Sigen Gateway (C180-9, C300-12, C300-B) Installation Guide

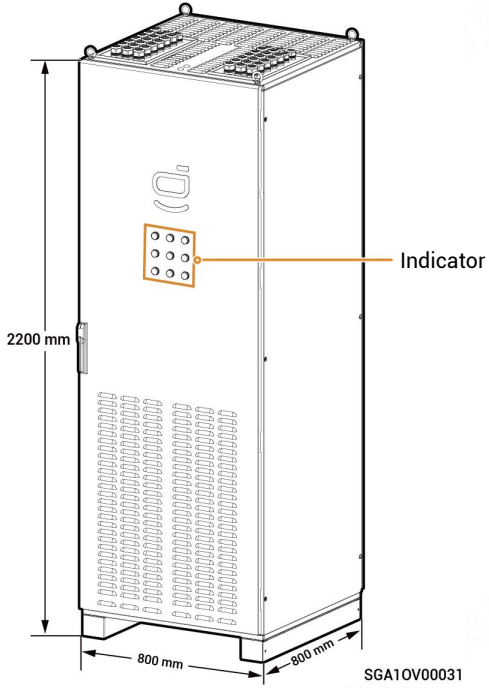
Version: 05
Release date: 2026-04-08

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 *User Manual*. Any equipment damage caused by improper operation will not be covered under warranty.**

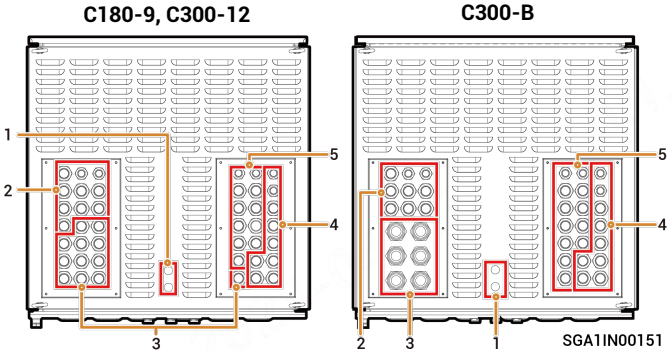
1 Introduction

1.1 Appearance and Dimensions



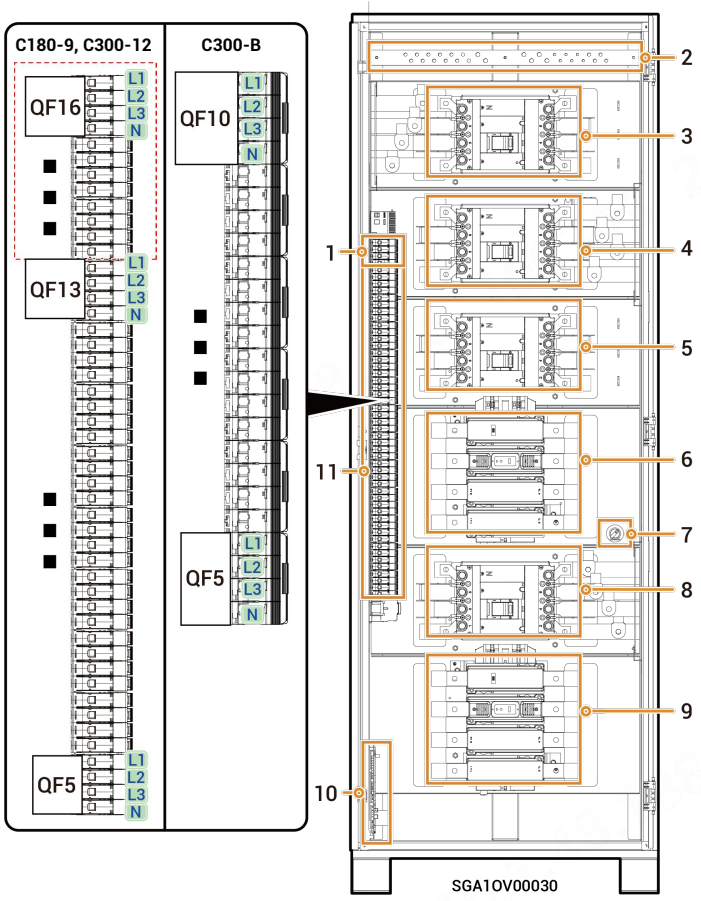
1.2 Port Description

Top view



No.	Description
1	Routing hole for signal cable
2	Routing hole for AC cable of the load
3	Routing hole for AC cable of the inverter
4	Routing hole for AC cable of the diesel generator
5	Routing hole for AC cable of the power grid

Interior view



No.	Label	Description
1	QF4	Surge arrester switch
2	-	Grounding busbar (connects to the PE cable)
3	QF3	Load switch (connects to the load)
4	QF1	Grid switch (connects to the power grid)
5	QS1	Bypass switch
6	KM1	Grid contactor
7	-	Indicator switch (controls the power supply to the indicator)
8	QF2	Diesel generator switch (connects to the diesel generator)
9	KM2	Diesel generator contactor
10	-	Communication terminal (connecting to FE, DI, DO communication cable)
11	• **C180-9:** QF5 to QF13 • **C300-12:** QF5 to QF16 • **C300-B:** QF5 to QF10	Miniature circuit breakers (connect to inverters)

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 and ensure the completeness of personal protective equipment and installation tools; replenish if necessary.
- Check and ensure the correctness of quantity and specifications of the installer-provided cables; re-prepare if necessary.
- Before installing the equipment, check whether the screws installed before delivery are secured. 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

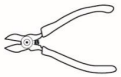

Insulating shoes

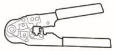

Safety vest

Installation Tools


Power drill


Vacuum cleaner


Wire cutter


Crimp tool


Crimping pliers

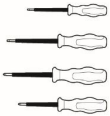

Wire stripper


Scissors


Cable ties


Heat shrinkable sleeve

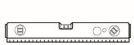

Heat gun


Insulated screwdriver set


Adjustable torque wrench for external hexagon bolts


Marker


Rubber mallet


Level


Tape measure


Stainless steel plastic-covered wire rope L>1300 mm × 4


Multimeter


Insulated sleeve set


Forklift (load capacity > 5000 kg)


Crane (load capacity > 500 kg)

Torque socket wrench


Cold terminal crimping pliers


Insulated L-Shaped Hex Key Set

Self-supplied Cables

Caution

- **The specifications of the Installer-provided cable must comply with the cable regulations and standards of the country/region standards.**
- **L1, L2, L3, N and PE should be connected to other equipment in sequence without mixing.**

<table>
<tr><th rowspan="2">No.</th><th colspan="2" rowspan="2">Cable name</th><th colspan="3">Recommended specification</th></tr>
<tr><th>Sigen Gateway C180-9</th><th>Sigen Gateway C300-12</th><th>Sigen Gateway C300-B</th></tr>
<tr><td rowspan="4">1</td><td rowspan="4">AC cable, PE cable</td><td>Connects to the power grid (L1/L2/L3/N/PE)</td><td rowspan="3">0.6 kV/1 kV cross-linked polyethylene (XPLE) power cable
• Cable OD: 39 mm
• Cross-sectional area of conductor: 95 mm² (L1/L2/L3/N), 50 mm² (PE)</td><td rowspan="3">0.6 kV/1 kV cross-linked polyethylene (XPLE) power cable
• Cable OD: 42.2 mm
• Cross-sectional area of conductor: 150 mm² (L1/L2/L3/N), 70 mm² (PE)</td><td rowspan="3">0.6 kV/1 kV cross-linked polyethylene (XPLE) power cable
• Cable OD: 42.2 mm
• Cross-sectional area of conductor: 150 mm² (L1/L2/L3/N), 70 mm² (PE)</td></tr>
<tr><td>Connects to the diesel generator (L1/L2/L3/N/PE)</td></tr>
<tr><td>Connects to the load (L1/L2/L3/N/PE)</td></tr>
<tr><td>Connects to the inverter (L1/L2/L3/N/PE)</td><td colspan="2">0.6 kV/1 kV cross-linked polyethylene (XPLE) power cable
• Cable OD: 20.6 mm
• Cross-sectional area of conductor: 16 mm²</td><td>0.6 kV/1 kV cross-linked polyethylene (XPLE) power cable
• Cable OD: 19-32 mm
• Cross-sectional area of conductor: 35 mm²</td></tr>
<tr><td>2</td><td colspan="2">Network cable</td><td colspan="3">Eight-core shielded twisted pair for outdoor use
Cross-sectional area of conductor: 0.13 mm² to 0.2 mm², cable OD: 4 mm to 7.5 mm
Cable length: ≤ 100 m[1]</td></tr>
<tr><td>3</td><td colspan="2">DI/DO signal cable</td><td colspan="3">Two-core shielded cable for outdoor use
Cross-sectional area of conductor: 0.2 mm² to 1.5 mm²; cable OD: 2 mm to 4 mm</td></tr>
</table>

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

3 Site Requirements

Tips

- **The equipment can be installed indoors. Install the equipment in strict accordance with installation instructions given in this section and local laws and regulations.**
- **Before installing the equipment, be sure to read the following installation requirements carefully. The company will not bear any responsibility if the equipment malfunctions, is damaged, or even causes a personal safety accident during operation due to failure to operate as required.**
- **During actual installation, the selection of the mounting location should meet local fire protection, environmental protection, and other regulations, as well as local low-voltage power distribution room technical specifications. The specific mounting location planning shall be subject to the installer or EPC (Engineering，Procurement，Construction).**

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 ≤ 28 psu), the mounting distance of the device from the coastline can be appropriately relaxed to ≥ 200 m.
- If the outer surface of the device is damaged, please repaint the device in time.

Installation Location

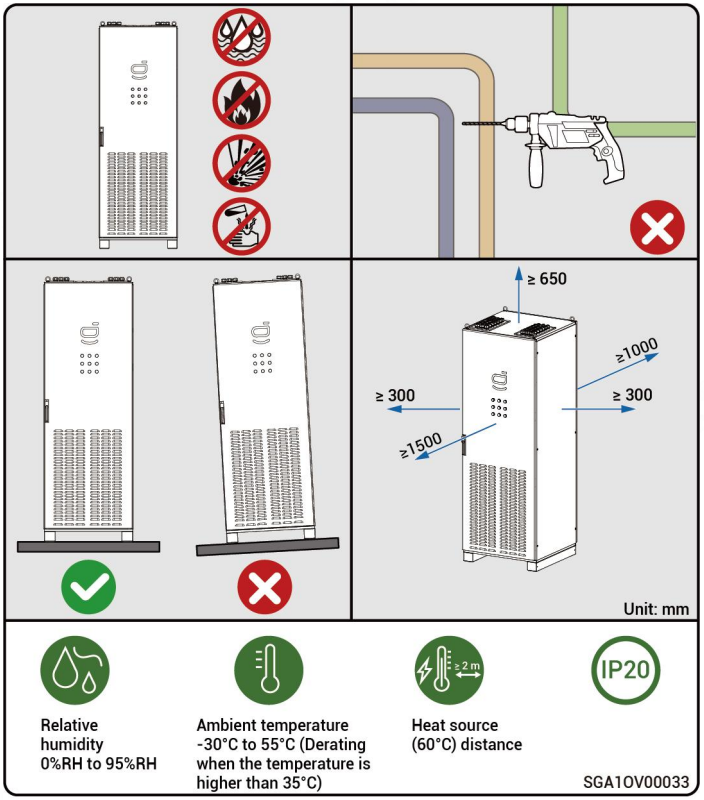
- Do not tilt the equipment or place it upside down. Ensure that the equipment is horizontally installed.
- Do not install the equipment in areas easily accessible to children.
- Do not install the equipment in a place with fire hazards or is prone to moisturizing.
- The equipment produces sound when 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° 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 and should be free of adverse geological conditions including but not limited to rubber soil and soft soil. Solid brick-concrete structures and 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 should be inside the installation base to avoid potential drilling hazards during equipment installation.

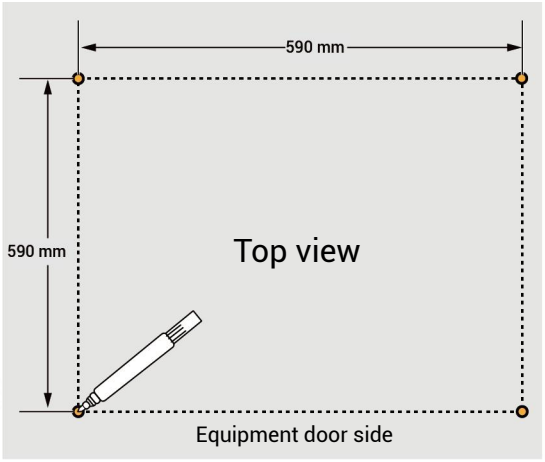
Tips

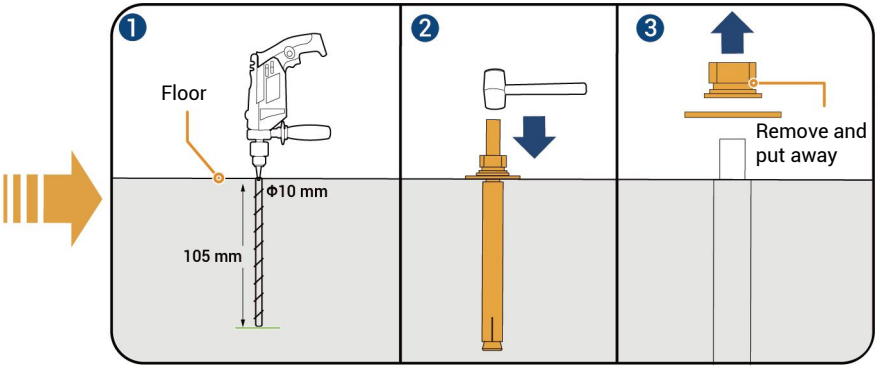
To ensure optimal performance of the device, it is suggested that the installation distance between the device and surrounding obstacles be planned with reference to the diagram. If the installation site is well-ventilated, the optimal solution may be deployed based on actual conditions.



4 Installation

1 **Determine the mounting point.**





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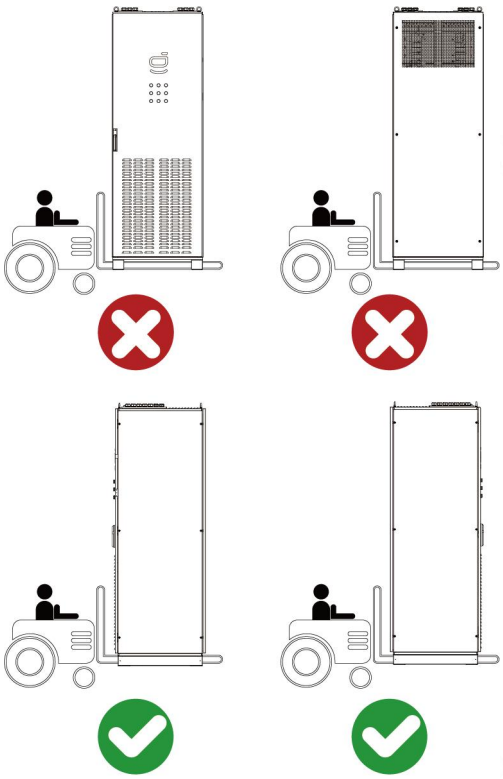
2 Move the equipment to the designated location.

Using a forklift



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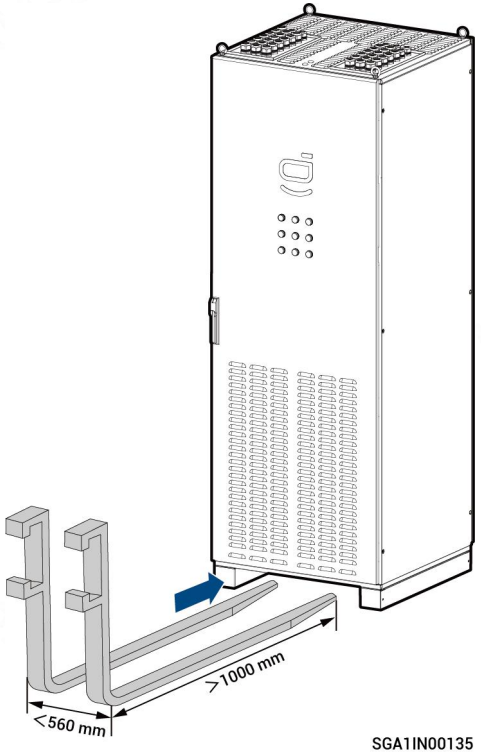
The forklift can carry a load higher than 500 kg.



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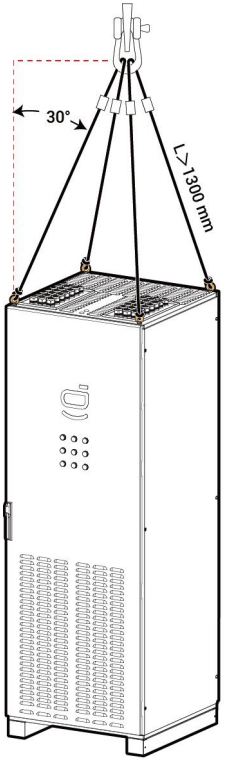
Using a hoist

The hoist has a lifting capacity of higher than 500 kg.



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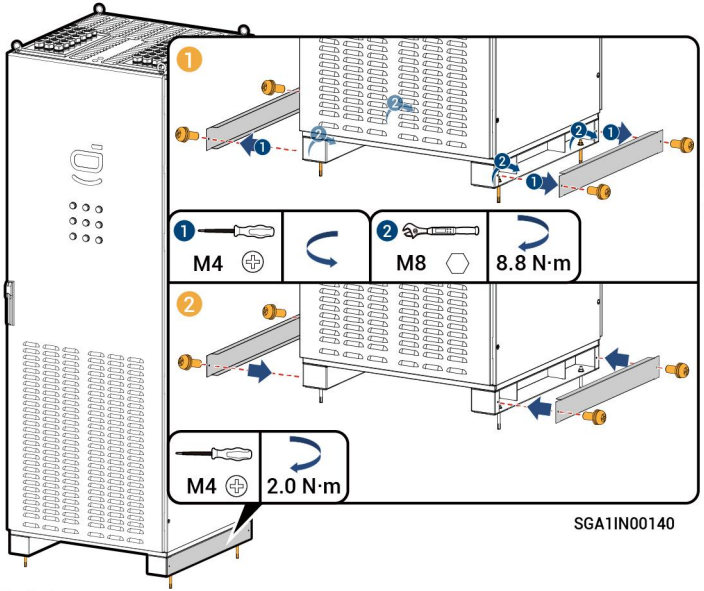
3 **Fix the equipment.**



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5 Cable Connection

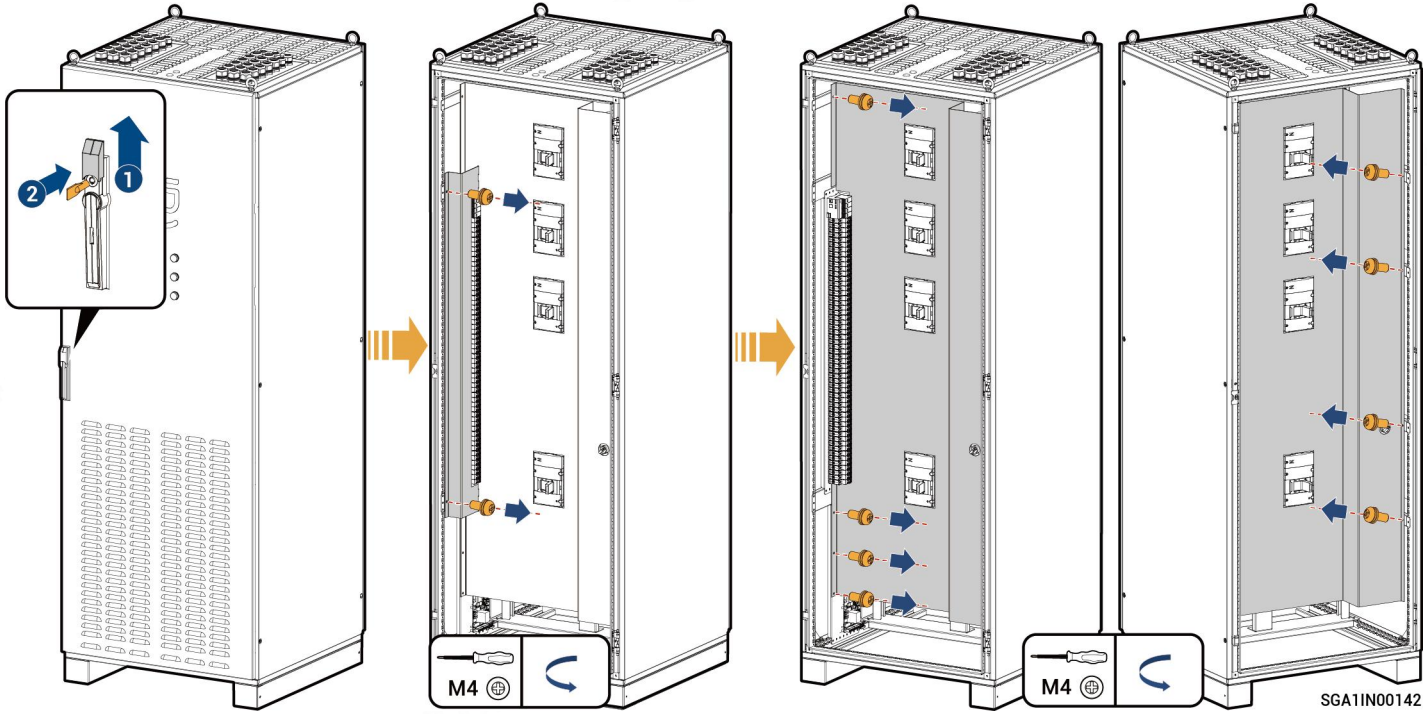
Danger

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 diesel generator power switches.

Caution

- **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.**
- **When performing the same operation on Sigen Gateway C180-9, C300-12 and C300-B, Sigen Gateway C300-12 is taken as an example in all cases.**

5.1 Opening the Cabinet Door

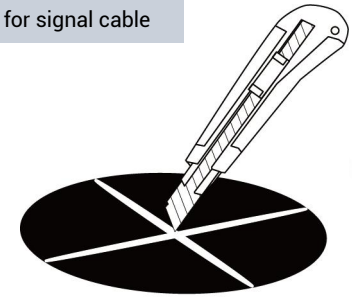


5.2 Requirements for Routing Holes

Caution

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

Routing hole for signal cable



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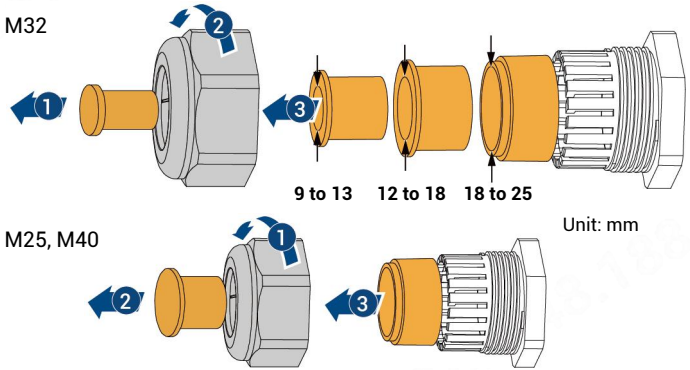
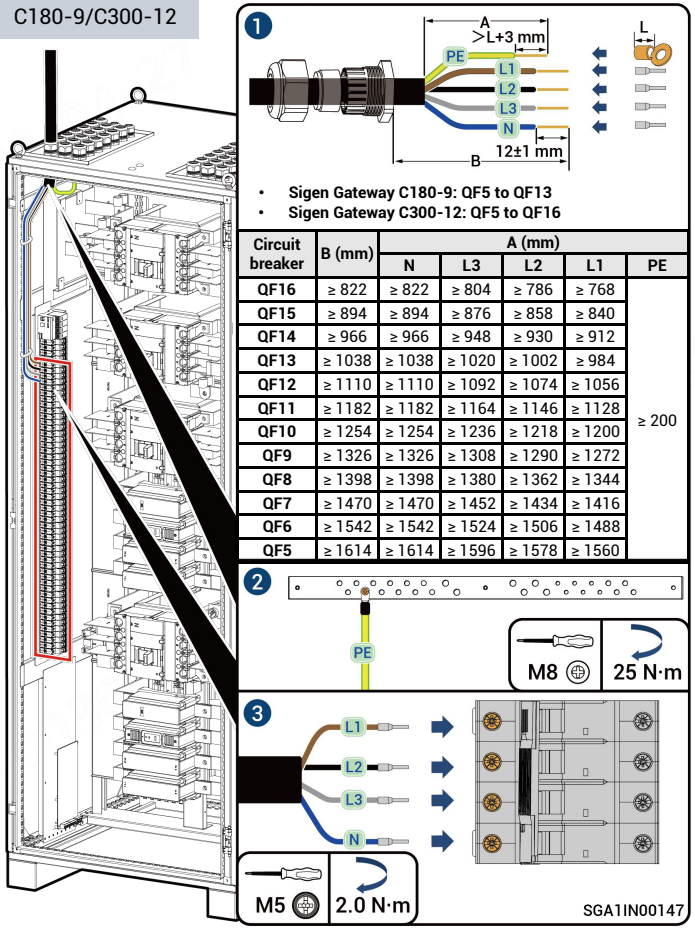
Routing hole for AC cable, PE cable



5.3 Connecting Inverters

C180-9/C300-12

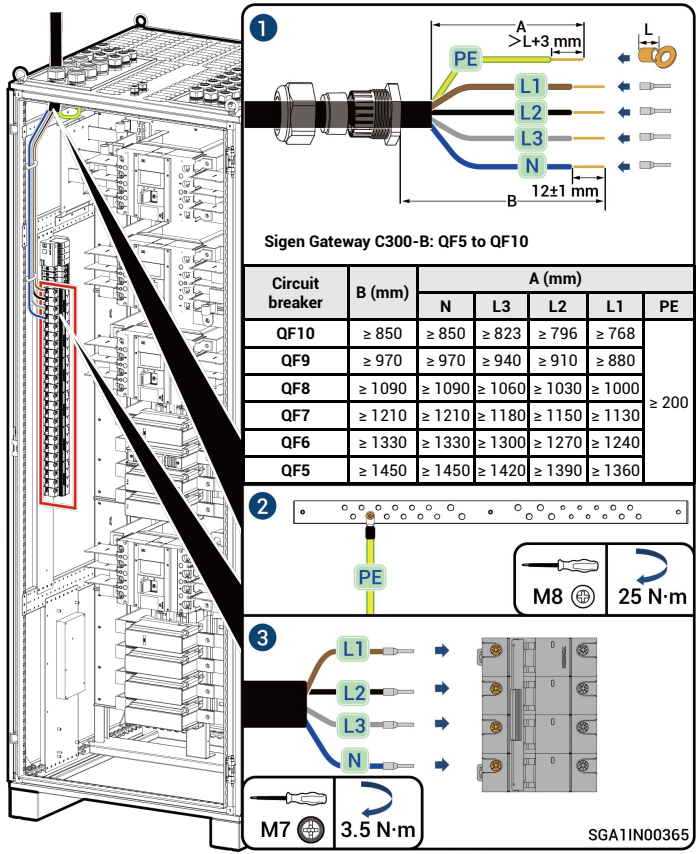


- Sigen Gateway C180-9: QF5 to QF13
- Sigen Gateway C300-12: QF5 to QF16

Circuit breaker	B (mm)	A (mm)				
		N	L3	L2	L1	PE
QF16	≥ 822	≥ 822	≥ 804	≥ 786	≥ 768	≥ 200
QF15	≥ 894	≥ 894	≥ 876	≥ 858	≥ 840	
QF14	≥ 966	≥ 966	≥ 948	≥ 930	≥ 912	
QF13	≥ 1038	≥ 1038	≥ 1020	≥ 1002	≥ 984	
QF12	≥ 1110	≥ 1110	≥ 1092	≥ 1074	≥ 1056	
QF11	≥ 1182	≥ 1182	≥ 1164	≥ 1146	≥ 1128	
QF10	≥ 1254	≥ 1254	≥ 1236	≥ 1218	≥ 1200	
QF9	≥ 1326	≥ 1326	≥ 1308	≥ 1290	≥ 1272	
QF8	≥ 1398	≥ 1398	≥ 1380	≥ 1362	≥ 1344	
QF7	≥ 1470	≥ 1470	≥ 1452	≥ 1434	≥ 1416	
QF6	≥ 1542	≥ 1542	≥ 1524	≥ 1506	≥ 1488	
QF5	≥ 1614	≥ 1614	≥ 1596	≥ 1578	≥ 1560	

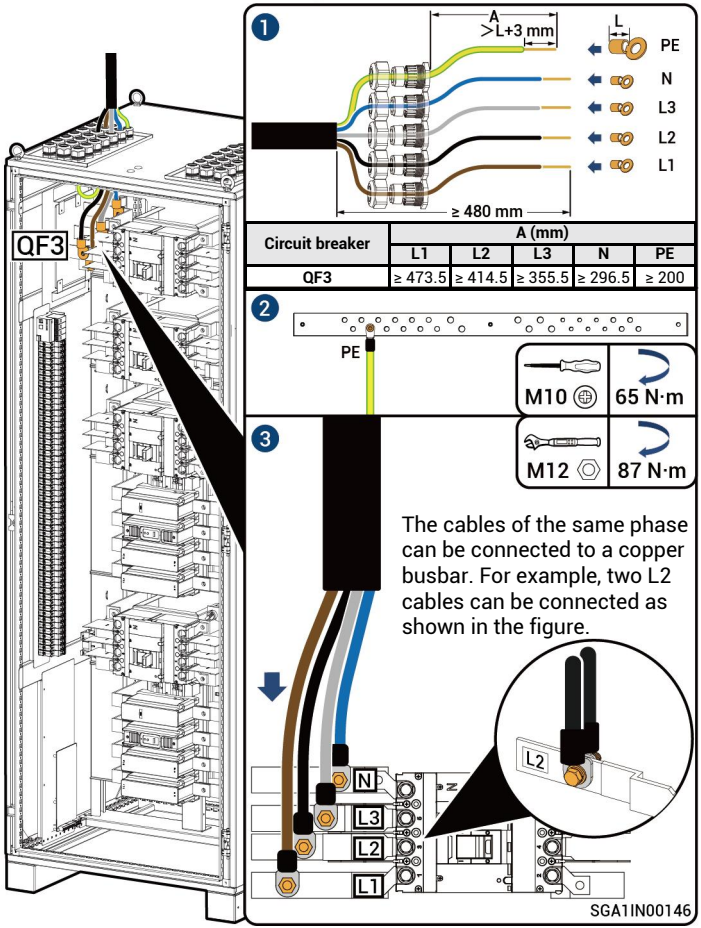
5.4 Connecting the Load

C300-B



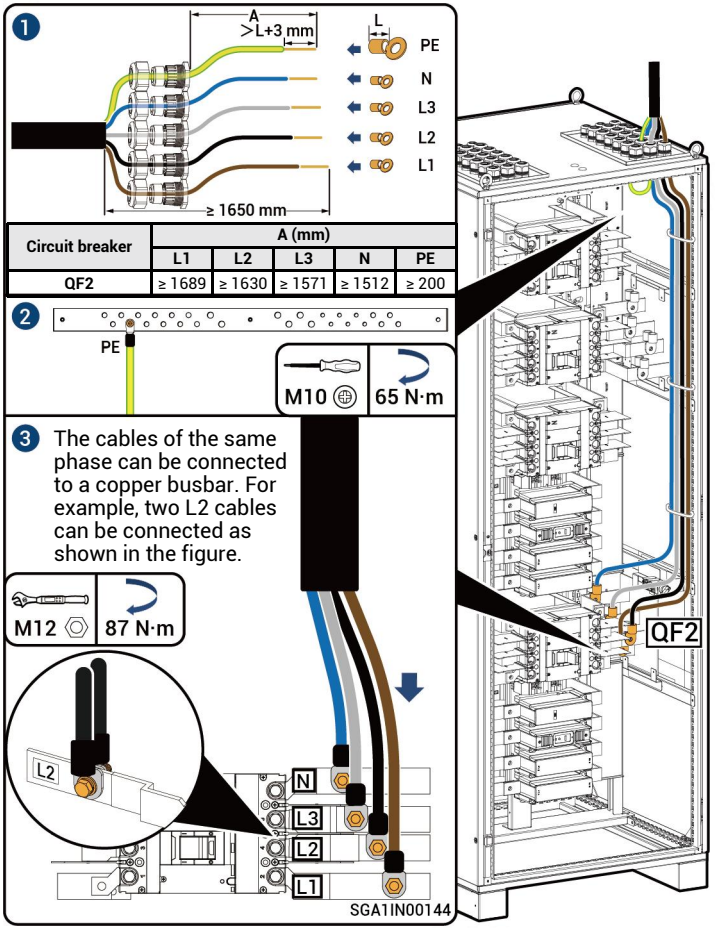
Sigen Gateway C300-B: QF5 to QF10

Circuit breaker	B (mm)	A (mm)				
		N	L3	L2	L1	PE
QF10	≥ 850	≥ 850	≥ 823	≥ 796	≥ 768	≥ 200
QF9	≥ 970	≥ 970	≥ 940	≥ 910	≥ 880	
QF8	≥ 1090	≥ 1090	≥ 1060	≥ 1030	≥ 1000	
QF7	≥ 1210	≥ 1210	≥ 1180	≥ 1150	≥ 1130	
QF6	≥ 1330	≥ 1330	≥ 1300	≥ 1270	≥ 1240	
QF5	≥ 1450	≥ 1450	≥ 1420	≥ 1390	≥ 1360	



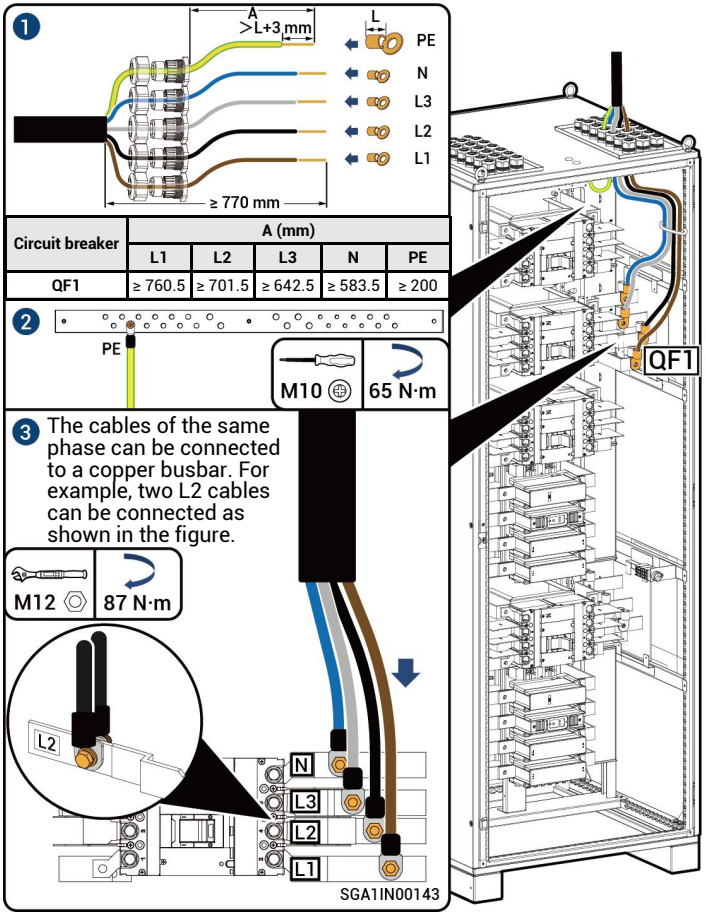
Circuit breaker	A (mm)				
	L1	L2	L3	N	PE
QF3	≥ 473.5	≥ 414.5	≥ 355.5	≥ 296.5	≥ 200

5.5 Connecting the Diesel Generator



Circuit breaker	A (mm)				
	L1	L2	L3	N	PE
QF2	≥ 1689	≥ 1630	≥ 1571	≥ 1512	≥ 200

5.6 Connecting the Power Grid

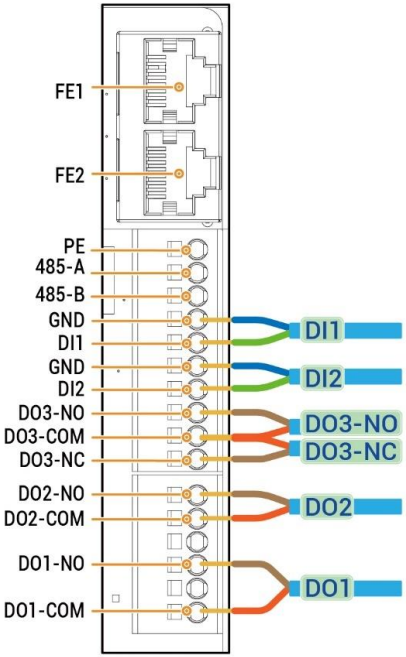


Circuit breaker	A (mm)				
	L1	L2	L3	N	PE
QF1	≥ 760.5	≥ 701.5	≥ 642.5	≥ 583.5	≥ 200

5.7 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.**

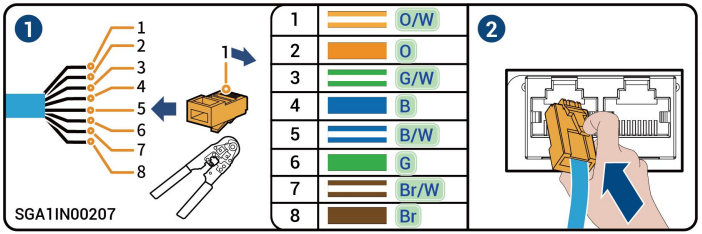


Label	Definition		Description
FE (Network cable interface)	FE1	Fast Ethernet 1	Used to connect an inverter.
	FE2	Fast Ethernet 2	Used to connect an Sigen EV AC Charger, inverter, router and so on.
(Reserved)485 (RS485 interface)	PE	PE signal shielding ground	Used to connect the equipment over RS485.
	485-A	RS485 signal _A+	
	485-B	RS485 signal _B-	
DI1 (Digital input 1)	GND	Signal GND	• Universal digital input interfaces. • DI1 is used to connect the feedback contact of the bypass switch.
	DI1	Digital input 1	
DI2 (Digital input 1)	GND	Signal GND	• 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. • Low impedance input (short circuit on ATS relay) indicates the power grid. High impedance input (open circuit on the ATS relay) indicates the Generator.
	DI2	Digital input 2	
DO3/GEN (Dry contact 3/Generator startup)	DO3-NO	Digital output 3 - Normal Open	• DO3 interface can be used for controlling generator start in two-wire start mode. • DO3 have a contact capacity of 30 Vd.c./1 A. • NO/COM is normally open contact and NC/COM is normally close contact.
	DO3-COM	Digital output 3 - Common	
	DO3-NC	Digital output 3 - Normal Close	
DO2 (Dry contact 2)	DO2-NO	Digital output 2 - Normal Open	• DO2 is used for the output of the contactor status feedback signal for the Generator. • DO2 have a contact capacity of 30 Vd.c./1 A.
	DO2-COM	Digital output 2 - Common	
DO1 (Dry contact 1)	-	-	• DO1 is used for the output of the contactor status feedback signal for the grid. • DO1 has a contact capacity of 250 Va.c./1 A or 30 Vd.c./1 A.
	DO1-NO	Digital output 1 - Normal Open	
	-	-	
	DO1-COM	Digital output 1 - Common	

5.7.1 Connecting RJ45 Network Cable

Tips

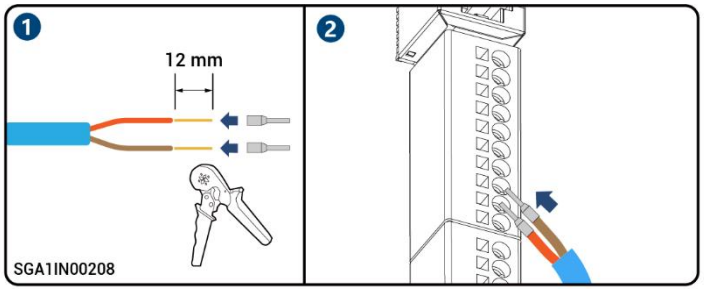
Two network ports, one of which is connected to the inverter, and the other is connected to other devices. (for example, Sigen EV AC Charger, inverter, and router)



5.7.2 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.

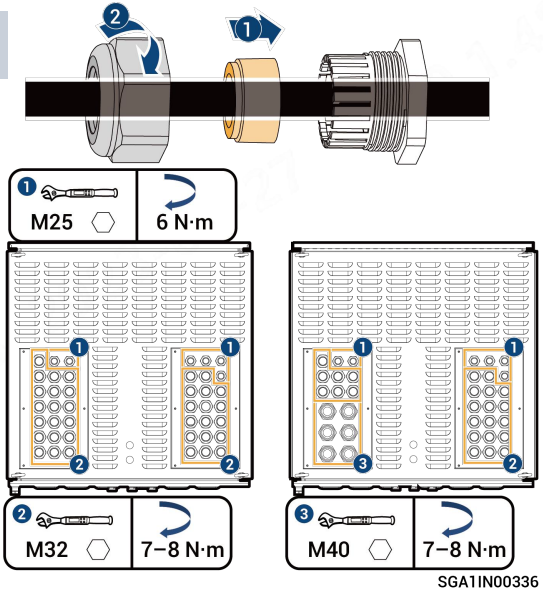


5.8 Post-installation Check

Check the following items against the provided table, tighten each routing hole.

No.	Check Item
1	The equipment is securely installed.
2	All screws or terminal blocks on the device have been installed in place and are not loose.
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.

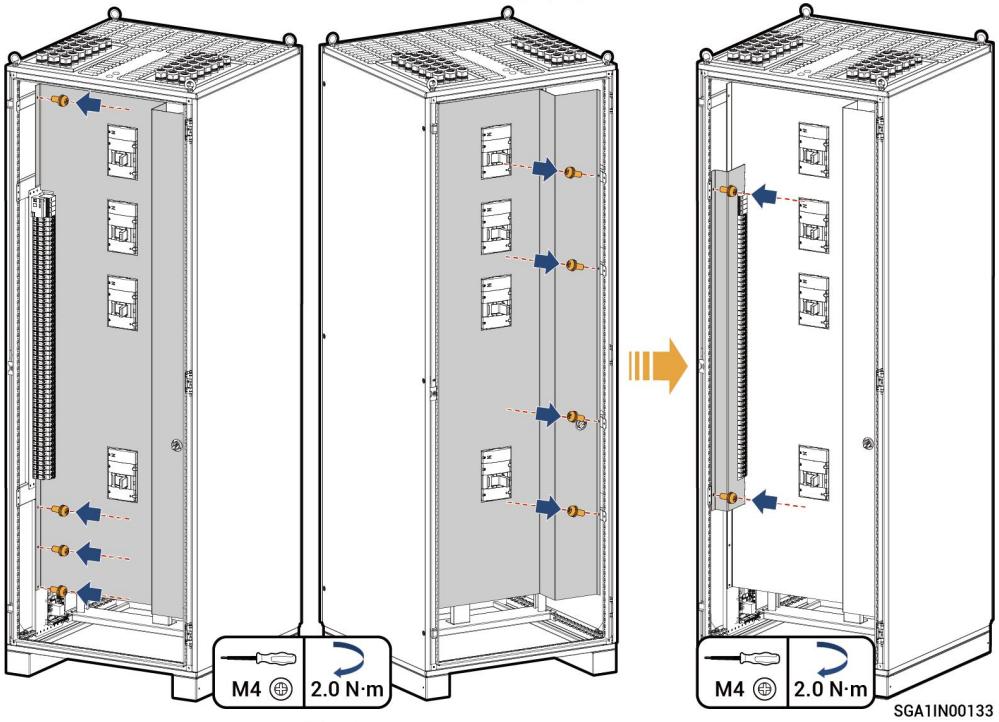
Tighten each routing hole



5.9 Installing the protective cover

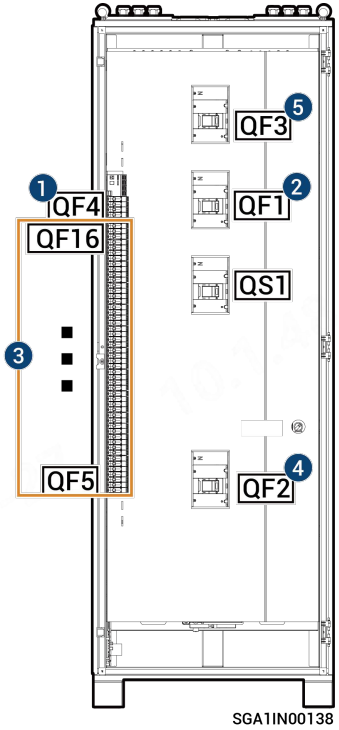
Caution

Measure the voltage of the switch QF1 on the power grid side and check that the measured value is within the locally permissible voltage range. Ensure that the cables are connected properly, then install the protective cover panel..



6 Power-on

Steps



SGA1IN00138

Tips

- Turn on the front switch of the equipment.
- There is a risk of electric shock if the Gateway is left ungrounded.
- If the surge protective device is not switched on, failure of surge protection may lead to damage to household loads and Gateway.

Caution

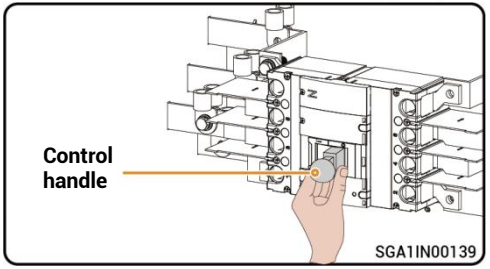
Do not turn on the miniature circuit breaker when it is not connected to its corresponding device.

Danger

In normal cases, the bypass switch QS1 should be kept turned off.

Tips

You can operate circuit breakers with the control handle.



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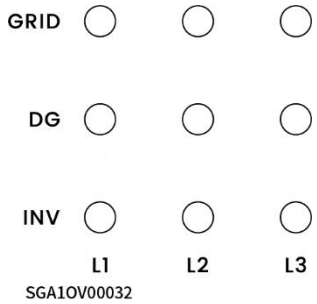
1. Turn on QF4 (surge arrester switch).
2. Turn on QF1 (connects to the power grid).
3. Turn on QF5 to QF13 or QF5 to QF16 (connect to inverters).
   - Sigen Gateway C180-9： QF5 to QF13
   - Sigen Gateway C300-12： QF5 to QF16
   - Sigen Gateway C300-B： QF5 to QF10

   Energize the inverters.
4. Turn on QF2 (connects to the diesel generator).
5. Turn on QF3 (connects to the load).

Indicators

Tips

Check that the light switch is in the ON position before you observe the indicator status.



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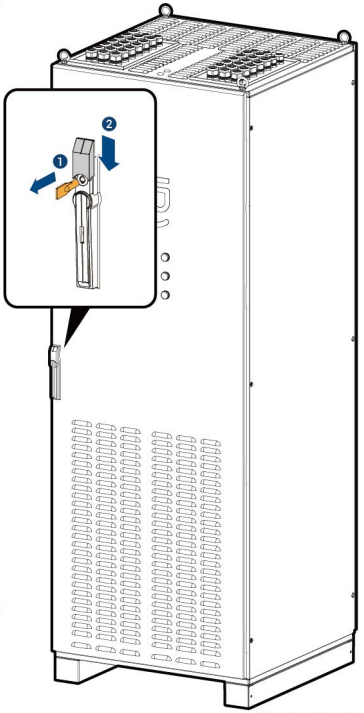
The corresponding indicator lights up when the circuit breaker is powered on.

- GRID: Power grid
- DG: Diesel generator
- INV: Inverter

Tips

The INV indicator lights up if the inverter is turned off and the load is powered from the grid or a diesel generator.

7 Closing the Cabinet Door



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Sigenergy Technology Co., Ltd.

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