

Sigen PV Max (3.0–6.0) SP Sigen Hybrid (3.0–6.0) SP

Installation Guide



Version: 03
Release date: 2024-03-22

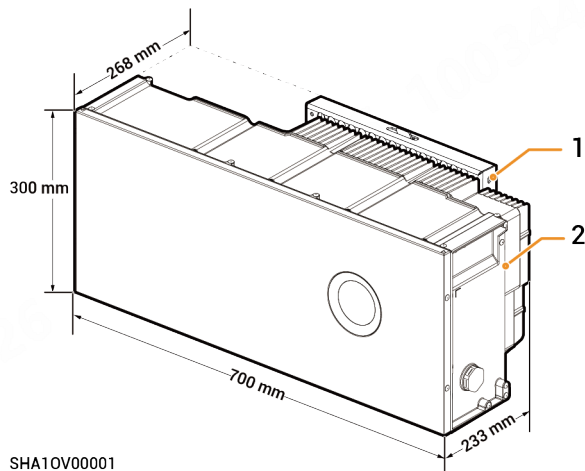


! Caution

- Trained or experienced electrical personnel are required to operate the equipment.
- Operators should be familiar with national/regional laws, regulations and standards, the structure and working principle of relevant systems.
- Please read carefully the operating requirements and precautions in this document and "Important Notice" before operating. Failure to do so may result in damage to the equipment that is not covered by the warranty.

1 Introduction to Product Appearance

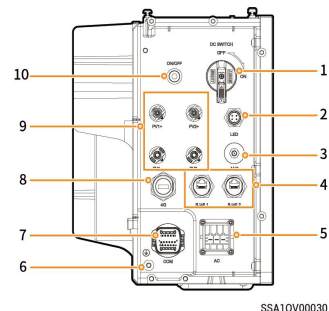
1.1 Appearance and Dimensions



S/N	Equipment/component	Model
1	Wall mounting hardware	-
2	Sigen PV Max (Decorative covers are not configurable)	Sigen PV Max 3.0/3.6/4.0/4.6/5.0/6.0 SP
	Sigen Hybrid	Sigen Hybrid 3.0/3.6/4.0/4.6/5.0/6.0 SP

1.2 Port Descriptions

Left side view



S/N	Name	Marking
1	DC switch	DC SWITCH
2	Decorative cover strip light interface (This interface is unavailable for Sigen PV Max)	LED
3	Antenna interface	ANT
4	Cable interface	RJ45 1/ RJ45 2
5	AC output interface	AC
6	Ground screw	-
7	Communication interface	COM
8	Sigen CommMod interface	4G
9	DC input interface	PV1+/PV2+/ PV1-/PV2-
10	Switch button (This button is unavailable for Sigen PV Max)	ON/OFF

2 Pre-installation Check

- According to the packing list, check whether the components are complete and in good appearance. If any abnormality occurs, contact your sales agent in time.
- Check personal protective equipment and installation tools to ensure that they are complete; If not, please make them up.
- Check the customer-provided cable to ensure that the quantity and specifications are correct; if not, prepare again.

Protective equipment



Safety hat



Goggles



Dust mask



Protective gloves

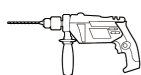


Insulating gloves

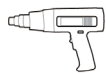


Insulating shoes

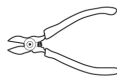
Installation tool



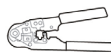
Power drill



Heat gun



Wire cutter



Hydraulic pliers



Crimping pliers



Wire stripper



Scissors



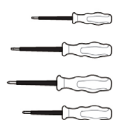
Cable tie



Heat shrinkable sleeve



Vacuum cleaner



Insulation screwdriver set sleeve



Insulation sleeve set



Torque socket wrench



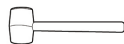
Crimping pliers
(model: H4TC0003
Manufacturer:
Amphenol)



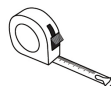
Open-end wrench
(model: H4TW0001
Manufacturer:
Amphenol)



hexagonal L-
type wrench (4mm
on opposite side)



Rubber mallet



Tape measure



Marker



Level

Caution

- The specifications of the Installer-provided cable must comply with the cable regulations and standards of the country or region standards.
- L, N and PE should be connected to other equipment in sequence without mixing.

Customer-provided cable

S/N	Cable name	Recommended specifications
1	Protective ground cable of inverter housing	Outdoor single core copper cable Cross-sectional area of core conductor: 4–6 mm ² ;
2	AC cable	Outdoor three-core copper cable (L, N, PE) Cross-sectional area of core conductor: 4–6 mm ² ; Outer diameter: 13–21 mm
3	RS485 signal cable	Outdoor shielded twisted pair Cross-sectional area of core conductor: 0.5–0.75 mm ² (multi-core flexible conductor, Tubular terminal needed); 0.5–1 mm ² (single-strand hard conductor, no tubular terminal needed) Outer diameter: 4.5–6.5 mm Cable length: ≤ 1000 m Baud rate: ≤ 9600 bps
4	RJ45 network cable	Outdoor eight-conductor shielded twin-twisted pair cable Cross-sectional area of core conductor: 0.13–0.2 mm ² ; Outer diameter: 4–7.5 mm Single cable length: ≤ 100 m ^[1]
5	DC input cable of inverter	Outdoor photovoltaic cable Cross-sectional area of core conductor: 4–6 mm ² ; Outer diameter: 4.5–7.8 mm

Note [1]: The cable length should be limited for good communication. Too long cable degrades the communication effect. FE communication distance: ≤ 100 m.

3 Site Selection Requirements

Tips

The warranty applies when the equipment has been installed properly for its intended use and in accordance with the operating instructions.

Installation environment

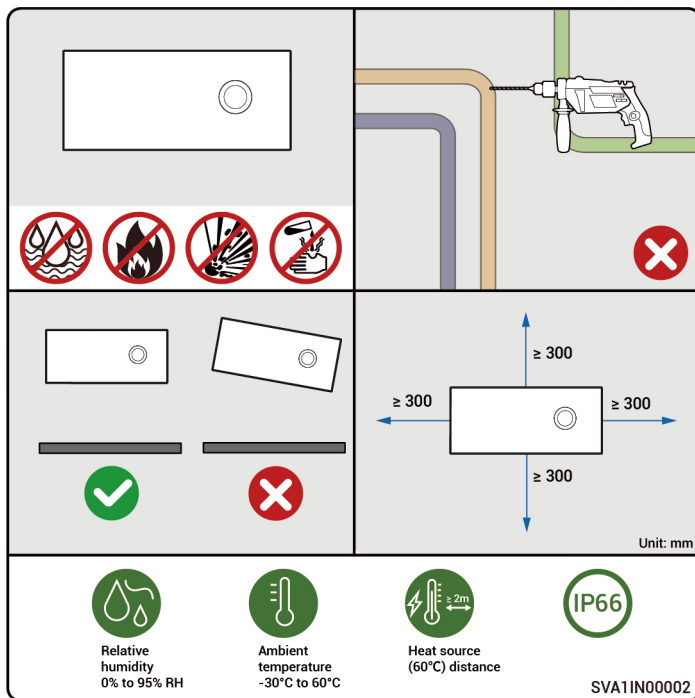
- Do not install the equipment in smoky, flammable, or explosive environments.
- Avoid exposing the equipment to direct sunlight, rain, standing water, snow, or dust. Install the equipment in a sheltered place. Take preventive measures in operating areas prone to natural disasters such as floods, mudslides, earthquakes, and typhoons.
- Do not install the equipment in an environment with strong electromagnetic interference.
- Ensure that the temperature and humidity of the installation environment comply with the equipment's requirements.
- The equipment should be installed in an area that is at least 500 m away from corrosion sources that may result in salt damage or acid damage (corrosion sources include but are not limited to seaside, thermal power plants, chemical plants, smelters, coal plants, rubber plants, and electroplating plants).

Installation position

- Do not tilt or overturn the equipment to ensure that it is installed horizontally.
- Do not install the equipment in places easily touched by children.
- Do not install the equipment in places with fire or damp.
- Please keep away from the daily work and living places.
- Do not install the equipment in a sealed, poorly ventilated location without fire protection measures and difficult access for firefighters.
- The equipment will generate heat when operating. If the device is installed indoors, please ensure that the room is well ventilated. It is prohibited to cause the indoor temperature to rise significantly due to the operation of the device.
- Do not install the equipment in mobile scenarios such as RVS, cruise ships, and trains.
- You are advised to install the equipment in a location where you can easily access, install, operate, maintain it, and view the indicator status.
- When installing the equipment in the garage, do not install the equipment in the position where the vehicle passes through to avoid collision.

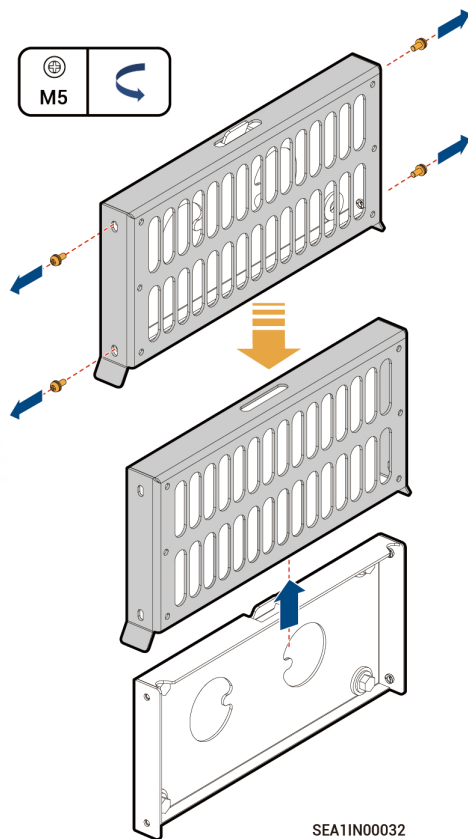
Mounting surface

- Do not install the equipment on a flammable installation base.
- The installation base should meet the load-bearing requirement. Solid brick-concrete structures, concrete walls are recommended.
- The surface of the installation base must be smooth and the installation area must meet the installation space requirements.
- No water or electricity is routed inside the installation base to prevent drilling hazards during equipment installation.

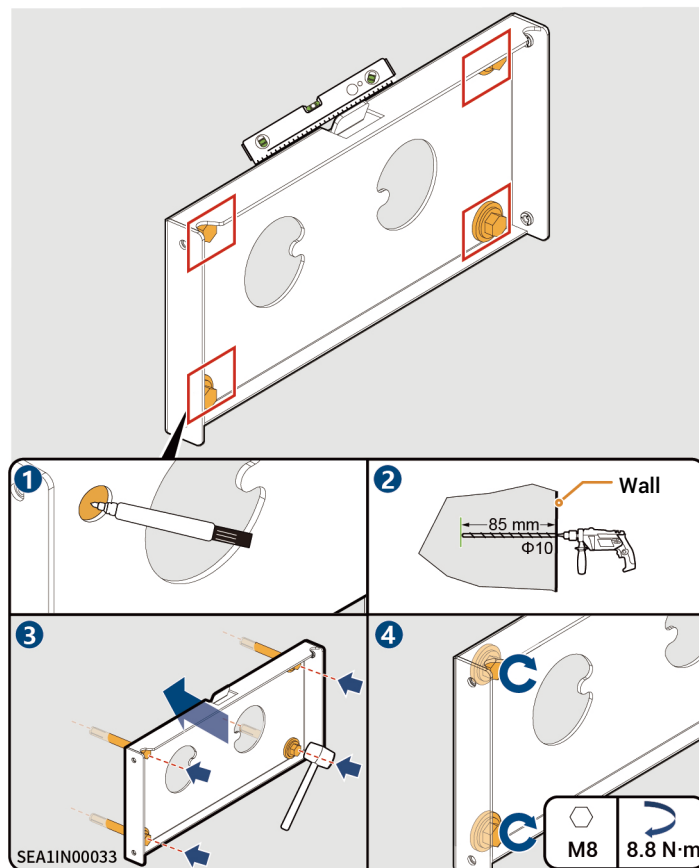


4 Equipment Installation

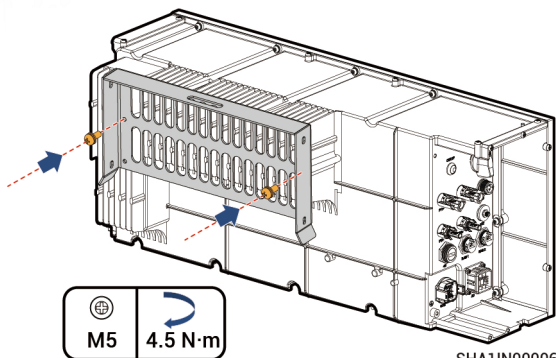
1



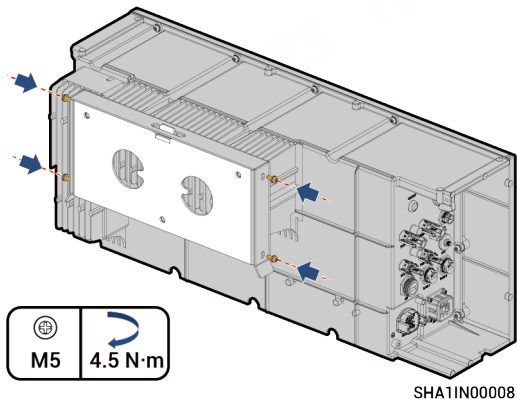
2



3



4



Caution

- The Sigen Hybrid can be tuned to light storage scenarios. Please follow this section in reverse to install the Sigen Hybrid on the SigenStor BAT after removing it from the wall. Please refer to "SigenStor Home Installation Guide – Single-phase System A1" for details.
- Before making any adjustments to the installation scenarios of Sigen Hybrid, ensure that Sigen Hybrid is powered off.

4 Cable Connection and Component Installation

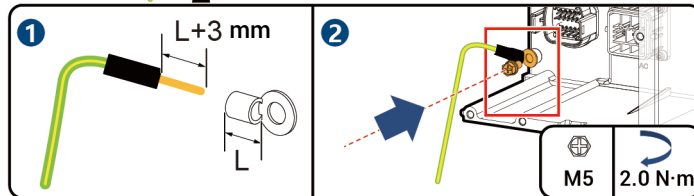
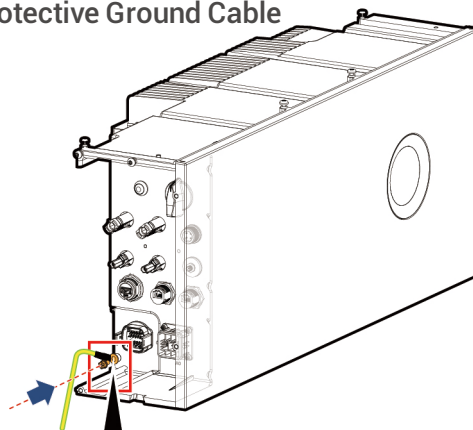
Warning

Before connecting cables, ensure that DC SWITCH is in the OFF position, and the front switch of the AC line is off.

Tips

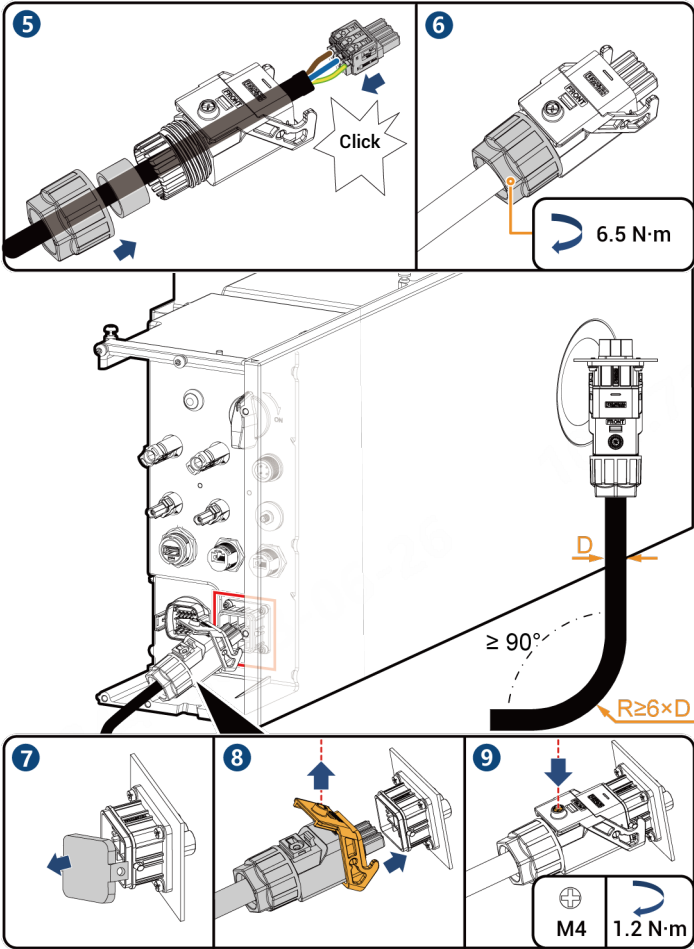
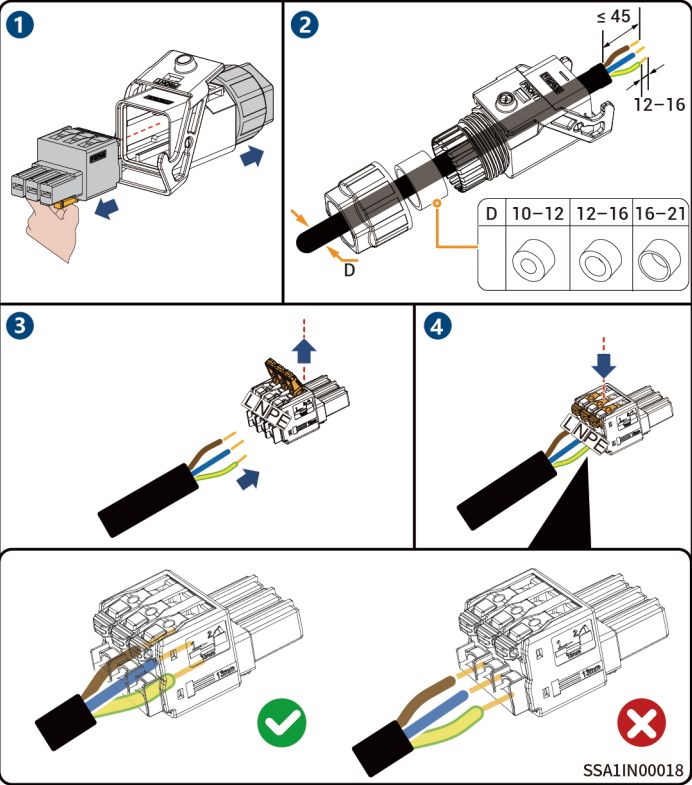
- Bind the power cable separately from the signal cable.
- PVC wiring ducts or PVC conduits are recommended to wrap cables outside decorative parts. 50 × 30 mm PVC wiring ducts are recommended and PVC conduits with diameter not less than $\Phi 63$ are recommended.

4.1 Protective Ground Cable

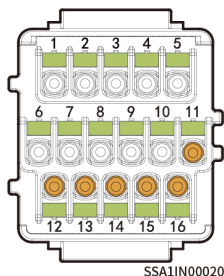


4.2 AC Output Cable

Unit: mm



4.3 COM terminal of the inverter

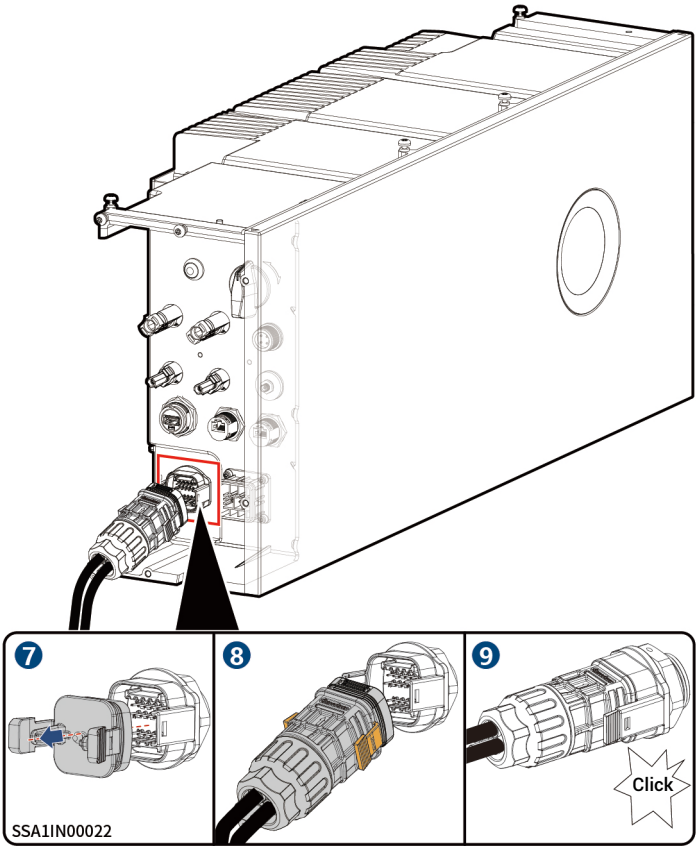
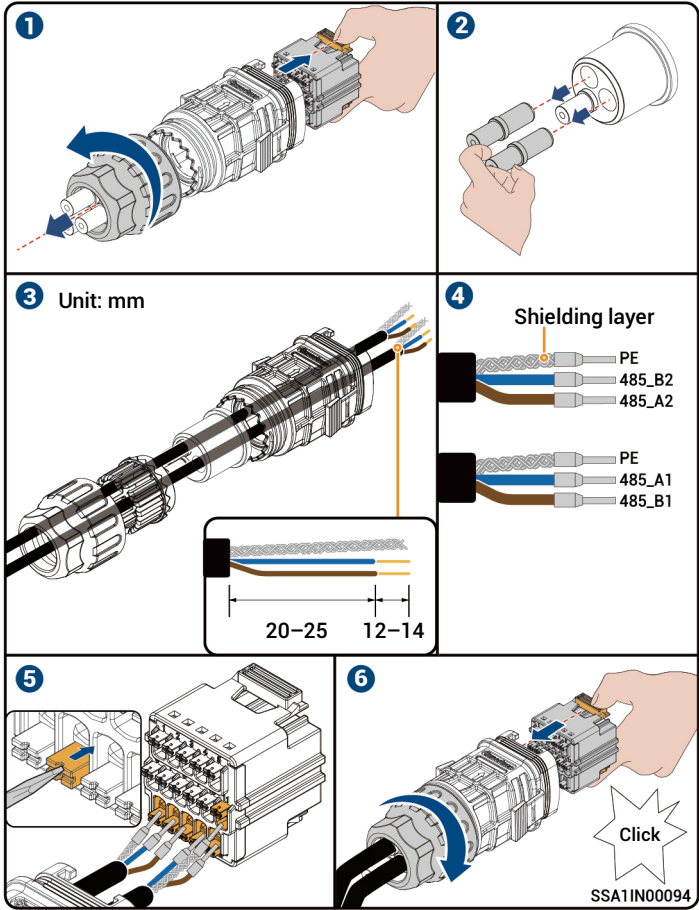


Tips

- Power sensors need to be purchased from our official channel.
- The appearance and specific wiring of the power sensor can be found in the instruction manual delivered with the case.

Description	Interface definition	COM terminal of the inverter	Sigen Sensor SP-DH (SDM230Modbus)	Sigen Sensor SP-CT120-DH (SDM120CT 40mA)
(Reserved) DO1, connected to third party intelligent electric equipment, such as switch control and heat pump	Dry contact 1 – Common	1	–	–
	Dry contact 1 – NO	2	–	–
(Reserved) DO2, connected to third party intelligent electric equipment, such as switch control and heat pump	Dry contact 2 – Common	3	–	–
	Dry contact 2 – NO	4	–	–
(Reserved) For power scheduling, such as DRM and Ripple control	DI1, digital input 1	5	–	–
	DI2, digital input 2	6	–	–
	DI3, digital input 3	7	–	–
	DI4, digital input 4	8	–	–
	DI5, digital input 5	9	–	–
	Signal GND	10	–	–
RS485-2, COM port used to access the power sensor	PE signal shielding ground	12	–	–
	RS485 signal 2_B–	13	6	9
	RS485 signal 2_A+	14	5	10
RS485-1, custom port. It can be used to connect to third-party EMS controllers, electricity meters or heat pump equipment, etc.	PE signal shielding ground	11	–	–
	RS485 signal 1_A+	15	–	–
	RS485 signal 1_B–	16	–	–

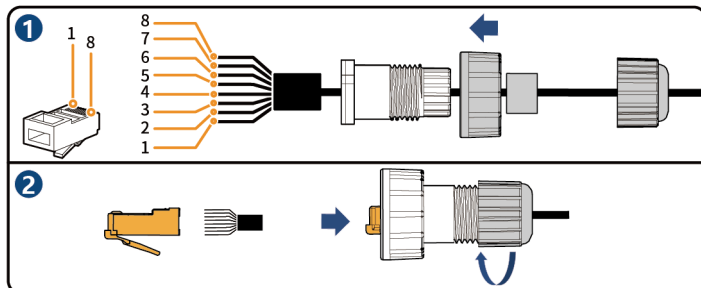
4.3.1 RS485 Signal Cable



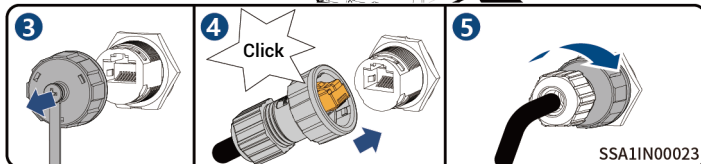
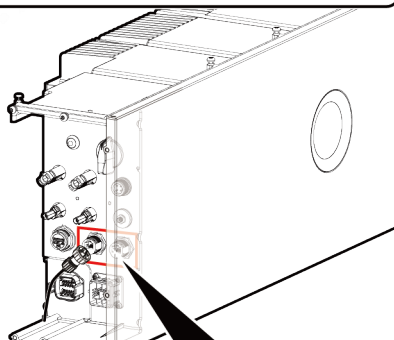
4.4 RJ45 Cable

Tips

- RJ45 cables are EIA/TIA 568B standard cables.
- Two RJ45 Ethernet ports, one of which is connected to the router, and the other is connected to other devices (e.g., inverters, etc.).



- ① White orange
- ② Orange
- ③ White green
- ④ Blue
- ⑤ White blue
- ⑥ Green
- ⑦ White brown
- ⑧ Brown

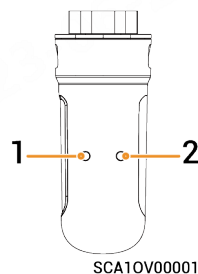


SSA1IN00023

4.5 Sigen CommMod Installation

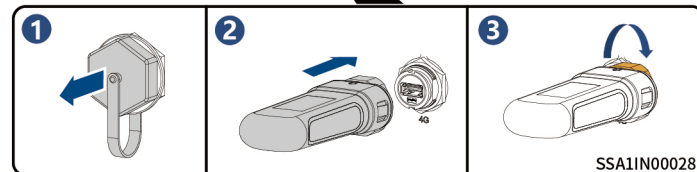
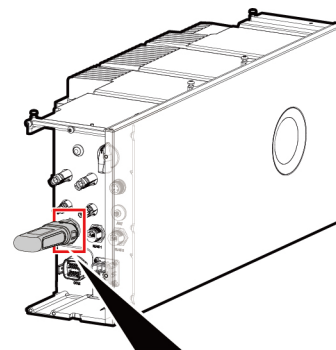
Tips

Sigen CommMod is required for 4G communication.



SCA10V00001

S/N	Indicator	Description
1	Power indicator	-
2	Network state indicator	<ul style="list-style-type: none"> • Slow flashing (200ms on/1800ms off): The network is being connected • Slow flashing (1800ms on/200ms off): Standby • Quick flashing (125ms on/125ms off): Data is being transferred

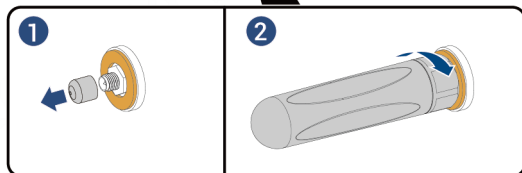
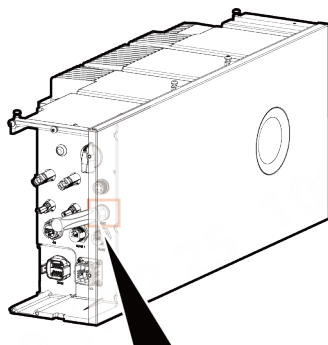


SSA1IN00028

4.6 WLAN antenna stick Installation

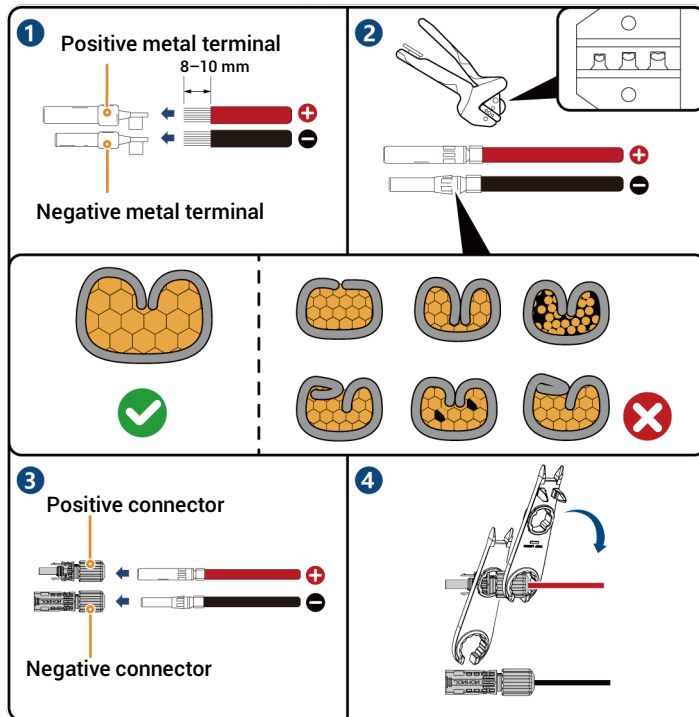
Tips

WLAN communication requires the installation of WLAN antenna stick.



SHA1IN00009

4.7 DC Input Cable



SSA1IN00024

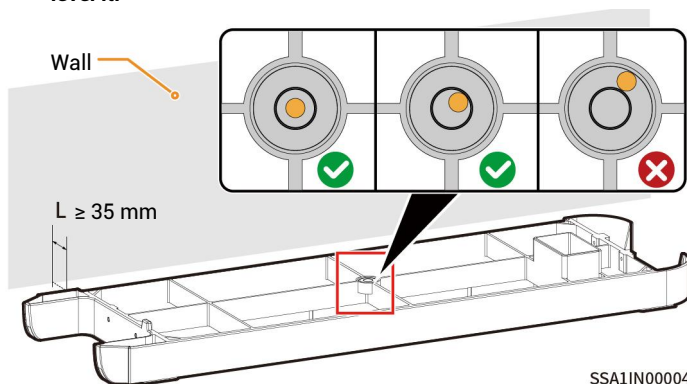
5 Installation of hybrid inverter with battery pack

Tips

- At least two people are required to install the equipment.
- Up to six SigenStor BATs are supported for floor installation and up to two for wall installation.
- When installing three or more SigenStor BATs on the floor, use Lift.
- Multiple SigenStor BATs can be installed onsite based on the actual configuration.
- If the floor is prone to stagnant water, please set up a waterproofing platform or install it on the wall.
- The equipment is heavy, do not slip off when handling the equipment to avoid the equipment falling and injuring the operator.
- SigenStor BAT is forbidden to be used after falling, please buy a new one.
- Do not drag the equipment during installation.

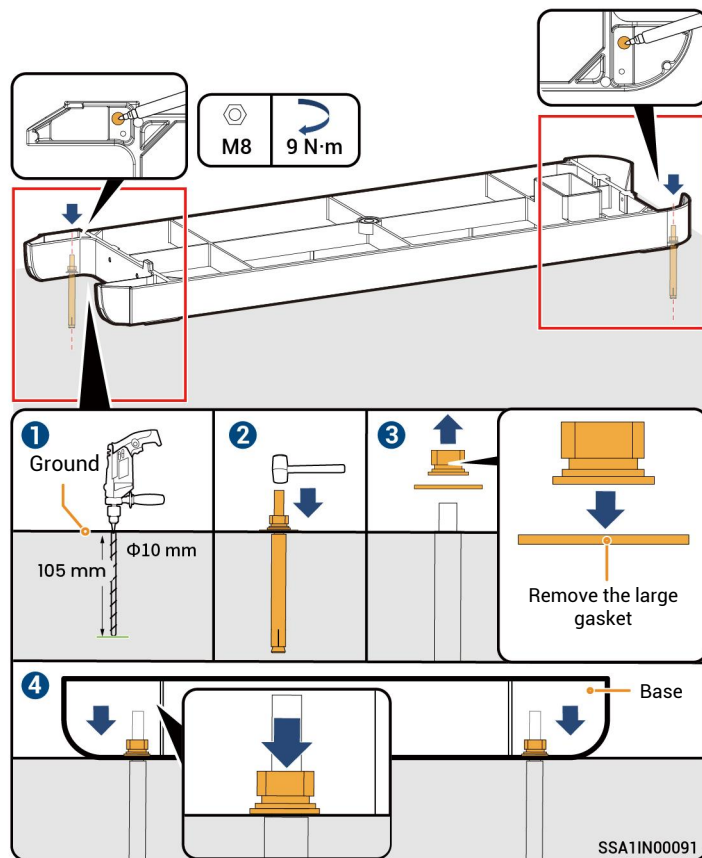
5.1 Floor Installation

- 1 If the horizontal bubble is not centered, use a leveling gasket to level it.

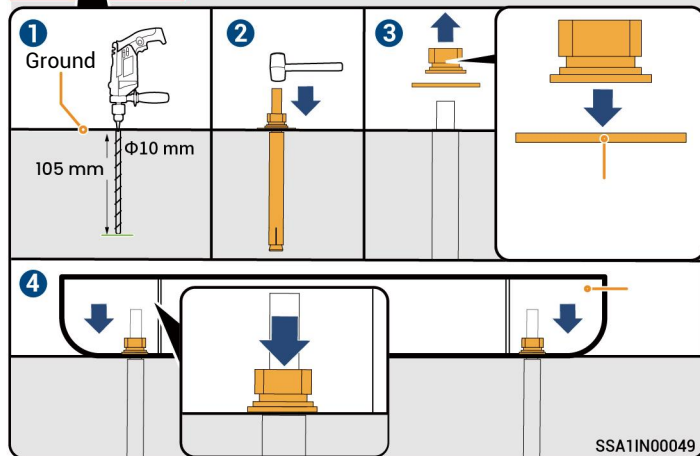
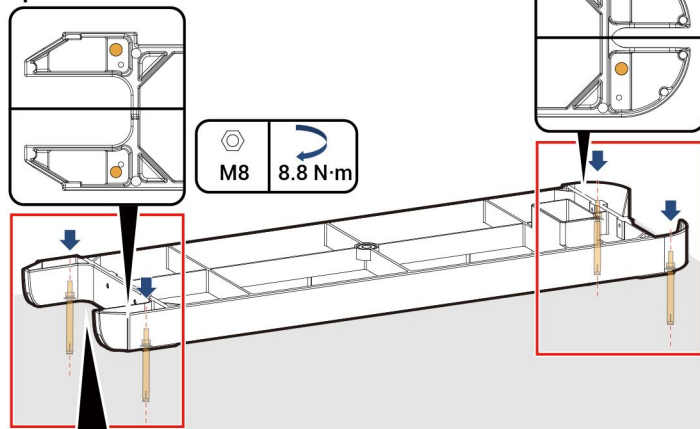


- 2 There are two installation methods for the Base. Please refer to the actual product received for detailed instructions.

Option 1:

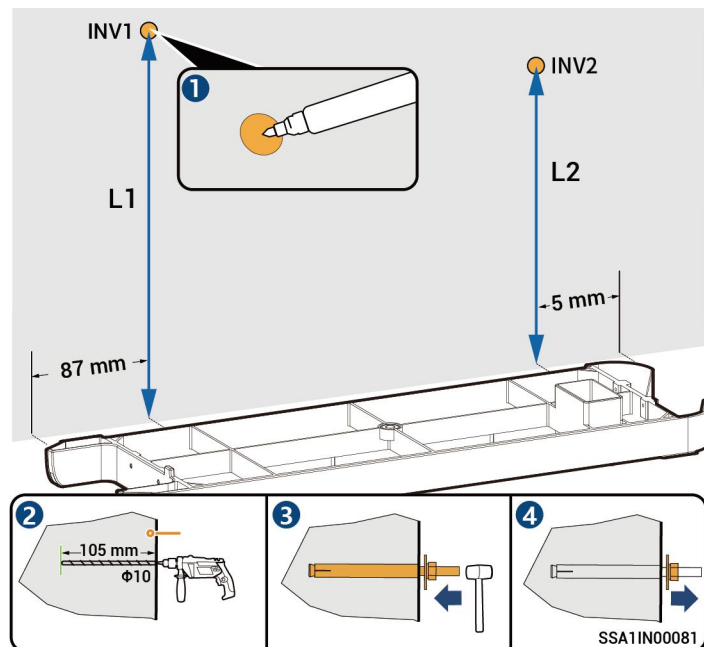


Option 2:

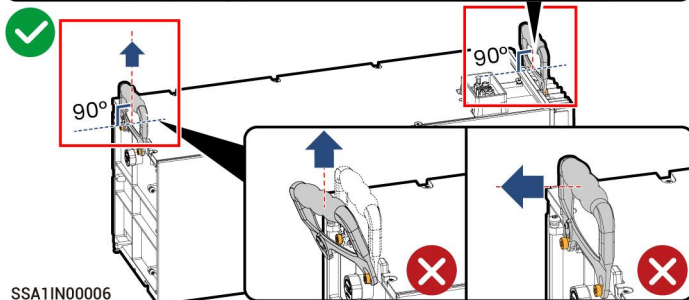
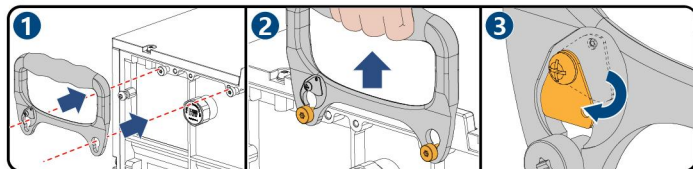


- 3** INV1 is the hole punching point for the Inverter wall fastener on the left side, and INV2 is the hole punching point for the Inverter wall fastener on the right side.

SigenStor BAT units	L1 length	L2 length
three	1120–1125 mm	1115–1120 mm
four	1390–1395 mm	1385–1390 mm
five	1660–1665 mm	1655–1660 mm
six	1930–1935 mm	1925–1930 mm

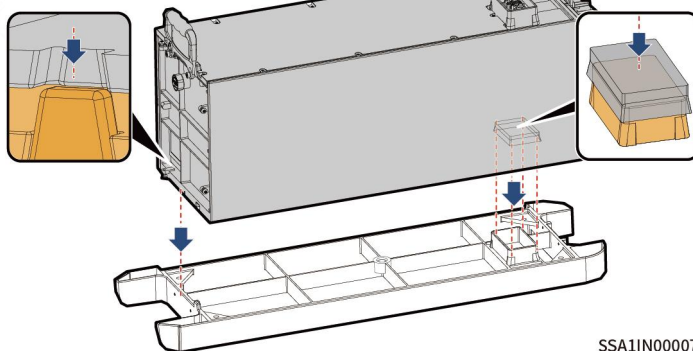


- 4** Before installing the handle, please use a Torque socket wrench to measure the screws and confirm that the screws on Sigen BAT are securely tightened with a torque of 4.5 N·m (± 0.45 N·m).



SSA1IN00006

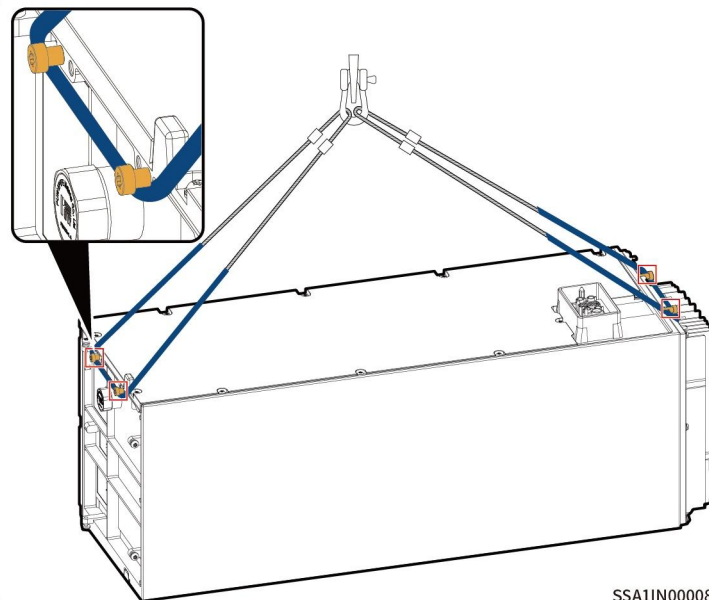
- 5** SigenStor BAT is kept horizontally and mounted vertically downwards.



SSA1IN00007

- 6** For details about how to place the second SigenStor BATs, see Steps **3** **4**.

- 7** If three or more SigenStor BATs are to be installed, use a Lift. For details about the hoisting rope binding scheme, see the figure.



SSA1IN00008

Tips

During lifting operations, the area where the sling comes in contact with the equipment should be wrapped with a protective layer to avoid damage to the equipment.

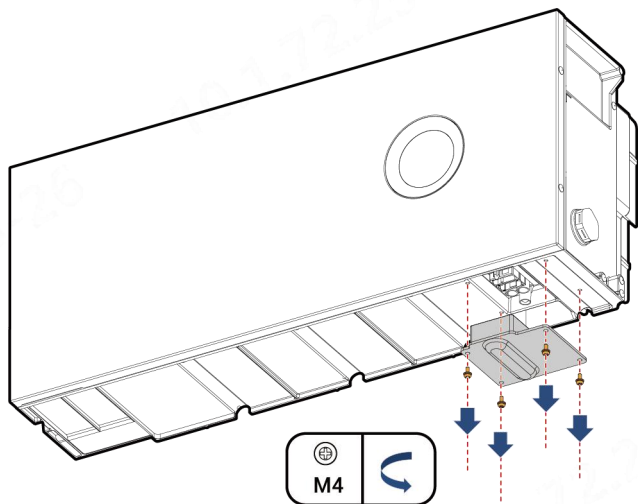
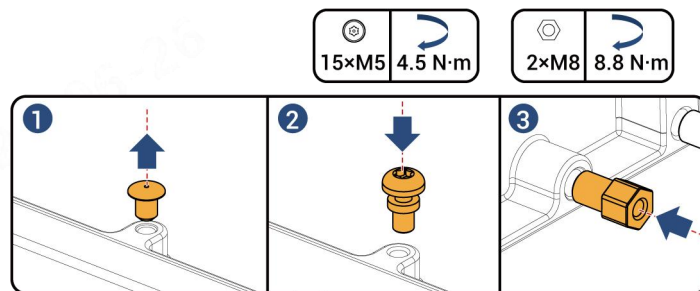
8 Arrange SigenStor EC, SigenStor AC or Sigen Hybrid

Sigen Hybrid

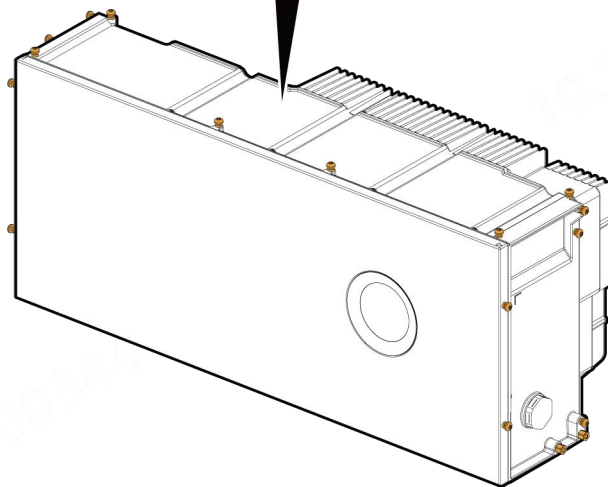
Remove the IP protection cover at the bottom, install the chuck screws of the decorative parts, and arrange them as described in Step 4.

Tips

The chuck screws are packed in the extension package.



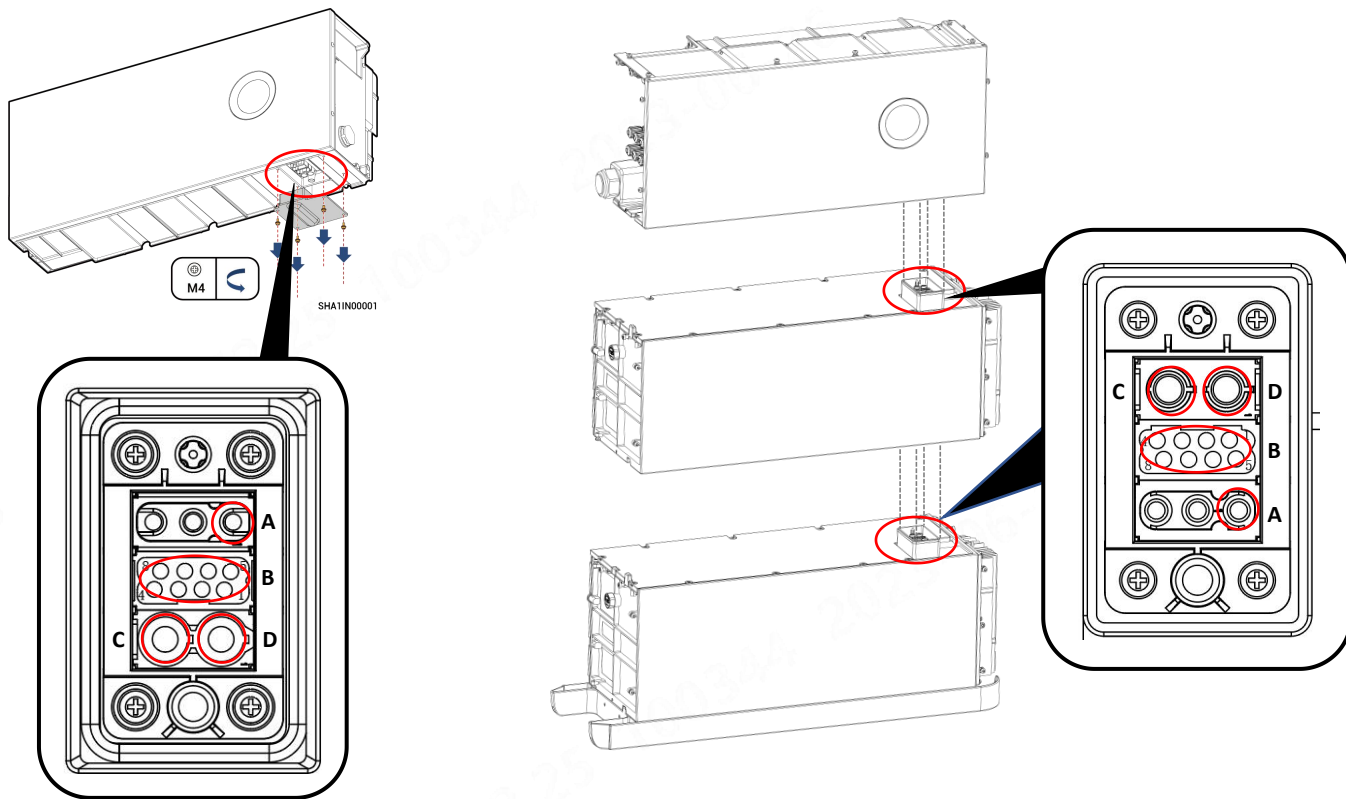
SHA1IN00001



SHA1IN00002

10

The whole system is stacked and installed as the below picture shows, all the connection of electrical and communication between the controller and the battery packs is through the floating terminal, and the terminal description shows how the connection built.



A. PE

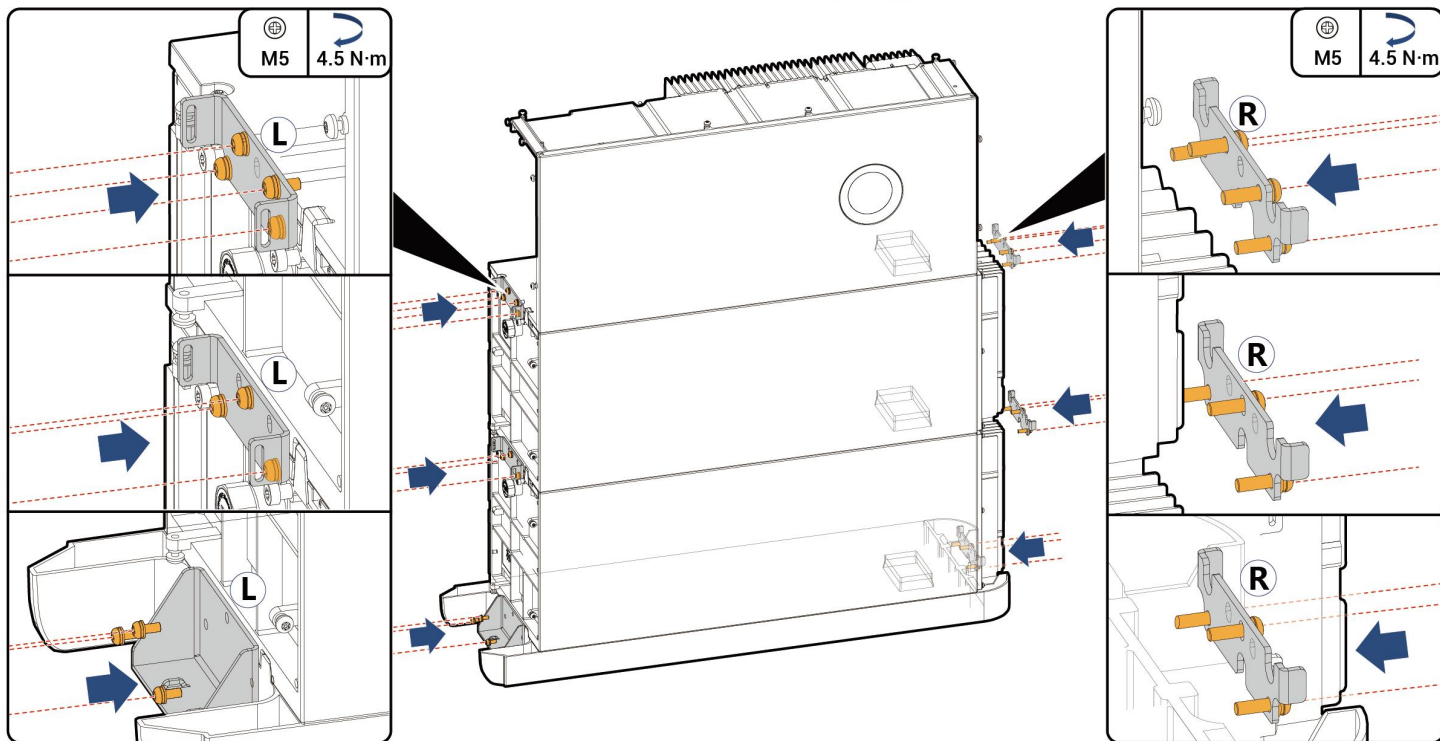
B. Communication

C. Bat+

D. Bat-

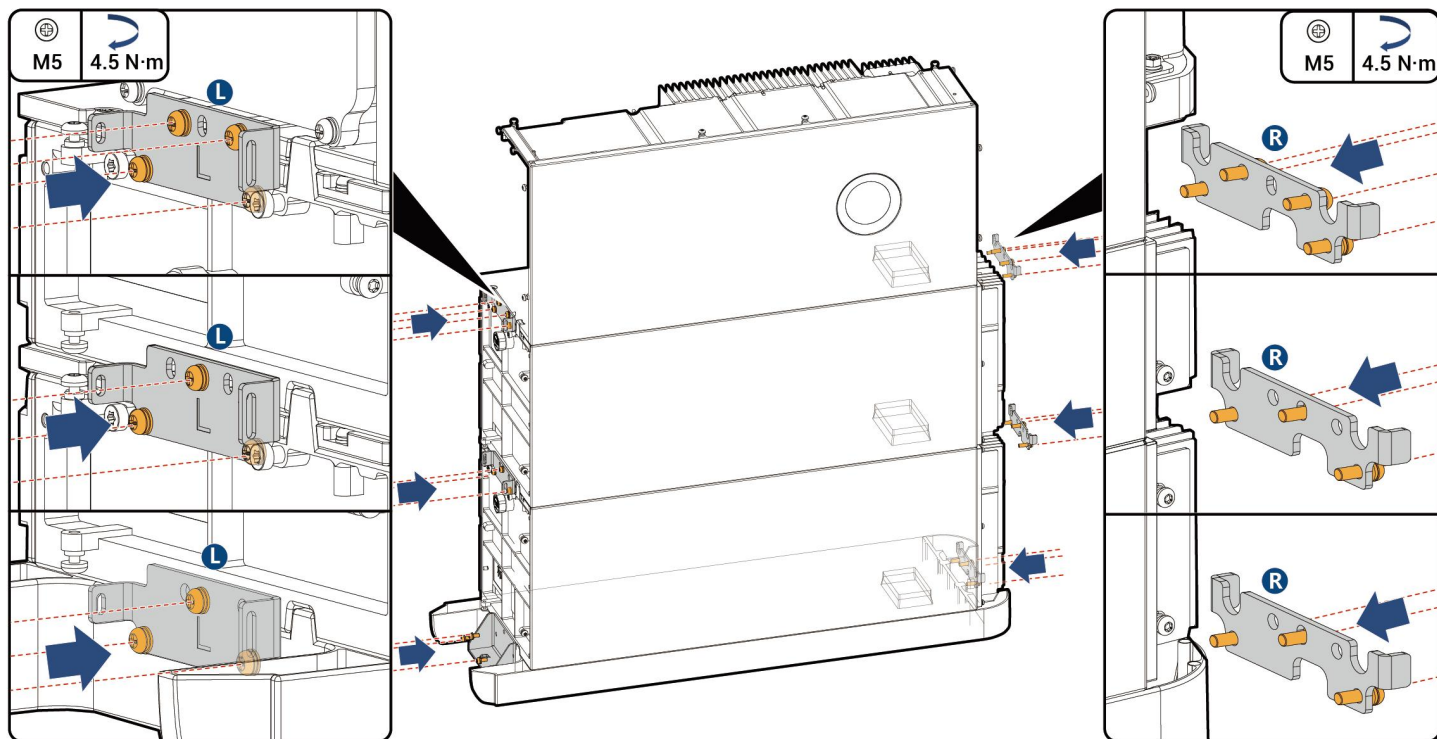
- 9 Base bracket has two versions in terms of appearance. The actual product shall prevail. The installation method for both versions remains the same.

Appearance 1:



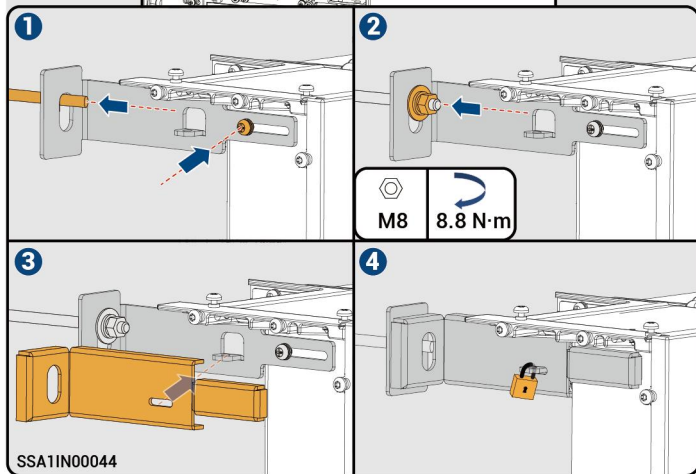
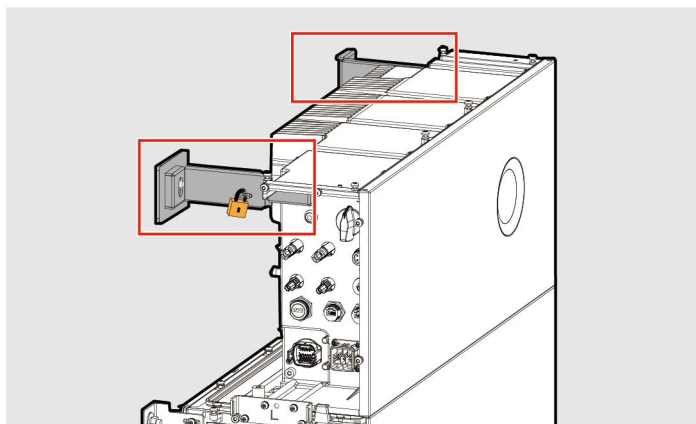
SSA11N00009

Appearance 2:



SSA11N00090

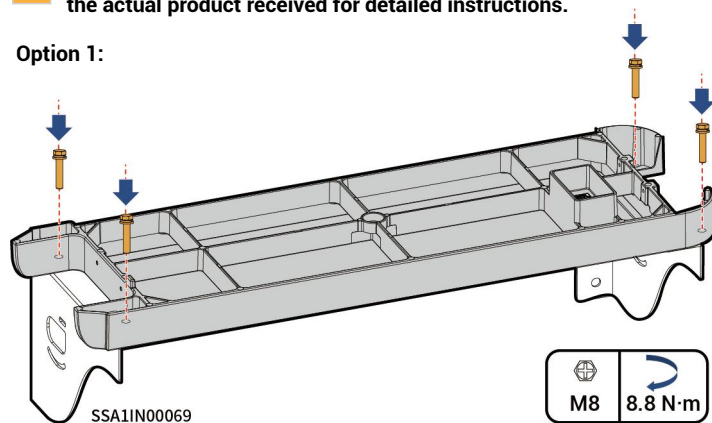
10



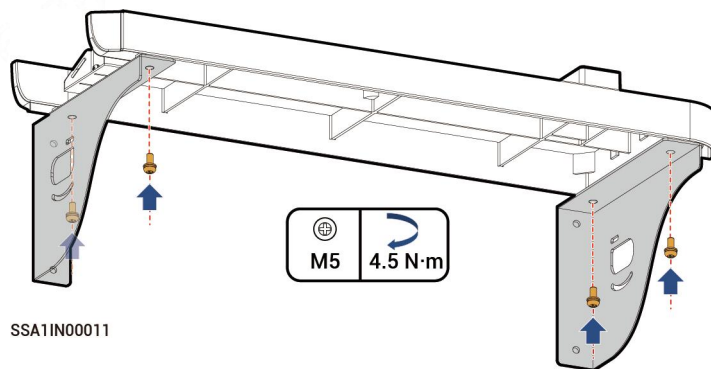
5.2 Wall Installation

- 1** There are two installation methods for the tripod. Please refer to the actual product received for detailed instructions.

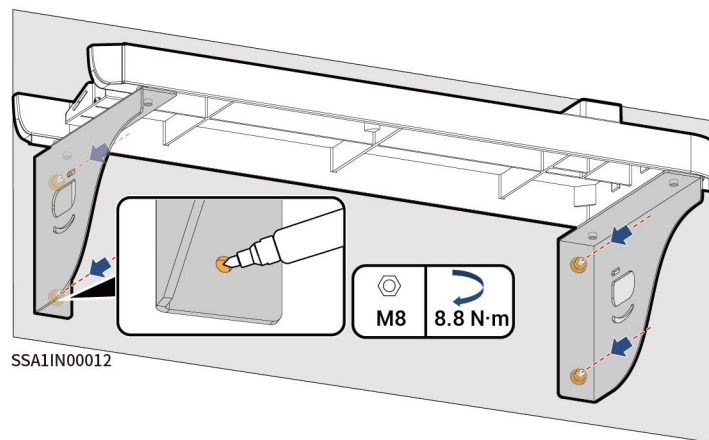
Option 1:



Option 2:

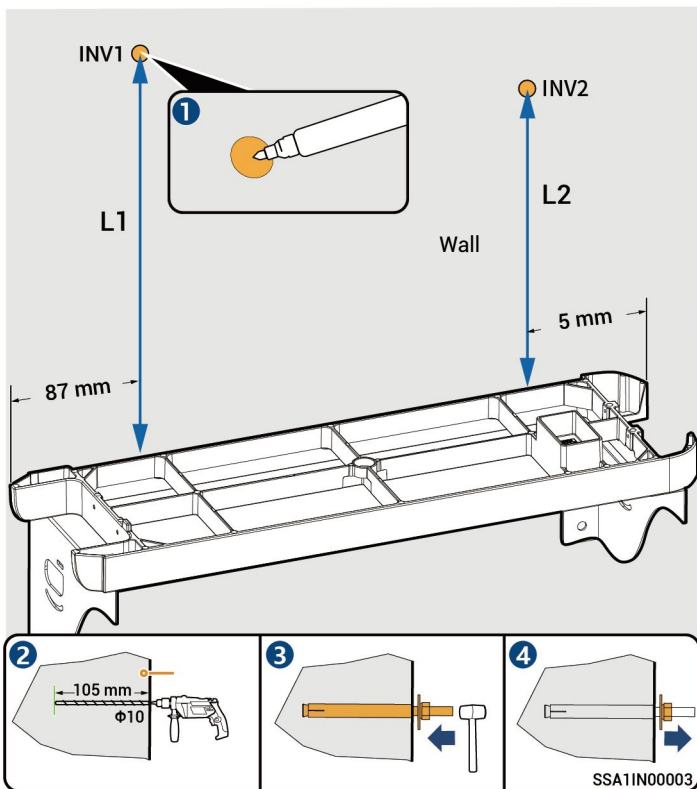


2



4

SigenStor BAT units	L1 length	L2 length
one	580–585 mm	575–580 mm
two	850–855 mm	845–850 mm



5 For details about how to place the SigenStor BAT, see Steps 4 5 in Section 4.1 Floor installation.

6 For details about how to place the inverter, see Steps 8 in Section 4.1 Floor installation.

7 For the installation of the Base bracket, please refer to Step 9 in Section 4.1 Floor Installation.

8 For the installation of the fasteners for a wall-mounted inverter, please refer to Step 10 in Section 4.1 Floor installation.

6 Cable Connection and Component Installation

Warning

Before connecting cables, ensure that DC SWITCH is in the OFF state, and the front switch of the AC line is off.

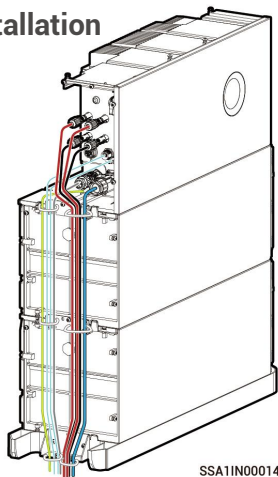
Tips

- The cable colors in the figure are used only to distinguish different lines. The cable colors are based on actual conditions.
- Bind the power cable separately from the signal cable.
- There are three routing schemes, Select them based on the actual situation.
- PVC wiring ducts or PVC conduits are recommended to wrap cables outside decorative parts. 50 × 30 mm PVC wiring ducts are recommended and PVC conduits with diameter not less than $\Phi 63$ are recommended.

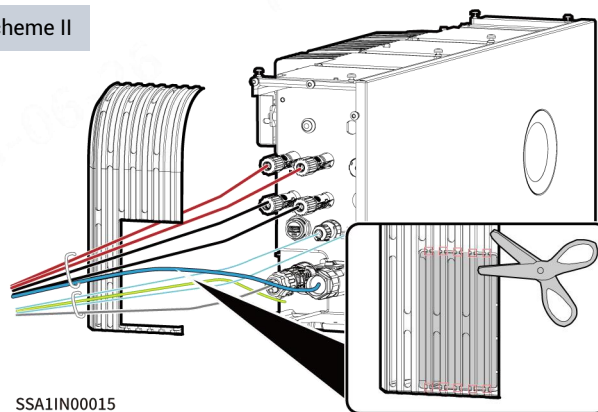
6.1 Recommended Cabling installation

Scheme I

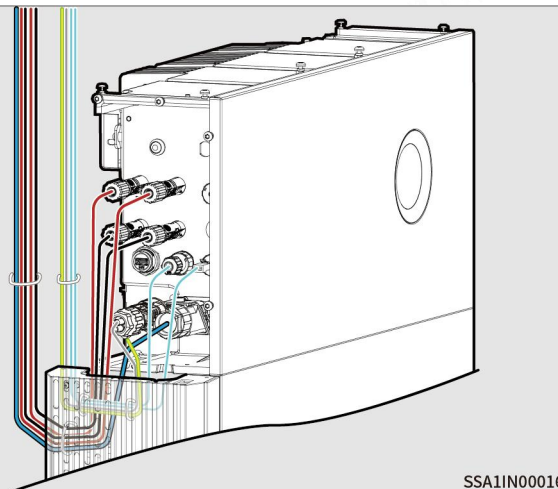
- AC output cable
- RS485 signal cable
- Protective ground cable
- RJ45 cable
- DC input cable

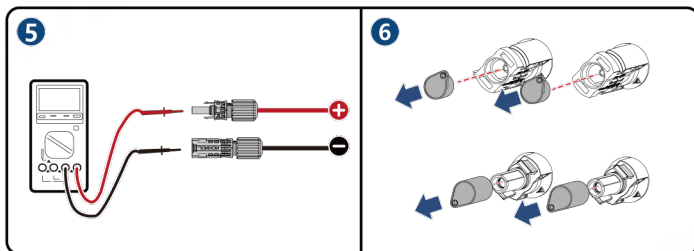


Scheme II



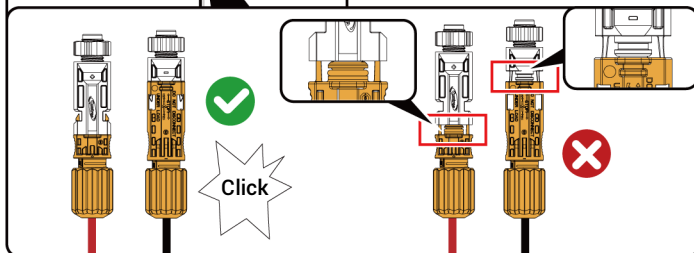
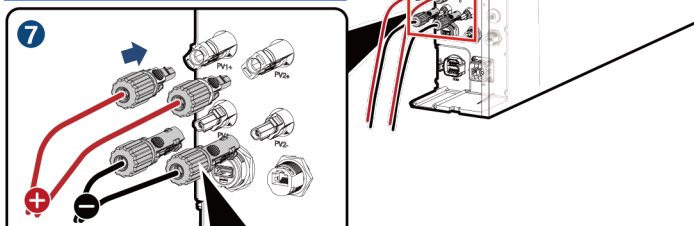
Scheme III





⚠ Caution

- If the voltage is negative, the polarity is incorrect. Rectify the fault in time.
- If you have only one DC input, connect it to PV1.

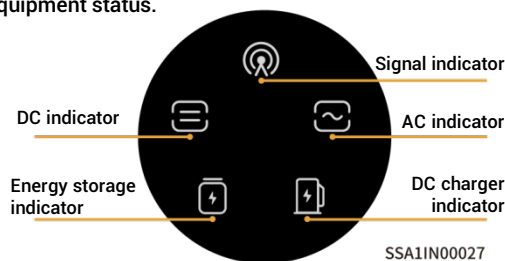


5 Post-installation Check

Serial number	Check Item
1	The equipment has been securely installed.
2	Ground cables, DC cables, signal cables, etc. are installed accurately without leftovers.
3	The cable fastening screws or terminals are properly installed.
4	There are no sharp spikes or acute angles at the cut point of the cable tie.
5	DC SWICH is in the OFF position.
6	Ports that are not in use have waterproof covers or plugs installed.
7	There is no construction left inside or outside the equipment.

7 Equipment Power-On

1. Turn on the front switch (the AC circuit breaker) of the equipment.
2. Rotate DC SWITCH to ON.
3. Observe the indicators on the front side of the inverter to learn about the equipment status.



Indicator	Color	State	Meaning
	White	Always on	The DC side is connected but not running.
	Green	Always on	The DC side is running.
	Grey	-	The DC side is not connected.
	Orange	Flash	The DC side is faulty.
	Red	Always on	The Sigen PV Max is faulty.
	White	Always on	The AC side is connected but not running.
	Green	Always on	Grid-connected operation.
	Blue	Always on	Off-grid operation.
	Grey	-	The AC side is not connected.
	Blue	Flash	Off-grid overload operation.
	Orange	Flash	The AC side is faulty.
	Red	Always on	The inverter is faulty.

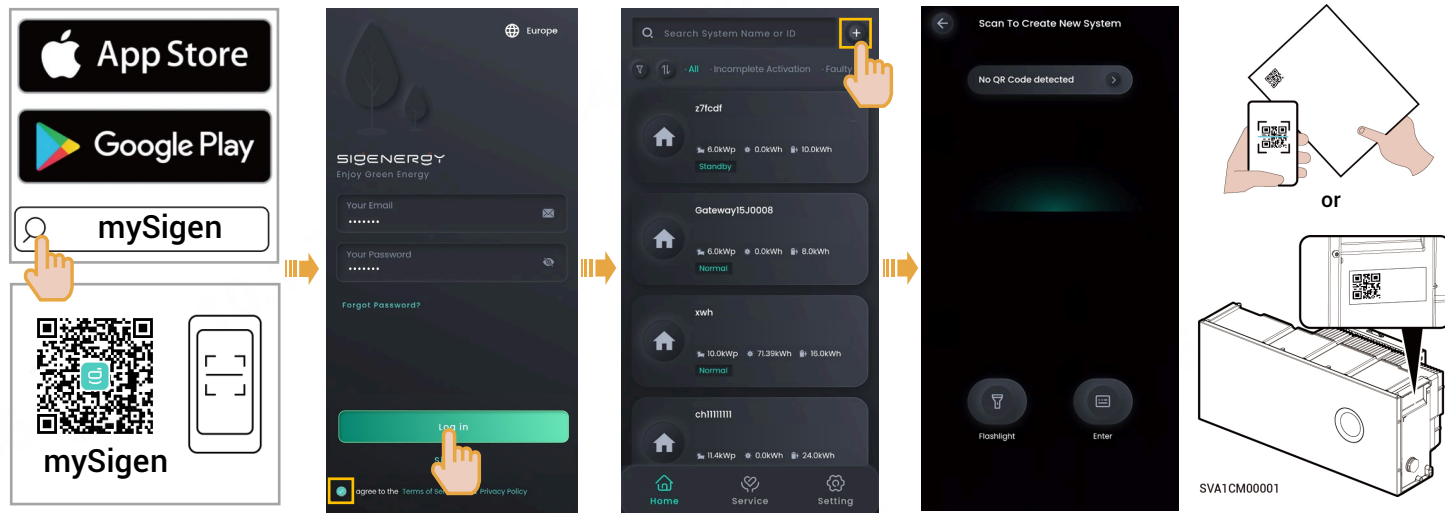
Indicator	Color	State	Meaning
	Grey	-	The management system is not connected.
	Green	Flash	Connected to local App.
	Green	Always on	Connected to the management system using an FE or WLAN.
	Blue	Always on	Connected to the management system over 4G.
	Blue	Flash	Insufficient traffic for Sigen CommMod.

Tips

- For turning off the equipment, please refer to the System Commissioning guide clause 2.5.4.
- There is no maintenance required for all the models listed in this manual, if there is any hardware issue happens within the warranty period and fulfil the warranty clause, the faulty one will be replaced by a new one according to the warranty.

8 Download and create new system for mySigen APP

- 1 Please enter the "Partner" → "Register Now" at the Company's official website (<https://www.sigenenergy.com>), and complete the account registration based on facts.
- 2 Download the mySigen App and create new system for the device.



Scan the SN code label on the accompanying box material. If the SN is lost, scan the SN on the side of the inverter.

Tips

The following steps are different when the equipment has already been connected or not connected to the internet (that is, FE and 4G communication fault), as described below.

Already connected to the internet:

1 Basic

System Location

Use your location; mySigen will use location permission to show SigenStor position information.

Timezone

Total Panel Capacity (kWp)

Owner Details

First Name

Last Name

Email

The owner will use this email address as login credentials for the mySigen app. Please remind owner to check their email after the add new system process.

Next

2 Devices

Sigen pv max

SN:145632897001

Latest Software Version: V100R001C00SPC10/B031

Download and install

I confirm all the devices have been add to the system.

What to do when devices are not discovered?

Next

3 Parameters

Grid Code

EN50438-TR

Export Limitation

Operational Mode

Sigen AI Mode

Off-Grid

Next

4 Check

System check has been completed!

Check Again

AC-side Cable Connection

Normal

Power Meter Connection

Connected

Network Connection

Ethernet **Currently used**

Connected

WLAN **Failed to connect to hotspot.**

Cellular **Dongle not inserted.**

Next

5 Confirm

Timezone

Europe/Berlin

Export Limitation

Maximum Power of Export Limitation

0kW

Operational Mode

Self-Consumption

Backup Capacity

30%

2 Devices

All the devices have been added to the system.

3 Diagnosis

A full diagnosis has been conducted to the system and devices.

Confirm

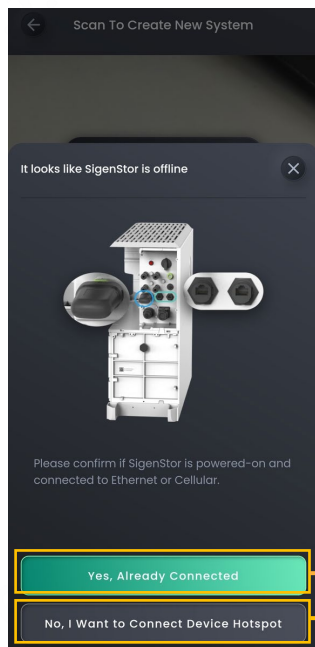
Manually locate the address, set the Timezone, and enter Owner Details.

Perform upgrades where necessary.

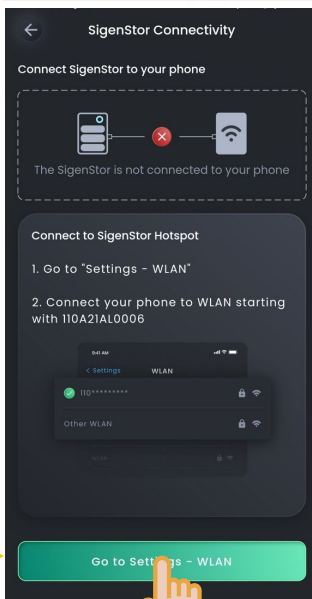
You can manually set and modify some function parameters of the power station.

3 Upon completion of the new system creation, the installer shall inform the owner to check its "sigencloud" e-mail within 24 hours and proceed with activating its account.

Not connected to the internet (that is, FE and 4G communication fault):

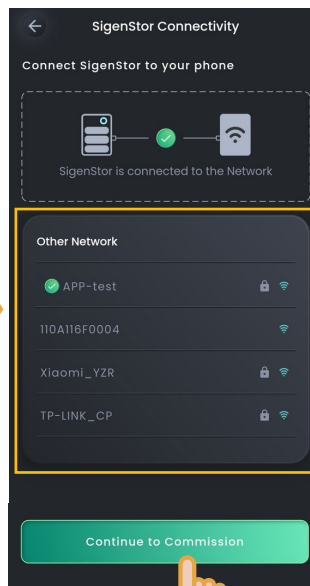


Click this button if the equipment is still not connected to the internet

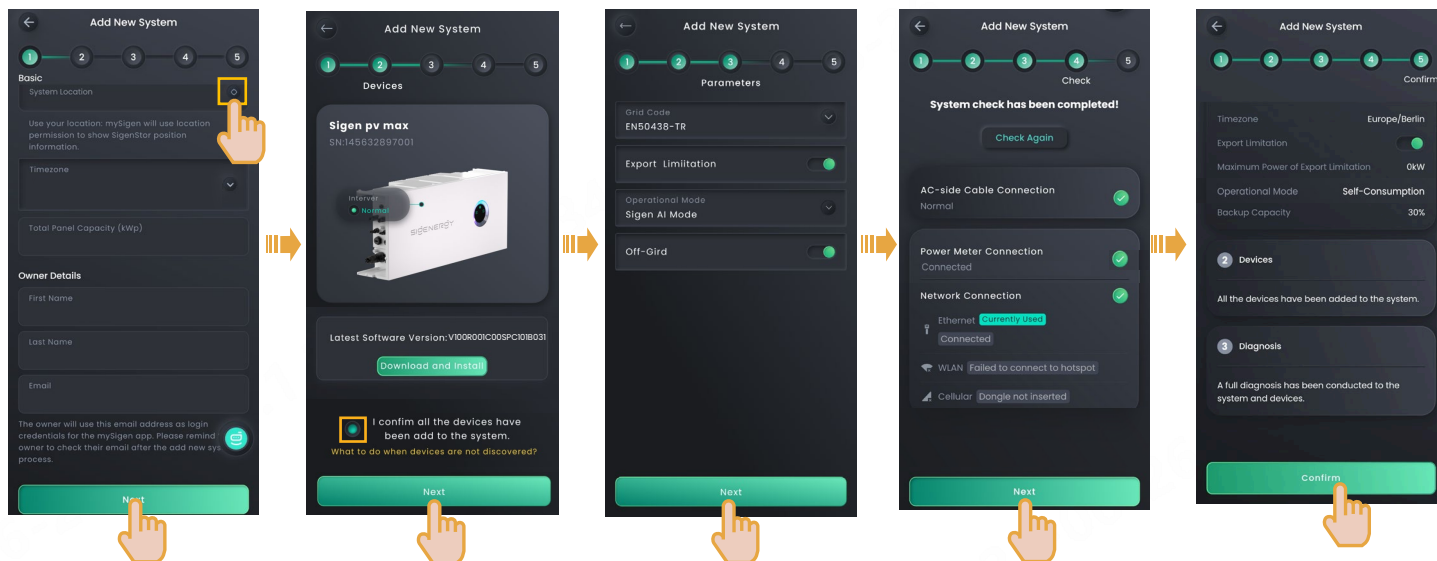


Connect the WLAN hotspot of the equipment. The hotspot is named equipment SN code.

If the equipment has already been connected to the internet, click this button and go to the Create New System page and perform operations by referring to the description in the "already connected to the internet" section.



Connect to the owner's WLAN hotspot.



Manually locate the address, set the Timezone, and enter Owner Details.

Perform upgrades where necessary.

You can manually set and modify some function parameters of the power station.

3 Upon completion of the new system creation, the installer shall inform the owner to check its "sigencloud" e-mail within 24 hours and proceed with activating its account.

Sigenergy Technology Co., Ltd.



Website	LinkedIn	YouTube
---------	----------	---------

www.sigenergy.com



**Copyright© 2024 Sigenergy Technology Co., Ltd.
All Rights Reserved.**

Description in this document may contain predictive statements regarding financial and operating results, product portfolio, new technology, configurations and features of product. Several factors could cause difference between actual results and those expressed or implied in the predictive statements. Therefore, description in this document is provided for reference purpose only and constitutes neither an offer nor an acceptance. Sigenergy Technology Co., Ltd. may change the information at any time without notice.