

# Sigen Gateway HomePro SP Installation Guide

Version: 01  
Release date: 2025-05-22

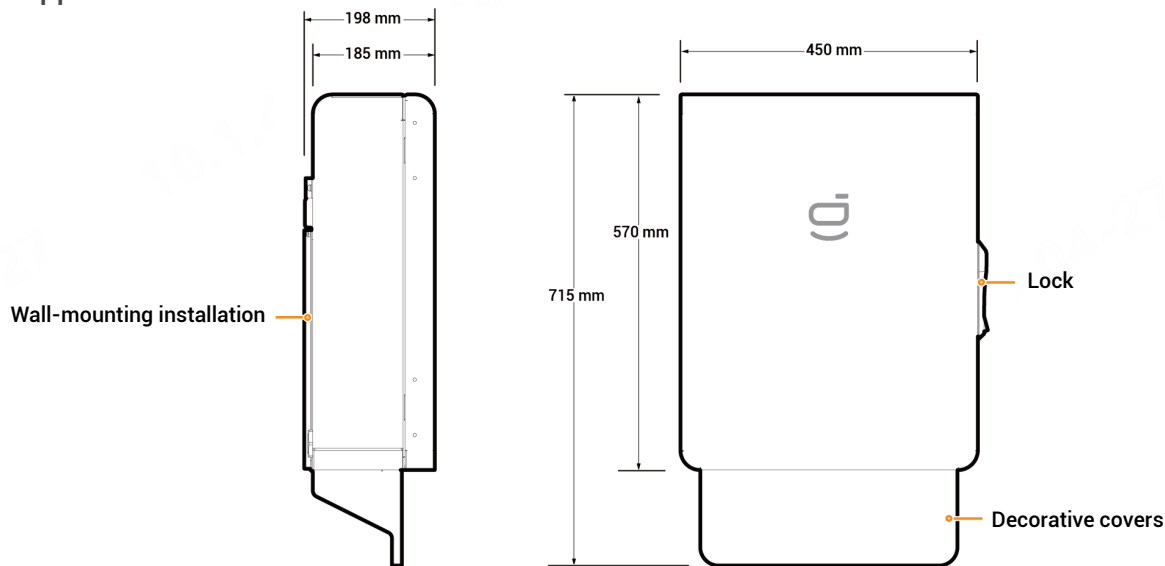


## Caution

- Only trained or qualified persons with electrical engineering knowledge can work directly on the equipment.
- Operators should be familiar with national and local laws, regulations, and standards, and the compositions and operating principles of relevant systems.
- Before operations, please carefully read operating requirements and precautions in this document and Important Notice. Any equipment damage caused by improper operation will not be covered under warranty.

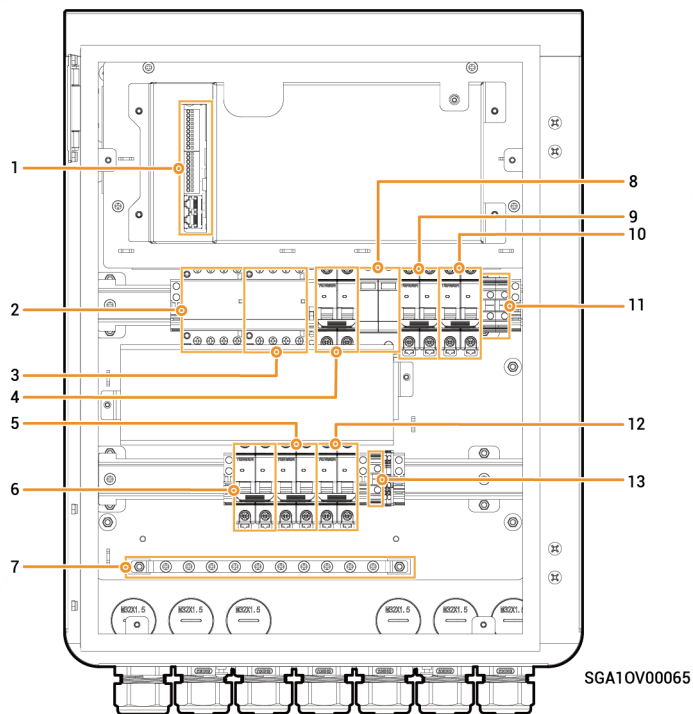
## 1 Product Description

### 1.1 Appearance and Dimensions



SGA10V00064

## Interior view



No.	Label	Description
1	-	Communication terminal (connecting to FE or DI communication cable)
2	KM2	Generator/smart loads contactor
3	KM1	Grid contactor
4	QS1	Bypass switch
5	QF4	Miniature circuit breaker (connecting to a single-phase inverter in a power range of 5.0 to 6.0 kW)
6	QF3	Miniature circuit breaker (connecting to a single-phase inverter in a power range of 8.0 to 12.0 kW)
7	PE	Grounding copper busbar
8	FC1	Surge protective device
9	QF1	Miniature circuit breaker (connecting to the power grid)
10	QF2	Miniature circuit breaker (connecting to a generator/smart loads <sup>[1]</sup> )
11	X1	Terminal (connecting to a non-backup load)
12	QF5	Miniature circuit breaker (connecting to a household load)
13	GND	Terminal (functional ground)

### Note [1]:

- All the power equipment in the owner's home can be connected as smart loads.
- To ensure that this product maximizes the benefits to users, it is recommended that the high-power equipment be connected as smart loads (third-party inverter, heat pumps, pool heaters, clothes dryers, immersion heaters, etc.), which can be cut off when the energy storage system has low power. Other low-power equipment are connected as household loads (lights, routers, etc.)



## Danger

Please check that all switches are turned off at the factory. Always avoid hot-line work.

## 2 Inspections Before Installation

- Check whether the components are entirely supplied against the packing list and whether the appearance is in good condition. For any problem, contact your sales representative.
- Parts and accessories supplied with the packing box are personal assets of the owner and must not be taken away from the installation site.
- Check personal protective equipment and installation tools to ensure that they are complete; If not, please make them up.
- Check and ensure the completeness of personal protective equipment and installation tools; replenish if necessary.
- Check if the factory-installed screws are tight. Before delivery, the tightened screws are marked with lines. If the marks are misaligned, the screws are loose. Tighten the screws again.

### Personal Protective Equipment



Safety hat



Goggles



Dust mask



Protective gloves



Insulating gloves



Insulating shoes

### Installation Tools



Power drill



Vacuum cleaner



Wire cutter



Crimp tool



Crimping pliers



Wire stripper



Scissors



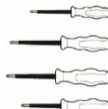
Cable ties



Heat shrinkable sleeve



Heat gun



Insulated screwdriver set



Insulated sleeve set



Torque socket wrench



Marker



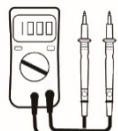
Level



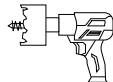
Tape measure



Utility knife



Multimeter



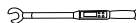
Hole drill



Rubber mallet



Cold terminal crimping pliers



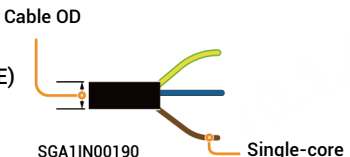
Torque wrench for external hexagon bolts



Fire-proof sealant

## Caution

The specification of installer-provided cables shall meet the cable laws and standards of the countries/regions.

No.	Cable name		Recommended specification
1	AC cable	Used to connect an inverter	Three-core copper core cable for outdoor use (L, N, PE) <ul style="list-style-type: none"> <li>Power: 5.0 kW to 6.0 kW, cross-sectional area of conductor: 4 mm<sup>2</sup> to 6 mm<sup>2</sup>, cable OD: 13 mm to 21 mm</li> <li>Power: 8.0 to 12.0 kW, cross-sectional area of conductor: 10 mm<sup>2</sup> to 16 mm<sup>2</sup>, cable OD: 16 mm to 20 mm</li> </ul>
2		Used to connect a backup household load	
3		Used to connect to the power grid	
4		Used to connect a non-backup load	
5		Used to connect a generator/smart load (optional)	
6	RJ45 network cable		Eight-core shielded twisted pair for outdoor use Cross-sectional area of conductor: 0.13 mm <sup>2</sup> to 0.2 mm <sup>2</sup> ; cable OD: 4 mm to 7.5 mm Single cable length: ≤ 100 m <sup>[1]</sup>
7	DI/DO signal cable		Two-core shielded cable for outdoor use Cross-sectional area of conductor: 0.2 mm <sup>2</sup> to 1.5 mm <sup>2</sup> ; cable OD: 2 mm to 4 mm
8	Functional ground cable		Outdoor single-core copper flexible cable Cross-sectional area of core conductor: 10–16 mm <sup>2</sup> ; Outer diameter: 7–9 mm

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

## 3 Site Requirements

### Tips

- Before installing the equipment, please be sure to carefully read the following installation requirements. The company will not be liable for any functional abnormalities or damages arising from the operation of the equipment if the installation requirements are not followed, even in cases leading to personal safety incidents.
- During actual installation, the selection of installation location should comply with local firefighting, environmental protection regulations, and other relevant laws. The specific installation location planning should be subject to the installer or engineering, procurement, and construction (EPC) contracts.

#### Installation Environment

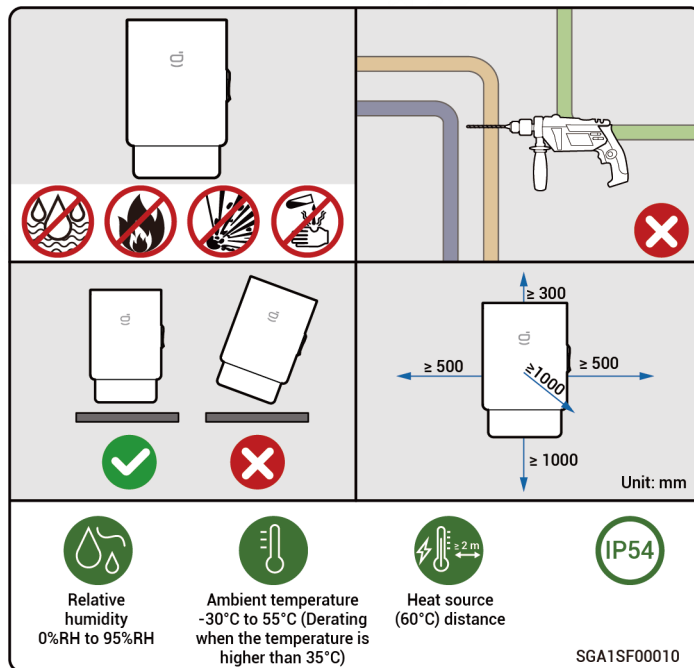
- Do not install the equipment in a smoky, flammable, or explosive environment.
- Avoid exposing the equipment to direct sunlight, rain, standing water, snow, or dust. It is suggested to install the equipment in a sheltered place. Take preventive measures in operating areas prone to natural disasters such as floods, mudslides, earthquakes, and typhoons.
- Do not install the equipment in an environment with strong electromagnetic interference.
- The temperature and humidity of the installation environment should meet equipment 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.
- In areas with good marine environments (such as Norway, where the nearshore salinity is  $\leq 28$  psu), the mounting distance of the device from the coastline can be appropriately relaxed to  $\geq 200$  m.
- If the outer surface of the device is damaged, please repaint the device in time.

#### Installation Location

- Do not tilt the equipment or place it upside down. Ensure that the equipment is horizontally installed.
- Do not install the equipment in areas easily accessible to children.
- Do not install the equipment in a place with fire hazards or is prone to moisturizing.
- The equipment produces sound when it is operating. Please install the equipment in a place with appropriate distance at which there is no impact to daily work and life.
- Do not install the equipment in a sealed, poorly ventilated location without fire protection measures and inaccessible for firefighters.
- The equipment is hot when it is operating. If the equipment is installed indoors, please ensure good indoor ventilation and avoid significant indoor temperature rise by more than  $3^{\circ}\text{C}$  while the equipment is operating. Otherwise, the equipment will be derated.
- Do not install the equipment in mobile scenarios such as recreational vehicles, cruise ships, and trains.
- It is recommended to install the equipment in a location where you can easily access, install, operate, and maintain it, and view the indicator status.
- Do not place the equipment in the vehicle passage when installed in a garage to avoid collisions.

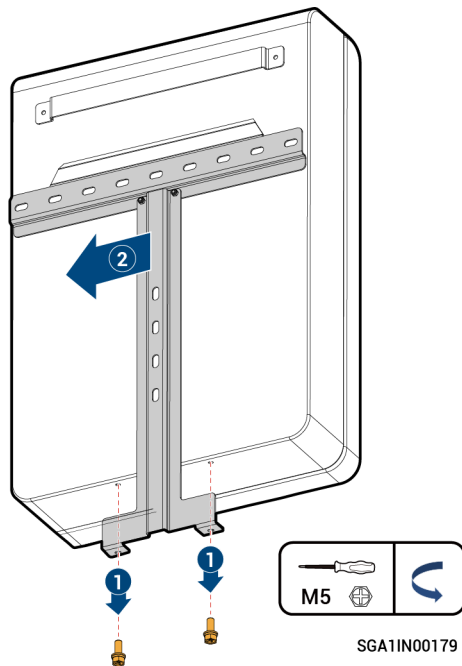
## Installation Base

- Do not install the equipment on a flammable base.
- The installation base should meet the load-bearing requirement. Solid brick-concrete structures, concrete walls are recommended.
- The installation base should be flat, and the installation area should meet the installation space requirements.
- No plumbing or electrical alignments are allowed inside the installation base to avoid potential drilling hazards during equipment installation.

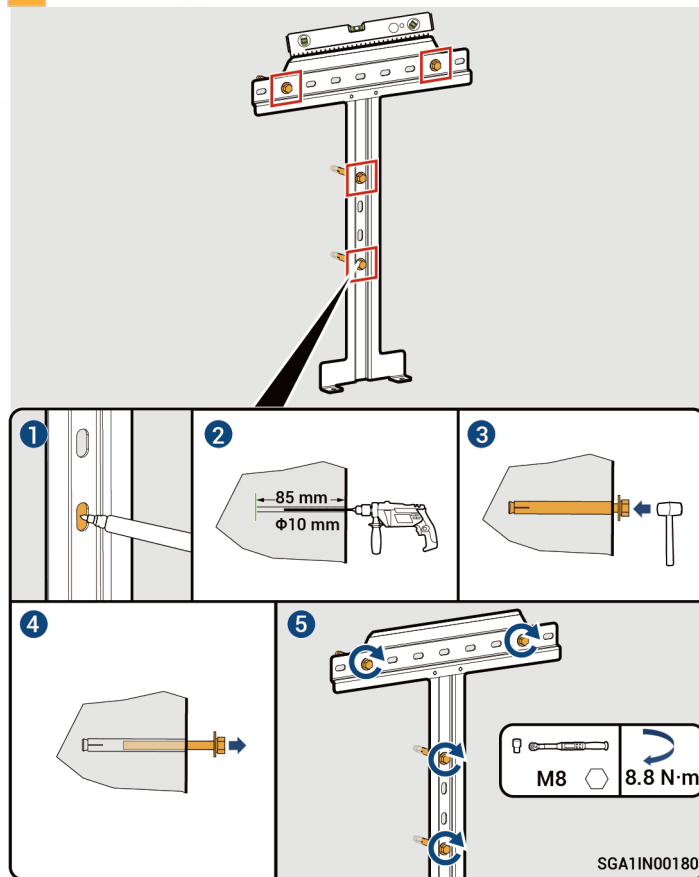


## 4 Installation

1

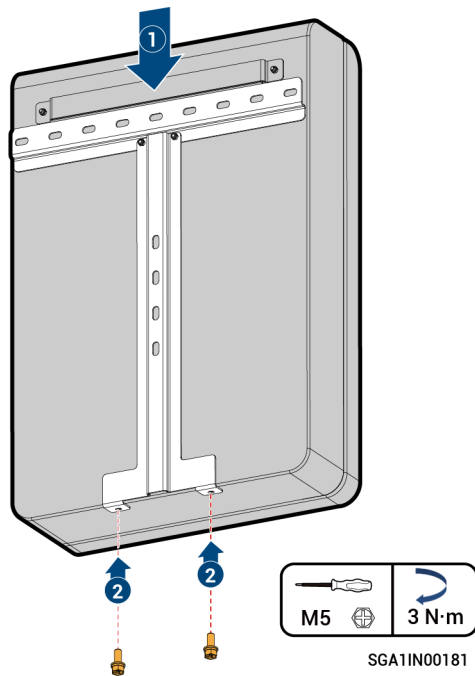


2





3



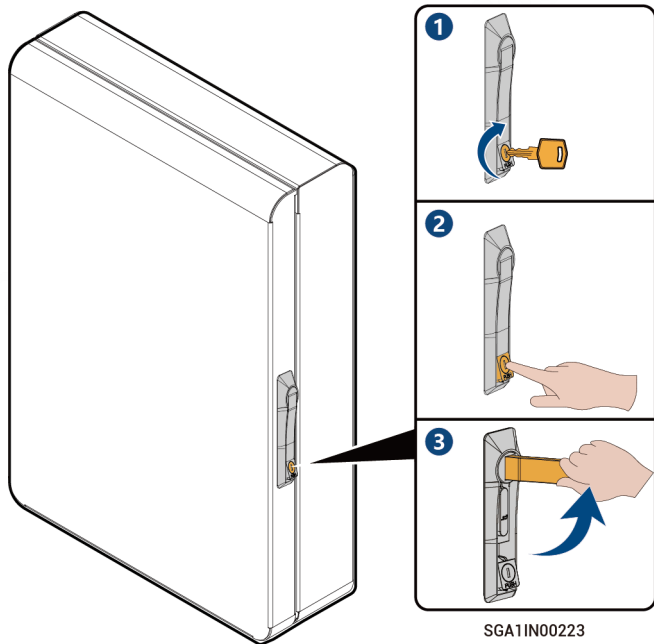
## 5 Cable Connection

### **Danger**

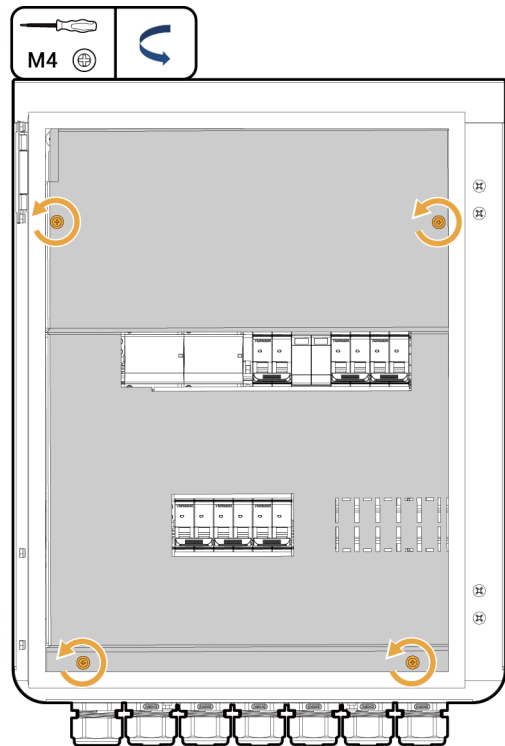
Do not perform operations on the equipment with power on. Before operation, please make sure all power supplies to the equipment have been disconnected, including but not limited to the grid side, inverter and generator power switches.

### 5.1 Open the door

1



2



SGA1IN00243

## 5.2 Inspection Before Wiring

### Tips

- The equipment offers two wiring options: option 1 is Bottom Cable Entry, and option 2 is Back Cable Entry. Please choose according to the actual situation.
- Connect cables according to the corresponding labels to prevent personal injury and equipment damage caused by incorrect cable connection.
- To ensure that the inverters, loads, and the Gateway are connected to the common ground point, connect the PE cable.
- The routing method shown in the figure is for reference only, select proper wires according to your local laws and regulations. The wire color codes in the figure is only for identifying different types of wires. The actual wire color codes shall prevail.
- If the back entry is adopted, the entry hole needs to be waterproofed.
- If the seal is damaged or fails to seal after threading, fire-proof sealant must be used for sealing.
- The two miniature circuit breakers (QF3 and QF4) can each be used for inverter connection, but only one should be selected. Wire the miniature circuit breaker according to the rated power of the inverter, using QF3 as an example in the diagram.

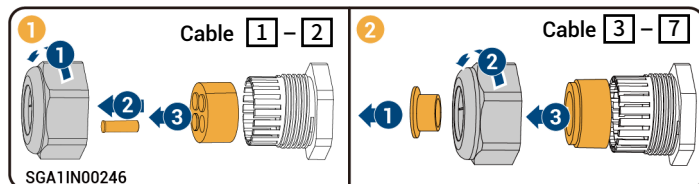


### Caution

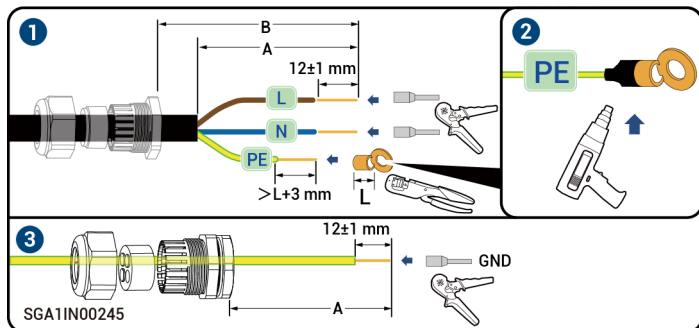
Do not remove or loosen reserved routing holes to avoid the effect on ingress protection.

## 5.3 Option 1: Bottom Cable Entry

### 5.3.1 Processing Routing Holes

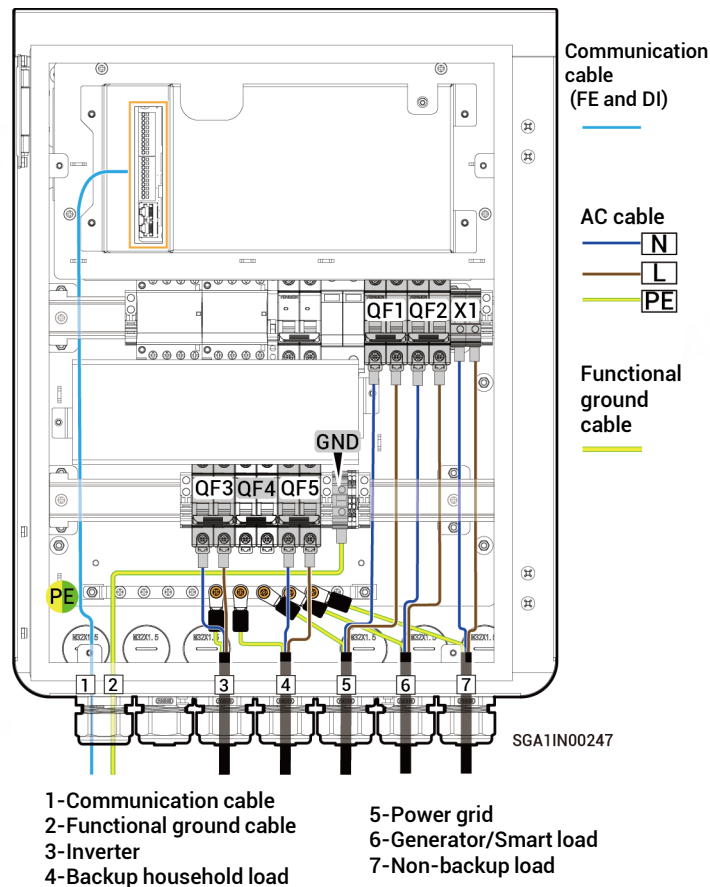


### 5.3.2 Processing Cables



Reserved length (Unit: mm)

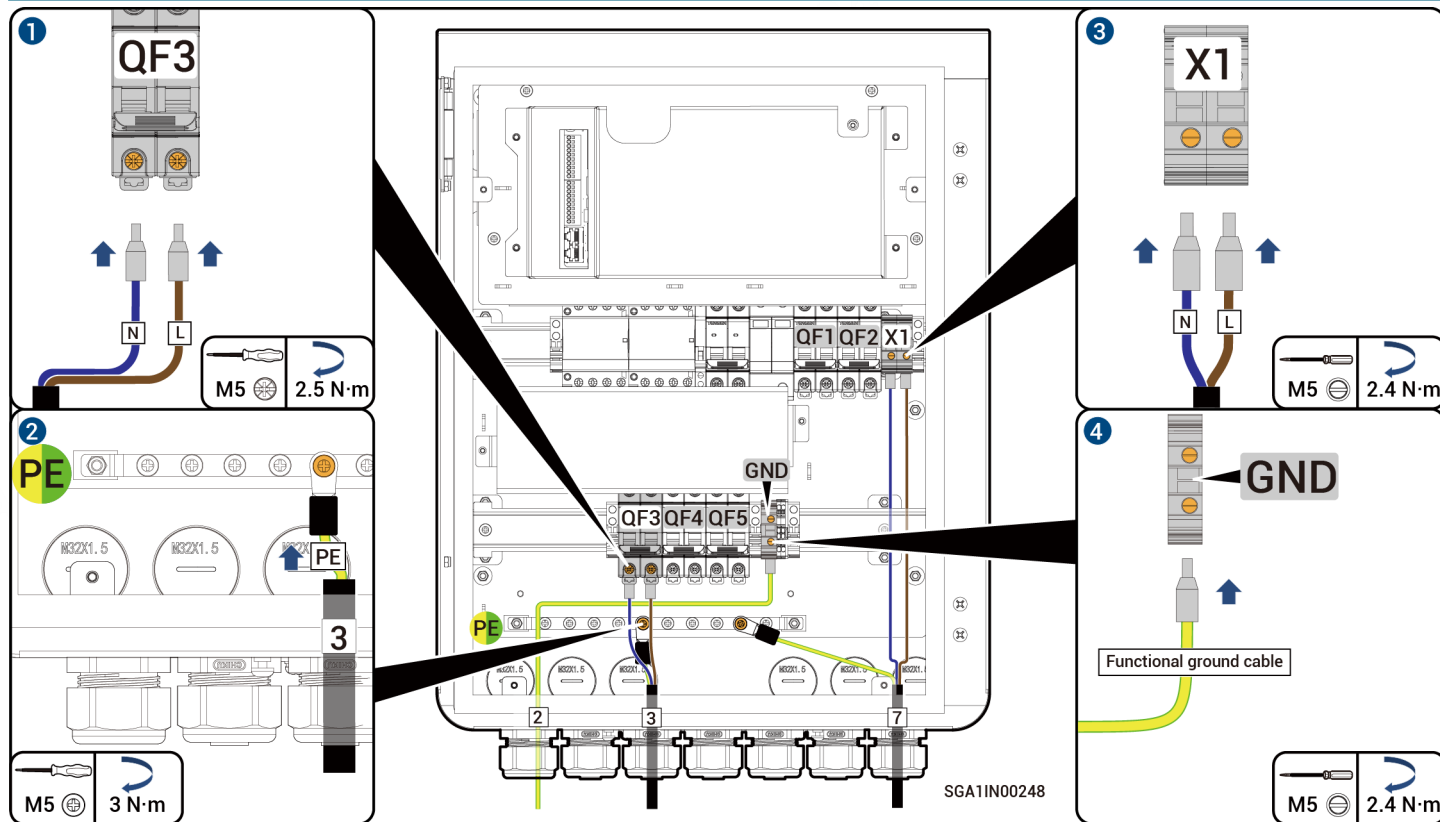
Label	B		L	N	PE
QF1	≥360	A	≥330	≥330	≥145
QF2	≥340		≥310	≥310	≥160
QF3	≥165		≥135	≥135	≥105
QF4	≥165		≥135	≥135	≥105
QF5	≥165		≥135	≥135	≥105
X1	≥365		≥335	≥335	≥190



### 5.3.3 Cable Connections

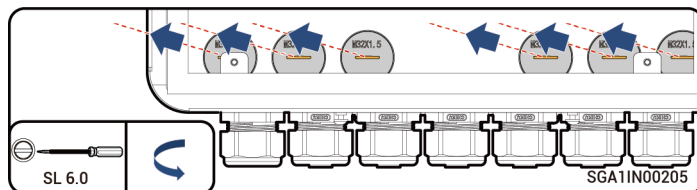
#### Tips

The method to connect the power grid/inverter/backup household load/Household Load/ Generator/Smart Load is the same. This section takes connecting the inverter as an example.

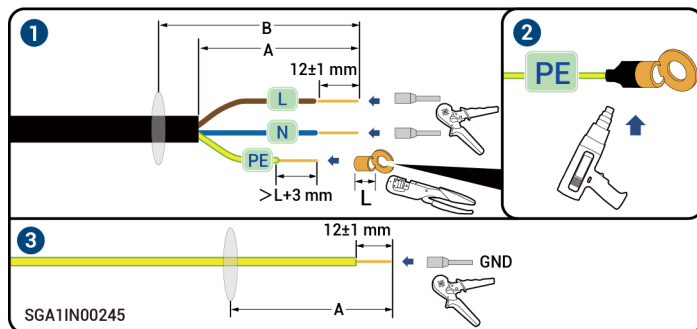


## 5.4 Option 2: Back Cable Entry

### 5.4.1 Processing Routing Holes

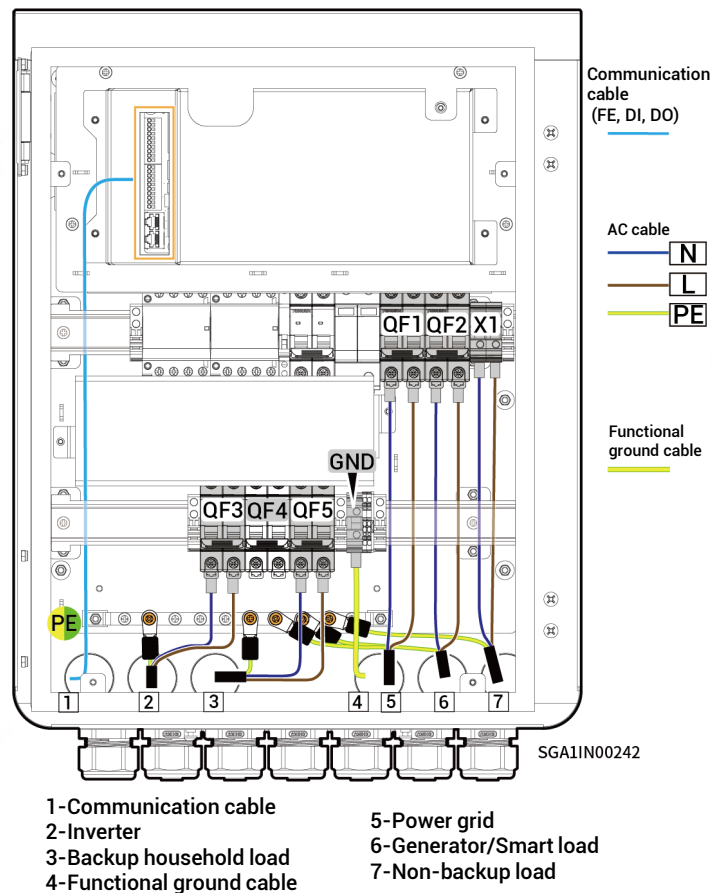


### 5.4.2 Processing Cables



Reserved length (Unit: mm)

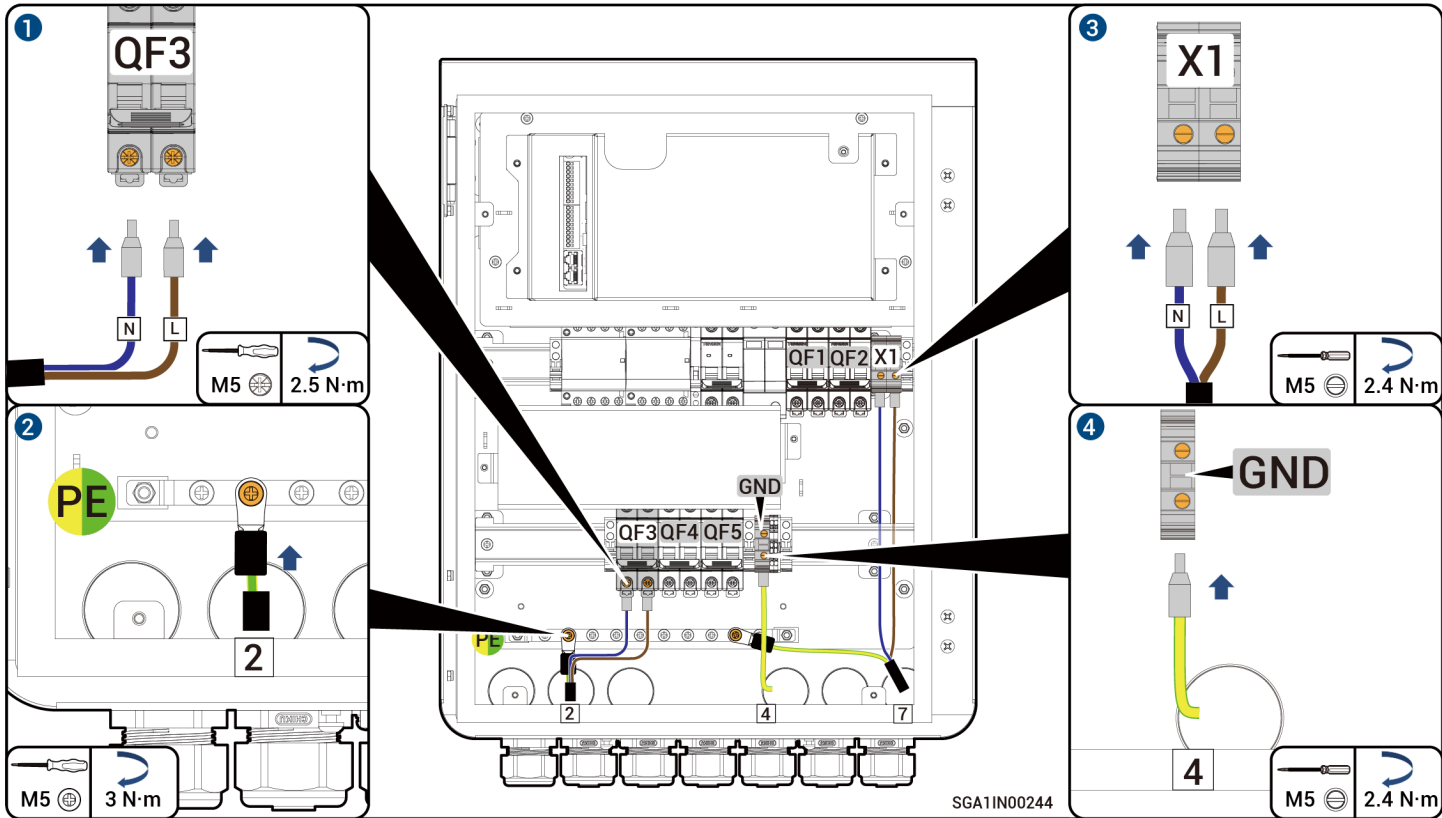
Label	B	A	L	N	PE
QF1	≥300		≥270	≥270	≥130
QF2	≥310		≥280	≥280	≥150
QF3	≥200		≥170	≥170	≥130
QF4	≥200		≥170	≥170	≥110
QF5	≥190		≥160	≥160	≥70
X1	≥320		≥290	≥290	≥170



5.4.3 Cable Connections

Tips

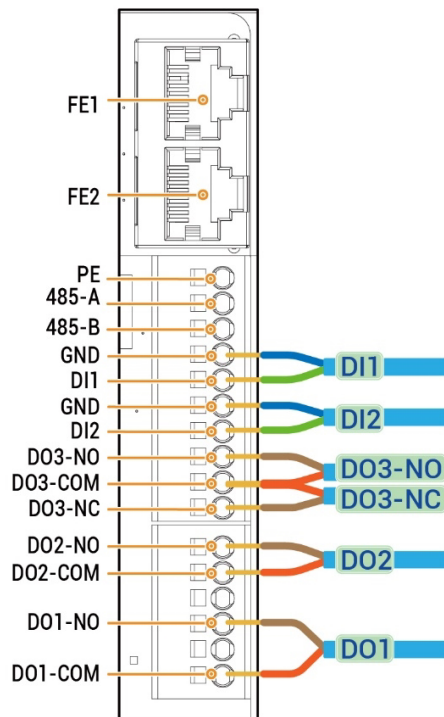
The method to connect the power grid/inverter/backup household load/generator/smart load is the same. This section takes connecting the inverter 1 as an example.



## 5.5 Communication port introduction

### Tips

- Identify the cable connection and table content suiting you according to the label appearance.
- For the Generator that starts when the dry contacts are open, connect the dry contacts to DO3-NO and DO3-COM. For the Generator that starts when the dry contacts are closed, connect the dry contacts to DO3-NC and DO3-COM.



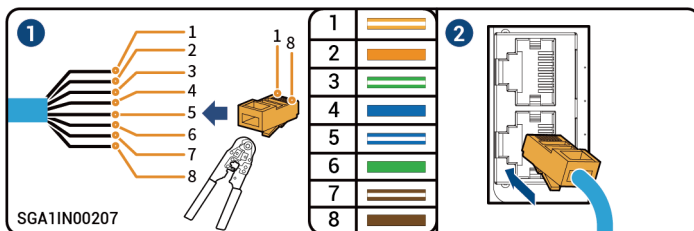
Label	Definition		Description
FE (Network cable interface)	FE1	Fast Ethernet 1	Used to connect an inverter.
	FE2	Fast Ethernet 2	Used to connect an Sigen EV AC Charger, inverter, router and so on.
(Reserved)485 (RS485 interface)	PE	PE signal shielding ground	Used to connect the equipment over RS485.
	485-A	RS485 signal 2_A+	
	485-B	RS485 signal 2_B-	
DI1 (Digital input 1)	GND	Signal GND	<ul style="list-style-type: none"> <li>• Universal digital input interfaces.</li> <li>• DI1 is used to connect the feedback contact of the bypass switch.</li> </ul>
	DI1	Digital input 1	
DI2 (Digital input 1)	GND	Signal GND	<ul style="list-style-type: none"> <li>• DI2 can be used to connect the feedback signal of the external Automatic Transfer Switch (ATS) to identify whether the gateway "grid port" is powered by the grid or the generator.</li> <li>• Low impedance input (short circuit on ATS relay) indicates the power grid. High impedance input (open circuit on the ATS relay) indicates the Generator.</li> </ul>
	DI2	Digital input 2	
DO3/GEN (Dry contact 3/Generator startup)	DO3-NO	Digital output 3 - Normal Open	<ul style="list-style-type: none"> <li>• DO3 interface can be used for controlling generator start in two-wire start mode.</li> <li>• DO3 have a contact capacity of 30 Vd.c./1 A.</li> <li>• NO/COM is normally open contact and NC/COM is normally close contact.</li> </ul>
	DO3-COM	Digital output 3 - Common	
	DO3-NC	Digital output 3 - Normal Close	
DO2 (Dry contact 2)	DO2-NO	Digital output 2 - Normal Open	<ul style="list-style-type: none"> <li>• DO2 is used for the output of the contactor status feedback signal for the Generator.</li> <li>• DO2 have a contact capacity of 30 Vd.c./1 A.</li> </ul>
	DO2-COM	Digital output 2 - Common	
DO1 (Dry contact 1)	-	-	<ul style="list-style-type: none"> <li>• DO1 is used for the output of the contactor status feedback signal for the grid.</li> <li>• DO1 has a contact capacity of 250 Va.c./1 A or 30 Vd.c./1 A.</li> </ul>
	DO1-NO	Digital output 1 - Normal Open	
	-	-	
	DO1-COM	Digital output 1 - Common	



## 5.5.1 Connecting RJ45 Network Cable

### Tips

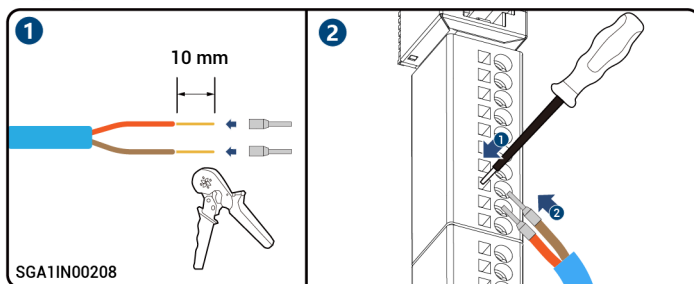
Two network ports, one of which is connected to the inverter, and the other is connected to other devices. (for example, Sigen EV AC Charger, inverter, and router)



## 5.5.2 Connecting DI/DO Cable

### Tips

The method to connect the DI/DO cable is the same. This section takes connecting the DO cable as an example.



## 5.6 Post-installation Check

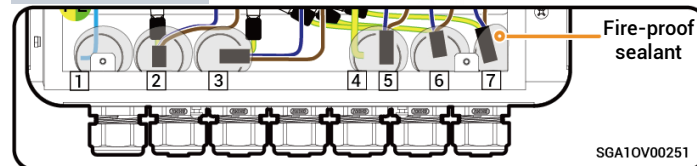
Check the following items against the provided table, install the Inner Panel.

No.	Check Item
1	The equipment is securely installed.
2	Grounding cable, AC cables, and signal cables are properly connected without omission.
3	Lock screws or terminals are installed in place without any looseness.
4	Cutouts of cable ties are free of burr or sharp edges.
5	No construction residue inside and outside the equipment.

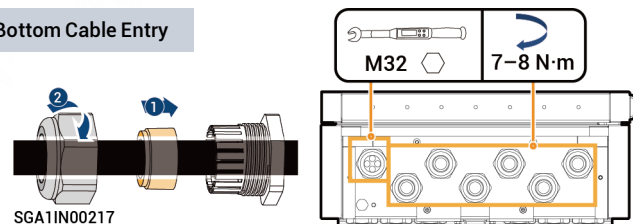
### Tips

- If the Back Cable Entry is used, the cable outlet shall be sealed with fire-proof sealant.
- If the bottom cable entry is used, the routing holes need to be tightened.

### Back Cable Entry



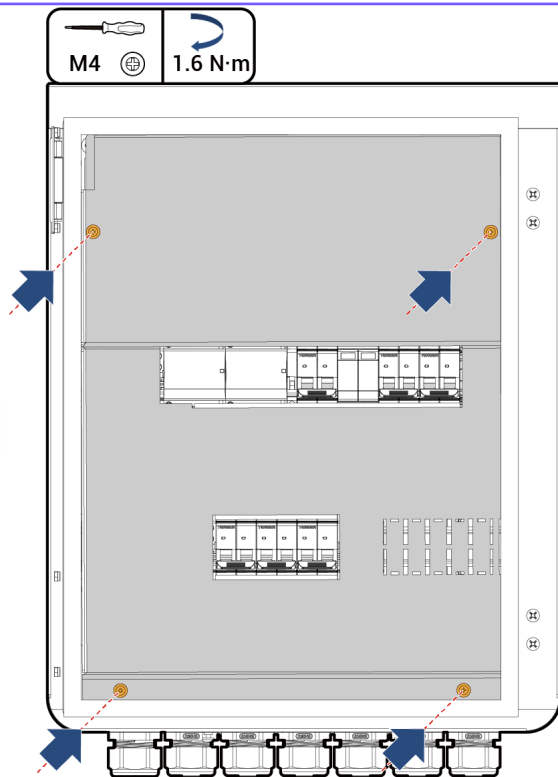
### Bottom Cable Entry



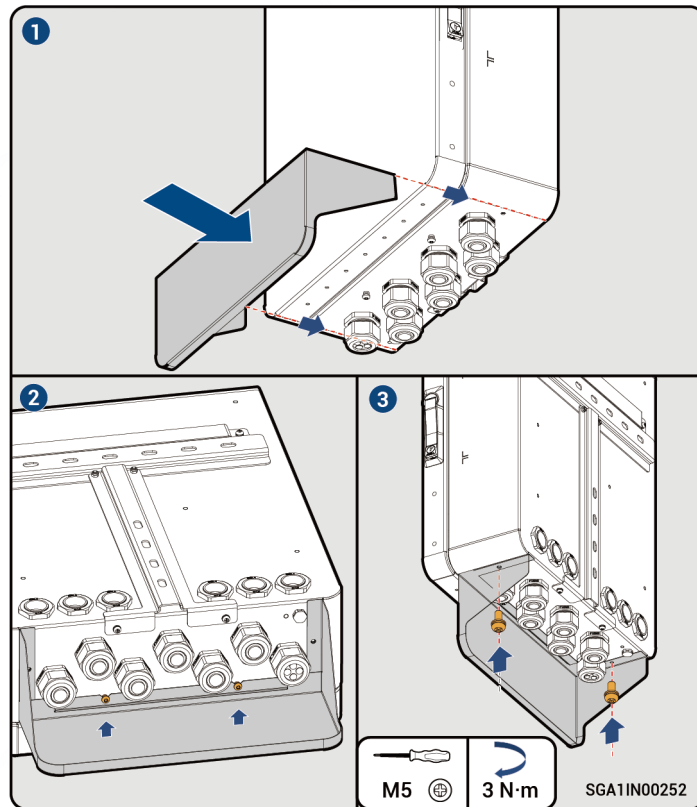
## 5.7 Installing Inner Panel

### ⚠ Caution

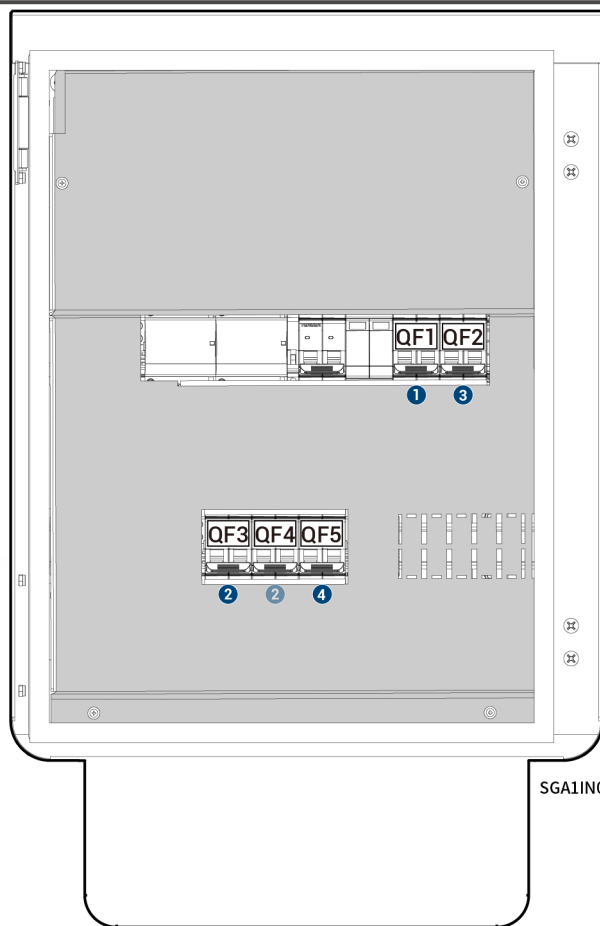
Measure the voltage of the switch QF1 on the power grid side and check that the measured value is within the allowable range. Ensure that the cable is connected properly and install inner panel.



## 5.8 Decorative Component Installation



## 6 Power On



### Tips

- Turn on the upstream AC switch.
- There is a risk of electric shock when the Gateway is not grounded.
- If the surge protective device is not turned on, the failure of the surge protective device can damage loads and Gateway.



### Caution

Do not turn on the miniature circuit breaker when it is not connected to its corresponding device.

- 1 Turn on the miniature circuit breaker QF1 (connecting to the power grid).
- 2 Turn on the miniature circuit breakers QF3 or QF4 (connecting to an inverter). Wait until inverter is powered on.
- 3 Turn on the miniature circuit breaker QF2 (connecting to a generator/smart load).
- 4 Turn on the miniature circuit breaker QF5 (connecting to a backup household load).



### Caution

After each wiring change, please perform a wiring check on the mobile app to ensure proper connection before proceeding with subsequent operations.

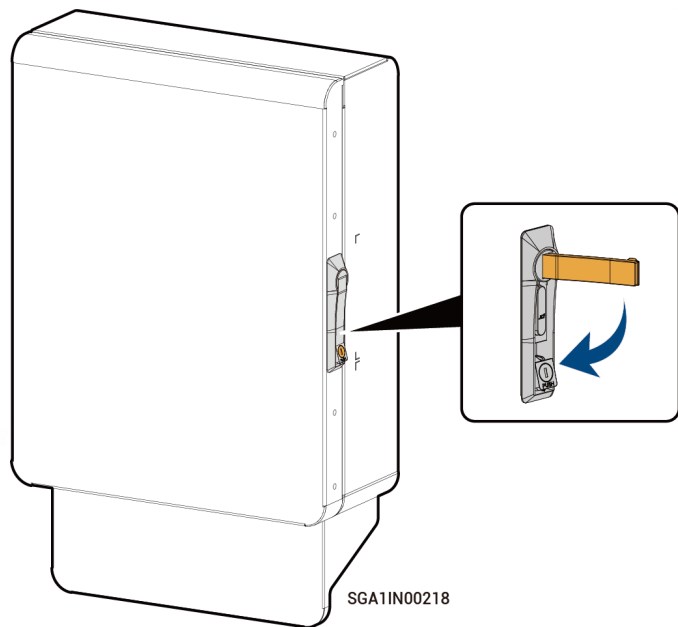


### Danger

In normal cases, the bypass switch QS1 is turned off.

## 7 Close the door

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Sigenergy Technology Co., Ltd.



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