

Sigen Energy Gateway Home Series

User Manual

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Contents

Revision History	5
Overview	6
Chapter 1 Safety Precautions	7
Chapter 2 Product Introduction	9
2.1 Product Features	9
2.2 Product Appearance	10
2.2.1 Sigen Gateway HomeMax SP	10
2.2.2 Sigen Gateway Home SP	13
2.2.3 Sigen Gateway Home SP 12K	15
2.2.4 Sigen Gateway HomeMax TP	17
2.2.5 Sigen Gateway (TP AU, HomeMax TP CN)	20
2.2.6 Sigen Gateway Home TP	23
2.2.7 Sigen Gateway Home TP (30K, 30K CN)	25
2.2.8 Sigen Gateway SP AU	27
2.3 Label Description	29
2.4 Typical Networking Introduction	30
Chapter 3 Site Selection Requirements	36
Chapter 4 Equipment Installation and Wiring	39
Chapter 5 mySigen App Query	40
Chapter 6 System Maintenance	41
6.1 Power Off	41
6.1.1 Sigen Gateway HomeMax SP	42
6.1.2 Sigen Gateway Home SP	43
6.1.3 Sigen Gateway Home SP 12K	44
6.1.4 Sigen Gateway HomeMax TP	45
6.1.5 Sigen Gateway (TP AU, HomeMax TP CN)	46
6.1.6 Sigen Gateway Home TP	47
6.1.7 Sigen Gateway Home TP (30K, 30K CN)	48
6.1.8 Sigen Gateway SP AU	49
6.2 Routine Maintenance	50

6.3 Troubleshooting.....	52
6.4 Operations on Bypass Switch.....	53
6.5 Emergency Treatment.....	54
Chapter 7 Appendix	55
7.1 Technical Parameter	55

Revision History

Version	Date	Description
02	2024.10.10	Updated Chapter 2 Product Introduction Updated 6.1 Power Off
01	2024.08.23	First official release.

Overview

Introduction




The focus of this document is to provide an overview of the Sigen Gateway Home Series, including product description, networking, system operation, maintenance, etc.

Readers

This document is suitable for product users and professionals.

Sign Definition

The following signs may be used in the document to indicate security precautions or key information. Before installation, operation, and maintenance of the equipment, familiarize yourself with signs and their definitions.

Signs	Definition
 Danger	Danger. Failure to comply will result in death or serious personal injury.
 Warning	Warning. Failure to comply will result in serious personal injury or property damage.
 Caution	Caution. Failure to comply will result in property damage.
Tips	Important or key information, and supplementary operation tips.

Chapter 1 Safety Precautions

Basic Information

Before installation, operation, and maintenance of the equipment, familiarize yourself with this document.

The "Danger", "Warning", "Caution" items described in this manual are only supplementary to all precautions.

The Company shall not be liable for equipment damage or property loss caused by the following reasons:

- Failure to obtain approval from the national, regional power authority.
- The installation environment does not meet international, national, or regional standards.
- Failure to observe local laws, regulations and norms when operating and maintaining equipment.
- The installation area does not meet the requirements of the equipment.
- Failure to follow the instructions and precautions in this document.
- Failure to follow the warning labels on equipment or tools.
- Negligent, improper operation or intentional damage.
- Damage caused by your or a third party's replacement of our equipment.
- The equipment is damaged by your or the third-party company to use the accessories supplied with the package and purchase and use the accessories of the same specifications for installation.
- Equipment damage caused by improper operations such as disassembling, replacing, or modifying the software code without authorization.
- Equipment damage caused by force majeure (such as war, earthquake, fire, storm, lightning, flood, debris flow, etc.).
- Damage caused by the failure of the natural environment or external power parameters to meet the standard requirements of the equipment during actual operation (for example, the actual operating temperature of

the equipment is too high or too low).

- The equipment was stolen.
- The equipment is damaged after the warranty period.

Safety Requirements

Danger

- Do not expose the device to high temperature or heat sources (such as sunlight, fire, or heaters) around the equipment for a long time.
- Do not clean or soak the equipment with water, alcohol, or oil to avoid power leakage.
- Do not knock or impact the equipment. In case of an accident, please stop using the equipment immediately and contact your installer or sales representative. The equipment shall be inspected and evaluated by professional personnel before continuing to use.

Caution

- Do not use the equipment with faults. If the equipment appears abnormal (for example, appearance distortion), contact your installer or sales representative. You are prohibited from disassembling it on their own.
- Carbon dioxide fire extinguishers and ABC dry powder fire extinguishers are recommended at home. It is prohibited to disassemble the equipment by yourself.

Do not use the equipment in the following situations:

- When connected to public infrastructure systems.
- When connected to emergency medical equipment.
- When connected to elevators and other control devices.
- Any other critical systems.

Chapter 2 Product Introduction

2.1 Product Features

Function

Gateway products can be used in household PV storage and pure storage applications for data collection and monitoring, off-grid backup power switching, diesel generator control, and energy management, and more. The gateway products must be used in conjunction with our battery packs and inverters.

This document mainly covers the following product models:

Sigen Gateway HomeMax SP

Sigen Gateway Home SP

Sigen Gateway Home SP 12K

Sigen Gateway HomeMax TP

Sigen Gateway TP AU

Sigen Gateway HomeMax TP CN

Sigen Gateway Home TP

Sigen Gateway Home TP 30K

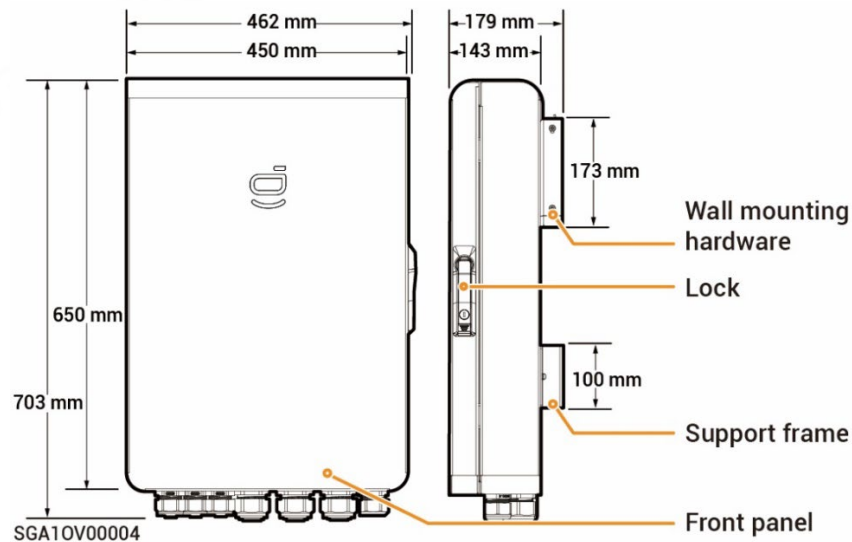
Sigen Gateway Home TP 30K CN

Sigen Gateway SP AU

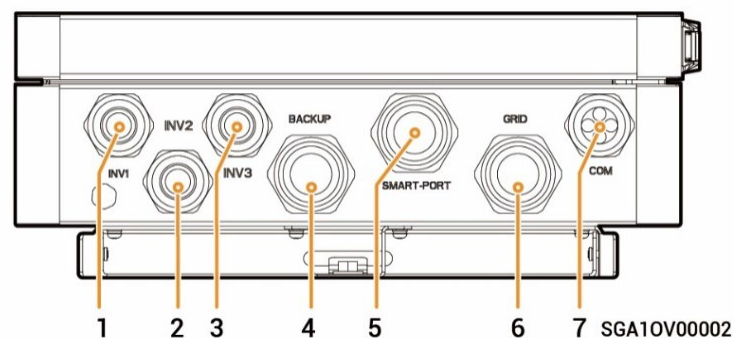
2.2 Product Appearance

2.2.1 Sigen Gateway HomeMax SP

Dimensions

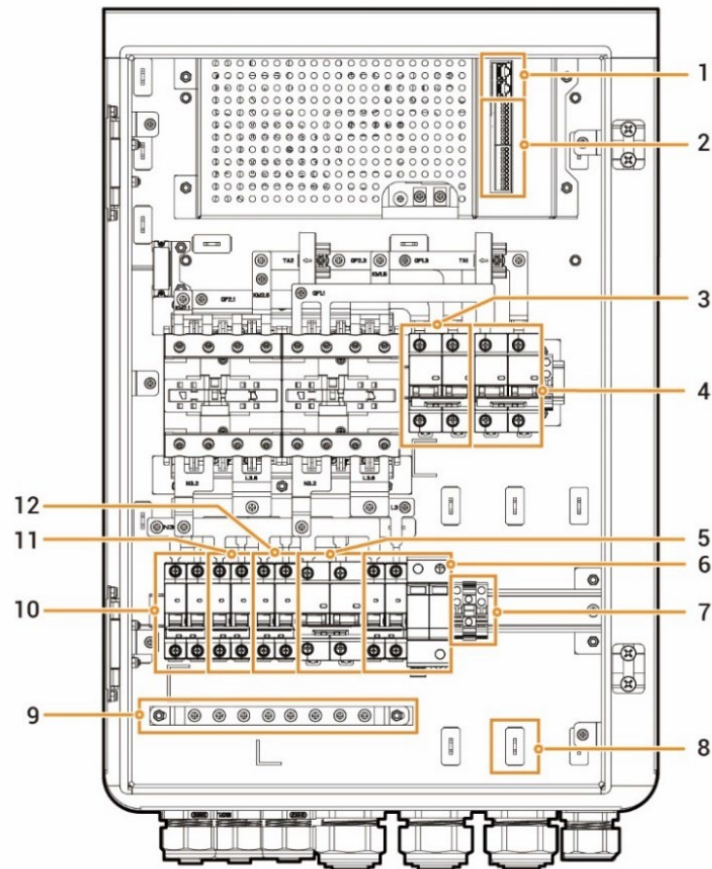


Bottom View



S/N	Marking	Description
1	INV1	Wire-in port of inverter 1
2	INV2	Wire-in port of inverter 2
3	INV3	Wire-in port of inverter 3
4	BACKUP	Wire-in port of backup household loads
5	SMART-PORT	Wire-in port for smart Loads/ diesel generator
6	GRID	Wire-in port of power grid
7	COM	Wire-in port of communication

Interior View



SGA10V00003

S/N	Label	Description
1	-	FE interfaces
2	-	DI, and DO interfaces
3	QF2	Miniature circuit breaker (connecting to Smart Loads ^[1] / Diesel generator)
4	QF1	Miniature circuit breaker (connecting to Power grid)
5	QF6	Miniature circuit breaker (connecting to Backup Household loads)
6	QF8	Miniature circuit breaker + Surge protection Device
7	GND	GND
8	-	Cable clamp

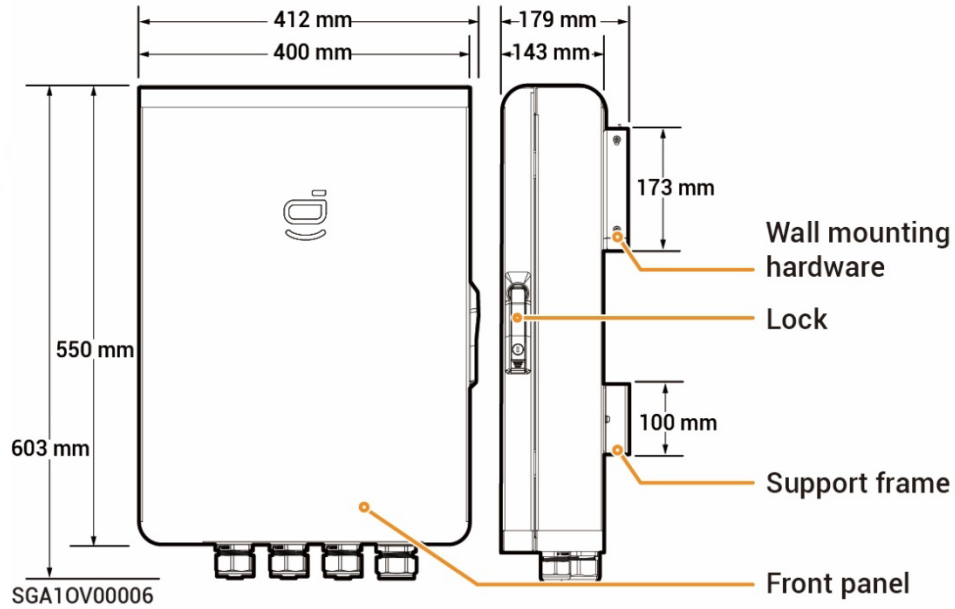
9	-	Earthing bar
10	QF3	Miniature circuit breaker (connecting to Inverters 1)
11	QF4	Miniature circuit breaker (connecting to Inverters 2)
12	QF5	Miniature circuit breaker (connecting to Inverters 3)

Note [1]:

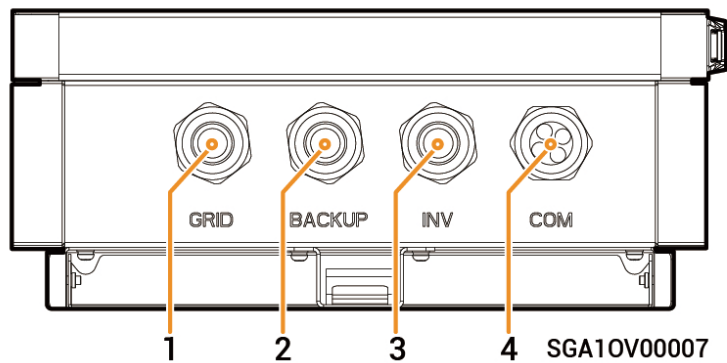
- All the power equipment in the owner's home can be connected as smart loads.
- To ensure that this product maximizes the benefits to users, it is recommended that the high-power equipment be connected as smart loads (heat pumps, pool heaters, clothes dryers, immersion heaters, etc.), which can be cut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

2.2.2 Sigen Gateway Home SP

Dimensions

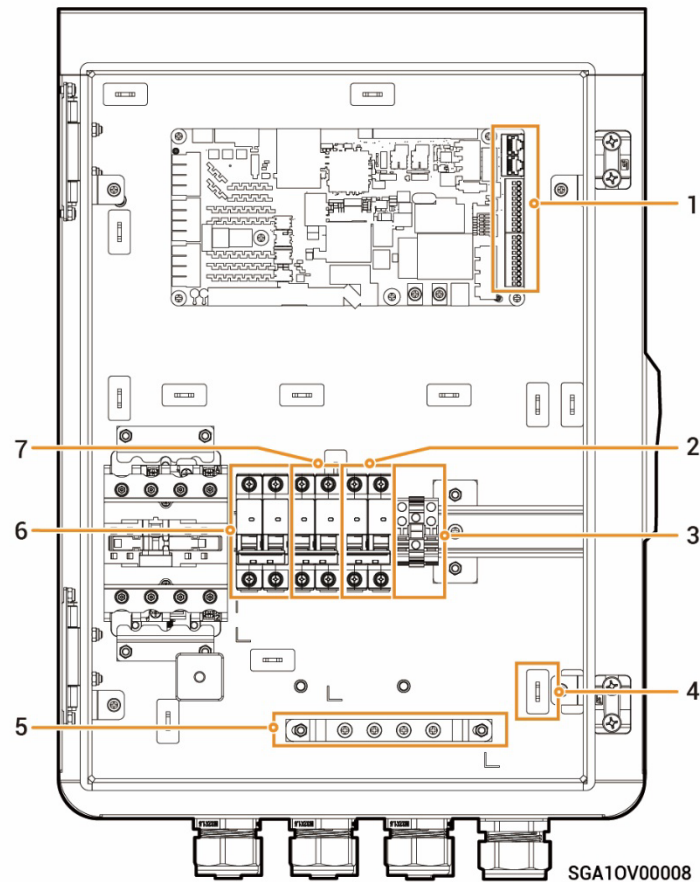


Bottom View



S/N	Marking	Description
1	GRID	Wire-in port of power grid
2	BACKUP	Wire-in port of backup Household loads
3	INV	Wire-in port of inverter
4	COM	Wire-in port of communication

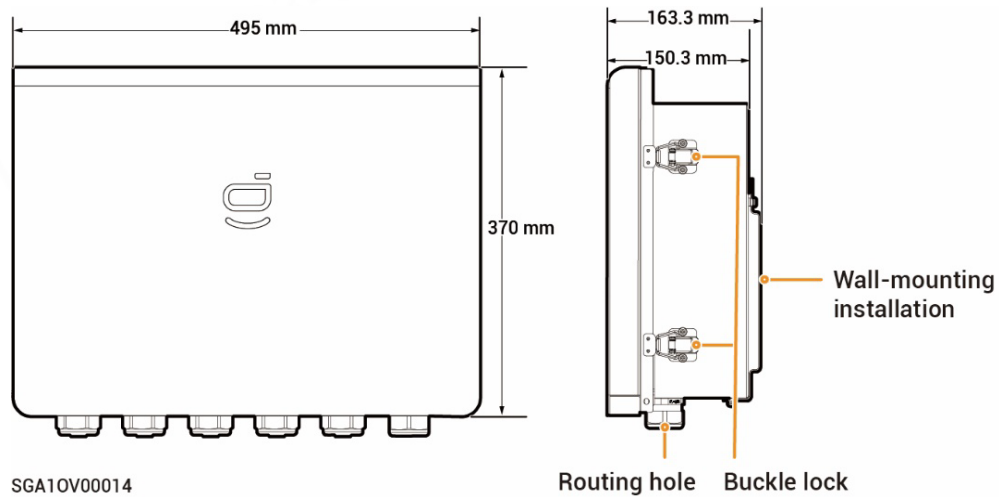
Interior View



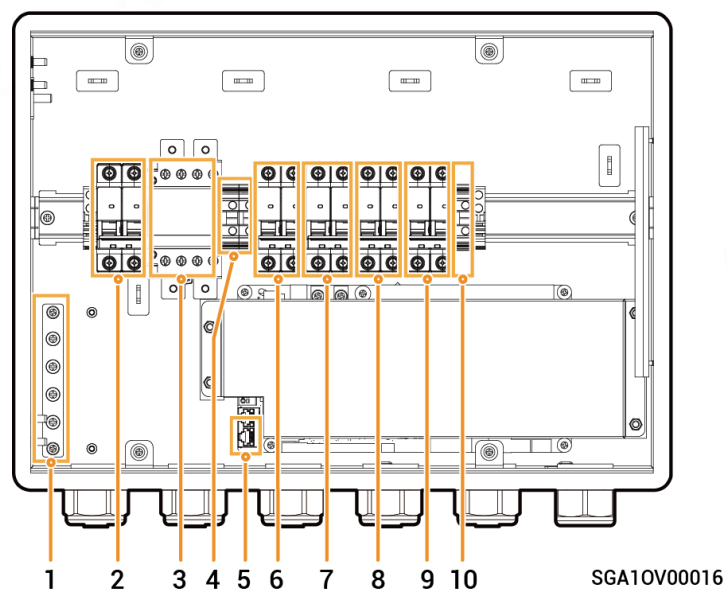
S/N	Label	Description
1	-	FE, RS485, DI, and DO interfaces
2	QF30	Miniature circuit breaker (connecting to Inverter)
3	GND	GND
4	-	Cable clamp
5	-	Grounding Bar
6	QF10	Miniature circuit breaker (connecting to Power grid)
7	QF50	Miniature circuit breaker (connecting to Backup Household loads)

2.2.3 Sigen Gateway Home SP 12K

Dimensions



Interior View

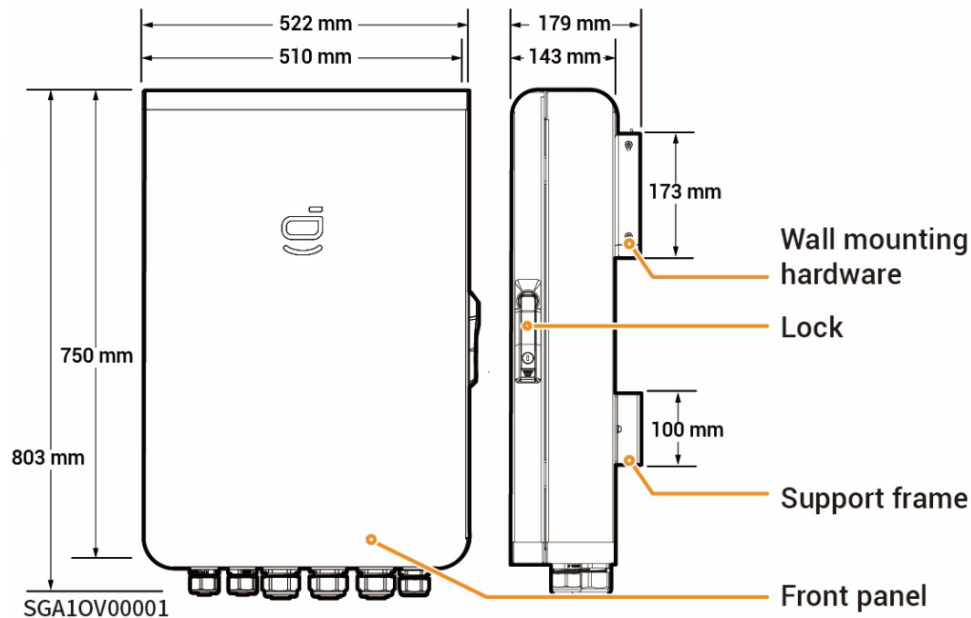


S/N	Label	Description
1	-	Grounding copper busbar
2	QS1	Bypass switch
3	KM1	Grid contactor
4	X1	Terminal (connecting to a non-backup load)

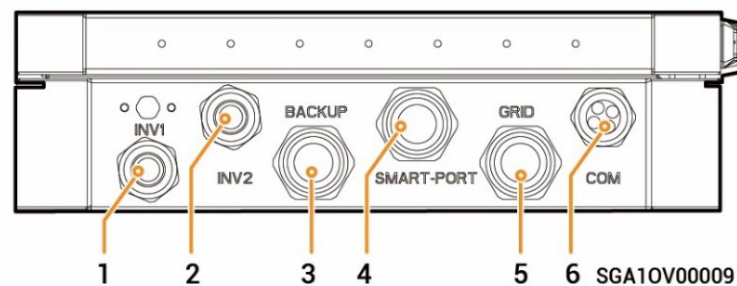
5	-	FE terminal
6	QF1	Miniature circuit breaker (connecting to the power grid)
7	QF2	Miniature circuit breaker (connecting to a single-phase inverter in a power range of 8.0 to 12.0 kW)
8	QF3	Miniature circuit breaker (connecting to a household load)
9	QF4	Miniature circuit breaker (connecting to a single-phase inverter in a power range of 3.0 to 6.0 kW)
10	-	Terminal (connecting to functional ground cable)

2.2.4 Sigen Gateway HomeMax TP

Dimensions

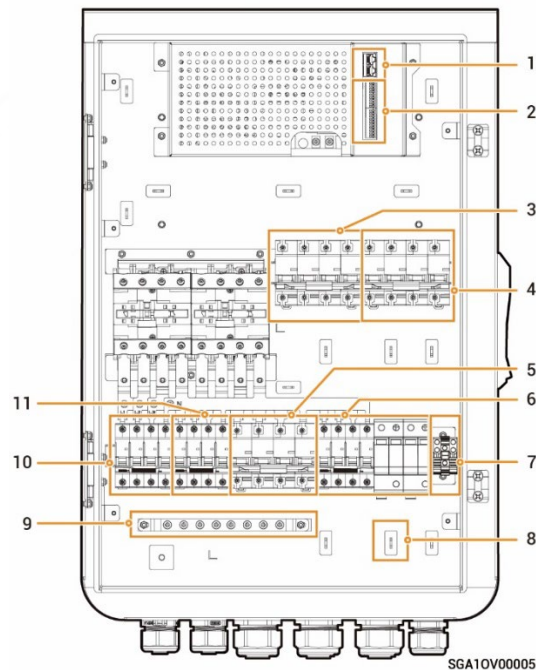


Bottom View



S/N	Marking	Description
1	INV1	Wire-in port of inverter 1
2	INV2	Wire-in port of inverter 2
3	BACKUP	Wire-in port of backup Household loads
4	SMART-PORT	Wire-in port for smart loads /diesel generator
5	GRID	Wire-in port of power grid
6	COM	Wire-in port of communication

Interior View



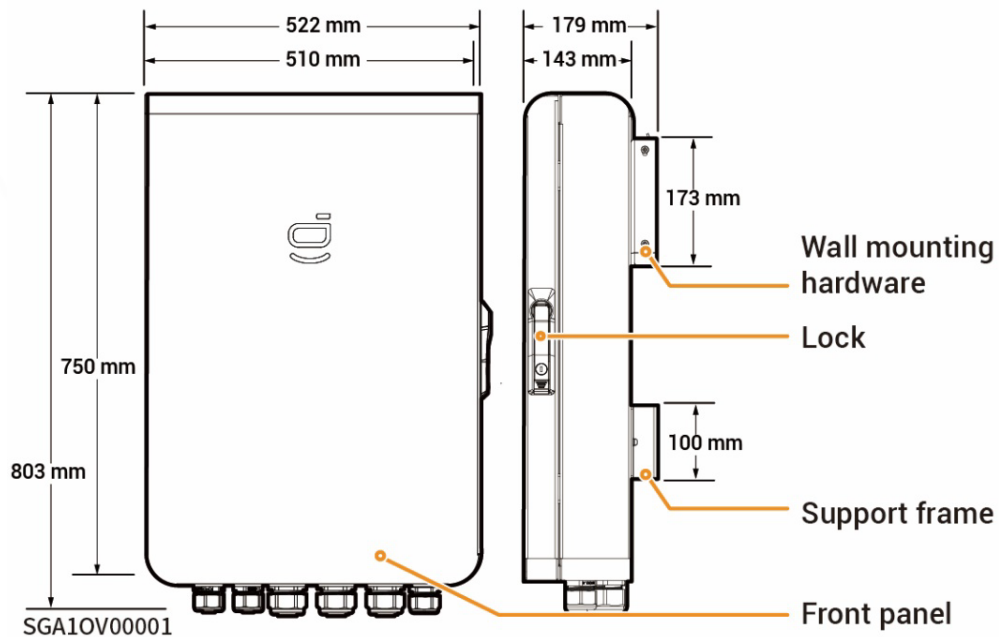
S/N	Label	Description
1	-	FE interfaces
2	-	DI, and DO interfaces
3	QF2	Miniature circuit breaker (connecting to Smart Loads ^[1] /Diesel generator)
4	QF1	Miniature circuit breaker (connecting to Power grid)
5	QF5	Miniature circuit breaker (connecting to Backup Household loads)
6	QF6	Miniature circuit breaker + Surge protection Device
7	GND	GND
8	-	Cable clamp
9	-	Earthing bar
10	QF3	Miniature circuit breaker (connecting to Inverters 1)
11	QF4	Miniature circuit breaker (connecting to Inverters 2)

Note [1]:

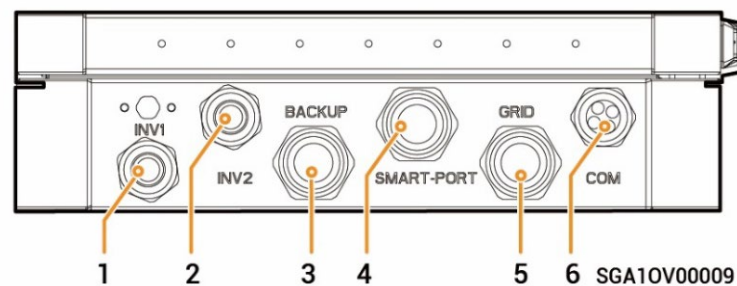
- All the power equipment in the owner's home can be connected as smart loads.
- To ensure that this product maximizes the benefits to users, it is recommended that the high-power equipment be connected as smart loads (heat pumps, pool heaters, clothes dryers, immersion heaters, etc.), which can be cut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

2.2.5 Sigen Gateway (TP AU, HomeMax TP CN)

Dimensions

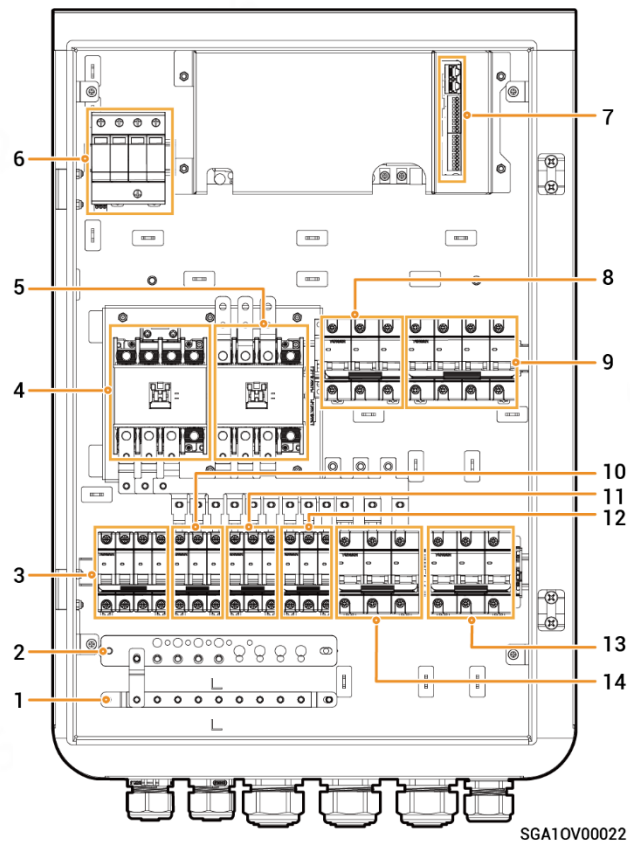


Bottom View



S/N	Marking	Description
1	INV1	Wire-in port of inverter 1
2	INV2	Wire-in port of inverter 2
3	BACKUP	Wire-in port of backup Household loads
4	SMART-PORT	Wire-in port for smart loads /diesel generator
5	GRID	Wire-in port of power grid
6	COM	Wire-in port of communication

Interior View



SGA10V00022

S/N	Label	Description
1	-	Grounding copper busbar
2	-	N-line copper busbar
3	QF7	Surge protective device switch
4	KM2	Diesel generator contactor
5	KM1	Grid contactor
6	SPD	Surge protective device
7	-	Communication terminal (connecting to FE or DI communication cable)
8	QS1	Bypass switch

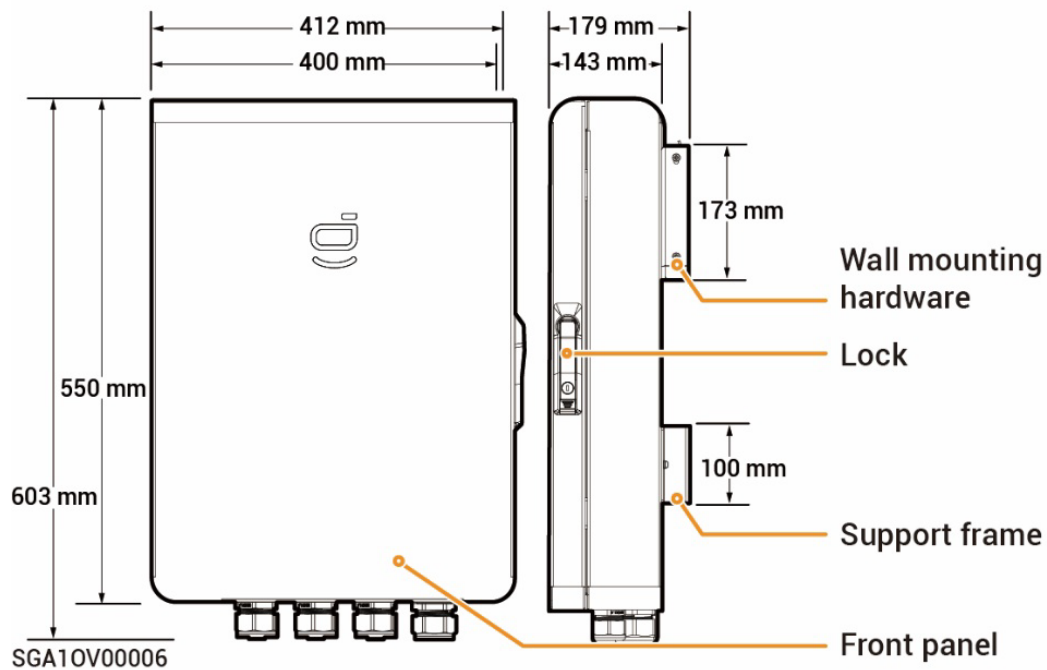
9	QF2	Miniature circuit breaker (connecting to a smart load ^[1] /diesel generator)
10	QF3	Miniature circuit breaker (connecting to a three-phase inverter in a power range of 17.0 kW to 30.0 kW)
11	QF4	Miniature circuit breaker (connecting to a three-phase inverter in a power range of 17.0 kW to 30.0 kW)
12	QF5	Miniature circuit breaker (connecting to a three-phase inverter in a power range of 5.0 kW to 15.0 kW)
13	QF1	Miniature circuit breaker (connecting to the power grid)
14	QF6	Miniature circuit breaker (connecting to a household load)

Note [1]:

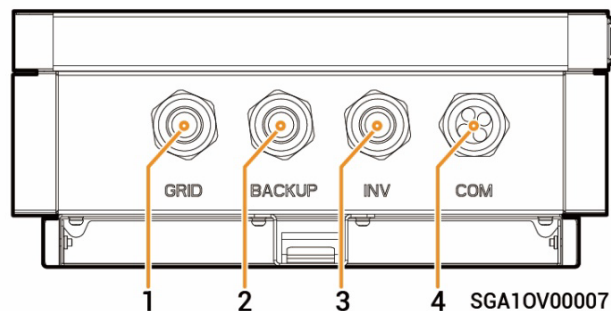
- All the power equipment in the owner's home can be connected as smart loads.
- To ensure that this product maximizes the benefits to users, it is recommended that the high-power equipment be connected as smart loads (heat pumps, pool heaters, clothes dryers, immersion heaters, etc.), which can be cut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

2.2.6 Sigen Gateway Home TP

Dimensions

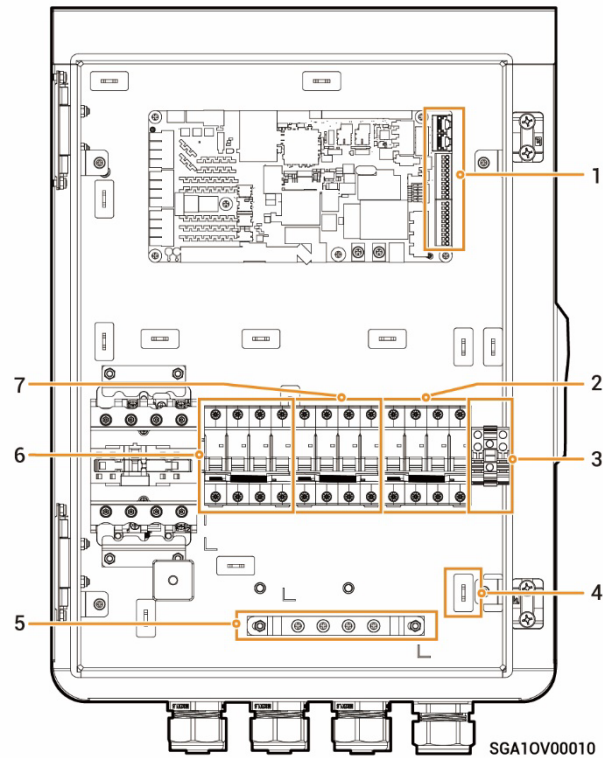


Bottom View



S/N	Marking	Description
1	GRID	Wire-in port of power grid
2	BACKUP	Wire-in port of Backup Household loads
3	INV	Wire-in port of inverter
4	COM	Wire-in port of communication

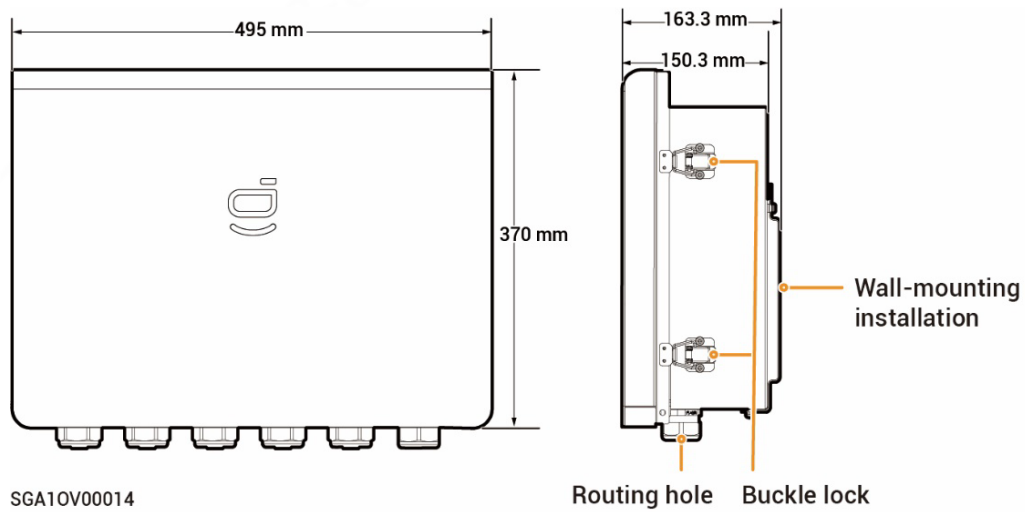
Interior View



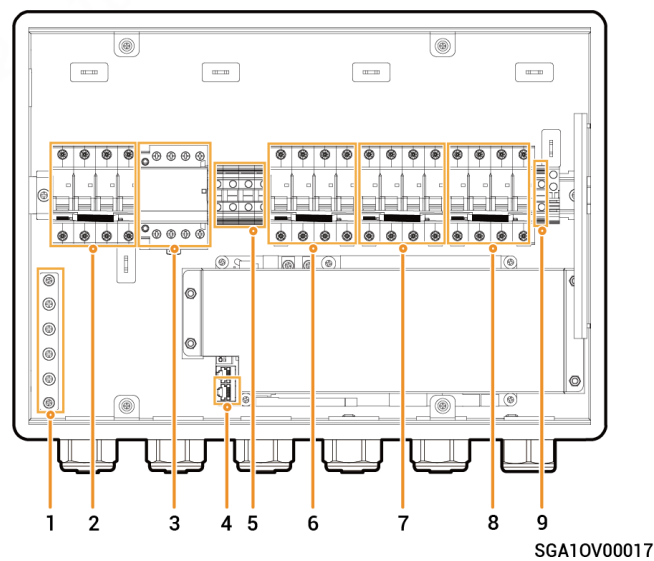
S/N	Label	Description
1	-	FE, RS485, DI, and DO interfaces
2	QF30	Miniature circuit breaker (connecting to Inverter)
3	GND	GND
4	-	Cable clamp
5	-	Grounding bar
6	QF10	Miniature circuit breaker (connecting to Power grid)
7	QF50	Miniature circuit breaker (connecting to Backup Household loads)

2.2.7 Sigen Gateway Home TP (30K, 30K CN)

Dimensions



Interior View

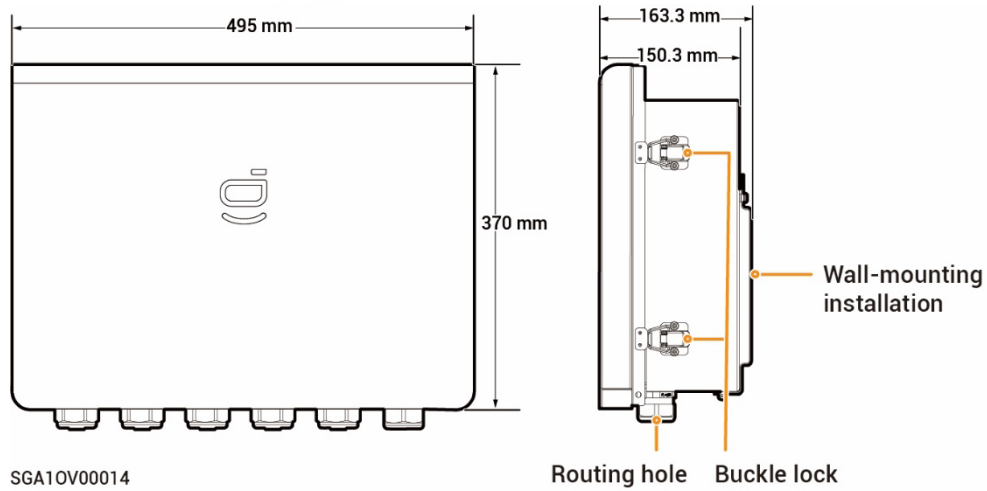


S/N	Label	Description
1	-	Grounding copper busbar
2	QS1	Bypass switch
3	KMI	Grid contactor
4	-	FE terminal
5	X1	Terminal (connecting to a non-backup load)

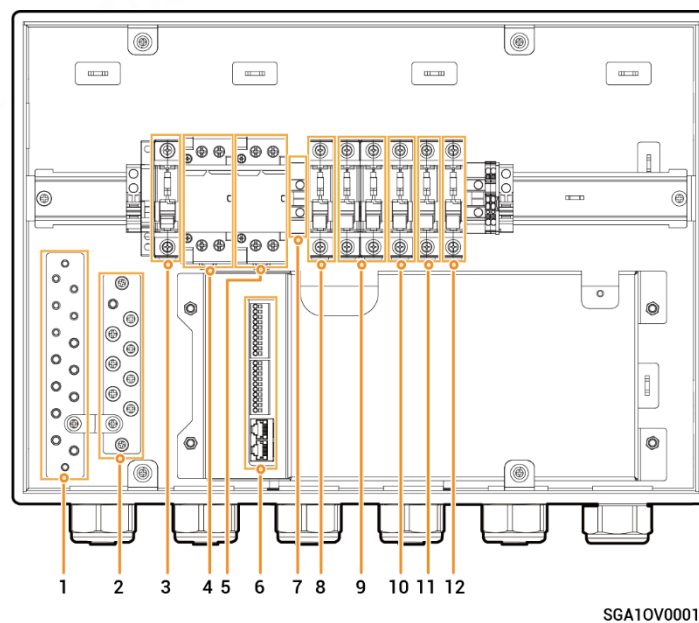
6	QF1	Miniature circuit breaker (connecting to the power grid)
7	QF2	Miniature circuit breaker (connecting to a three-phase inverter)
8	QF3	Miniature circuit breaker (connecting to a household load)
9	-	Terminal (connecting to functional ground cable)

2.2.8 Sigen Gateway SP AU

Dimensions



Interior View








S/N	Label	Description
1	-	N-line copper busbar
2	-	Grounding copper busbar
3	QS1	Bypass switch
4	KM1	Grid contactor

5	KM2	Diesel generator contactor
6	-	Communication terminal (connecting to FE or DI communication cable)
7	X1	Terminal (connecting to a non-backup load)
8	QF1	Miniature circuit breaker (connecting to the power grid)
9	QF2	Miniature circuit breaker (connecting to a diesel generator/smart load ^[1])
10	QF3	Miniature circuit breaker (connecting to a single-phase inverter in a power range of 8.0 to 10.0 kW)
11	QF4	Miniature circuit breaker (connecting to a single-phase inverter in a power range of 5.0 to 6.0 kW)
12	QF5	Miniature circuit breaker (connecting to a household load)

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 (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.)

2.3 Label Description

Symbols	Definition
	Warning! Risk of High voltage. There is a risk of high voltage in the cover of the equipment. Please take precautions when operating the equipment.
	After the equipment is powered off, the discharge of internal components is delayed. Wait 5 minutes until the equipment is fully discharged according to the label time.
	Warning! Risk of burns. The surface of the heat dissipation area is hot when the equipment is running. Do not touch it to avoid burns.
	Please refer to the instructions to operate the equipment.
	Earthing mark

2.4 Typical Networking Introduction

- This product is applicable to household backup power system networking scenarios. It must be used in conjunction with PV panels, inverters, battery packs, main control switches, loads, generators, and power grid.
- In the event of a power outage, the household energy storage system switches to off-grid operation mode. After the power grid resumes normal operation, the household energy storage system switches back to on-grid mode. This achieves a seamless switchover between PV storage and diesel generator.

Tips

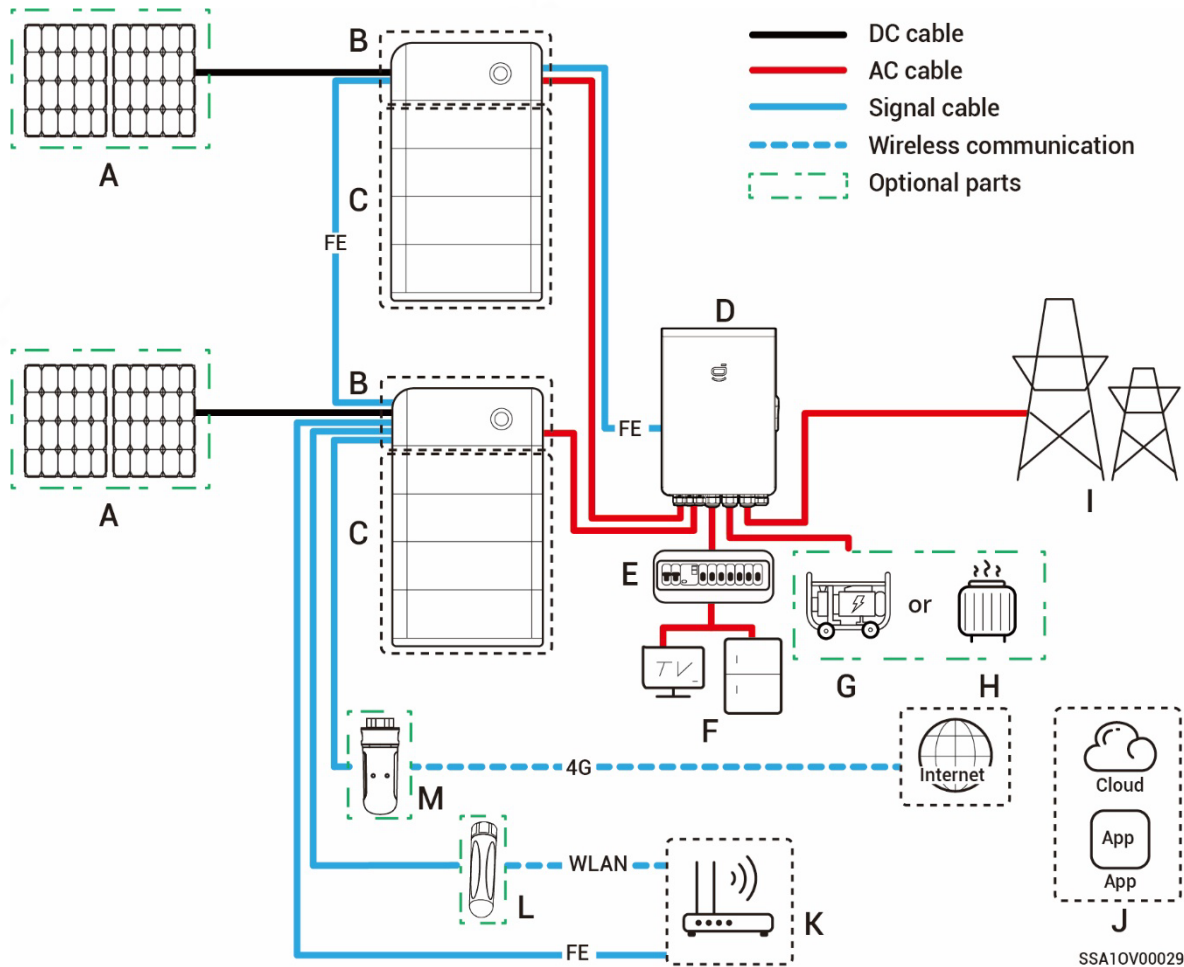
- Under backup power networking, the duration of off-grid operation of the backup power load is related to the power supply capacity of the PV storage system. If there is an abnormality in the power supply of the PV storage system during off-grid operation (including but not limited to abnormal PV power generation, insufficient battery power, and abnormal power supplies to the diesel generator), the backup power load will still be unable to operate.
- The networking diagram takes two inverters as an example. The number of inverters that can be connected depends on the Gateway specification. For more information, see Table 2-1.

Table 2-1

S/N	Model	Number of Inverters that can be connected
1	Sigen Gateway HomeMax SP	3 units
2	Gateway Home SP	1 unit
3	Gateway Home SP 12K	2 units
4	Sigen Gateway HomeMax TP	2 units
5	Sigen Gateway TP AU	2 units

6	Sigen Gateway HomeMax TP CN	2 units
7	Sigen Gateway Home TP	1 unit
8	Sigen Gateway Home TP 30K	1 unit
9	Sigen Gateway Home TP 30K CN	1 unit
10	Sigen Gateway SP AU	2 units

Networking Diagram (Whole Home Backup)



- A.** PV panel
- B.** SigenStor EC / SigenStor AC / Sigen Hybrid
- C.** SigenStor BAT
- D.** Gateway
- E.** Backup Distribution panel
- F.** Backup Household loads
- G.** Diesel generator
- H.** Smart loads
- I.** Power grid
- J.** mySigen
- K.** Router
- L.** Antenna
- M.** CommMod

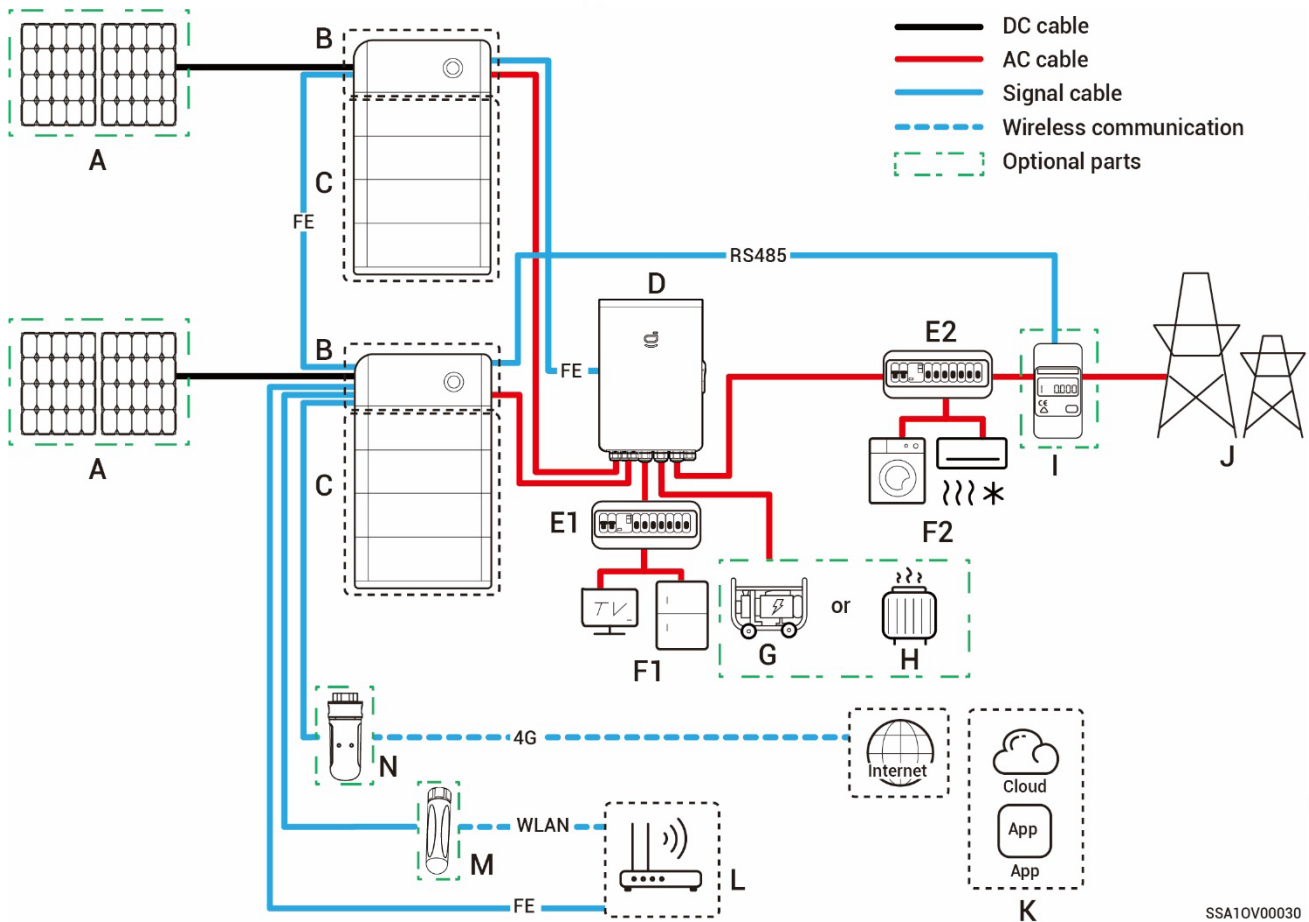
Tips

- When B is SigenStor AC, A is not configured.
- As a backup energy source for long-term off-grid applications, the diesel generator can work in tandem with the Gateway to provide a smooth transition between PV, storage and diesel generation.
- 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 (heat pumps, pool heaters, clothes dryers, 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.)

- It is recommended to use Fast Ethernet and WLAN for communication with inverters. When free 4G traffic of CommMod runs out, users must top up their accounts or replace a SIM card.

Networking Diagram (Partial Home Backup)



SSA10V00030

- A.** PV panel
- B.** SigenStor EC / SigenStor AC / Sigen Hybrid
- C.** SigenStor BAT
- D.** Gateway
- E1.** Backup Distribution panel
- E2.** Non-Backup Distribution panel
- F1.** Backup Household loads
- F2.** Non-Backup Household loads
- G.** Diesel Generator
- H.** Smart loads
- I.** Power sensor
- J.** Power grid
- K.** mySigen
- L.** Router
- M.** Antenna
- N.** CommMod

Tips

- When B is SigenStor AC, A is not configured.
- As a backup energy source for long-term off-grid applications, the diesel generator can work in tandem with the Gateway to provide a smooth transition between PV, storage and diesel power generation.
- 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 (heat pumps, pool heaters, clothes dryers, 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.)
- Power sensor has the function of data acquisition for grid connection points enables zero-power grid connection. For partial home backup, Power sensor does not need to be configured. For partial backup power and zero-power grid connection control networking, Power sensor is configured.
- It is recommended to use Fast Ethernet and WLAN for communication with inverters. When free 4G traffic of CommMod runs out, users must top up their accounts or replace an SIM card.

Chapter 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.
- 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 Requirements

- 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).


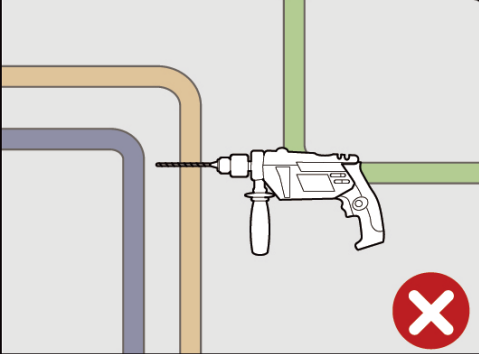
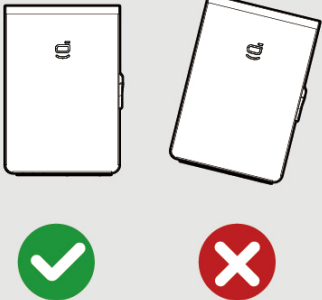
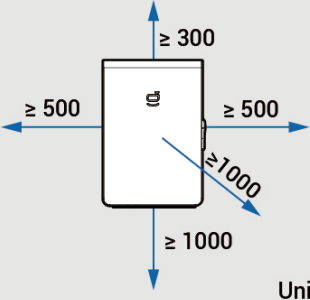




Installation Position Requirements

- 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.
- The equipment produces sound when it is operating. Please install the equipment in a place far away from your daily work and daily life.
- Do not install the equipment in a sealed, poorly ventilated location without fire protection measures and difficult access for firefighters.
- 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 3°C while the equipment is running. Otherwise, the equipment will be derated.
- 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 Requirements

- 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.

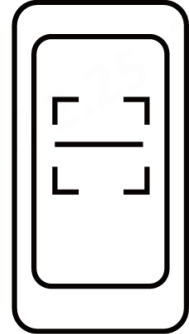
			
	 <p>Unit: mm</p>		
 <p>Relative humidity 0%RH to 95%RH</p>	 <p>Ambient temperature -30°C to 55°C (The equipment will be derated when the temperature is greater than 35°C)</p>	 <p>Heat source (60°C) distance ≥ 2m</p>	 <p>SSA1SF00008</p>

Chapter 4 Equipment Installation and Wiring

- Only company authorized personnel should install and connect the equipment. For more information about Gateway installation and wiring, refer to the respective documentation.
- Parts and accessories supplied with the packing box are personal assets of the owner and must be kept safe.

Chapter 5 mySigen App Query

The App can be downloaded in the following two ways. For details, see **mySigen App User Manual**.



SSA1CM00014

Chapter 6 System Maintenance

Danger

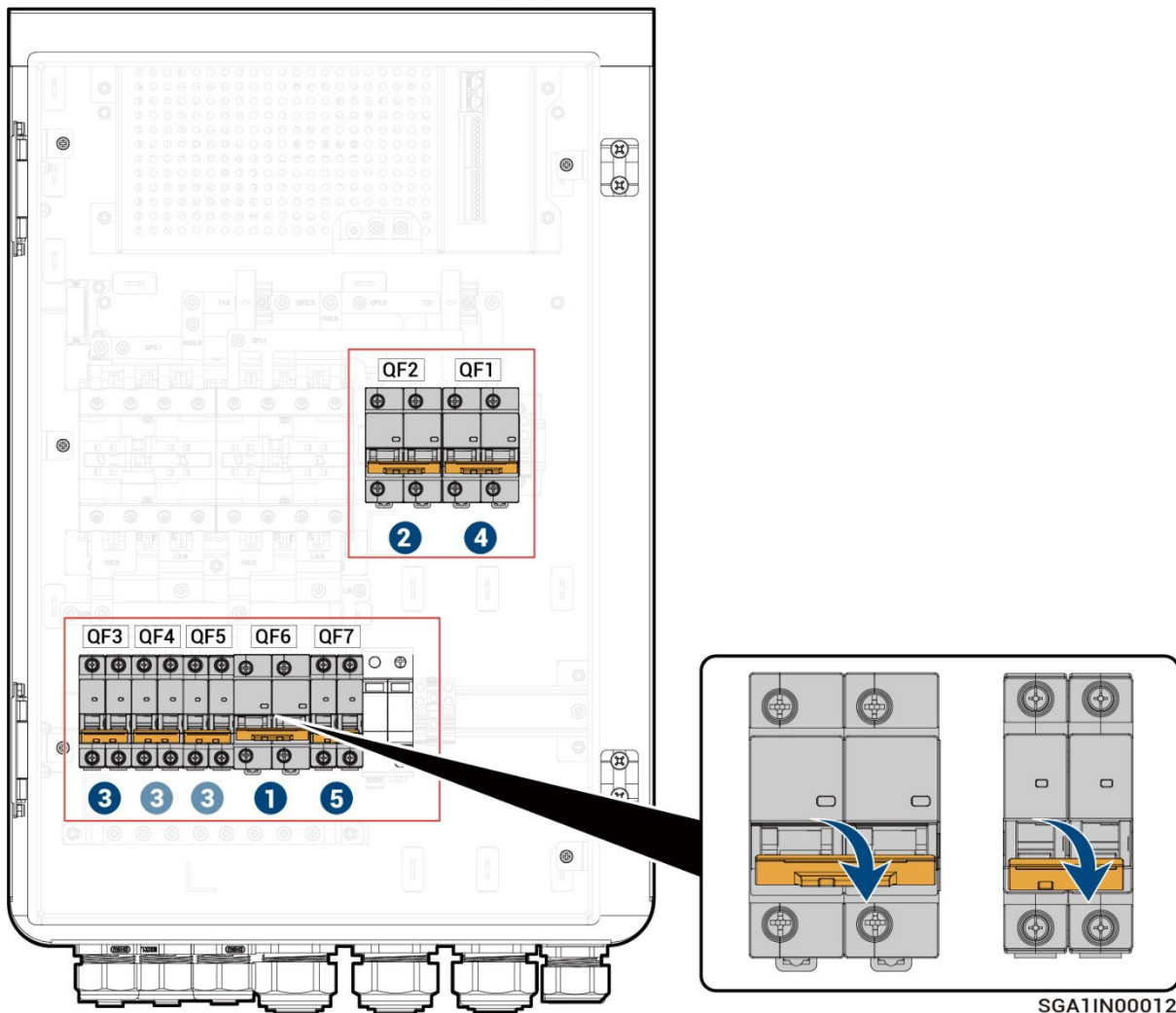
- Do not perform operations on the equipment with power on. Before operation, please make sure all power supplies to the equipment have been disconnected, including but not limited to the grid side, inverter and diesel generator power switches.
- Do not remove the inner panel. To remove the inner panel, contact your installer or sales representative for assistance.

6.1 Power Off

Warning

- When the equipment is faulty, disconnect all circuit breakers in the equipment immediately, and check and remove the fault before turning it on again.
- Do not operate circuit breakers that are not connected to corresponding equipment when the equipment is powered off. Keep these circuit breakers disconnected.

6.1.1 Sigen Gateway HomeMax SP

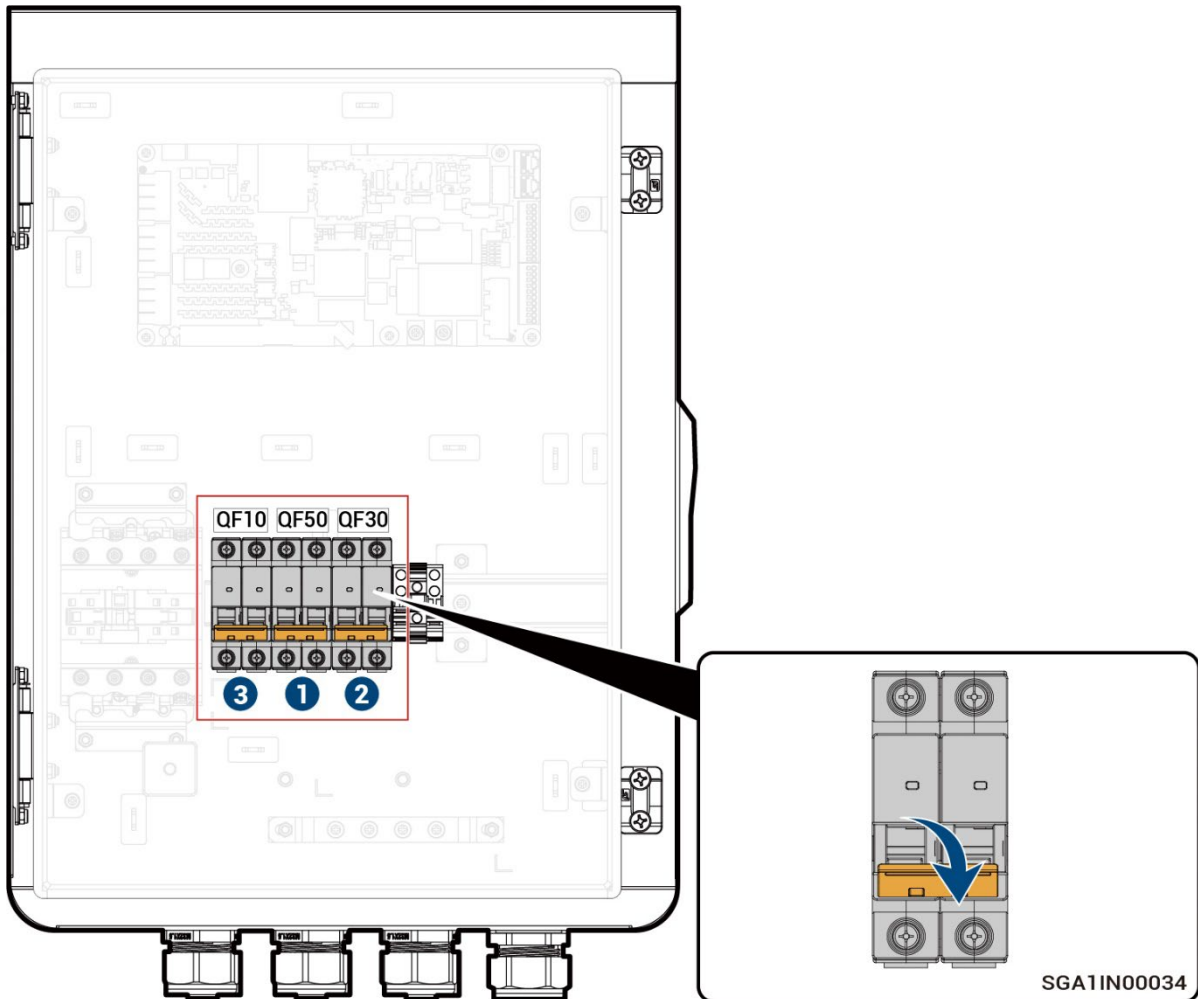


Warning

The Gateway should be disconnected in the following order:

1. Switch off the miniature circuit breaker (Backup Household loads) QF6.
2. (Optional) Switch off the miniature circuit breaker (Diesel generator/ Smart load) QF2.
3. After shutting down the inverter, switch off the miniature circuit breakers (Inverter) QF3 or QF4 or QF5.
4. Switch off the miniature circuit breaker (Power grid) QF1.
5. Switch off the miniature circuit breaker (Surge protection device) QF7.

6.1.2 Sigen Gateway Home SP

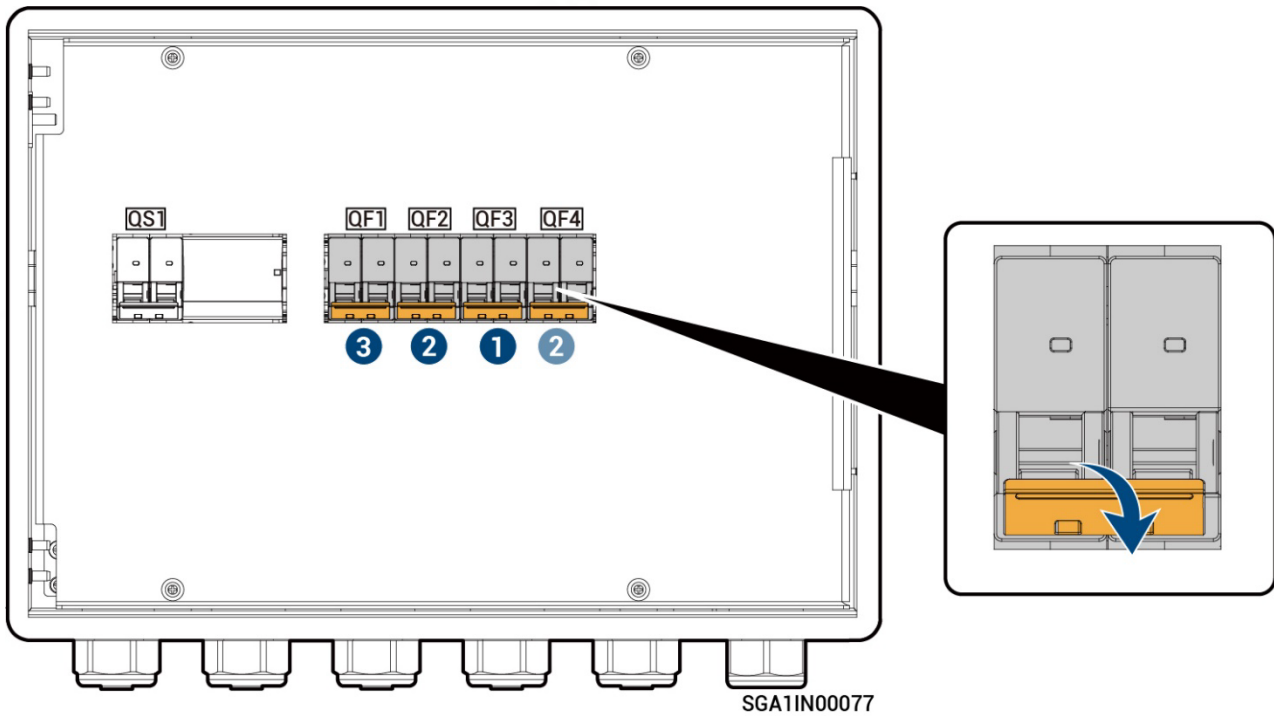


Warning

The Gateway should be disconnected in the following order:

1. Switch off the miniature circuit breaker (Backup Household loads) QF50.
2. After shutting down the inverter, switch off the miniature circuit breaker (Inverter) QF30.
3. Switch off the miniature circuit breaker (Power grid) QF10.

6.1.3 Sigen Gateway Home SP 12K

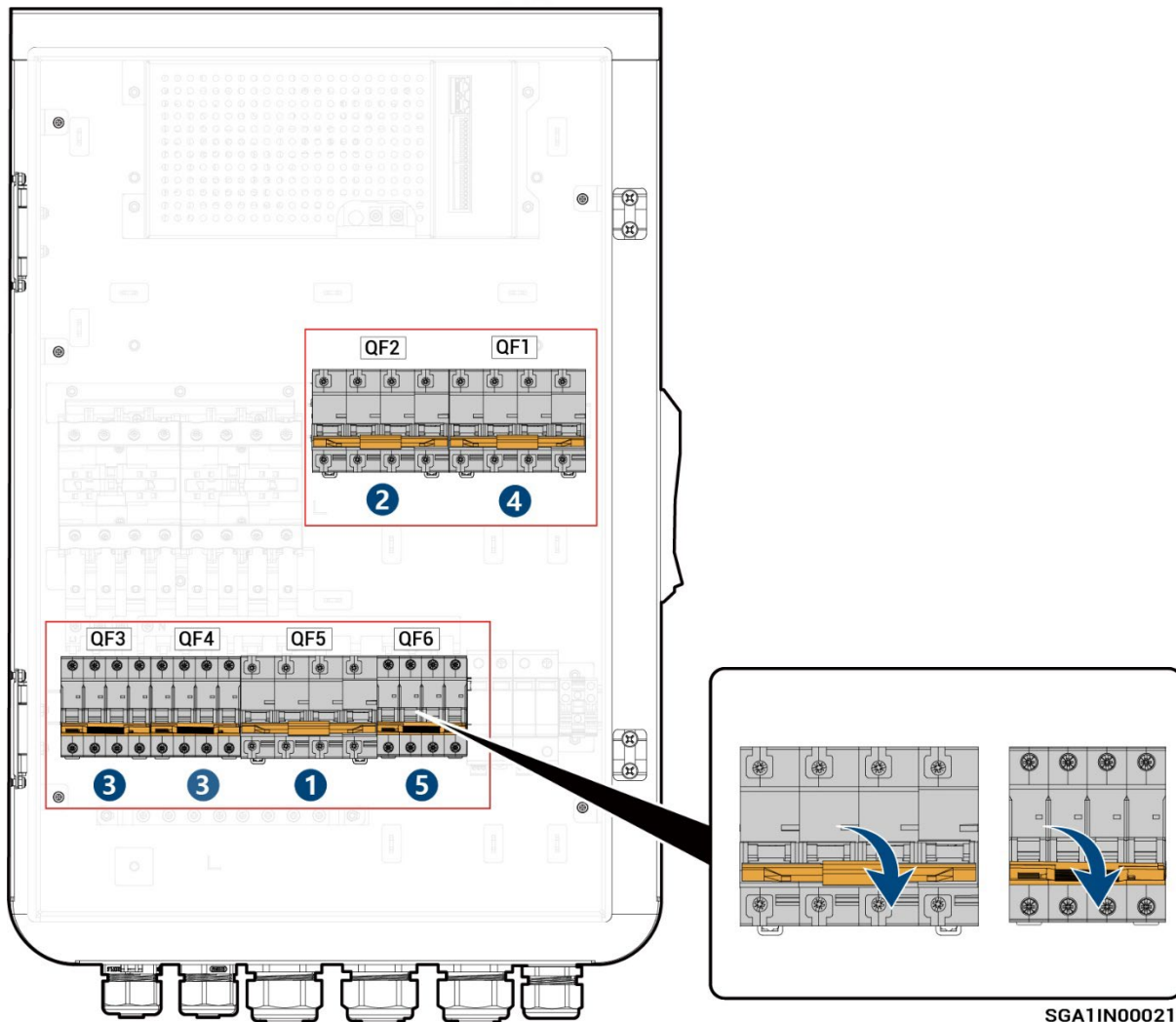


Warning

The Gateway should be disconnected in the following order:

1. Switch off the miniature circuit breaker (Backup Household loads) QF3.
2. After shutting down the inverter, switch off the miniature circuit breaker (Inverter) QF2 or QF4.
3. Switch off the miniature circuit breaker (Power grid) QF1.

6.1.4 Sigen Gateway HomeMax TP

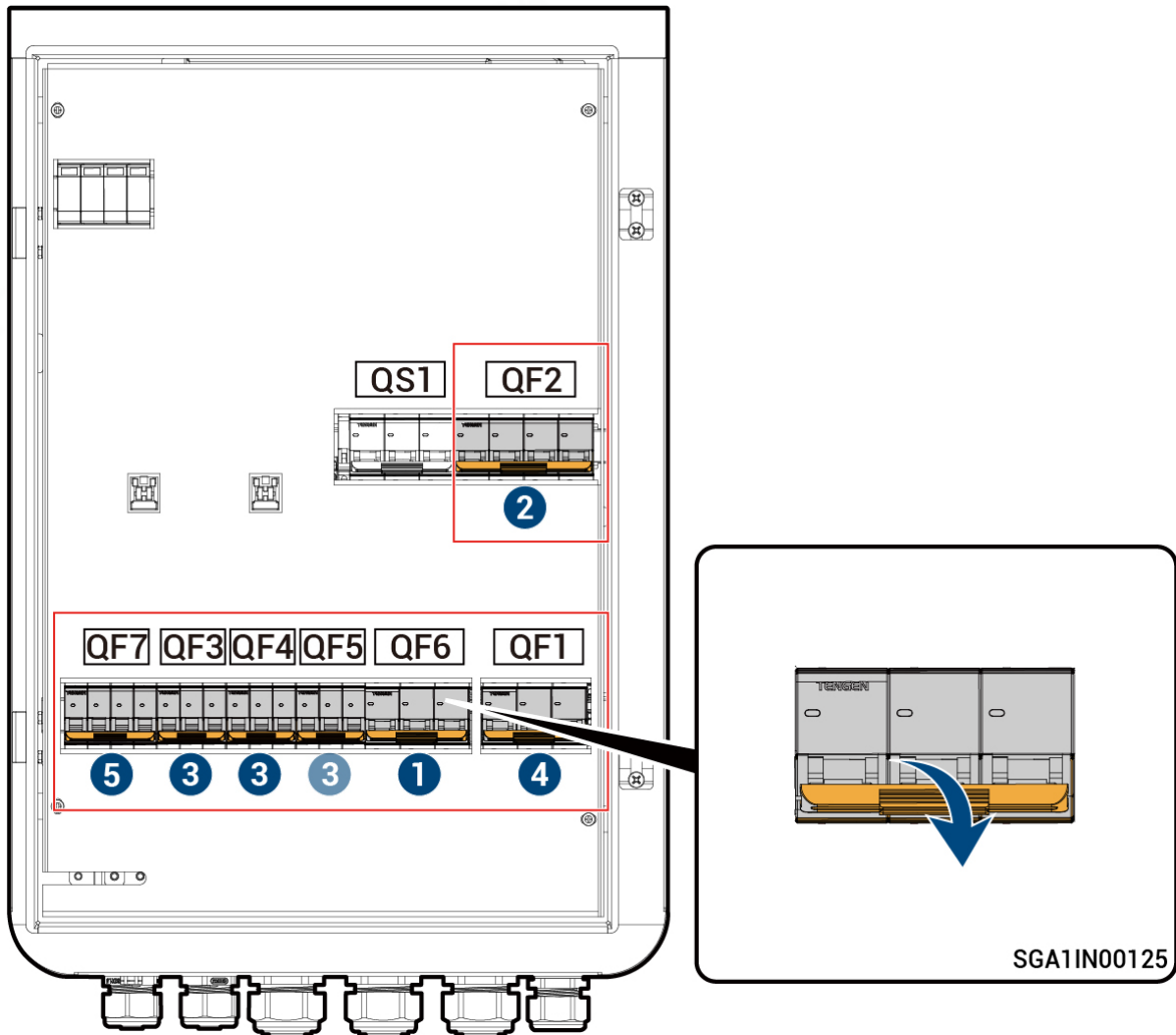


Warning

The Gateway should be disconnected in the following order:

1. Switch off the miniature circuit breaker (Backup Household loads) QF5.
2. (Optional) Switch off the miniature circuit breaker (Diesel generator/Smart load) QF2.
3. After shutting down the inverter, switch off the miniature circuit breaker (Inverter) QF3 or QF4.
4. Switch off the miniature circuit breaker (Power grid) QF1.
5. Switch off the miniature circuit breaker (Surge protection device) QF6.

6.1.5 Sigen Gateway (TP AU, HomeMax TP CN)

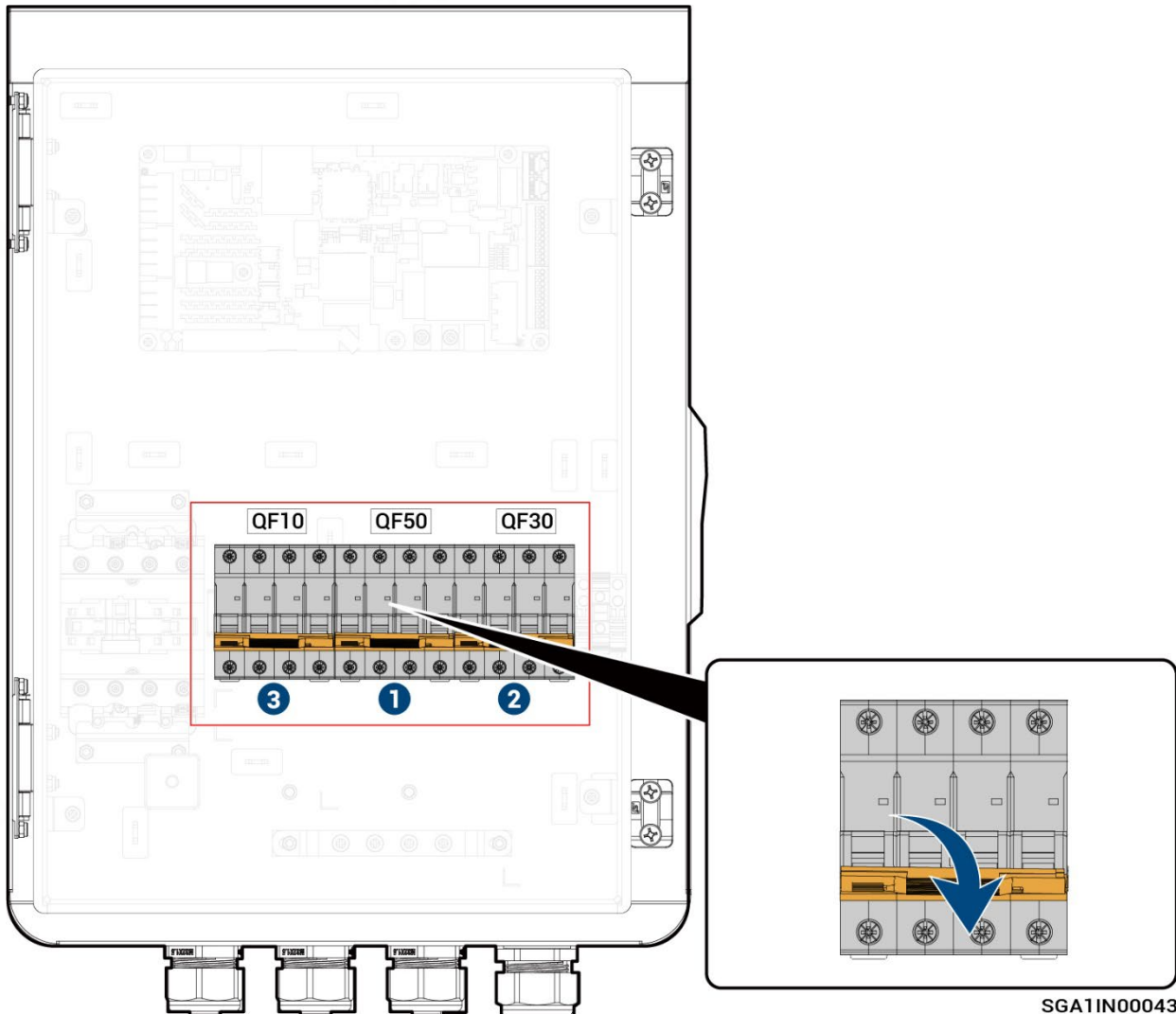


Warning

The Gateway should be disconnected in the following order:

1. Switch off the miniature circuit breaker (Backup Household loads) QF6.
2. (Optional) Switch off the miniature circuit breaker (Diesel generator/Smart load) QF2.
3. After shutting down the inverter, switch off the miniature circuit breaker (Inverter) QF3, QF4 or QF5.
4. Switch off the miniature circuit breaker (Power grid) QF1.
5. Switch off the miniature circuit breaker (Surge protection device) QF7.

6.1.6 Sigen Gateway Home TP

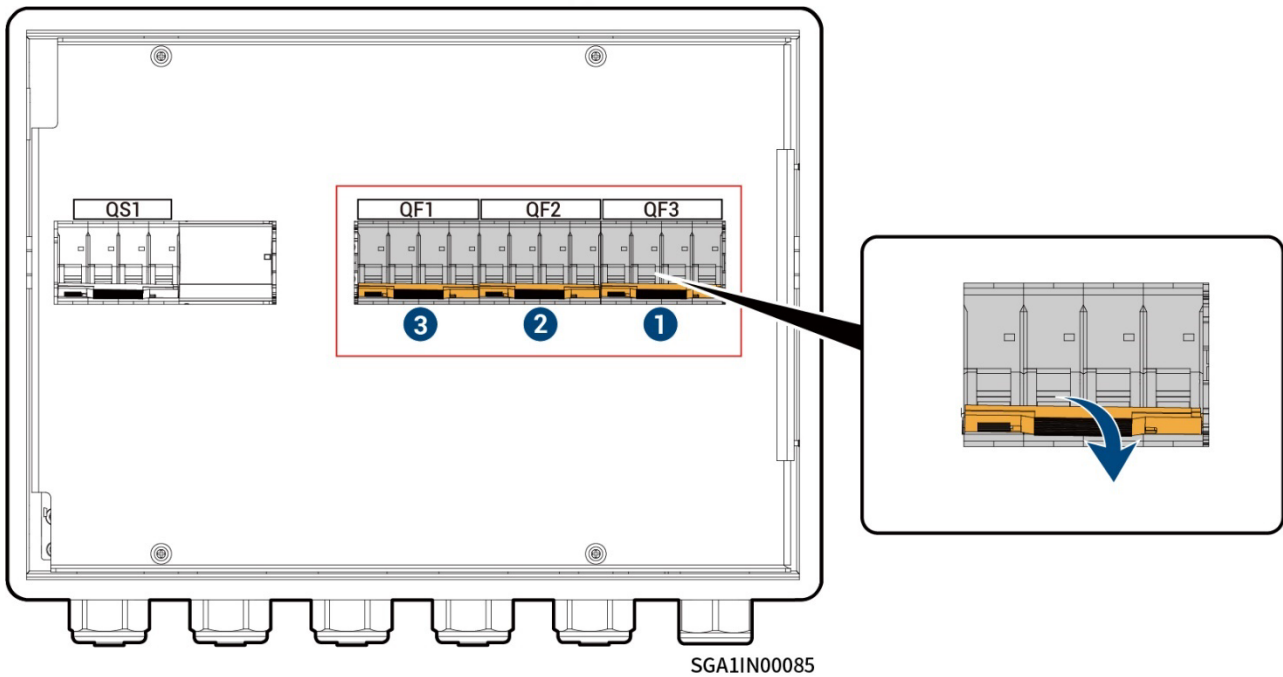


Warning

The Gateway should be disconnected in the following order:

1. Switch off the miniature circuit breaker (Backup Household loads) QF50.
2. After shutting down the inverter, switch off the miniature circuit breaker (Inverter) QF30.
3. Switch off the miniature circuit breaker (Power grid) QF10.

6.1.7 Sigen Gateway Home TP (30K, 30K CN)

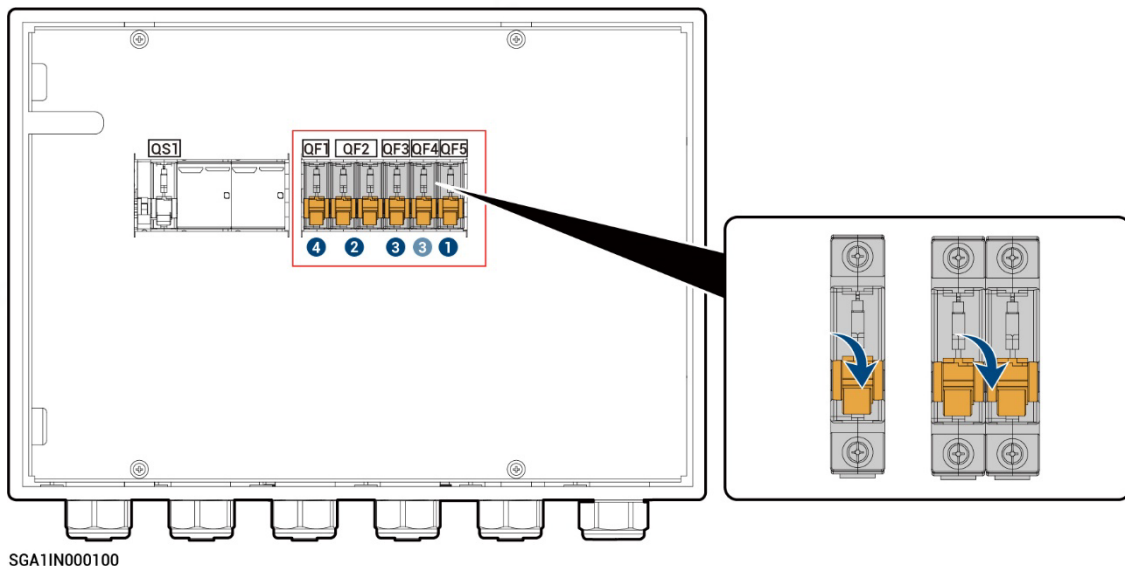


Warning

The Gateway should be disconnected in the following order:

1. Switch off the miniature circuit breaker (Backup Household loads) QF3.
2. After shutting down the inverter, switch off the miniature circuit breaker (Inverter) QF2.
3. Switch off the miniature circuit breaker (Power grid) QF1.

6.1.8 Sigen Gateway SP AU



Warning

The Gateway should be disconnected in the following order:

1. Switch off the miniature circuit breaker (Backup Household loads) QF5.
2. (Optional) Switch off the miniature circuit breaker (Diesel generator/ Smart load) QF2.
3. After shutting down the inverter, switch off the miniature circuit breakers (Inverter) QF3 or QF4.
4. Switch off the miniature circuit breaker (Power grid) QF1.

6.2 Routine Maintenance

To ensure the long-term operating of the equipment, you are advised to perform routine maintenance according to this section.

Inspection content	Inspection method	Power off or not	Maintenance cycle
System cleaning	Check the device regularly for shielding and dirt. If so, clean it up. Do not use tools that may cause electric shock or insulation damage, such as wire brushes and during the cleaning process.	Yes	Once every three months.
System operating state	<ul style="list-style-type: none"> ● Check whether the equipment is damaged or deformed. ● Listen for any abnormal noises during the operation of the equipment. ● When the equipment is operating, check whether the equipment parameters are correctly set. 	No	Once every six months.
Electrical connection	<ul style="list-style-type: none"> ● Check whether the cable sheath is damaged. ● Check whether scratches exist on the surface where the cable contacts the metal. ● Check whether unused routing holes are sealed. 	Yes	Check once every 6 months after you create new systems and once every 6 to 12 months thereafter.

Grounding reliability	<ul style="list-style-type: none"> ● Check whether the ground cable is properly and reliably connected. 	No	Check once every 6 months after you create new systems and once every 6 to 12 months thereafter.
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6.3 Troubleshooting

Fault	Cause analysis	Corrective action
The all-in-one machine shuts down/restarts repeatedly in off-grid mode.	The backup load is greater than the rated power of the all-in-one machine.	Turn off part of household loads to ensure the load is lower than the rated power of the all-in-one machine.
	The bypass switch is turned on by mistake.	Turn off the bypass switch.

6.4 Operations on Bypass Switch

Tips

- **In normal cases, the bypass switch is turned off. Do not operate the bypass switch. In this case, the Gateway can automatically switch between on-grid and off-grid.**
- **When the Gateway fails to supply power to loads, you can turn on the bypass switch to supply power to loads from the power grid.**

Steps

1. Check that the grid normally supplies power.
2. Power off by referring to 6.1 Power Off.
3. Refer to the delay time as instructed on the label on the equipment, wait for the specified time and turn on the bypass switch.

Warning

- There is residual current and the equipment is hot immediately after the equipment is powered off. Operating the equipment immediately upon power off may lead to electric shock or burns.
- High voltage exists in the equipment. Wear insulating gloves when turning on the switch.

Caution

After turning on the bypass switch, do not turn on the miniature circuit breaker connected to the inverter and diesel generator on Gateway. Otherwise, the power grid port will be charged, resulting in the risk of electric shock.

4. Turn on the miniature circuit breaker connected to the SPD.
5. Turn on the miniature circuit breaker connected to the power grid.
6. Turn on the miniature circuit breaker connected to backup household loads.
7. Close the equipment door.

6.5 Emergency Treatment

Emergency Measures for Fire

 **Danger**

- Please shut down the equipment or disconnect the main power switch when it is safe.
- If the fire is small, use carbon dioxide or ABC dry powder extinguisher to extinguish the fire.
- If the fire is spreading, evacuate the building or equipment area immediately and call the fire department. Re-entry to burning buildings is prohibited.
- Do not contact with high voltage components during fire fighting, otherwise it may lead to the risk of electric shock.
- After extinguishing the fire, do not use the equipment, please contact your installer or sales representative.

Emergency Measures for Flood

 **Danger**

- Please shut down the equipment or disconnect the main power switch when it is safe.
- After the flood waters recede, do not use the equipment. Please contact your installer or sales representative.

Chapter 7 Appendix

7.1 Technical Parameter

For details about equipment parameters, see the Data sheets of the product.