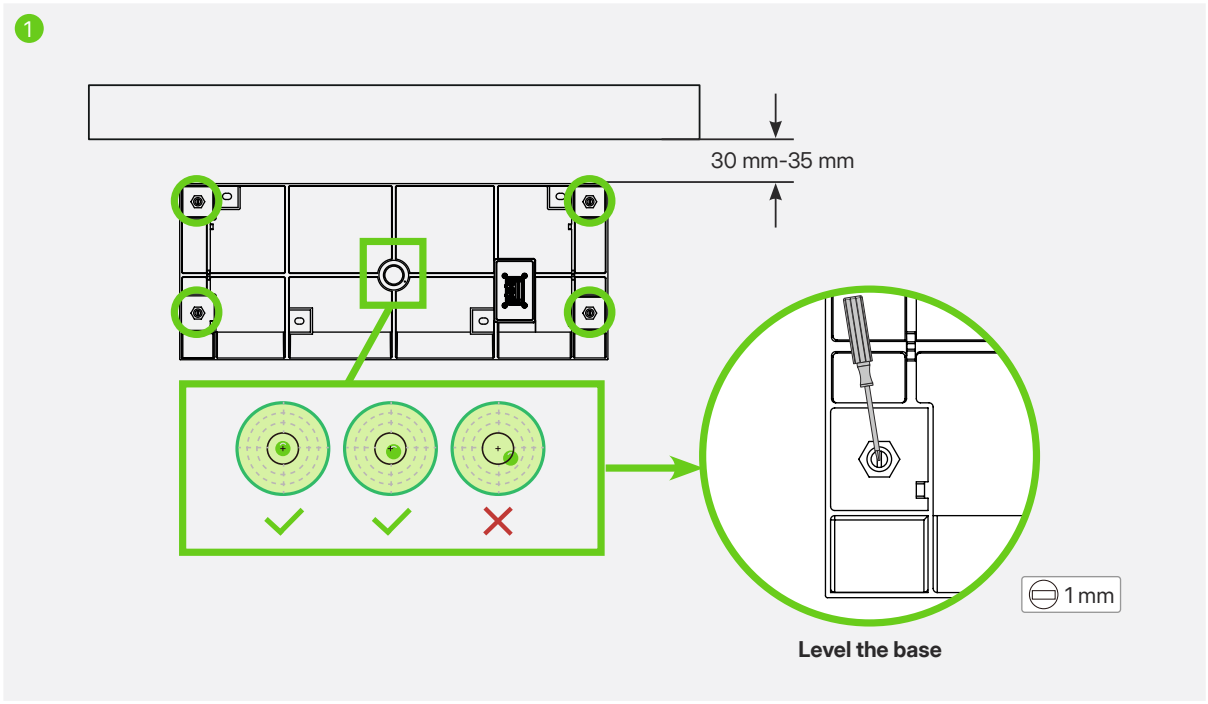
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7 Installation Steps

7.1 Floor-standing Installation

Step 1 Place the base on a level ground, parallel to the wall, and keep a distance of 30 mm to 35 mm. Ensure that the level bubble is in the center; if not, use a flat head screwdriver to adjust the base.



Step 2 **Fix the base.**

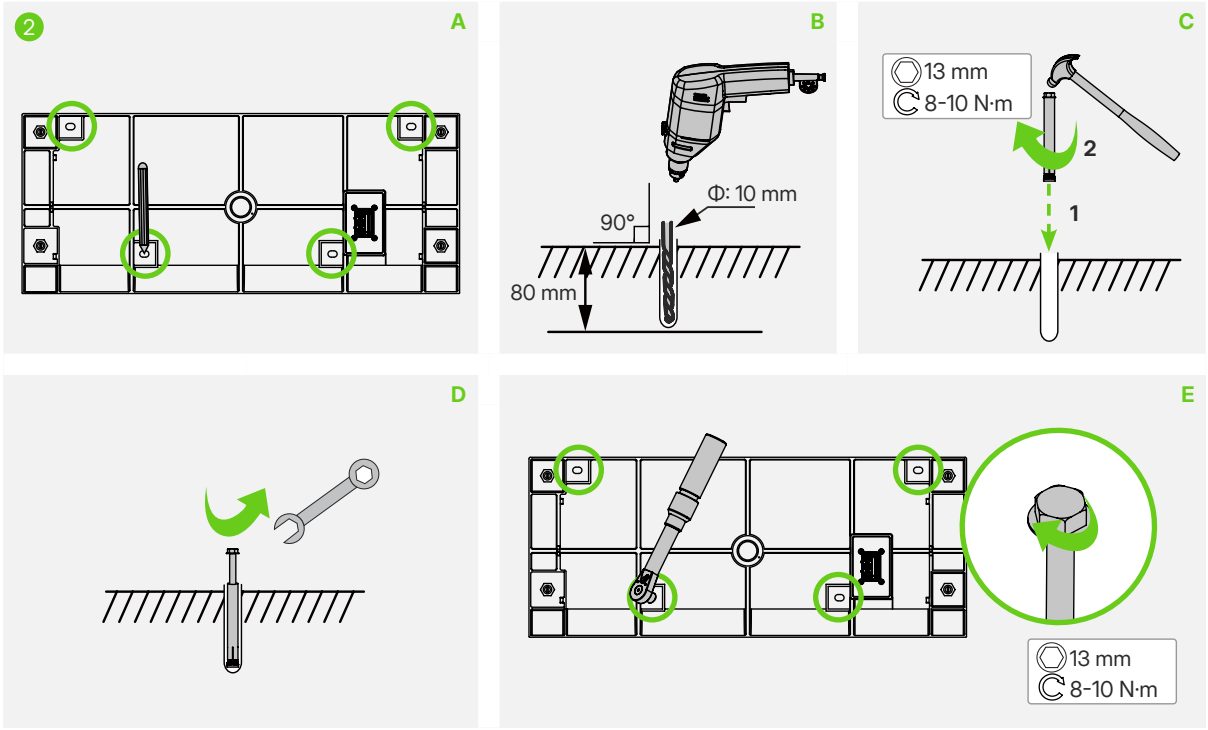
A. Mark hole positions.

B. Drill holes.

C. Hammer and tighten the expansion screws.

D. Unscrew the screws while leaving sleeves in place.

E. Place the base, insert the screws into the sleeves, and tighten them.



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Step 3 Drill holes for installing HiOne.

A. Bend the bottom of the positioning board along the dotted lines.

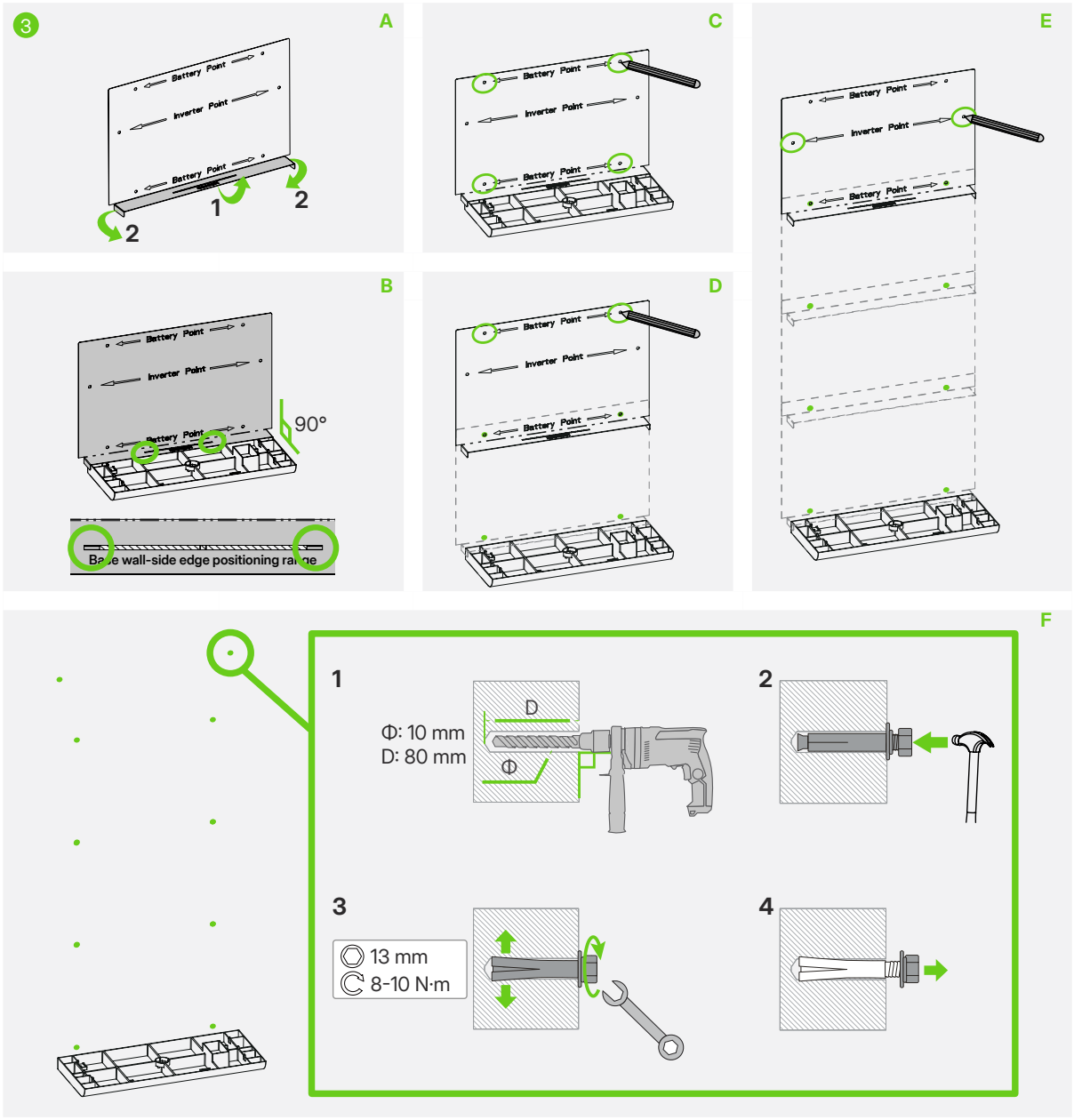
B. Clip the positioning board to the base.

C. Mark the four battery installation holes (battery points).

D. Slide the positioning board upward along the wall until its bottom battery points align with the marked top battery points.

E. Repeat step D to mark the battery points for all batteries. Then, mark the inverter points.

F. Drill holes and install the expansion sleeves.



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Step 4 Install a battery.

A. Remove the connector cap from the base.

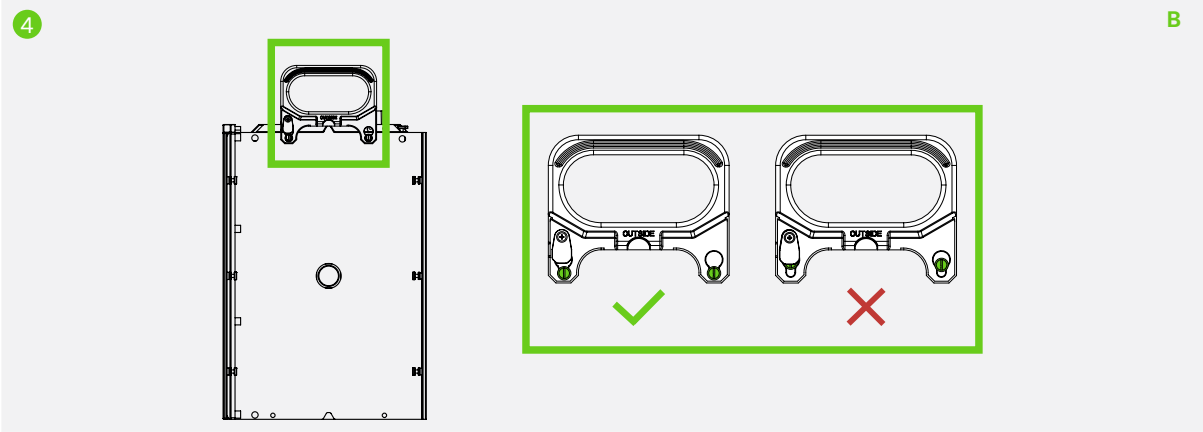
B. Install the handles on a battery.

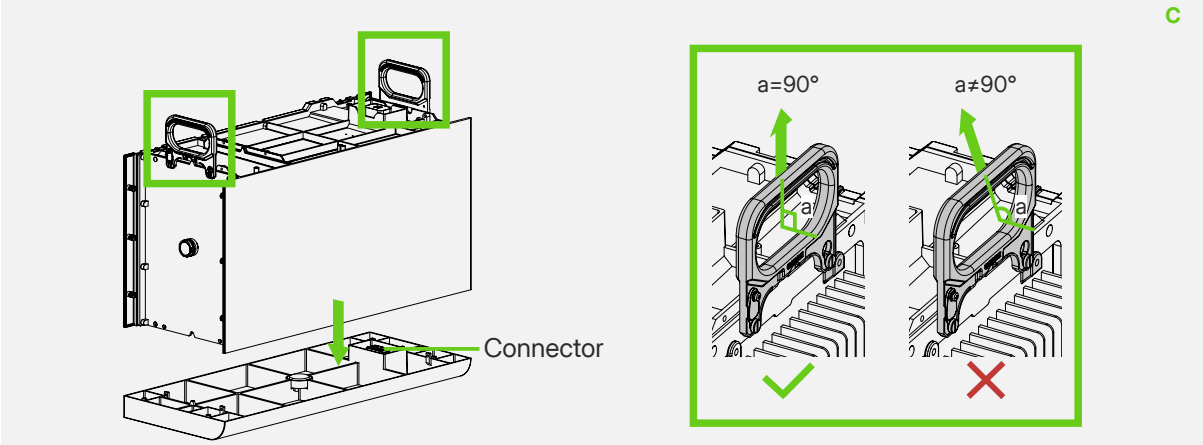
C. Hold the handles to lift the battery, align it with the base, and place it on the base. Ensure that the connectors fully engage.

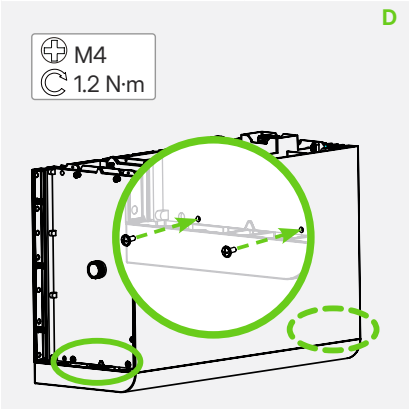
D. Secure the battery to the base using the M4 screws.

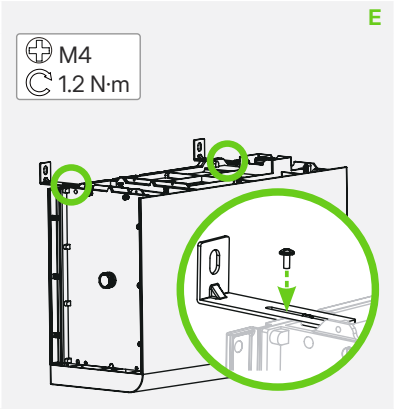
E. Secure the L-shaped brackets to the battery using the M4 screws.

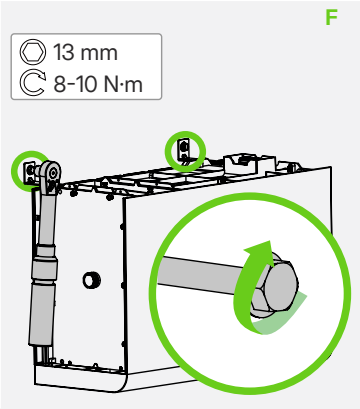
F. Secure the battery to the wall using the L-shaped brackets and expansion screws.











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Step 5 Install other batteries. If you only have one battery, go to step 6.

A. Remove the connector cap from the top of the installed battery.

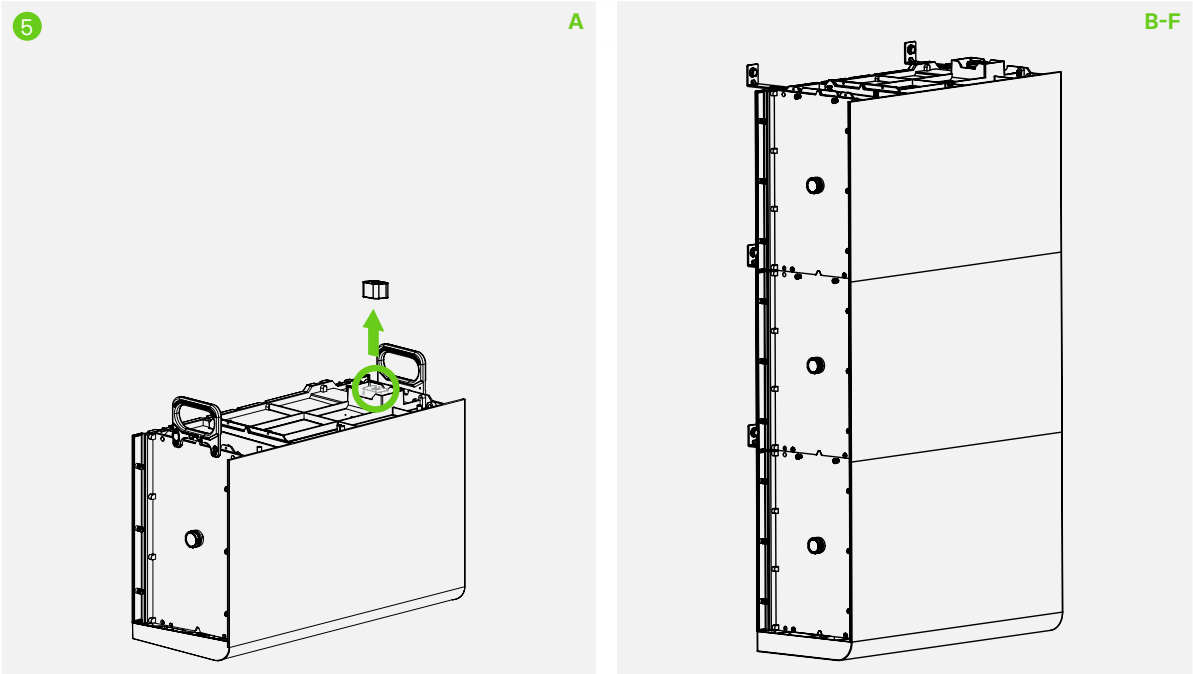
B. Lift a battery to be installed, align it with the installed battery, and place it on the installed battery. Ensure that the connectors fully engage.

C. Secure the two batteries using the M4 screws.

D. Secure the L-shaped brackets to the top battery using the M4 screws.

E. Secure the top battery to the wall using the L-shaped brackets and expansion screws.

F. Repeat steps A-E to install all batteries.



Step 6 Install the inverter.

A. Remove the connector cap from the top of the battery and from the bottom of the inverter.

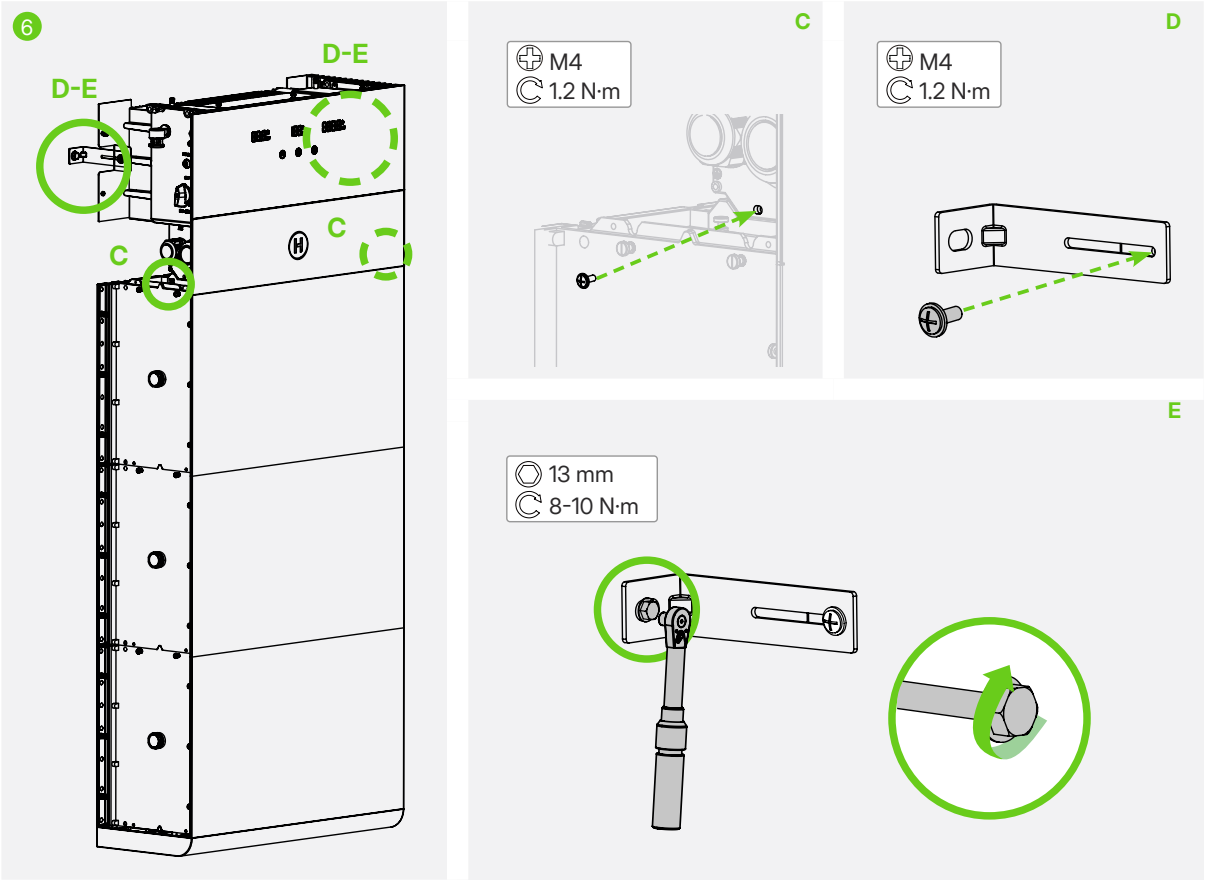
B. Use the handles to lift the inverter, align it with the battery, and place it on the battery. Ensure that the connectors fully engage.

C. Secure the inverter to the battery using the M4 screws.

D. Secure the L-shaped brackets to the inverter using the M4 screws.

E. Secure the inverter to the wall using the L-shaped brackets and expansion screws.

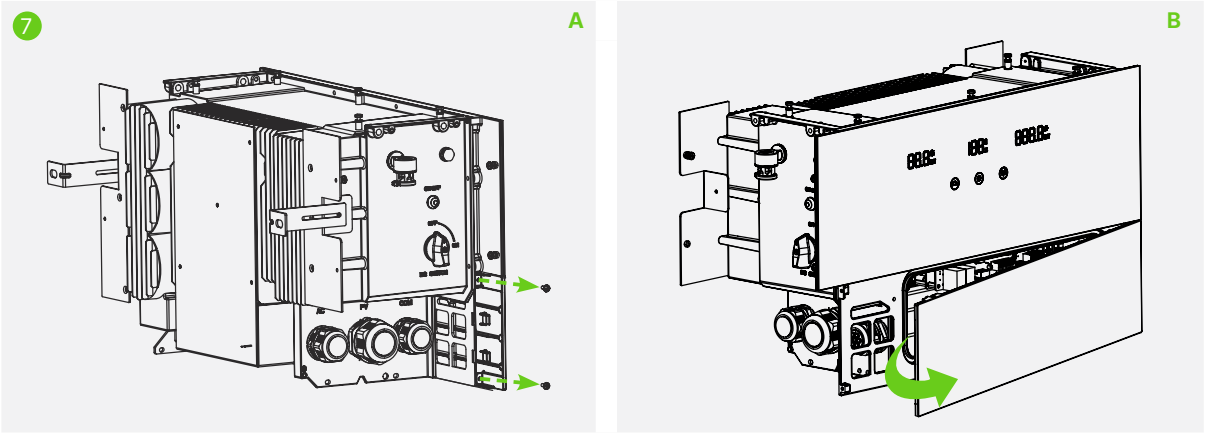
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Step 7 Remove the wiring box cover.

A. Unscrew the two screws on the lower-left side of the inverter.

B. Remove the wiring box cover.



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7.2 Wall-mounting Installation

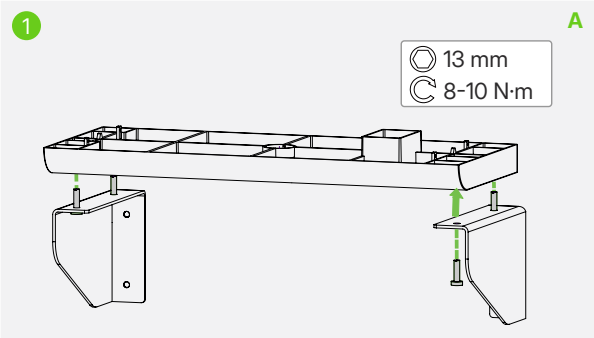
Step 1 Install the wall-mounting bracket.

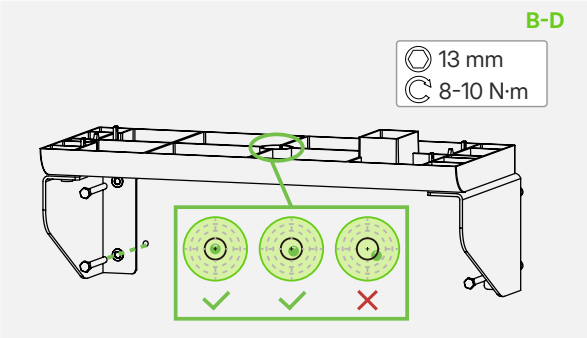
A. Attach the two wall-mounting brackets to the base.

B. Place the bracket assembly against the wall and adjust it until the level bubble is centered.

C. Mark the drilling positions through the bracket holes, then drill holes into the wall.

D. Tighten the expansion screws to secure the wall-mounting brackets to the wall.





Step 2 Drill holes for installing HiOne.

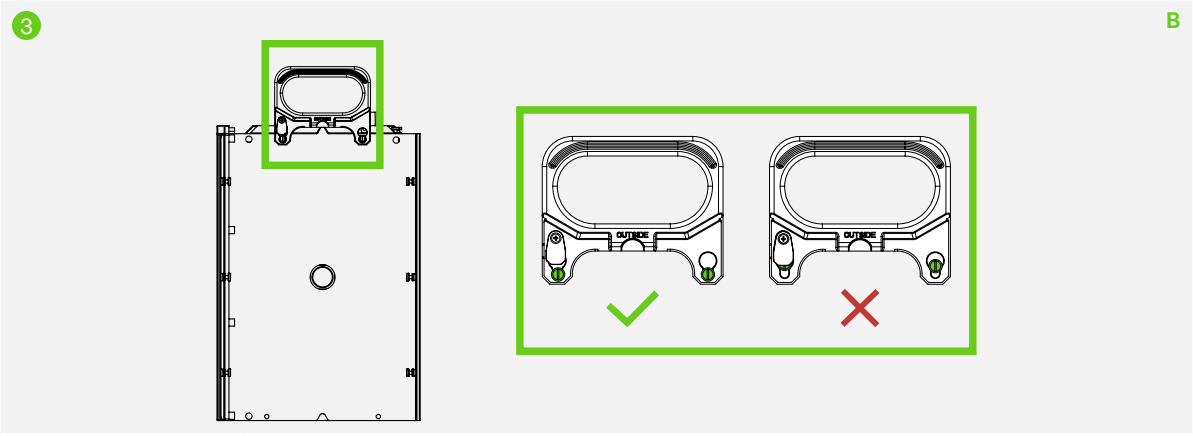
See ***step 3*** of floor-standing installation.

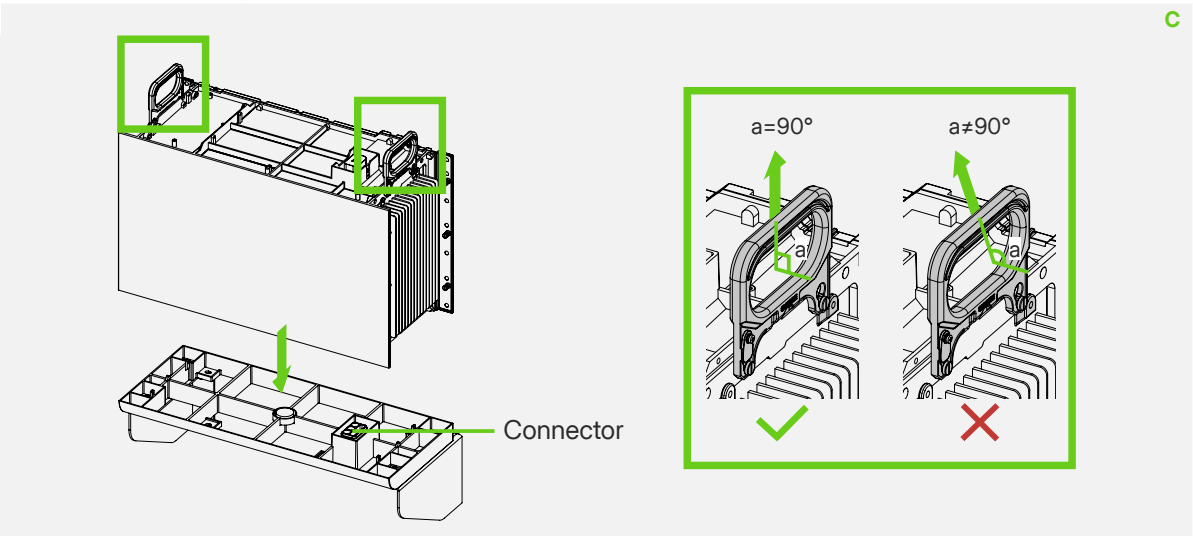
Step 3 Install a battery.

A. Remove the connector cap from the base.

B. Install the handles on a battery.

C. Hold the handles to lift the battery, align it with the base, and place it on the base. Ensure that the connectors fully engage.





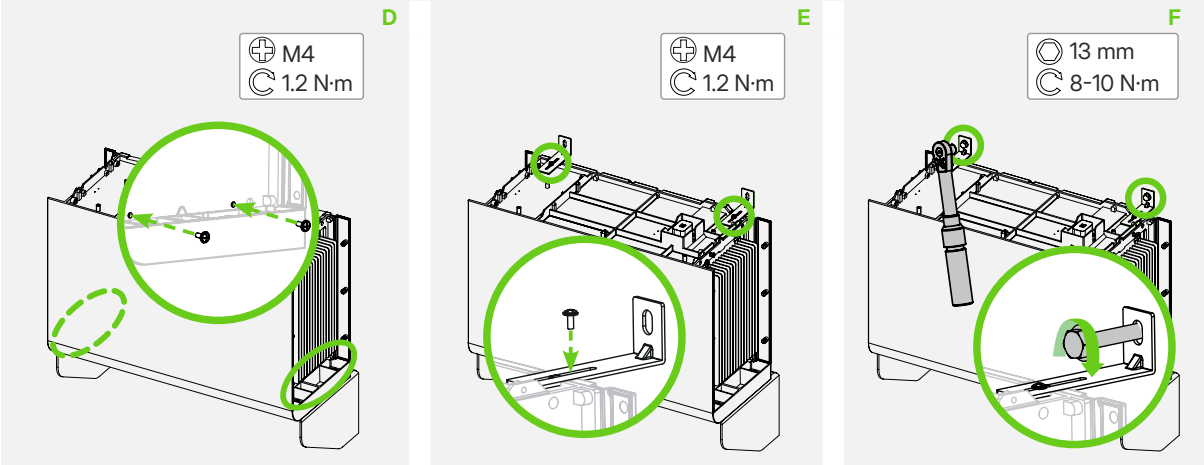
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D. Secure the battery to the base using the M4 screws.

E. Secure the L-shaped brackets to the battery using the M4 screws.

F. Secure the battery to the wall using the L-shaped brackets and expansion screws.



Step 4 Install other batteries. If you only have one battery, go to step 5.

A. Remove the connector cap from the top of the installed battery.

B. Lift a battery to be installed, align it with the installed battery, and place it on the installed battery. Ensure that the connectors fully engage.

C. Secure the two batteries using the M4 screws.

D. Secure the L-shaped brackets to the top battery using the M4 screws.

E. Secure the top battery to the wall using the L-shaped brackets and expansion screws.

F. Repeat steps A-E to install all batteries.

Step 5 Install the inverter.

A. Remove the connector cap from the top of the battery and from the bottom of the inverter.

B. Use the handles to lift the inverter, align it with the battery, and place it on the battery. Ensure that the connectors fully engage.

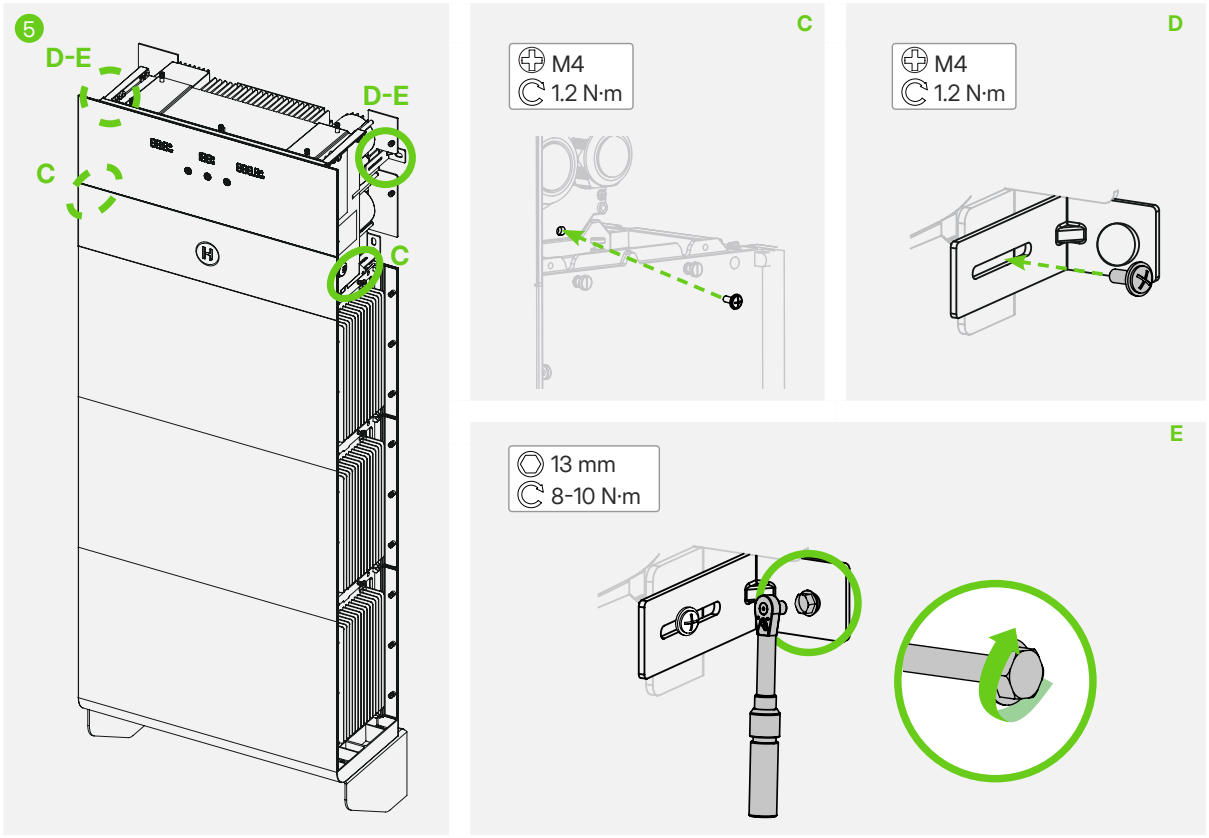
C. Secure the inverter to the battery using the M4 screws.

D. Secure the L-shaped brackets to the inverter using the M4 screws.

E. Secure the inverter to the wall using the L-shaped brackets and expansion screws.

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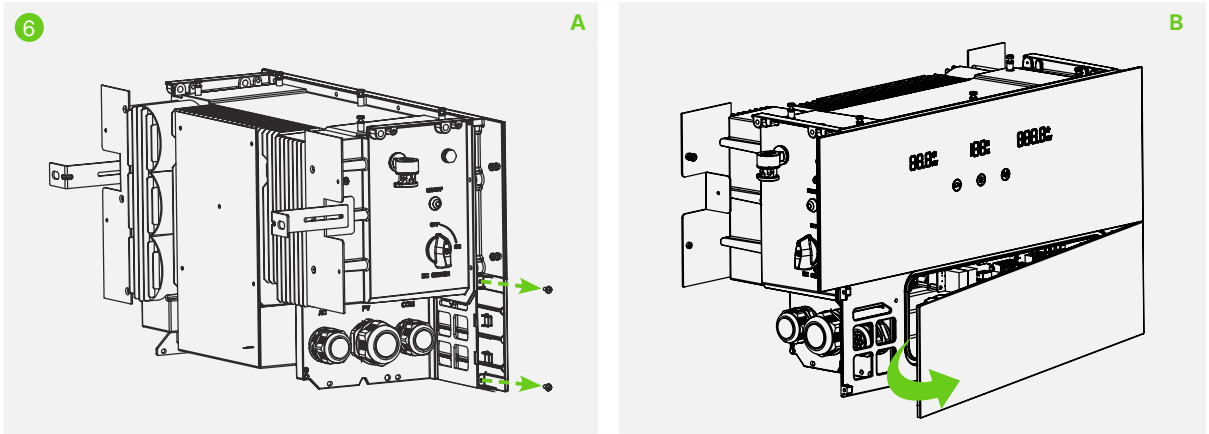
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Step 6 Remove the wiring box cover.

A. Unscrew the two screws on the lower-left side of the inverter.

B. Remove the wiring box cover.



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8 Electrical Connection

⚠ WARNING

- Before any electrical connections, keep in mind that the inverter has dual power supplies.
- Qualified personnel must wear personal protective equipment (PPE) during operation.
- To ensure safe connection and operation, it is recommended to install an overcurrent protection device (circuit breaker) while connecting the AC cable.

8.1 Wiring Diagram

ⓘ NOTE

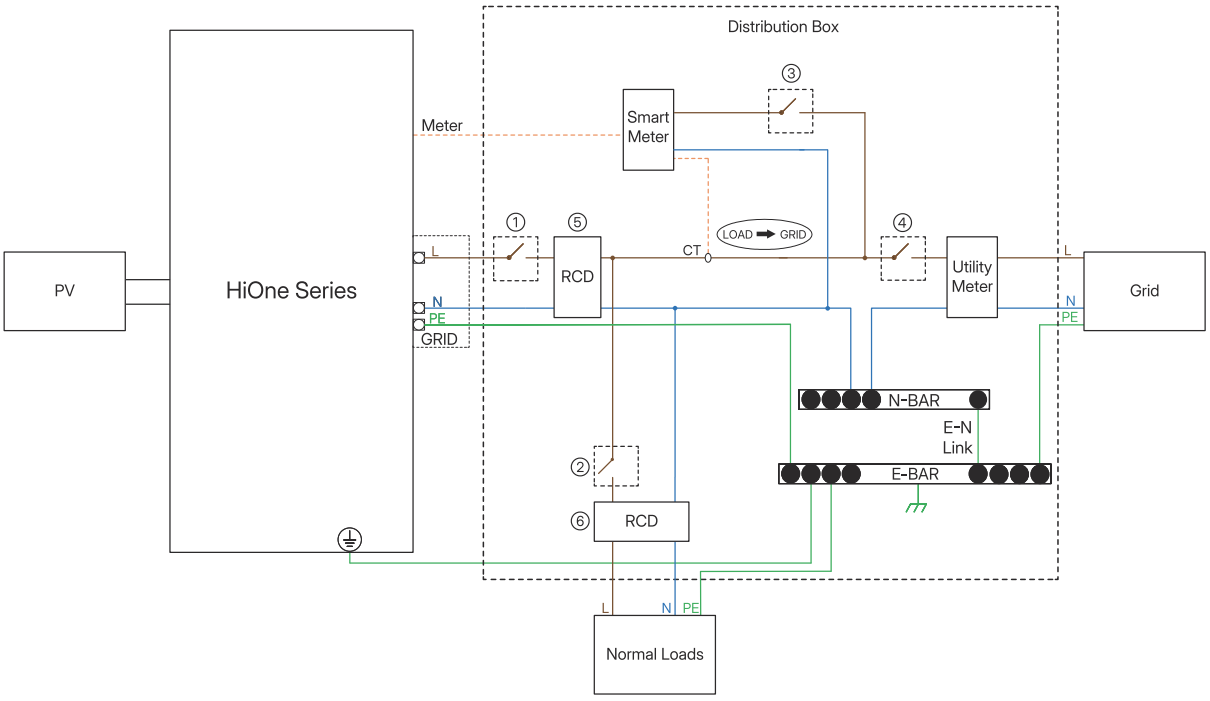
Since Hoymiles inverter has a built-in leakage current detection circuit, it is recommended to use a Type A RCD. If required by local regulations, a Type B RCD is also permitted.

8.1.1 Basic System

For Australia, New Zealand, South Africa, etc.

NOTICE

- This diagram is an example of application in which the neutral connects with PE in the distribution box.
- For countries such as Australia, New Zealand, South Africa, etc., please follow local wiring regulations.



①	②	③	④	⑤	⑥
63 A AC Breaker	Depends on Loads	Depends on Meter	Main Breaker	300 mA RCD	30 mA RCD

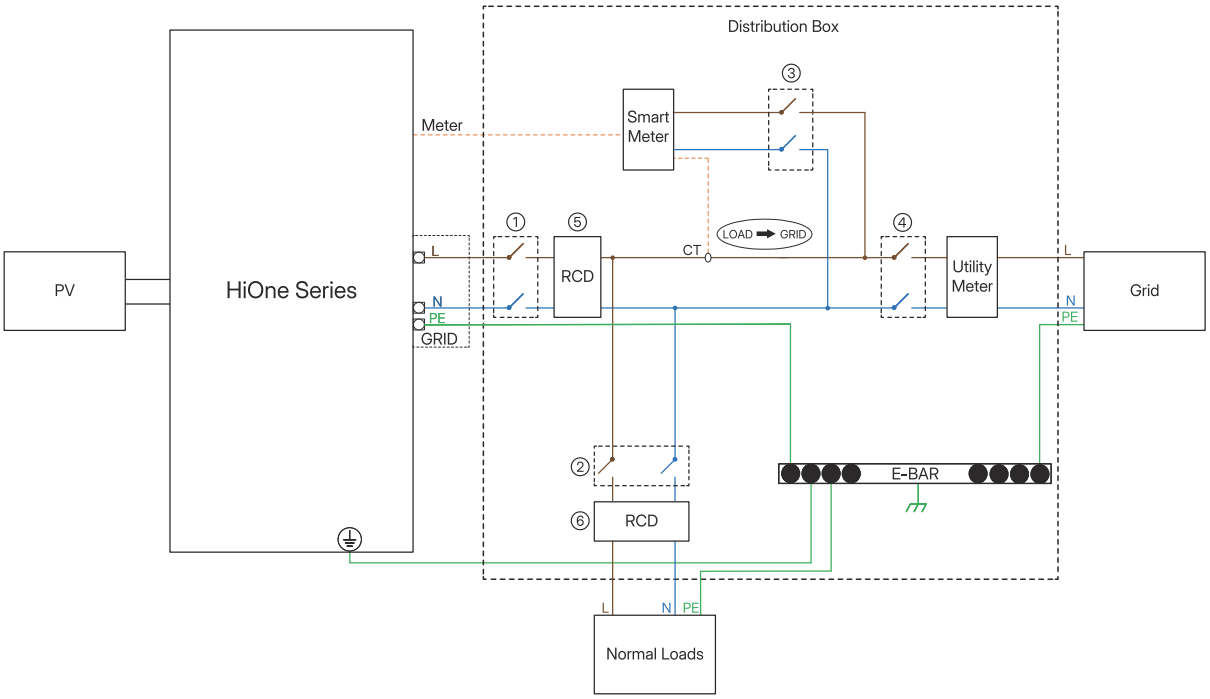
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For Other Countries

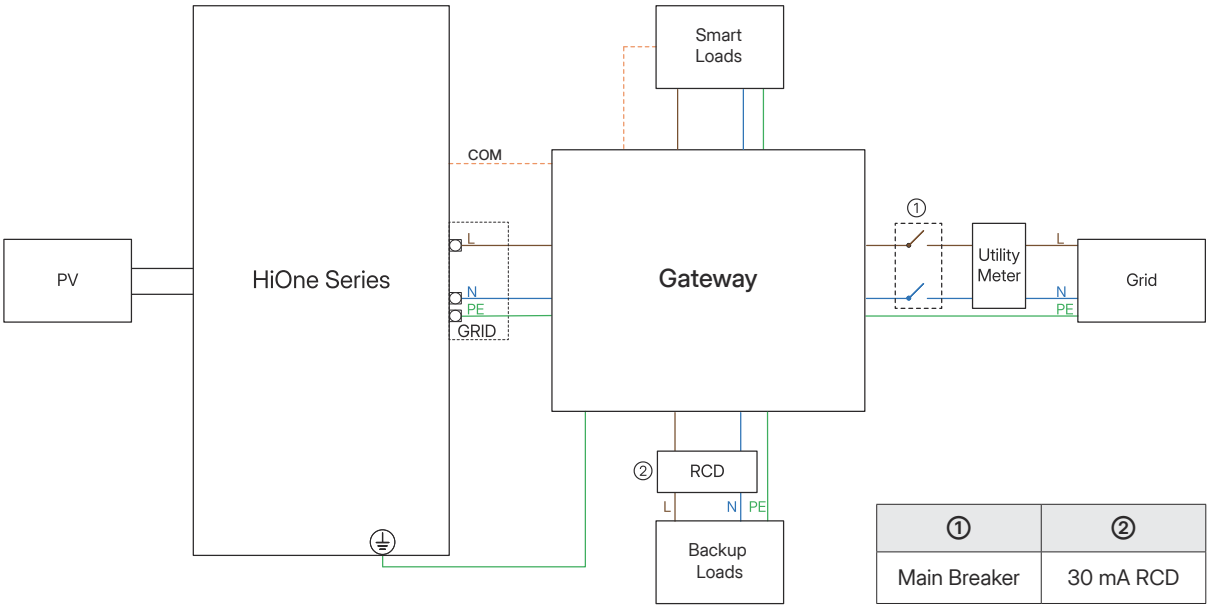
NOTICE

- This diagram is an example of application in which the neutral is separated from the PE in the distribution box.
- For countries such as China, Germany, Italy, etc., please follow local wiring regulations.



①	②	③	④	⑤	⑥
63 A AC Breaker	Depends on Loads	Depends on Meter	Main Breaker	300 mA RCD	30 mA RCD

8.1.2 Whole Home Backup System



①	②
Main Breaker	30 mA RCD

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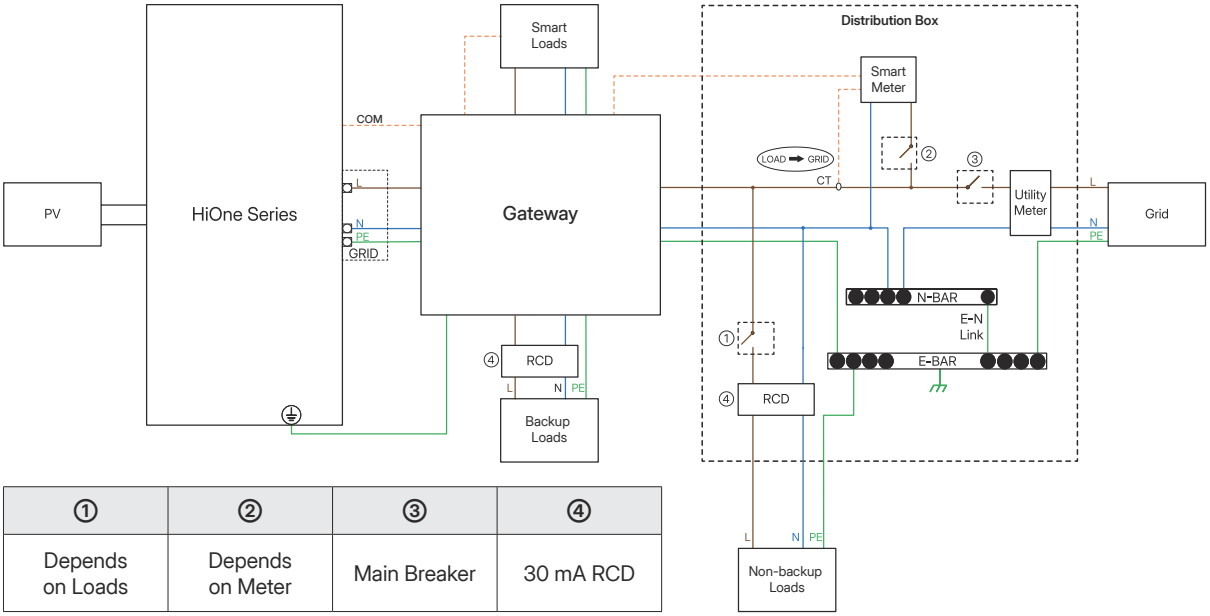
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8.1.3 Partial Home Backup System

For Australia, New Zealand, South Africa, etc.

NOTICE

- This diagram is an example of application in which the neutral connects with PE in the distribution box.
- For countries such as Australia, New Zealand, South Africa, etc., please follow local wiring regulations.

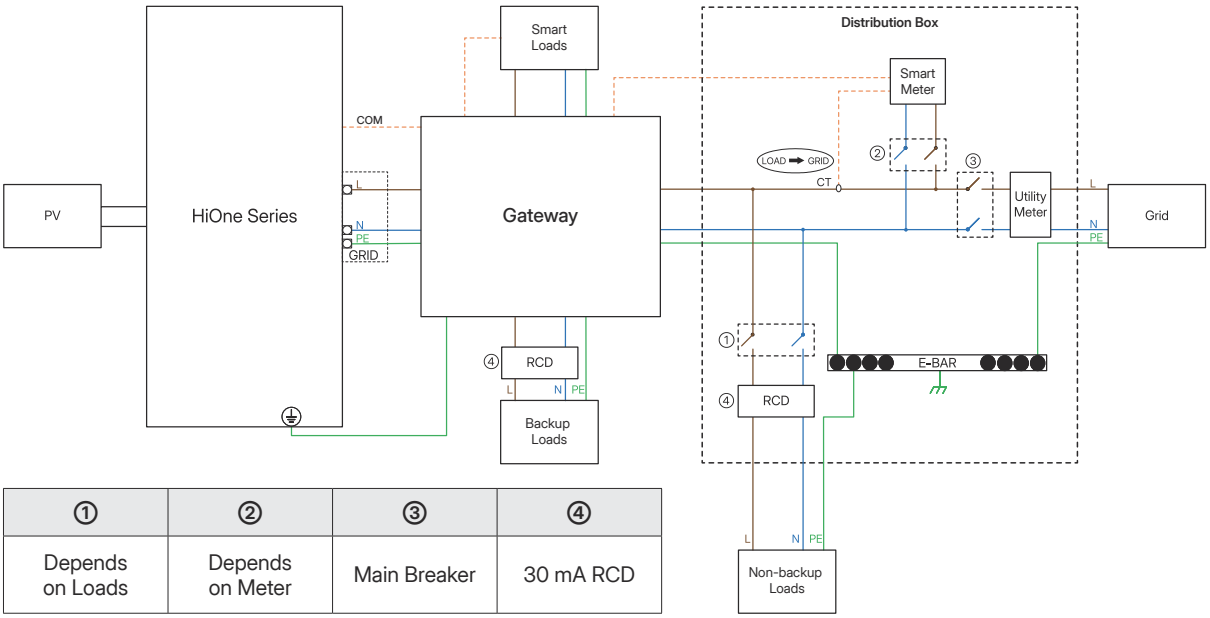


①	②	③	④
Depends on Loads	Depends on Meter	Main Breaker	30 mA RCD

For Other Countries

NOTICE

- This diagram is an example of application in which the neutral is separated from the PE in the distribution box.
- For countries such as China, Germany, Italy, etc., please follow local wiring regulations.



①	②	③	④
Depends on Loads	Depends on Meter	Main Breaker	30 mA RCD

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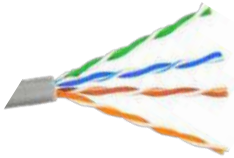
8.2 Recommended Cable List

The following tables provide the cable specifications recommended by Hoymiles. The cables used in actual installation can be larger than the recommended specifications, but cannot be smaller than the recommended specifications. Select the appropriate cables in accordance with local laws and regulations.

NOTE

To ensure a reliable electrical connection, it is recommended to use crimp terminals when connecting cables to the inverter.

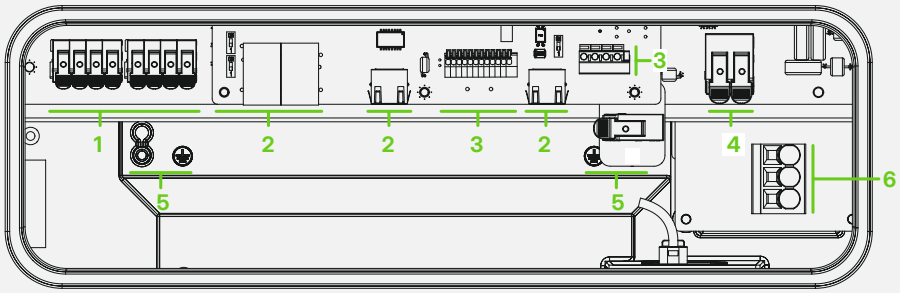
Cable (90°C, Copper)	Recommended Specification (mm^2)							Stripping Length (mm)
	HiOne-3.6S-G3	HiOne-4.6S-G3	HiOne-5S-G3	HiOne-6S-G3	HiOne-8S-G3	HiOne-10S-G3	HiOne-12S-G3	HiOne-3.6/4.6/5/6/8/10/12S-G3
Ground	2.5	4			6	10	16	12
AC	2.5	4			6	10	16	18
PV	4							12
COM1	Standard CAT 5E/CAT 6 Ethernet Cable							/
COM2	0.5–0.8							11

Cable	Picture	Type
Ground		Yellow-green cable
AC		Three-core copper cable
PV		Dedicated PV cable with a voltage rating of more than 1000 V, a temperature resistance of 105 °C, and a fire resistance grade of VW-1
COM1		Standard CAT 5E/CAT 6 Ethernet cable
COM2		Two-core signal cable

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8.3 Internal overview



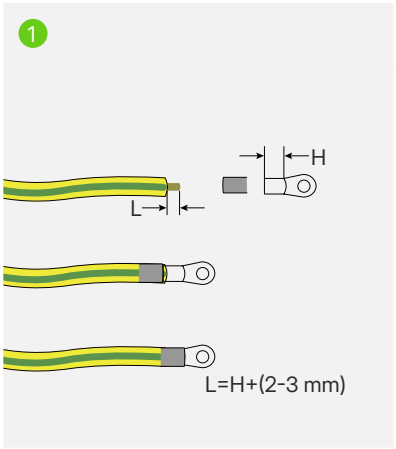
NO.	Description
1	PV Terminals
2	Communication Terminals (COM1)
3	Communication Terminals (COM2)
4	AC Terminals
5	Ground Terminals
6	Battery Terminals

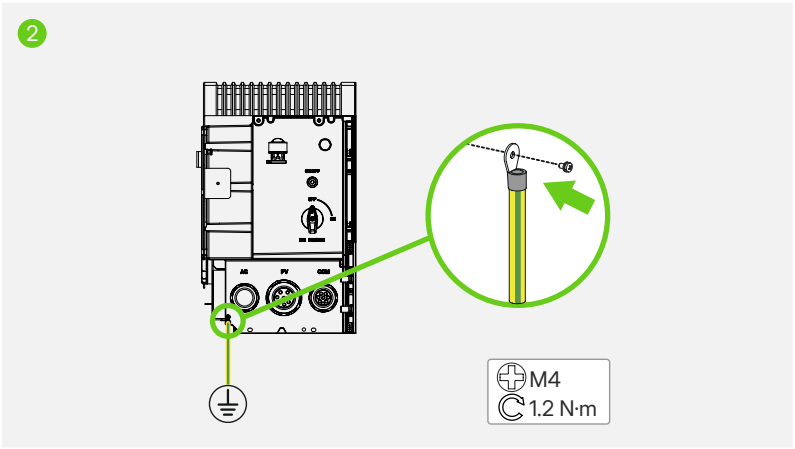
8.4 Ground Cable Connection

Cable (90°C, Copper)	Recommended Specification (mm^2)							Stripping Length (mm)
	HiOne-3.6S-G3	HiOne-4.6S-G3	HiOne-5S-G3	HiOne-6S-G3	HiOne-8S-G3	HiOne-10S-G3	HiOne-12S-G3	HiOne-3.6/4.6/5/6/8/10/12S-G3
Ground	2.5	4			6	10	16	12

Step 1 Crimp the cable and ground terminal.

Step 2 Connect the ground cable to the inverter.





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8.5 AC Cable Connection

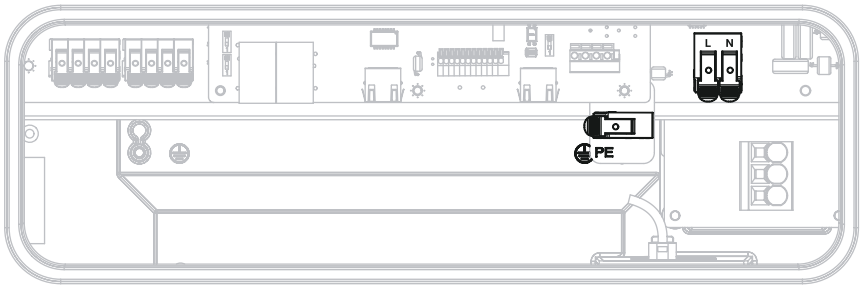
⚠ WARNING

Before connecting the AC cable, please make sure all requirements listed below are followed.

- An independent three or four-pole circuit breaker must be installed on the output side of the inverter to ensure safe disconnection from the grid.
- Multiple inverters cannot share one circuit breaker.
- Never connect a load between the inverter and the circuit breaker.
- Make sure that the overcurrent protection devices (OCPDs) (breakers) are turned off.
- Ensure the rated power of the EPS load does not exceed the rated output power of the inverter.
- Ensure that the starting power of inductive loads, such as air conditioners, refrigerators, and pumps, does not exceed the EPS peak power of the inverter. (The starting power of the air conditioner is at least 2 times the rated power. For details, refer to the appliance manual.) Otherwise, the inverter will stop output or even shut down with a fault alarm.
- Before proceeding to the next step, make sure that the AC voltages are 0 Vac through a multimeter.

ⓘ NOTE

- The colors for L, N, and PE wires used in this manual are L-Brown, N-Blue, and PE-Yellow&Green.
- The wiring color code may vary. Please follow local laws and regulations for wiring.



AC Terminals

Procedure

Cable (90°C, Copper)	Recommended Specification (mm^2)							Stripping Length (mm)
	HiOne-3.6S-G3	HiOne-4.6S-G3	HiOne-5S-G3	HiOne-6S-G3	HiOne-8S-G3	HiOne-10S-G3	HiOne-12S-G3	HiOne-3.6/4.6/5/6/8/10/12S-G3
AC	2.5	4			6	10	16	18

⚠ WARNING

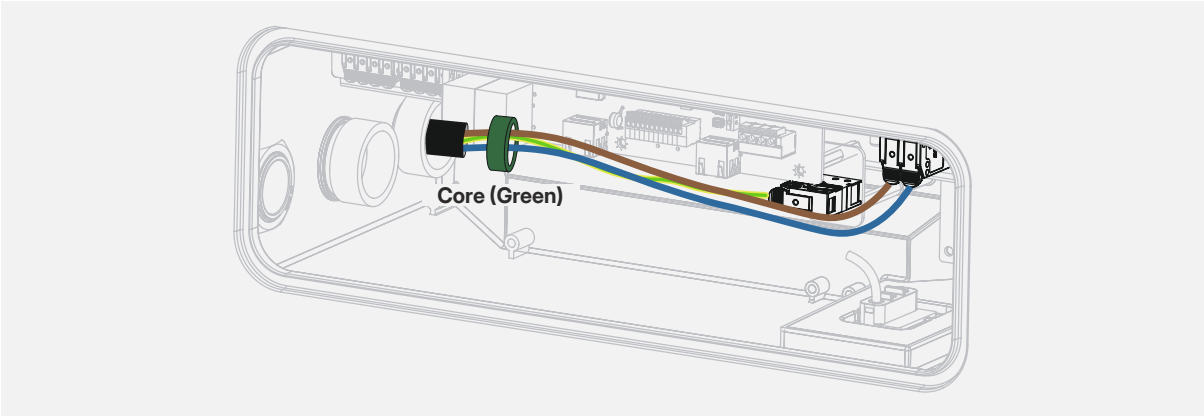
Ensure that the stripping length is 18 mm. If it is too short, the terminal may clamp onto the insulation instead of the conductor, causing overheating and creating a fire hazard.

ⓘ NOTE

Wire sizes above are for reference only. Follow local laws and regulations when choosing the wire size.

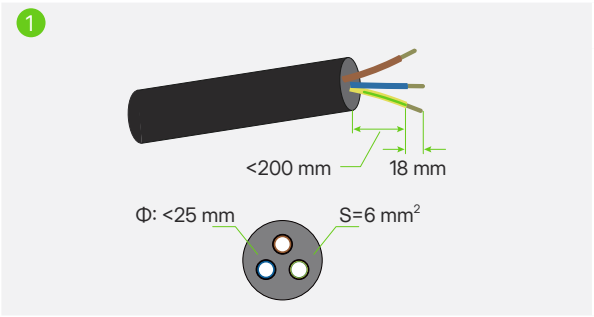
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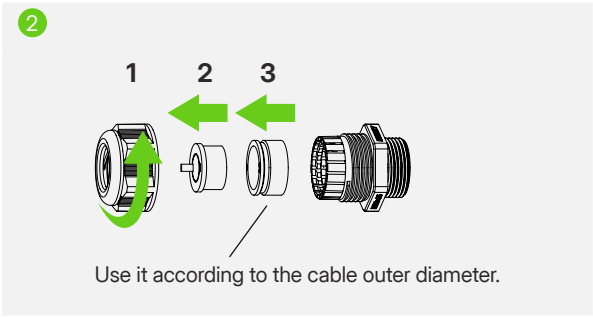
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Step 1 Strip the insulation of L/N/PE wires by 18 mm.

Step 2 Unscrew the cable gland on the left side of the inverter.



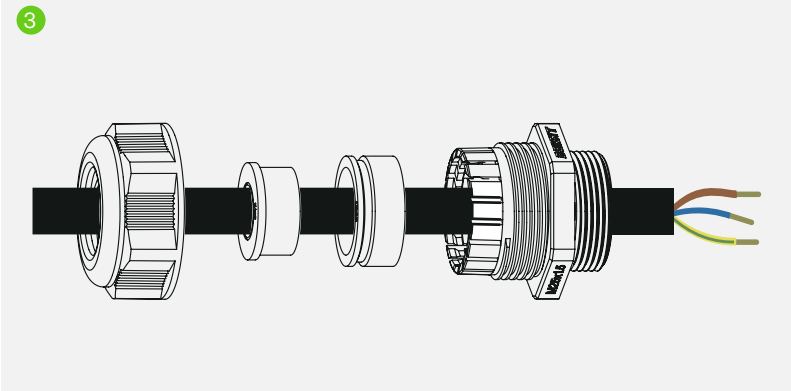


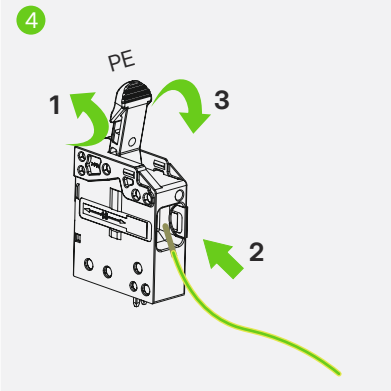
Step 3 Thread the AC cable through the AC cable entry.

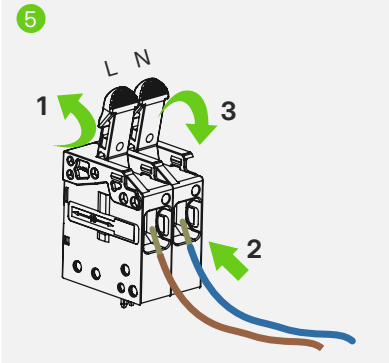
Step 4 Connect the PE wire to the PE terminal.

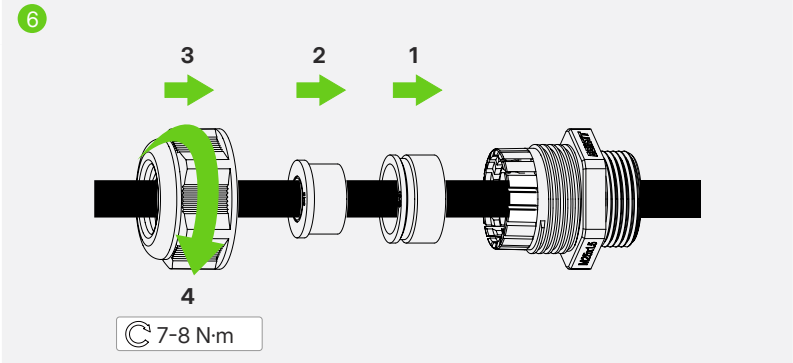
Step 5 Connect the L/N wires to the corresponding terminals.

Step 6 Gently pull the wires backward to ensure that they are firmly connected, and tighten the cable gland with a torque of 7 N·m to 8 N·m.









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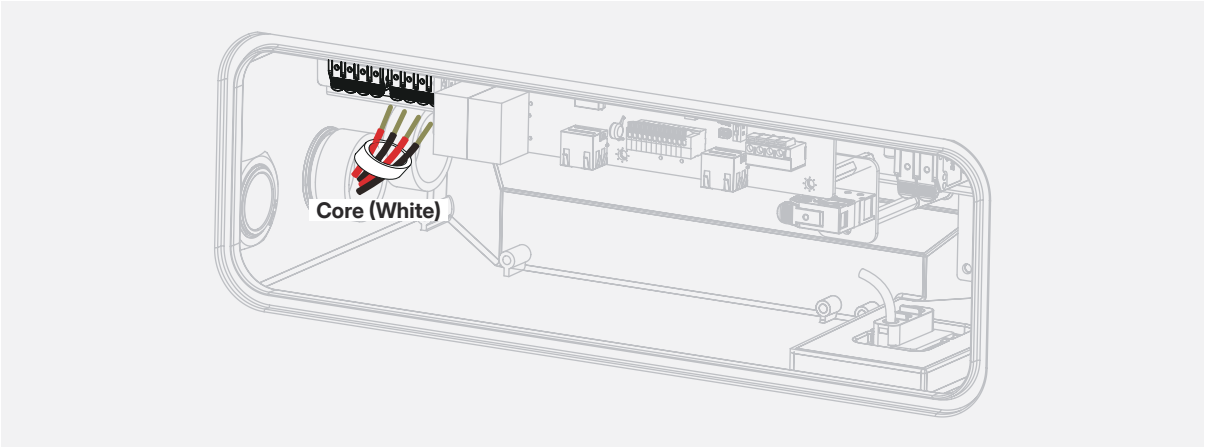
8.6 PV Cable Connection

⚠ WARNING

Before connecting the PV cables, please make sure all requirements listed below are followed.

- The voltage, current, and power ratings of the panels to be connected are within the allowable range of the inverter. Ensure the polarity is correct, and please refer to the technical parameters in *13 Technical Datasheet* for voltage and current limits.
- If the PV cables are reversely connected or if the equipment is not working properly, do not turn off the DC switch. Otherwise, it may cause a DC arc, fire, or damage to the inverter. After the PV input current drops below 0.5 A, disconnect the DC switch and adjust the polarity of the PV strings.
- Since the equipment is a transformerless structure, please do not ground the outputs of PV panels.

Cable (90°C, Copper)	Recommended Specification (mm^2)	Stripping Length (mm)
	HiOne-3.6/4.6/5/6/8/10/12S-G3	HiOne-3.6/4.6/5/6/8/10/12S-G3
PV	4	12

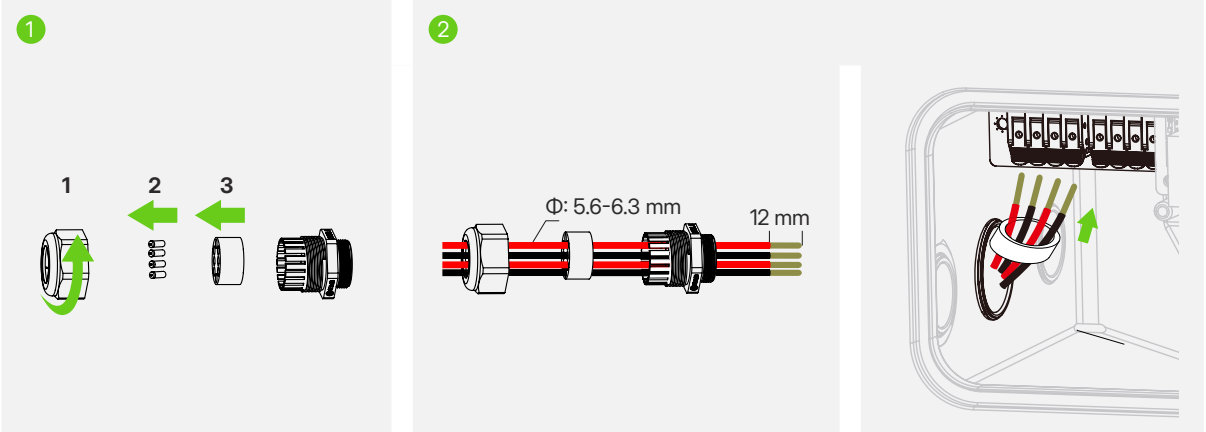


Step 1 Unscrew the cable gland on the left side of the inverter, and remove the rubber plugs.

Step 2 Strip the insulation of PV cables by 12 mm, and thread the PV cables through the PV cable entry.

ⓘ NOTE

To ensure sealing performance, remove the rubber plugs based on the actual number of cables.



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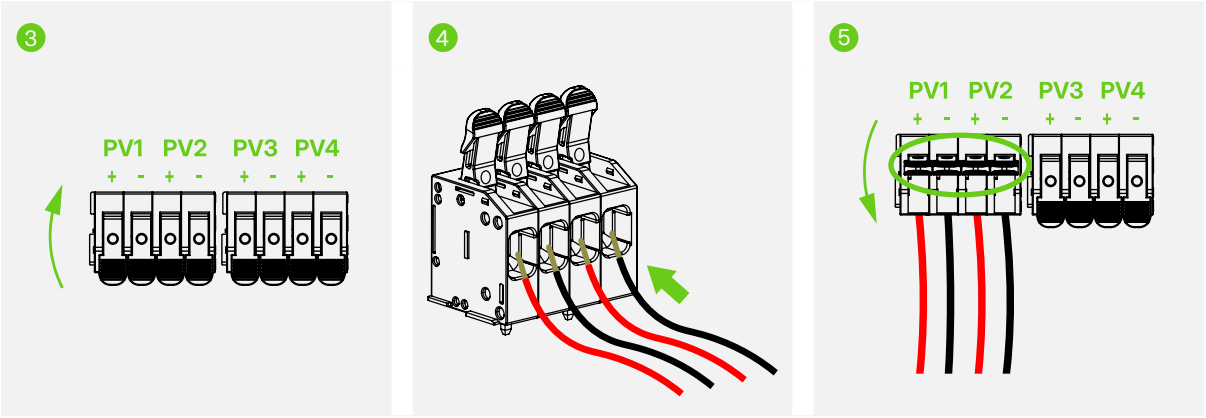
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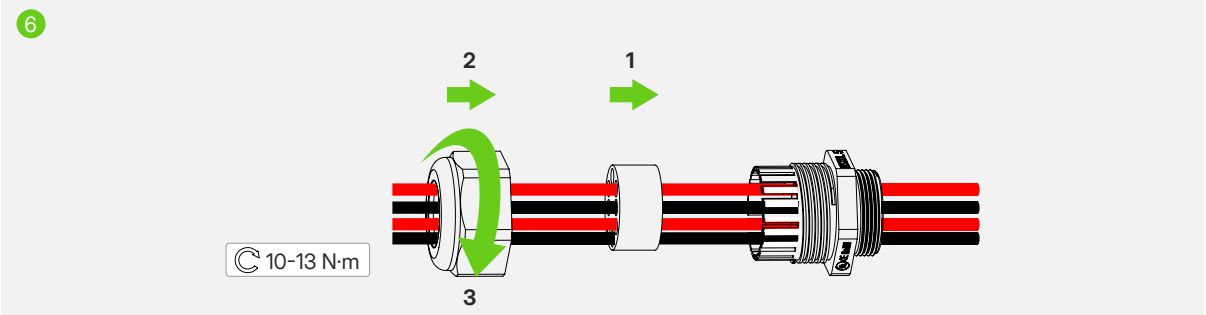
Step 3 Raise the locking clip.

Step 4 Insert the PV cables into the corresponding terminals.

Step 5 Pull the locking clip downward to lock the connection. Gently pull the wires backward to ensure that they are firmly connected.

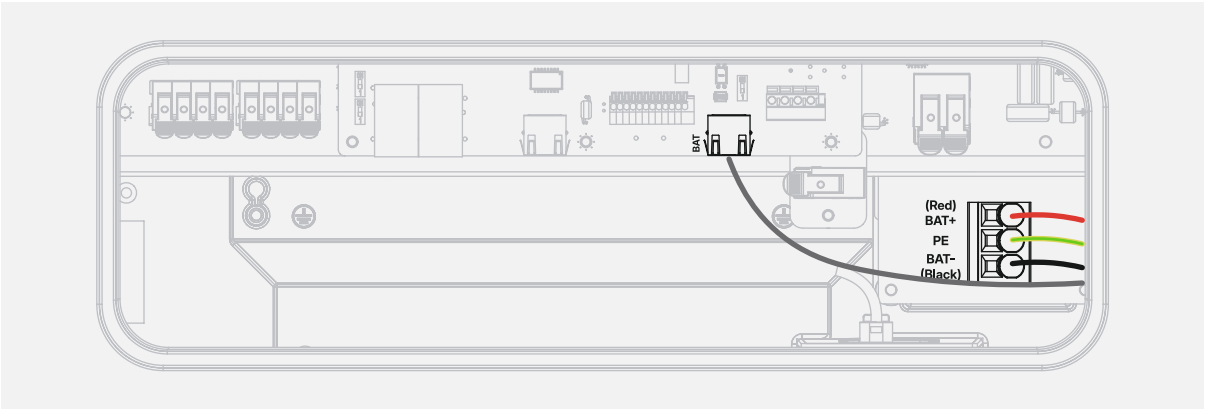
Step 6 Tighten the cable gland with a torque of 10 N·m to 13 N·m.





8.7 (Optional) Battery Parallel Connection

If the second battery tower needs to be installed, use the provided cable to connect the second battery tower to the inverter.

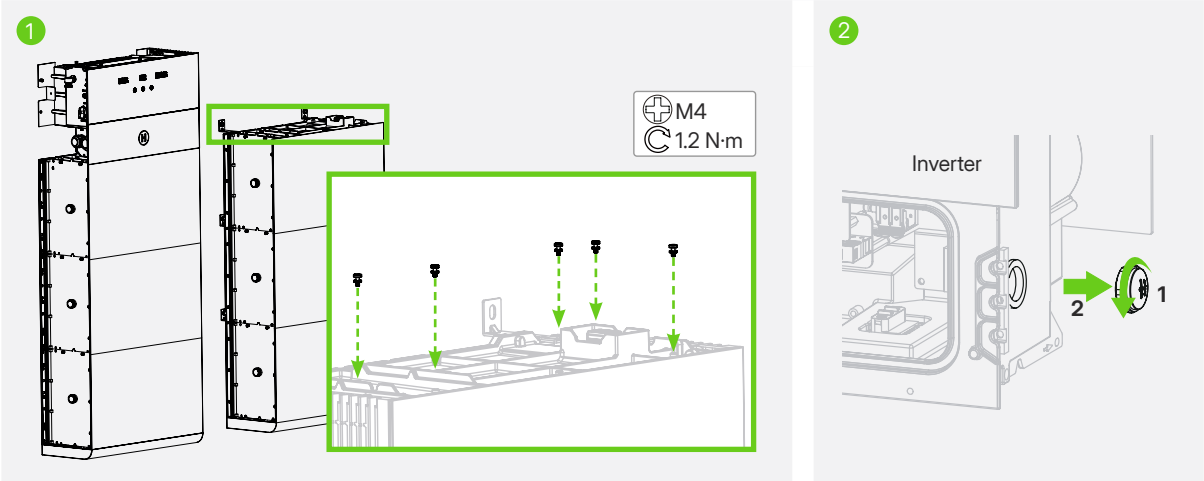


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Step 1 Follow the instructions in ***7 Installation Steps*** to install the second battery tower, and install the five stepped screws on the top of the second battery tower.

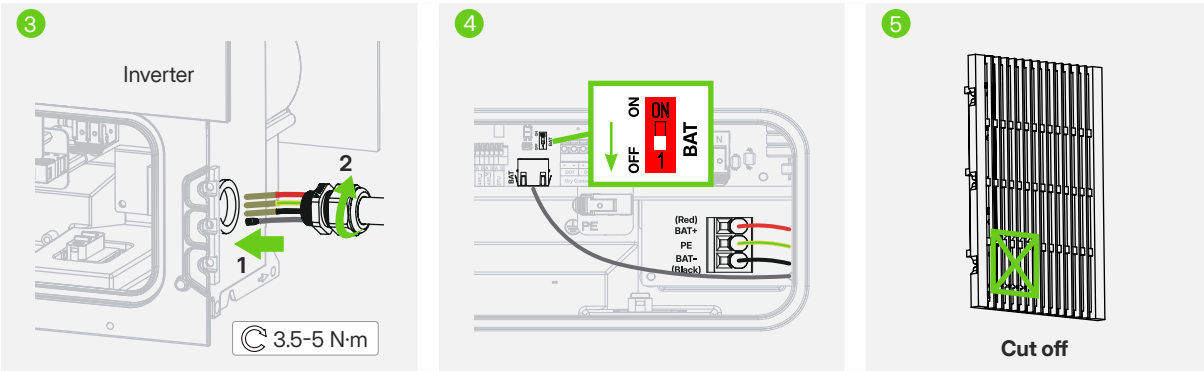
Step 2 Remove the cover on the right side of the inverter.



Step 3 Thread the battery cable through the battery cable entry, and tighten the cable gland.

Step 4 Insert the positive wire, negative wire, PE wire, and communication wire into corresponding terminals.

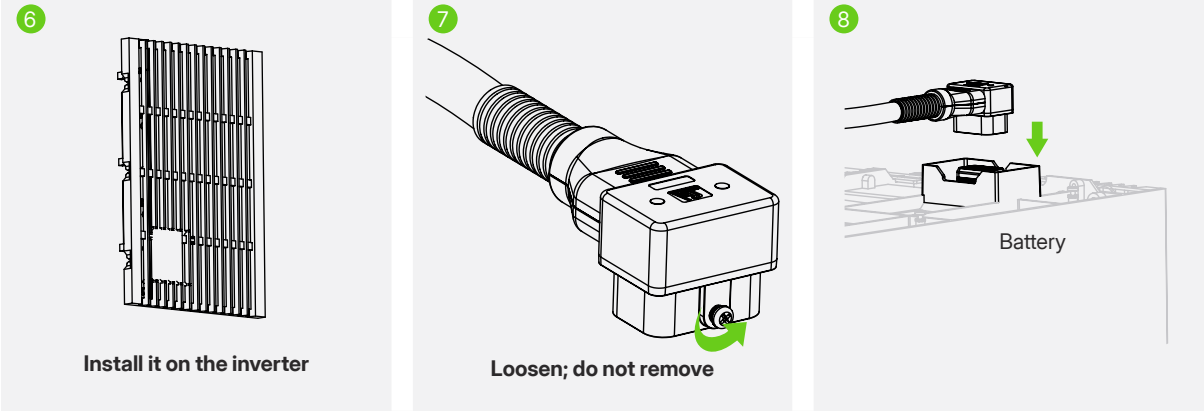
Step 5 Cut off a piece of the decorative cover.



Step 6 Install the decorative cover on the inverter.

Step 7 Loosen but do not remove the screw on the battery cable.

Step 8 Insert the quick connector end of the battery cable into the connector on the top of the second battery tower.



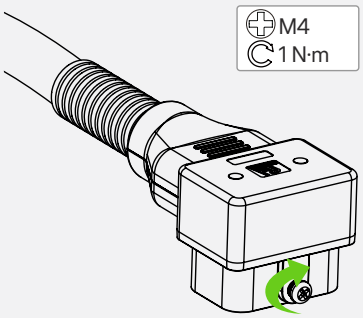
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Step 9 Tighten the screw on the battery cable.

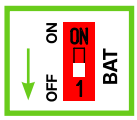
Step 10 Install the top cover.

9



Tighten

NOTE

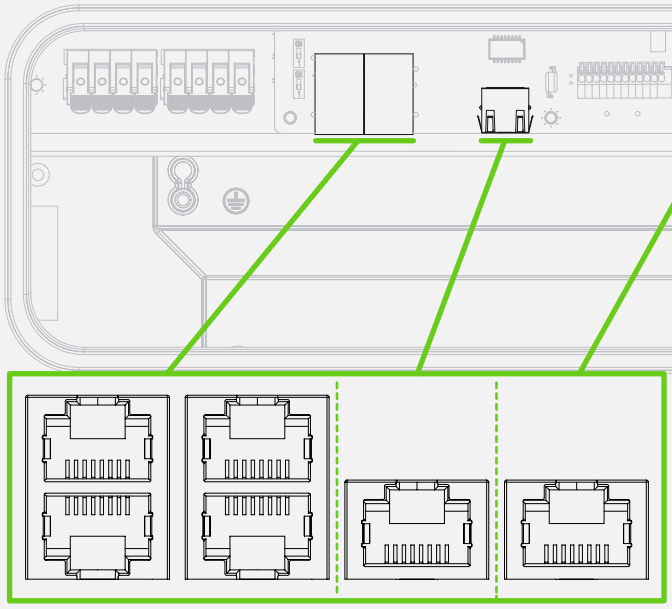


Ensure that this termination resistor is "OFF".

8.8 Communication Cable Connection (COM1)

The HiOne system includes one standard communication cable for connecting to the Meter/GTW port. If you need to connect additional devices to COM1, prepare communication cables that meet the recommended cable specifications.

Cable	Recommended Specification (mm²)
	HiOne-3.6/4.6/5/6/8/10/12S-G3
COM1	Standard CAT 5E/CAT 6 Ethernet Cable



Parallel_2	DRM	/	/
Parallel_1	Meter/GTW	EMS	BAT

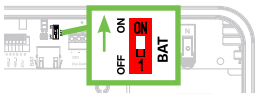
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Terminal	PIN	Definition							
		1	2	3	4	5	6	7	8
Parallel_2		NC	GND	CANH	Psync-485A	Psync-485B	CANL	485B	485A
Parallel_1		NC	GND	CANH	Psync-485A	Psync-485B	CANL	485B	485A
DRM		DRM1/5	DRM2/6	DRM3/7	DRM4/8	REF	COM	NC	NC
Meter/ GTW		CANH	CANL	GND	485A	485B	GND	+12V1A_ 0UT	+12V1A_ 0UT
EMS		RX_P	RX_N	TX_P	NC	NC	TX_N	NC	NC
BAT		Button 2+	Button 2-	NC	NC	+12V	GND	CANL	CANH

NOTE

If the batteries are stacked in one battery tower, ensure that this termination resistor is "ON".



Taking **meter connection** as an example:

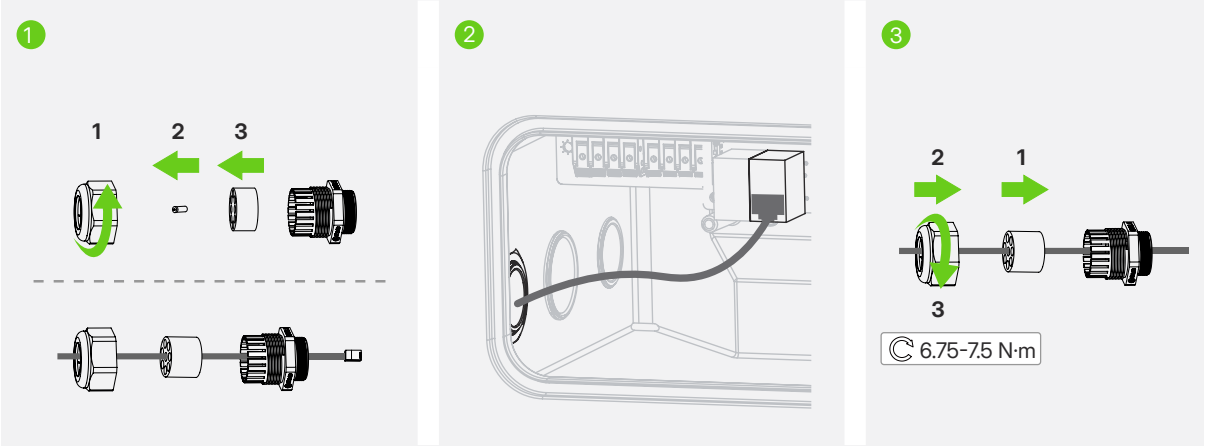
Step 1 Unscrew the cable gland, and remove the rubber plugs.

Step 2 Thread the cable through the communication cable entry at the left side of the inverter. Insert the RJ45 plug into the corresponding terminal until it clicks into place

Step 3 Tighten the cable gland with a torque of 6.75 N·m to 7.5 N·m.

NOTE

- To ensure sealing performance, remove the rubber plugs based on the actual number of cables.
- If the wiring is incorrect, the system will work abnormally. Reconnect cables according to the PIN definition described above.



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8.8.1 Smart Meter and CT Connection

The smart meter and CTs in the delivery package are necessary for the system installation and are used to provide the operating condition of the inverter via RS485 communication.

WARNING

Before connecting the smart meter and CT, ensure that the AC cables are totally isolated from the AC power source.

NOTICE

- One smart meter can be used with only one inverter.
- All CTs must be used for one smart meter and should be connected on the same phase as the smart meter power cable.
- There is an arrow or label on the surface of CTs that indicates the correct mechanical orientation of the CT on the conductor under measurement. Please identify the arrow or label before installing the CT.

NOTE

- This series inverter comes with Meter-1S-G3 or Meter-1S-G3 (2 CT Port) as standard.
- To install an AC coupled system, refer to ***Appendix 1: Application of AC Coupled System***.

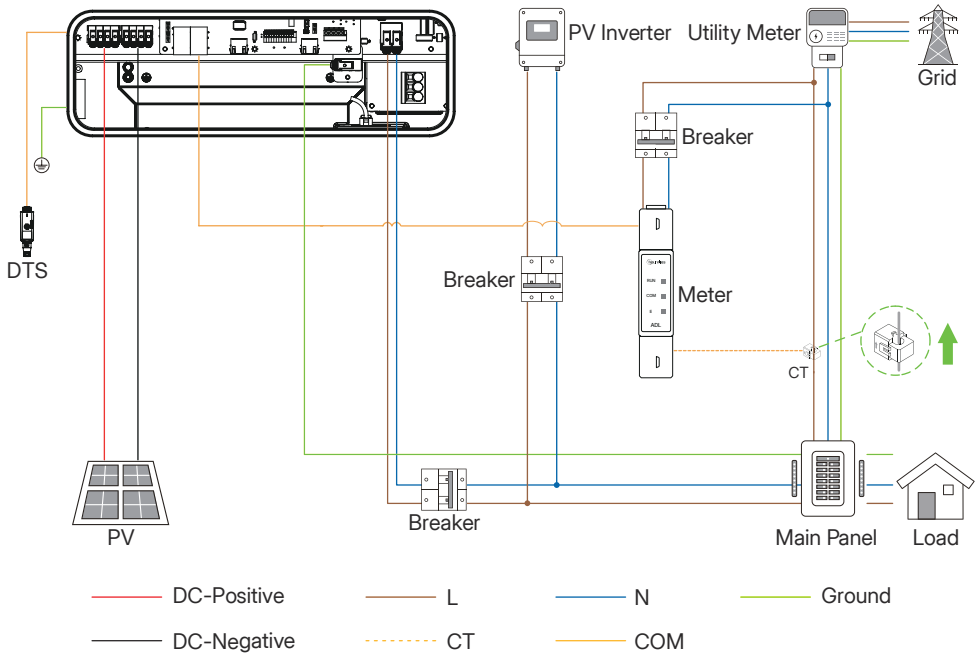
Step 1 Connect the meter's L and N terminals to the grid's L and N.

Step 2 Install the CT.

a. Clamp the CT onto the grid's live wire. Make sure the arrow on the CT points toward the grid.

b. Connect the CT to the meter's CT1 terminal.

Step 3 Use a standard Ethernet cable to connect the meter's RS485 terminal to the inverter's meter terminal.



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8.8.2 DRM Connection

The DRM function is designed to support several demand response modes by certain control signals.

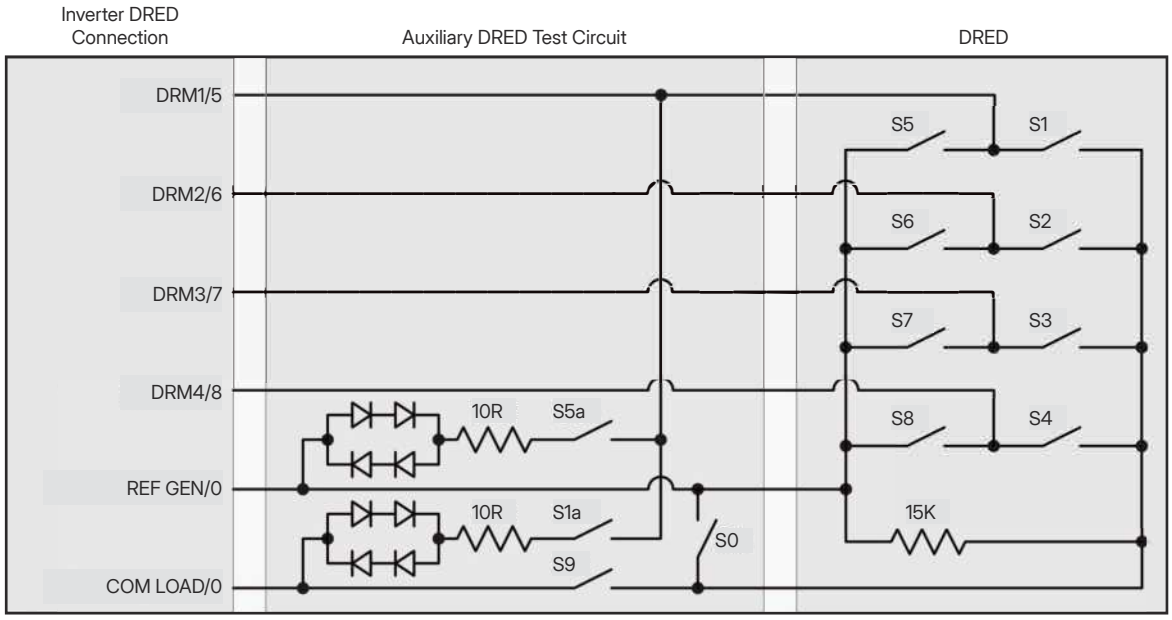
For Australia and New Zealand

According to AS/NZS 4777.2, the inverter needs to support the function of demand response mode (DRM). With the use of an external control box, active or reactive power regulation can be realized in a timely and fast manner, and the inverter can work stably during the process of regulation.

Demand Response Modes

Function	Description
DRM0	Operate the disconnection device
DRM1	Do not consume power
DRM2	Do not consume at more than 50% of rated power
DRM3	Do not consume at more than 75% of rated power AND supply reactive power if capable
DRM4	Increase power consumption (subject to constraints from other active DRMs)
DRM5	Do not generate power
DRM6	Do not generate at more than 50% of rated power
DRM7	Do not generate at more than 75% of rated power AND absorb reactive power if capable
DRM8	Increase power generation (subject to constraints from other active DRMs)

DRED Connection Circuit



App Configuration

On the S-Miles Installer App, enable the DRM function and set the DRM control mode according to the actual installation. For detailed instructions, refer to *10.3.2 Enable DRM Function*.

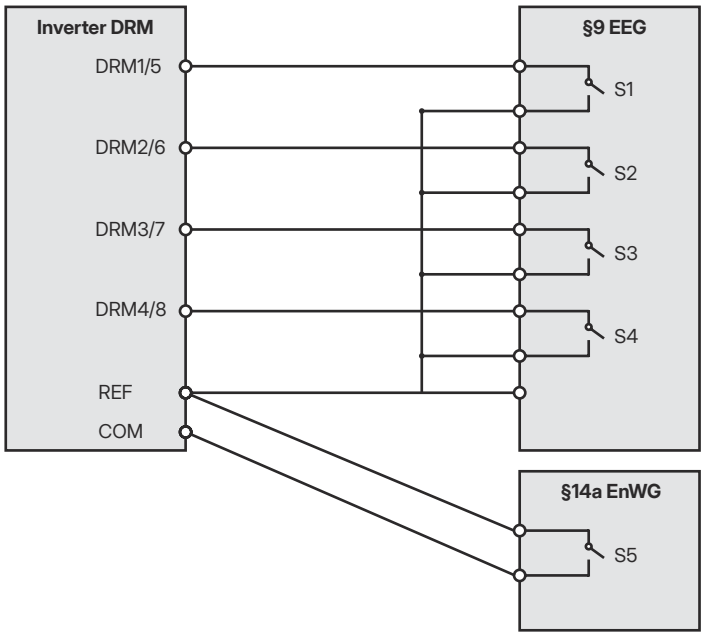
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For Germany

The HiOne series operates in accordance with German regulations §14a EnWG and §9 EEG. It can be connected via its communication port to an external control box approved by the grid operator.

Connection Circuit



S1	S2	S3	S4	§9 EEG Operation	Power Exported to the Grid
0	0	0	0	None	100% (Unlimited)
1	0	0	0	Close S1	100%
0	1	0	0	Close S2	60%
0	0	1	0	Close S3	30%
0	0	0	1	Close S4	0

S5	§14a EnWG Operation	Power Imported from the Grid
0	None	100% (Unlimited)
1	Close S5	< 4.2 kW

App Configuration

On the S-Miles Installer App, enable the DRM function and set the DRM control mode according to the actual installation. For detailed instructions, refer to *10.3.2 Enable DRM Function*.

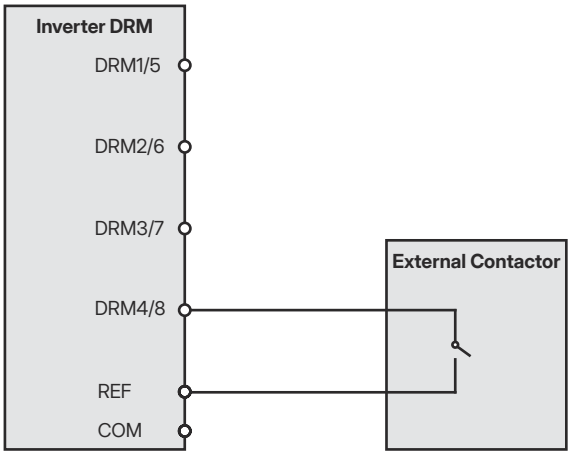
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For Austria

An external contactor should be connected to DRM4/8 and REF. Select a NO contactor or a NC contactor as required.

Connection Circuit

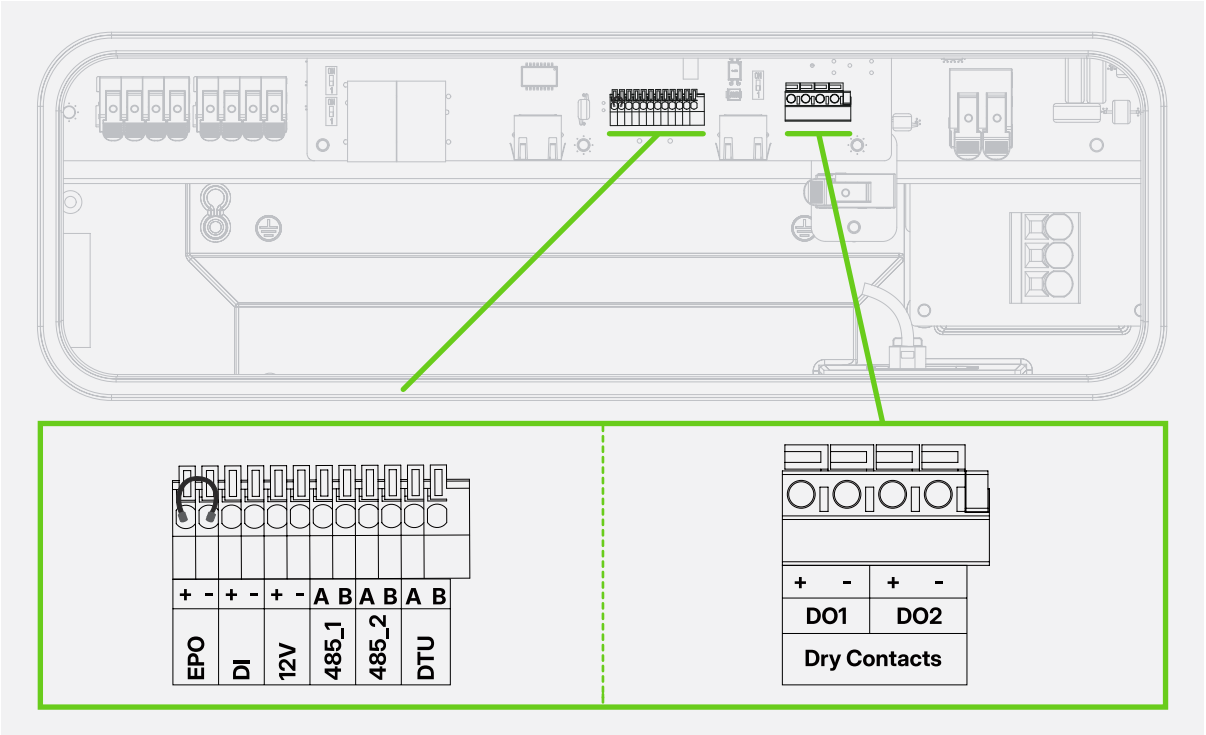


App Configuration

On the S-Miles Installer App, enable the DRM function and set the DRM control mode according to the actual installation. For detailed instructions, refer to *10.3.2 Enable DRM Function*.

8.9 Communication Cable Connection (COM2)

Cable	Recommended Specification (mm²)	Stripping Length (mm)
	HiOne-3.6/4.6/5/6/8/10/12S-G3	HiOne-3.6/4.6/5/6/8/10/12S-G3
COM2	0.5-0.8	11



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Label	Definition
EPO	For external Emergency Power Off switch.
DI	Reserved dry contact input.
12V	12V/1A output. For heat pump control by connecting an external relay.
485_1	For EV charger control.
485_2	For third-party device control and EMS communication.
DTU	For DTU communication.
DO1 (NO1, COM1)	Dry contact output. For SG Ready heat pump control.
DO2 (NO2, COM2)	Reserved dry contact output.

Taking **DO1 connection** as an example:

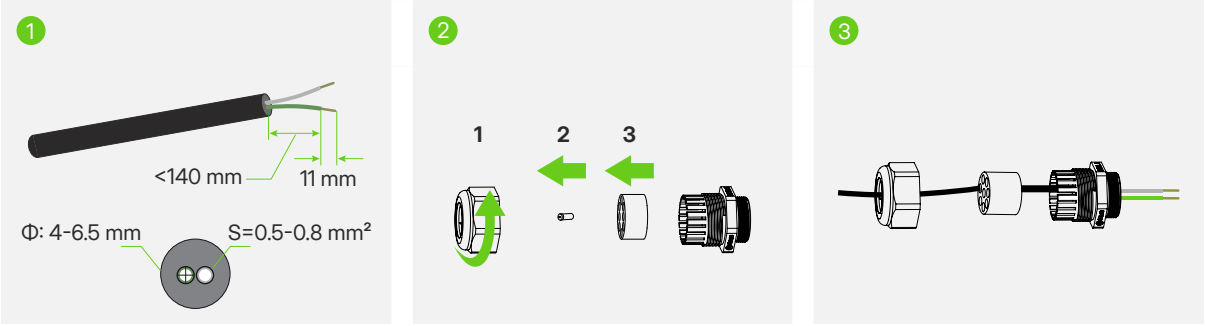
Step 1 Strip the insulation of the communication cable by 11 mm.

Step 2 Unscrew the cable gland and remove the rubber plugs.

NOTE

To ensure sealing performance, remove the rubber plugs based on the actual number of cables.

Step 3 Thread the cable through the communication cable entry on the left side of the inverter.

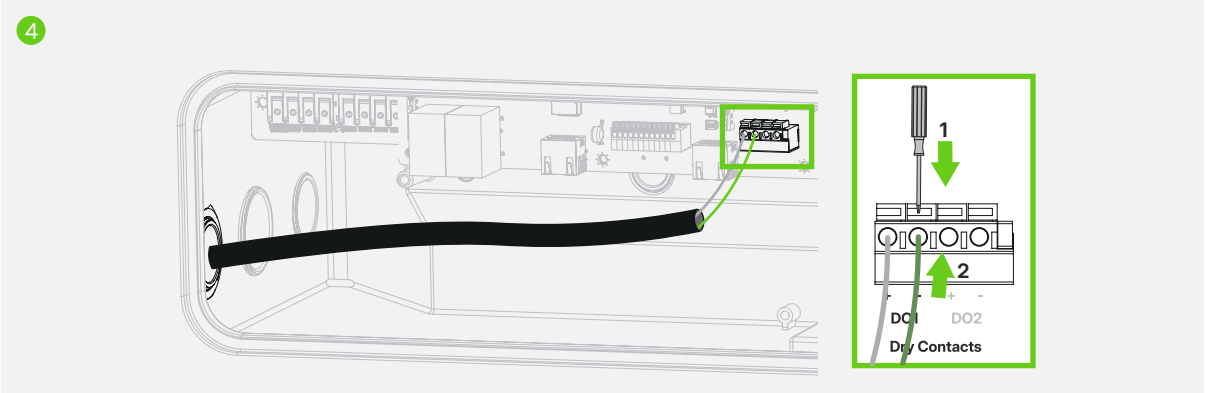


Step 4 Connect the cable.

A. Insert a screwdriver to press down the leaf spring.

B. Insert the wires into the corresponding terminals, and remove the screwdriver.

C. Gently pull the wires backward to ensure that they are firmly connected, and tighten the cable gland with a torque of 6.75 N·m to 7.5 N·m.



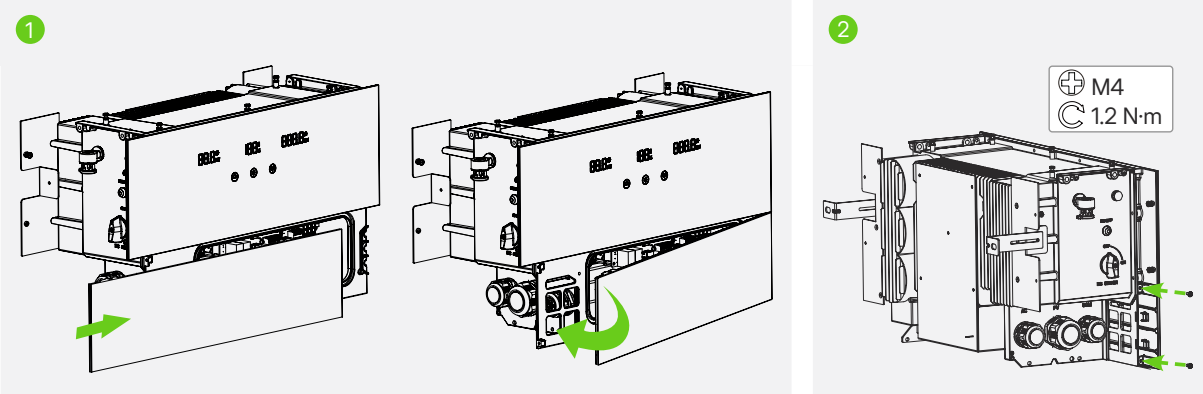
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8.10 Installing the Wiring Box Cover

Step 1 Put back the wiring box cover.

Step 2 Insert the screws into the screw holes, and tighten the screws.

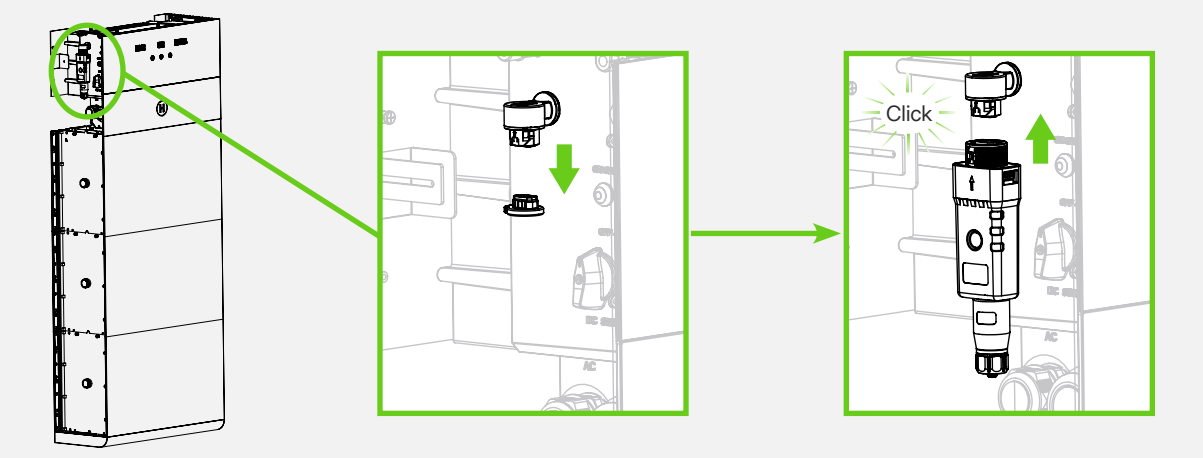


8.11 Installing the Data Transfer Stick (DTS)

8.11.1 DTS-WL-G3 (Wi-Fi Mode)

Step 1 Remove the cover of the DTS terminal.

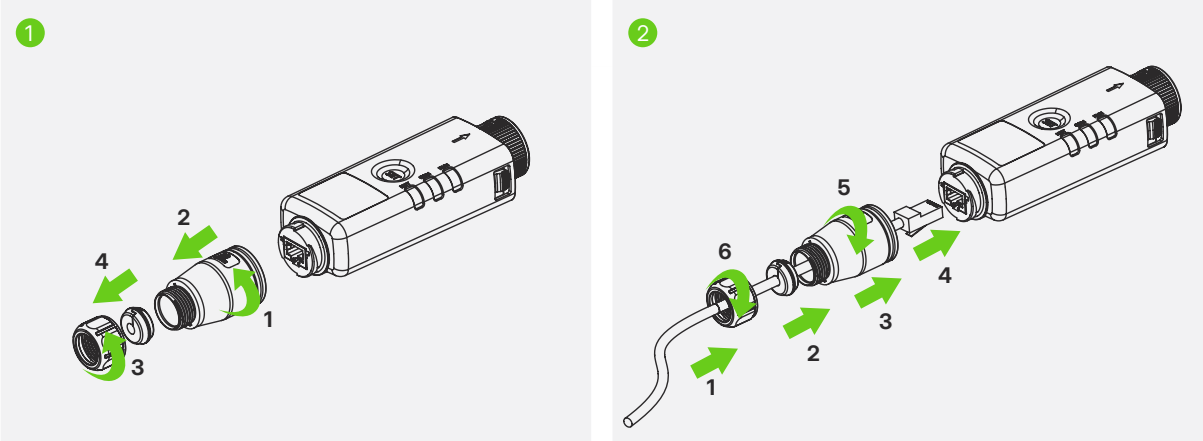
Step 2 Insert the DTS into the DTS terminal. There will be a “Click” sound when it is plugged in correctly.



8.11.2 DTS-WL-G3 (LAN Mode)

Step 1 Disassemble the DTS in sequence.

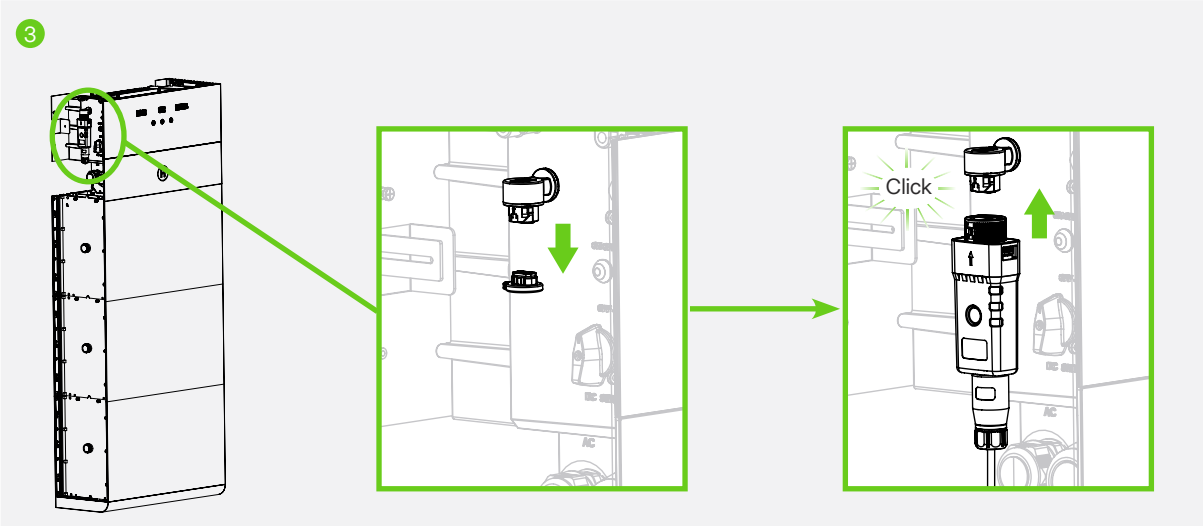
Step 2 Thread the Ethernet cable through the parts and tighten them.



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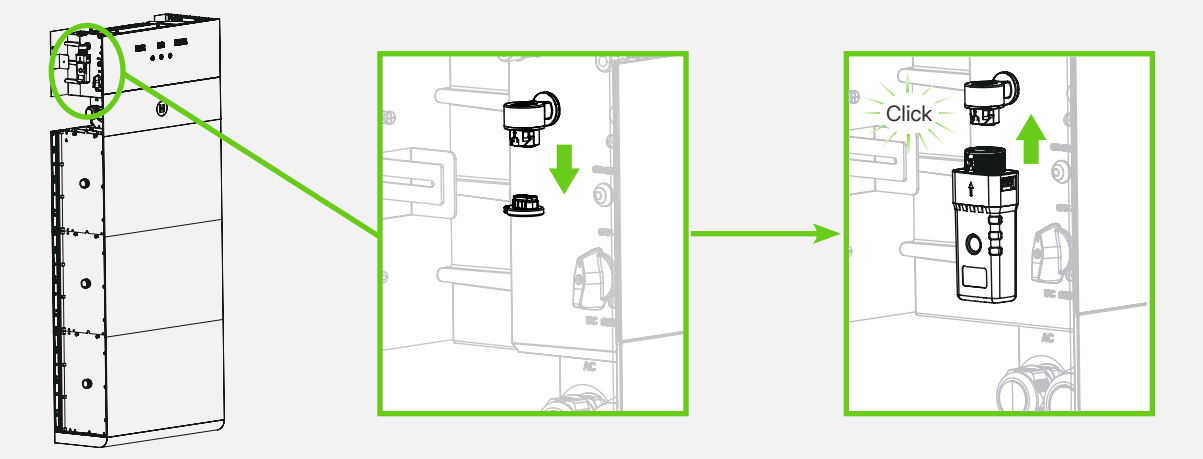
Step 3 Remove the cover of the DTS terminal, and then insert the DTS into the DTS terminal. There will be a "Click" sound when it is plugged in correctly.



8.11.3 DTS-4G-G3 (4G Mode)

Step 1 Remove the cover of the DTS terminal.

Step 2 Insert the DTS into the DTS terminal. There will be a "Click" sound when it is plugged in correctly.



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9 System Commissioning

9.1 Preparation

Before the commissioning of the product, make sure:

- The inverter DC switch and external circuit breaker are disconnected.
- The DIP switch is in the “OFF” State.
- The wiring follows the instructions in ***8 Electrical Connection***.
- The grid voltage is within the permissible range through the multimeter before turning on the AC switch.
- The rubber plugs in the unused terminals are not removed.
- Nothing is left on the top of the product.
- Cables are routed in a safe place or protected against mechanical damage.
- Warning signs and labels are intact.

9.2 System Power-on

Step 1 Turn on the AC breaker between the inverter and the grid.

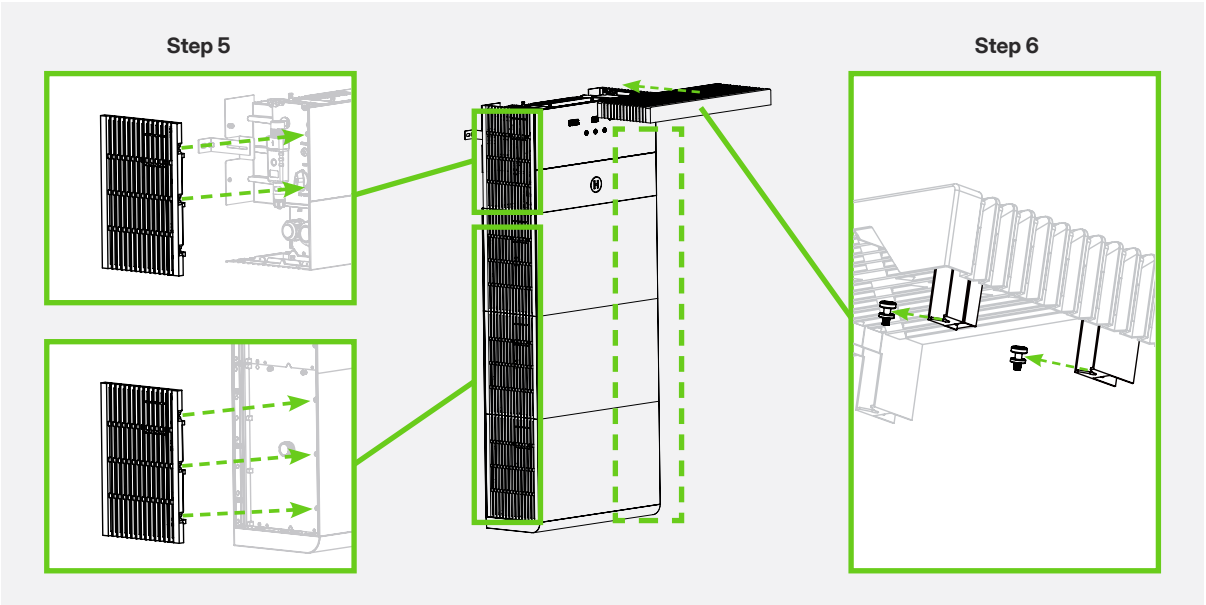
Step 2 If the inverter is connected to the PV strings, rotate the DC switch to the “ON” position.

Step 3 On the left side of the inverter, press the power button for 4 seconds until the LED indicators light up.

Step 4 Check the ***indicator status*** to confirm the inverter is operating properly.

Step 5 Install the decorative covers on both the left and right sides of the inverter.

Step 6 Install the top cover to complete the installation.



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10 S-Miles Cloud

The S-Miles App has been developed for Hoymiles and offers the following features.

- Network configuration
- Local installation assistant
- System monitoring

Installer End-user

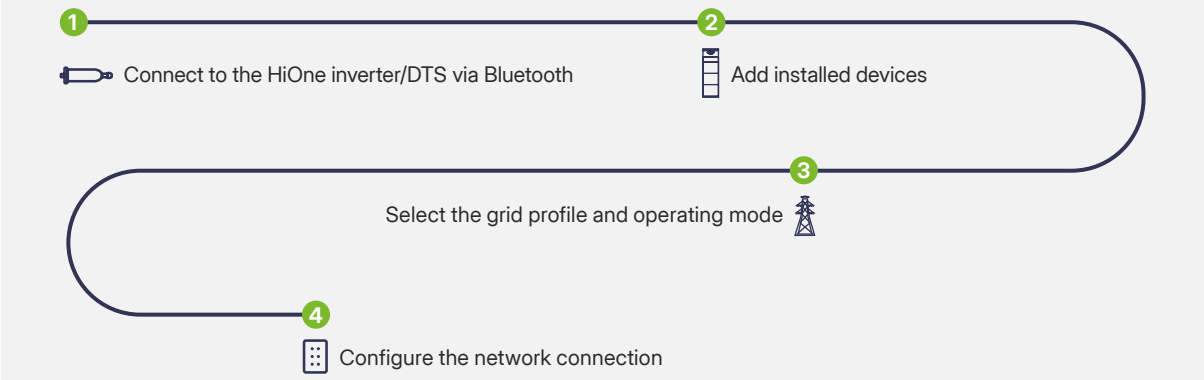
Please download the S-Miles App from the Google Play Store or the App Store. The QR code above can also be scanned to download the App.

NOTE

- Unless otherwise specified, the DTU mentioned in this manual refers to the DTS (Data Transfer Stick).
- In a residential energy storage system, the DTU displayed in the S-Miles Cloud refers to the DTS.
- The screenshots shown in this manual are for reference only. Since the App version will be updated periodically, the interface displayed on your screen may differ.
- For more information about S-Miles App, refer to ***S-Miles Cloud User Manual (App)***.

10.1 Start Commissioning

Commissioning is used to set and test a new residential energy storage system. It is a critical step to ensure that a new device and system can function properly according to the design specifications. During commissioning, you will:



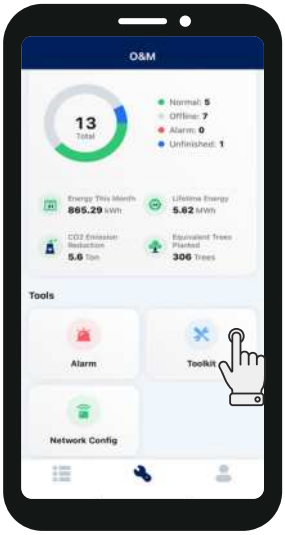
Step 1 Pair with the HiOne inverter/DTS

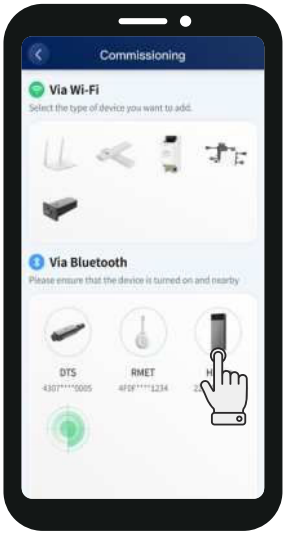
- **For DTS software version V03.00.19 and later**

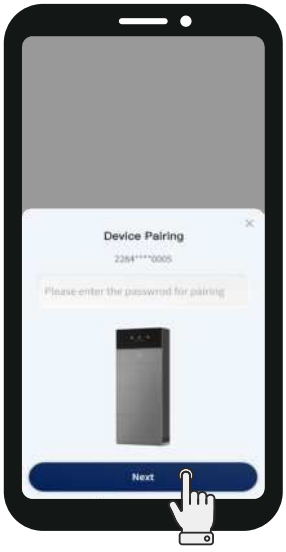
A. Tap **O&M** > **Toolkit**.

B. Under **Via Bluetooth**, tap the HiOne inverter you want to connect.

C. Enter the default password **123456**, then tap **Next**. Go to ***step 2***.







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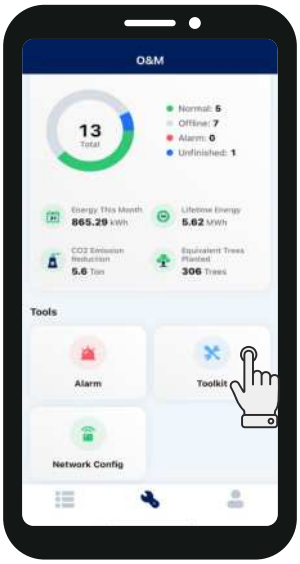
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- **For DTS software version earlier than V03.00.19**

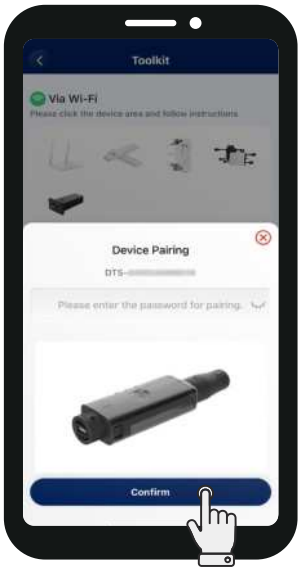
A. Tap **O&M** > **Toolkit**.

B. Under **Via Bluetooth**, tap the DTS you want to connect.

C. Enter the default password **123456**, then tap **Confirm**.







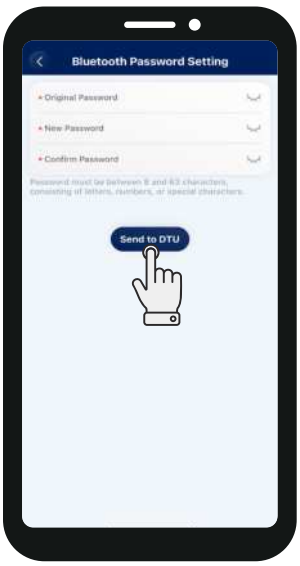
D. Tap **Go to Settings**.

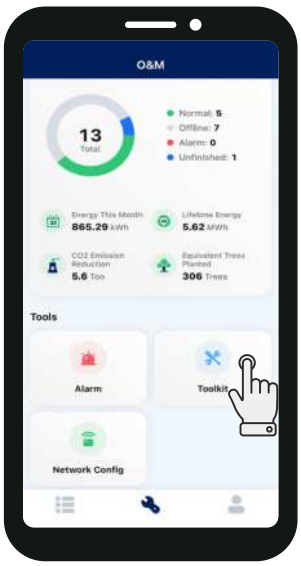
> **NOTE**
>
> Password setup is required only for the first connection.

E. Enter the current password and a new password, confirm the new password, and tap **Send to DTU**.

F. Tap **Toolkit** again.







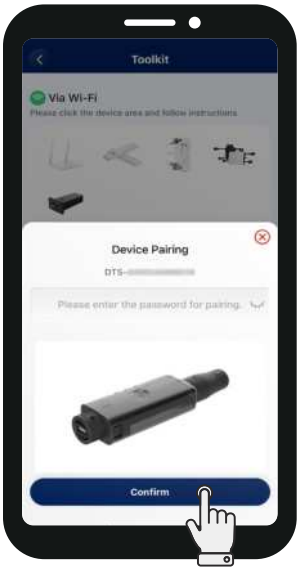
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G. Under **Via Bluetooth**, tap the DTS again.

H. Enter the new password and tap **Confirm**.



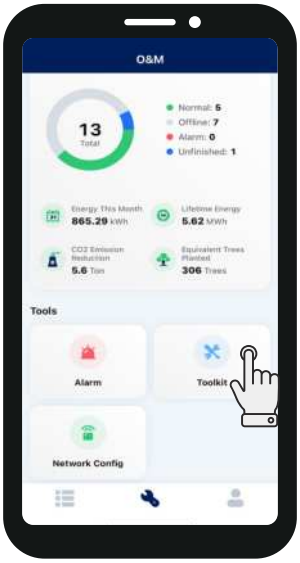




Step 2 Start Commisioning

A. Tap **Toolkit** > **Commissioning**.

B. Follow the on-screen instructions and add devices based on your actual installation, then tap **Next**.







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- **Parallel system**

If a parallel system is installed, tap **Paralleling**. All slave inverters will be added automatically.

NOTE

- The DTS must be connected to the master inverter.
- Slave inverters must be connected to the master via communication cables.
- One DTS supports communication with up to 10 inverters.



- **Gateway**

If a Hoymiles HiBox Gateway is installed, it will be automatically detected.

When the EPS port is connected, you can select “UPS” for faster switch between the on-grid mode and the off-grid mode. For details, refer to *10.3.1 Set Advanced Parameters*.



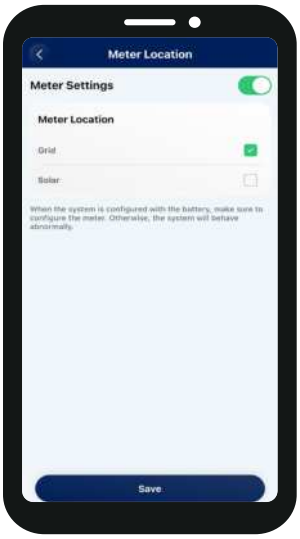
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- **Meter**

Tap **Meter**, enable **Meter Settings**, select the meter location according to the installation, and tap **Save.**





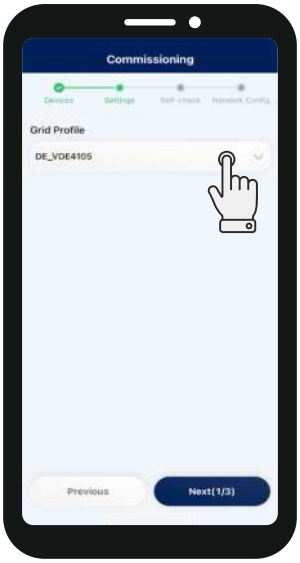
- **P1 Meter**

Refer to ***Appendix 1: Application of P1 Meter***.

C. Configure system settings.

- Select the grid profile for your region, then tap **Next**.

- Select the required working mode, then tap **Next**. For details, see ***4.4 Working Modes***.

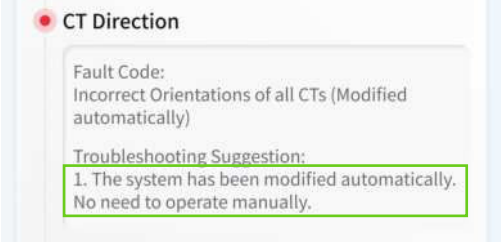




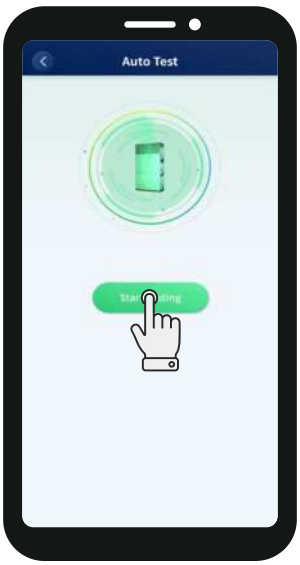
D. Tap **Start Testing** for self-check.

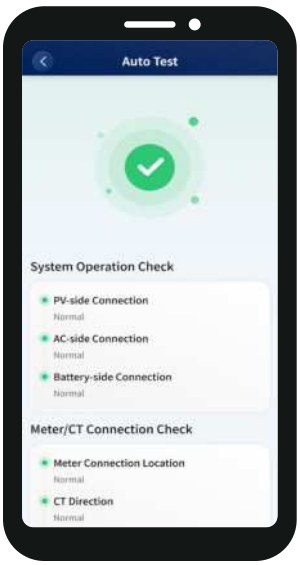
NOTE

- Before this operation, ensure that all DC, AC, and communication cables are correctly connected, and all AC and DC switches are turned on.
- The self-check results are valid only when the system is connected to the grid.
- If the CTs are in the wrong direction, the system will automatically modify the CT direction and phase sequence (figure on the right).



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E. Configure network.

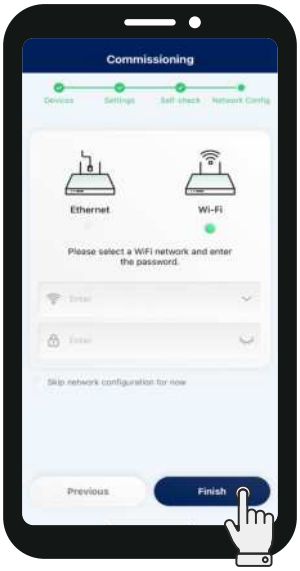
- **Wi-Fi Mode**

  a. Select **Wi-Fi**, choose or enter the Wi-Fi name, enter the password, and tap **Finish**.

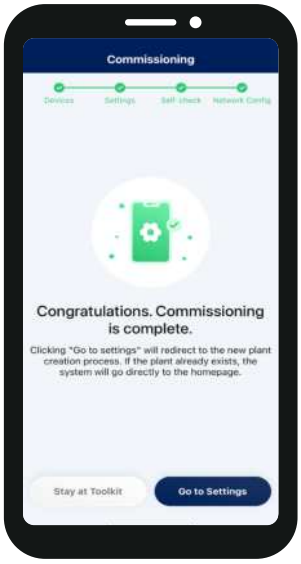
  b. When the network connects successfully, tap **Finish**.

  c. When prompted:

  - Tap **Stay at Toolkit** to remain on the Toolkit screen.
  - Tap **Go to Settings** to proceed to:
    the Create Plant screen (if no plant has been created), or
    the Plant Home screen (if a plant already exists).







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- **LAN Mode**

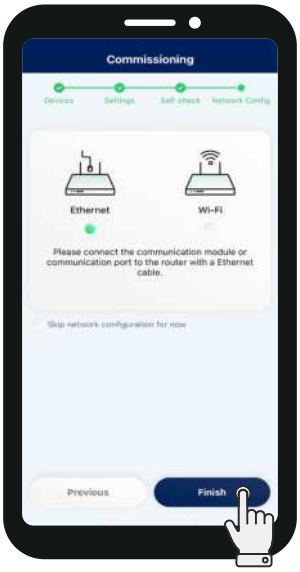
> **NOTE**
>
> LAN mode applies only to DTS-WL-G3 when the DTS is connected to the router via an Ethernet cable.

a. Select **Ethernet** and tap **Finish**.

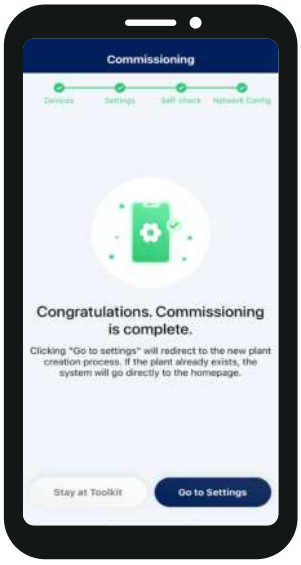
b. After the connection is successful, tap **Finish**.

c. When prompted:

- Tap **Stay at Toolkit** to remain on the Toolkit screen.
- Tap **Go to Settings** to proceed to:
  the Create Plant screen (if no plant has been created), or
  the Plant Home screen (if a plant already exists).





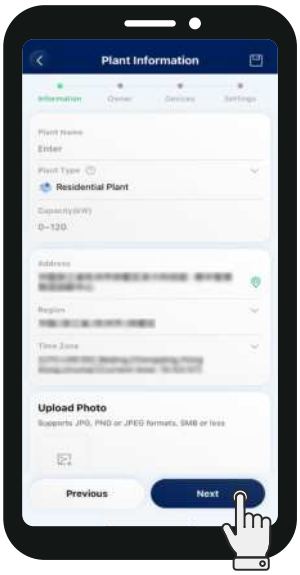


10.2 Create a Plant

Step 1 Tap ⊕ in the upper left corner.

Step 2 Enter the basic information and tap **Next**.





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Step 3 Tap to create an owner.

> **NOTE**
>
> If you don't want to create an owner, tap **Select Owner** to select an existing owner.

Step 4 Enter the login account, name, and password, confirm the password, enter Email and phone number as required, and tap **Save**.

> **NOTE**
>
> It is recommended to enter an email address to help the owners reset the password when they forget it.

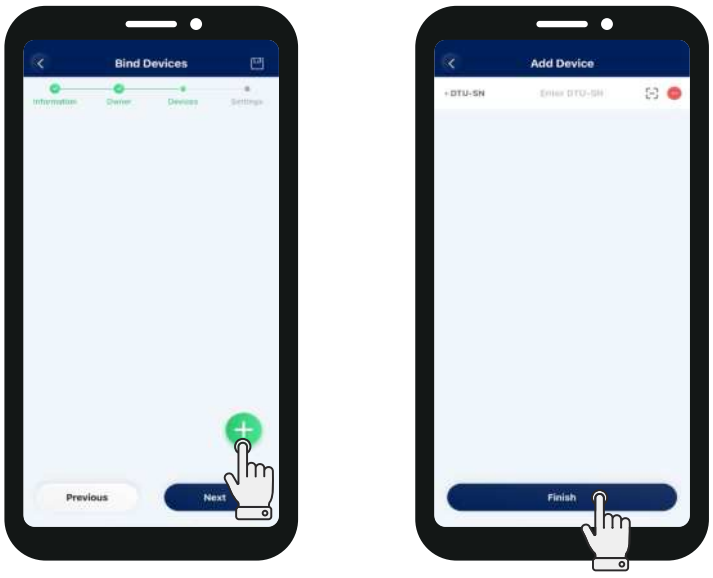
Step 5 Tap **Next**.



Step 6 Tap in the lower right.

Step 7 Enter the DTU SN. The energy storage inverter SN will be automatically identified.

Step 8 Tap **Finish**.



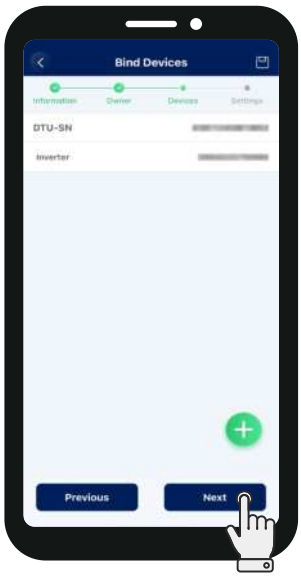
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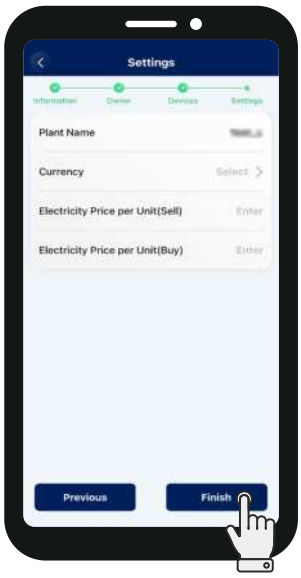
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Step 9 Tap **Next**.

Step 10 (Optional) Set the currency type and the electricity price per unit (Sell and Buy).

Step 11 Tap **Finish**.





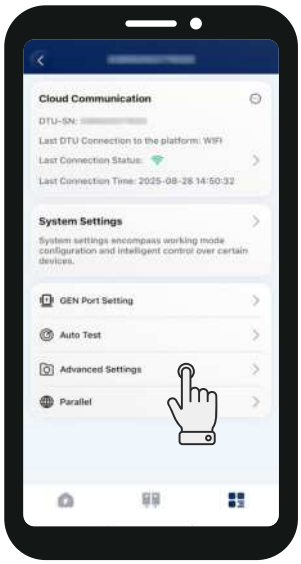
10.3 Perform System Settings

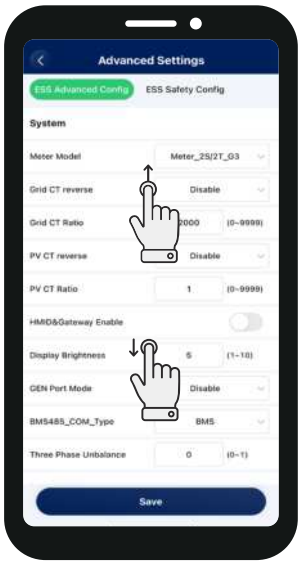
10.3.1 Set Advanced Parameters

Step 1 Tap **O&M** > **Toolkit**, and tap in the lower right corner.

Step 2 Tap **Advanced Settings** to set parameters of System, Battery, PV, Emergency Power Supply (EPS), and Generator, and tap **Save**.







★ System

Parameter	Description	Default Value
Meter Model	• For a single-phase inverter, select “Single-phase Meter”, “Three-phase Meter”, “Meter_1S/1T_G3”, “Meter_2S/2T_G3”, or “CT (Only G3)” according to actual installation. • For a three-phase inverter, select “Three-phase Meter”, “Meter_1S/1T_G3”, “Meter_2S/2T_G3”, or “CT (Only G3)” according to actual installation.	No Meter

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Grid CT Reverse	Enable it to get correct sampling current when the grid side CT is reversely connected.	Disable
Grid CT Ratio	Set the grid side CT ratio.	2000
PV CT Reverse	Enable it to get correct sampling current when the PV inverter side CT is reversely connected.	Disable
PV CT Ratio	Set the PV inverter side CT ratio.	2000
HMID&Gateway Enable	Manually enable or disable the HMID or HiBox Gateway	Disable
Display Brightness	Set the brightness of LED indicators.	10
GEN Port Mode	Select “PV”, “Generator”, or “Smart Load (Only G3)” based on the actual installation.	Disable
BMS485_COM_Type	• If the RS485 port is connected to the battery, please select “BMS”. • If the RS485 port is connected to the microinverter DTU, please select “DTU Com”.	BMS
Three-phase Unbalance	When the loads of the three-phase inverter are not balanced, enable the three-phase unbalance function. It can compensate for each load.	0

★ Battery

Parameter	Description	Default Value
Max. Discharging Power	Set the maximum discharging power.	100%
Max. Charging Power	Set the maximum charging power.	100%
Max. SOC	Set the maximum battery capacity as recommended by the battery manufacturer.	100%
Min. SOC	Set the minimum battery capacity as recommended by the battery manufacturer.	10%
Min. SOC Force Charging Power	Set the power to forcibly charge the battery when the battery SOC falls below the set minimum SOC.	200 W
Reserved SOC Force Charging Power	Set the power to charge the battery when the battery SOC falls below reserved SOC.	2%
Max. BAT Feed-in Power in Peak Time	Set the maximum value of battery feed-in power in peak time.	100%
Max. Grid Charging Power in Off-peak Time	Set the maximum power to charge the battery from the grid in off-peak time.	0 W
Max. BAT Discharging Power in Partial Peak Time	Set the maximum value of battery discharging power in partial peak time.	100%

★ PV

Parameter	Description	Default Value
MPPT Global Scan	If the PV Modules are shaded, enable this function.	Disable

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★ Emergency Power Supply (EPS)

Parameter	Description	Default Value
EPS Mode	• When the EPS port is connected, you can select “EPS” or “UPS”. For faster switch between the on-grid mode and the off-grid mode, please select “UPS”. ▷ If “UPS” is selected, the system will directly switch to backup mode when the grid frequency or voltage is beyond normal range. ▷ If “EPS” is selected, frequency and voltage ride-through (FVRT) will be initiated when the grid frequency or voltage is beyond normal range. If the frequency or voltage does not recover within the given time, the system will first report a fault and then switch to backup mode. Meanwhile, the loads connected to the Backup port will be shutdown. • When the inverter is used as a PV inverter, select “Disable”.	EPS
External Bypass	For inverters with an external ATS (EPS) Box, when the external bypass switch is enabled, the inverter EPS port works in the off-grid mode and will not work in the on-grid mode.	Disable
PV Only	In off-grid mode, the hybrid inverter supports operation with PV when there is no battery connection. (This function is not recommended since the system is unstable under this mode.)	Disable

★ Generator

Parameter	Range
GEN Location	None/GenSide. Select “GenSide” to ensure the normal operation of the generator.
GEN Signal Setting	Manual or DI/DO. Select “Manual” if no dry contact; select “DI/DO” if dry contact is wired.
Min. Run Time	5-60 min
Max. Run Time	6-10 hour
Protection Interval	5-60 min
Synchronize Time	1-20 min
Shutdown Delay	1-20 min
GEN Rated Power	0-20000 W
High Voltage Limit	0-280 V
Low Voltage Limit	0-180 V
High Frequency Limit	0-70 Hz
Low Frequency Limit	0-59 Hz
Max. GEN Charging Power	0-20000 W

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10.3.2 Enable DRM Function

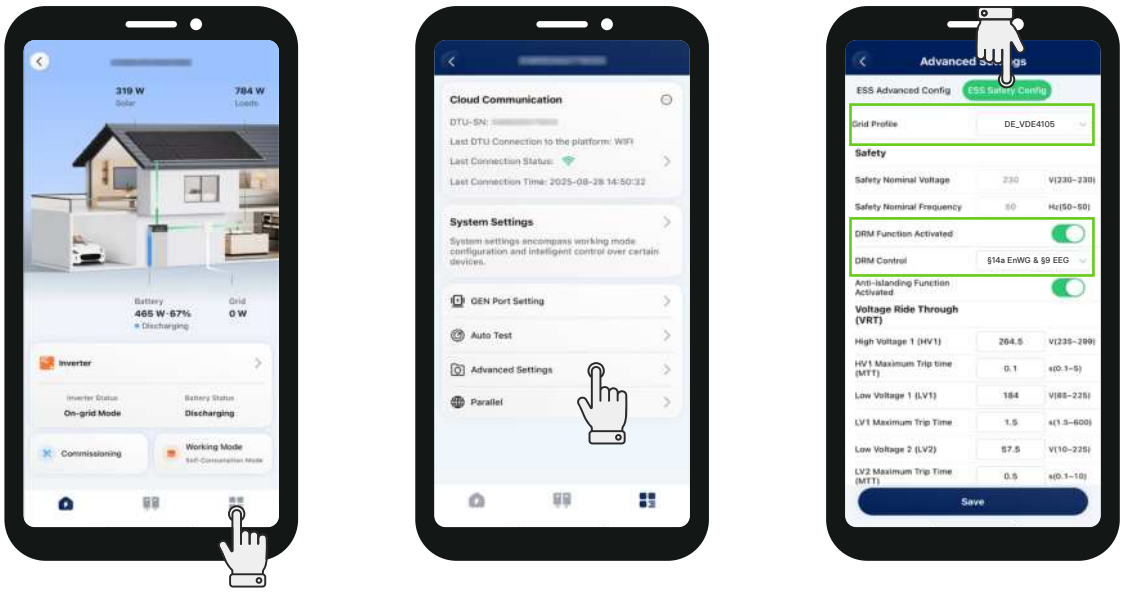
Step 1 Tap **O&M** > **Toolkit**, and tap in the lower right corner.

Step 2 Tap **Advanced Settings** > **ESS Safety Config**.

Step 3 Select the grid profile in your region and toggle on **DRM Function Activated**.

Step 4 (For some countries) Set the mode of **DRM Control**.

Step 5 Tap **Save**.



NOTE

- Only the installer can modify grid protection and power quality response mode parameters.
- The energy storage system must be updated to the latest firmware. To update the firmware, refer to ***10.4 Upgrade the Firmware***.
- **Grid Profile and DRM Control for Germany**

  Grid Profile: DE_VDE4105.

  DRM Control: §14a EnWG & §9 EEG.
- **DRM Control for Austria**

  Zero Export (NO)
  Default state: open.
  When the contactor is closed, the inverter's feed-in power is 0%.
  When the contactor is open, the inverter's feed-in power is not limited and can be up to 100%.

  Zero Export (NC)
  Default state: closed.
  When the contactor is closed, the inverter's feed-in power is not limited and can be up to 100%.
  When the contactor is open, the inverter's feed-in power is 0%.

  Shutdown (NO)
  Default state: open.
  When the contactor is closed, the inverter shuts down.
  When the contactor is open, the inverter operates normally.

  Shutdown (NC)
  Default state: closed.
  When the contactor is closed, the inverter operates normally.
  When the contactor is open, the inverter shuts down.

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10.3.3 Set Export Management Parameters

NOTE

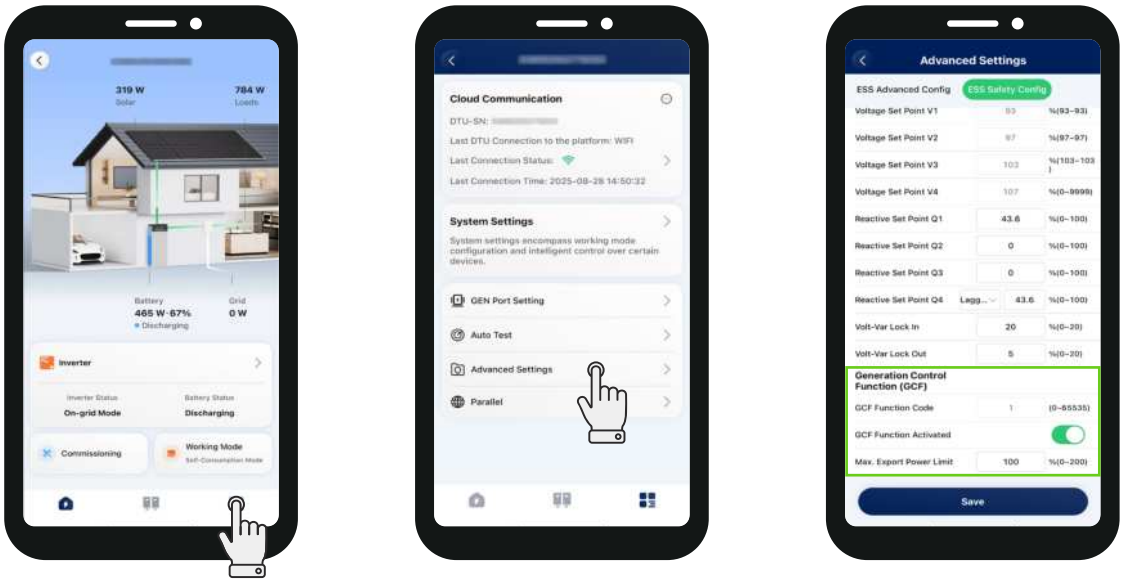
- This function is enabled by default, and the default value of Max. Export Power Limit is 100%.
- ESS refers to a single energy storage inverter or a parallel system.
- The energy storage inverter cannot control the output power of other input devices connected to the grid side. It means that the feed-in power cannot be limited to 0 if other input devices are connected to the grid side.
- If no input device is connected to the grid side, Max. Export Power Limit can be set to 0-100%.

- If no input device is connected to the grid side, and you do not need to limit the feed-in power, disable this function or skip this setting.
- If an input device, such as a microinverter, is connected to the grid side, and you do not need to limit the feed-in power, disable this function.
- If you need to limit the feed-in power, follow the instructions below to set Max. Export Power Limit.

Step 1 Tap **O&M** > **Toolkit**, and tap in the lower right corner.

Step 2 Tap **Advanced Settings** > **ESS Safety Config**, and slide your finger down to the bottom.

Step 3 Ensure **Generation Control Function (GCF)** is enabled, and set the value of Max. Export Power Limit, and tap **Save**.



Scenario 1: Max. Export Power Limit is 0

The feed-in power of an Energy Storage System (ESS) is 0. If an input device, such as a microinverter, is connected to the grid side, its output power cannot be controlled; it will output power according to its logic.

Scenario 2: Max. Export Power Limit is 50%

The maximum allowable feed-in power is 50% of the rated power of ESS. If an input device, such as a microinverter, is connected to the grid side, it can operate at full power, and the energy storage inverter will adjust the output of ESS in real time according to the set Max. Export Power Limit.

Scenario 3: Max. Export Power Limit is 100%

The maximum allowable feed-in power is 100% of the rated power of ESS. If an input device, such as a microinverter, is connected to the grid side, it can operate with its full power, and the energy storage inverter will adjust the output of ESS in real time according to the set Max. Export Power Limit.

Scenario 4: Max. Export Power Limit is 150%

The maximum allowable feed-in power is 150% of the rated power of ESS. If an input device, such as a microinverter, is connected to the grid side, it can operate with its full power, and the energy storage inverter will adjust the output of ESS in real time according to the set Max. Export Power Limit.

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10.3.4 Set Working Mode

NOTE

Only one mode can be selected at a time.

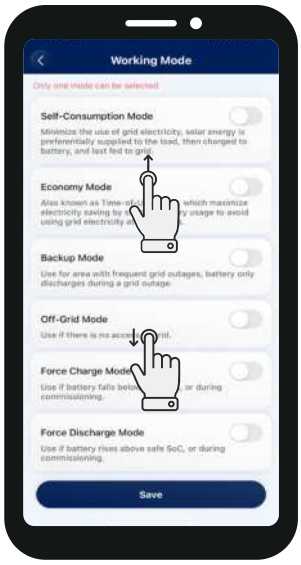
After the commissioning, if you want to change the working mode, follow the instructions below.

Method One

Step 1 Tap **O&M** > **Toolkit**, and tap **Working Mode**.

Step 2 Select one mode, set relevant parameters, and tap **Save**.



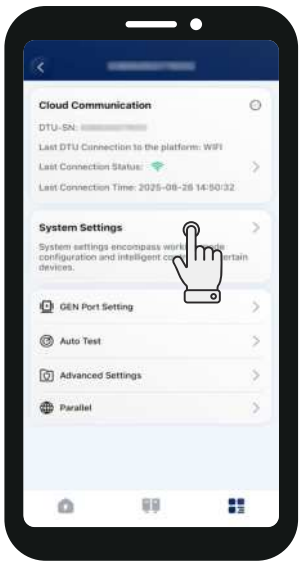


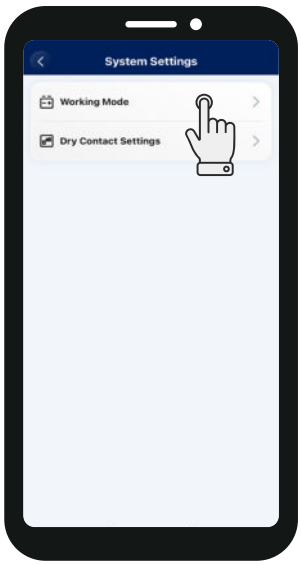
Method Two

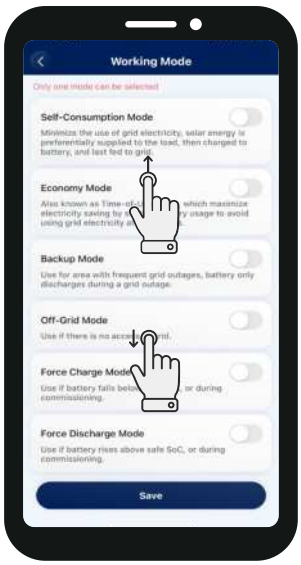
Step 1 Tap **O&M** > **Toolkit**, tap in the lower right corner, and tap **System Settings**.

Step 2 Tap **Working Mode**.

Step 3 Select one mode, set relevant parameters, and tap **Save**.







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10.3.5 Set Dry Contact Function

> **NOTE**
>
> Only one mode can be selected at a time.

Step 1 Tap **O&M** > **Toolkit**, tap in the lower right corner, and tap **System Settings**.

Step 2 Tap **Dry Contact Settings**.

Step 3 Select one mode, set relevant parameters, and tap **Save**.



★ Earth Fault Alarm

This function is used for external alarm caused by grounding insulation resistance fault or residual current fault. Disable the external alarm when the load is connected. This function is to produce alarm, not to cause tripping.

★ Load Control

Load control can be used according to individual demand. This setting is to control whether the smart load works or not. There are five modes available as follows.

- Manual Mode
  The inverter can supply power to the smart load after you select this mode.
- Scheduled Mode
  Set the time period for the smart load to work. The inverter can supply power to the smart load during this set time, and the smart load will be disconnected at other times.
- Intelligent Mode

  > **NOTE**
  >
  > Before selecting the intelligent mode, return to screen, tap **Advanced Settings**, and set the **GEN Port Mode** to **Smart Load (Only G3)**.

  It is necessary to set the value of Min. Running Time and Rated Load Power.
  In this mode, the inverter will detect the feed-in power generated by PV in real time. If the feed-in power exceeds the rated load power, the inverter can supply power to the smart load during the pre-set minimum running time. Once the time is up, the inverter will detect the feed-in power again. If the feed-in power is less than the rated load power, the smart load will be disconnected; conversely, the inverter will repeat the above process according to the same logic.
- EPS Port Smart Control
  In this mode, battery protection SOC can be set.
  In off-grid state, if the battery SOC is higher than the protection SOC, the inverter can supply power to the smart load; if the battery SOC is lower than the protection SOC, the smart load will be disconnected.

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- Heat Pump Control
  This function allows users to add up to four runtimes. According to the set power and battery SOC, the system can control the start and stop as well as the power of SG Ready heat pumps and compatible heat pumps of selected brands, maximizing the PV energy utilization.

Parameter	Description
Start Power	The heat pump will start when the export power reaches this value.
Shutdown Power	The heat pump will shut down when the grid import power reaches this value.
Battery Starting SOC (Optional)	OFF by default. If it is ON, the heat pump will start when the battery SOC exceeds this value.
Battery Shutdown SOC	The heat pump will shut down when the battery SOC falls below this value.
Min. Single Runtime	It has the highest priority. It refers to the minimum duration of a single operating cycle.
Max. Single-day Runtime (Optional)	OFF by default. If it is ON, the heat pump will shut down when the total runtime for the day reaches this value.
Runtime Settings	Up to four operating periods can be set.

★ Generator Control

- Exercise Mode
  The generator starts regularly during the preset period to ensure the operation of the generator.

Parameter	Description
Frequency	It allows the generator to start regularly at this frequency.
Start Time	It allows the generator to start regularly at this time.
Duration	The generator will stop running after this duration.

- Running Mode
  This mode is the off-grid operation mode of the generator, including manual mode and auto mode.
  - ▷ Manual Mode
    The manual mode is used to turn on or turn off the generator manually.
  - ▷ Auto Mode
    The auto mode is used to turn on or turn off the generator according to the battery capacity. The auto mode only supports generators controlled by Dry Contact. Otherwise, please select the manual mode.

Parameter	Description
GEN Start SOC	Battery level (%) at or below which the generator starts in off-grid mode.
GEN Shutdown SOC	Battery level (%) at or above which the generator stops in generator mode.
Quiet Time	Period during which the generator is disabled. Please note that enabling Quiet Time may affect power availability during those hours.

- Battery Charge Time

Parameter	Description
Battery Charge Time	The generator will charge the battery during the preset period. To avoid wasting PV power, please choose the time period when the PV power is low.

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10.4 Upgrade the Firmware

NOTE

During the firmware upgrade, do not power off the device.

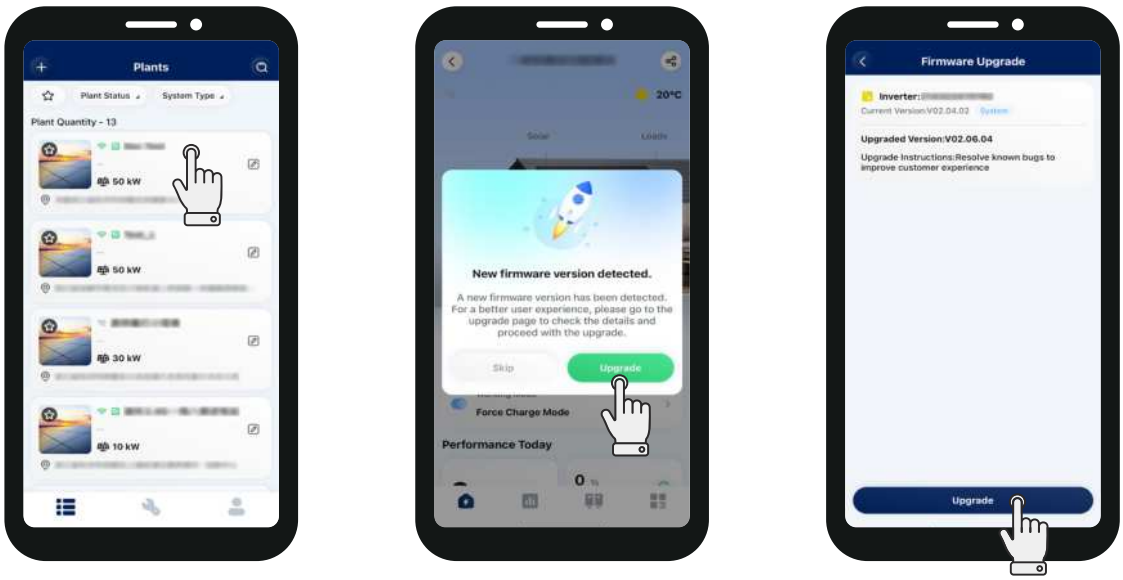
When you enter the plant overview interface, there will be a pop-up window if there is a new firmware version.

Method One

Step 1 Tap the target plant.

Step 2 Tap **Upgrade**.

Step 3 Tap **Upgrade**.

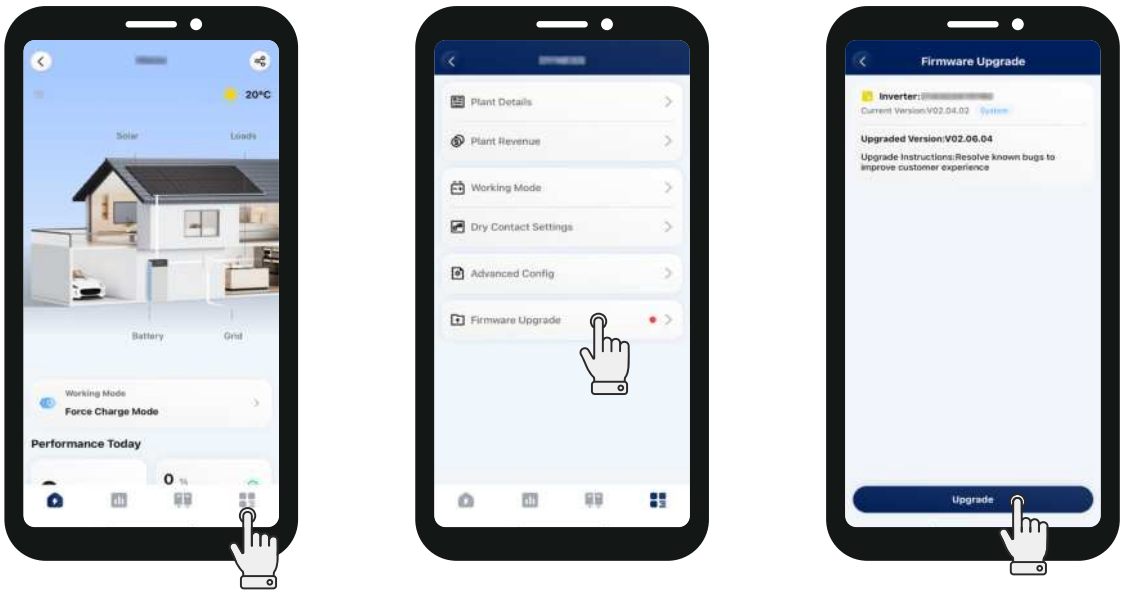


Method Two

If you have tapped **Skip** to perform other operations, you can also follow the instructions below to upgrade the firmware.

Step 1 Tap in the lower right corner.

Step 2 Tap **Firmware Upgrade** > **Upgrade**.



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11 System Maintenance

11.1 System Power-off

Step 1 Stop the product from working via the S-Miles App.

Step 2 On the left side of the inverter, press the power button and hold for 6 s to power-off the device.

Step 3 Disconnect the AC breaker between the inverter and the grid.

Step 4 If the inverter is connected to the PV strings, rotate the DC switch to the “OFF” position.

Step 5 Check whether the inverter indicators are off.

NOTICE

Wait at least 5 minutes after the LED indicators are off to release the internal energy.

11.2 Routine Maintenance

Check Item	Check Method	Maintenance Interval
System Operation Status	• Check whether the device is damaged or deformed. • Check whether there is an abnormal sound when the device is working. • Check whether the device parameters are set correctly.	Once every 6 months
Electrical Connection	• Check whether the cables are firmly connected and intact; in particular, ensure that the parts being contacted with the metal surface are not scratched. • Check whether the waterproof plugs or covers of unused ports are firmly in place.	The first inspection is 3 months after the first installation, and the subsequent inspections can be carried out once every 6 to 12 months.
Grounding Reliability	Check whether the ground cables are firmly connected.	The first inspection is 3 months after the first installation, and the subsequent inspections can be carried out once every 6 to 12 months.

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11.3 Troubleshooting

When the system is in alarm, please log in to the S-Miles App to review. The possible causes and their troubleshooting are shown as follows.

Display	Possible Cause	Handling Suggestions
Grid Overvoltage	The grid voltage is higher than the permissible range.	Generally, the inverter will reconnect to the grid after the grid recovers. If the alarm occurs frequently: 1. Make sure the ESS safety configuration of the inverter is set correctly. 2. Make sure that the grid voltage in your area is stable and within the normal range. 3. Check whether the cross-sectional area of the AC cable meets the requirement. 4. If the alarm persists, contact Hoymiles technical support team.
Grid Undervoltage	The grid voltage is lower than the permissible range.	Generally, the inverter will reconnect to the grid after the grid recovers. If the alarm occurs frequently: 1. Make sure the ESS safety configuration of the inverter is set correctly. 2. Make sure that the grid voltage in your area is stable and within the normal range. 3. Check whether the AC cable is firmly in place. 4. If the alarm persists, contact Hoymiles technical support team.
Grid Overfrequency	The grid frequency is higher than the permissible range.	Generally, the inverter will reconnect to the grid after the grid recovers. If the alarm occurs frequently: 1. Make sure the ESS safety configuration of the inverter is set correctly. 2. Make sure that the grid frequency in your area is stable and within the normal range. 3. If the alarm persists, contact Hoymiles technical support team.
Grid Underfrequency	The grid frequency is lower than the permissible range.	
No Grid	The inverter detects that there is no grid connected.	Generally, the inverter will reconnect to the grid after the grid recovers. If the alarm occurs frequently: 1. Check whether the grid supply is reliable. 2. Check whether the AC cable is firmly in place. 3. Check whether the AC cable is correctly connected. 4. Check whether the AC circuit breaker is disconnected. 5. If the alarm persists, contact Hoymiles technical support team.

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Display	Possible Cause	Handling Suggestions
RCD Fault	The residual leakage current is too high.	1. The alarm can be caused by high ambient humidity, and the inverter will reconnect to the grid after the environment is improved. 2. If the environment is normal, check whether the AC and DC cables are well insulated. 3. If the alarm persists, contact Hoymiles technical support team.
PV Reverse Connection	The inverter detects that the PV strings are reversely connected.	1. Check whether the corresponding string is of reverse polarity. If so, disconnect the DC switch and adjust the polarity when the string current drops below 0.5 A. 2. If the alarm persists, contact Hoymiles technical support team.
PV Undervoltage	The PV voltage is lower than the permissible range.	1. Check whether the DC cable is firmly in place. 2. Check whether there is a PV Module shaded. If so, remove the shade and ensure the PV Module is clean. 3. Check whether the PV Module is in abnormal aging. 4. If the alarm persists, contact Hoymiles technical support team.
PV Overvoltage	The PV voltage is higher than the permissible range.	1. Check the specification and numbers of corresponding string PV Modules. 2. If the alarm persists, contact Hoymiles technical support team.
Over Temperature	The temperature inside the inverter is higher than the permissible range.	1. Make sure that the installation complies with the instructions from the User Manual. 2. Check whether the alarm “Fan Fault” occurs. If so, replace the faulty fan. 3. If the alarm persists, contact Hoymiles technical support team.
ISO Fault	The insulation impedance of the PV string to the ground is too low.	1. Use a multimeter to determine if the resistance between the earth and the inverter frame is close to zero. If not, please ensure that the connection is good. 2. If the humidity is too high, an isolation fault may occur. Attempt to restart the inverter. If the fault persists, check it again when the weather turns fine. 3. Check the resistance to ground from the PV Module/cable. Take corrective measures in case of leading to a short circuit or damaged insulation layer. 4. If the alarm persists, contact Hoymiles technical support team.

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Display	Possible Cause	Handling Suggestions
Arc Fault	The inverter detects that there is an arc fault.	1. Disconnect the DC switch and check whether DC cables are damaged and whether the wiring terminals are loose or in poor contact. If so, take corresponding corrective measures. 2. After taking corresponding measures, reconnect the DC switch. 3. If the alarm persists, contact Hoymiles technical support team.
EPS Load Overpower	The EPS load power is higher than the permissible range.	1. Reduce the power of EPS loads, or remove some EPS loads. The inverter will restart automatically. 2. If the alarm persists, contact Hoymiles technical support team.
Meter Reverse Connection	The inverter detects that the Meter or CT is reversely connected.	1. Make sure that the installation complies with the instructions from the User Manual. 2. If the alarm persists, contact Hoymiles technical support team.
Meter Communication Fault	The inverter detects that there is a meter communication fault.	1. Check whether the Meter communication cable and terminal are abnormal. 2. Reconnect the Meter communication cable. 3. If the alarm persists, contact Hoymiles technical support team.
Battery Reverse Connection	The inverter detects that the battery wirings are reversely connected.	1. Check the battery for polarity correctness, and correct it if necessary. 2. If the alarm persists, contact Hoymiles technical support team.
Battery Voltage Fault	The battery voltage is higher than the permissible range.	1. Check if the battery input voltage is within the normal range. 2. If the alarm persists, contact Hoymiles technical support team.
BMS Communication Fault	The inverter detects that there is a BMS communication fault.	1. Check whether the BMS communication cable and terminal are abnormal. 2. Reconnect the BMS communication cable. 3. If the alarm persists, contact Hoymiles technical support team.
BMS Battery Alarm	The inverter detects that there is a battery fault from BMS.	Try to restart the battery. If the fault persists, contact the battery manufacturer.
BMS Battery Fault	The inverter detects that there is a battery fault from BMS.	Try to restart the battery. If the fault persists, contact the battery manufacturer.
Relay Self-check Fault	The inverter detects that there is a relay self-check fault.	Try to restart the inverter. If the fault persists, contact Hoymiles technical support team.

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12 Decommissioning

12.1 Removing the Product

Step 1 Power off the product as described in ***11.1 System Power-off***.

Step 2 Disconnect all cables.

Step 3 Remove the device from the wall.

12.2 Packing the Product

If the original package is available, put the product and its accessories into the package and keep them in a dry and proper place.

If the original package is not available, put the product and its accessories into a suitable package. The package should be easy to remove, can bear the weight of the product, and can be sealed properly.

12.3 Disposing of the Product

If the product can not be used and needs to be disposed of, dispose of the product and its accessories in accordance with the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

In accordance with the WEEE and its implementation in national law, the electrical devices must be collected separately and recycled in an environmentally responsible manner. We recommend that you return your used device to your dealer or obtain information regarding a local, authorized collection and disposal system. Failure to comply with this EU Directive may result in a negative impact on the environment.

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13 Technical Datasheets

13.1 HiOne-(3.6-12)S-G3

Model	HiOne-3.6S-G3	HiOne-4.6S-G3	HiOne-5S-G3	HiOne-6S-G3	HiOne-8S-G3	HiOne-10S-G3	HiOne-12S-G3
Battery							
Battery type	Li-ion						
Battery voltage range (V)	390-550						
Compatible battery model	HiOne-6B-G3, HiOne-8B-G3						
Number of modules	1-8(1)						
PV Input							
Recommended max. PV power (W)	7200	9200	10000	12000	16000	20000	24000
Max. input voltage (V)	600						
Rated voltage (V)	390						
Start-up voltage (V)	70						
MPPT voltage range (V)	50-550						
Max. input current (A)	18/18/18	18/18/18	18/18/18	18/18/18	18/18/18/18	18/18/18/18	18/18/18/18
Max. short circuit current (A)	27/27/27	27/27/27	27/27/27	27/27/27	27/27/27/27	27/27/27/27	27/27/27/27
MPPT number/Max. input strings number	3/3	3/3	3/3	3/3	4/4	4/4	4/4
AC Output							
Rated output power (W)	3680(2)	4600(3)	5000	6000	8000	10000	12000
Max. on-grid output apparent power (VA)	3680(2)	4600(3)	5000	6000	8000	10000	12000
Max. output current (A)	16(2)	20(3)	22.7	27.3	36.4	45.5	54.5
Max. off-grid output apparent power (VA)(4)	5520 (10s)	6900 (10s)	7500 (10s)	9000 (10s)	12000 (10s)	15000 (10s)	18000 (10s)
Grid form	L/N/PE						
Nominal AC output voltage (V)	220/230/240						
Nominal grid frequency (Hz)	50/60						
Power factor	>0.99 (0.8 leading-0.8 lagging)						
THDi (@rated output)	<3%						
Efficiency							
Max. efficiency	98.0%						
EU efficiency	97.5%						

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Model	HiOne-3.6S-G3	HiOne-4.6S-G3	HiOne-5S-G3	HiOne-6S-G3	HiOne-8S-G3	HiOne-10S-G3	HiOne-12S-G3
Protection							
Anti-islanding protection	Integrated						
PV string input reverse polarity protection	Integrated						
Insulation resistor detection	Integrated						
Residual current monitoring unit	Integrated						
AC overcurrent protection	Integrated						
AC short circuit protection	Integrated						
AC overvoltage and undervoltage protection	Integrated						
Surge protection	DC Type II / AC Type II						
General							
Dimensions (W × H × D [mm])	620 × 360 × 255						
Weight (kg)	24.5	24.5	24.5	24.5	28.5	28.5	28.5
Mounting	Wall-mounted / Floor-standing						
Operating temperature (°C)	-30 to +65 (>45, derating)						
Relative humidity	0-95%, no condensation						
Cooling	Natural convection	Natural convection	Natural convection	Natural convection	Intelligent air cooling	Intelligent air cooling	Intelligent air cooling
Topology (Solar / Battery)	Transformerless / High-frequency isolation						
Altitude (m)	≤4000						
Protection degree	IP66						
User interface	LED & App						
Communication	RS485, Bluetooth, Wi-Fi / Ethernet / 4G (optional)						
Warranty	10 Years						
Standard Compliance							
Grid connection standard	EN 50549-1/-10, NF EN 50549-1/-10, CEI0-21, AS/NZS 4777.2, PEA/MEA, TOR Erzeuger Type A, NTS 631, UNE 217001, UNE 217002						
Safety / EMC standard	IEC/EN 61000-6-1/-2/-3/-4, EN 62920, IEC/EN 62109-1&2						

(1) Up to four modules can be stacked in one battery tower.
(2) This value is in compliance with G98.
(3) This value is in compliance with VDE 4105.
(4) Applicable only when the inverter is connected to Hoymiles HiBox Gateway.

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13.2 HiOne-6B-G3/HiOne-8B-G3

Model	HiOne-6B-G3	HiOne-8B-G3
Battery Data		
Battery type	$LiFePO_4$	
Cell capacity (Ah)	314	
Cycle life	8000(1)	
Total energy (kWh)	6	8
Usable energy (kWh)	5.85(2)	7.8(2)
Depth of discharge	100%(3)	
Max. charging/discharging power (kW)	3	4
Peak discharge power (kW)	4.5 (10 s)	6 (10 s)
Max. stackable quantity	4	
Max. parallel quantity	2	
General		
Dimensions (W × H × D [mm])	620 × 360 × 255 (single pack)	
Weight (kg)	55	67
Mounting	Wall-mounting / Floor-standing	
Installation environment	Indoor / Outdoor	
Storage temperature range (°C)	-25 to +60	
Charging/discharging temperature range (°C)	-20 to +55	
Protection degree	IP66	
Cooling	Natural convection	
Altitude (m)	≤4000	
Relative humidity range	5% - 95%	
Compatible inverters	HiOne-(8-20)T-G3, HiOne-(3.6-12)S-G3	
Standard compliance	IEC/EN 60730-1, IEC/EN 61000-6-1&3, UN 38.3, IEC/EN 62619, IEC/EN 63056, IEC/EN 62477	
Warranty	10 Years	

(1) This value is provided by the Cell manufacturer and is based on the following conditions: SOH=70%, 0.5 C charge/discharge rate at 25±2°C.

(2) This value is measured at the beginning of life under the following conditions: 100% depth of discharge, 0.2 C charge/discharge rate at 25±2°C.

(3) This value refers to the usable energy capacity of the battery. To keep the battery in good condition, recharge it within 7 days after it has been fully discharged.

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Appendix 1: Application of P1 Meter

NOTE

The P1 meter is not included in the standard package of the HiOne series. You need to purchase it seperately.

P1 Meter Introduction

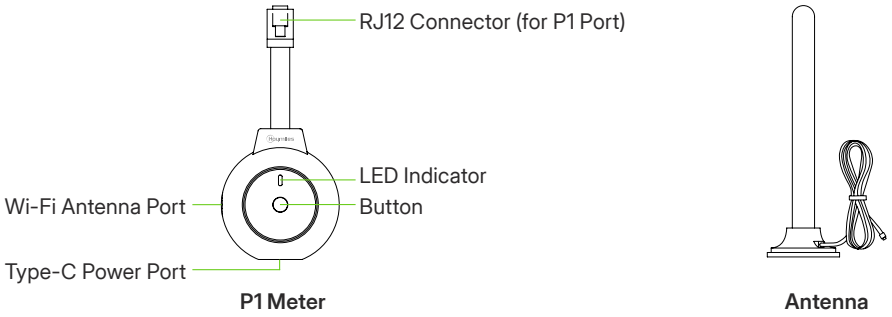


Figure 14-1 P1 Meter Package Contents and Appearance

Button Action	Function
Press for 3 s	Turn on Bluetooth, and Bluetooth starts broadcasting.
Press once	Confirm Bluetooth connection.
Press for 10 s	Reset the device.

LED	Time Gap	Indication
Alternating blue and green flashing	1 s	Upgrade mode
Alternating blue and green flashing	Blue: 2 s Green: 0.5 s	Abnormal mode
Flashing blue	1 s	Bluetooth broadcasting
Flashing blue	0.5 s	Waiting for button confirmation to connect Bluetooth (Maximum waiting time: 15 s)
Solid blue	-	Bluetooth connected
Flashing green	2 s	Network not configured / Factory resetting
Flashing green	0.5 s	Network configured, connecting to network / Network connection failed
Solid green	-	Network connected, but no data communication
Solid green with blue flashing once per data transmission	-	Data communicating

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System Diagram

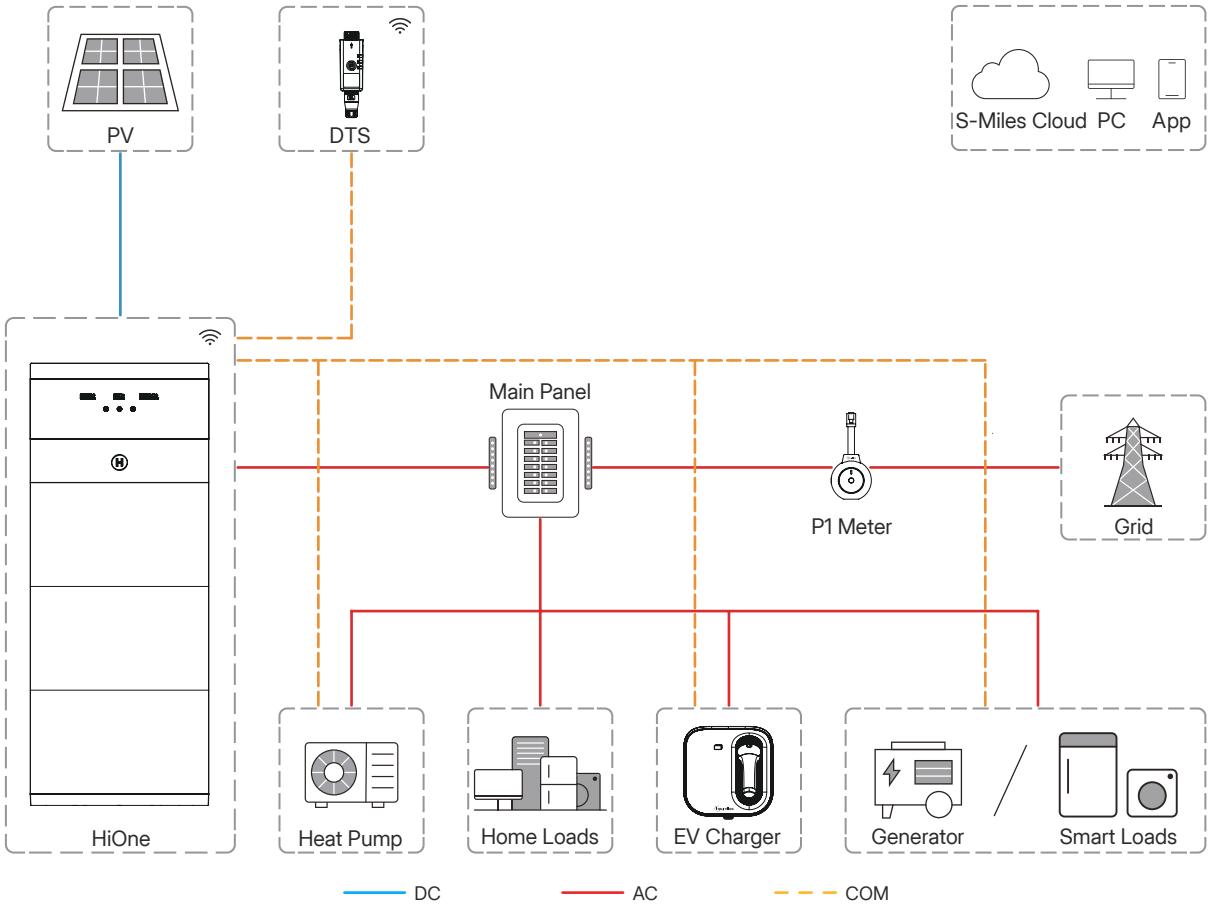


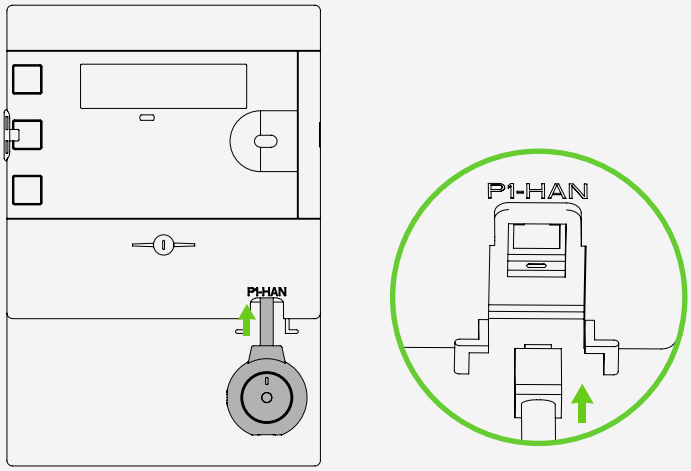
Figure 14-2 P1 Meter System

How to Connect the P1 Meter

NOTE

Before installation, make sure the P1 communication of the residential smart meter is turned on.

Step 1 Insert the P1 meter into the P1 port of the smart meter. For the DSMR 5.0 smart meter, if the P1 meter is powered on, the LED indicator will flash green.

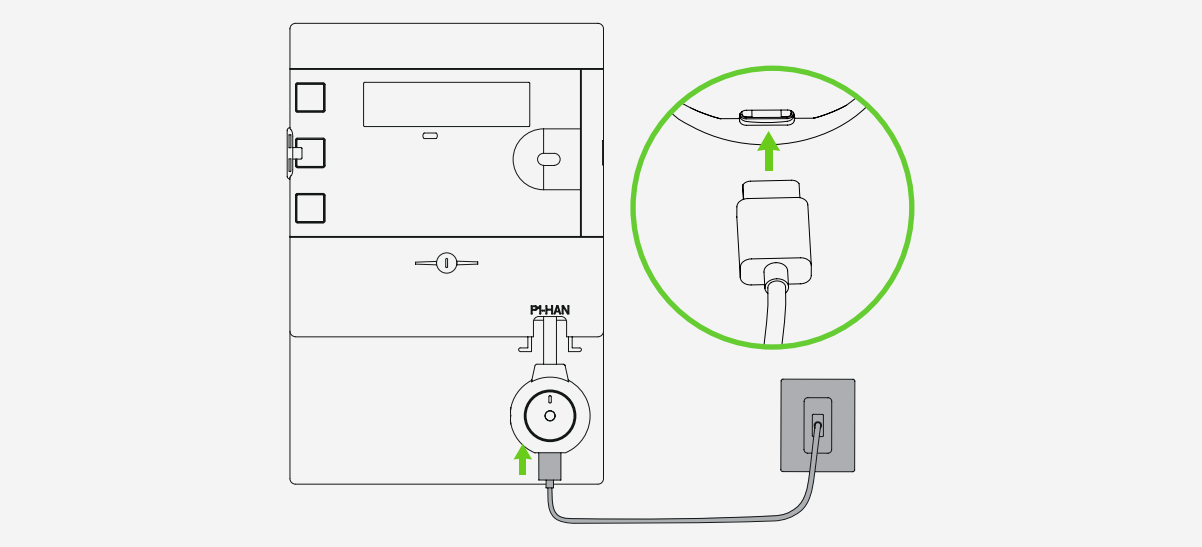


NOTE

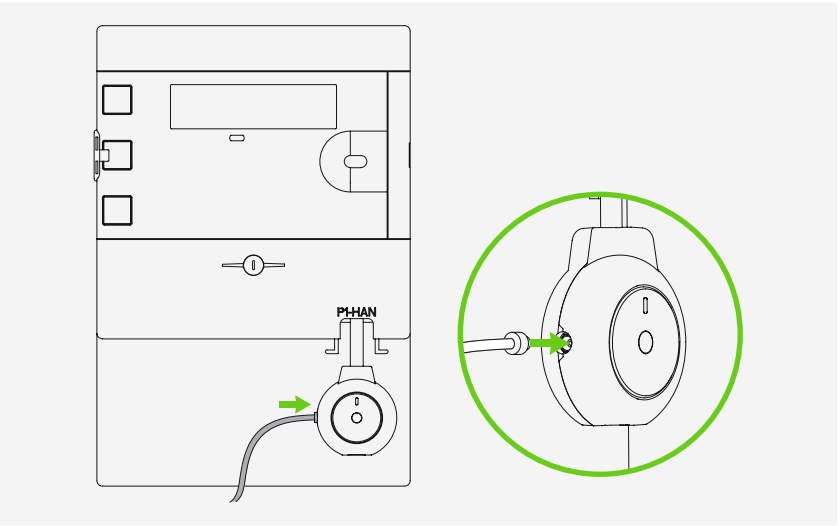
The actual position of the P1 port may vary depending on the smart meter, but it is typically labeled as “P1”.

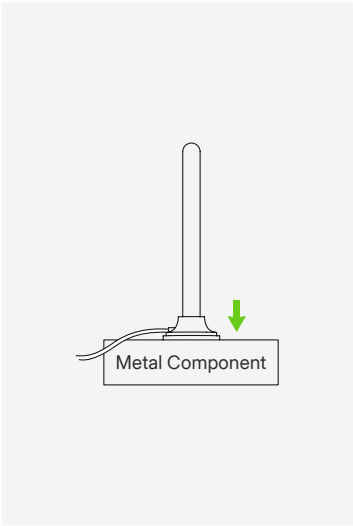
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Step 2 For the DSMR 4.0 smart meter, you need to connect the P1 meter to a power adapter (5 V, > 0.5 A) through the Type-C power port. If the P1 meter is powered on, the LED indicator will flash green.



Step 3 Connect the magnetic mount antenna's cable to the P1 meter's Wi-Fi antenna port, and securely attach the antenna body to a nearby metal component.





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Online Setting

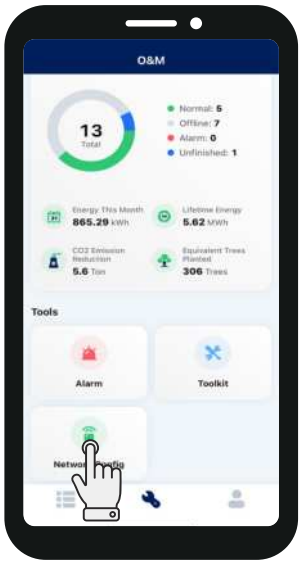
Step 1 Connect to the P1 meter

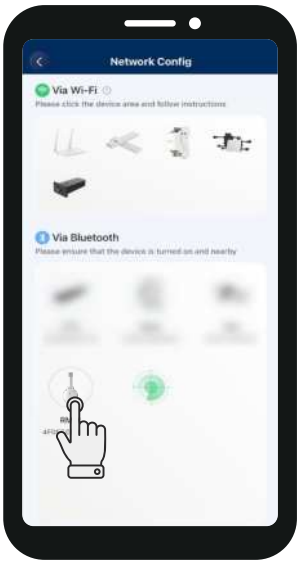
A. Tap **O&M** > **Network Config**.

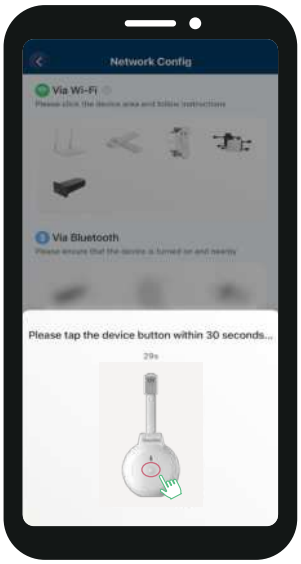
B. Press the button on the P1 meter for 3 seconds. Its LED indicator will flash blue, indicating Bluetooth starts broadcasting.

C. Under **Via Bluetooth**, tap the P1 meter you want to connect.

D. Within 30 seconds, press the button on the P1 meter.

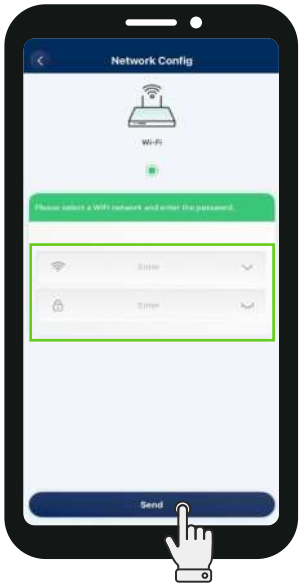


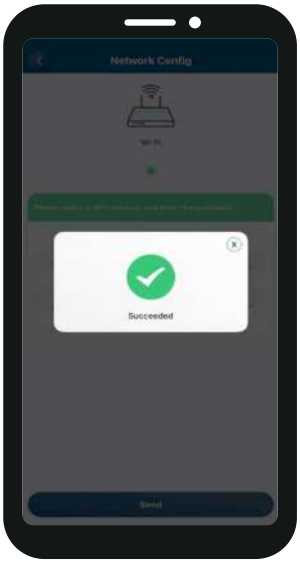




D. Select a Wi-Fi network and enter the password. Then, tap **Send**.

E. Wait for the network connection to succeed.





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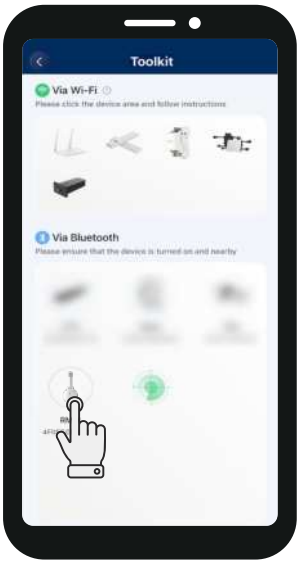
Step 2 Check the P1 meter status

A. Return to the O&M screen. Tap **Toolkit**.

B. Under **Via Bluetooth**, tap the P1 meter you want to check.

C. Check the real-time data of the P1 meter.







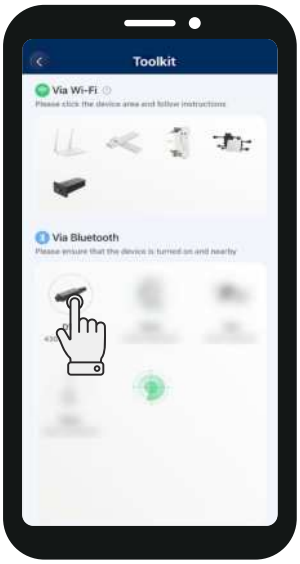
Step 3 Start commissioning

A. Return to the O&M screen. Tap **Toolkit**.

B. Under **Via Bluetooth**, tap the DTS connected to the HiOne inverter.

C. Tap **Commissioning**.







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D. Tap **P1 Meter** > **Add Now**.

E. Tap the P1 meter you want to add. Then, tap **Confirm**.

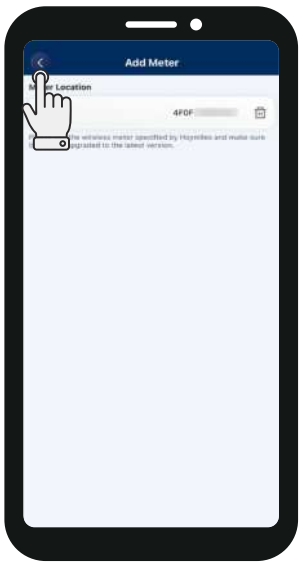






F. Wait for the P1 meter SN to be displayed, which means the P1 meter has been successfully added. Then, tap the arrow in the upper left corner to return to the previous screen.

G. Tap **Next** and follow the on-screen instructions to proceed with commissioning. For details, refer to **Step 2 C-E** in *10.1 Start Commissioning*.





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Appendix 2: Application of AC Coupled System

Overview

The HiOne series is compatible with any grid-connected inverter (PV inverter or microinverter). With the HiOne series, a PV system can be retrofitted into a PV Energy Storage System (ESS), allowing more self-consumption energy and backup energy.

NOTE

- If power export management is required, the power of the PV inverter shall be less than the battery charging power. The zero-export function will be disabled after the battery is fully charged.
- In off-grid mode, do not connect a PV inverter and a generator to the HiOne inverter at the same time.

System Diagram

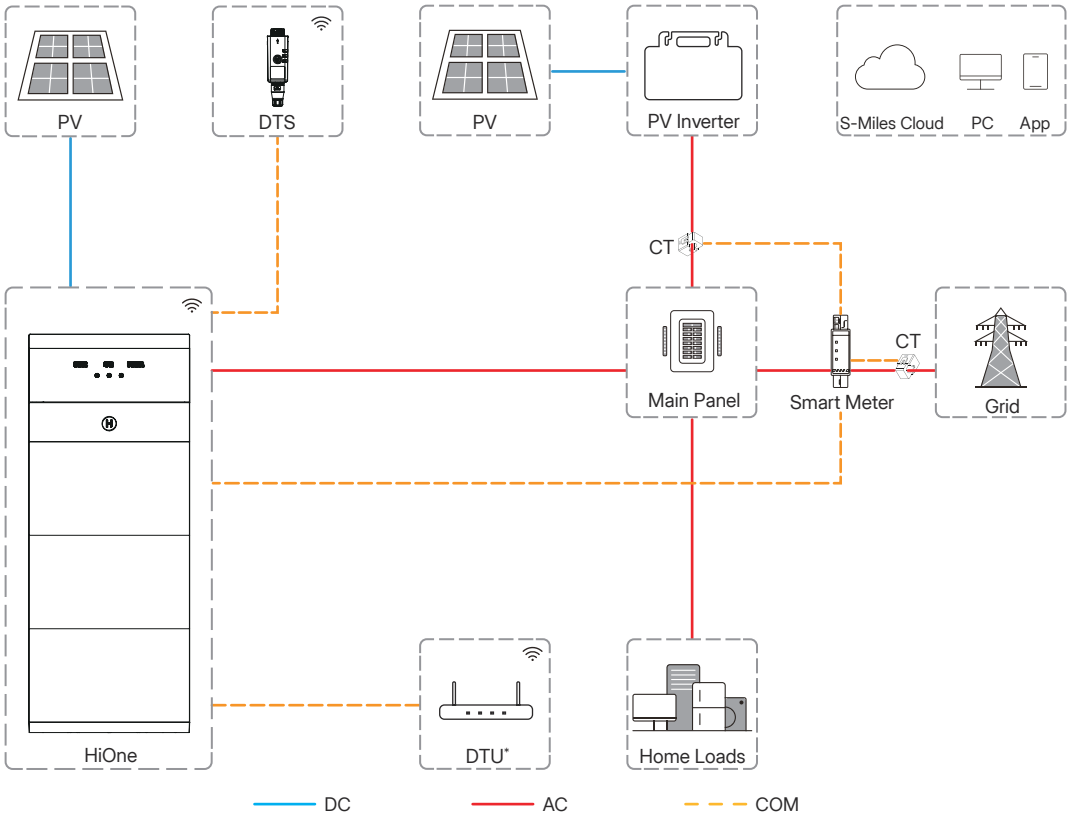


Figure 15-1 AC Coupled System

NOTE

If the PV system uses Hoymiles microinverters, connect the DTU-Pro or DTU-Pro-S to the HiOne inverter.

How to Connect the Meter and CTs

The Hoymiles dual-CT solution requires only one meter. One CT is installed on the grid side, and the other is installed on the PV inverter side. The S-Miles Cloud monitoring platform provides a visualized view of the AC coupled system data in a single plant.

NOTE

- This series inverter comes with Meter-1S-G3 or Meter-1S-G3 (2 CT Port) as standard.
  - ▷ If the meter you received is Meter-1S-G3, Meter-2S-G3 must be purchased separately from Hoymiles.
  - ▷ If the meter you received is Meter-1S-G3 (2 CT Port), another CT must be purchased separately from Hoymiles.
- In an AC coupled system, the grid side CT must be connected to the meter's CT1 terminal, and the PV inverter side CT must be connected to the meter's CT2 terminal.

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Step 1 Connect the meter's L and N terminals to the grid's L and N.

Step 2 Install the grid side CT.

a. Clamp the grid side CT onto the grid's live wire. Make sure the arrow on the CT points toward the grid.

b. Connect the CT to the meter's CT1 terminal.

Step 3 Install the PV inverter side CT.

a. Clamp the PV inverter side CT onto the PV inverter's live wire. Make sure the arrow on the CT points toward the opposite direction of the PV inverter.

b. Connect the CT to the meter's CT2 terminal.

Step 4 Use a standard Ethernet cable to connect the meter's RS485 terminal to the inverter's meter terminal.

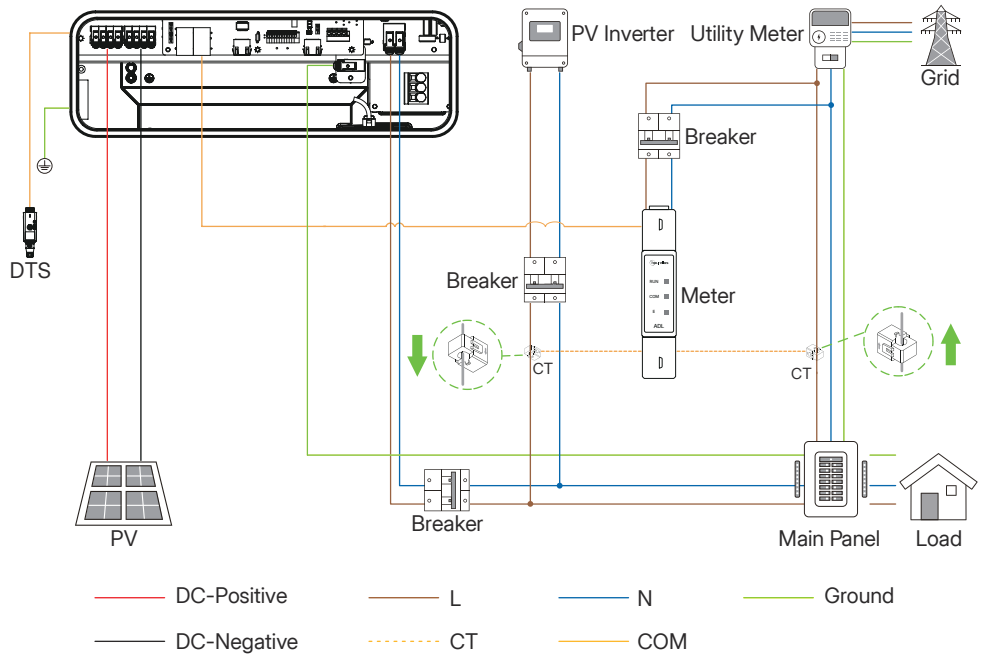


Figure 15-2 Meter and CT Connection

How to Connect the DTU to HiOne inverter

Connect the DTU's RS485 terminals to the DTU terminals on the HiOne inverter.

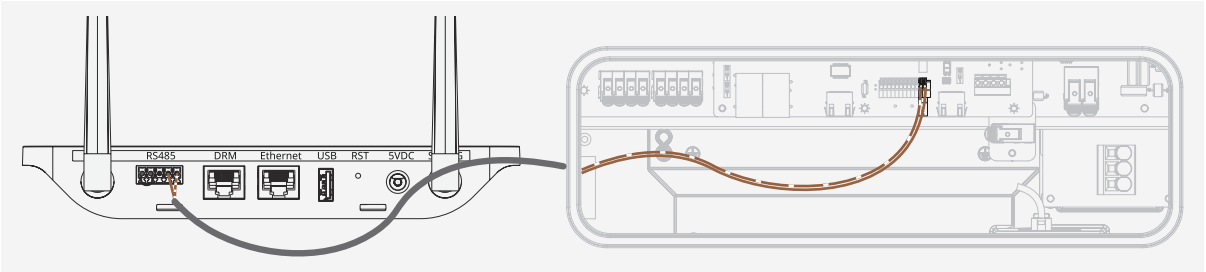


Figure 15-3 Connecting DTU to HiOne Inverter

Online Setting

After completing the electrical connection, add the HiOne inverter to your plant and configure the parameters on the S-Miles Cloud platform.

The following shows how to add the HiOne inverter. For other instructions, refer to ***10 S-Miles Cloud*** or ***S-Miles Cloud User Manual (App)***.

Step 1 Open S-Miles Installer App.

Step 2 Find the plant and tap > **Devices**.

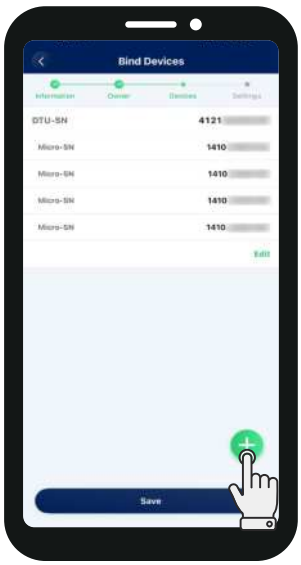
Step 3 Tap to enter the HiOne inverter SN. Then, tap **Save**.

Step 4 Return to the Plants Screen. Tap next to , and tap **Networking**.

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Plants
Plant Quantity - 426729


Edit Plant
Plant Information
Owner Information
Devices
Layout Design
Installation Map
Settings


Bind Devices
DTU-SN
Save


Plants
Plant Quantity - 426729
Networking
Cancel

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Appendix 3: Application of Smart Load

System Diagram

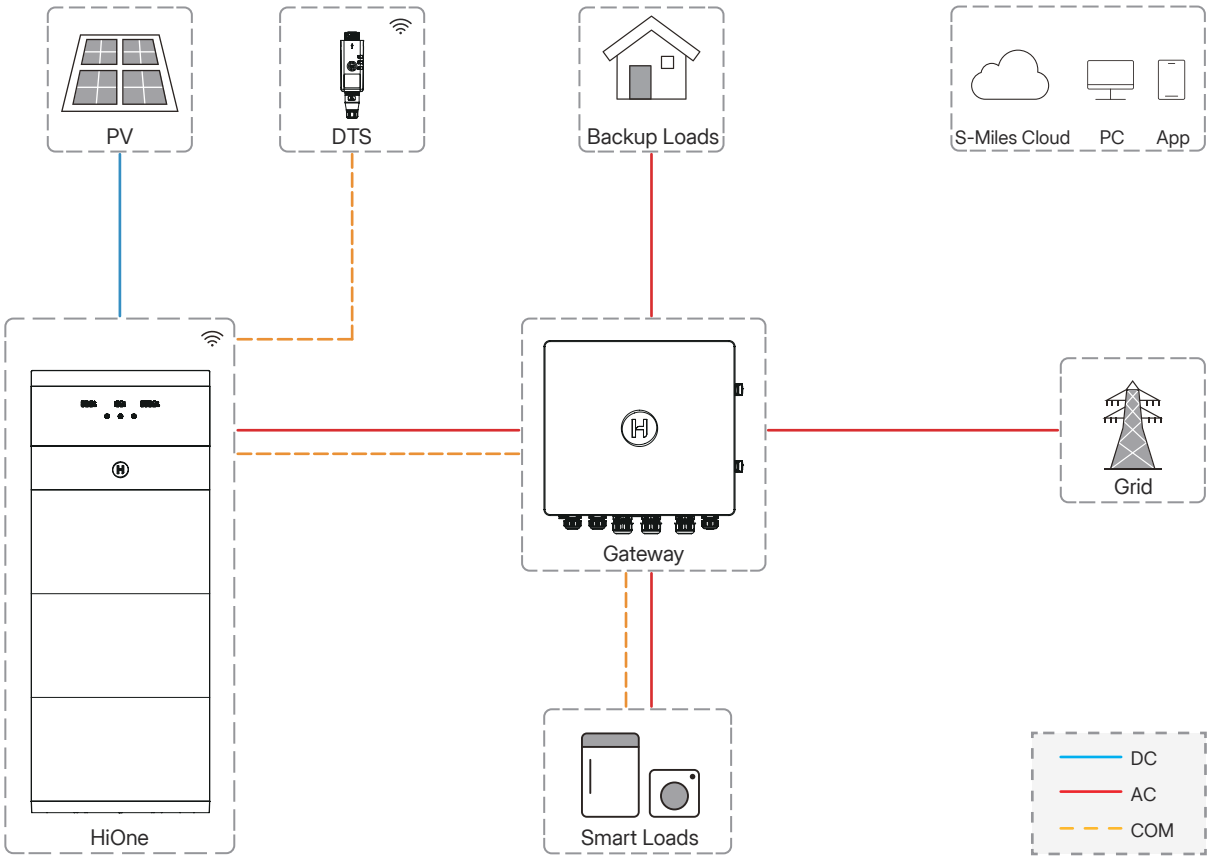
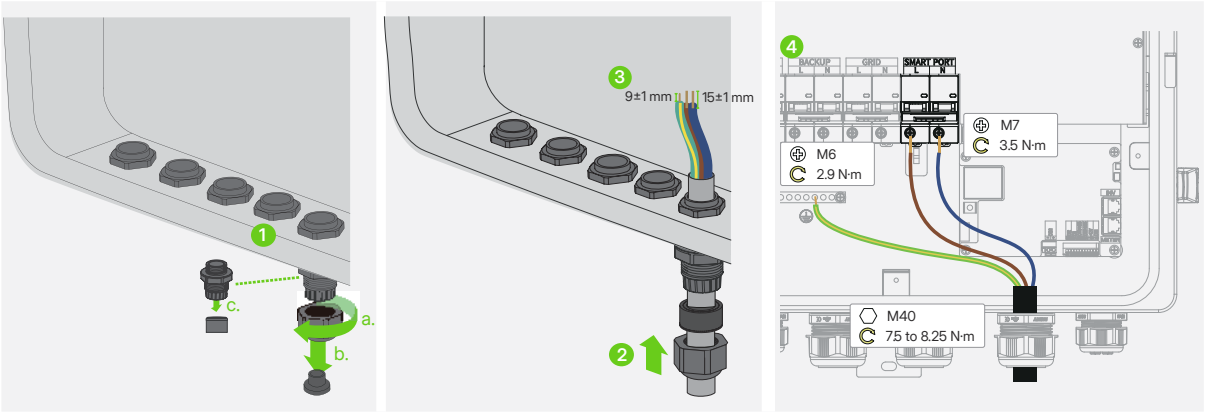


Figure 16-1 Smart Load System

How to Achieve Smart Load Connection

Smart load operation is performed through the HiBox's SMART PORT terminals.



NOTE

The cable specifictions should meet the following requirements.

Type	Core Conductor Cross-Section	Outer Diameter
Outdoor use, three-core copper flexible cable	35 mm^2	24 to 32 mm

Online Setting

After completing the electrical connection, configure the parameters on the S-Miles Cloud platform. For detailed instructions, refer to ***10.3.5 Set Dry Contact Function*** or ***S-Miles Cloud User Manual (App)***.

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Appendix 4: Application of Heat Pump

Overview

In many European households, heat pump systems (heat pumps or electric modulating heaters) are commonly used. By connecting the heat pump control ports to the inverter, you can:

- Control the heat pump's startup.
- Manage its power usage.
- Optimize PV energy use through intelligent control. Excess PV power can be converted into thermal energy for storage.

System Diagrams

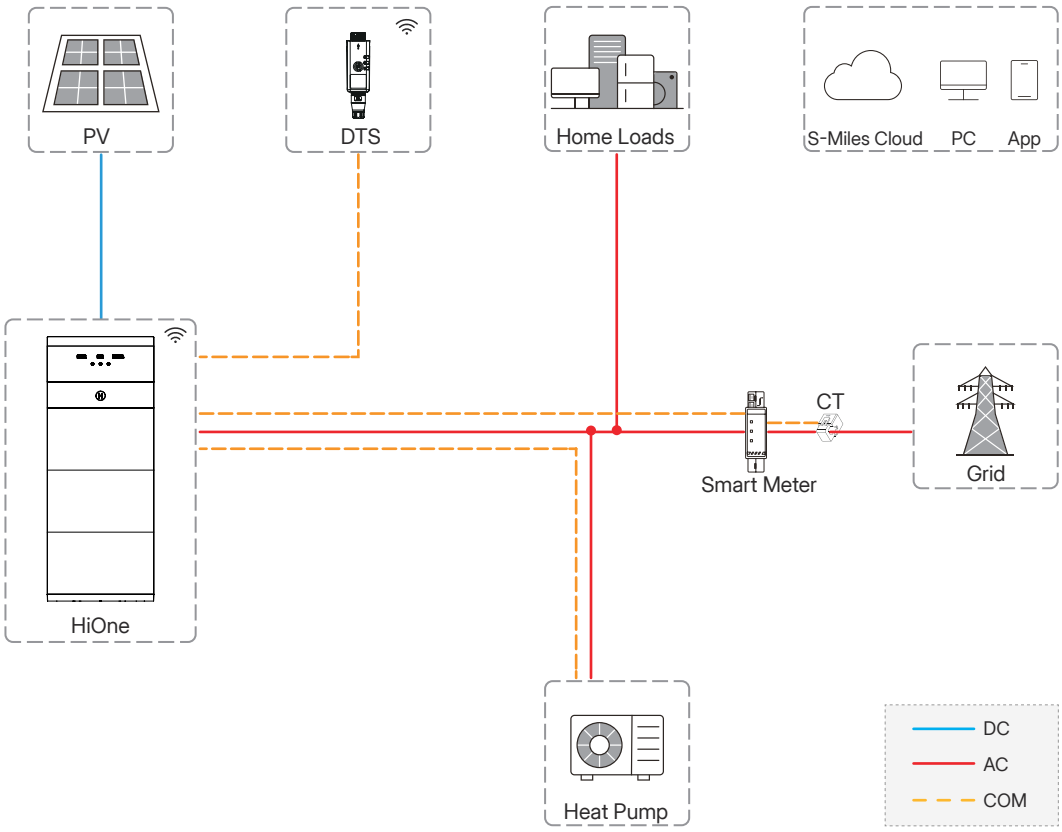


Figure 17-1 Heat Pump System (Without Gateway)

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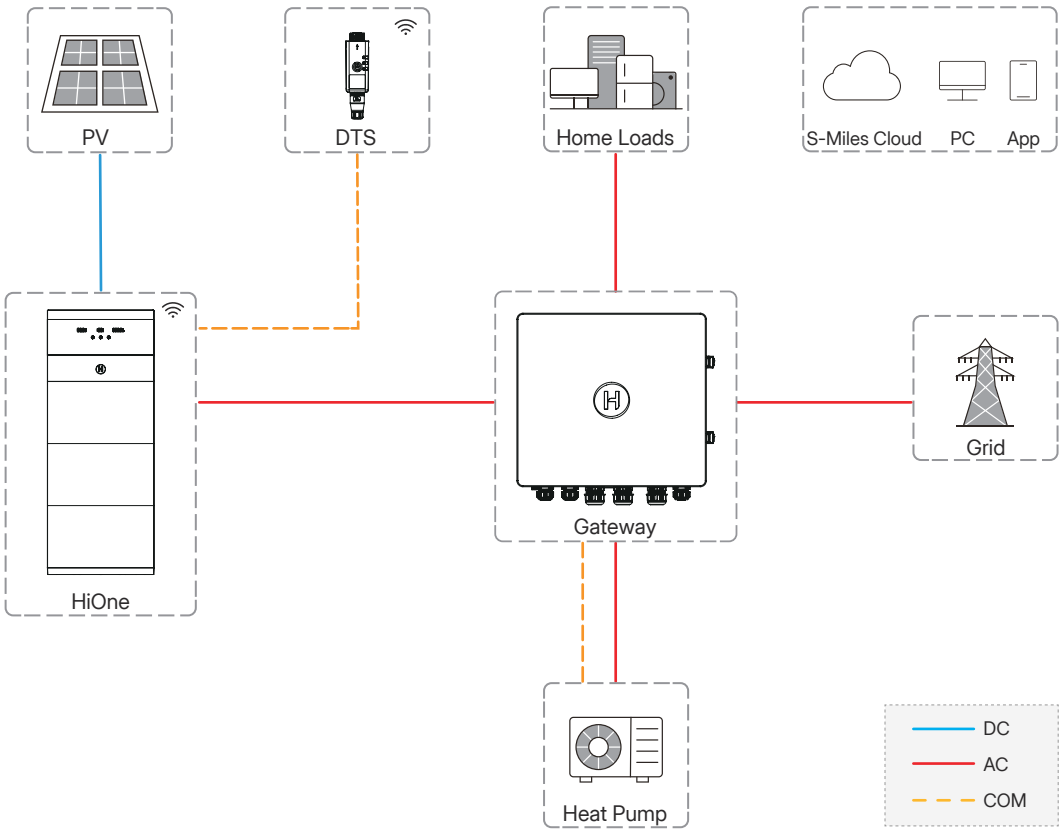


Figure 17-2 Heat Pump System (With Gateway)

The HiOne inverter currently supports SG Ready heat pumps and selected compatible heat pump brands. If your heat pump is SG Ready, follow the instructions below. For heat pumps of selected compatible brands, see ***page 87***.

For SG Ready Heat Pumps

How to Achieve Electrical Connection

- **For systems without Gateways**, connect the heat pump to the DO1 terminals of the HiOne inverter.
  If an external relay (12 V, 100 mA) is required, short DO1+ to 12 V+. Then connect the communication cable to DO1− and 12 V−.

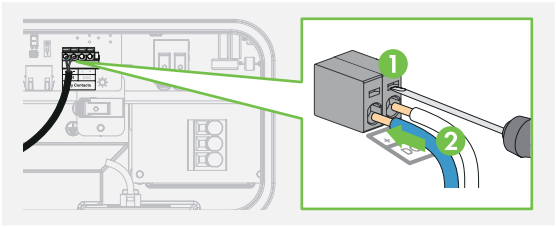


Figure 17-3 Dry Contact Control

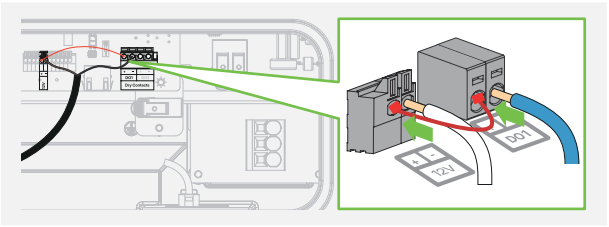


Figure 17-4 12 V @100 mA External Relay Control

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- **For systems with Gateways,** connect the heat pump to the DO1 terminals of the Gateway.
  If an external relay (12 V, 100 mA) is required, short DO1- to 12 V-. Then connect the communication cable to DO1+ and 12 V+.

> **NOTE**
>
> If there is a Gateway in your system, the heat pump's communication terminals must be connected to the Gateway, not the HiOne inverter.

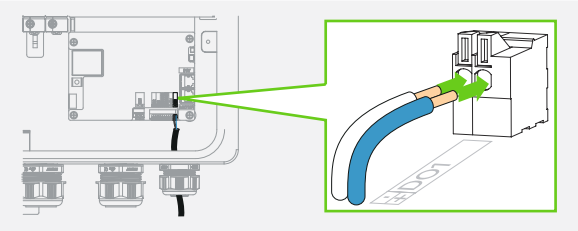


Figure 17-5 Dry Contact Control

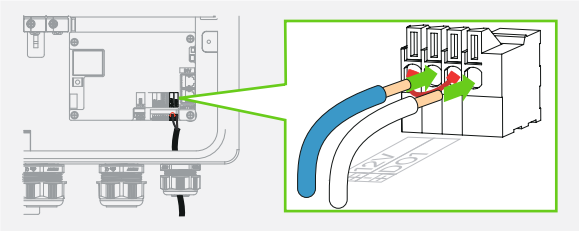


Figure 17-6 12 V @100 mA External Relay Control

Online Setting

After completing the electrical connection, set the control mode on the S-Miles Cloud platform.

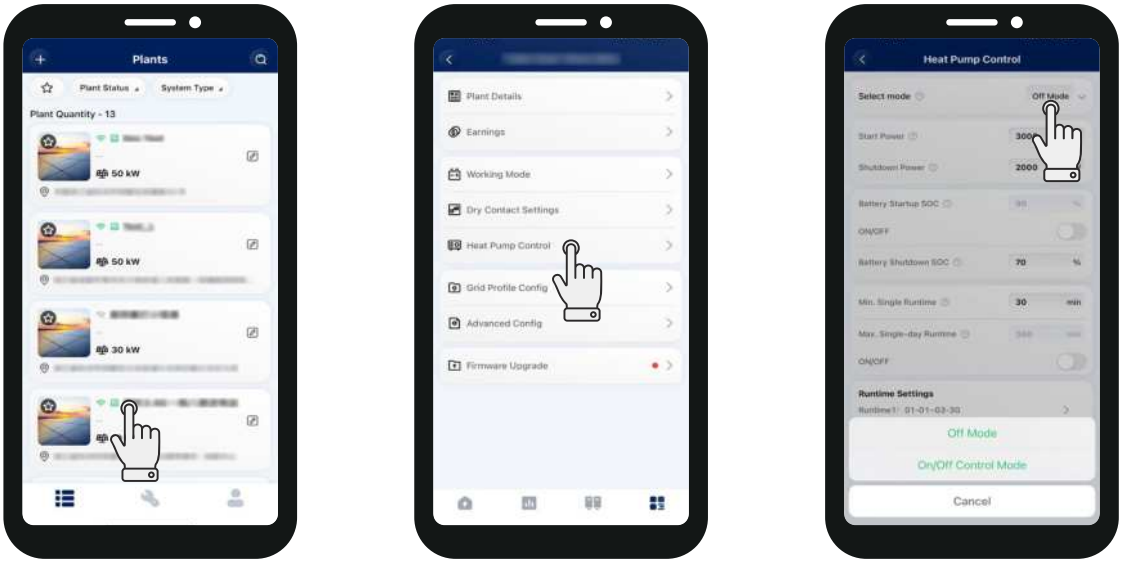
Step 1 Open S-Miles Installer App.

Step 2 Find the plant and tap the name to open the plant homepage.

Step 3 Tap in the lower right corner.

Step 4 Tap **Heat Pump Control**.

Step 5 Set the control mode and tap **Save**.



Two control modes are available:

Mode	Description
Off Mode	The heat pump is completely shut down. No control signals are output.
On/Off Control Mode	The heat pump is controlled only by on/off signals.

Parameter	Description
Start Power	The heat pump will start when the export power reaches this value.
Shutdown Power	The heat pump will shut down when the grid import power reaches this value.
Battery Starting SOC (Optional)	OFF by default. If it is ON, the heat pump will start when the battery SOC exceeds this value.

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Parameter	Description
Battery Shutdown SOC	The heat pump will shut down when the battery SOC falls below this value.
Min. Single Runtime	Highest priority. It refers to the minimum duration of a single operating cycle.
Max. Single-day Runtime (Optional)	OFF by default. If it is ON, the heat pump will shut down when the total runtime for the day reaches this value.
Runtime Settings	Up to four operating periods can be set.

NOTE

- Shutdown conditions have higher priority than start conditions. Even if the start conditions are met, the system checks the shutdown conditions. If any shutdown condition is met, the heat pump will not start.
- In off-grid mode, Battery Starting SOC must be set.
- If no battery is connected, only Start Power and Shutdown Power need to be set.
- The interval between disabling and re-enabling the heat pump must be at least 10 minutes.

For Heat Pumps of Selected Compatible Brands

How to Achieve Connection

- **For systems without Gateways**, connect the heat pump to the 485_1 terminals of the HiOne inverter.

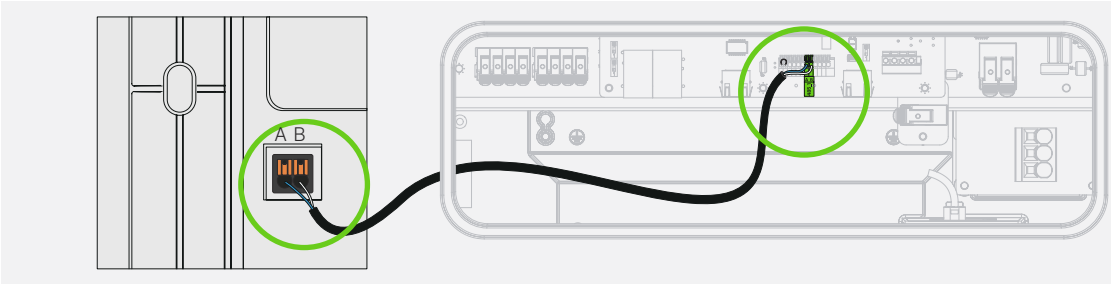
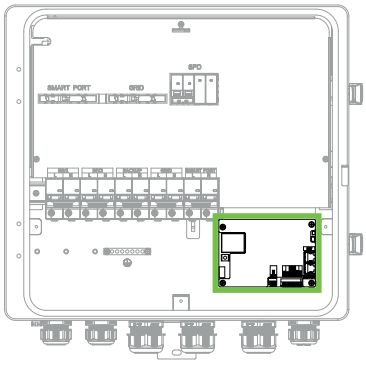


Figure 17-7 Connecting Heat Pump to HiOne Inverter

- **For systems with Gateways**, connect the heat pump to the HiBox Gateway.
  The Gateway has two versions of communication terminals. The difference is the terminal name, as highlighted below.



Version One: CGR485



Version Two: 485_1



Figure 17-8 Two Versions of Gateway Communication Terminals

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For version one, connect the heat pump to the CGR485 terminals on the Gateway.

For version two, connect the heat pump to the 485_1 terminals.

The illustration below takes version one as an example.

NOTE

If there is a Gateway in your system, the heat pump's communication terminals must be connected to the Gateway, not the HiOne inverter.

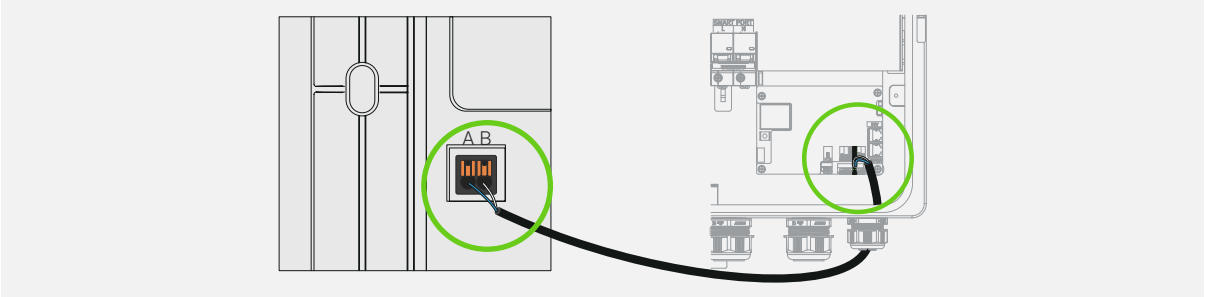


Figure 17-9 Connecting Heat Pump to HiBox Gateway

Online Setting

After completing the electrical connection, add the heat pump to the system, configure the parameters, and view historical data on the S-Miles Cloud platform.

Step 1 Open S-Miles Installer App.

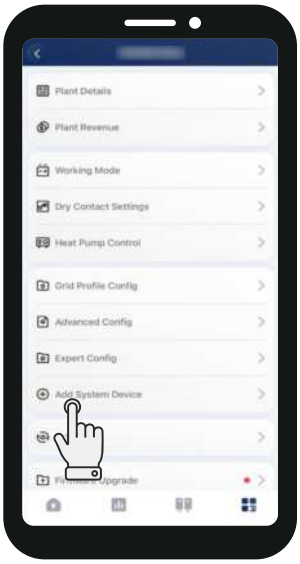
Step 2 Find the plant and tap the name to open the plant homepage.

Step 3 Tap in the lower right corner.

Step 4 Tap **Add System Device** > **Heat Pump**.

Step 5 Select the heat pump brand and tap **Confirm**. You will access the heat pump homepage.







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Step 6 Tap **Heat Pump** to set the control mode. Then, tap **Save**.





Three control modes are available:

Mode	Description
Manual Mode	The heat pump is turned on or off manually.
Scheduled Mode	The heat pump is operating only during preset runtimes.
Intelligent Mode	The heat pump is controlled based on multiple parameters. For details, see the next table.

Parameter	Description
Start Power	The heat pump will start when the export power reaches this value.
Shutdown Power	The heat pump will shut down when the grid import power reaches this value.
Battery Starting SOC (Optional)	OFF by default. If it is ON, the heat pump will start when the battery SOC exceeds this value.
Battery Shutdown SOC	The heat pump will shut down when the battery SOC falls below this value.
Min. Single Runtime	It has the highest priority. It refers to the minimum duration of a single operating cycle.
Max. Single-day Runtime (Optional)	OFF by default. If it is ON, the heat pump will shut down when the total runtime for the day reaches this value.
Runtime Settings	Up to four operating periods can be set.

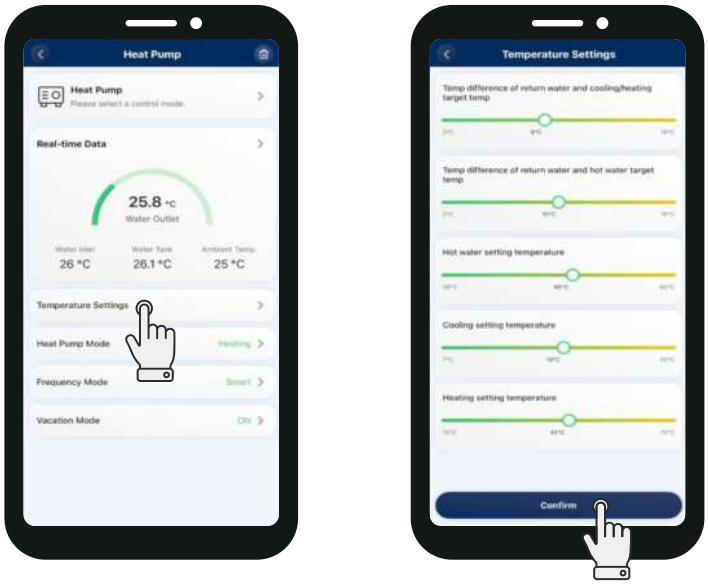
NOTE

- Shutdown conditions have higher priority than start conditions. Even if the start conditions are met, the system checks the shutdown conditions. If any shutdown condition is met, the heat pump will not start.
- In off-grid mode, Battery Starting SOC must be set.
- If no battery is connected, only Start Power and Shutdown Power need to be set.
- The interval between disabling and re-enabling the heat pump must be at least 10 minutes.

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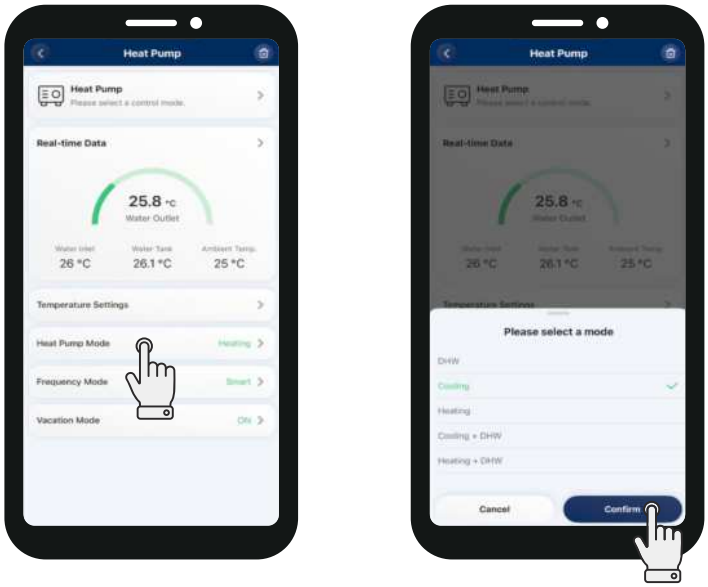
Step 7 Tap **Temperature Settings** to adjust the temperature parameters. Then, tap **Confirm**.



Step 8 Tap **Heat Pump Mode** to set the operating mode. Then, tap **Confirm**.

NOTE

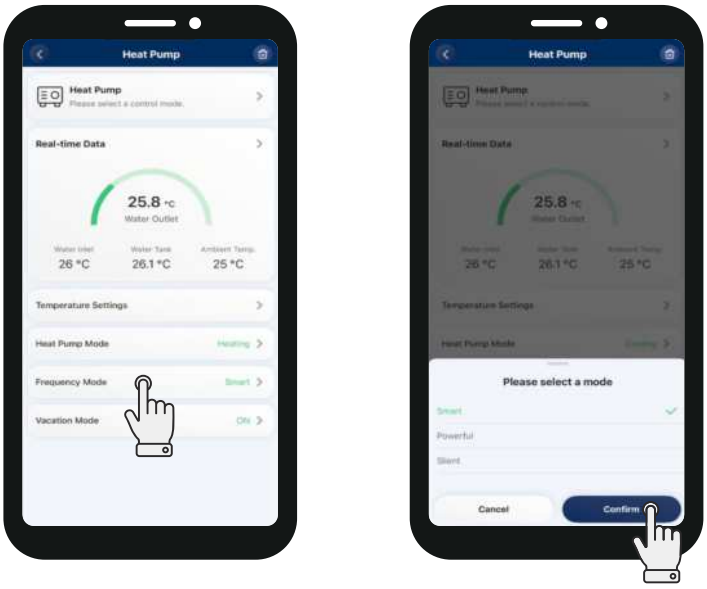
DHW: Domestic hot water mode. The heat pump is heating water for household use, such as showers.



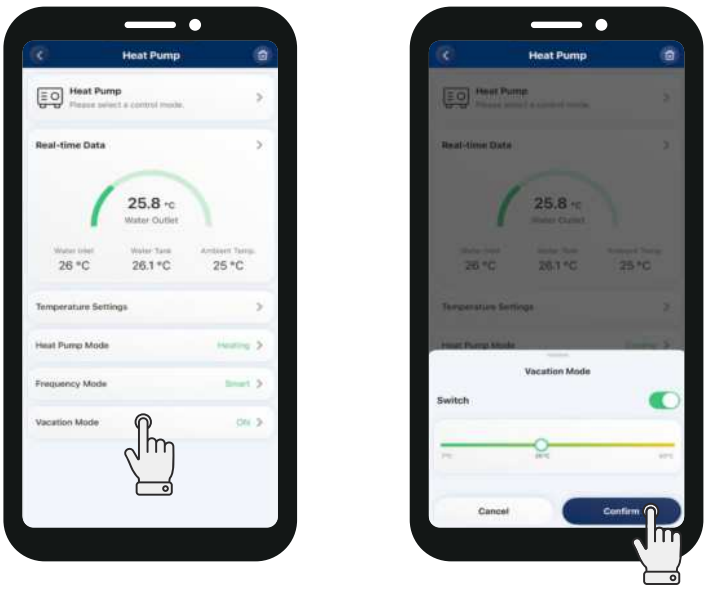
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Step 9 Tap **Frequency Mode** to set the operating feature. Then, tap **Confirm**.



Step 10 (Optional) Tap **Vacation Mode** and enable this function. The heat pump will operate in heating mode only. Set the temperature and tap **Confirm**.



ⓘ NOTE

- The heat pump performs heating function when:
  Inlet water temperature ≤ Vacation Mode temperature − Temp difference of return water and cooling/heating target temp (the first parameter in Temperature Settings).
- The heat pump stops heating when:
  Inlet water temperature ≥ Vacation Mode temperature + 2 °C.

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Step 11 (Optional) Tap **Real-time Data** to view heat pump consumption by day, month, or year.





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