



# Adapter Box G3

## User Manual

Version 1.0

[www.solaxpower.com](http://www.solaxpower.com)



eManual in the QR code or  
at <http://kb.solaxpower.com/>



# STATEMENT

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# About This Manual

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## Scope of Validity

This manual is an integral part of Adapter Box G3. It describes the transportation, storage, installation, electrical connection, commissioning, maintenance and troubleshooting of the product. Please read it carefully before operating.




## Target Group

The installation and maintenance can only be performed by qualified personnel who:

- Are licensed and/or satisfy state and local jurisdiction regulations.
- Have good knowledge of this manual and other related documents.

## Conventions

The symbols that may be found in this manual are defined as follows.

Symbol	Description
 <b>DANGER</b>	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
 <b>WARNING</b>	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
 <b>CAUTION!</b>	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
<b>NOTICE!</b>	Provides tips for the optimal operation of the product.

## Change History

### Version 1.0 (2025-06-16)

Updated applicable models in ["7.9.4 LCD settings on the inverter"](#)

Updated images and contents about Solax App

Added ["14.3 DI Terminal Description"](#)

### Version 0.0 (2025-03-18)

Initial release

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# 1 Safety

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## 1.1 General Safety

The Adapter Box G3 has been meticulously designed and thoroughly tested to comply with the relevant state and international safety standards. Nevertheless, like all electrical and electronic device, safety precautions must be observed and followed during the installation of the device to minimize the risk of personal injury and ensure a safe installation.

Please thoroughly read, fully comprehend, and strictly adhere to the comprehensive instructions provided in the user manual and any other relevant regulations prior to the installation of the device. This document does not replace and is not intended to replace any local, state, provincial, federal or national laws, regulations or codes applicable to the installation, electrical safety and use of the device.

SolaX assumes no responsibility for any consequences resulting from the violation of the storage, transportation, installation and operation regulations outlined in this document. Such consequences include, but are not limited to:

- Device damage caused by force majeure events, such as earthquakes, floods, thunderstorms, lightning, fire hazards, volcanic eruptions, and similar events.
- Device damage due to human causes.
- Device damage caused by strong vibrations from external factors before, during and after installation.
- Use or operation of the Device in violation of state and local policies or regulations.
- Failure to comply with the operation instructions and safety precautions provided with the product and in this document.
- Improper installation or use of the Device in unsuitable environmental or electrical conditions.
- Unauthorized modifications to the product or software.
- Device damage occurring during transportation by the customer.
- Storage conditions that do not meet the requirements specified in this document.
- Installation and commissioning performed by unauthorized personnel who lack the necessary licenses or do not comply with state and local regulations.

## 1.2 Safety Instructions

Save these important safety instructions. Failure to follow these safety instructions may result in damage to the product and injury or even loss of life.

### CAUTION!

- Before installation, ensure all power of the Adapter Box G3 has been cut off.
- Do not dismantle or scrap by force.
- Strictly follow the user manual to connect cables and the enclosure must be well locked before the Adapter Box G3 is electrified.  
Unauthorized opening and cable connection will void the warranty and cause lethal danger or serious injury due to electric shock.
- Refer to the corresponding user manual for related safety requirements when it is connected to other devices.
- Anti-static measures should be taken to decrease the damage of static electricity to electronic components.
- Keep away from flammable, explosive materials.
- All the product labels and nameplate on the device shall be maintained clearly visible.

### CE DECLARATION OF CONFORMITY

- The product conforms to RF specifications and technical standards.
- The device complies with DOC declaration.
- The device meets the basic requirements and other relevant provisions of 2014/53/ EU directive.
- The device is allowed to be used in all EU member states.
- Manufacturer: SolaX Power Network Technology (Zhejiang) Co., Ltd.  
Product type: Adapter Box G3

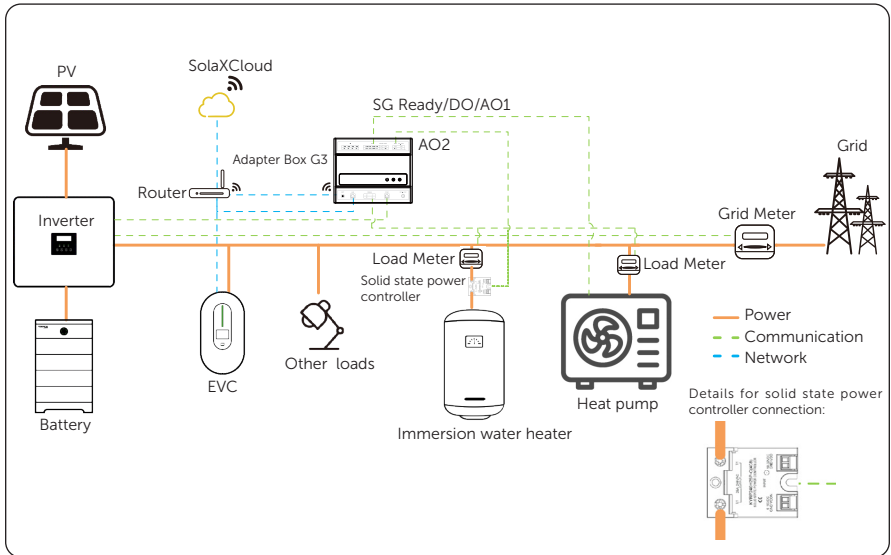
# 2 Product Overview

## 2.1 Product Introduction

Adapter Box G3 is a smart energy distributor for PV applications. Adapter Box G3 supports multiple signal control modes, it will intelligently distribute the connected different loads according to preset modes based on the current remaining PV and the allowable electricity consumption on the grid. And it can monitor the electricity consumption of each load, and upload all the data to the SolaXCloud. Each load supports individual mode control, and different operating modes for different loads will take effect under the internal control logic of the Adapter Box G3. The supported load types are heat pump, immersion water heater, EV Charger, and other controllable loads.

### NOTICE!

- This device is intended to be used as a complementary product to a PV system. To ensure proper use, please check that the connected inverter is compatible and has the corresponding firmware.



## 2.2 Appearance

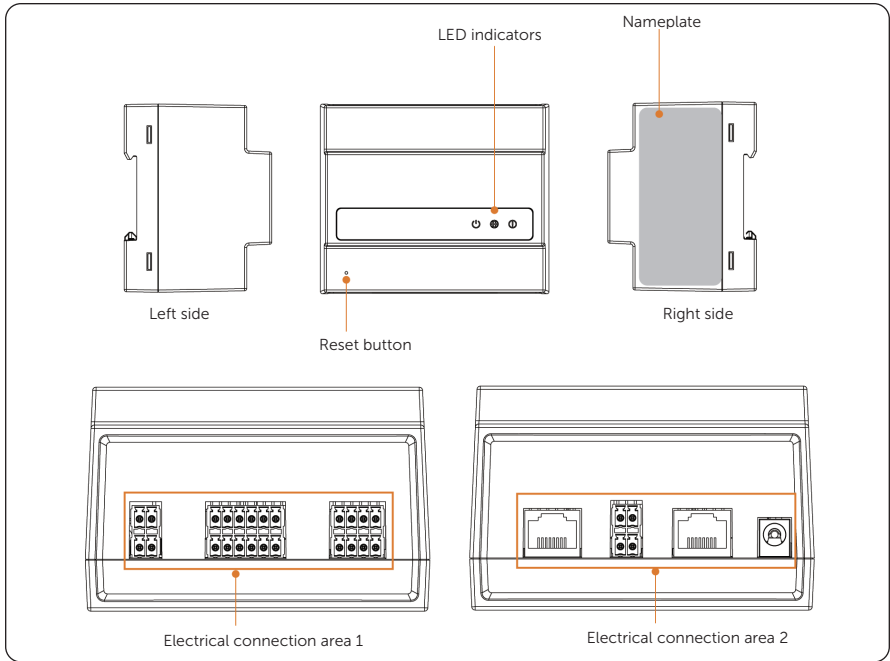


Figure 2-1 Appearance

Table 2-1 Description of appearance

Item	Description
Nameplate	Nameplate clearly identifies the device type, serial number (registration number), specific parameters, certification, etc.
LED indicators	Indicators indicate the status of Adapter Box G3.
Electrical connection area 1	Including 12V_OUT, AO2, AO1, RS485, DO and DI terminals.
Electrical connection area 2	Including LAN, RS485, COM and DC IN 12V terminals.

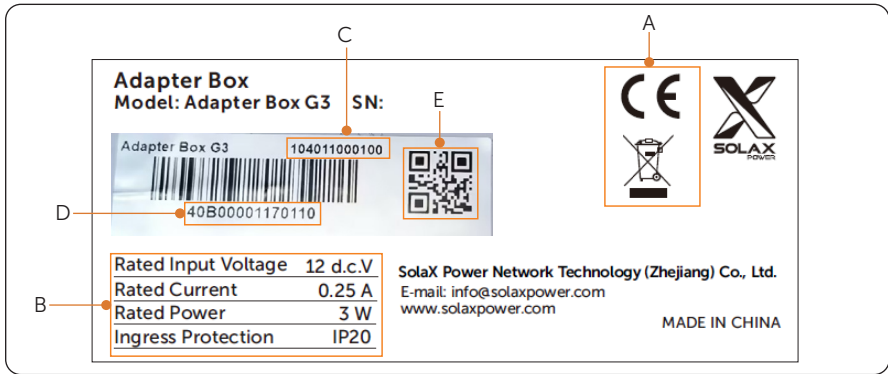




Figure 2-2 Nameplate

Table 2-2 Description of appearance

Item	Description
A	Certifications
B	Specific parameters
C	Product number
D	Serial number
E	Registration number: Scan the QR code to complete network connection settings for the Adapter Box G3.

## 2.3 Symbols on the Label and Inverter

Table 2-3 Description of symbols

Symbol	Description
	CE mark. The device complies with the requirements of the applicable CE guidelines.
	Do not dispose of the device together with household waste.

## 2.4 Working Mode

Working mode refers to the operating mode of a load; different loads can operate in different modes.

Table 2-4 Description of working state

State	Description
Solar mode	<ul style="list-style-type: none"><li>• Adapter Box G3 can intelligently control the load power according to the current remaining PV, to achieve the maximum utilization of PV.</li></ul>
Quick mode	<ul style="list-style-type: none"><li>• Users can configure the Adapter Box G3 manually to control the power of loads.</li><li>• In this mode, the energy is provided by PV or Grid. When there is PV, PV is preferred; When there is no PV, the energy is provided by Grid.</li></ul>
Signal OFF	<ul style="list-style-type: none"><li>• In this mode, Adapter Box G3 does not control the loads.</li></ul>

# 3 Transportation and Storage

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If the Adapter Box G3 is not put into use immediately, the transportation and storage requirements need to be met:

## Transportation

- The device must be transported in its original packaging. SolaX will not be held responsible for any damage to the device caused by improper transportation or by transportation after it has been installed.
- Observe the caution signs on the packaging of the Adapter Box G3 before transportation.

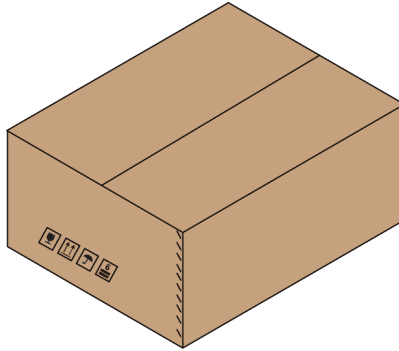


Figure 3-1 Caution signs on the packaging

## Storage

- The Adapter Box G3 must be stored indoors.
- Do not remove the original packaging material and check the outer packaging material regularly.
- The storage temperature should be between  $-30^{\circ}\text{C}$  and  $+60^{\circ}\text{C}$ . The relative humidity should be between 45%RH and 75%RH.
- Stack the Adapter Box G3 in accordance with the caution signs on the carton.

# 4 Preparation before Installation

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## 4.1 Selection of Installation Location

The installation location selected for the Adapter Box G3 is quite critical in the aspect of the guarantee of machine safety, service life and performance. It should be installed indoors. The installation position shall be convenient for wiring connection, operation and maintenance.

### 4.1.1 Environment Requirement

Make sure the installation environment meets the following conditions:

- The ambient temperature:  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ .
- The relative humidity shall be between 0-95%RH.
- Do not install it in the areas where the altitude exceeds 2000 m.
- Do not install it in areas with flammable, explosive and corrosive materials.

### 4.1.2 Clearance Requirement

When mounting the Adapter Box G3 inside the distribution box, ensure that the following distance is reserved.

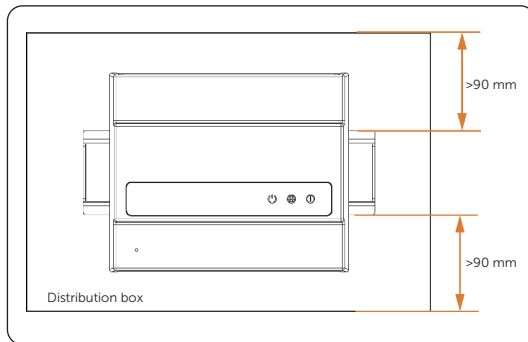
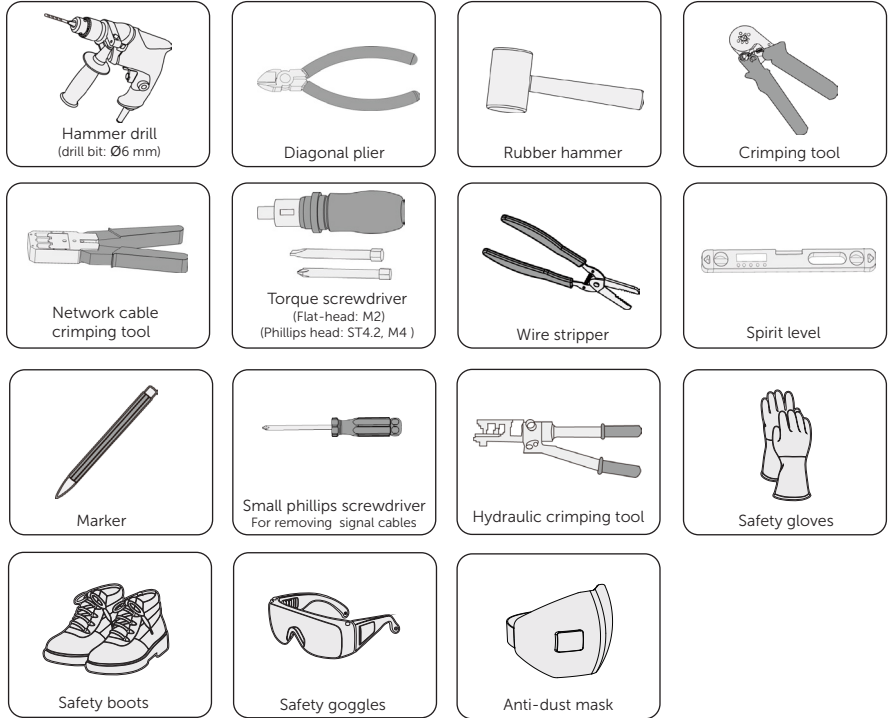


Figure 4-2 Clearance requirement






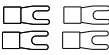
## 4.2 Tools Requirement

Installation tools include but are not limited to the following recommended ones. If necessary, use other auxiliary tools on site. Please note that the tools used must comply with local regulations.



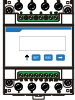

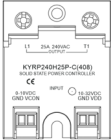
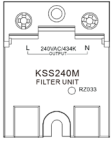

### 4.3 Additionally Required Materials

Table 4-1 Additionally required wires

No.	Required Material	Type	Conductor Cross-section
1	LAN and COM wire		Network cable CAT5E/CAT6 0.2 mm <sup>2</sup>
2	DI wire		Four-core cable 0.25~0.3 mm <sup>2</sup>
3	RS485/ AO/12V_OUT wire		Two-core cable 0.25~0.3 mm <sup>2</sup>
4	DO wire		Eight-core cable 0.25~0.3 mm <sup>2</sup>
5	Filter unit and solid state power controller wire		Single core cable 2.5 mm <sup>2</sup>
6	UT terminal		Suitable wire diameter: 2.5 mm <sup>2</sup> Suitable screw: M4 /

**NOTICE!**

- For DI and DO connection, you can also use two two-core cables and four two-core cables.

No.	Required Material	Type/Function	Source
1	Three-phase meter	 DTSU666-CT; M3-40	Purchased from Solax
2	Single-phase meter	 DDSU666-CT; M1-40	Purchased from Solax
3	Solid state power controller	 <p>Supports 0~10V analog input control. It's power supply can be AC or DC, if DC power supply needs to be provided by Adapter Box G3, the power supply voltage of Adapter Box G3 should be <math>12V \leq 30mA</math>. 50 ° C derated flow capacity should be more than 15A.</p>	Purchased from Solax (recommend), or prepared by user
4	Filter unit	 <p>Grid voltage range: (48~275) Va.c. Internal MOV protective voltage scope: (423~517) V Capacitance value range: (387~473) nF Resistance Value Range:(950~1050) kΩ</p>	Purchased from Solax (recommend), or prepared by user
5	12V DIN-rail power supply	 <p>Supports 12V DC output, output current should be greater than 1A. Supports DIN-rail mounting.</p>	Purchased from Solax (recommend), or prepared by user

**NOTICE!**

- The meter connected to COM port is used to feedback the three-phase/single-phase power information of the system's grid port, so as to control the corresponding loads.
- The meter connected to the RS485-1 port is used to monitor the power information of the corresponding connected three-phase/single-phase loads, and the data is used to precise control the loads and can be uploaded to the SolaxCloud for data display.

# 5 Unpacking and Inspection

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## 5.1 Unpacking

- The Adapter Box G3 undergoes 100% testing and inspection before delivery. However, damages may still occur during transportation. Before unpacking, please carefully check the external packaging for any signs of damage, such as punctures or cracks.
- Unpacking the Adapter Box G3 according to the following figure.

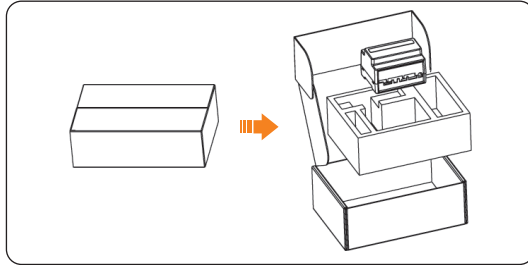


Figure 5-3 Unpacking the Adapter Box G3

- Properly handle all the packaging materials in case they may be reused for storage and transportation of the Adapter Box G3 in the future.
- Upon opening the package, check whether the Adapter Box G3 is intact and whether all accessories are included. If any damage is found or any parts are missing, contact your dealer immediately.

## 5.2 Scope of Delivery

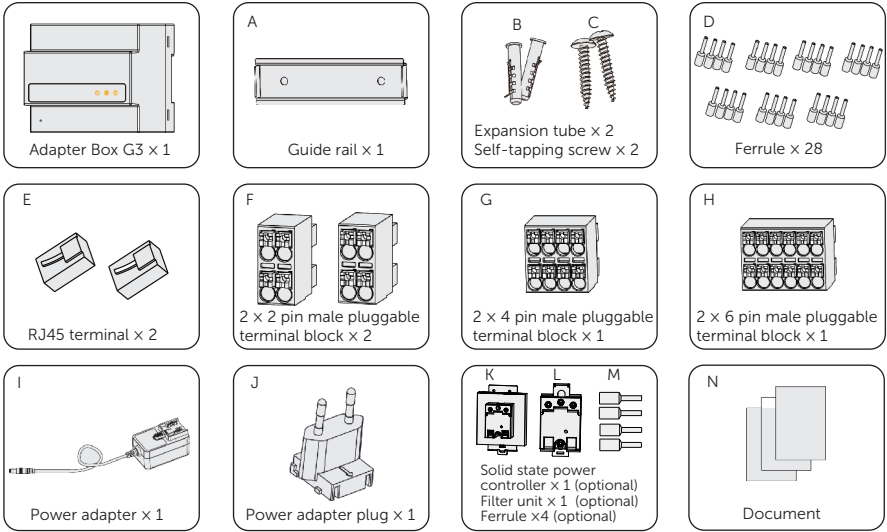


Table 5-1 Packing list

Item	Quantity	Remark
/ Adapter Box G3	1 pc	
A Guide rail	1 pc	For fixing the Adapter Box G3
B Expansion tube	2 pcs	For fixing the guide rail
C Self-tapping screw	2 pcs	For fixing the guide rail
D Ferrule	28 pcs	
E RJ45 terminal	2 pcs	For LAN and COM port connection
F 2 × 2 pin male pluggable terminal block	2 pcs	
G 2 × 4 pin male pluggable terminal block	1 pc	
H 2 × 6 pin male pluggable terminal block	1 pc	
I Power adapter	1 pc	For power adapter connection
J Power adapter plug	1 pc	For power adapter connection

## Unpacking and Inspection

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	Item	Quantity	Remark
K	Solid state power controller (optional)	1 pc	
L	Filter unit (optional)	1 pc	
M	Ferrule (optional)	4 pcs	
N	Document	/	

### NOTICE!

- The power adapter plug is based on the actual product and may vary depending on the country or region.

## 6 Mechanical Installation

### WARNING!

- Only qualified personnel are allowed to perform the mechanical installation in accordance with local laws and regulations.
- Check the existing power cables or other piping in the wall to prevent electric shock or other damage.
- Use insulated tools and wear personal protective equipment throughout the installation and maintenance process.

### NOTICE!

- Avoid installing the Adapter Box G3 forward tilted, side tilted, or upside down.

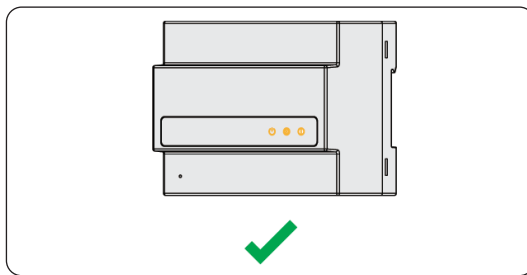


Figure 6-1 Correct installation

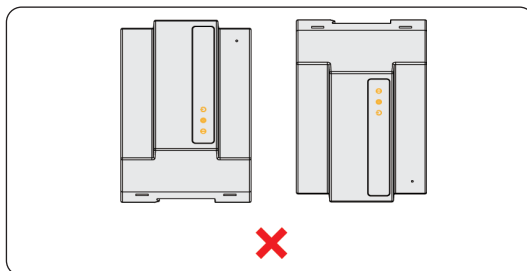


Figure 6-2 Incorrect installation

### 6.1 Dimensions for mounting

Before installation, check the dimensions of the product and the guide rail and ensure that enough space is reserved for the installation.

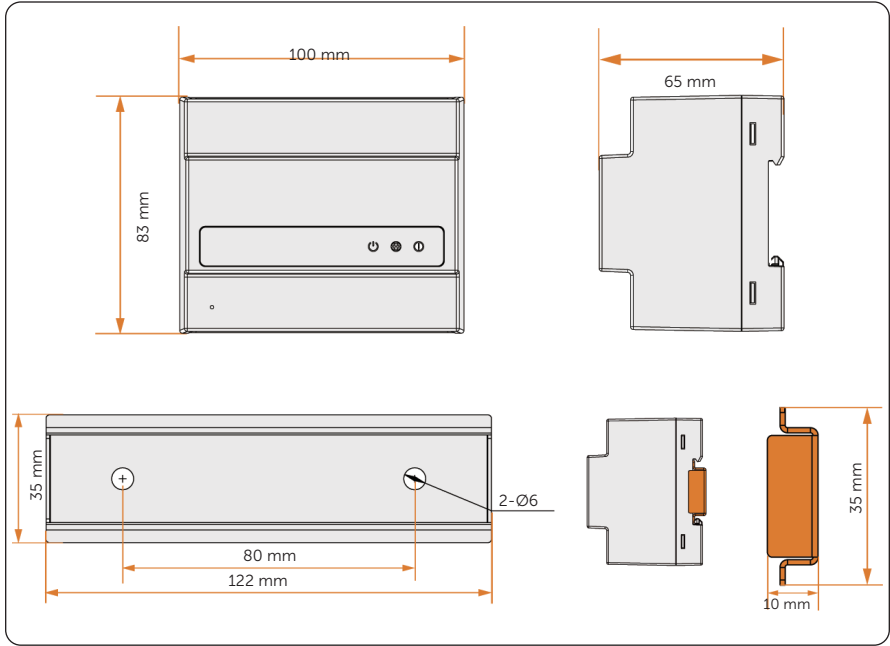


Figure 6-3 Dimensions

## 6.2 Installation procedures

### NOTICE!

- The Adapter Box G3 has two mounting options: wall mounting and mounting inside the distribution box. When you choose to mount inside the distribution box, follow step 5 of wall mounting.

**Step 1:** Align the guide rail (Part A in chapter 5.2) with the wall, adjust the position of the guide rail with a spirit level until the bubble stays in the middle, then mark holes.

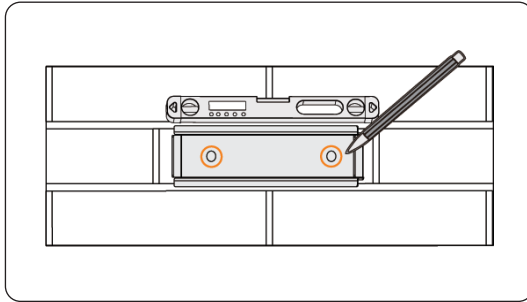


Figure 6-4 Marking the holes

**Step 2:** Set the guide rail aside and drill holes with  $\varnothing 6$  drill bit. The depth of the holes should be over 30 mm.

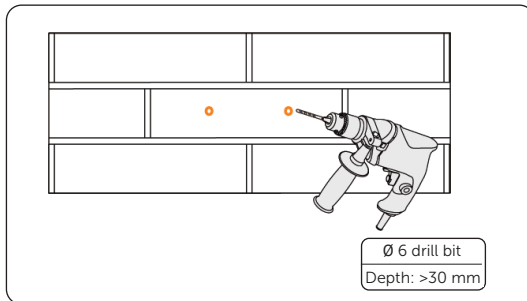


Figure 6-5 Drilling holes

**Step 3:** Take the expansion tubes (Part B in chapter 5.2) from the accessory bag, then knock them into the holes by rubber mallet.

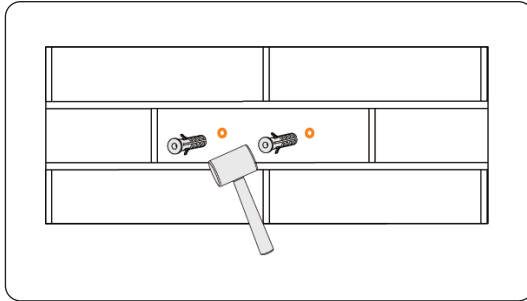


Figure 6-6 Knocking the expansion tubes

**Step 4:** Attach the guide rail on the wall again. Insert the self-tapping screws (Part C in chapter 5.2) into the expansion tubes, fix the guide rail to the wall, then tighten the screws with a philips head screwdriver.

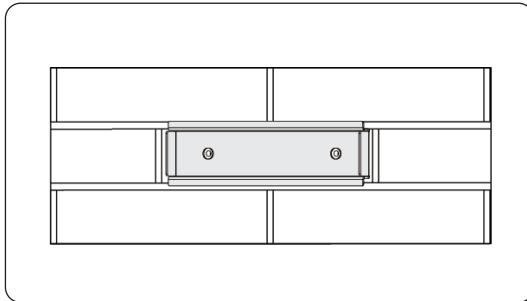


Figure 6-7 Attaching the guide rail on the wall

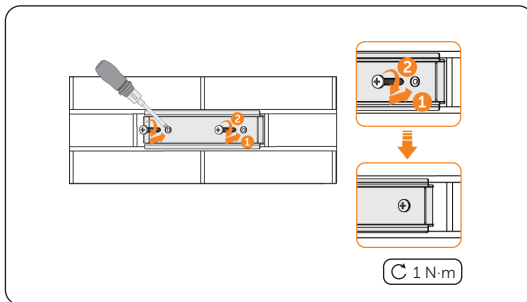


Figure 6-8 Fixing the guide rail

**Step 5:** Take out the Adapter Box G3. Lift up it and hang it onto the guide rail. Insert the bottom side of the Adapter Box G3 into the lower part of the guide rail from below, then press the box downward so that the top side of the box also locks into the upper part of the rail. Make sure that the Adapter Box G3 is firmly fixed on the guide rail.

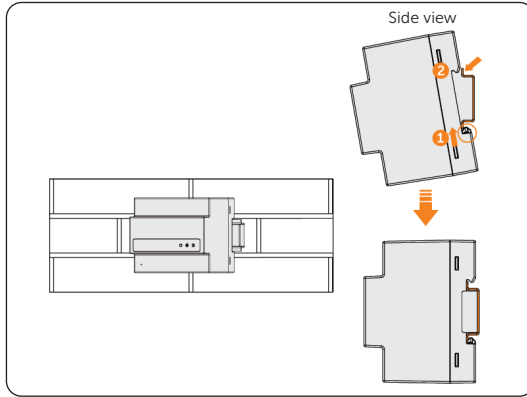


Figure 6-9 Hanging the Adapter Box G3

# 7 Electrical Connection

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## DANGER!

- Before electrical connection, make sure the power adapter and the solid state power controller are disconnected; the connection between power adapter and the Adapter Box G3 are disconnected. Otherwise, the high voltage may cause electric shock, resulting in severe personal injuries or even death.

## WARNING!

- Only qualified personnel are allowed to perform the electrical connection following local laws and regulations.
- Strictly follow the instructions of this manual or other related documentation for electrical connection. Damages caused by incorrect wiring are not covered by the warranty.
- Use insulated tools and wear personal protective equipment throughout the electrical connection process.

## 7.1 Overview of Electrical Connection

### 7.1.1 Terminals of Adapter Box G3

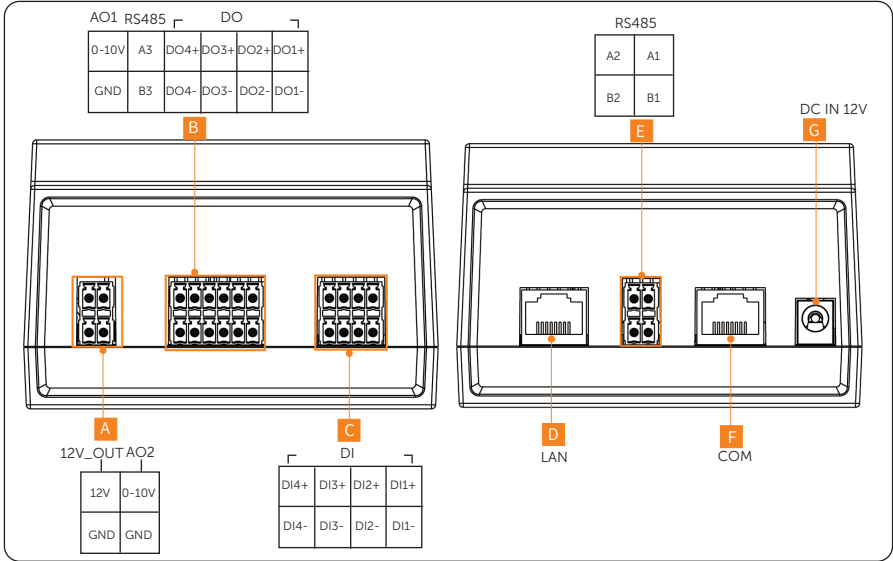


Figure 7-1 Terminals of Adapter Box G3

Table 7-1 Description of terminals

Item	Description	Remarks
A	12V_OUT, AO2 terminals	12V_OUT for DC power output, AO2 for analog signal output.
B	AO1, RS485, DO terminals	AO1 for analog signal output, RS485 for heat pump connection, DO for drycontact output.
C	DI terminal	For drycontact input.
D	LAN terminal	For network connection.
E	RS485 terminal	A1, B1 for meter connection. A2, B2 are reserved for later use.
F	COM terminal	For communication with inverter or other devices.
G	DC IN 12V terminal	For power adapter or the third party DIN-rail power supply connection.

Item	Description	Remarks
H	Reset button	<p>Press the reset button for 1-2s to reset the login password to the default password.</p> <p>The default login account and password of the local Web are admin and password. You can modify the password on the Web, and reset it by this reset button after modification.</p> <p>The diameter of the tool used to operate the reset button should not exceed 1.2 mm.</p>

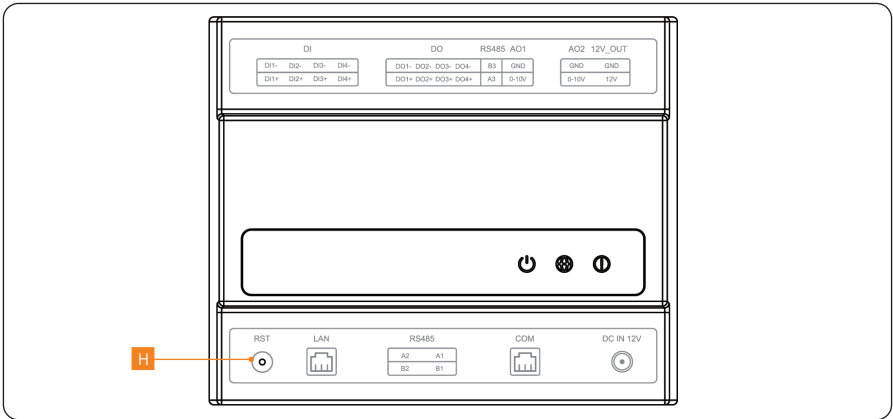


Figure 7-2 Terminals of Adapter Box G3

7.1.2 Cable Connections of Adapter Box G3

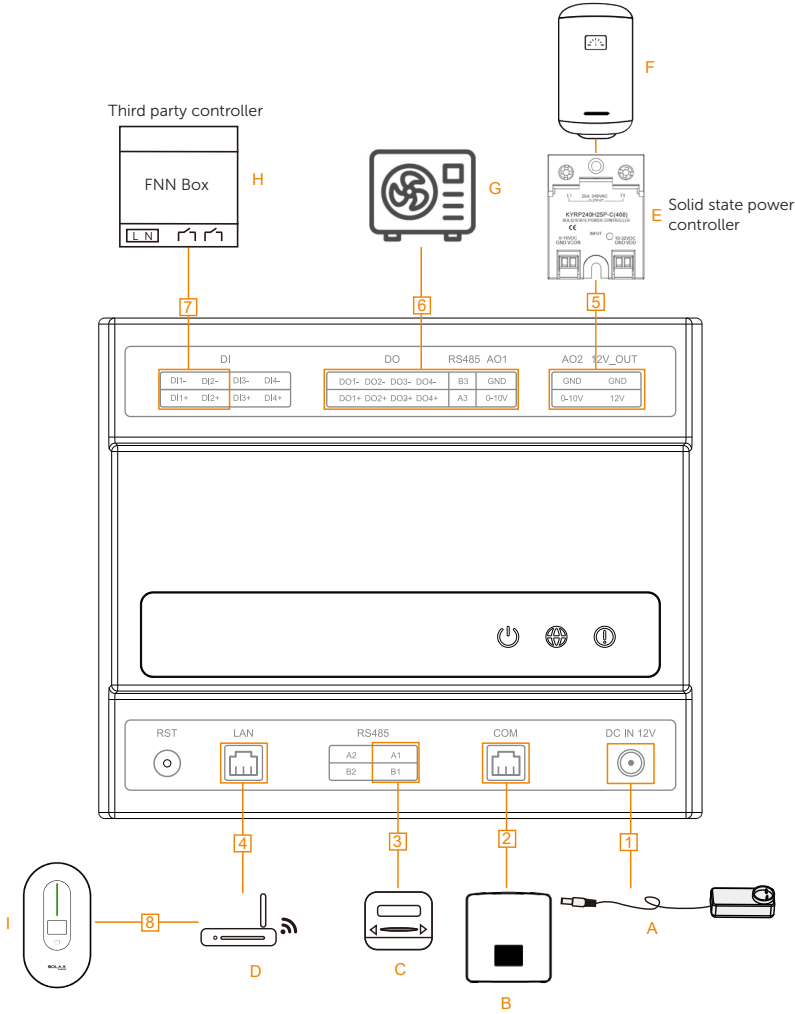


Figure 7-3 Cable connections of Adapter Box G3

Table 7-2 Descriptions of connected part

Item	Terminal	Part	Description	Source
A	DC IN 12V terminal	Power adapter	Users can use the standard power adapter prepared by SolaX, or use a third party DIN-rail power supply prepared by users themselves (12Vdc, 1A)	Prepared by SolaX
B	COM terminal	Inverter	Can be connected with the compatible inverter or other devices.	Purchased from SolaX
C	RS485 terminal	Meter	Supported meter: SolaX authorized	Purchased from SolaX
D	LAN terminal	Router	To connect to the network.	Prepared by user
E	AO2 and 12V_OUT terminal	Solid state power controller	Supports 0~10V analog input control. It's power supply can be AC or DC, if DC power supply needs to be provided by Adapter Box G3, the power supply voltage of Adapter Box G3 should be 12V ≤ 30mA. 50 ° C derated flow capacity should be more than 15A. (Control the power consumption of the immersion water heater.)	Purchased from SolaX or prepared by user
F	/	Immersion Water heater	Connect to the solid state power controller	Prepared by user
G	DO, RS485 and AO1 terminal	Heat pump or other loads	<ul style="list-style-type: none"> <li>Heat pump support for SG ready or dry contact</li> <li>Heat pump support for RS485 communication</li> <li>Heat pump and other loads support for DO function</li> <li>Heat pump and other loads support for AO function</li> </ul>	Prepared by user
H	DI terminal	Third party controller	Power grid scheduling device	Prepared by user

Item	Terminal	Part	Description	Source
I	/	EV Charger	Compatible with EV Charger G1/G2. EV Charger is communicated by Modbus TCP protocol. It is recommended to use Ethernet network cable to connect the router. WiFi connection may be unstable due to the long distance between the router and the EV Charger.	Purchased from SolaX

Table 7-3 Descriptions of cables

Item	Cable	Type and specifications	Source
1	Power adapter	Users can use the standard power adapter, or use a third party DIN-rail power supply (12Vdc, 1A)	Purchased from SolaX or prepared by user
2/4	Network cable	Refer to " <a href="#">5.3 Additionally Required Materials</a> ".	Prepared by user
3/5/6/7	Signal cable		
8	Network cable	CAT5E/CAT6	Prepared by user

## 7.2 DI Connection

DI port has 4 channel input drycontact detection. DI1+, DI1-, DI2+ and DI2- are connected to external smart devices (third party controller) to receive grid commands. DI3+, DI3-, DI4+ and DI4- are reserved for later use.

### Wiring procedures

**Step 1:** Prepare a four-core cable and strip the insulation of the DI cable to an appropriate length.

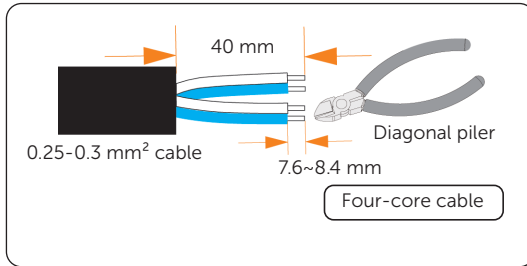


Figure 7-4 Stripping the DI cable

**Step 2:** Insert the stripped section into ferrules (Part D in chapter 5.2).

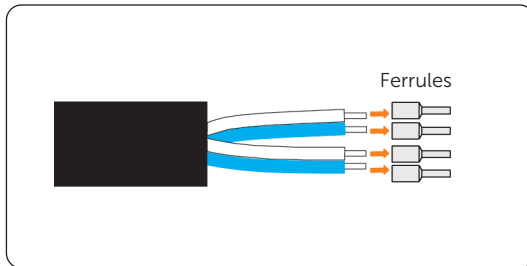


Figure 7-5 Inserting into ferrules

**Step 3:** Crimp it with crimping tool. Make sure the conductors are correctly assigned and firmly seated in the ferrules.

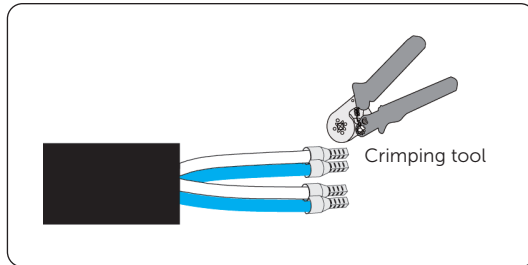


Figure 7-6 Crimping the cables

**Step 4:** Insert the crimped cables into the corresponding terminals at 2x 4 pin male pluggable terminal block (Part G in chapter 5.2) .

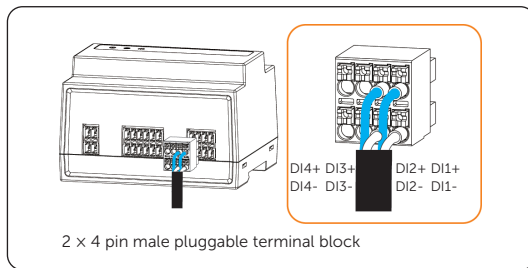


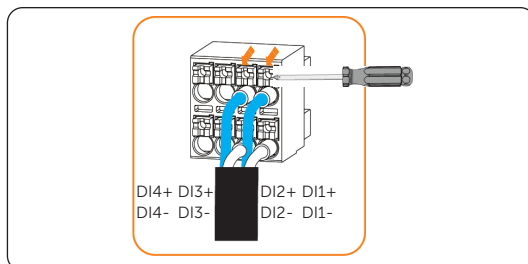
Figure 7-7 Inserting the cables

### NOTICE!

- The length of DI cable should not exceed 100 m.

### Removing the cables

For removing the cables, press the position indicated by the arrow with the small phillips screwdriver and pull out the cables. Remove other signal cables in the same way as for DI cable.



### 7.3 DO Connection

DO port has 4 channel output drycontact. It is used to send SG ready or dry contact control commands to heat pump.

#### Wiring procedures

**Step 1:** Prepare an eight-core cable and strip the insulation to an appropriate length.

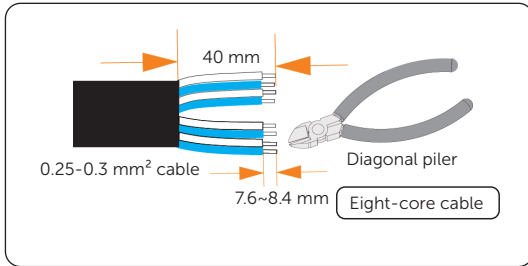


Figure 7-8 Stripping the cable

**Step 2:** Insert the stripped section into ferrules.

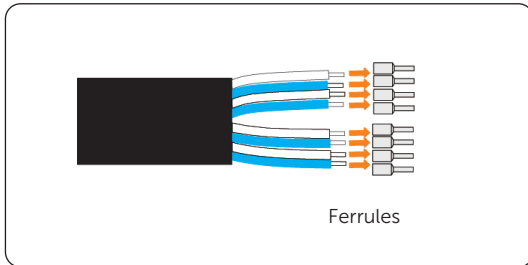


Figure 7-9 Inserting into ferrules

**Step 3:** Crimp it with crimping tool. Make sure the conductors are correctly assigned and firmly seated in the ferrules.

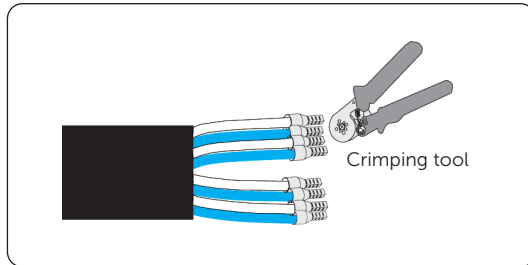


Figure 7-10 Crimping the cables

**Step 4:** Insert the crimped cables into the corresponding terminals at 2x 6 pin male pluggable terminal block (Part H in chapter 5.2).

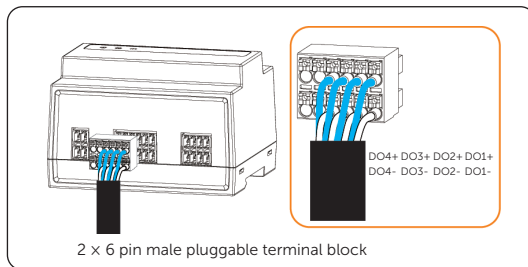


Figure 7-11 Inserting the cables

#### NOTICE!

- The DO port has a built-in voltage detection circuit, which is used to determine whether the DO port is successfully connected to the DI port of the external device. Therefore, the DO+ must be connected to the external DI+ , and the DO- must be connected to the external DI- .
- The length of DO cable should not exceed 20 m.
- The DO port supports external circuit input voltage range of 5-24V. Voltages exceeding 24V may damage the circuit board, so please ensure proper voltage when wiring.

## 7.4 RS485 Connection

There are two RS485 port: 2 × 6 pin male pluggable terminal block and 2 × 2 pin male pluggable terminal block. Among them, A3 and B3 are used for compatible heat pump connection. (The specific models of the heat pump are being updated.) A1 and B1 are used to connect to a SolaX meter, which is only used to monitor the power consumption of the load. A2 and B2 are reserved for later use.

### Wiring procedures

#### 2 × 6 pin RS485 port connection

**Step 1:** Prepare a two-core cable and strip the insulation to an appropriate length.

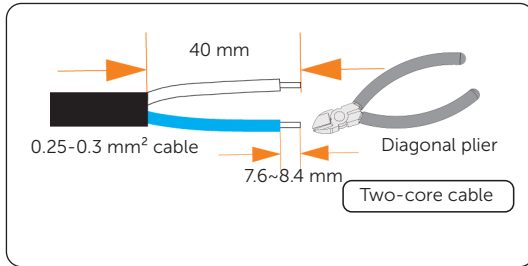


Figure 7-12 Stripping the cable

**Step 2:** Insert the stripped section into ferrules.

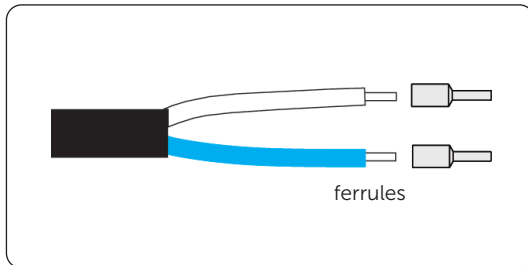


Figure 7-13 Inserting into ferrules

**Step 3:** Crimp it with crimping tool. Make sure the conductors are correctly assigned and firmly seated in the ferrules.

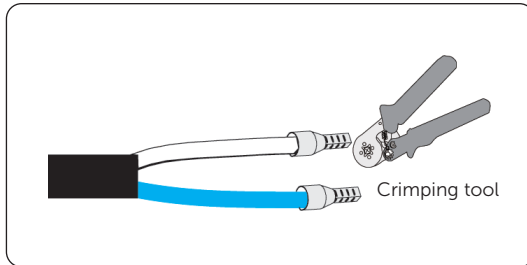


Figure 7-14 Crimping the cables

**Step 4:** Insert the crimped cables into the corresponding terminals at 2x 2 pin male pluggable terminal block (Part F in chapter 5.2).

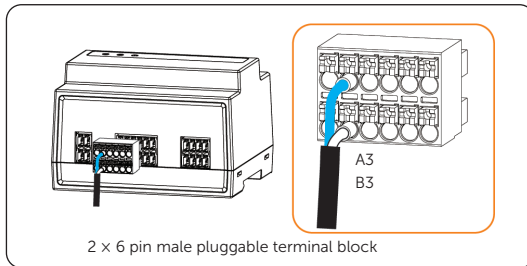


Figure 7-15 Inserting the cables

2 × 2 pin RS485 port connection

NOTICE!

- Step1 to step 3 are the same as 2 × 6 pin RS485 port connection.

**Step 4:** Insert the crimped cables into the corresponding terminals.

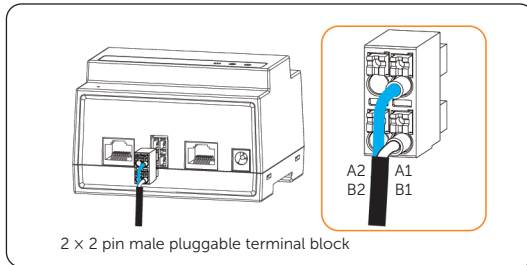


Figure 7-16 Inserting the cables

NOTICE!

- The length of RS485 cable should not exceed 100 m.

## 7.5 AO Connection

AO1 port can output a 0-10V analog signal, which is used to control heat pumps and other loads that support analog signal control. AO2 is used for analog signal output, which can control the power consumption of the immersion water heater by controlling the solid state power controller.

### Wiring procedures

#### AO1 connection

**Step 1:** Prepare a two-core cable and strip the insulation to an appropriate length.

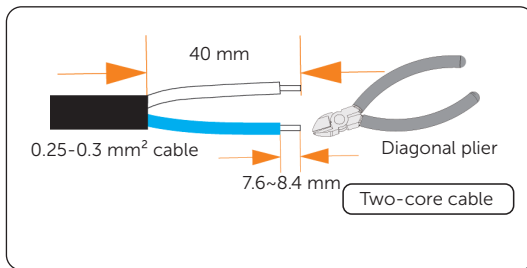


Figure 7-17 Stripping the cable

**Step 2:** Insert the stripped section into ferrules.

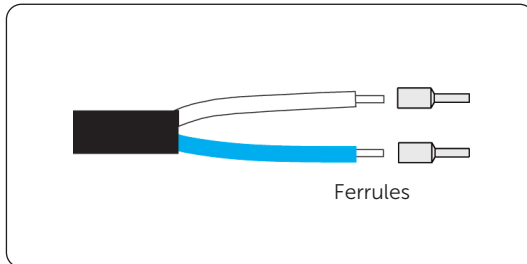


Figure 7-18 Inserting into ferrules

**Step 3:** Crimp it with crimping tool. Make sure the conductors are correctly assigned and firmly seated in the ferrules.

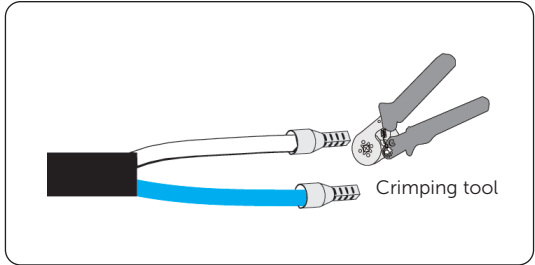


Figure 7-19 Crimping the cables

**Step 4:** Insert the crimped cables into the corresponding terminals at 2x 6 pin male pluggable terminal block.

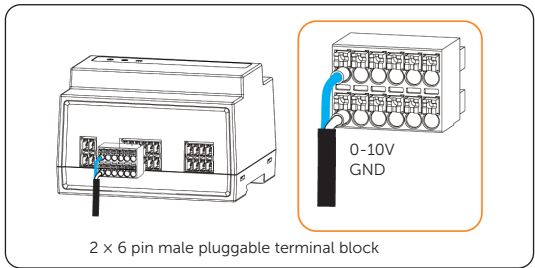


Figure 7-20 Inserting the cables

**NOTICE!**

- The length of AO1 cable should not exceed 20 m.

## AO2 connection

## NOTICE!

- Step1 to step 3 are the same as AO1 connection.

**Step 4:** Insert the crimped cables into the corresponding terminals.

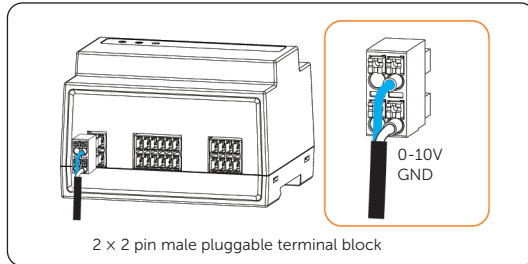


Figure 7-21 Inserting the cables

## NOTICE!

- The length of AO2 cable should not exceed 20 m.

## 7.6 12V\_OUT Connection

12V\_OUT port is used for DC power output, supplying voltage to the solid state power controller. The allowable current of this port should less than 30mA.

### Wiring procedures

**Step 1:** Prepare a two-core cable and strip the insulation to an appropriate length.

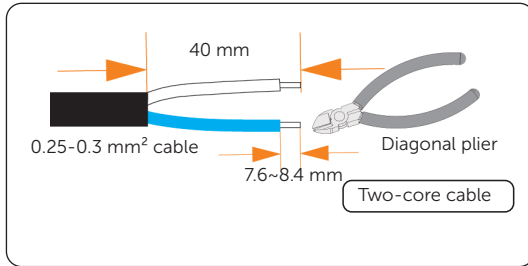


Figure 7-22 Stripping the cable

**Step 2:** Insert the stripped section into ferrules.

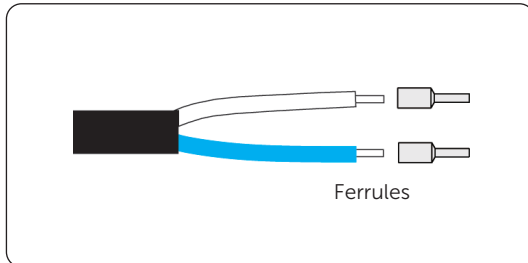


Figure 7-23 Inserting into ferrules

**Step 3:** Crimp it with crimping tool. Make sure the conductors are correctly assigned and firmly seated in the ferrules.

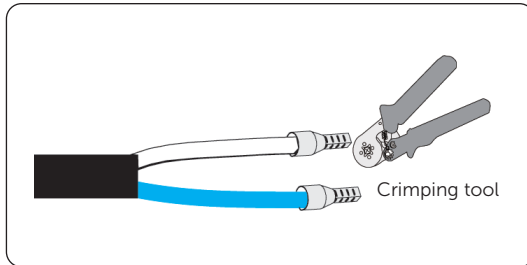


Figure 7-24 Crimping the cables

**Step 4:** Insert the crimped cables into the corresponding terminals at 2x 2 pin male pluggable terminal block.

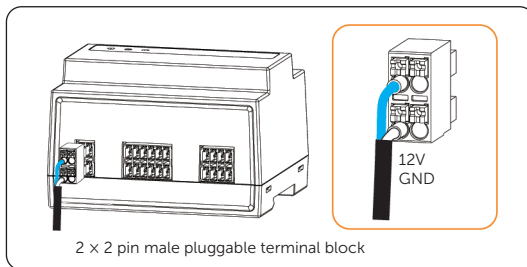


Figure 7-25 Inserting the cables

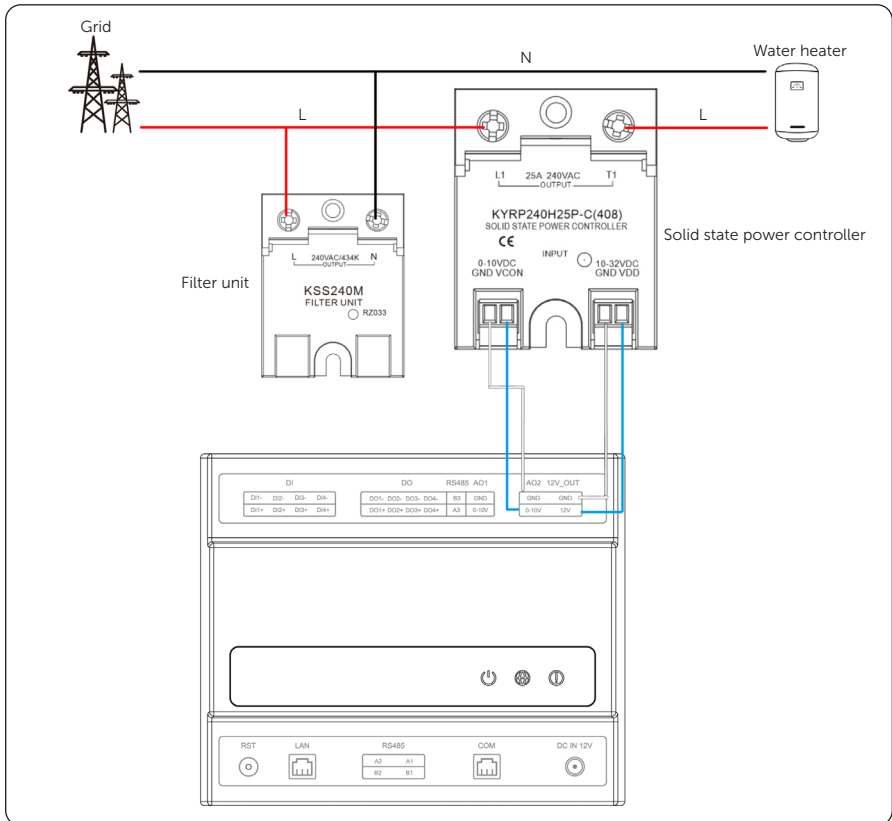
**NOTICE!**

- The length of 12V\_OUT cable should not exceed 20 m.

## 7.7 Solid State Power Controller Connection

Solid state power controller supports 0~10V analog input control. It's power supply can be AC or DC, if DC power supply needs to be provided by Adapter Box G3, the power supply voltage of the Adapter Box G3 should be  $12V \leq 30mA$ .  $50^\circ C$  derated flow capacity should be more than 15A.

### Wiring diagram



## Wiring procedure

Solid state power controller connection (AO2, 12V\_OUT)

**Step 1:** Prepare a two-core cable and strip the insulation to an appropriate length.

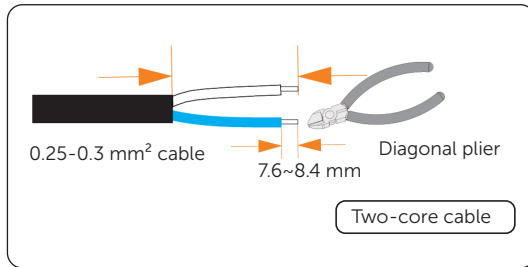


Figure 7-26 Stripping the cable

**Step 2:** Insert the stripped section into ferrules.

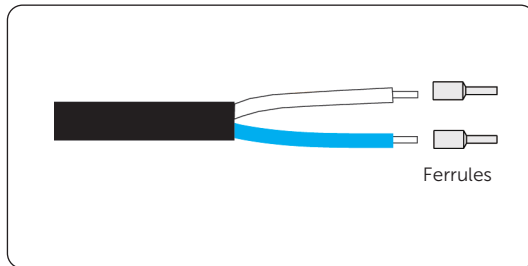


Figure 7-27 Inserting into ferrules

**Step 3:** Crimp it with crimping tool. Make sure the conductors are correctly assigned and firmly seated in the ferrules.

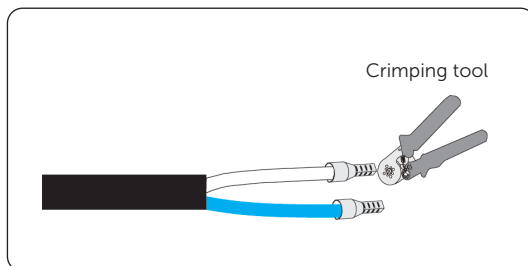


Figure 7-28 Crimping the cables

**Step 4:** Connecting the cables to AO2 and 12V\_OUT port of the Adapter Box G3.

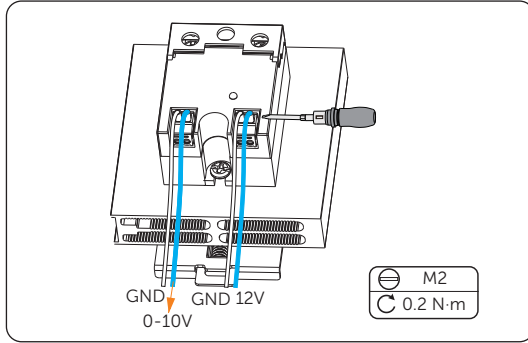


Figure 7-29 Connecting the cables

Filter unit connection (L, N) and Solid state power controller connection (L, L)

**Step 1:** Prepare 2.5 mm<sup>2</sup> cables, and suitable UT terminals. Strip the appropriate length according to the actual needs. Insert the stripped section into UT terminals.

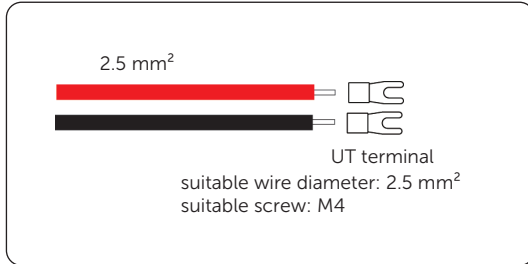


Figure 7-30 Stripping the cable

**Step 2:** Crimp the cables with hydraulic crimping tool. Make sure the conductors are correctly assigned and firmly seated in the UT terminals.

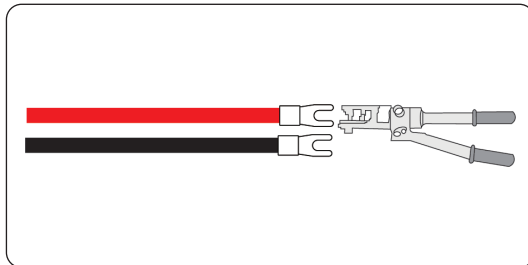


Figure 7-31 Crimping the cables

**Step 3:** Connecting the L and N cables of the filter unit.

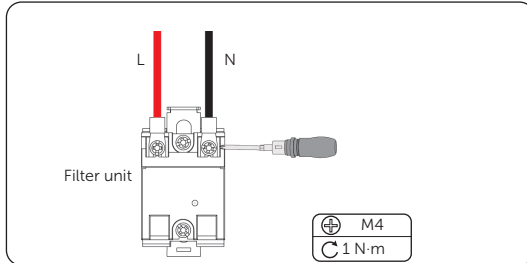


Figure 7-32 Connecting the cables

**Step 4:** Connecting the L cables of the solid state power controller.

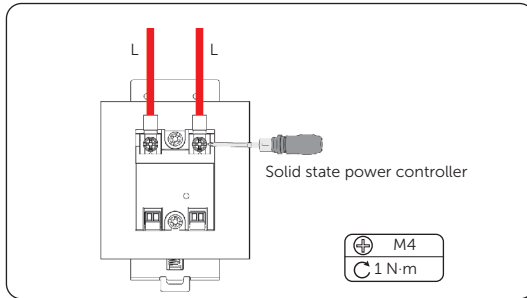


Figure 7-33 Connecting the cables

### Installation procedure

Solid state power controller installation

**Step 1:** Fasten one end of the solid state power controller clip to the guide rail.

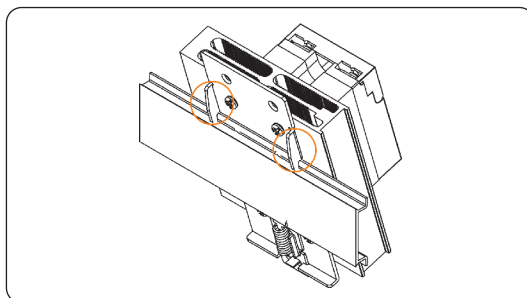


Figure 7-34 Fastening one end of the clip

**Step 2:** Then use a flat-head screwdriver to pull the the buckle downwards. While pulling down the buckle, press the product towards the guide rail.

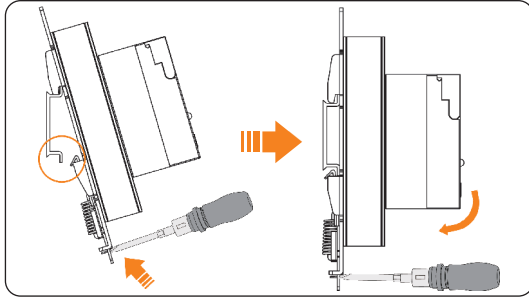


Figure 7-35 Pulling down the buckle

Filter unit installation

**Step 1:** Fasten one end of the filter unit clip to the guide rail.

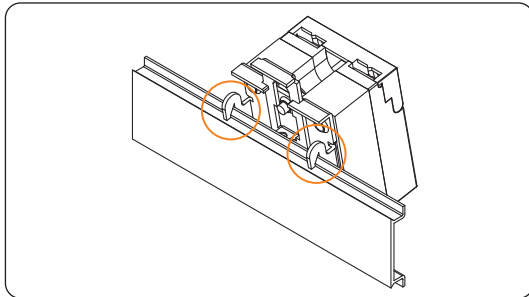


Figure 7-36 Fastening one end of the clip

**Step 2:** Then press the buckle downwards. While pressing down the buckle, press the product towards the guide rail.

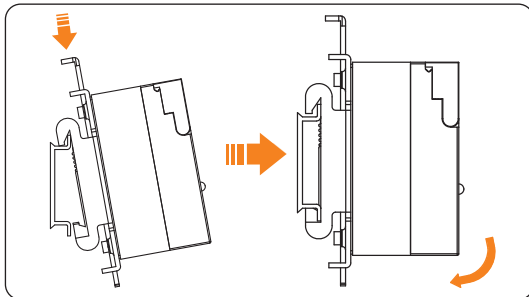


Figure 7-37 Pressing down the buckle

## Disassembling

Solid state power controller disassembly

**Step 1:** Use a flat-head screwdriver to pull the buckle downwards.

**Step 2:** While pulling down the buckle, pull the product to the opposite direction of the guide rail.

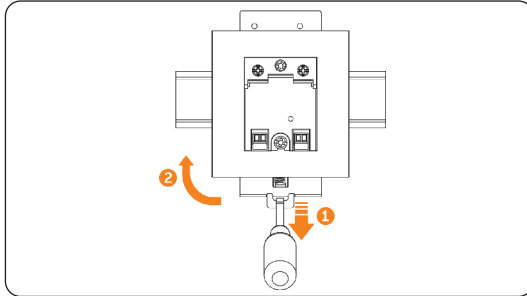


Figure 7-38 Disassembling the solid state power controller

Filter unit disassembly

**Step 1:** Press the buckle downwards.

**Step 2:** While pressing down the buckle, pull the product to the opposite direction of the guide rail.

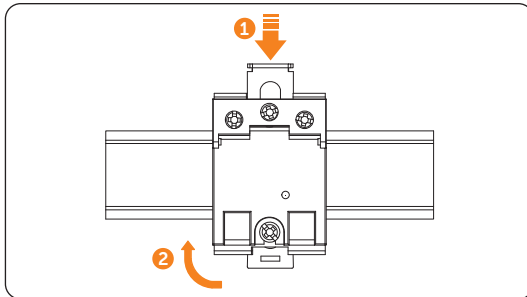


Figure 7-39 Disassembling the filter unit

## 7.8 LAN Connection

The Adapter Box G3 provides a LAN terminal. It is used to connect to a router in order to connect to network or to communicate with other devices on the LAN. (e.g. Communication with solax EV Charger)

### Wiring procedures

**Step 1:** Strip the insulation to an appropriate length. Insert the stripped section into the RJ45 terminal (Part E in chapter 5.2). Crimp it tightly with a network crimping tool. Pay attention to the pin order of RJ45 terminals. Use a network cable tester to check if the cable has been correctly and properly crimped before connecting to Adapter Box G3.

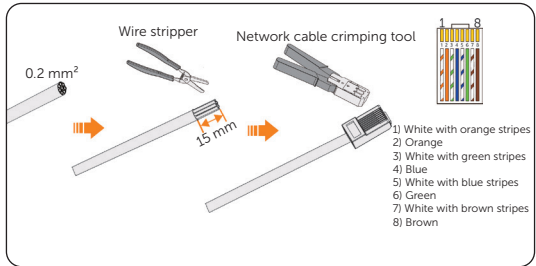


Figure 7-40 Stripping the cable

**Step 2:** Install the crimped network cable to LAN terminal.

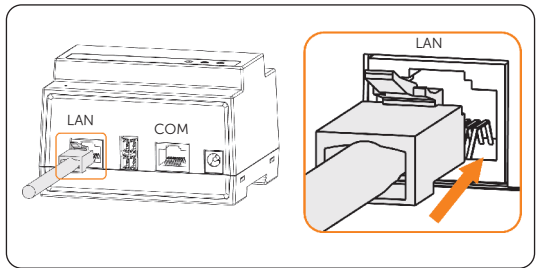


Figure 7-41 Installing the cable

### NOTICE!

- The length of LAN cable should not exceed 100 m.

## 7.9 COM Connection

COM port is used for communication with inverter or other devices.

### 7.9.1 Wiring procedures

**Step 1:** Strip the insulation to an appropriate length. Insert the stripped section into the RJ45 terminal. Crimp it tightly with a network crimping tool. Pay attention to the pin order of RJ45 terminals. Use a network cable tester to check if the cable has been correctly and properly crimped before connecting to Adapter Box G3.

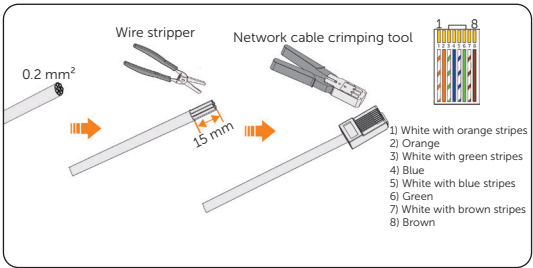


Figure 7-42 Stripping the cable

**Step 2:** Install the crimped network cable to COM terminal.

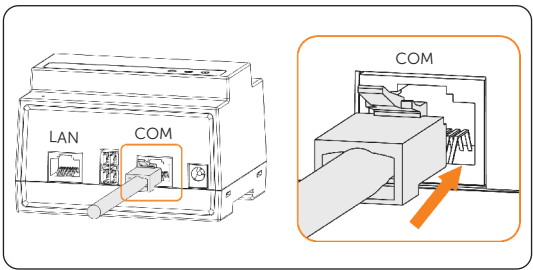


Figure 7-43 Installing the cable

**NOTICE!**

- The length of COM cable should not exceed 100 m.

### 7.9.2 Pin definition for COM port

Pin	1	2	3	4	5	6	7	8
Pin Definition	X	X	X	A	B	X	X	X

### 7.9.3 Pin-to-pin connection for Adapter Box G3 and inverter

1. Connection with X1/X3-Hybrid G4 series inverters

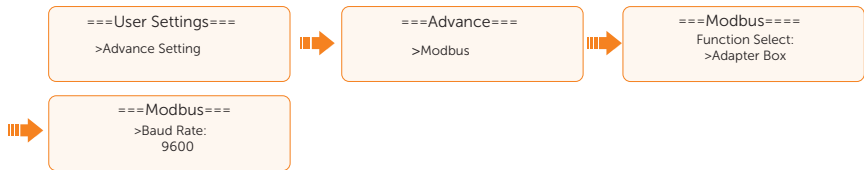
COM port of Adapter Box G3		COM port of X1/X3-Hybrid G4 series inverters	
Pin	Pin assignment	Pin	Pin assignment
4	A	4	REMOTE_485A/485_A
5	B	5	REMOTE_485B/485_B

2. Connection with X3-HYB-G4 PRO series inverters

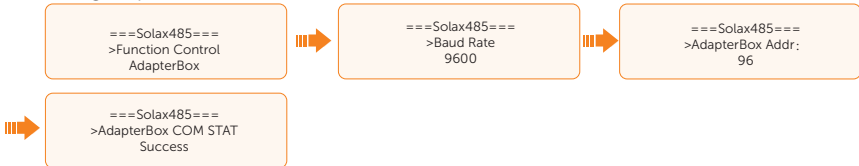
COM port of Adapter Box G3		HEATPUMP port of X3-HYB-G4 PRO series inverters	
Pin	Pin assignment	Pin	Pin assignment
4	A	4	HEATPUMP_485A_CON
5	B	5	HEATPUMP_485B_CON

### 7.9.4 LCD settings on the inverter

• Setting steps on X1/X3-Hybrid G4 series inverters



• Setting steps on X3-HYB-G4 PRO series inverters



## 7.10 Power Adapter Connection

The Adapter Box G3 requires 12V power supply, which can be used with a standard power adapter or a third party DIN-rail 12V power supply.

### Wiring procedure

Install one end of the power adapter (Part I in chapter 5.2) to the DC IN 12V terminal, then install the power adapter plug (Part J) to the power adapter, make sure both arrows are in the same direction, you will hear a clicking sound after successful installation. Then install the assembled power adapter to the socket. To remove the power adapter plug, press and hold the PUSH button and then push it out.

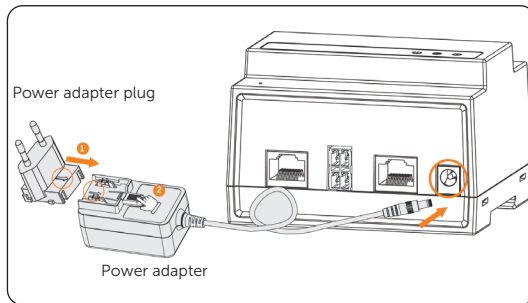


Figure 7-44 Installing the power adapter

### NOTICE!

- The power adapter plug is based on the actual product and may vary depending on the country or region.

# 8 System Commissioning

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## 8.1 Checking before Power-on

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No.	Item	Checking details
1	Installation	The Adapter Box G3 is installed correctly and securely. The optional accessories like solid state power controller, the third party DIN-rail power supply are installed correctly and securely.
2	Wiring	DC power input, AO output, DC output, and all communication cables are connected correctly and securely; Especially pay attention to the 4 channel drycontact output, make sure the positive DO port must be connected to the positive external DI port, and the negative DO port must be connected to the negative external DI port. DC input, AO input and L line cable of solid state power controller are connected correctly and securely; Ensure that the L line is protected from direct human contact.
3	Power supply	The connection between power adapter and the Adapter Box G3 is disconnected, ensure the device is powered off. Disconnect the circuit breaker of the L line connected to the solid state power controller.

---

## 8.2 Powering on the System

**Step 1:** Plug the DC IN 12V to power on the Adapter Box G3.

**Step 2:** (Optional) Power on the solid state power controller.

**Step 3:** Observe the power indicator to check the running status. If it is steady green, the device is powered on. If the light is off, the device is not powered.

# 9 Introduction of LED indicators

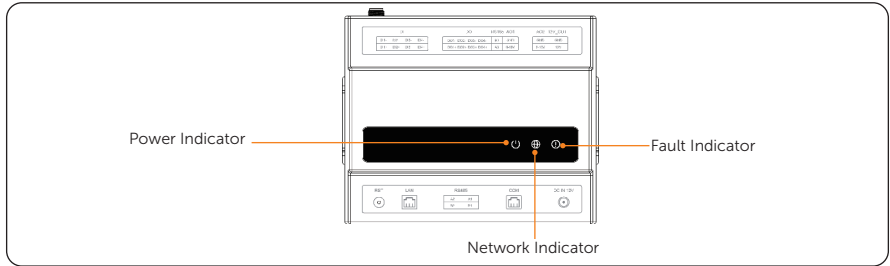


Figure 9-1 LED indicators




LED	Status	Definition
Power Indicator (Green) 	On	The device is powered on.
	Off	The device has a power supply issue.
Network Indicator (Blue) 	On	The device is connected to the SolaXCloud.
	Flash	The device is connected to the router but not to the SolaXCloud.
	Off	The device is not connected to the router.
Fault Indicator (Red) 	On	Errors occur on the device. (Only indicates errors with the Adapter Box G3. Load faults are not included.)
	Off	No errors occur on the device.

Table 9-1 Definition of indicators

**NOTICE!**

- When the fault indicator is on, check SolaXCloud app or SolaXCloud webpage for the specific reason for the error.

# 10 Operation on SolaX App

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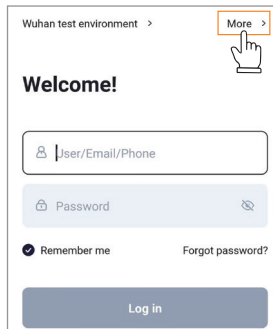
## 10.1 APP Login and Network Configuration

### 10.1.1 APP Login

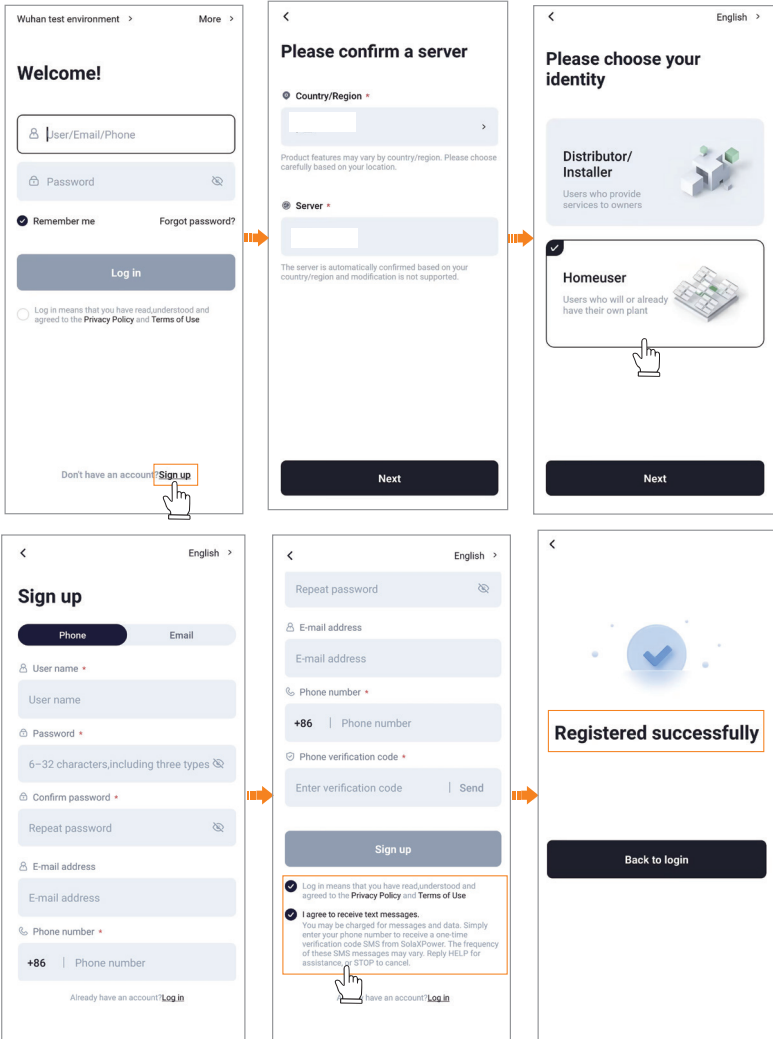
**Step 1:** Scan the QR code below to download the app. Or search for **SolaXCloud** in iPhone APP Store, Google Play or Appstore of Android phones, and then download the app.



**Step 2:** Tap **More** at the upper right corner to set language.

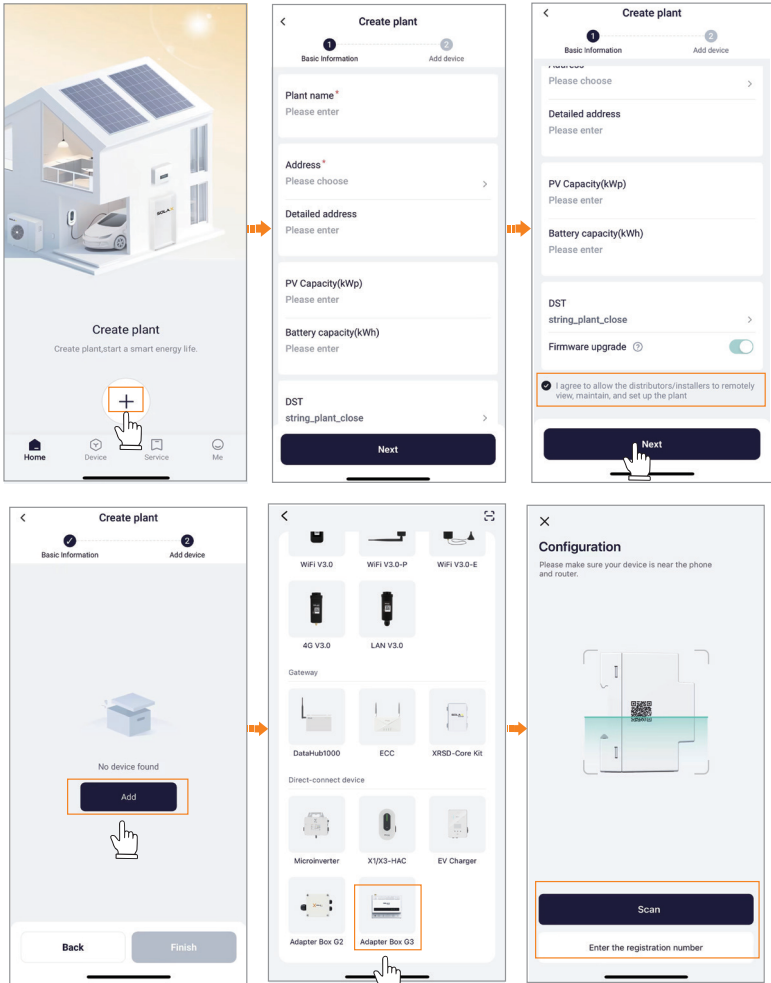


**Step 3:** Tap **Sign up** to create a new account. Fill in the following information in turn. After successfully registered a new account, it will display **Registered successfully**. If you already have an account, enter User/Email/Phone and Password to login in.

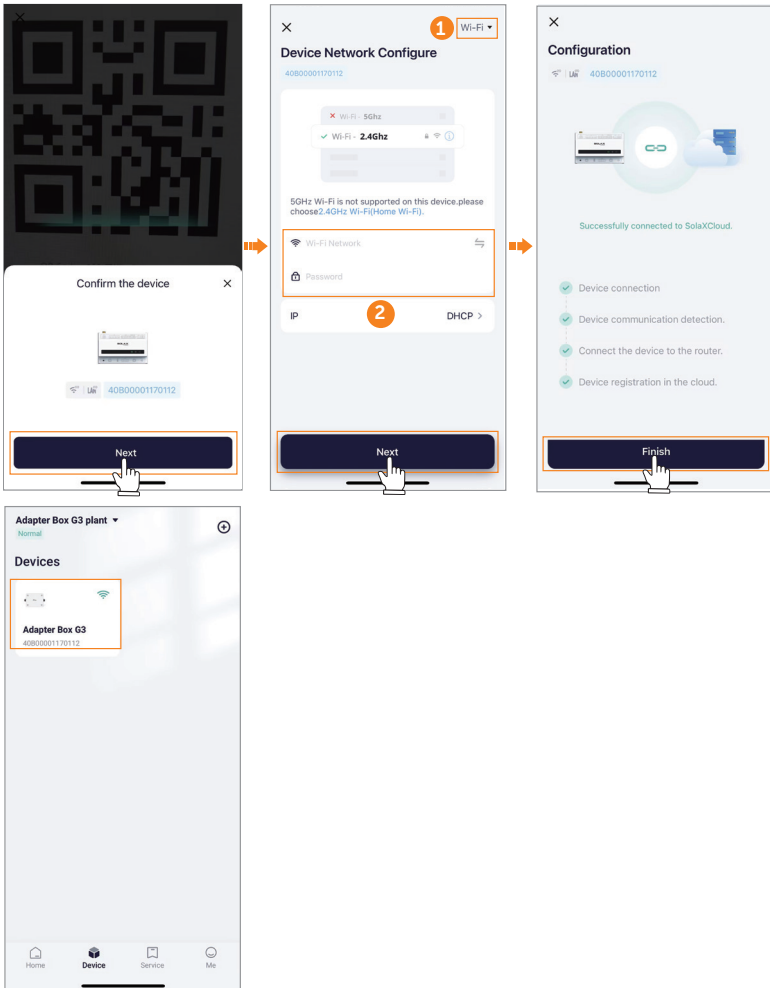


### 10.1.2 Create Plant, Add the Adapter Box G3 and Network Configuration

**Step 1:** Tap the "+" icon and fill in the basic information to create plant. Then tap **Add** to add the Adapter Box G3 by scan the QR code or enter the registration number on the device.



**Step 2:** Network Configuration Method: After scan the QR code or enter the registration number, you should confirm the device, then the network configuration page will be displayed. You can choose Wi-Fi or LAN to connect the network, after successfully configure the network, the Adapter Box G3 will be displayed in the plant.



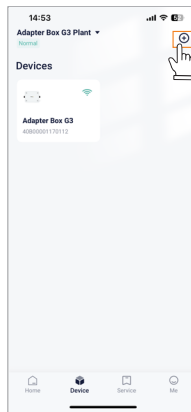
## 10.2 Settings for the Adapter Box G3

### NOTICE!

- The App pages below are from the SolaXCloud App V6.6.0., which might change with version update and should be subject to the actual situations.

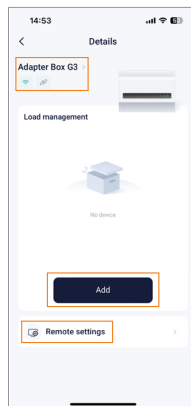
### Device page introduction

Device page displays the connected devices. Tap "+" icon to add new device.



### Detailed page of Adapter Box G3

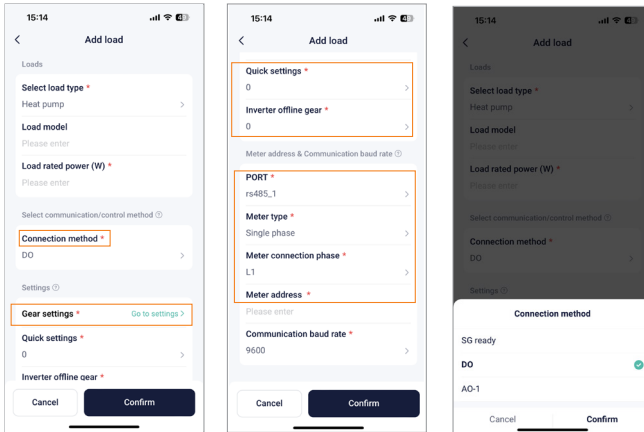
The detailed page of Adapter Box G3 includes device name, whether the device is online, whether the device is connected to the inverter, adding device and remote setting.



### 10.2.1 Adding loads

- Heat Pump -- control through DO communication

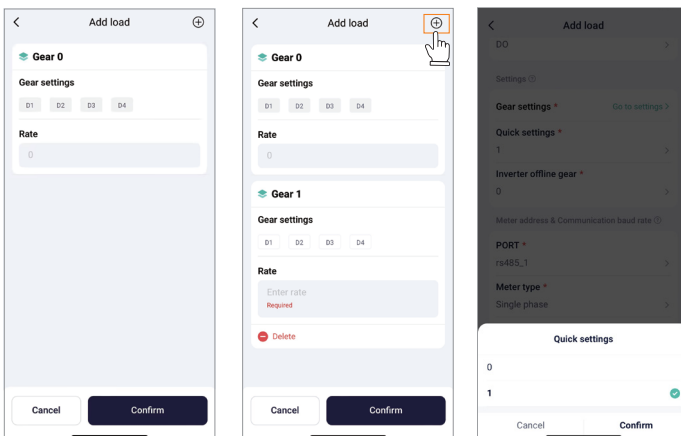
When selecting heat pump through DO connection, you should set the following settings, the framed part will be displayed in detail.



**Gear Settings:** Tap **Go to settings** and "+" icon to add **Gear**, there are 15 combination gears, make sure the power of each gear is set from lowest to highest. (Preset solar mode)

**Quick settings:** The range of quick settings is from 0 to the maximum value of the DO gear. (Preset quick mode)

**Inverter offline gear:** When the DO gear is not set, only 0 gear can be selected. The range of offline gear is from 0 to the maximum value of the DO gear.

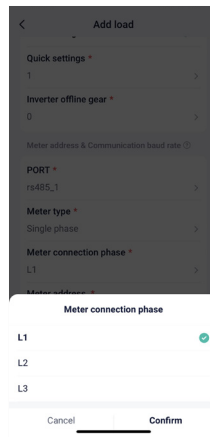
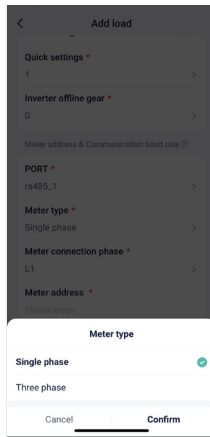
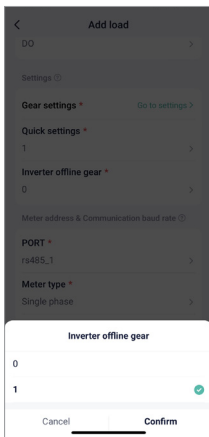


**PORT:** rs485\_1

**Meter type:** Here you can choose **Single phase** or **Three phase**.

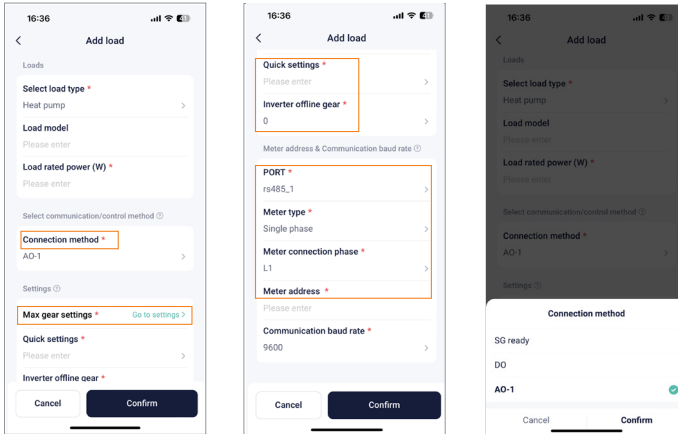
**Meter connection phase:** Here you can choose **L1**, **L2** or **L3** when selecting single phase meter.

**Meter address:** For DTSU 666-CT and DDSU 666-CT, the supported meter address are 1~247. For M1/3~40, the supported meter address are 1~2.



- Heat Pump -- control through AO-1 communication

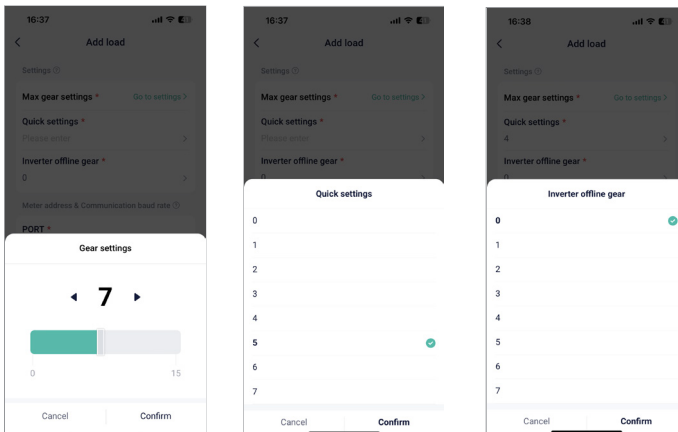
When selecting heat pump through AO-1 connection, you should set the following settings, the framed part will be displayed in detail.



**Max gear settings:** Tap **Go to settings** to set the maximum gear, slide or click to select the gear, the selectable gears are 0~15. (Preset solar mode)

**Quick settings:** The range of quick settings is from 0 to the value of the Max gear. (Preset quick mode)

**Inverter offline gear:** When the **Maximum gear** is not set, only 0 gear can be selected. The range of offline gear is from 0 to the value of the Max gear.



**PORT:** rs485\_1

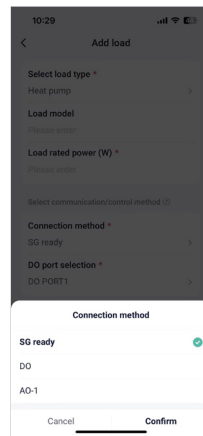
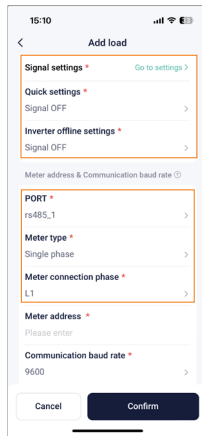
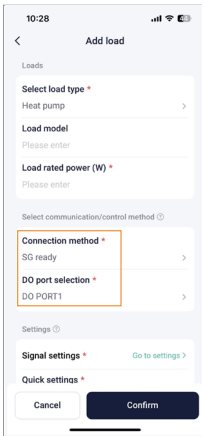
**Meter type:** Here you can choose **Single phase** or **Three phase**.

**Meter connection phase:** Here you can choose **L1**, **L2** or **L3** when selecting single phase meter.

**Meter address:** For DTSU 666-CT and DDSU 666-CT, the supported meter address are 1~247. For M1/3~40, the supported meter address are 1~2.

- **Heat Pump -- control through SG Ready communication**

When selecting heat pump through SG Ready connection, you should set the following settings, the framed part will be displayed in detail.



**DO port selection:** You can choose any one of the four DO port.

**Signal settings:** Tap **Go to settings** to set the threshold of the **Signal switch**. (Preset solar mode)

- » **Signal ON Condition:** Set the following settings, choose **and** or **or** - reaching both or either threshold, the signal will be ON.

Threshold on Feed in power (W): Range: 0~30000W

Threshold of battery SOC (%): Range: 0~100%

- » **Signal OFF Condition:** Set the following settings, choose **and** or **or** - reaching both or either threshold, the signal will be OFF.

Threshold on Consumption (W): Range: 0~30000W

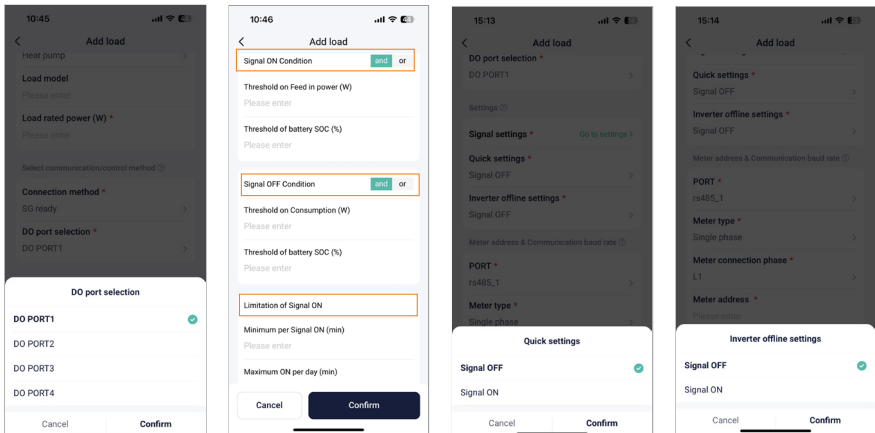
Threshold of battery SOC (%): Range: 0~100%

- » **Limitation of Signal ON:** Set the minimum and maximum time of single day startup.

Minimum ON per day (min): Range: 5~1200

Maximum ON per day (min): Range: 5~1200

**Quick settings:** Here you can select **Signal OFF** or **Signal ON**. (Preset quick mode)



**Inverter offline settings:** Here you can select **Signal OFF** or **Signal ON**. When the inverter is offline, it will perform **Signal OFF** or **Signal ON**.

**Meter type:** Here you can choose **Single phase** or **Three phase**.

**Meter connection phase:** Here you can choose **L1**, **L2** or **L3** when selecting single phase meter.

**PORT:** rs485\_1

**Meter address:** For DTSU 666-CT and DDSU 666-CT, the supported meter address are

1~247. For M1/3~40, the supported meter address are 1~2.

- **EV Charger -- control through modbus TCP communication**

When selecting EV Charger through modbus TCP connection, you should set the following settings, the framed part will be displayed in detail.

The screenshot shows the 'Add load' configuration screen. It includes the following fields and options:

- Select load type \***: EV Charger
- Load number \***: Please select
- Load model**: Please enter
- Load rated power (W) \***: Please enter
- Select communication/control method**: Connection method \*
- Connection method \***: modbus tcp
- Load IP \***: Please enter (highlighted with a yellow border)

Buttons for 'Cancel' and 'Confirm' are at the bottom.

**Load IP address:**

If IP address is not automatically filled in the field, please follow the steps below to manually check and enter the IP address.

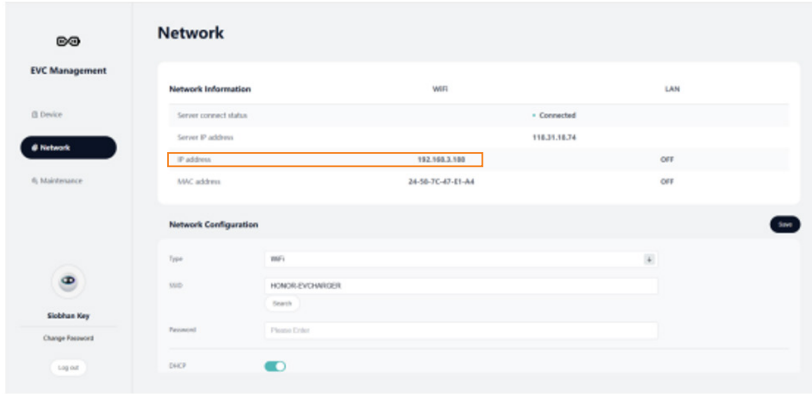
Query method:

1. Finish Wi-Fi configuration of EV Charger through SolaX APP.
2. Connect to the Wi-Fi hotspot of EV Charger through computer or phone.
3. Open your browser, type 192.168.10.10, and press **Enter**.
4. Enter the user name (admin) and password (registration number), the registration number (of EV Charger) is on the label on the left of the device.
5. For EV Charger G1, enter the DHCP page to check the IP address.

The screenshot shows the 'Static IP' configuration page with the following details:

- InternalCode**: 09.02
- MAC address**: WiFi:90-38-0C-6F-7B-1C LAN:90-38-0C-6F-7B-1F
- SN**: SQTAWRSHQX
- IP address**: WiFi:192.168.104.21 LAN:0.0.0.0 (highlighted with a yellow border)
- SSID**: SolaGuest **Find AP**
- Key**: **Unhide**
- save** button

For EV Charger G2, enter the Network page to check the IP address.



- **Immersion Water Heater**

When selecting immersion water heater connection, you should set the following settings, the framed part will be described in detail.

**Quick settings:** Here you can set the **Working power** of the load.(Preset quick mode)

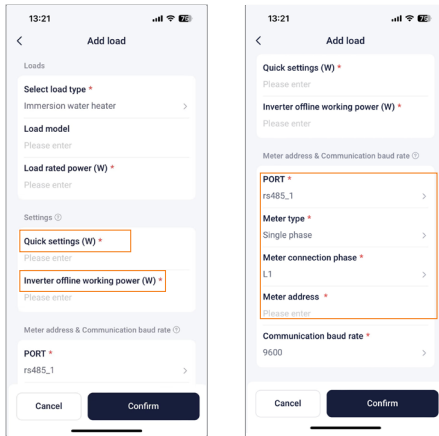
**Inverter offline working power (W):** The power of the load when the Adapter Box G3 is disconnected from the inverter.

**PORT:** rs485\_1

**Meter type:** Here you can choose **Single phase** or **Three phase**.

**Meter connection phase:** Here you can choose **L1**, **L2** or **L3** when selecting single phase meter.

**Meter address:** For DTSU 666-CT and DDSU 666-CT, the supported meter address are 1~247. For M1/3~40, the supported meter address are 1~2.

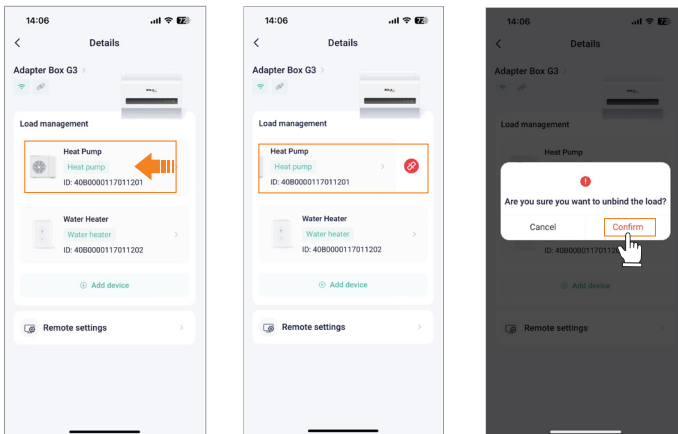


- Other loads

Other loads are the same as AO, DO, SG Ready settings for heat pump.

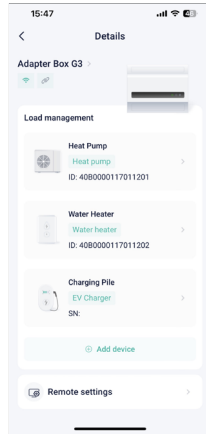
### 10.2.2 Unbinding loads

Slide left and the unbind button appears, click on it and confirm to unbind the load from the Adapted Box G3.



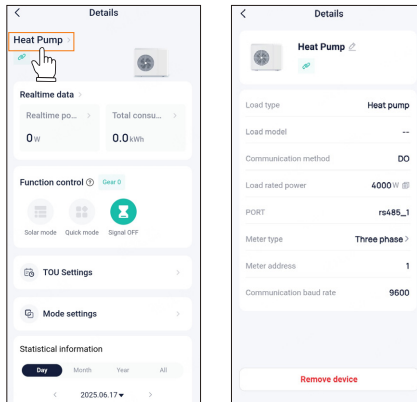
### 10.2.3 Load management

After adding the loads, the interface displays as follows:

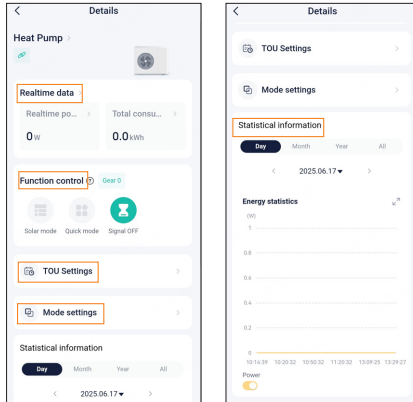


- Heat Pump -- control through DO communication

Tap (the name of load) Heat Pump, you can check for the detailed information of the load.



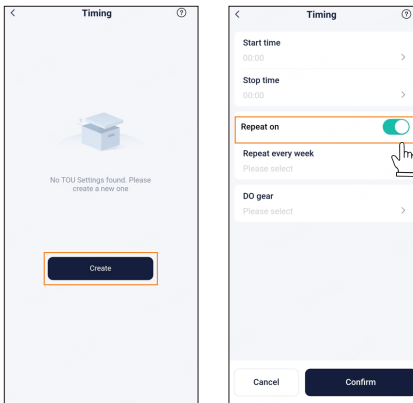
In the detailed interface of the heat pump through DO communication, you can check or set the following information.



**Realtime data:** Here you can view the realtime power and total consumption of the load. Tap **Realtime data** to view more realtime information.

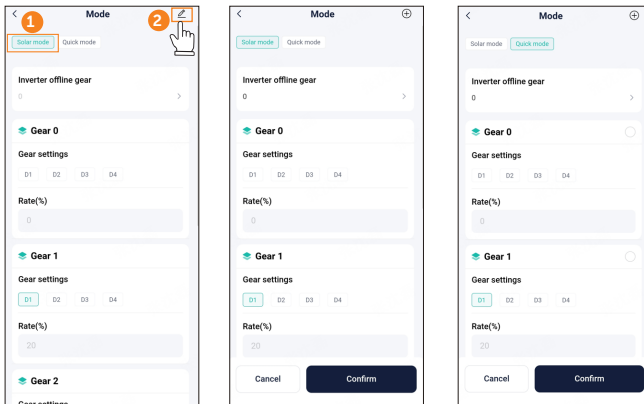
**Function control:** Here displays three modes, the default mode is **Signal OFF**. You can switch to other mode by tapping it.

**TOU Settings:** Tap **Create** to reserve different time periods to control the gear, up to four periods can be created, and the overlapping time periods are not allowed. Enable **Cycle period**, the reservation period will cycle according to the setted time period. Disable it, the reservation period will execute once by default.



**Mode setting:** Here you can set **Solar mode** and **Quick mode** specifically.

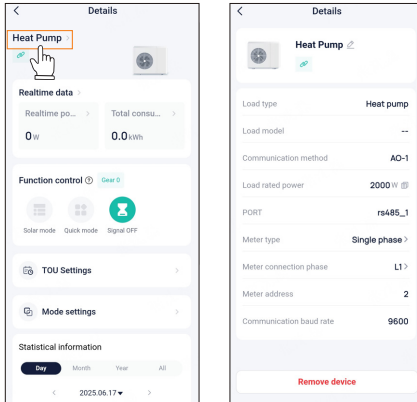
- » **Solar mode:** Here you can set up to 15 combination gears, make sure the power of each gear is set from lowest to highest. In this mode, it will intellectually choose the gear from your setted combination gears according to the remaining PV energy.
- » **Quick mode:** Here you can set up to 15 combination gears, make sure the power of each gear is set from lowest to highest. But in this mode, you can only manually choose one gear.



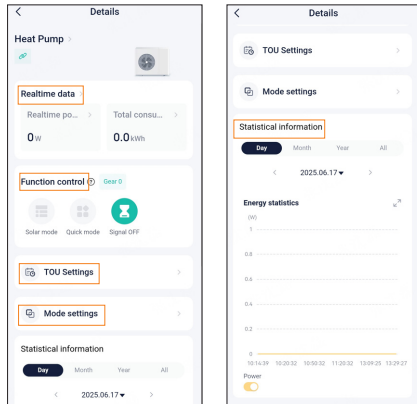
**Statistical information:** Here displays the energy statistics of the load.

- Heat Pump -- control through AO communication

Tap (the name of load) Heat Pump, you can check for the detailed information of the load.



In the detailed interface of the heat pump through AO communication, you can check or set the following information.



**Realtime data:** The same as DO communication.

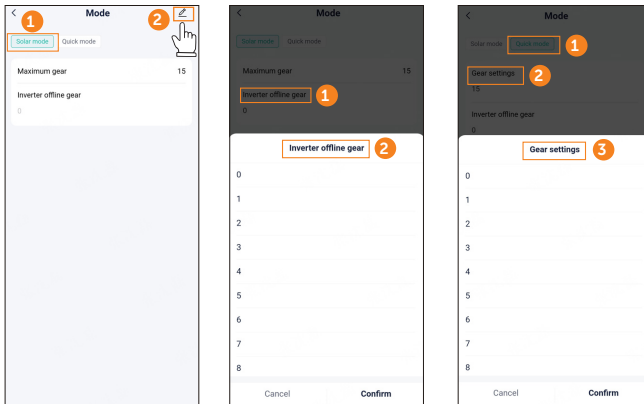
**Function control:** The same as DO communication.

**TOU settings:** The same as DO communication.

**Mode setting:** Here you can set **Solar mode** and **Quick mode** specifically.

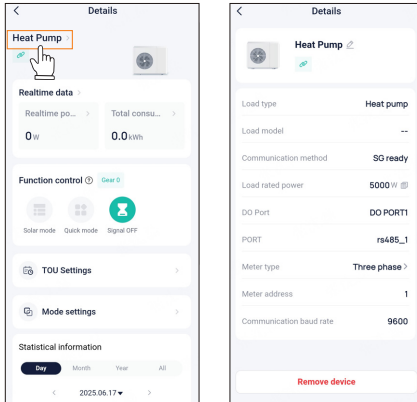
- » **Solar mode:** Here you can set the **Maximum gear** from 0 to 15. The settable **Inverter offline gear** is from 0 to the value of the maximum gear. In this mode, it will intellectually choose the gear from 0 to your setted maximum gears according to the remaining PV energy.
- » **Quick mode:** Here you can manually set the gear. The settable **Inverter offline gear** is from 0 to the value of the gear.

**Statistical information:** Here displays the energy statistics of the load.

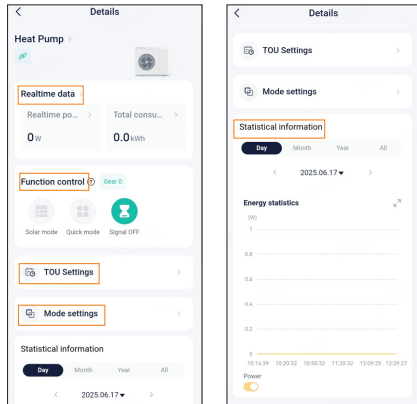


- Heat Pump -- control through SG Ready communication

Tap (the name of load) Heat Pump, you can check for the detailed information of the load.



In the detailed interface of the heat pump through SG Ready communication, you can check or set the following information.



**Realtime data:** The same as DO communication.

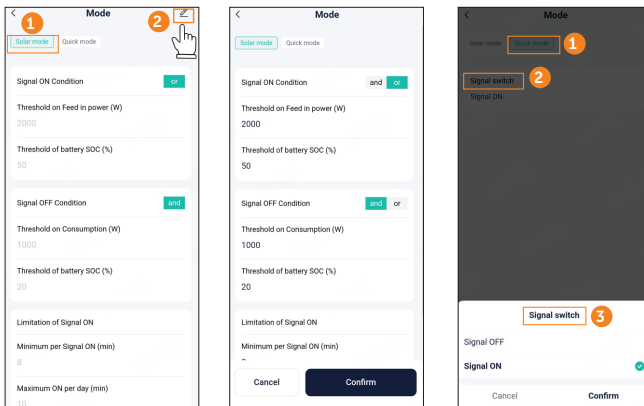
**Function control:** The same as DO communication.

**TOU settings:** The same as DO communication.

**Mode setting:** Here you can set **Solar mode** and **Quick mode** specifically.

- » **Solar mode:** Here you can set the **Signal ON Condition** and **Signal OFF Condition** and the **Reserve gear** (Signal ON/OFF). It will intellectually signal on/off according to the setted signal on/off condition.
- » **Quick mode:** Here you can manually set the **Signal switch** on or off.

**Statistical information:** Here displays the energy statistics of the load.



- EV Charger -- control through modbus TCP communication

Tap (the name of load) EV Charger, you can check for the detailed information of the load.

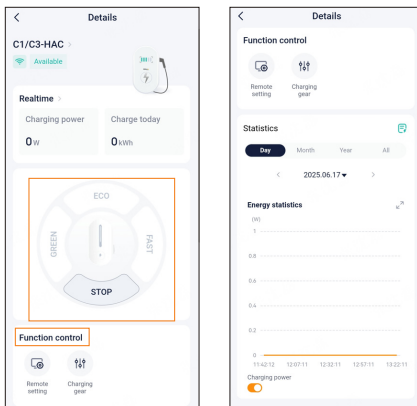
In the detailed interface of the EV Charger, you can check or set the following information.

**Realtime data:** Here displays Charging power and Charge today of the load, tap **Realtime** to view more realtime information.

**Mode selection:** Here you can select modes from **GREEN**, **ECO**, **FAST**, and **STOP**.

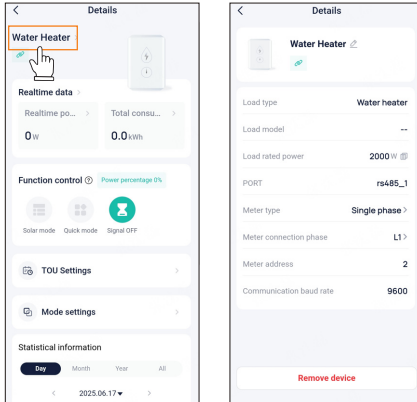
**Function control:** Here you can set **Remote setting** and **Charging gear**. Please refer to the User Manual of EV Charger for the specific settings.

**Statistical information:** Here displays the energy statistics of the load.

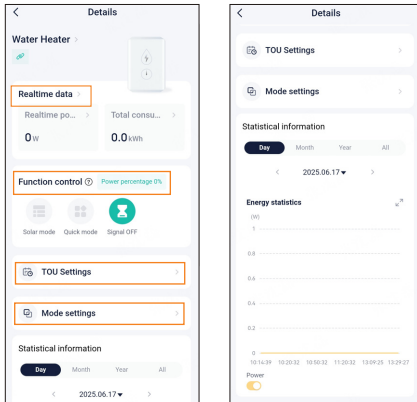


- **Immersion Water Heater**

Tap (the name of load) Water Heater, you can check for the detailed information of the load.



In the detailed interface of the water heater, you can check or set the following information.



**Realtime data:** The same as DO communication.

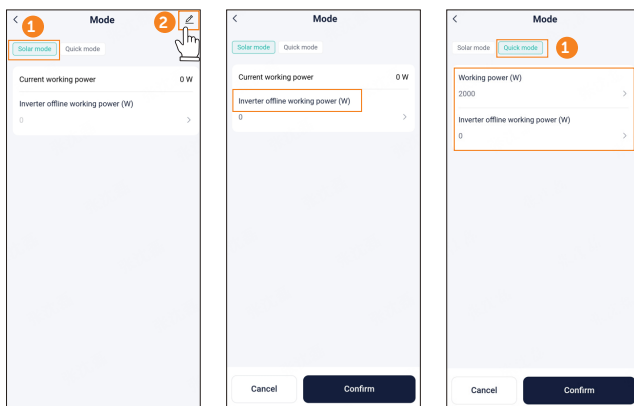
**Function control:** The same as DO communication.

**TOU settings:** The same as DO communication.

**Mode setting:** Here you can set **Solar mode** and **Quick mode** specifically.

- » **Solar mode:** Here you can set the **Inverter working power (W)**. In this mode, it will intellectually set the **Current working power** according to the remaining PV energy.
- » **Quick mode:** Here you can manually set the **Working power (W)** and the **Inverter offline working power (W)**.

**Statistical information:** Here displays the energy statistics of the load.



## 10.2.4 Remote setting

In remote settings, you can set the following settings.

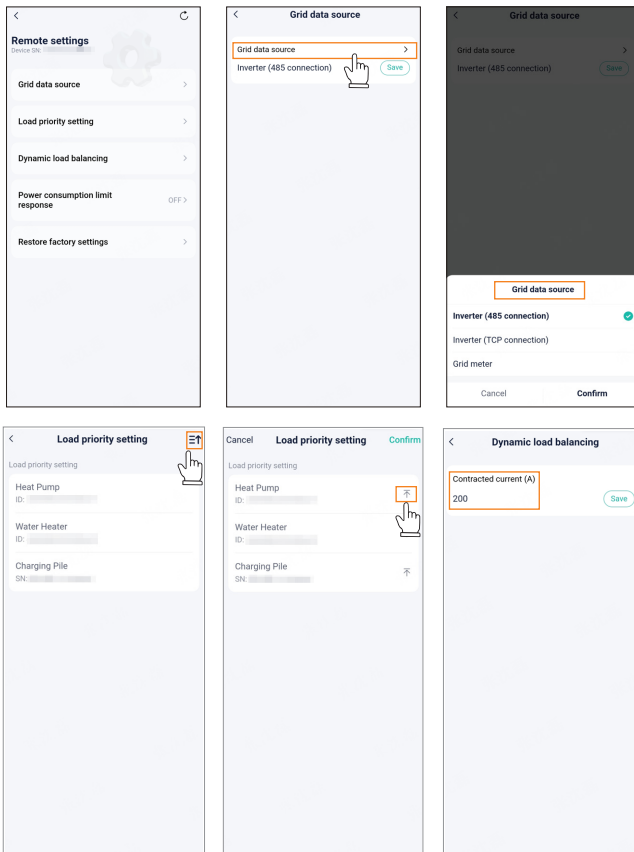
**Grid data source:** Here you can select **Inverter via RS485**, **Inverter via TCP** or **Grid Meter** connection. The default selection is RS485, when switching to TCP, you need to fill in the IP address of the dongle on the inverter. If an inverter is not used, grid information can also be accessed through the meter.

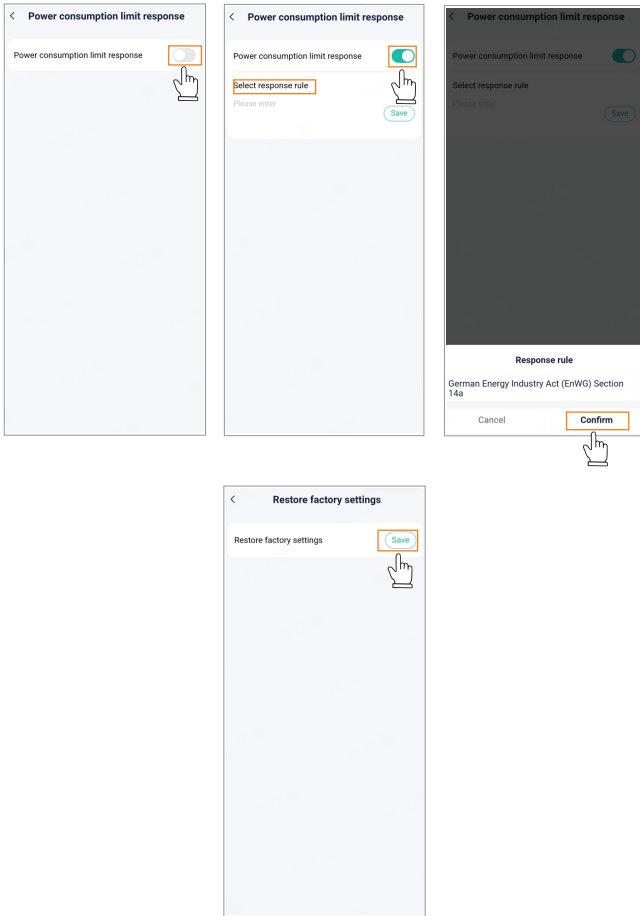
**Load priority setting:** Here you can set the priority of the loads, the default order is the order in which they were added.

**Dynamic load balancing:** Here you can set the allowable rated current of the main circuit breaker. Range: 16~200 A

**Response to power consumption limitation:** Here you can enable the response to power consumption limitation.

**Restore factory settings:** All loads that are added will be deleted.





# 11 Troubleshooting and Maintenance

## 11.1 Power off

- a. Unplug the DC IN 12V to power off the Adapter Box G3.
- b. (Optional) Power off the solid state power controller.



- After the device is powered off, there may still be residual electricity and heat which may cause electric shocks and body burns. Please wear personal protective equipment (PPE) and start maintaining the device at least one minute after power off.

## 11.2 Troubleshooting

This section lists the possible problems with the Adapter Box G3, and provides information and procedures for identifying and resolving them. For further assistance, contact SolaX Customer Service. Please provide the SN of the device, and be prepared to describe the details.

Table 11-1 Troubleshooting list

Error Code	Fault	Diagnosis and Solutions
0	faultCommuteWithInv	Unable to query inverter registers or receive feedback. <ul style="list-style-type: none"><li>• Replug the COM port and restart the Adapter Box G3.</li><li>• Contact installer for help if it can not return to normal.</li></ul>
1	faultCommuteWithHp_tcp	Unable to communicate with heat pump via TCP. <ul style="list-style-type: none"><li>• Check whether the router is normal.</li><li>• Check whether the Adapter Box G3 is normal in SolaXCloud.</li></ul>
2	faultCommuteWithHp_485	Unable to communicate with heat pump via 485. <ul style="list-style-type: none"><li>• Unplug the A3 B3 of RS485 port and restart the Adapter Box G3.</li></ul>
3	meterCommutefault_hp_AO	Unable to communicate with the meter of added AO heat pump via 485. <ul style="list-style-type: none"><li>• Replug the A1 B1 of RS485 port and restart the Adapter Box G3.</li><li>• Confirm whether the 485 address of the meter has changed.</li></ul>

Error Code	Fault	Diagnosis and Solutions
4	meterCommutefault_hp_DO_SG	<p>Unable to communicate with the meter of added DO/SGready heat pump via 485.</p> <ul style="list-style-type: none"> <li>• Replug the A1 B1 of RS485 port and restart the Adapter Box G3.</li> <li>• Confirm whether the 485 address of the meter has changed.</li> </ul>
5	meterCommutefault_waterheater	<p>Unable to establish communication with the meter, or cannot receive meter data, this meter collects power and current of the water heater.</p> <ul style="list-style-type: none"> <li>• Replug the A1 B1 of RS485 port and restart the Adapter Box G3.</li> <li>• Confirm whether the 485 address of the meter has changed.</li> </ul>
6	faultDryContact_1	<p>Abnormal feedback from the 1st relay on Adapter Box G3.</p> <ul style="list-style-type: none"> <li>• Contact installer for help.</li> </ul>
7	faultDryContact_2	<p>Abnormal feedback from the 2nd relay on Adapter Box G3.</p> <ul style="list-style-type: none"> <li>• Contact installer for help.</li> </ul>
8	faultDryContact_3	<p>Abnormal feedback from the 3rd relay on Adapter Box G3.</p> <ul style="list-style-type: none"> <li>• Contact installer for help.</li> </ul>
9	faultDryContact_4	<p>Abnormal feedback from the 4th relay on Adapter Box G3.</p> <ul style="list-style-type: none"> <li>• Contact installer for help.</li> </ul>
10	faultDryContactOutput_1	<p>No voltage on the output link of the 1st DryContact on Adapter Box G3.</p> <ul style="list-style-type: none"> <li>• Check that the positive voltage on the output link of the 1st DryContact connected to the heat pump is connected to DO1+, and the negative is connected to DO1-. And the link voltage is within the range of 5~24V voltage, and then check whether the link is connected normally.</li> </ul>
11	faultDryContactOutput_2	<p>No voltage on the output link of the 2nd DryContact on Adapter Box G3.</p> <ul style="list-style-type: none"> <li>• Check that the positive voltage on the output link of the 2nd DryContact connected to the heat pump is connected to DO1+, and the negative is connected to DO1-. And the link voltage is within the range of 5~24V voltage, and then check whether the link is connected normally.</li> </ul>

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Error Code	Fault	Diagnosis and Solutions
12	faultDryContactOutput_3	<p>No voltage on the output link of the 3rd DryContact on Adapter Box G3.</p> <ul style="list-style-type: none"> <li>• Check that the positive voltage on the output link of the 3rd DryContact connected to the heat pump is connected to DO1+, and the negative is connected to DO1-. And the link voltage is within the range of 5~24V voltage, and then check whether the link is connected normally.</li> </ul>
13	faultDryContactOutput_4	<p>No voltage on the output link of the 4th DryContact on Adapter Box G3.</p> <ul style="list-style-type: none"> <li>• Check that the positive voltage on the output link of the 4th DryContact connected to the heat pump is connected to DO1+, and the negative is connected to DO1-. And the link voltage is within the range of 5~24V voltage, and then check whether the link is connected normally.</li> </ul>
14	faultCommuteWithEvc	<p>Unable to communicate with EV Charger via TCP.</p> <ul style="list-style-type: none"> <li>• Check whether the router is normal.</li> <li>• Check whether the Adapter Box G3 is normal in SolaXCloud.</li> </ul>
15	faultCommuteWithInv	<p>Unable to communicate with Inverter via TCP.</p> <ul style="list-style-type: none"> <li>• Check whether the router is normal.</li> <li>• Check whether the Adapter Box G3 is normal in SolaXCloud.</li> </ul>

### 11.3 Maintenance

Regular maintenance is required for the Adapter Box G3. Please check and maintain the following items based on the instructions below to ensure the optimal performance of the device. Please keep maintenance records.



- Only qualified person can perform the maintenance for the device.
- Only spare parts and accessories authorized by SolaX can be used for maintenance.

#### 11.3.1 Maintenance routines

Table 11-2 Proposal of Maintenance

Item	Check notes	Maintenance interval
Electrical connection	<ul style="list-style-type: none"> <li>• Ensure that all cables are firmly connected.</li> <li>• Check whether the L wire connection protection of the solid state power controller is safe.</li> <li>• Check the integrity of the cables, ensuring that there are no scratches of the cable insulation material.</li> </ul>	Every 12 months
Appearance inspection	<ul style="list-style-type: none"> <li>• Check whether the appearance of the Adapter Box G3, power adapter, optional accessories like solid state power controller, third party DIN-rail power supply have any damage.</li> <li>• Check whether there are other devices and wiring nearby that may affect the running of Adapter Box G3.</li> </ul>	Every 12 months

## 12 Packing the Adapter Box G3

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- Use the original packaging materials if available.

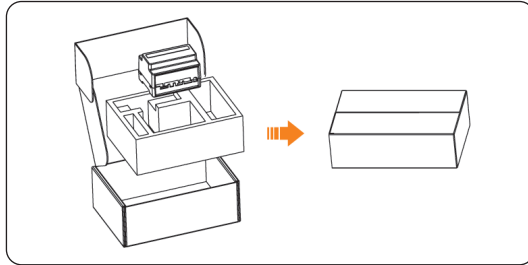


Figure 12-2 Packing the Adapter Box G3

- If the original packing material is not available, use the packing material which meets the following requirements:
  - » Suitable for the weight and dimension of product
  - » Convenient for transportation
  - » Can be sealed with adhesive tape

### 12.1 Disposing of the Adapter Box G3

Properly dispose of the Adapter Box G3 and accessories in accordance with local regulations on the disposal of electronic waste.

# 13 Technical Data

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- Electrical Parameter

Power Input	12Vdc, 0.25A
Power Consumption	3W

- Interface

Communication	RS485 × 3
Network Connection	WiFi 2.4GHz / Ethernet 10M
Digital Input	4 × DI, 12V
Digital Output	4 × DO
Analog Output	2 × AO, 0-10V
DC Ouput	12 V, 0.03A
HMI Interface	LED / APP / Reset button

- General data

Dimensions (H × W × D)	83 mm × 100 mm × 65 mm
Weight	0.2 Kg
Operating Temperature Range	-20°C ~ 50°C
Storage Temperature Range	-30°C ~ 60°C
Humidity	0%~95%
Altitude	< 2000 m
Degree of Protection	IP20
Installation Method	DIN-rail

- Standard

Certification	CE LVD, CE EMC, RED, RoHs
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- Bluetooth

Bluetooth Version	Bluetooth V4.2w
Frequency Range	2402-2480 MHz
Max Transmit Power	9,55 dBm

- Wi-Fi

Frequency Range	2412-2472MHz for 802.11b/g/n (HT20) 2422-2462MHz for 802.11n (HT40)
Max Transmit Power	19.23 dBm

# 14 Application Scenarios

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## 14.1 Application of single load scenarios

### 14.1.1 Control through SG Ready signal

The SG Ready function refers to the ability to control the corresponding DO port (on/off) based on the remaining power of the photovoltaic system or the remaining SOC of the energy storage battery. When there is excess photovoltaic power or battery capacity beyond the set threshold, the DO port controls the connected load (such as a heat pump or other single load) to increase power consumption, thereby utilizing the surplus energy from the photovoltaic system or battery.

The heat pump with SG Ready interface controls its operation based on the 4 states represented by different combinations of the 2 external dry contacts. See table below for details. After connected to the Adapter Box G3 through any one of 4 DO ports, the heat pump will switch its operation mode between the Normal State and Recommended On State. When DO dry contact is open circuited, the heat pump works normally without SG effect; When DO dry contact is close-circuited, the heat pump works in an enhance mode with higher power rate to make full use of the surplus energy.

Note:

SG Ready signal does not impact the normal operation of the heat pump. The Adapter Box G3 will trigger the heat pump to switch to Recommended ON state only when there are surplus PV energy in the system.

Mode	State	Relays Configuration	Terminal Connection	Action
1	OFF	ON/OFF	1:0	HP switched off
2	Normal	OFF/OFF	0:0	HP working in normal mode without SG effect
3	Recommended ON	OFF/ON	0:1	HP working in a recommended enhance mode
4	Forced ON	ON/ON	1:1	HP must switch ON

**NOTICE!**

- For SG Ready control, a meter must be connected to the corresponding load to monitor its real-time power consumption and upload the data to the SolaXCloud for display. When the meter is not connected or the meter communication is abnormal, the Adapter Box G3 cannot control the load.
- The SG Ready function allows users to connect a heat pump or other single load to any one of the four dry contact signals (DO1-DO4).
- The SG Ready control is mutually exclusive with the DO control, meaning that if the SG Ready function is used, the DO control function becomes unavailable.

**Wiring connection diagram**

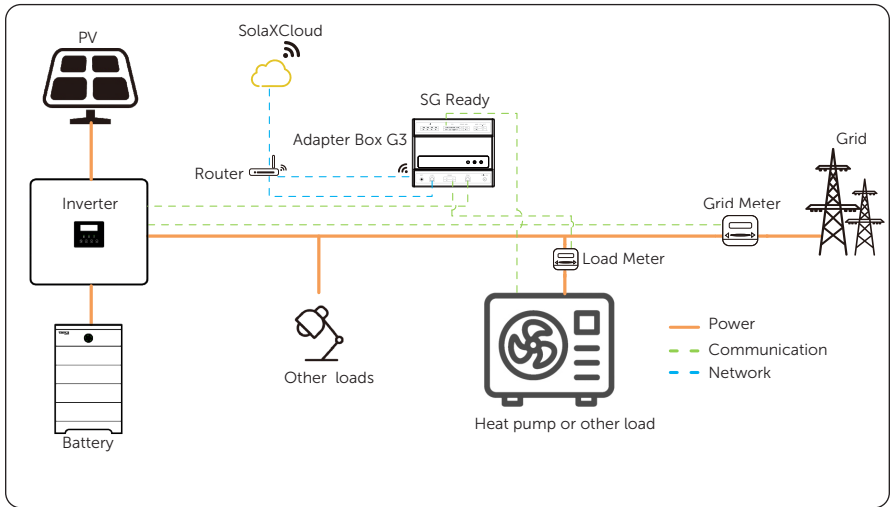


Figure 14-1 SG Ready signal control wiring diagram

### 14.1.2 Control through DO Function

The DO control function requires the user to input the power of the controlled load and then set the different switch combinations for DO port according to their control requirements (up to 15 combinations, or a maximum of 15 gears).

For each switch combination, the user must set the corresponding power percentage. The Adapter Box G3 will control the ON/OFF status of the corresponding DO port based on the remaining photovoltaic power and the power associated with each gear, ensuring the load to precisely consume the excess photovoltaic energy.

**NOTICE!**

- For load controlled by the DO function, a meter must be connected to the corresponding load to monitor its real-time power consumption and upload the data to the SolaXCloud for display. When the meter is not connected or the meter communication is abnormal, the Adapter Box G3 cannot control the load.
- For Do function, four dry contacts need to be connected.
- Once the DO control is used, the SG Ready control becomes unavailable.

#### Wiring connection diagram

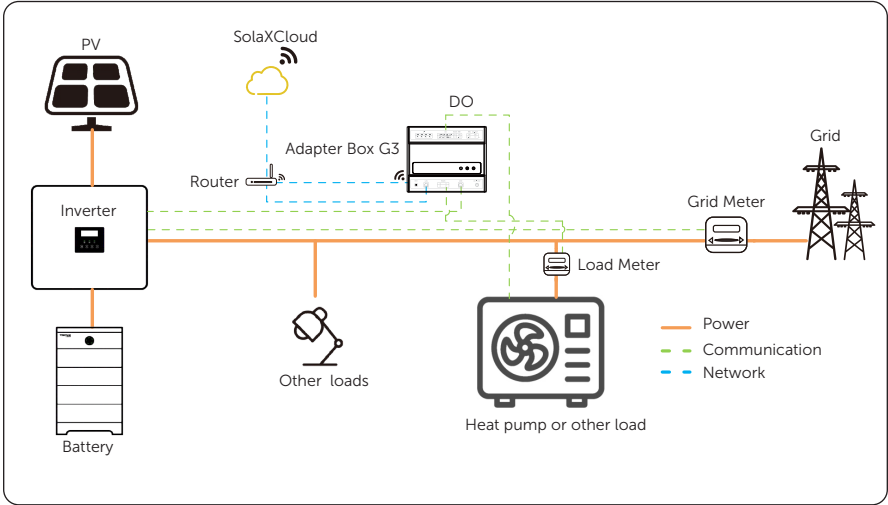


Figure 14-2 DO control wiring diagram

### 14.1.3 Control through AO1 Function

The AO1 control function requires the user to input the power of the controlled load and then set a gear based on their control requirements (up to a maximum of 15 gears). The Adapter Box G3 will distribute a 10V voltage across the gears evenly and will also allocate the load power proportionally to each gear.

For example, if set to 4 gears, the first gear will correspond to a voltage of 2.5V, representing 1/4 of the total load power. The second gear will correspond to 5V, representing 1/2 of the load power, the third gear will correspond to 7.5V, representing 3/4 of the load power, and the fourth gear will correspond to full power.

The Adapter Box G3 will control the AO1 output voltage based on the remaining photovoltaic power and the voltage associated with each gear, ensuring that the load can accurately consume the excess photovoltaic energy.

**NOTICE!**

- For load controlled by the AO-1 function, a meter must be connected to the corresponding load to monitor its real-time power consumption and upload the data to the SolaXCloud for display. When the meter is not connected or the meter communication is abnormal, the Adapter Box G3 cannot control the load.

#### Wiring connection diagram

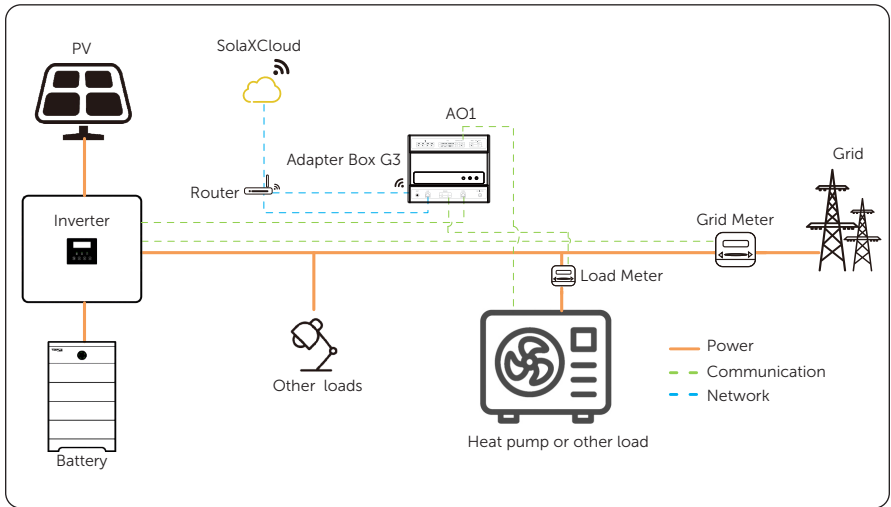


Figure 14-3 AO1 control wiring diagram

### 14.1.4 Control through AO2 Function

The AO2 control function is applied in scenarios requiring precise control of purely resistive load, such as immersion water heater.

It controls the output AC voltage of the solid state power controller by using the 0-10V analog voltage from the AO2 output. This ensures that the percentage of the load's power relative to the full power is consistent with the percentage of the 10V range of the analog voltage, allowing for accurate control of the real-time power of resistive load like immersion water heater.

The solid state power controller can be powered via 12V\_OUT. If users use their own solid state power controller, the power supply voltage should match the specifications of the controller.

**NOTICE!**

- This control mode requires an external meter to monitor the power consumption of the immersion water heater. When the meter is not connected or the meter communication is abnormal, the Adapter Box G3 cannot control the load.

#### Wiring connection diagram

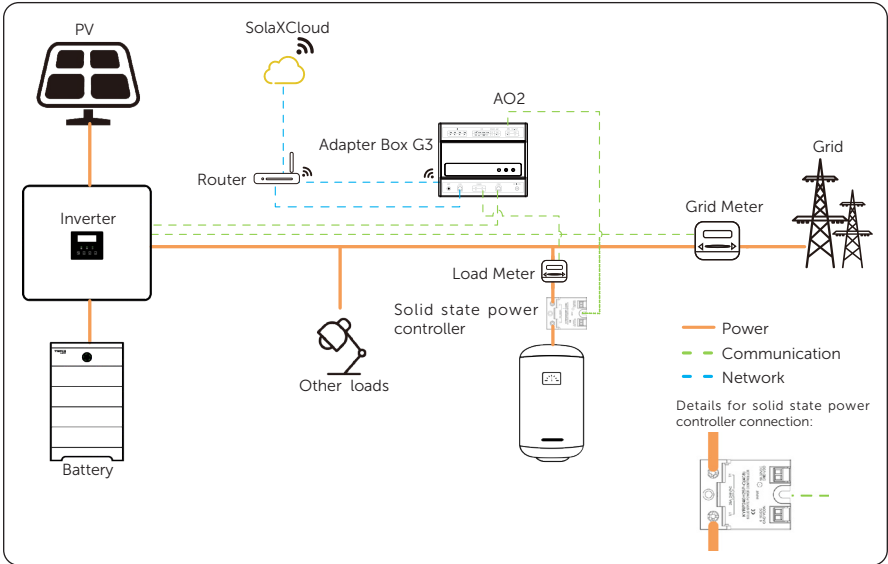


Figure 14-4 AO2 control wiring diagram

## 14.2 Application of multiple loads scenarios

When multiple loads are connected to the Adapter Box G3 in quick mode, the priority order of the loads can be set. The Adapter Box G3 will allocate the excess photovoltaic power to the higher-priority loads first. Only when the higher-priority loads can no longer increase their power will the device allocate the remaining photovoltaic power to the lower-priority loads.

Conversely, when multiple loads are operating and approaching the total power limit of the system, the Adapter Box G3 will first reduce the power consumption of the lower-priority loads. If the power of the lower-priority loads cannot be further reduced, it will then reduce the power consumption of the higher-priority loads.

### 14.2.1 Water Heater + Heat Pump + EV Charger

#### Wiring connection diagram

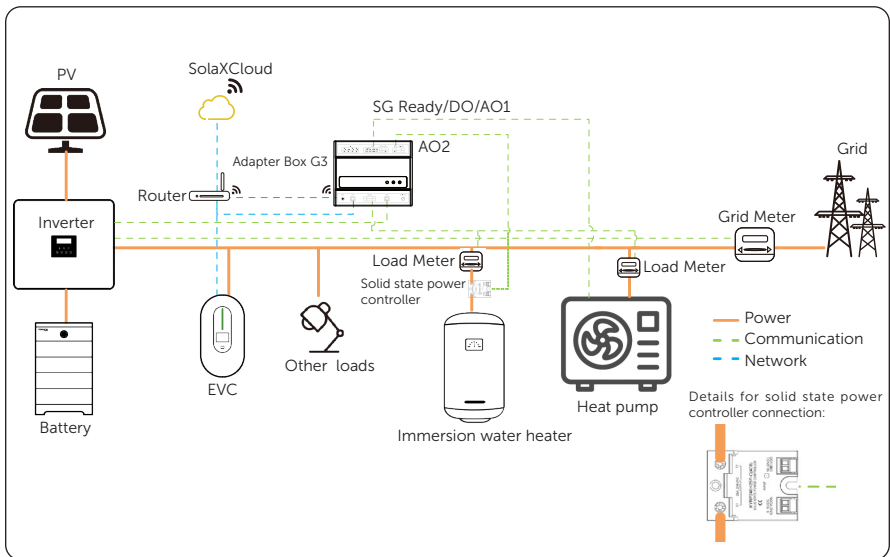


Figure 14-5 Water Heater+ Heat Pump + EV Charger wiring diagram

### 14.2.2 Water Heater + Heat Pump

#### Wiring connection diagram

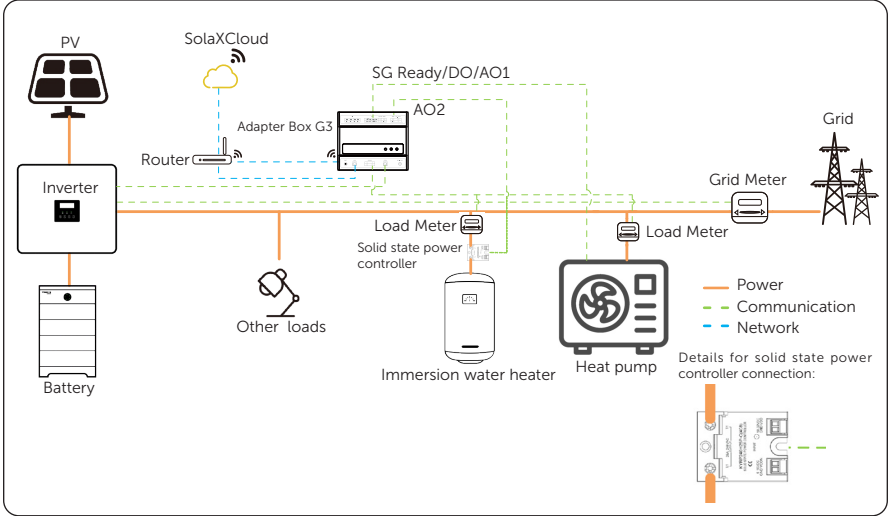


Figure 14-6 Water Heater+ Heat Pump wiring diagram

### 14.2.3 Heat Pump + EV Charger

#### Wiring connection diagram

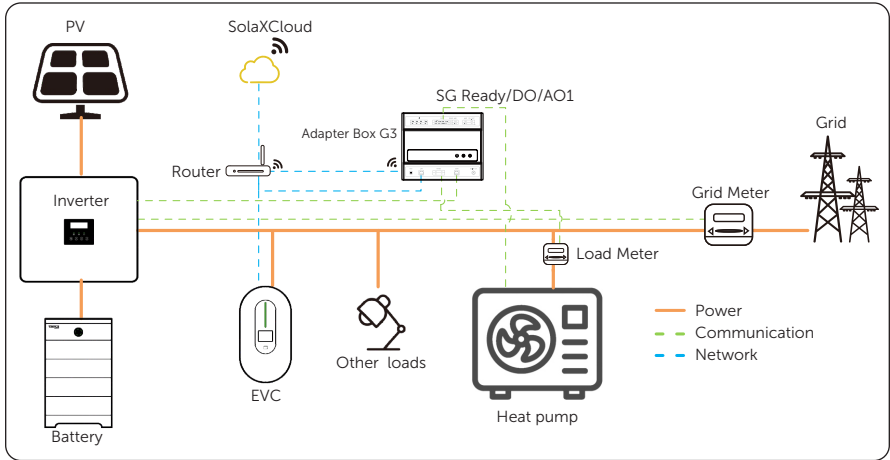


Figure 14-7 Heat Pump + EV Charger wiring diagram

### 14.2.4 Water Heater + EV Charger

#### Wiring connection diagram

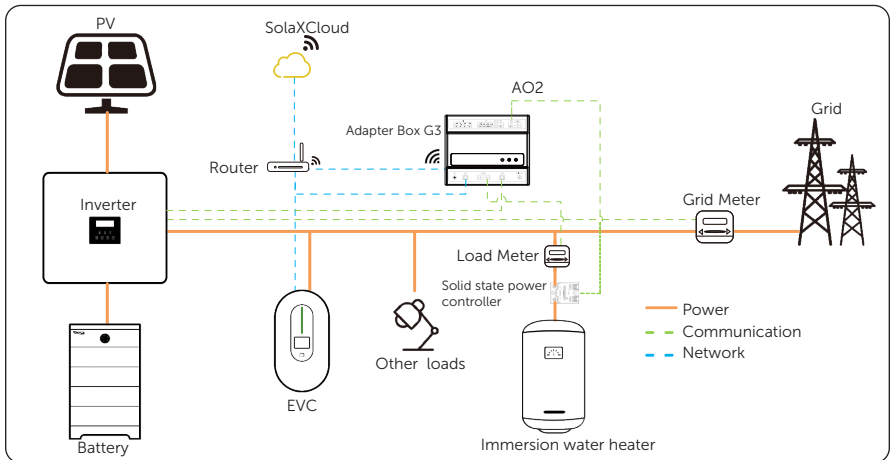


Figure 14-8 Water Heater + EV Charger wiring diagram

### 14.3 DI Terminal Description

The following descriptions only take effect for loads that are managed by Adapter Box G3.

Table 14-3 DI terminal description




Status	Description
DI1 off and DI2 off	No response.
DI1 off and DI2 on	The consumption of grid power will be controlled within 4.2 kW
DI1 on and DI2 on	No consumption of grid power.
DI1 on and DI2 off	No response.

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# Warranty Registration

Please visit the website: <https://www.solaxcloud.com/user-center/> to complete the warranty registration. For more detailed warranty terms, please visit SolaX official website: [www.solaxpower.com](http://www.solaxpower.com).



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