

# Sigen Gateway C120-6 Installation Guide

Version: 01  
Release date: 2024-07-12

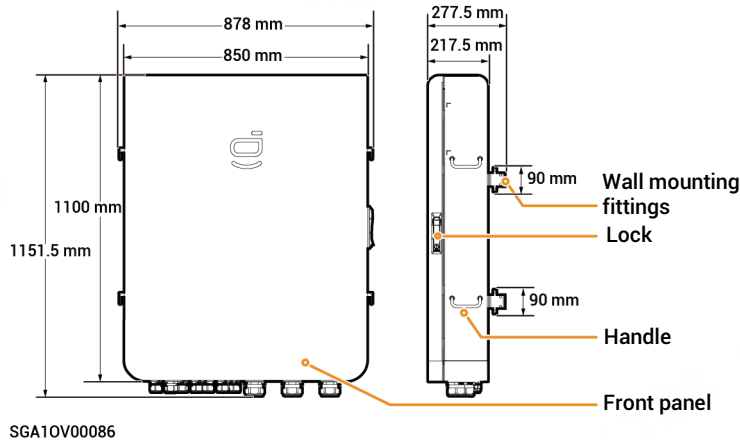


## ⚠ Caution

- 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 Product Description

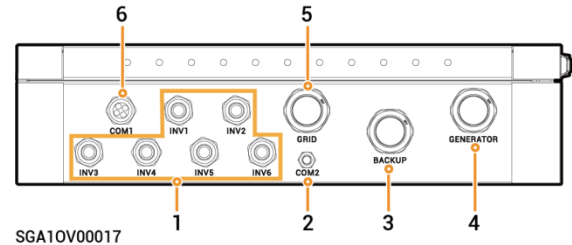
### 1.1 Appearance and Dimensions



SGA10V00086

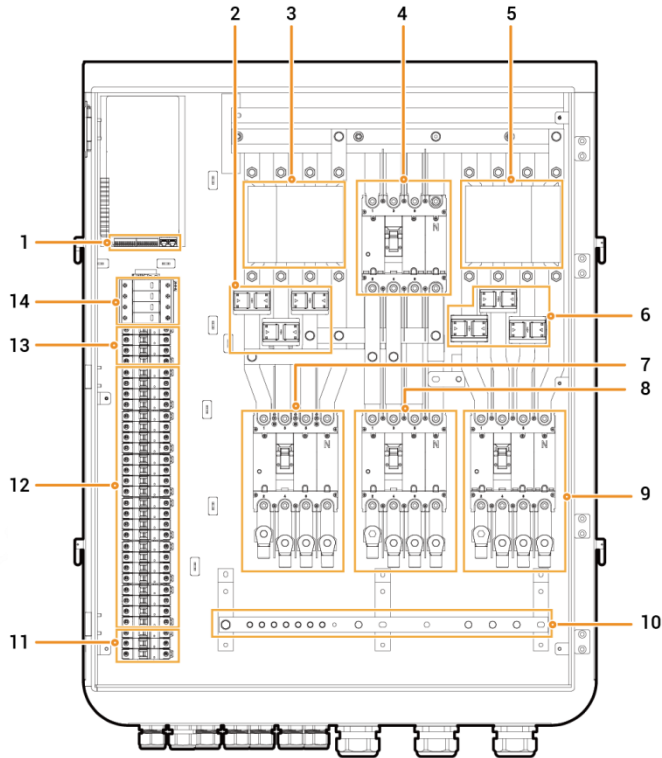
### 1.2 Port Description

Bottom view



| No. | Name   | Marking      |
|-----|--|--------------|
| 1   | Inverter routing hole                                | INV1 to INV6 |
| 2   | (Reserved) Routing hole for communication cable      | COM2         |
| 3   | Routing hole for backup loads                        | BACKUP       |
| 4   | Routing hole for diesel generator                    | GENERATOR    |
| 5   | Routing hole for power grid                          | GRID         |
| 6   | Routing hole for FE, DI, and DO communication cables | COM1         |

## Interior view of Siggen Gateway C120-6 (Gateway for short)



SGA1IN00087

| No. | Name   |
|-----|--|
| 1   | FE, DI, and DO interfaces  |
| 2   | Grid current transformer   |
| 3   | Grid contactor KM1   |
| 4   | Bypass switch QS1  |
| 5   | Diesel generator contactor KM2                                       |
| 6   | Diesel generator current transformer                                 |
| 7   | Molded case circuit breaker QF1 (connecting to the power grid)       |
| 8   | Molded case circuit breaker QF3 (connecting to the backup load)      |
| 9   | Molded case circuit breaker QF2 (connecting to the diesel generator) |
| 10  | Grounding copper busbar  |
| 11  | (Reserved) molded case circuit breaker QF1                           |
| 12  | Molded case circuit breakers QF5 to QF10 (connecting to inverters)   |
| 13  | Surge protective device switch QF4                                   |
| 14  | Surge protective device FC1  |

## 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.

### Safety Devices



Safety hat



Goggles



Dust mask



Protective gloves

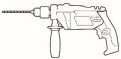


Insulating gloves



Insulating shoes

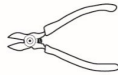
### Installation Tools



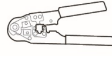
Power drill



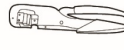
Vacuum cleaner



Wire cutter



Crimp tool



Crimping pliers



Wire stripper



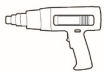
Scissors



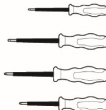
Cable ties



Heat shrinkable sleeve



Heat gun



Insulated screwdriver set



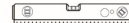
Insulated sleeve set



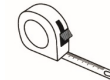
Torque socket wrench



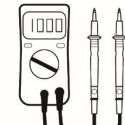
Marker



Level



Tape measure




Multimeter

**Caution**

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

**Self-supplied Cables**

| No. | Cable name         |                                    | Recommended specification  |
|-----|--------------------|------------------------------------|--|
| 1   | AC cable           | Used to connect an inverter        | 0.6 kV/1 kV five-core copper cable for outdoor use (L1, L2, L3, N, PE)<br>Cross-sectional area of conductor: 16 mm <sup>2</sup> ; cable OD: 21 mm  |
| 2   |                    | Used to connect a backup load      | 0.6 kV/1 kV five-core copper cable for outdoor use (L1, L2, L3, N, PE)<br>Cross-sectional area of conductor: 70 mm <sup>2</sup> to 95 mm <sup>2</sup> ; cable OD: 36 mm to 43 mm<br>OT terminal: M12         |
| 3   |                    | Used to connect to the power grid  |   |
| 4   |                    | Used to connect a diesel generator |  |
| 5   | RJ45 network cable |                                    | Eight-core shielded twisted pair for outdoor use<br>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<br>Single cable length: ≤ 100 m <sup>[1]</sup> |
| 6   | DI/DO signal cable |                                    | Two-core shielded cable for outdoor use<br>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  |

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 Requirements

### Tips

- The warranty applies when the equipment has been installed properly for its intended use and in accordance with the operating instructions.
- During actual installation, the selection of installation location should also comply with local regulations such as fire safety and environmental protection. The specific installation location planning should be based on the installer or EPC (Engineering, Procurement, Construction).

#### Installation Environment

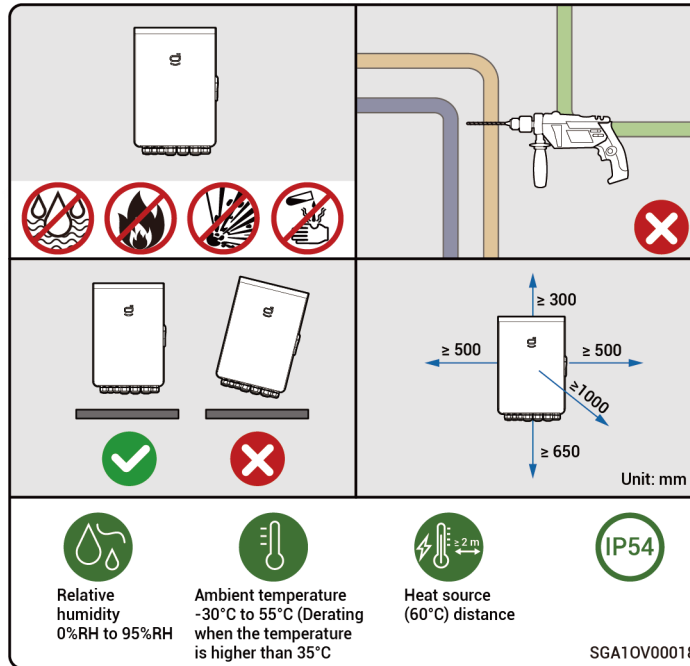
- Do not install the equipment in a smoky, flammable, or explosive environment.
- Do not install the equipment in an environment with conductive metal dust or magnetic dust.
- Do not install the equipment in an environment that is prone to mold and fungi.
- Avoid exposing the equipment to direct sunlight, 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.
- 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).

#### Installation Location

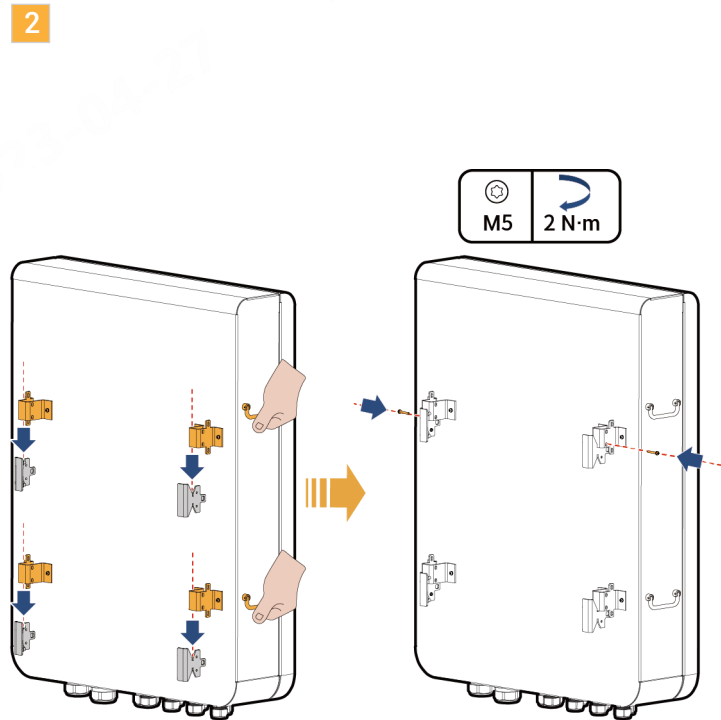
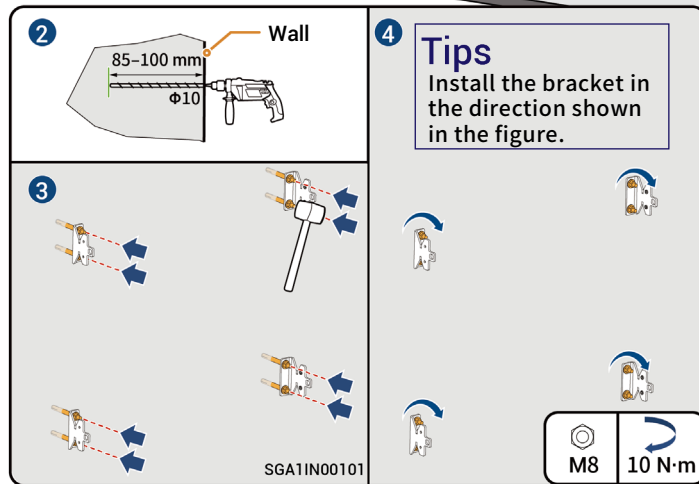
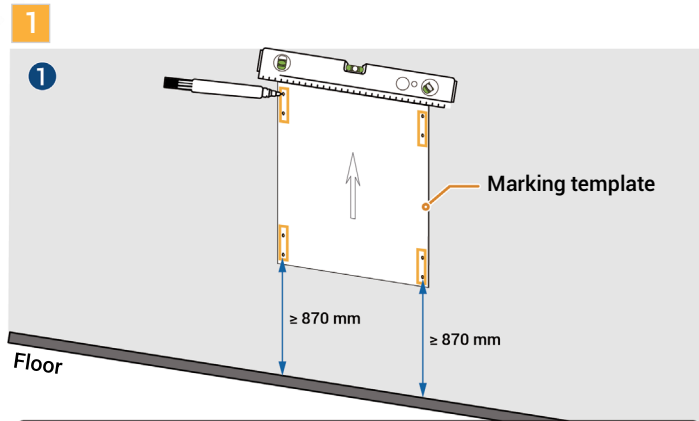
- Do not tilt the equipment or place it upside down. Ensure that the equipment is horizontally installed.
- Do not install the equipment in a place with fire hazards or is prone to moisturizing.
- Do not install the equipment in a sealed, poorly ventilated location without fire protection measures and difficult access for firefighters.
- Do not install the equipment under water sources, including but not limited to water pipes and air conditioner outlet windows, where condensate or water leakage may occur. Otherwise, liquid may enter the equipment and cause short circuit.
- Do not install the equipment in mobile scenarios such as recreational vehicles, cruise ships, and trains.
- The equipment is hot when it is running. 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 running. Otherwise, the equipment will be derated.
- The equipment generates heat when it is running. Do not install the equipment in areas easily accessible to heat dissipation surfaces.
- You are advised to install the equipment in a location where you can easily access, install, operate, maintain it, and view the indicator status.
- The on-grid/off-grid switchover makes noise. It is recommended that the equipment be installed near the AC distribution box, away from the rest area.

## 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.



## 4 Installation





## 5 Cable Connection

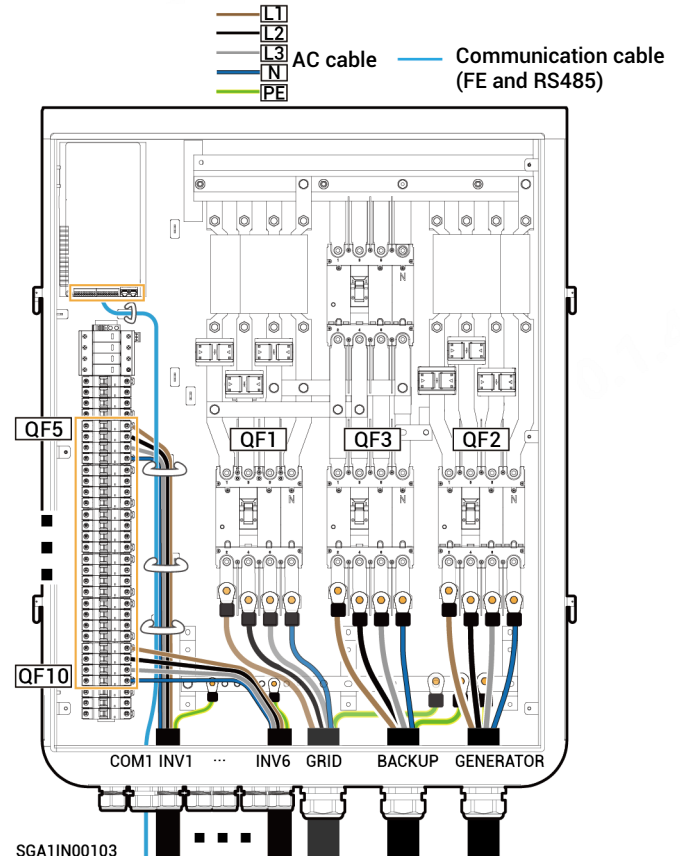
### 5.1 Recommended Routing

#### 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.

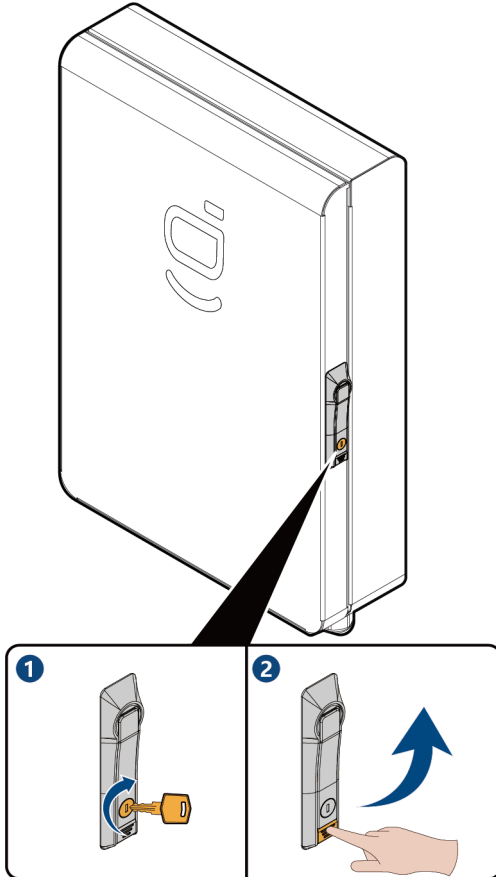
#### Caution

- 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.



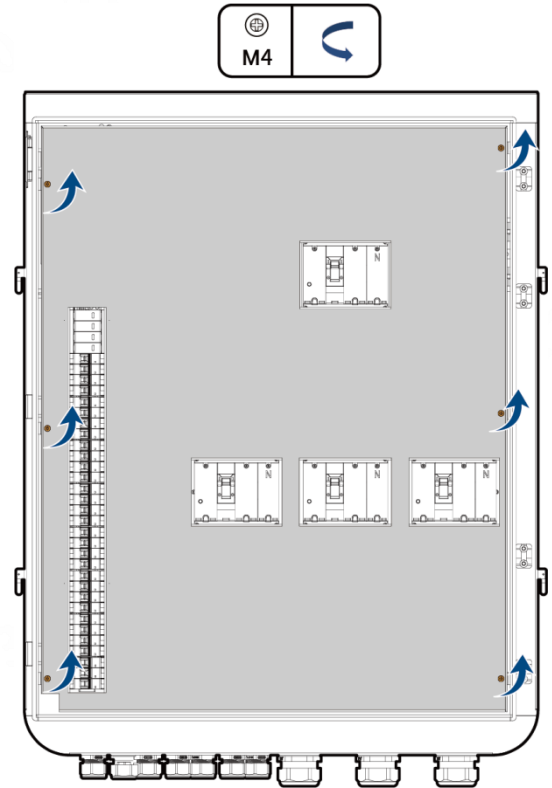
## 5.2 Opening Equipment Door

1



SGA1IN00011

2



SEA1IN00104

### 5.3 Connecting Power Grid/Backup Load/Diesel Generator

**1**

**2**

**3**

Routing hole

| Routing hole |           | L1    | L2 | L3 | N     | PE |
|--------------|-----------|-------|----|----|-------|----|
| A (mm)       | GRID      | ≥ 270 |    |    | ≥ 200 |    |
|              | BACKUP    | ≥ 270 |    |    | ≥ 200 |    |
|              | GENERATOR | ≥ 270 |    |    | ≥ 200 |    |

16–120 mm<sup>2</sup>

SGA1IN00105

### 5.4 Connecting Inverters

**1**

**2**

**3**

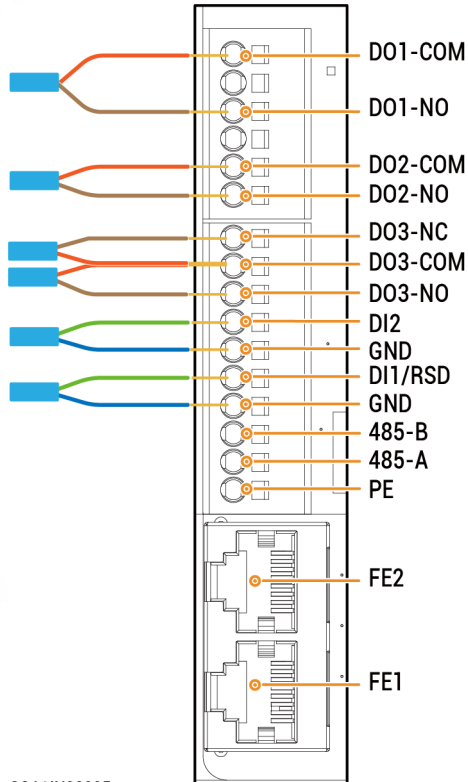
| D (mm) | Routing hole--QFX | B (mm) | A (mm) |    |    |       |    |
|--------|-------------------|--------|--------|----|----|-------|----|
|        |                   |        | L1     | L2 | L3 | N     | PE |
| 9–13   | INV1--QF5         | ≥ 900  | ≥ 850  |    |    | ≥ 300 |    |
|        | INV2--QF6         | ≥ 960  | ≥ 910  |    |    | ≥ 270 |    |
| 12–18  | INV3--QF7         | ≥ 710  | ≥ 660  |    |    | ≥ 380 |    |
|        | INV4--QF8         | ≥ 610  | ≥ 560  |    |    | ≥ 290 |    |
| 18–25  | INV5--QF9         | ≥ 610  | ≥ 560  |    |    | ≥ 230 |    |
|        | INV6--QF10        | ≥ 640  | ≥ 590  |    |    | ≥ 170 |    |

M5 2.5 N·m

M5 5 N·m

SGA1IN00106

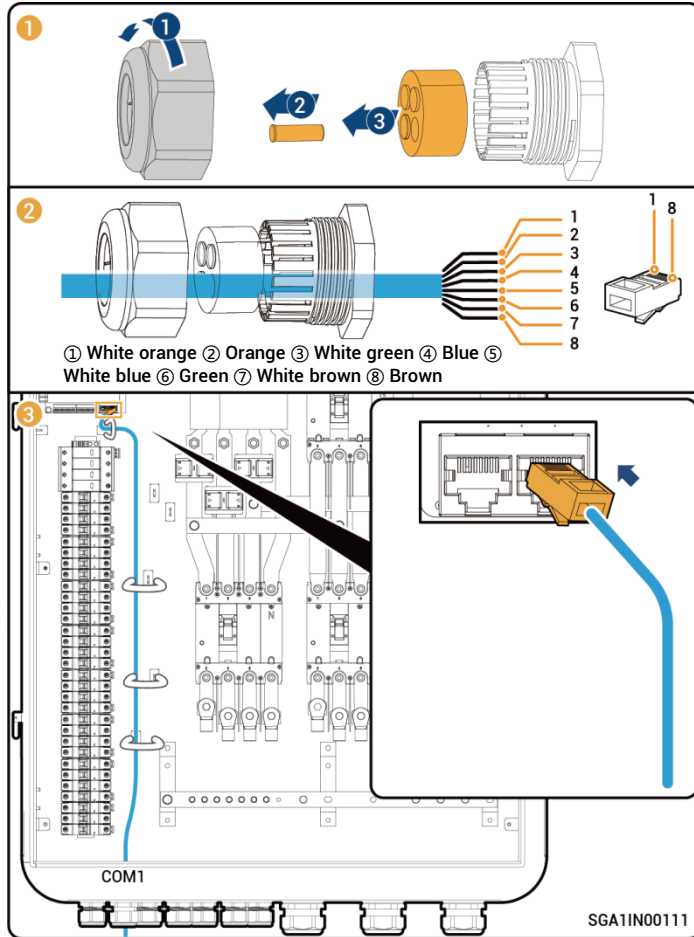
## 5.5 Connecting Communication Cable



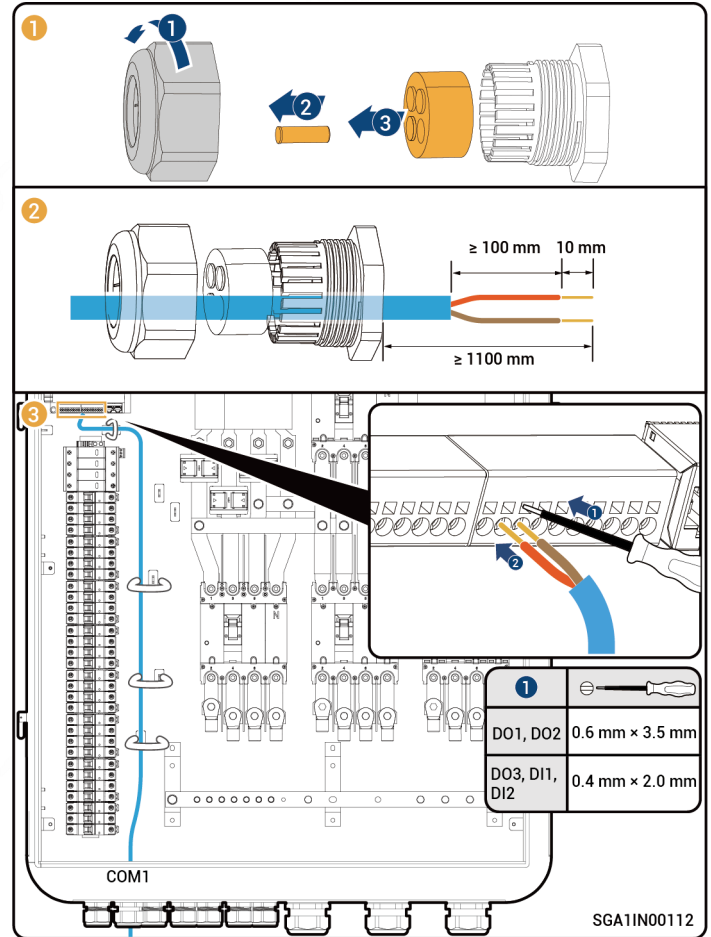
SGA1IN00095

| Interface Description                | Definition                | Function                         | Description  |  |
|--------------------------------------|---------------------------|----------------------------------|--|--|
| FE<br>(network cable interface)      | FE1                       | Network cable interface 1        | Used to connect an inverter.                                 |  |
|                                      | FE2                       | Network cable interface 2        | Used to connect Sigen EV AC Charger, inverters, and routers. |  |
| (Reserved) 485<br>(RS-485 interface) | PE                        | Protective earthing              | Used to connect the equipment over RS-485.                   |  |
|                                      | 485-A                     | RS485 signal 2_A+                |  |  |
|                                      | 485-B                     | RS485 signal 2_B-                |  |  |
| D1<br>(Input signal 1)               | GND                       | Signal GND                       | Universal digital signal input.                              |  |
|                                      | DI1 (RSD)                 | Digital input 1 (Rapid shutdown) |  |  |
| D2<br>(Input signal 2)               | GND                       | Signal GND                       |  |  |
|                                      | DI2                       | Input signal 2                   |  |  |
| DO3<br>(Dry contact 3)               | -                         | DO3-NO                           | Output signal 3—normally open                                | <ul style="list-style-type: none"> <li>• Universal digital output interface.</li> <li>• DO1 has a contact capacity of 250 Va.c./1 A or 30 Vd.c./1 A.</li> <li>• DO2 and 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> <li>• The DO3-COM and DO3-NC interface can be used for controlling generator start in two-wire start mode.</li> </ul> |
|                                      | GEN<br>(Diesel generator) | DO3-COM                          | Output signal 3—common point                                 |  |
|                                      |                           | DO3-NC                           | Output signal 3—normally close                               |  |
| (Reserved) DO2<br>(Dry contact 2)    | DO2-NO                    | Output signal 2—normally open    |  |  |
|                                      | DO2-COM                   | Output signal 2—common point     |  |  |
| (Reserved) DO1<br>(Dry contact 1)    | -                         | -                                |  |  |
|                                      | DO1-NO                    | Output signal 1—normally open    |  |  |
|                                      | -                         | -                                |  |  |
|                                      | DO1-COM                   | Output signal 1—common point     |  |  |

## 5.5.1 Connecting RJ45 Network Cable



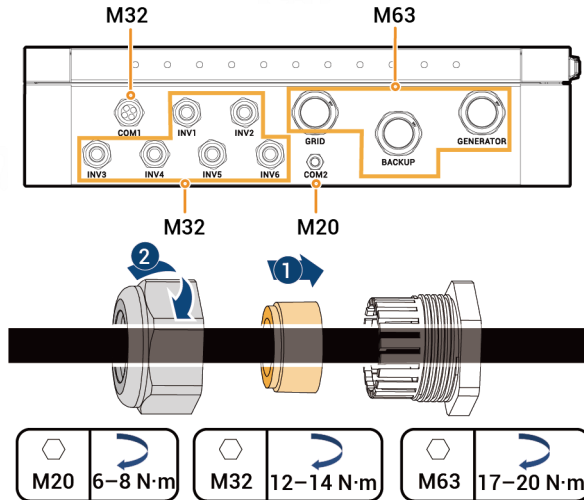
## 5.5.2 Connecting DI/DO Cable



## 5.6 Installing Protective Covers

Check the following items against the provided table, tighten routing holes, and install the protective covers.

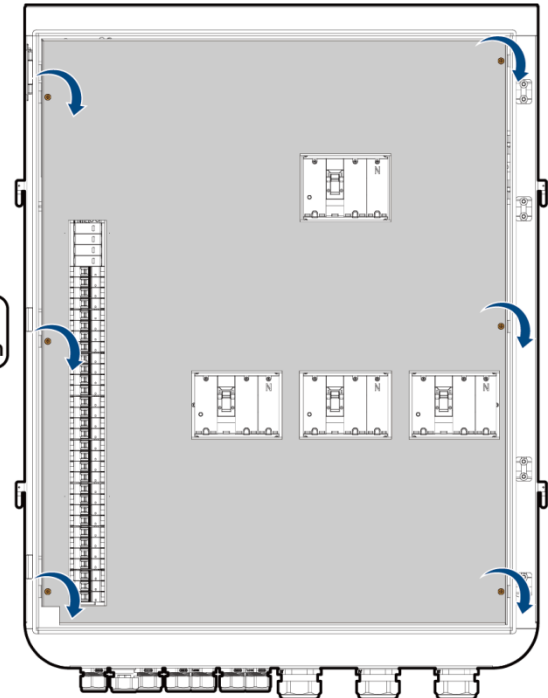
| No. | Check Item   |
|-----|--|
| 1   | The equipment is securely installed.   |
| 2   | Grounding cable, AC cables, and signal cables are properly connected without omission. |
| 3   | Lock screws or terminals are installed in place without any looseness.                 |
| 4   | Cutouts of cable ties are free of burr or sharp edges.                                 |
| 5   | Fasten the protective cover of Gateway.  |
| 6   | No construction residue inside and outside the equipment.                              |



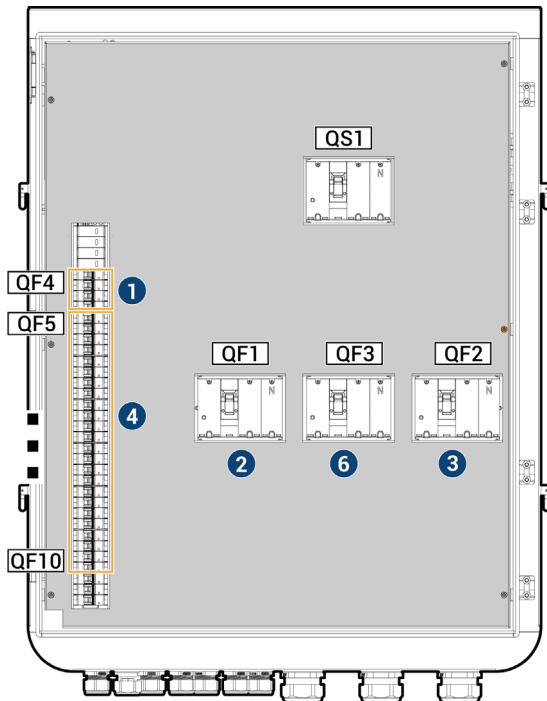
SGA1IN00113

### ⚠ 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, tighten routing holes, and install protective covers.



SEA1IN00107



SEA1IN00114

### 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.

1

### Caution

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

- 1 Turn on the surge protective device switch QF4.
- 2 Turn on the molded case circuit breaker QF1 (connecting to the power grid).
- 3 Turn on the molded case circuit breaker QF2 (connecting to a diesel generator).
- 4 Turn on the molded case circuit breakers QF5–QF10 (connecting to inverters).
- 5 Wait until inverters are powered on.
- 6 Turn on the molded case circuit breaker QF3 (connecting to a backup load).

2

After the operation is done, close the front panel of the Gateway and lock the side panels with the supplied key. After this, power-on procedure is complete.

### Danger

The bypass switch QS1 should be kept turned off.

**Sigenergy Technology Co., Ltd.**



|         |          |         |
|---------|----------|---------|
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|---------|----------|---------|

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