

# Sigen PV Max (3.6–6.0) SP

# Sigen Hybrid (3.6–6.0) SP

# User Manual

**Version: 03**

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## Revision History

Version	Date	Description
03	2024.03.22	Updated 2.3 Label Description  Updated Chapter 3 Site Selection Requirements
02	2024.01.02	Updated Chapter 3 Site Selection Requirements.
01	2023.10.24	First official release.

# Overview

## Introduction




The focus of this document is to provide an overview of the Sigen PV Max (3.6–6.0) SP and Sigen Hybrid (3.6–6.0) SP inverter, including product features, 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 and operation, familiarize yourself with signs and their definitions.

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

## Reference

For the important notice before installing the system, please refer to *01-Sigen PV Max (3.6–6.0) SP, Sigen Hybrid (3.6–6.0) SP Important Notice\_EN*

For the installation procedure, please refer to *02-Sigen PV Max (3.6–6.0) SP, Sigen Hybrid (3.6–6.0) SP Installation Guide\_EN*.

For the commissioning procedure and app guide, please refer to *System Commissioning Guide 0601*.

For the alarm code information, please refer to *03-Alarm list\_AU\_240601*.

# Chapter 1 Safety Precautions

## Basic Information

Before installing, operating, and maintaining 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 sales agent. The equipment shall be inspected and evaluated by professional personnel before continuing to use.

### Warning

Do not touch the heat sink when the equipment is running.

### Caution

- Do not use the equipment with faults. If the equipment appears abnormal (for example, appearance distortion), contact your sales agent.
- Carbon dioxide fire extinguishers and ABC dry powder fire extinguishers are recommended at home.

## 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 Model No.

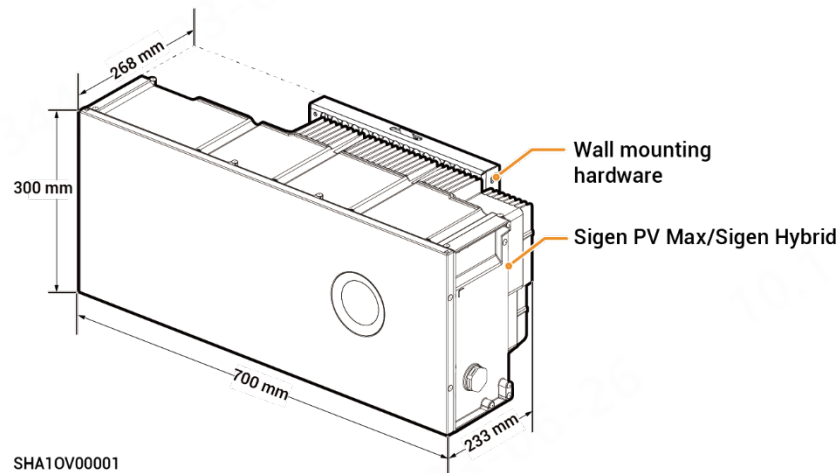
Product code	Model No.	Name	Function specification
Sigen PV Max*	Sigen PV Max 3.6 SP	Sigen PV Inverter Max 3.6 kW Single Phase	Single-phase string-type PV grid-connected inverters, are designed to convert the DC electricity generated by PV strings into AC electricity for Home loads or feeding into the grid. The LED strip light interface and ON/OFF button are unavailable for this product, and the decorative covers are non-configurable.
	Sigen PV Max 4.0 SP	Sigen PV Inverter Max 4.0 kW Single Phase	
	Sigen PV Max 4.6 SP	Sigen PV Inverter Max 4.6 kW Single Phase	
	Sigen PV Max 5.0 SP	Sigen PV Inverter Max 5.0 kW Single Phase	
	Sigen PV Max 6.0 SP	Sigen PV Inverter Max 6.0 kW Single Phase	
Sigen Hybrid**	Sigen Hybrid 3.6 SP	Sigen Hybrid Inverter 3.6 kW Single Phase	Inverter; it can be used in conjunction with PV modules for pure PV applications or in combination with PV modules and SigenStor BAT for photovoltaic storage systems after the purchase and activation of a license.
	Sigen Hybrid 4.0 SP	Sigen Hybrid Inverter 4.0 kW Single Phase	
	Sigen Hybrid 4.6 SP	Sigen Hybrid Inverter 4.6 kW Single Phase	
	Sigen Hybrid 5.0 SP	Sigen Hybrid Inverter 5.0 kW Single Phase	
	Sigen Hybrid 6.0 SP	Sigen Hybrid Inverter 6.0 kW Single Phase	

\* Sigen PV Max inverter series is only a grid connected inverter.

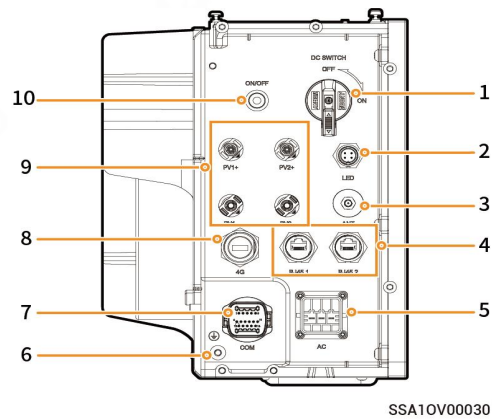
\*\* Sigen Hybrid inverter series is capable of functioning in off stand alone mode

## 2.2 Appearance Introduction

### Appearance and Dimensions









### Port Introduction



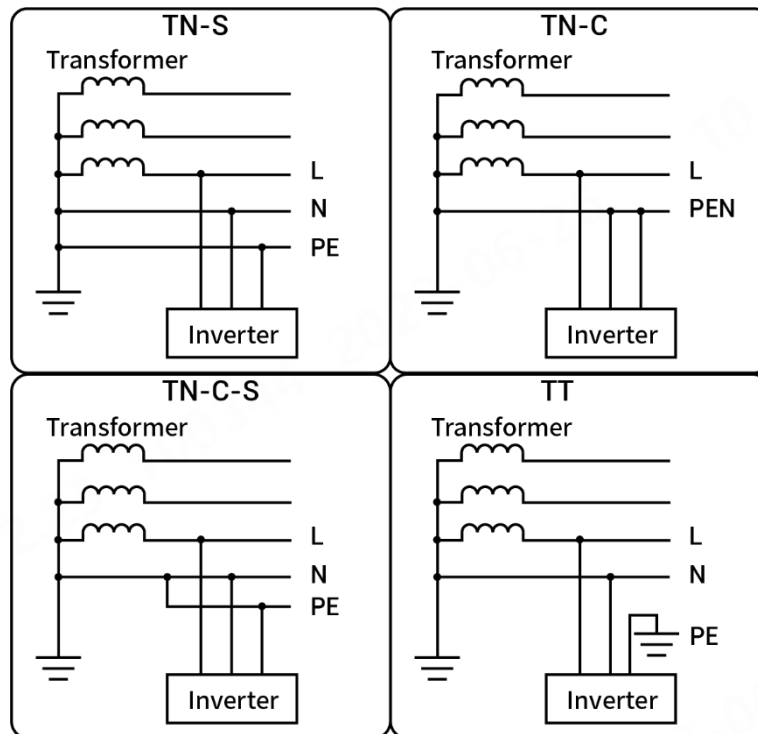
Serial No.	Name	Marking
1	Dc switch	DC SWITCH
2	Decorative cover strip light interface (This interface is unavailable for Sigen PV Max)	LED
3	Antenna interface	ANT
4	Cable interface	RJ45 1/ RJ45 2
5	AC output interface	AC
6	Ground screw	-
7	Communication interface	COM
8	Sigen CommMod interface	4G
9	DC input interface	PV1+/PV2+/ PV1-/PV2-
10	Switch button (This button is unavailable for Sigen PV Max)	ON/OFF

## 2.3 Label Description

Symbols	Definition
	<p>Danger! High Voltage</p> <p>High voltage exists inside the equipment when powered on. Do not open the casing when the equipment is running. Any maintenance or servicing operations must be performed by trained and skilled electrical engineers.</p>
	<p>Warning! Life at risk.</p> <p>The equipment has potential hazards after running. Take proper protection when operating the equipment.</p>
	<p>After the equipment is powered off, the discharge of internal components is delayed. Wait 10 minutes until the equipment is fully discharged according to the label time.</p>
	<p>Warning! Risk of burns.</p> <p>The surface of the heat dissipation area is hot when the equipment is running. Do not touch it to avoid burns.</p>
	<p>Please refer to the instructions to operate the equipment.</p>
	<p>Earthing mark</p>

## 2.4 Supported Power Supply Methods for the Power Grid

- The grid supply methods supported by Sigen PV Max or Sigen Hybrid include TN-S, TN-C, TN-C-S, and TT.
- When TT is used as the power supply technique for the power grid, the voltage between N and PE is required to be  $< 30$  V.

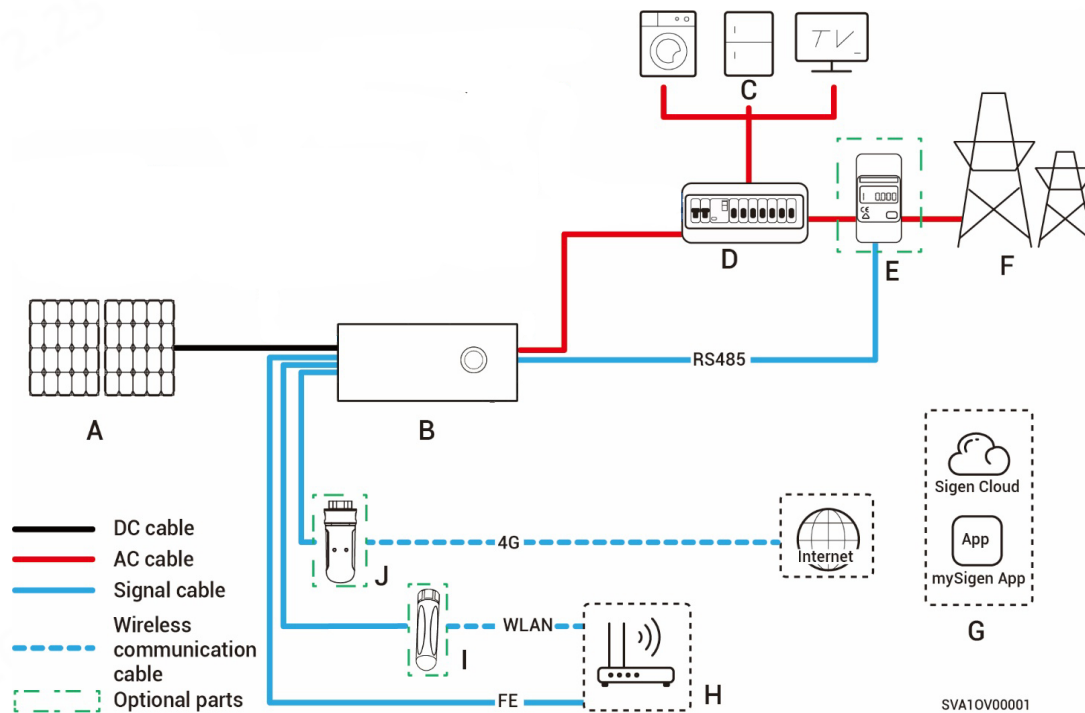


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## 2.5 Introduction to Typical Networking

Sigen PV Max or Sigen Hybrid is designed for grid-connected photovoltaic systems on residential rooftops. The grid-connected system consists of photovoltaic strings, inverters, distribution panels, and other components.

**Note:** Functionally earthed arrays is not suitable for Sigen PV Inverter and Sigen Hybrid inverter, and this kind use is prohibited.



- |                                 |  |                      |
|---------------------------------|--|----------------------|
| <b>A.</b> PV panel              | <b>B.</b> Sigen PV Max or Sigen Hybrid | <b>C.</b> Home loads |
| <b>D.</b> AC distribution panel | <b>E.</b> Power sensor                 | <b>F.</b> Power grid |
| <b>G.</b> mySigen               | <b>H.</b> Router                       | <b>I.</b> Antenna    |
| <b>J.</b> CommMod               |  |                      |

### Tips

- Sigen PV Max or Sigen Hybrid supports a maximum of 1 units in cascade connection. This cascade connection is only to build a single phase system. It is strictly prohibited to use single phase PV Max or Sigen Hybrid to combine multiple phase system.
- The rated voltage of the AC switch connected to each inverter should be  $\geq 240$  V.a.c. and the rated current is recommended:
  - Sigen PV Max/Sigen Hybrid (3.0-4.0) SP: The rated current is 25 A
  - Sigen PV Max/Sigen Hybrid (4.6-6.0) SP: The rated current is 40 A.
- It is recommended to use FE and WLAN for communication with inverter. CommMod users must top up their own 4G data plan after a period of 2 years.

# 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.

## Installation Environment Requirements

- Do not install the equipment in smoky, flammable, explosive, or corrosive 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).

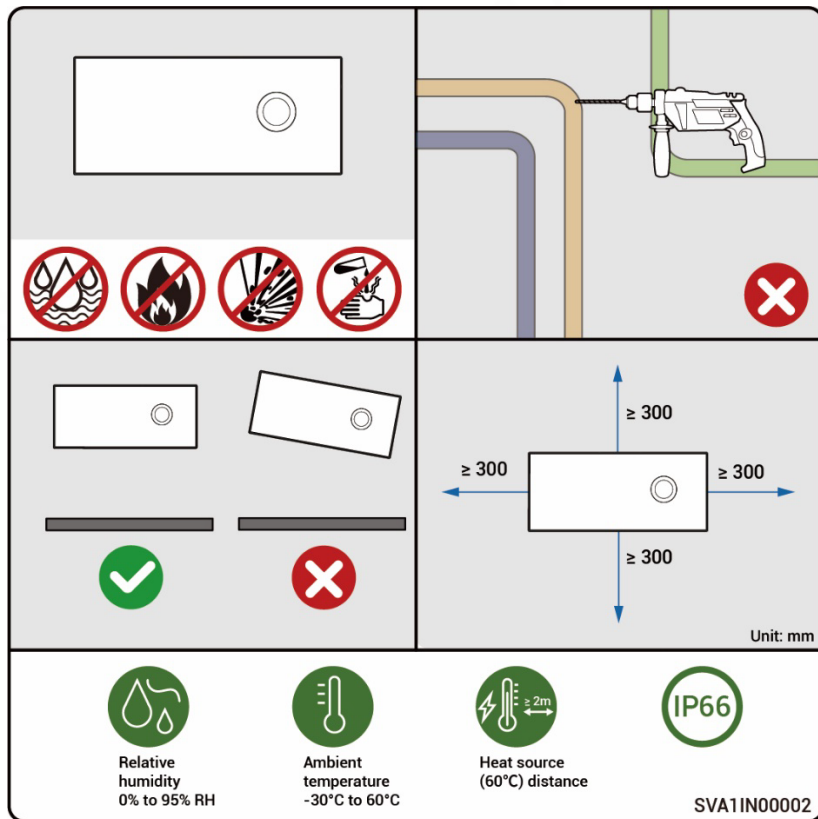
## Installation Position Requirements

- 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.
- Please keep away from the daily work and living places.
- Do not install the equipment in a sealed, poorly ventilated location without fire protection measures and difficult access for firefighters.

- The equipment will generate heat when operating. If the device is installed indoors, please ensure that the room is well ventilated. It is prohibited to cause the indoor temperature to rise significantly due to the operation of the device.
- Do not install the equipment in mobile scenarios such as RVS, cruise ships, and trains.
- You are advised to install the equipment in a location where you can easily access, install, operate, maintain it, and view the indicator status.
- When installing the equipment in the garage, do not install the equipment in the position where the vehicle passes through to avoid collision.

## **Mounting Surface Requirements**

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

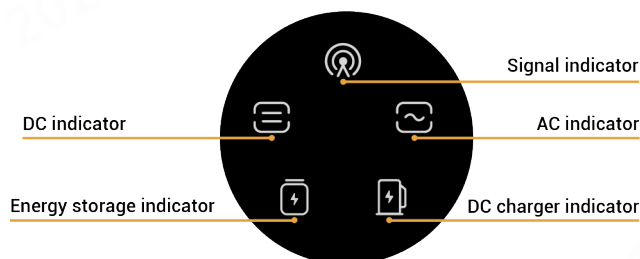


# Chapter 4 Equipment Installation and Wiring





















Only company authorized personnel should install and connect the equipment. For details, see ***Sigen PV Max (3.0–6.0) SP, Sigen Hybrid (3.0–6.0) SP Installation Guide***.

# Chapter 5 System Operation

## 5.1 LED Indicator State

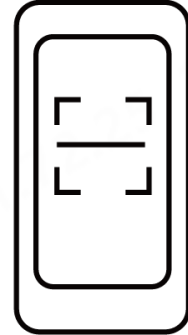


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Indicator	Color	State	Description
		Always on	The DC side is connected but not running.
		Always on	The DC side is running.
		-	The DC side is not connected.
		Flash	The DC side is faulty.
		Always on	The inverter is faulty.
		Always on	The AC side is connected but not running.
		Always on	Grid-connected operation.
		Always on	Off-grid operation.
		-	The AC side is not connected.
		Flash	Off-grid overload operation.
		Flash	The AC side is faulty.
		Always on	The inverter is faulty.
		-	The management system is not connected.
		Flash	Connected to local App.
		Always on	Connected to the management system using an FE or WLAN.
		Always on	Connected to the management system over 4G.
		Flash	Insufficient traffic for Sigen CommMod.

## 5.2 mySigen App Query

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



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## Chapter 6 System Maintenance

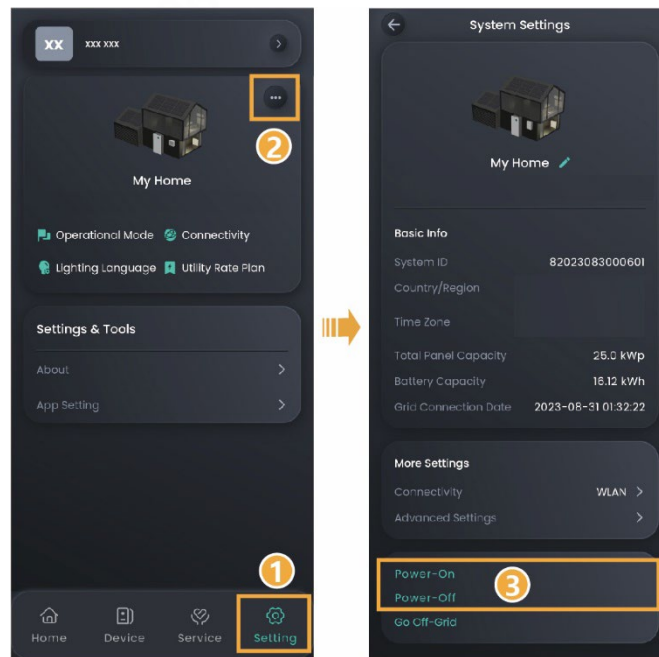
### 6.1 Routine Maintenance

To ensure the long-term running 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 wet towels during the cleaning process.	Yes	Once every three months.
System running state	<ul style="list-style-type: none"> <li>● Check whether the equipment is damaged or deformed.</li> <li>● Listen for any abnormal noises during the operation of the equipment.</li> <li>● When the equipment is running, check whether the equipment parameters are correctly set.</li> </ul>	No	Once every six months.

## 6.2 Equipment Powering-on/Power-off

Tap "Setting" in mySigen App to turn on/off the device.



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## 6.3 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 sales agent.

### 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 sales agent.

# Chapter 7 Appendix

## 7.1 Technical Parameter

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

Pollution degree: PD2, PD3;

Isc(Battery port): 90 A

Environmental category: outdoor, indoor conditional, indoor unconditional;

backfeed current: 0A;

For Sigen PV Max 3.6 SP or Sigen Hybrid 3.6 SP the inrush current is 16.0 A, the Max. output overcurrent protection is 24.0 A, the Max. output fault current is 57.6 A;

For Sigen PV Max 4.0 SP or Sigen Hybrid 4.0 SP the inrush current is 19.1 A, the Max. output overcurrent protection is 28.7 A, the Max. output fault current is 63.1 A;

For Sigen PV Max 4.6 SP or Sigen Hybrid 4.6 SP the inrush current is 21.7 A, the Max. output overcurrent protection is 32.5 A, the Max. output fault current is 65.0 A;

For Sigen PV Max 5.0 SP or Sigen Hybrid 5.0 SP the inrush current is 21.7 A, the Max. output overcurrent protection is 32.5 A, the Max. output fault current is 65.0 A;

For Sigen PV Max 6.0 SP or Sigen Hybrid 6.0 SP, the inrush current is 28.7 A, the Max. output overcurrent protection is 43.0 A, the Max. output fault current is 86.0 A;

For the above Sigen Hybrid inverter models, the Isc(Battery Port) is 90 A;

For both Sigen Hybrid and PV inverter, the Isc(PV) IS 20 A;

PV array configuration: Floating.

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