

XHub

User Manual

Version 3.0

www.solaxpower.com

eManual in the QR code or
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STATEMENT

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About This Manual

Scope of Validity

This manual is an integral part of XHub. 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, maintenance and grid-related setting can only be performed by qualified personnel who:

- Are licensed and/or satisfy state and local 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
DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION!	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury, device damage, power generation loss or unanticipated results.
NOTICE!	Provides tips for the optimal operation of the product.

Change History

Version 3.0 (2026-01-30)

Modified the supported inverter model in Table "7-4 Supported model" (deleted X1-VAST and added X1-Hybrid G4 and X3-Hybrid G4)

Modified from firmware upgrade through Web to firmware upgrade through App/Web in "12.4.6 Confirm the firmware version"

Added a notice in "12.4.7 Bind the sub-device to XHub"

Version 2.0 (2025-11-30)

Updated "12 Operation on SolaXCloud" (modified App operation steps and screenshots))

Version 1.0 (2025-08-30)

Updated "9.7 §14a EnWG+§9 EEG (DI)" (added the installation of §14a EnWG+§9 EEG (DI))

Version 0.0 (2025-06-30)

Initial release

Table of Contents

1 Safety 1

1.1 General Safety 1
1.2 Safety Instructions of XHub and Grid 1
1.2.1 Safety Instructions of XHub 2
1.2.2 Safety Instructions of Grid 3

2 Product Overview 4

2.1 Product Introduction 4
2.2 Appearance 5
2.3 Symbols on the Label and XHub 6

3 System Overview 7

4 Transportation and Storage 9

5 Preparation before Installation 10

5.1 Selection of Installation Location 10
5.1.1 Environment Requirement 10
5.1.2 Installation Site Requirement 11
5.2 Tools Requirement 11
5.3 Additionally Required Materials 12

6 Unpacking and Inspection 13

6.1 Unpacking 13
6.2 Scope of Delivery 14

7 Electrical Connection 15

7.1 Overview of Electrical Connection 16
7.1.1 Terminals and Parts of XHub 16
7.1.2 Cable Connections of XHub 17
7.2 L1/L2/L3/N Line Installation 19

8 Mechanical Installation 24

8.1 Dimensions for Mounting 24
8.2 Installation Procedures 25

9 Terminal Installation 26

9.1 ETH Installation 26
9.2 LAN Installation 28
9.3 RS485 Installation 30

9.4 DO Installation 32
9.5 DRM Function (AI+DI) 34
9.6 Ripple Control Function (DI) 36
9.7 §14a EnWG+§9 EEG (DI) 38
9.8 Power Supply Function (DI+AI) 40
9.9 CT Installation 42
9.10 Antenna Installation 44
10 Power-on the Device 46
10.1 Checking before Power-on 46
10.2 Power on the Device 46
10.3 Checking after Power-on 46
11 Indicators and key 47
12 Operation on SolaXCloud 49
12.1 Introduction of SolaXCloud 49
12.2 Downloading and Installing App 49
12.3 App Operation Procedures 50
12.4 Operation Guide on SolaXCloud App 51
12.4.1 Create a Plant 51
12.4.2 Add XHub 53
12.4.3 Configure the Network 54
12.4.4 Add the Sub-device 56
12.4.5 Network Configuration 57
12.4.6 Confirm the Firmware Version 58
12.4.7 Bind the Sub-device to XHub 60
12.4.8 Set the Electrical Price 62
12.4.9 Enable XSchedule 67
12.4.10 More Operations about App 68
12.5 Operations on SolaXCloud Web Page 69
12.5.1 Enter the Web Page 69
12.5.2 Upgrade on the Web Page 69
13 Troubleshooting and Maintenance 71
13.1 Power Off 71
13.2 Troubleshooting 71
13.3 Maintenance 72
14 Decommissioning 73
14.1 Disassembling the XHub 73
14.2 Packing the XHub 73
14.3 Disposing of the XHub 74
15 Technical Data 75

1 Safety

1.1 General Safety

The series XHub has been meticulously designed and 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 XHub to minimize the risk of personal injury and ensure a safe installation.

Please carefully 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 XHub. 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 XHub.

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:

- XHub damage caused by force majeure events, such as earthquakes, floods, thunderstorms, lightning, fire hazards, volcanic eruptions, and similar events.
- XHub damage due to human causes.
- XHub damage caused by strong vibrations from external factors before, during and after installation.
- Use or operation of the XHub 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 XHub in unsuitable environmental or electrical conditions.
- Unauthorized modifications to the product or software.
- XHub 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 of XHub and Grid

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

1.2.1 Safety Instructions of XHub

DANGER!

Potential risk of lethal electric shock associated with the XHub

- Only operate the XHub if it is in a technically faultless condition. Operating a faulty XHub may lead to electric shock or fire.
- Do not attempt to open the enclosure without authorization from SolaX. Unauthorized opening of the enclosure will void the warranty.
- Only qualified personnel can perform the installation, wiring, maintenance of the XHub by following this document and the related regulations.

WARNING!

- Use insulated tools when installing the device, and always wear personal protective equipment (PPE) during installation and maintenance.

CAUTION!

- Make sure that children are supervised to prevent them from playing with the XHub.

CAUTION!

- Before installation, ensure all power of the device has been cut off.
- Do not dismantle or scrap by force.
- Unauthorized opening and cable connection will void the warranty and cause lethal danger or serious injury due to electric shock.
- Refer to the corresponding installation guide 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.

CAUTION!

- Need of a all pole disconnect device as part of building installation and equipment is power distribution energy consuming device used inside buildings and over voltage category is II.

NOTICE!

- Keep all product labels on the XHub clearly visible and well-maintained.

CE DECLARATION OF CONFORMITY
• Hereby, [SolaX Power Network Technology (Zhejiang) Co., Ltd.] declares that the radio equipment type [XHub] is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: https://statics-oss.solaxcloud.com/guide/xhub/XHub-CE-Conformity-Declaration.pdf

1.2.2 Safety Instructions of Grid

NOTICE!
• Only connect the XHub to the grid with the permission of the local utility grid company.

2 Product Overview

2.1 Product Introduction

XHub is a special piece of equipment designed for smart home energy solutions, targeting residential scenarios. It aims to help households manage and utilize energy more efficiently, thereby reducing energy consumption and saving costs. It builds an energy AI model tailored to the personalized energy usage scenarios of households, providing a comprehensive solution for intelligent prediction and control of both the supply and demand sides of energy.

Highlights:

- Intelligent AI Management: Unified Dispatching of PV, Energy Storage, EV Chargers, etc. intelligently predict power Gen/Use, dynamically boost earnings by 50%+.
- Automations: Custom Triggers, Real-time Local Monitoring, Instant Execution
- Third-Party Ecosystem: Compatible with EEBUS, SGready, Modbus, etc.; Integrate Shelly devices.
- Grid-Friendly: Supports §14a EnWG+§9 EEG, Ripple Control, DRM, 3-Phase Unbalanced Output, etc. Ease of use: Intuitive App and web interface with transparent visualization of energy flows and savings potential.
- Future-proof: Support for dynamic electricity tariffs, modular extensibility for future technologies.
- Privacy & Security: Local data processing, encrypted communication to ensure privacy.

2.2 Appearance

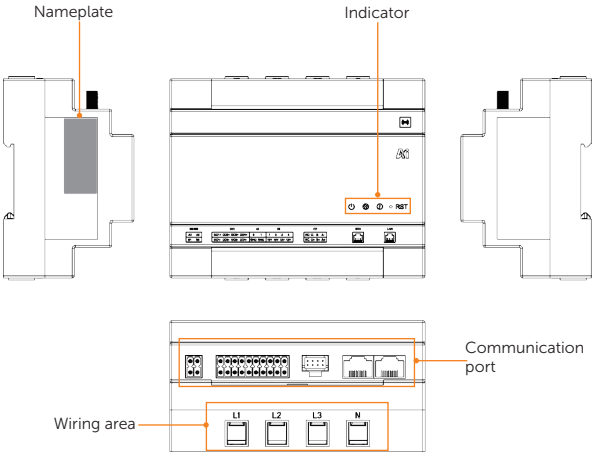


Figure 2-1 Appearance

Table 2-1 Description of appearance

Item	Description
Nameplate	Nameplate clearly identifies the device type, specific AC parameters, certification, etc.
Indicator	Including power, communication, alarm and reset indicators.
Wiring area	The wiring area for L1, L2, L3 and N lines.
Communication port	Including RS485, DO, AI, DI, CT, ETH and LAN ports.

2.3 Symbols on the Label and XHub

Table 2-2 Description of symbols

Symbol	Description
	CE mark. The XHub complies with the requirements of the applicable CE guidelines.
	RCM mark. The XHub complies with the requirements of the applicable RCM guidelines.
	Double insulation symbol Equipment protected throughout by double insulation or reinforced insulation
	Refer to the operating instructions.
	Do not dispose of the XHub together with household waste.

3 System Overview

System overview

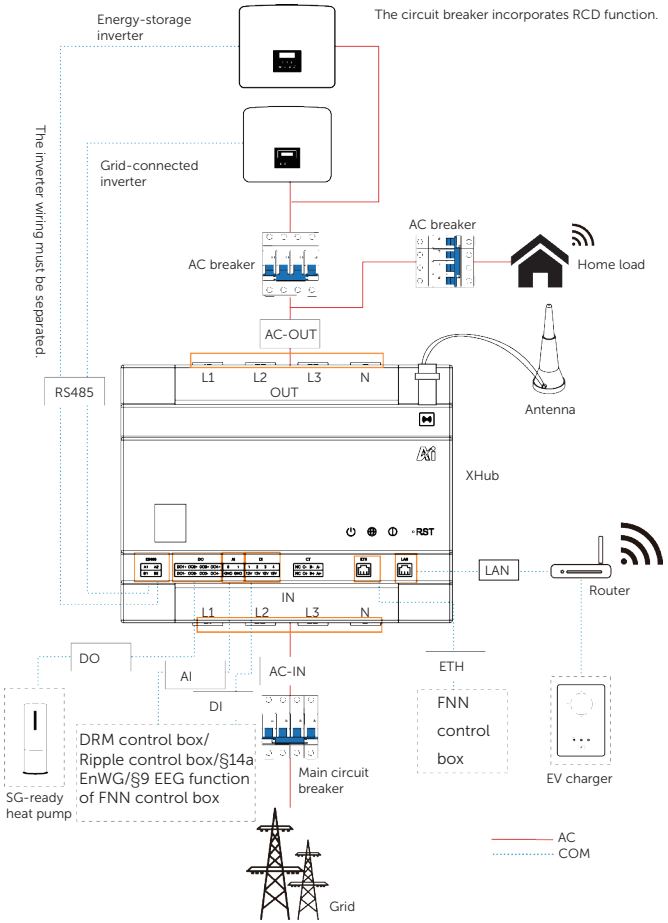


Figure 3-1 System diagram

NOTICE!

- The system diagram illustrates no additional CT scene, for additional CT connection, please refer to "Figure 9-33 Wiring diagram for additional CT connection".

Table 3-1 System item description

Item	Description
XHub (the device covered in this manual)	XHub is a special piece of equipment designed for smart home energy solutions, targeting residential scenarios.
EV-Charger (supported)	The XHub can communicate with SolaX EV-Charger to form an intelligent photovoltaic, storage and EV charging energy system, thus maximizing the utilization of photovoltaic energy. Please refer to "12 Operation on SolaX App and Web" for the specific models.
Inverter (supported)	XHub supports the energy-storage inverters and grid-connected inverters. Please refer to "7-4 Supported model" for the specific models.
CT (optional)	CT installation is optional. The XHub is equipped with an internal CT inside (as shown in the figure above). If the users want to realize the export control function by meter or if the internal CT accuracy doesn't meet the users' requirements, please install an external CT.
Heat pump (supported)	XHub can realize the control of high-power load like heat pump.
Load	XHub can control the normal loads like computer and high-power loads like heat pump.
Router	XHub can connect to the router through LAN port to acquire WiFi signal.
External control unit	Ripple control, FNN control box and DRM.
Rated AC voltage	230 V (100–240)
SolaXCloud	SolaXCloud is an intelligent, multifunctional monitoring platform that can be accessed either remotely or through a hard wired connection. With SolaXCloud, the operators and installers can always view key and up to date data.

4 Transportation and Storage

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

Transportation

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

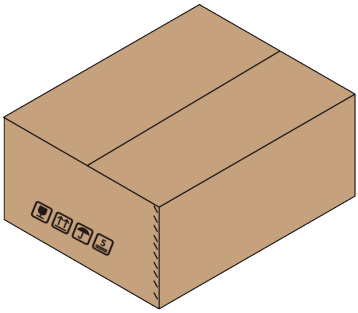


Figure 4-1 Caution signs on the packaging

Storage

- The XHub must be stored in a dry, clean, and ventilated indoor environment that is free from sources of corrosive gases, flammable, explosive material, heat and ignition.
- Do not remove the original packaging material and check the outer packaging material regularly.
- The storage temperature should be between -20°C and +60°C. The relative humidity should be between 5%RH and 95%RH.
- Stack the XHub in accordance with the caution signs on the XHub carton to prevent their falling down and device damage. Do not place it upside down.

5 Preparation before Installation

5.1 Selection of Installation Location

The installation location selected for the XHub is quite critical in the aspect of the guarantee of device safety, service life and performance. It has the IP20 ingress protection, which is suitable for indoor use. The installation position shall be convenient for wiring connection, operation and maintenance. We recommend installing in the distribution box.

5.1.1 Environment Requirement

- The ambient temperature: -20°C to +60°C.
- The relative humidity shall be between 5–95%RH.
- Do not install the XHub in the areas where the altitude exceeds 3000 m.
- Install the XHub in a well-ventilated environment for heat dissipation.
- Do not install the XHub in areas with flammable, explosive and corrosive materials or near antennas.

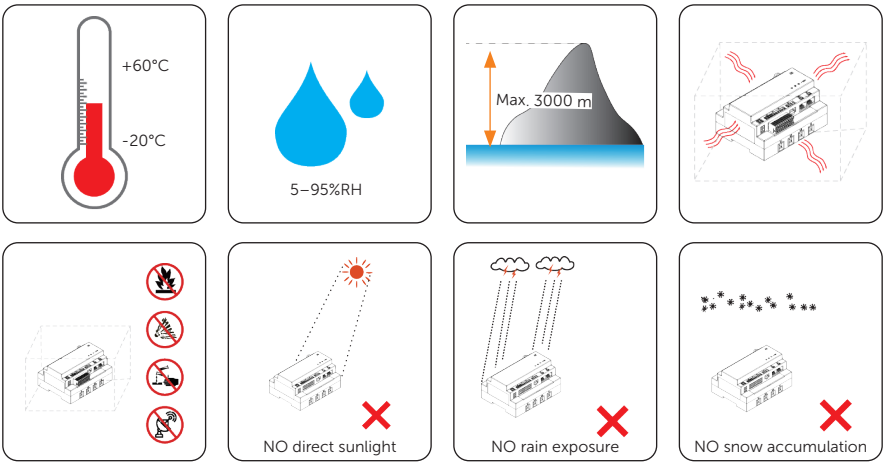


Figure 5-1 Environment requirement

5.1.2 Installation Site Requirement

The installation site must be waterproof. And we recommend installing in the rail of distribution box and the distribution box shall be closed in case of rain, snow and sunlight exposure.

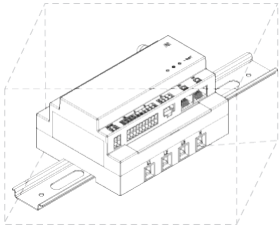
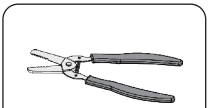


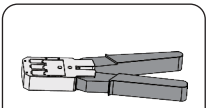
Figure 5-2 Installation site requirement

5.2 Tools Requirement

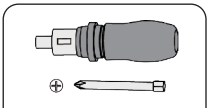
Installation tools include but are not limited to the following recommended ones. If necessary, use other auxiliary tools on site. Please note that the tools used must comply with local regulations.



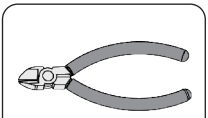
Wire stripper



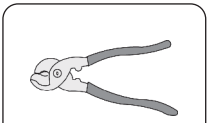
Crimping tool for RJ45



Torque screwdriver
(Philips head: M5)



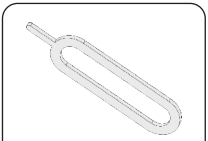
Diagonal pliers



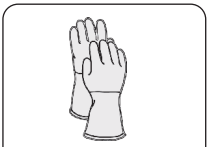
Wire cutter



Crimping tool for ferrules
Recommended manufacturer: OPT
Model: DL10A



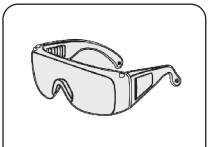
Ejector pin



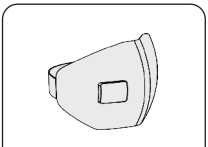
Safety gloves



Safety boots



Safety goggles



Anti-dust mask

5.3 Additionally Required Materials

Table 5-1 Additionally required materials

No.	Required material		Type	Requirement	Use
1	CT		3-in-1 CT (current > 80 A)	Recommend purchasing from SolaX	For CT port installation
2	RS485 Communication cable		Shielded twisted pair	Conductor cross-section:0.25 mm^2; Prepared by the user	For RS485 port installation
3	Communication cable		CAT 5E network cable (internal resistance ≤ 1.5 ohms/ 10 m RJ45 connector)	Conductor cross-section:0.25 mm^2; Prepared by the user	For ETH /LAN port installation
4	AC input/output power cable		Outdoor cooper cable	Maximum allowable current: 80 A; Prepared by the user	For L1/L2/L3/N port installation
5	Power cable		12 VDC power cable	Conductor cross-section: 0.25 mm^2; Maximum allowable current: 1 A; Prepared by the user	For GND and 12 V port installation (used when energy-storage inverter is connected)
6	Signal cable		Two-core signal cable	Conductor cross-section: 0.25 mm^2; Prepared by the user	For DO/DI/AI port installation
7	Ferrules		Euro terminal	0.3 mm^2; prepared by the user and the number is depended on connected terminals	For RS485/DO/DI/AI line installation

6 Unpacking and Inspection

6.1 Unpacking

- The XHub 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.
- Unpack the XHub according to the following figure.

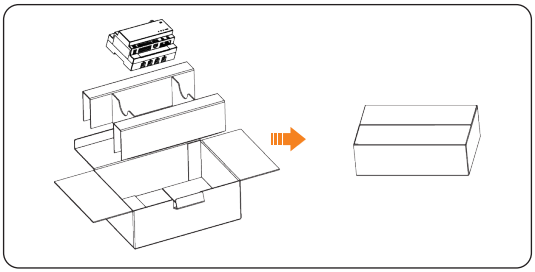
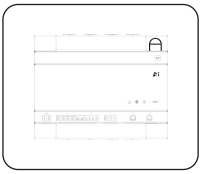
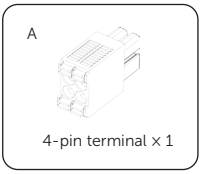


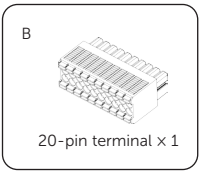
Figure 6-1 Unpacking the XHub

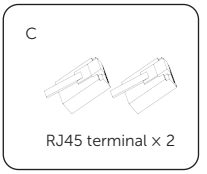
- Properly handle all the packaging materials in case they may be reused for storage and transportation of the XHub in the future.
- Upon opening the package, check whether the XHub is intact and whether all accessories are included. If any damage is found or any parts are missing, contact your dealer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

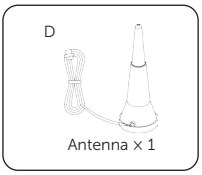
6.2 Scope of Delivery











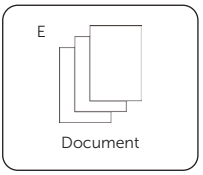


Table 6-1 Packing list

Item	Description	Quantity	Remark
/	XHub	1 pc	
A	4-pin terminal	1 pc	For RS485 connection
B	20-pin terminal	1 pc	For DO/DI/AI connection
C	RJ45 terminal	2 pcs	For LAN and ETH connection
D	Antenna	1 pc	
E	Document	-	

NOTICE!

- Refer to the actual delivery for the optional accessories.

7 Electrical Connection

DANGER!

- Before electrical connection, make sure that XHub has not been connected to the circuit. 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 documents for electrical connection. XHub damages caused by incorrect wiring are not covered by the warranty.
- Use insulated tools and wear personal protective equipment throughout the electrical connection process.

NOTICE!

- The cable colours in figures shown in this manual are for reference only. Please select cables according to local cable standards.

7.1 Overview of Electrical Connection

7.1.1 Terminals and Parts of XHub

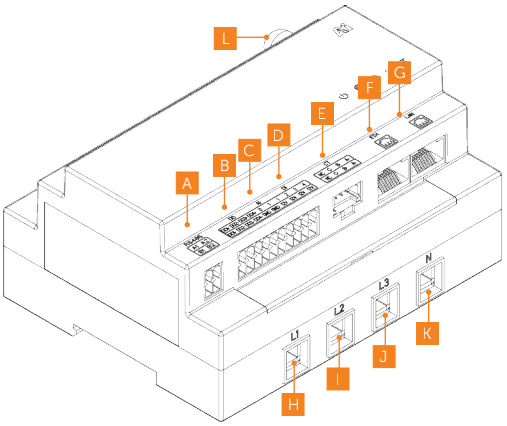


Figure 7-1 Terminals and parts of XHub

Table 7-1 Description of terminals

Item	Name	Description
A	RS485 port	For communication cable connection
B	DO port	4 strings; For accessing DO signal; Input voltage: 3–8 VDC
C	AI port	2 strings; For accessing AI signal
D	DI port	4 strings; For accessing DI signal
E	CT port	For CT connection
F	ETH port	For FNN control box connection
G	LAN port	For router connection
H	L1 port	For L1 line connection
I	L2 port	For L2 line connection
J	L3 port	For L3 line connection
K	N port	For N line connection
L	Antenna	For the transmittance of WiFi signal

7.1.2 Cable Connections of XHub

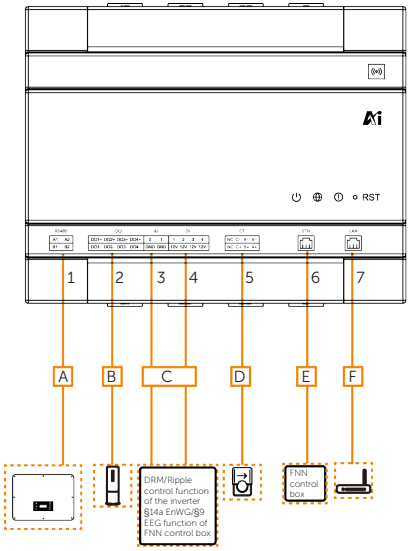


Figure 7-2 Cable connections of XHub

Table 7-2 Descriptions of connected part

Item	Part	Description	Source
A	Inverter	Refer to "7-4 Supported model" for the supported model and superiority	Purchased from SolaX
B	Heat pump	SG-ready heat pump	Prepared by user
C	DRM/ripple control function of the inverter		Purchased from SolaX
D	CT	3-in-1 CT; Internal CT: current ≤80 A; External CT: current > 80 A	Purchased from SolaX
E	FNN control BOX		Prepared by user
F	Router		Prepared by user

Table 7-3 Descriptions of cables

Item	Cable	Type and specifications	Source
1	RS485 communication cable	Refer to "14 Technical Data"	Prepared by user
2	Signal cable		Prepared by user
3	Signal cable		Prepared by user
4	Signal cable		Prepared by user
5	Current sampling cable		Prepared by user
6	Communication cable		Prepared by user
7	Communication cable		Prepared by user

Table 7-4 Supported model

Type	Model
Energy-storage inverter	X1-Hybrid G4
	X1-IES
	X3-IES
	X3-ULTRA
	X3-Hybrid G4
	X3-Hybrid G4 PRO
	X3-IES-P
Grid-connected inverter	X3-MIC G2
	X3-PRO G2
EV Charger	A1-HAC
	C1-HAC
	C3-HAC
	X1-HAC
	X3-HAC
Plug (shelly)	Shelly Plus Plug S
	Shelly Plug S MTR GEN3 (White)
	Shelly Plug S MTR GEN3(Black)
	Shelly Outdoor Plug S GEN3
	Shelly Plus Plug UK

NOTICE!

- The supported models might be updated without notice. Please refer to the matching list displayed on App.

7.2 L1/L2/L3/N Line Installation

Install the L1/L2/L3/N line to connect to the power grid.

Wiring procedures

Step 1: Open the cover on the XHub, use a screwdriver to loosen the screws.

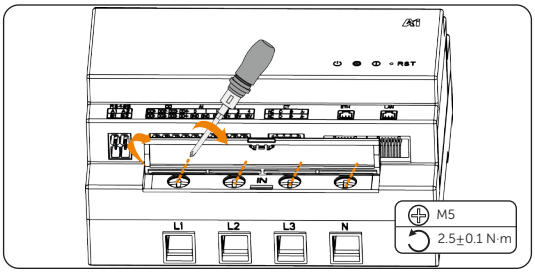


Figure 7-3 Open the cover

Step 2: Strip 10–13 mm of the L1, L2, L3 and N lines.

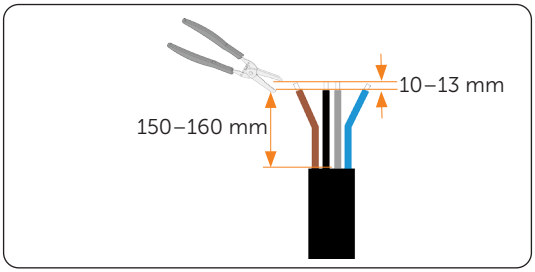


Figure 7-4 Strip L N lines

Step 3: Insert the L1, L2, L3 and N lines into the ferrules and crimp the ferrules.

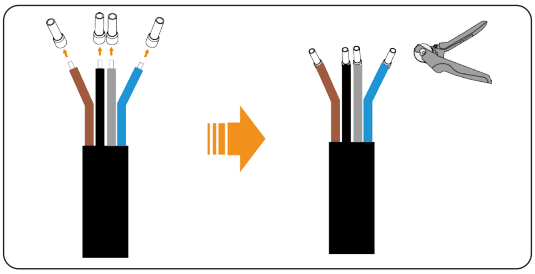


Figure 7-5 Crimp the ferrules

Step 4: Insert the ferrules into the corresponding port.

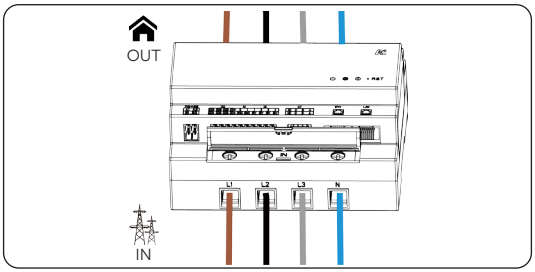


Figure 7-6 Insert the ferrules

Step 5: Screw down the screws and close the cover of the XHub.

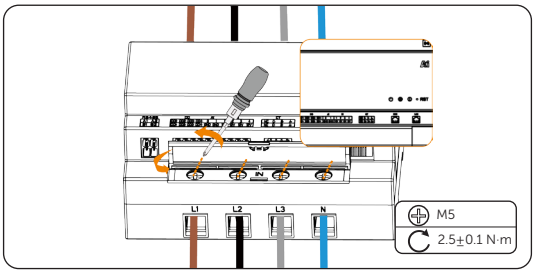


Figure 7-7 Screw down the screws

NOTICE!

- Users can choose to wiring L1-L2-L3-N, L-N or L1-L2-N, connect the corresponding lines according to actual needs.

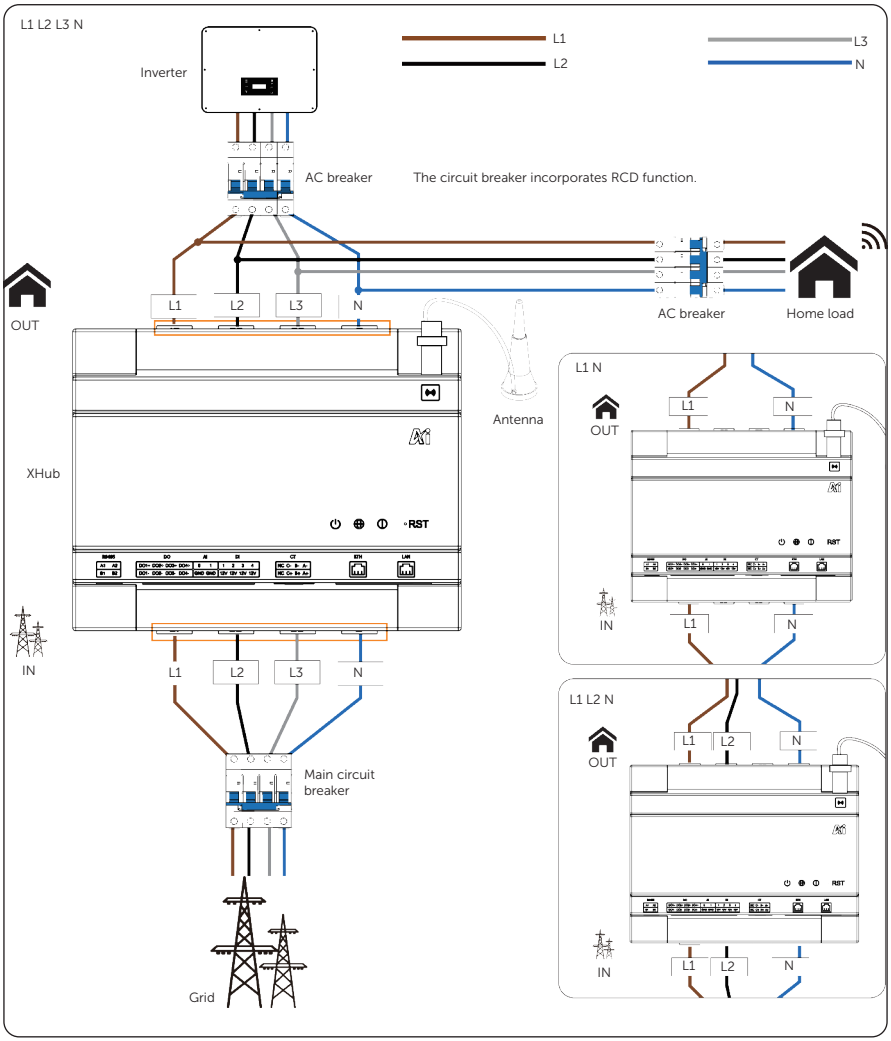


Figure 7-8 L/N line connection diagram (no additional CT connection requirements)

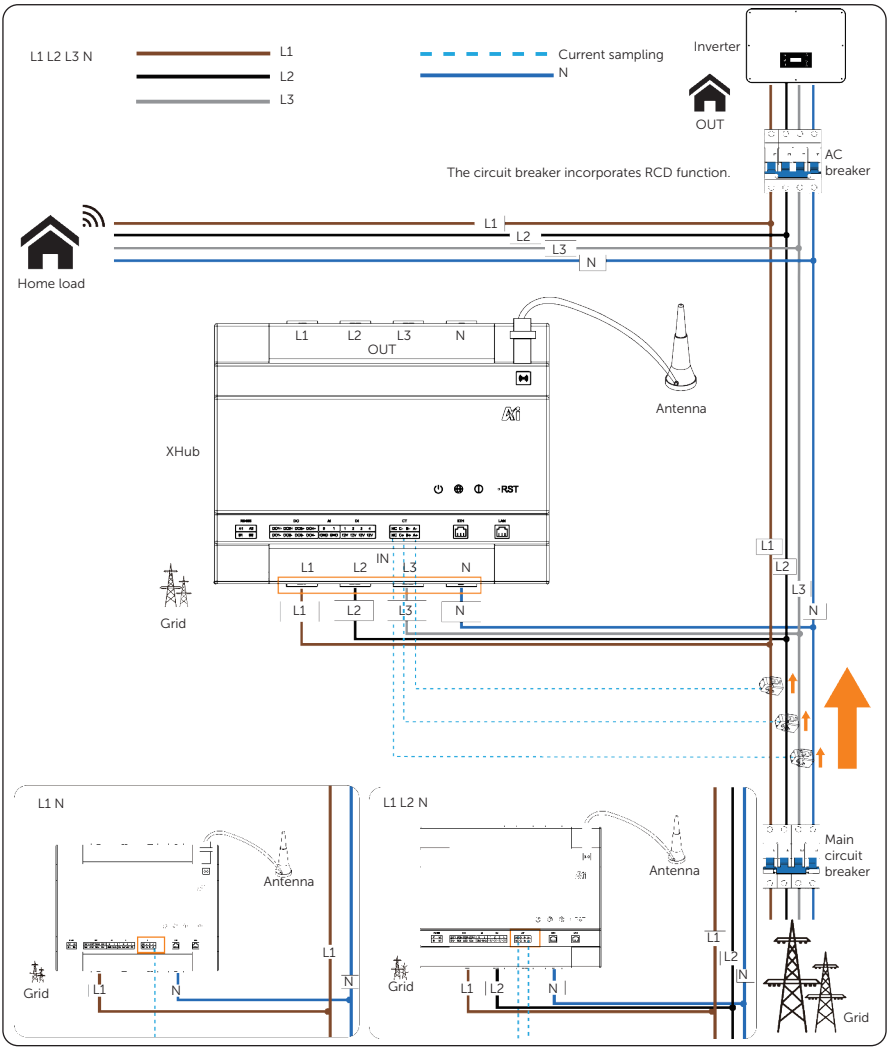


Figure 7-9 L/N line connection diagram (requires additional CTs)

XHub port	L/N line	CT
CT: A+/A-	L1	Yellow - A+ Black - A-
CT: B+/B-	L2	Green - B+ Black - B-
CT: C+/C-	L3	Red - C+ Black - C-

8 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 to prevent electric shock or other damage.
- Use insulated tools and wear personal protective equipment throughout the installation process.
- Make sure there is no electrical connection before installation.

CAUTION!

- During installation, always be cautious. Improper lifting or dropping of the XHub may result in device damage. Handle it with care.
- Tighten the screws to the torque specified in this document. Otherwise, the XHub may be damaged. This damage is not coved by the warranty.

8.1 Dimensions for Mounting

Before installation, check the dimensions of the XHub and the bracket. Make sure that enough space is reserved for the installation and heat dissipation of the entire system.

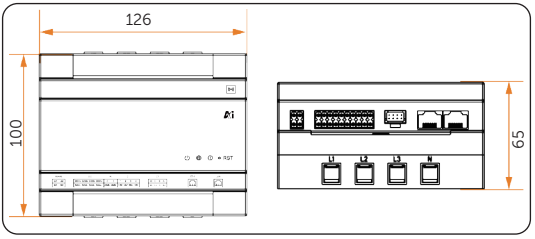


Figure 8-1 Dimensions of XHub (dimensions in mm)

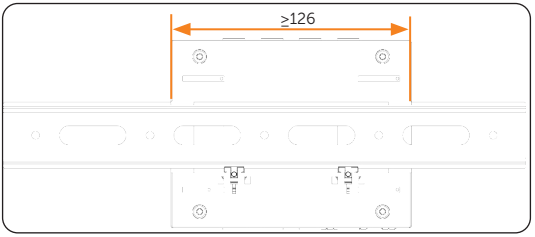


Figure 8-2 Dimensions of bracket (dimensions in mm)

8.2 Installation Procedures

Step 1: Clip the buckles on the back of XHub onto the DIN guide rail of the distribution cabinet from bottom to top. Make sure that at least 126 mm space is reserved on the left and right side of the rail.

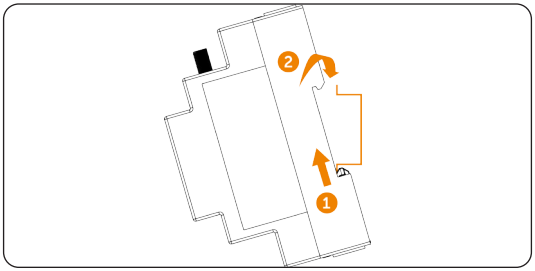


Figure 8-3 Clip the device

Step 2: Fasten the XHub to the DIN guide rail.

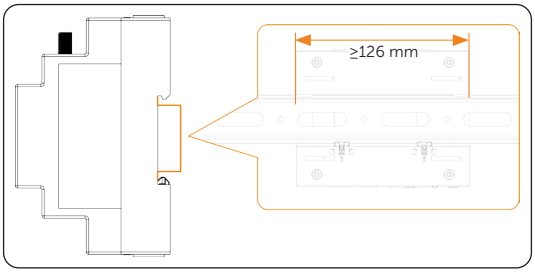


Figure 8-4 Install the device

9 Terminal Installation

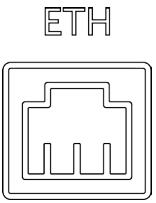
9.1 ETH Installation

The ETH is connected to FNN control box as an IoT interface device.

Requirements for ETH installation

- The signal source must be technically suitable for connection to the digital inputs. (see "14 Technical Data").

ETH port

ETH	

Wiring procedures

Step 1: Strip 10–15 mm of the communication cable and insert it into the RJ45 terminal according to 568B standard. Crimp the RJ45 terminal.

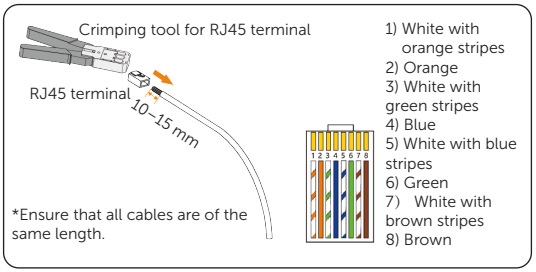


Figure 9-1 Insert the communication cable

Step 2: Install the RJ45 terminal into the ETH port of XHub. And then connect the other terminal to the FNN control box.

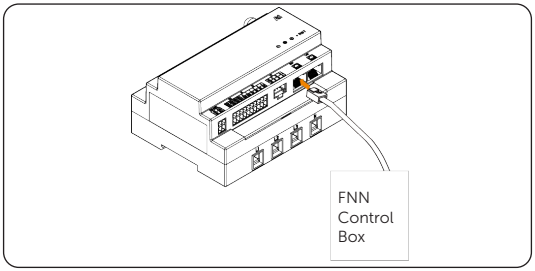


Figure 9-2 Install the RJ45 terminal

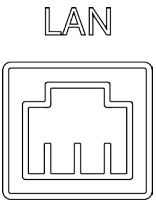
9.2 LAN Installation

Install the LAN port to router for WiFi transmission.

Requirements for LAN installation

- The signal source must be technically suitable for connection to the digital inputs. (see "14 Technical Data").

LAN pin assignment

LAN	

Wiring procedures

Step 1: Strip 10–15 mm of the network cable and insert it into the RJ45 terminal according to 568B standard. Crimp the RJ45 terminal.

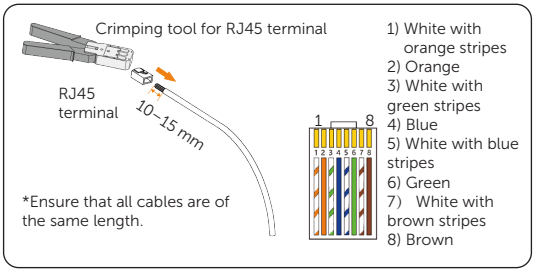


Figure 9-3 Insert the network cable

Step 2: Insert the network cable into the LAN port.

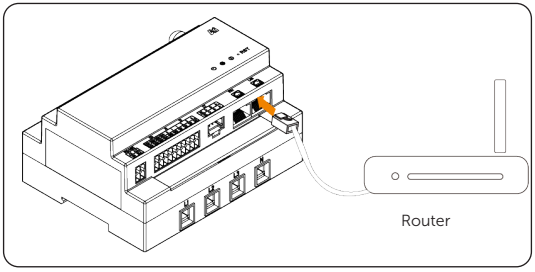


Figure 9-4 Insert into the LAN port

9.3 RS485 Installation

Through RS485 port, XHub could communication with the supported inverter and EV Charger.

Requirements for RS485 installation

- The signal source must be technically suitable for connection to the digital inputs. (see "14 Technical Data").

RS485 pin assignment

RS485	
A1	12
B1	B2

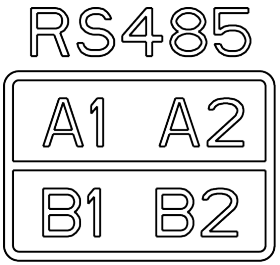


Figure 9-5 RS485 PIN rules

Wiring procedures

Step 1: Strip off 8–10 mm of the RS485 communication cable.

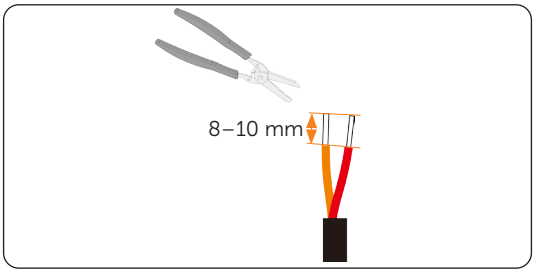


Figure 9-6 Stripping the communication cable

Step 2: Insert the ferrules into the stripped end and crimp the ferrules.

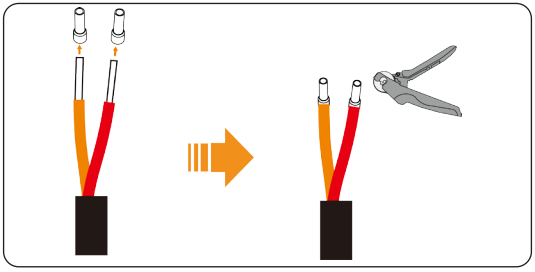


Figure 9-7 Crimp the ferrules

Step 3: Insert the stripped cable into the 4-pin terminal (accessory A).

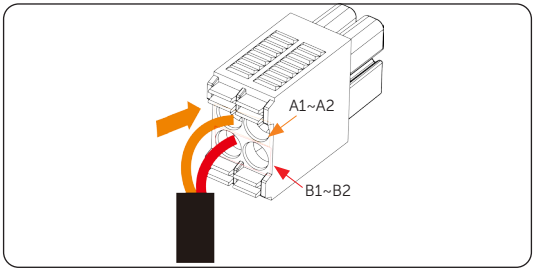


Figure 9-8 Insert the stripped cable

Step 4: Install the 4-pin terminal into the XHub and the RJ45 terminal into the RS485 port of the supported inverter.

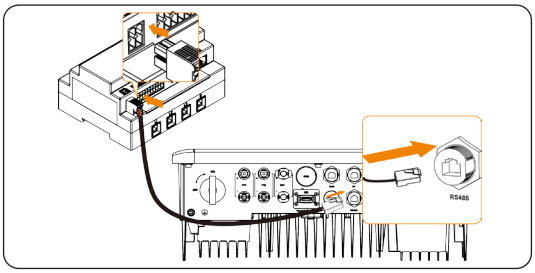


Figure 9-9 Install the 4-pin terminal

NOTICE!

- Please visit https://www.solaxpower.com/products.html for the RS485 installation of inverter side in detail.

9.4 DO Installation

The DO is used for interfaces that adapt to DRM and ripple control, in order to meet the scheduling requirements of the local power grid.

Requirements for DO installation

- The signal source must be technically suitable for connection to the digital inputs. (see "14 Technical Data").

DO pin assignment

DO			
DO1+	DO1+	DO1+	DO1+
DO1-	DO1-	DO1-	DO1-



Figure 9-10 DO PIN rules

Wiring procedures

Step 1: Strip off 8–10 mm of the signal cable.

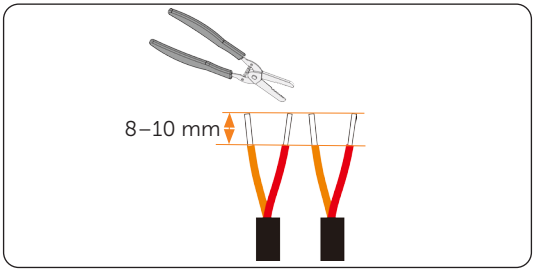


Figure 9-11 Stripping the signal cable

Step 2: Insert the ferrules into the stripped end and crimp the ferrules. Repeat twice.

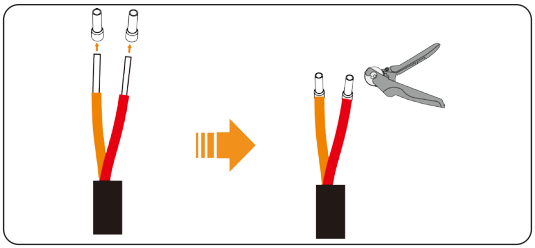


Figure 9-12 Crimp the ferrules

Step 3: Insert the stripped cable into the corresponding pin contact of the 20-pin terminal (accessory B) according to DO pin rules.

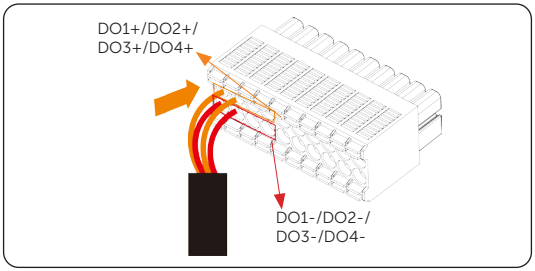


Figure 9-13 Insert the stripped cable

Step 4: Install the 12-pin terminal into the XHub and the other terminal into heat pump.

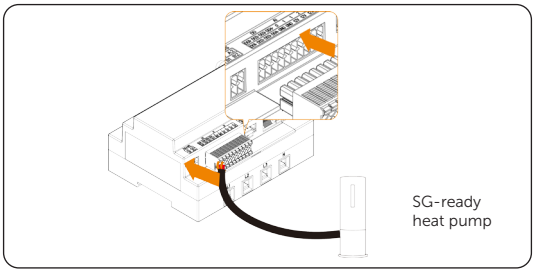


Figure 9-14 Install the 20-pin terminal

Pin of XHub	Pin of heat pump
DO1+/DO2+/DO3+/DO4+*	Pin28/Pin29*
DO1-/DO2-/DO3-/DO4-*	Pin G/Pin G*
*Connect any two DO+ to the heat pump's Pin 28 or 29, connect the corresponding two DO- the heat pump's Pin G.	

NOTICE!

- Refer to the *Installation Manual or User Manual of Heat Pump* to acquire the specific wiring and installation method of heat pump.

9.5 DRM Function (AI+DI)

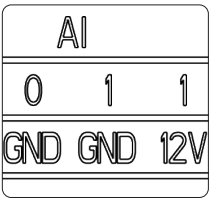
The AI and DI ports are used for interfaces that adapt to DRM and ripple control, in order to meet the scheduling requirements of the local power grid. DRM function is exclusive for inverters in the Australian region.

Requirements

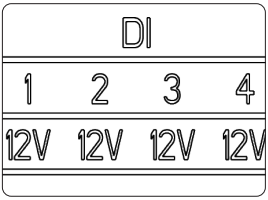
- The signal source must be technically suitable for connection to the digital inputs. (see "14 Technical Data").

Pin assignment

AI	
0	1
GND	GND



DI			
1	2	3	**4**
12V	12V	12V	12V



Wiring procedures

Step 1: Strip off 8–10 mm of the signal cable.

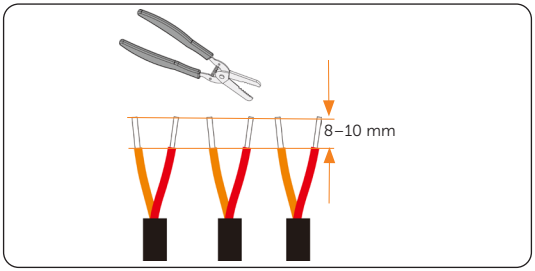


Figure 9-15 Stripping the signal cable

Step 2: Insert the ferrules into the stripped end and crimp the ferrules.

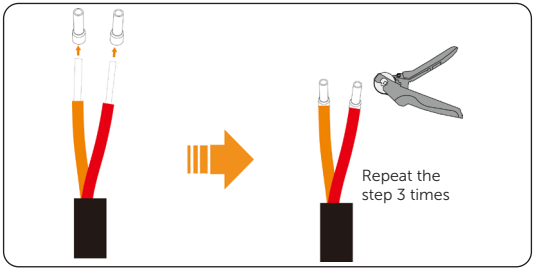


Figure 9-16 Crimp the ferrules

Step 3: Insert the stripped cable into the corresponding pin contact of the 20-pin terminal according to pin rules.

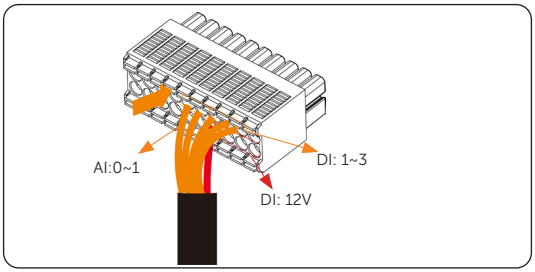


Figure 9-17 Insert the stripped cable

Step 4: Install the 20-pin terminal into the XHub and the other terminal into the DRM control box.

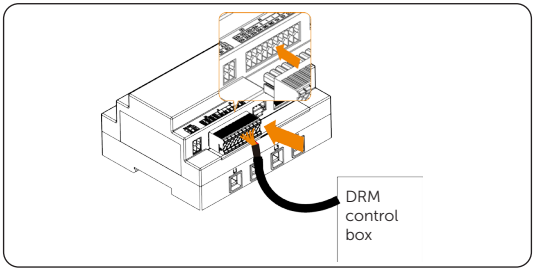


Figure 9-18 Install the 20-pin terminal

9.6 Ripple Control Function (DI)

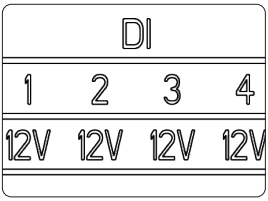
In order to meet the scheduling requirements of the local power grid, XHub support ripple control function which is available for inverters among the Germany region.

Requirements

- The signal source must be technically suitable for connection to the digital inputs. (see "14 Technical Data").

Pin assignment

DI			
1	2	3	**4**
12V	12V	12V	12V



Wiring procedures

Step 1: Strip off 8–10 mm of the signal cable.

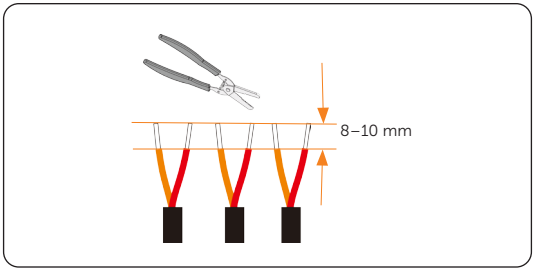


Figure 9-19 Stripping the signal cable

Step 2: Insert the ferrules into the stripped end and crimp the ferrules.

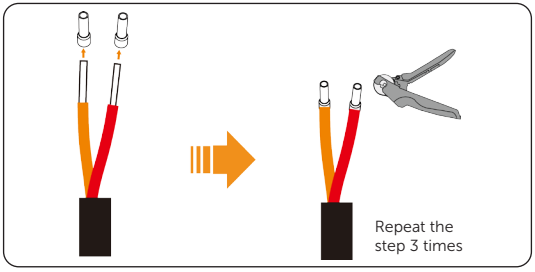


Figure 9-20 Crimp the ferrules

Step 3: Insert the stripped cable into the corresponding pin contact of the 20-pin terminal according to pin rules.

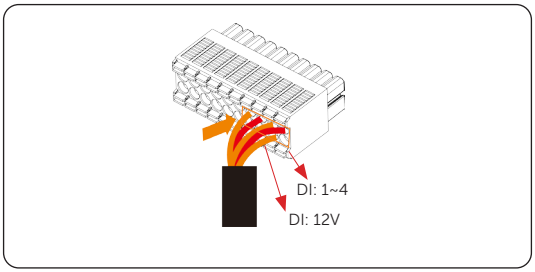


Figure 9-21 Insert the stripped cable

Step 4: Install the 20-pin terminal into the XHub and the other terminal into the ripple control box.

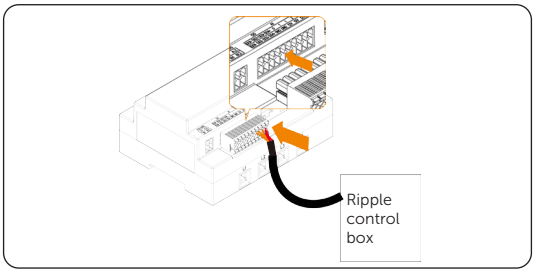


Figure 9-22 Install the 20-pin terminal

9.7 §14a EnWG+§9 EEG (DI)

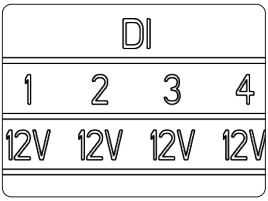
§14a EnWG function is used to control the power limits of load. §9 EEG function is used to control the power limits of power device.

Requirements

- The signal source must be technically suitable for connection to the digital inputs. (see "14 Technical Data").

Pin assignment

DI			
1	2	3	**4**
12V	12V	12V	12V



Wiring procedures

Step 1: Strip off 8–10 mm of the signal cable.

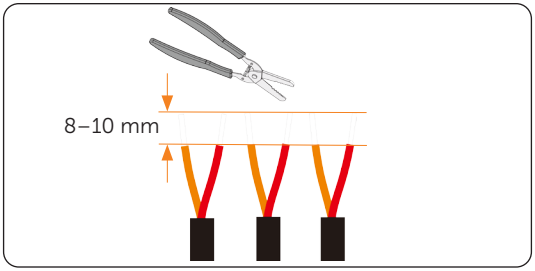


Figure 9-23 Stripping the signal cable

Step 2: Insert the ferrules into the stripped end and crimp the ferrules.

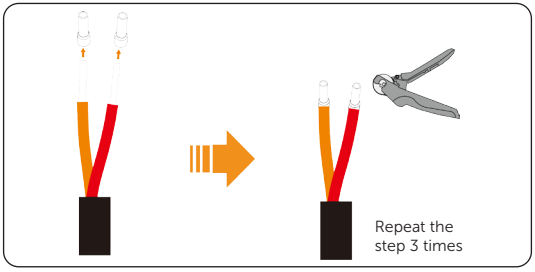


Figure 9-24 Crimp the ferrules

Step 3: Insert the stripped cable into the corresponding pin contact of the 20-pin terminal according to pin rules.

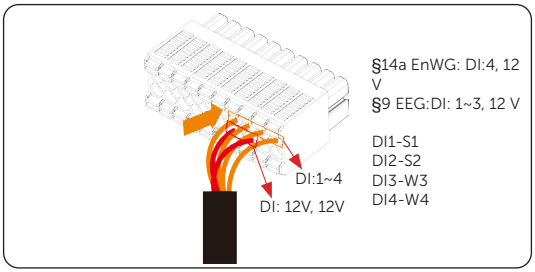


Figure 9-25 Insert the stripped cable

Step 4: Install the 20-pin terminal into the XHub and the other terminal into the §14a EnWG function of FNN control box.

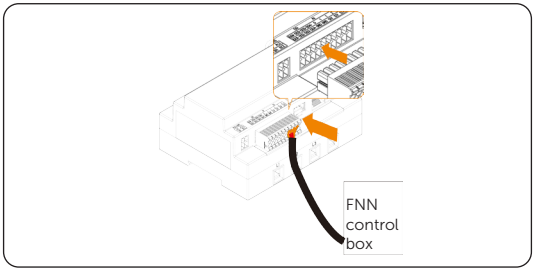


Figure 9-26 Install the 20-pin terminal

9.8 Power Supply Function (DI+AI)

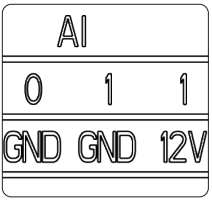
The DI and AI ports can also be used to supply power to XHub from the energy-storage inverter. This function is exclusive for energy-storage inverter.

Requirements

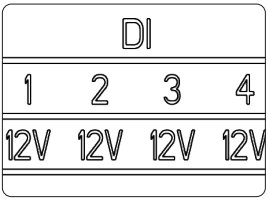
- The signal source must be technically suitable for connection to the digital inputs. (see "14 Technical Data").

DI pin assignment

AI	
0	1
GND	GND



DI			
1	2	3	**4**
12V	12V	12V	12V



Wiring procedures

Step 1: Strip off 8–10 mm of the signal cable.

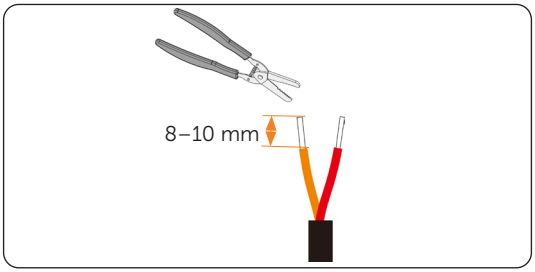


Figure 9-27 Stripping the signal cable

Step 2: Insert the ferrules into the stripped end and crimp the ferrules.

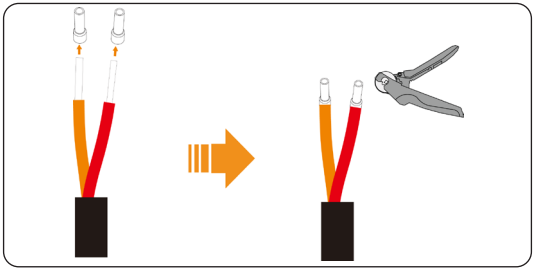


Figure 9-28 Crimp the ferrules

Step 3: Insert the stripped cable into the corresponding pin contact of the 20-pin terminal according to pin rules.

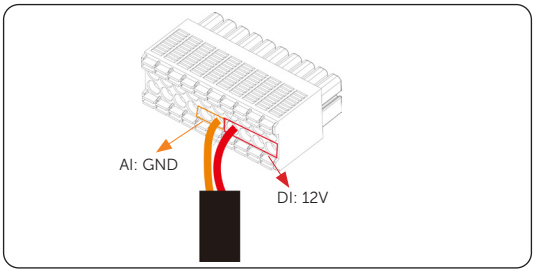


Figure 9-29 Insert the stripped cable

Step 4: Install the 20-pin terminal into the XHub and the other terminal into the 12V output port of grid-storage inverter.

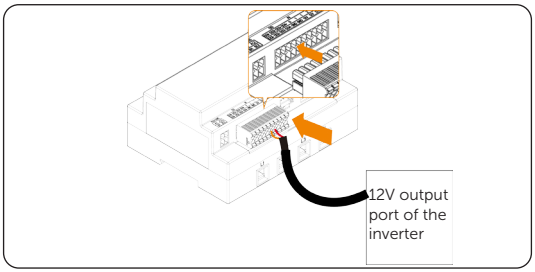


Figure 9-30 Install the 20-pin terminal

9.9 CT Installation

CT installation is optional. The XHub is equipped with an internal CT inside (refer to "Figure 3-1 System diagram" for specific wiring). If the users want to realize the export control function by meter or if the internal CT accuracy doesn't meet the users' requirements, please install an external CT.

Requirements for CT installation

- Use 3-in-1 CT
- External CT: current > 80 A

Wiring procedures

Step 1: Install the 3-in-1 CT into the CT port of XHub.

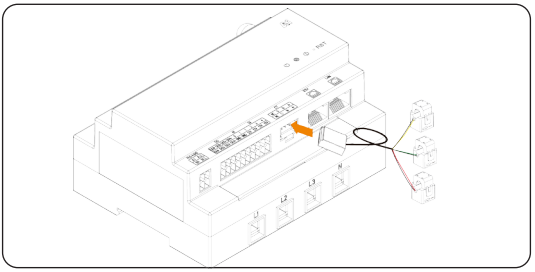


Figure 9-31 Install the 3-in-1 CT

Step 2: Clip the 3-in-1 CT onto the L1, L2 and L3 cables of the power grid.

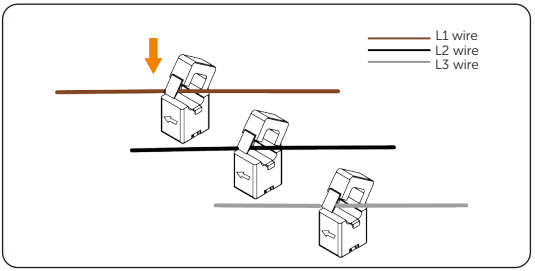


Figure 9-32 Clip the 3-in-1 CT

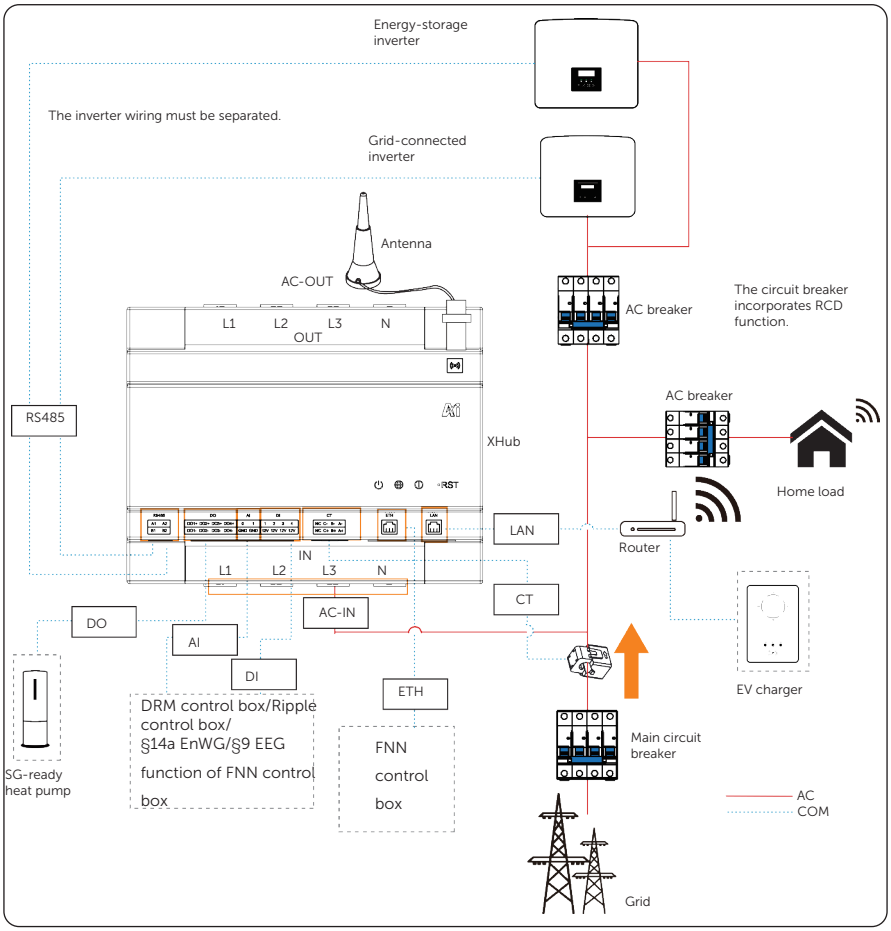


Figure 9-33 Wiring diagram for additional CT connection

9.10 Antenna Installation

The antenna is applied to strength the transmitted and received WiFi and bluetooth signal.

Wiring procedures

Step 1: Remove the dustproof cap from the Antenna.

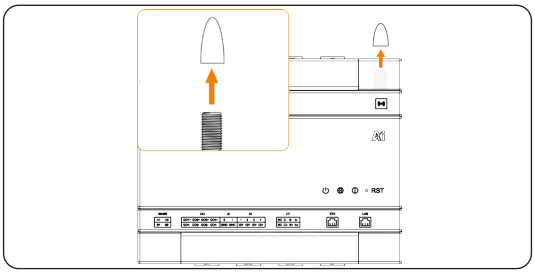


Figure 9-34 Remove the cap

Step 2: Screw down the antenna (accessory D) on the right higher corner of the XHub.

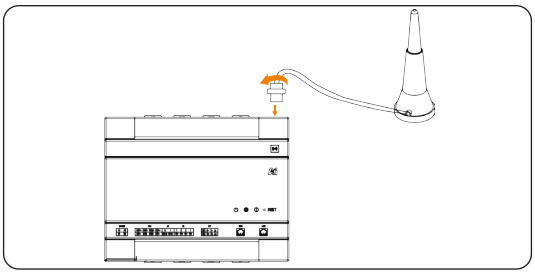


Figure 9-35 Screw down the antenna

WARNING!

- Use insulated tools and wear personal protective equipment throughout the power-on process.

NOTICE!

- Prior to the initial operation of the equipment, make sure that the parameters are properly configured by qualified personnel. Incorrect settings could lead to non-compliance with local grid connection standards and disrupt the equipment's normal functioning.

10 Power-on the Device

10.1 Checking before Power-on

Step 1: Check whether the XHub is installed correctly and securely.

Step 2: Check whether all the cables are connected securely.

10.2 Power on the Device

Step 1: Connect the system to three-phase electricity grid.

Step 2: Check the LED indicators on the XHub to monitor its operating status.

10.3 Checking after Power-on

Step 1: Check whether the XHub has any abnormal noise.

Step 2: Check whether the power indicator is on, and whether the alarm indicator is off.

11 Indicators and key

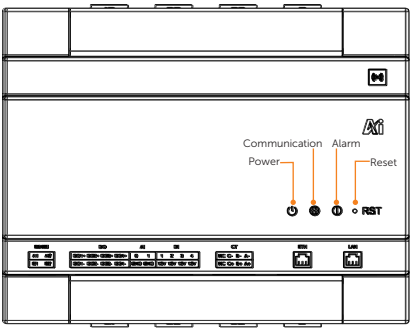


Figure 11-1 Panel

Table 11-1 Definition of indicators

LED indicator	States	Definition
Power	On	XHub is powered on
	Off	XHub is not powered on
	Green light flashes slowly (on for 1 s and off for 1 s):	The main program of XHub has been terminated.
	Green light flashes (on and off for 0.25 s and lasts for 5 s)	Network configuration (trigger by long press **Reset key** for 3 s to turn on AP)
	Green light flashes (on and off for 0.75 s)	System restarting (trigger by press **Reset key** twice)
	Red light flashes (on and off for 0.25 s and lasts until the process ends)	System reset in progress (trigger by long press **Reset key** for 10 s)

LED indicator	States	Definition
Communication	Off	No communication with the SolaXCloud. The device will communicate with SolaXCloud after being powered on
	Green light flashes slowly (on for 1 s and off for 1 s)	Normally communication with the management system
	Green light flashes quickly (on for 0.125 s and off for 0.125 s)	Communication outage with the SolaXCloud *Note: XHub is accessed to the monitoring platform, and communication outage has continued within 15 minutes.
Alarm	Red light flashes quickly (on for 0.5 s and off for 0.5 s)	System alarm

Table 11-2 Definition of keys

Key	Definition
○ RST Reset key	Long press for 3 s to turn on AP for network configuration. Long press for 10 s to reset the system settings for meter, export control and WiFi. Press twice to restart the system.

NOTICE!

- Use an ejector pin to long press the button to restart the system.

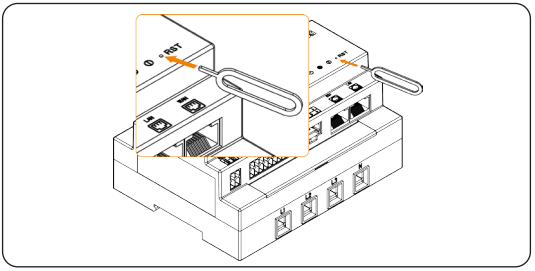


Figure 11-2 Long press the RST key

12 Operation on SolaXCloud

12.1 Introduction of SolaXCloud

SolaXCloud is an intelligent management platform for home energy, which integrates energy efficiency monitoring, device management, data security communication and other integrated capabilities. While managing your home energy device, it helps you optimize the efficiency of electricity consumption and improve the revenue of power generation.

12.2 Downloading and Installing App

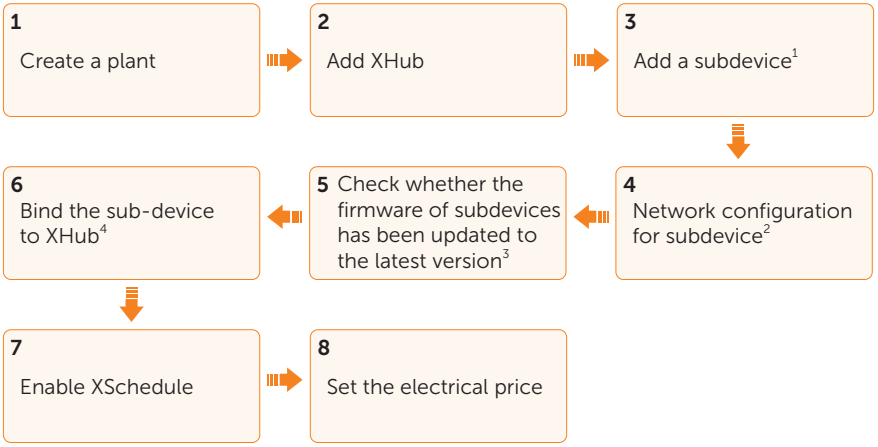
Method 1: Scan the QR code below to download the App.

The QR codes are also available on the login page of our official website (www.solaxcloud.com), and the installation guide of the dongle.

Figure 12-1 QR code

Method 2: Search for **SolaXCloud** in App Store or Google Play, and then download the App.

12.3 App Operation Procedures



*Note:

1 Add inverter/EV-charger into the same plant and ensure the subdevices are connected to the same router. If you ensure that the subdevice firmware has been updated to the latest version, please skip step 3 4 5, perform step 6 directly.

2 Inverter only supports connecting to XHub through RS485 currently. Network configuration is for the firmware upgrade of the first-connected device. If inverter firmware has been updated to the latest version, network configuration is unnecessary. For other subdevices, please configurate to the same router network with XHub.

3 Firmware upgrade supports WEB, App and USB upgrade.

4 Before searching to add all sub-devices, please connect the inverters to XHub through RS485 and ensure all sub-devices are linked to the same router.

12.4 Operation Guide on SolaXCloud App

NOTICE!

- The screen shots in this chapter correspond to the SolaXCloud App V6.11.1, which might change with version update and should be subject to the actual situations.

12.4.1 Create a Plant

Step 1: **Add plant** and fill in the corresponding information, then click **Next**.

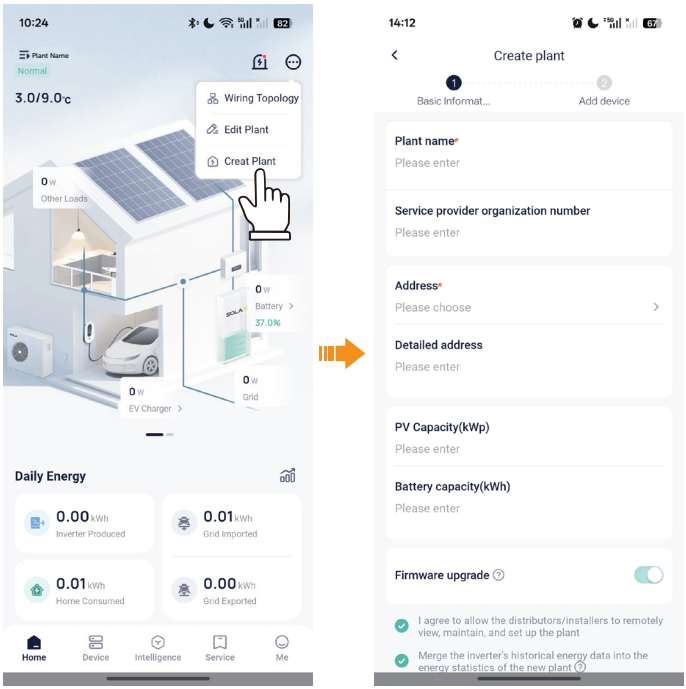


Figure 12-2 Create a plant

NOTICE!

- If you use an installer account, please bind the end-user account as follow:

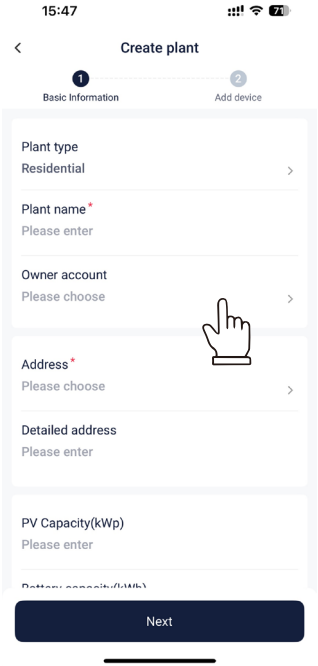


Figure 12-3 Bind the end-user account

12.4.2 Add XHub

Step 1: Click **Add** to add a device, select the device to be bound.

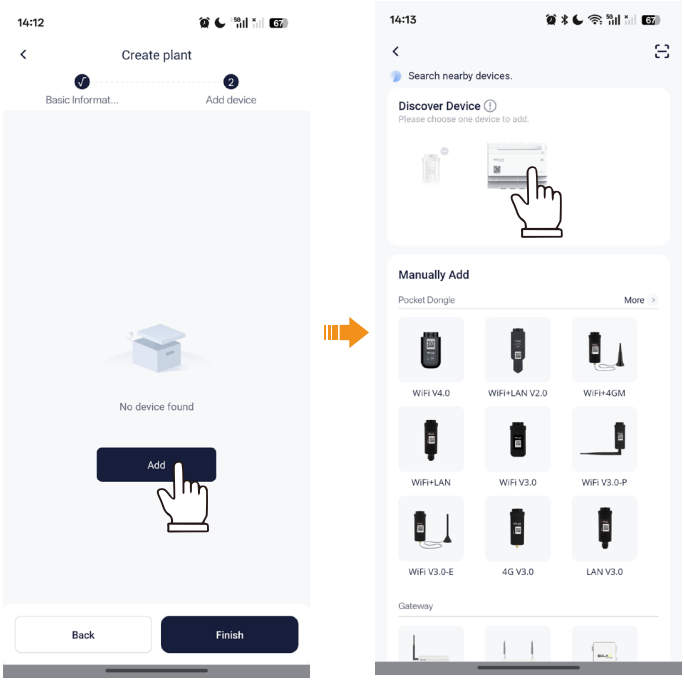


Figure 12-4 Add XHub

12.4.3 Configure the Network

Step 1: Connect to your home WiFi, click **Next** to configure the network.

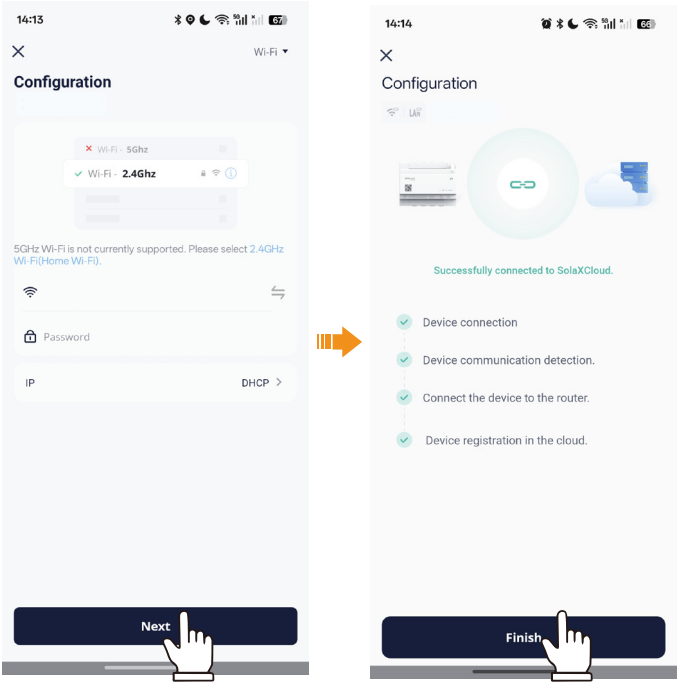


Figure 12-5 Configurate the network

NOTICE!

- If you exit the network configuration in mistake, please try to re-configurate the network following the figures as below.

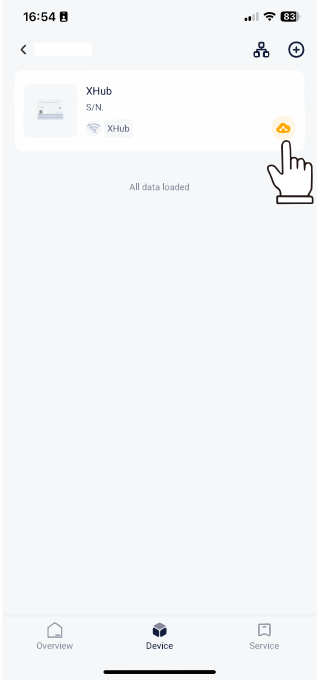


Figure 12-6 Reconfigurate the network

12.4.4 Add the Sub-device

Step 1: Take X3-Hybrid-G4 as an example, please click **Add Device** -> **Add**, select the target device.

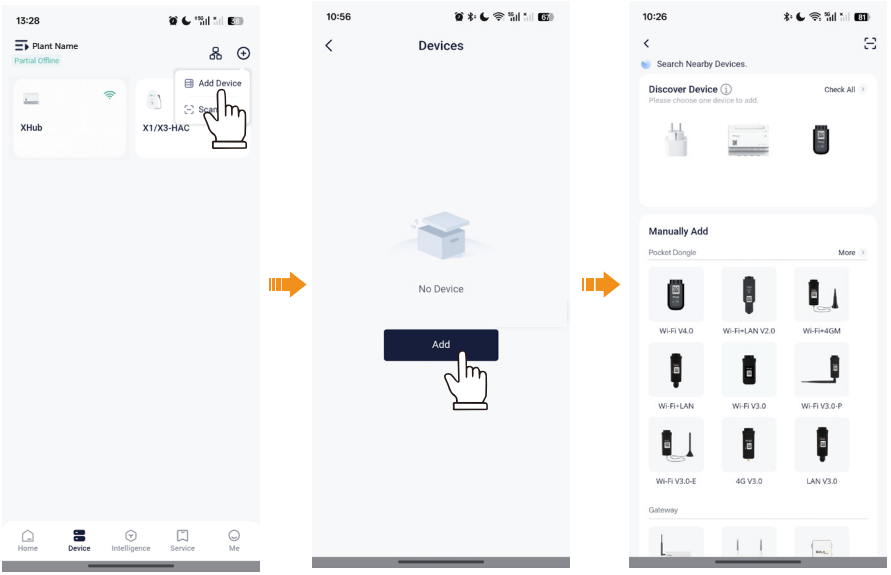


Figure 12-7 Add the sub-device

12.4.5 Network Configuration

Step 1: Scan the QR code and configure network as follows.

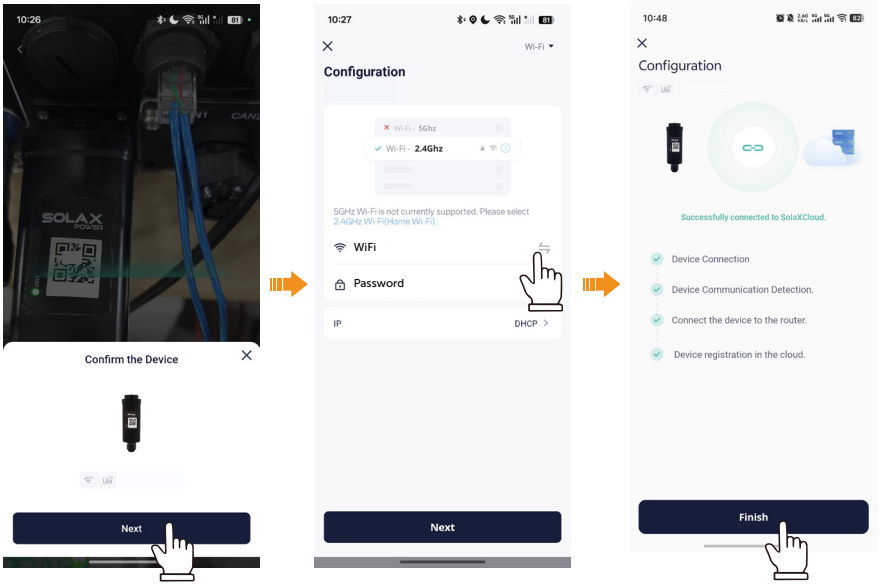


Figure 12-8 Network configuration

12.4.6 Confirm the Firmware Version

Step 1: Click the target subdevice (take X3-Hybrid-G4 as an example), check the firmware version.

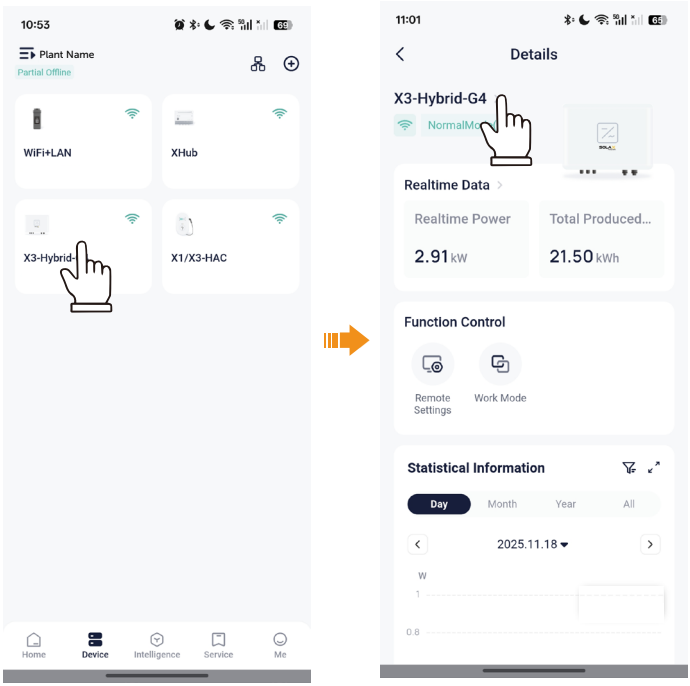


Figure 12-9 Confirm the firmware version

Step 2: If the firmware version is not the latest, please upgrade the firmware. We also support upgrade through App/web (refer to "12.5.2 Upgrade on the Web Page") and USB (refer to the user manual of device).

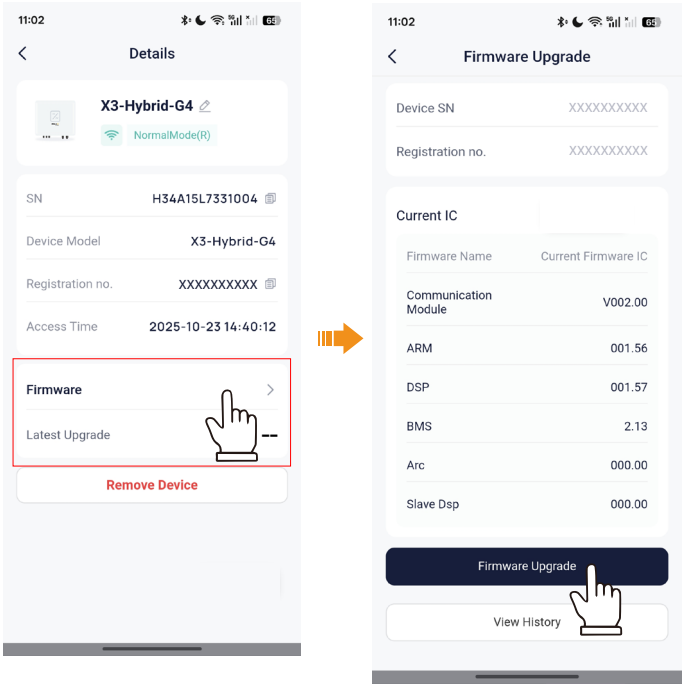


Figure 12-10 Firmware upgrade

12.4.7 Bind the Sub-device to XHub

Step 1: Click the device you have just bound (take X3-Hybrid-G4 as an example), then click **Add device** to **Add** the sub-device in the **Equipment management**.

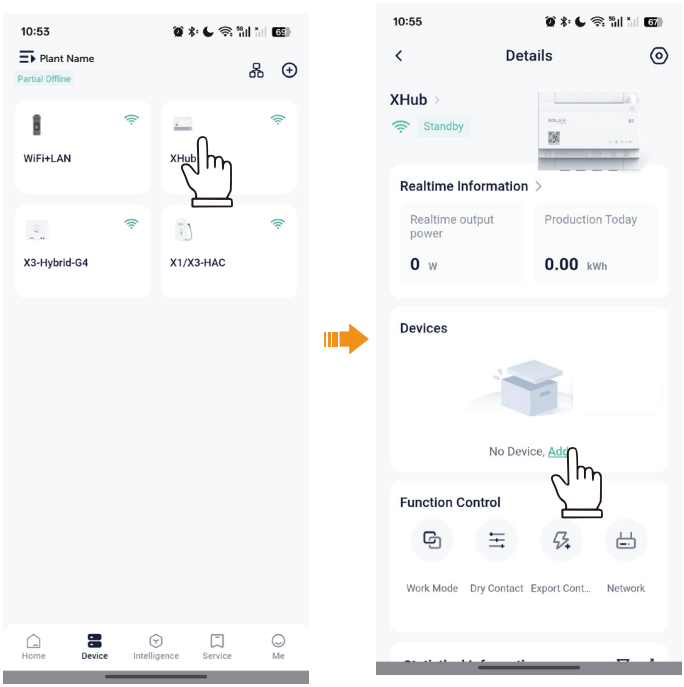


Figure 12-11 Bind sub-device-1

NOTICE!

- The inverter supports communication with XHub only via RS485. When adding device for the first time, it is recommended to unplug the dongle after completing the inverter firmware upgrade.

Step 2: **Search** the sub-device and then **Confirm** the sub-device.

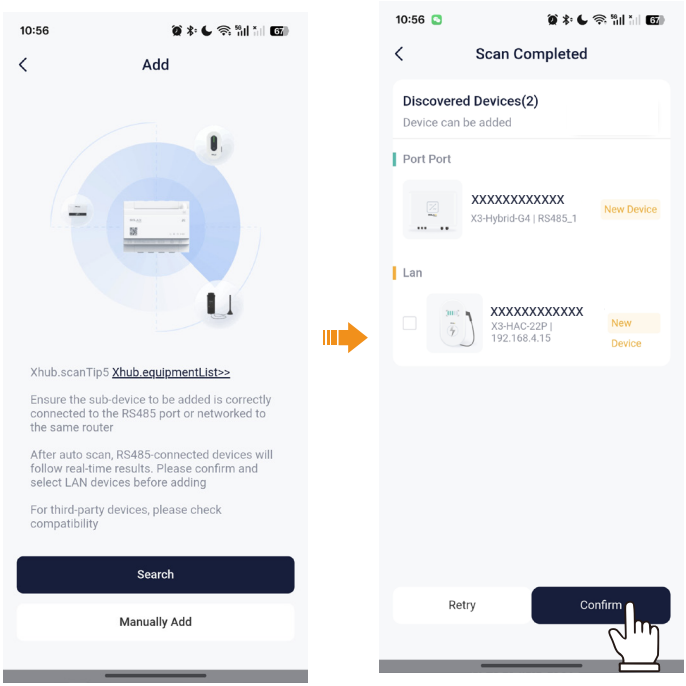


Figure 12-12 Bind sub-device-2

NOTICE!

- Regarding the devices detected by the local area network, you can select the ones you need to add and **Confirm** the addition.

12.4.8 Set the Electrical Price

Step 1: Set the tariff and electricity price as follows.

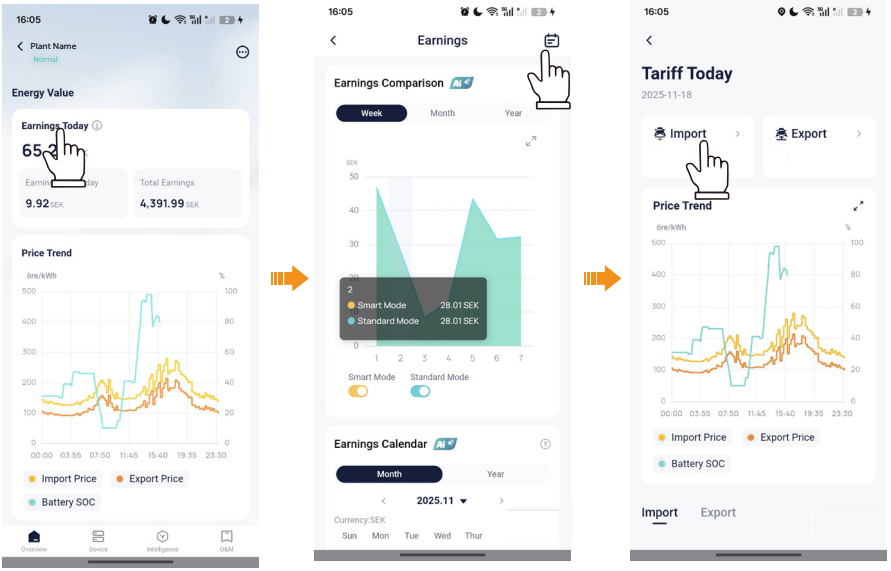


Figure 12-13 Set the electricity price-1

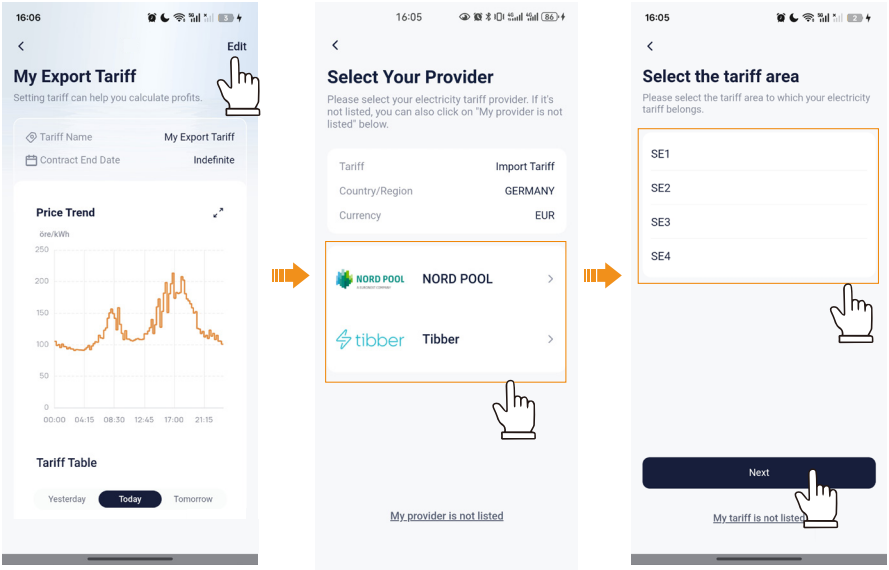


Figure 12-14 Set the electricity price-2

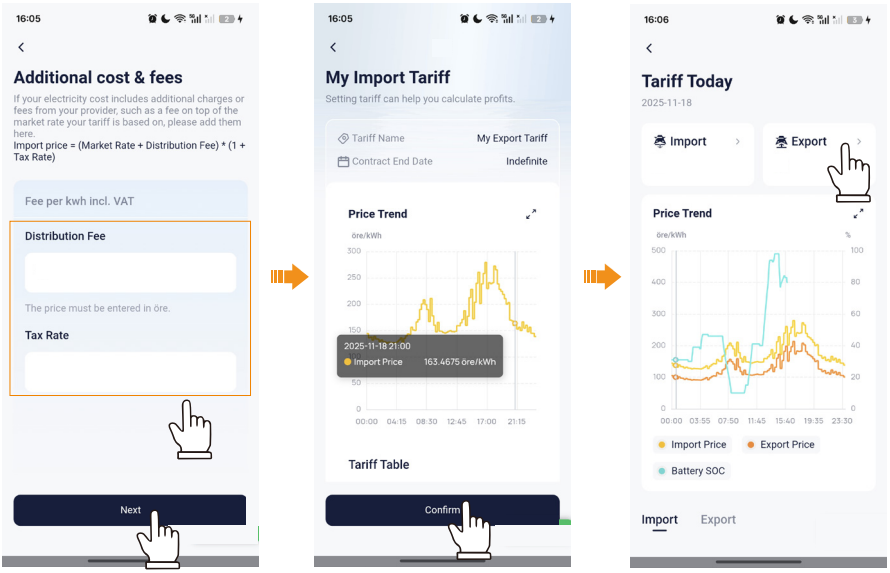


Figure 12-15 Set the electricity price-3

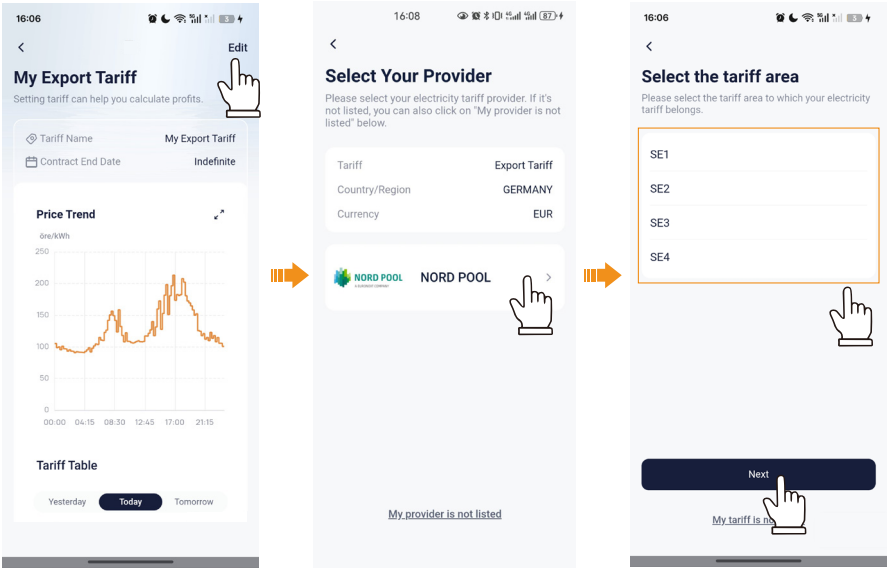


Figure 12-16 Set the electricity price-4

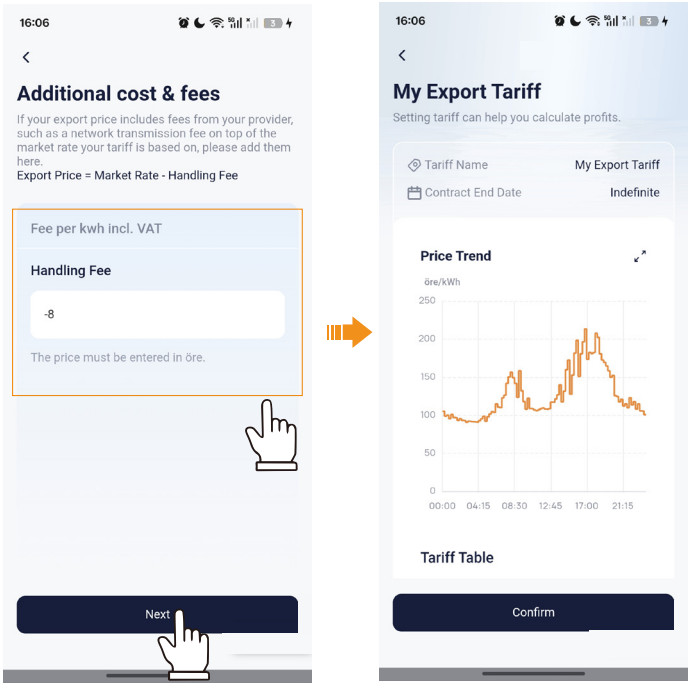


Figure 12-17 Set the electricity price-5

12.4.9 Enable XSchedule

Step 1: Enable the XSchedule function following the operation as follows.

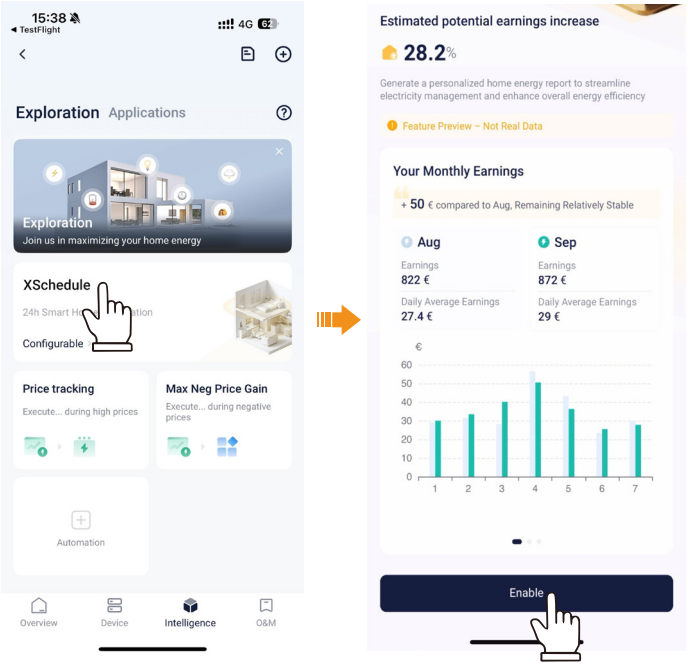


Figure 12-18 Enable XSchedule-1

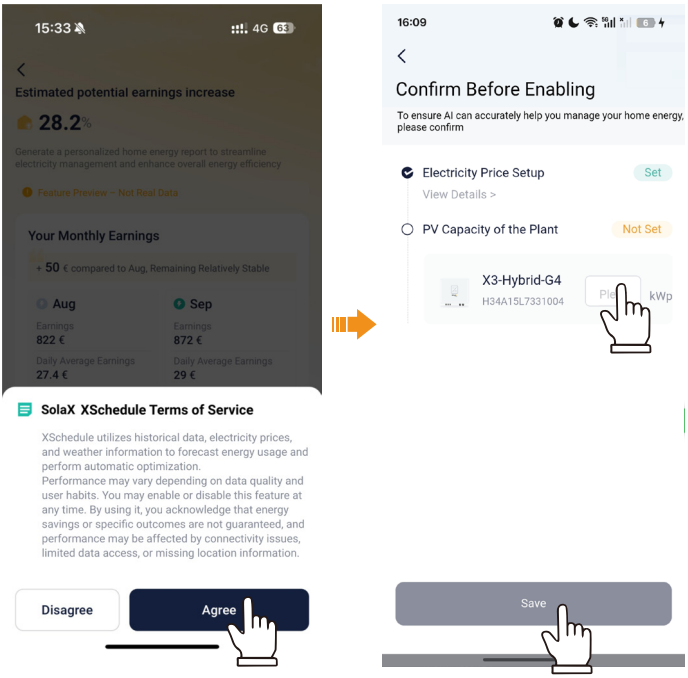


Figure 12-19 Enable XSchedule-2

12.4.10 More Operations about App

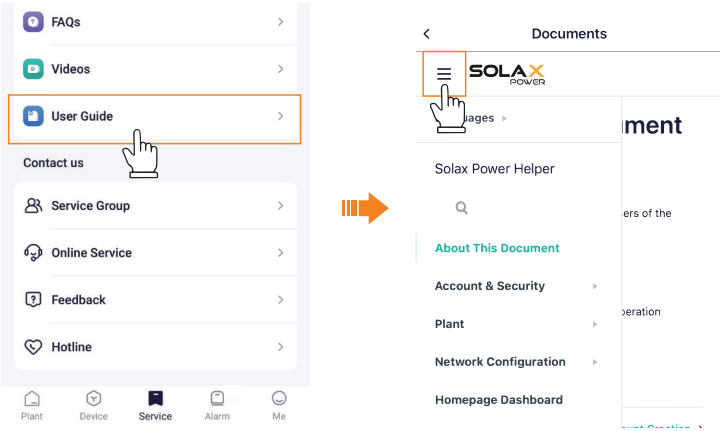


Figure 12-20 Online help on SolaXCloud

12.5 Operations on SolaXCloud Web Page

12.5.1 Enter the Web Page

Open a browser and enter www.solaxcloud.com to complete registration, login, add site and other related operations according to the guide.

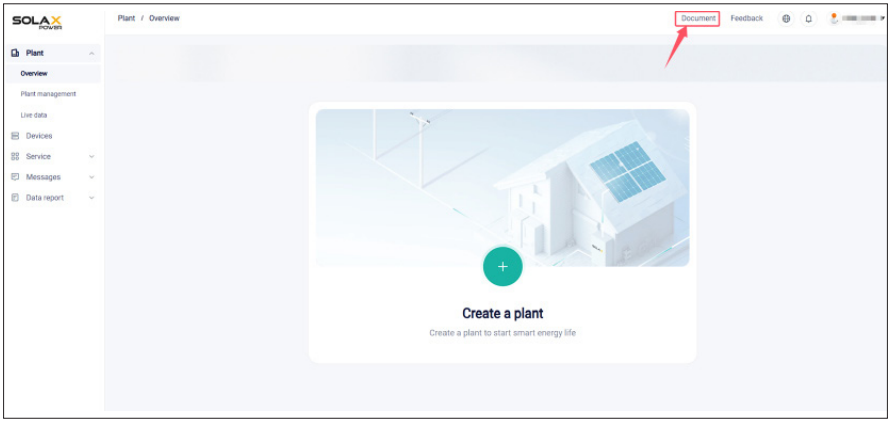


Figure 12-21 Guide on web page

12.5.2 Upgrade on the Web Page

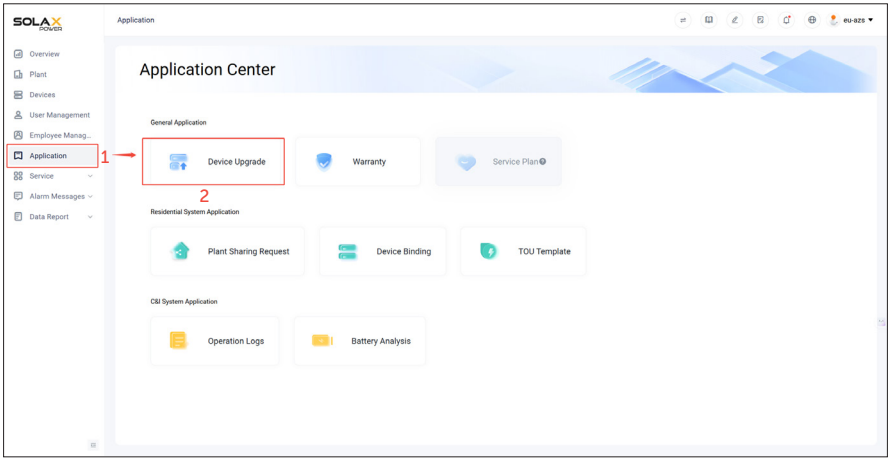


Figure 12-22 Upgrade on the web page-1

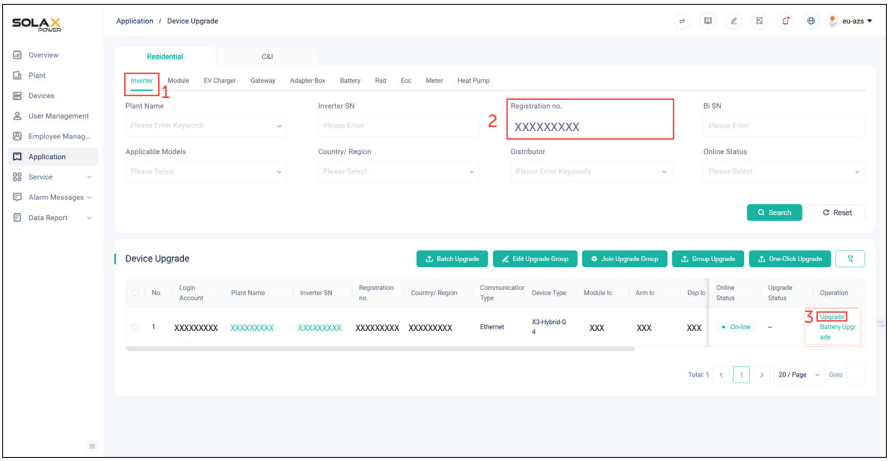


Figure 12-23 Upgrade on the web page-2

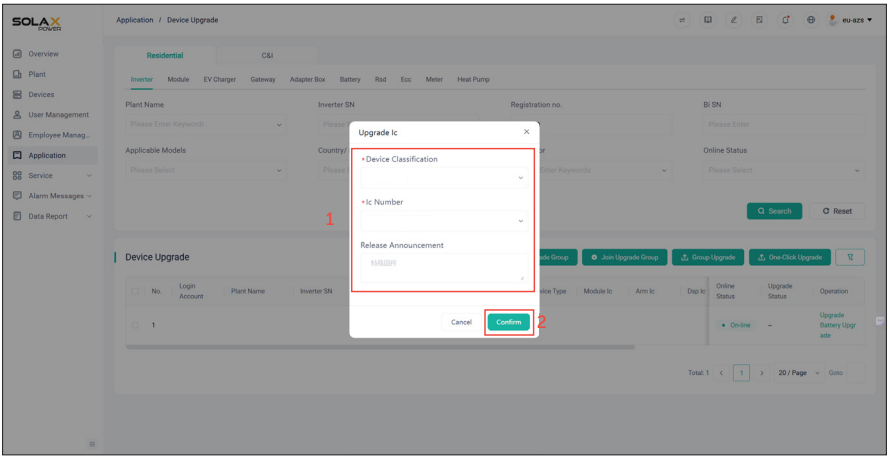


Figure 12-24 Upgrade on the web page-3

13 Troubleshooting and Maintenance

13.1 Power Off

Step 1: Wear personal protective equipment and use dedicated insulated tool.

Step 2: Disconnect the system from three-phase electricity grid.

Step 3: Wait for at least 5 minutes after power off to proceed the operation in case of residual electricity which may cause electric shocks.

13.2 Troubleshooting

This section lists the possible problems with the XHub, and provides information and procedures for identifying and resolving them. In case of any errors, check the warning lights on the XHub or error messages on App, and then refer to the suggestions below. For further assistance, contact SolaX Customer Service. Please provide the model and SN of the XHub, and be prepared to describe the system installation details.

Table 13-1 Troubleshooting list of XHub

Type	Fault	Diagnosis and solutions
Alarm	Abnormal device communication	• Please check the communication connection between XHub and the sub-devices. It can be restored by itself. If there is a persistent warning, please contact the installer for handling.

13.3 Maintenance

Regular maintenance is required for the XHub. Please check and maintain the following items based on the below instructions to ensure the optimal performance of the XHub. For XHubs working in inferior conditions, more frequent maintenance is required. Please keep maintenance records.

WARNING!

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

Table 13-2 Proposal of maintenance

Item	Time interval	Notice
Warranty interval	2 years	Warranty for two years; Over two years, we support paid services
Maintenance interval	6 months	Device running status • Check whether the product is damaged or deformed; • Check whether the indicator status is normal; • Connect to the XHub through the App and check whether an alarm is generated. Electrical connection • Check whether cables are securely connected; • Check whether cables are damaged, especially whether the cable sheath that contacts a metal surface is damaged.

14 Decommissioning

14.1 Disassembling the XHub

WARNING!

- Strictly follow the steps below to disassemble the XHub.
- After the XHub 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 disassembling the XHub at least five minutes after power off.

Step 1: Disconnect the power supply of the whole system.

Step 2: Uninstall the L1/L2/L3/N line (if connected).

Step 3: Uninstall the CT (if connected). Remove the CT clip on the L line, and then pull out the terminal on the XHub.

Step 4: Uninstall all the terminals and cables on the XHub and screw off the antenna.

14.2 Packing the XHub

- Use the original packaging materials if available.

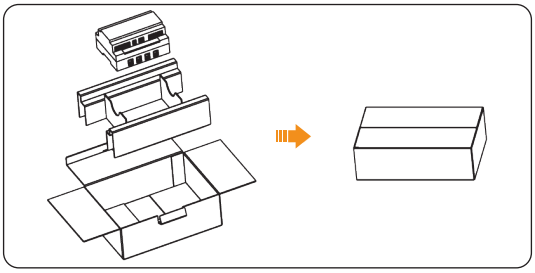


Figure 14-1 Packing the XHub

- 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

14.3 Disposing of the XHub

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

15 Technical Data

Ethernet	10/100 M
Wi-Fi Frequency Range	2412–2472 MHz
Wi-Fi EIRP Power	14.5 dBm
Working Voltage	100–240 V~
Rated Frequency	50/60 Hz
Rated Power	5 W
Maximum Power	8 W
Dimensions	126*100*65 mm
Weight	600 g
Operating Temperature Range	-20°C to +60°C
Operating Humidity Range	5%–95%
Working Altitude	3000 m
Degree of Protection	IP20
Measurement accuracy	1%
EMC	EN 55011 : 2016+A2 : 2021; EN IEC 61000-3-2 : 019+A1:2021; EN 61000-3-3 : 2013+A2 : 2021; EN 55035 : 2017+A11 : 2020; ETSI EN 301 489-1 V2.23: 2019; ETSI EN 301 489-17 V3.2.4: 2020; AS/NZS 61000.6.1; AS/NZS 61000.6.2; AS/NZS 61000.6.3; AS/NZS 61000.6.4; AS/NZS CISPR 32
Safety	EN62368; AS/NZS 62368.1
Cyber Security	EN 303645; EN 18031
Radio	ETSI EN 300 328 :2019; AS/NZS 4268; AS/NZS 2772.2
Health	EN IEC 62311:2020 EN 50665:2017

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