PCOMM-802 Communication Box User Manual

Change History

Date	Version	Content
2024-04-16	V1.1	1) Added 1.4 Transportation Safety 2) Added 1.5 Storage Safety
2022-06-15	V1.0	The first official release

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0　Preface

Thank you for choosing PCOMM-802 Communication Box (hereinafter referred to as "Communication Box") developed by Shanghai Chint Power Systems Co., Ltd. (hereinafter referred to as "CHINT").

This communication box is one highly reliable device, which is widely applicable in communication of power plants.

IMPORTANT!

Please read this manual carefully and make sure that you have understood all the contents thoroughly before you start any operation.

Main Contents

Safety precautions, device overview, installation and wiring, operation and maintenance, technical data as well as quality assurance are mainly introduced in this manual.

Target Reader

This manual is applicable to the work staff of wiring, installation, maintenance and daily management of the communication box.

Manual Management

Please store this manual together with related documents of other device components, and make sure keep it at hand for quick reference and easy use.

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Version

This manual is subject to technical change or contents modification without prior notice. The actually purchased device shall prevail. Users can get the latest manual from our sales channel or our official website: www.chintpowersystems.com/.

1 Safety

Please read this user manual carefully before the installation and operation of this communication box. CPS reserves the right to refuse warranty claims for equipment damages if users fail to install the equipment according to the instructions in this manual.

The Danger, Warning, Caution, and Notice statements described in this document do not cover all the safety precautions. You also need to comply with relevant international, national, or regional standards and industry practices.

1.1 Symbols and meanings in this document

Symbol	Meanings
⚠	**DANGER!** DANGER indicates a hazardous situation with high level of risk which, if not avoided, will result in death or serious injury.
⚠	**WARNING!** WARNING indicates a hazardous situation with medium level of risk which, if not avoided, could result in death or serious injury.
⚠	**CAUTION!** CAUTION indicates a hazardous situation with low level of risk which, if not avoided, could result in minor or moderate injury.
⚠	**NOTICE!** NOTICE indicates a hazardous situation which, if not avoided, could result in equipment working abnormally or property loss.
ⓘ	**IMPORTANT!** IMPORTANT indicates important supplementary information or provides skills or tips that can be used to help you solve a problem or save you time.

1.2 Markings and meanings on the device

Symbol	Meanings
	HIGH VOLTAGE! Danger to life due to high voltage! All work on the device must only be performed by qualified personal as described in this document.
	HOT! The equipment is designed according to international safety standards, but surfaces can become hot during operation. DO NOT touch the peripheral surfaces during or shortly after operation.
	EARTH GROUND! This symbol marks the location of grounding terminal, which must be securely connected to the earth through the PE (protective earth) cable to ensure operational safety.
	RoHS SYMBOL In accordance with 2011/65/EU regulations, the inverter imposes restrictions on the use of specific hazardous substances in electrical and electronic equipment.
	CE Certification This inverter has passed the certification of CE organization.

![CHiNT POWER]

1.3 Safety precautions of operating the communication box

Symbol	Meanings
⚠️	**DANGER!** Touching the wiring terminals inside the device may result in death by electric shock! DO NOT touch the terminals or conductors connected with PV modules or PV inverters, which may result in death by electric shock!
⚠️	**WARNING!** All the installation and wiring connections should be performed only by qualified technical personnel. Make sure both the AC and DC sources are disconnected, and the shell of device is securely grounded to avoid electric shock during maintenance or installation. DO NOT touch live or exposed parts of the input and output sides to avoid electric shock when checking or maintaining the device.
⚠️	**CAUTION!** Handle the communication box carefully to prevent falling off due to its weight! Check the device and make sure there is no problem with the installation before putting it into operation! Connect the wires of the device to avoid short circuit hazard, to ensure personal safety and the normal operation of the device. Although the communication box is certified to international safety standards, it will become hot during operation. DO NOT touch the hot parts of the device during operation.
⚠️	**NOTICE!** Follow all the wiring and safety instructions of the communication box. All the wiring and operation must conform to the related local standard requirements of the device.
ⓘ	**IMPORTANT!** The device nameplate contains important information of the device, such as model, serial number and detailed parameters. If there is any problem or malfunction of the device during operation, please contact our after-sales center and provide the serial number. Our service personnel can provide timely service for you. Please keep the nameplate intact.

1.4 Transportation Safety

If the communication box needs to be transferred, the following requirements need to be met:

- All transportation related operations must comply with the relevant laws and regulations of the local country or region.
- Make sure communication box is placed in the direction indicated by the outer packaging, and corresponding fastening measures are taken,
- Avoid damaging equipment and packaging due to strong vibrations and bumps.
- Handling equipment should be prepared for load-bearing to avoid being crushed by the equipment. At least 3 people are required to handle this equipment.

1.5 Storage Safety

If the communication box is not immediately put into use, The following requirements should be met when the communication box needs to be stored:

- Do not unpack the communication box. Check the packing materials periodically. If any rodent bites are found, replace the packing materials immediately.
- Store the SACU in a place with appropriate temperature and humidity to protect the SACU from dust and water vapor corrosion. If stored outdoors, it is necessary to have dust and waterproof measures in place.
- To avoid personal injury or equipment damage, stack communication box neatly by following the instructions on the outer packaging, and it is strictly prohibited for people or other objects to collide or squeeze the communication box.
- After long-term storage, the communication box needs to be inspected and tested by professional personnel before it can be put into use.
- The company shall not be liable for any consequence caused by violation of the storage requirements specified in this document.

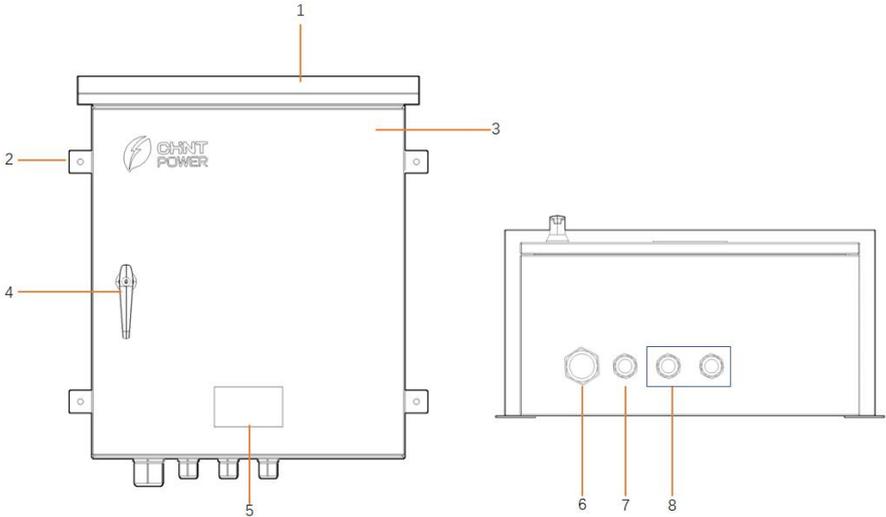# 2 General Introduction

2.1 Appearance and dimension

Figure 2-1 Product Appearance

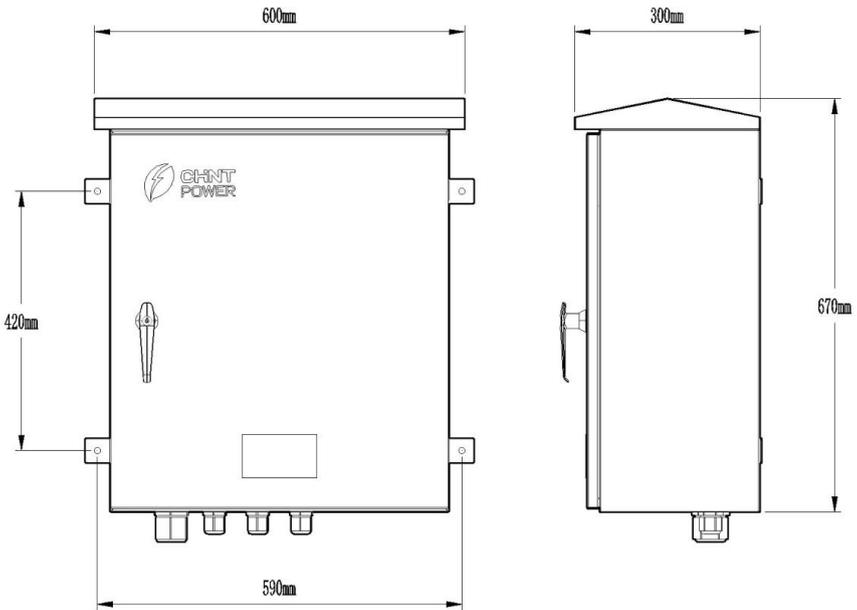| No.	Component Name	No.	Component Name
1	Rainproof cap	2	Mounting lug
3	Door	4	Door handle
5	Nameplate	6	Waterproof connectors for the three phase AC power cable (PLC coupling signal)
7	Waterproof connector for single-phase AC power cable (AC220V)	8	Waterproof connectors for RS485 COM cable, fiber optic cable and 4G antenna

Table 2-1 Component Name

Figure 2-2 Product Dimension

2.2 Features of AC communication box

- Comply with all Chint Power inverters

- Pre-configured for Plug & Play

- Capability with Chint Power O&M platform

- Hardware mounted and pre-wired

- IP65 rated enclosure

- Support local real-time monitoring

3 Mechanical Installation

3.1 Unpacking for Inspection

Check the product for any obvious damages or if the items in the delivery list are complete before performing installation. Contact your supplier immediately if any problem is found. The delivery list of the communication box is as below:

No.	Images	Accessories	Notes
1		Communication box	Communication
2	M32X1.5,3PCS	Cable gland connector	Connect single-Phase AC Power Cable, COM Cable, network cables
3	M50X1.5,1PCS	Cable gland connector	Connect three phase AC Power Cable
4	M8X120,4PCS	Expansion screw	
8		User manual and warranty card	

Table 3-1 Delivery list

3.2 Installation requirements

3.2.1 Environment requirements

- Inflammable and explosive materials inside and around the communication box are strictly prohibited.

- Good ventilation around the equipment shall be kept.

- The temperature shall be kept within -30°C ~ +70°C. If the environment temperature is more than 55°C, please choose installation sites with shelters, or sunshades shall be built for outdoor locations.

- It is not recommended to expose the device directly to heavy rain, to avoid water from entering the device through the cable entry hole in the bottom in case that the water is very deep.

3.2.2 Installation requirements

- Make sure the device is not electrically connected and energized before installing.

- Never install, use or maintain the device in lightning, rain, snow, wind and other severe weather.

- Do not wear conductive objects such as watches, bracelets, rings, and necklaces when installing, operating, or maintaining the device.

- After installing devices, remove empty packing materials in time, such as cartons, foams, plastics, and cable ties.

- The paint scratches on the communication box body caused in the process of transportation and installation must be repaired in time. It is strictly prohibited to expose the scratched parts to the outdoor environment for a long time.
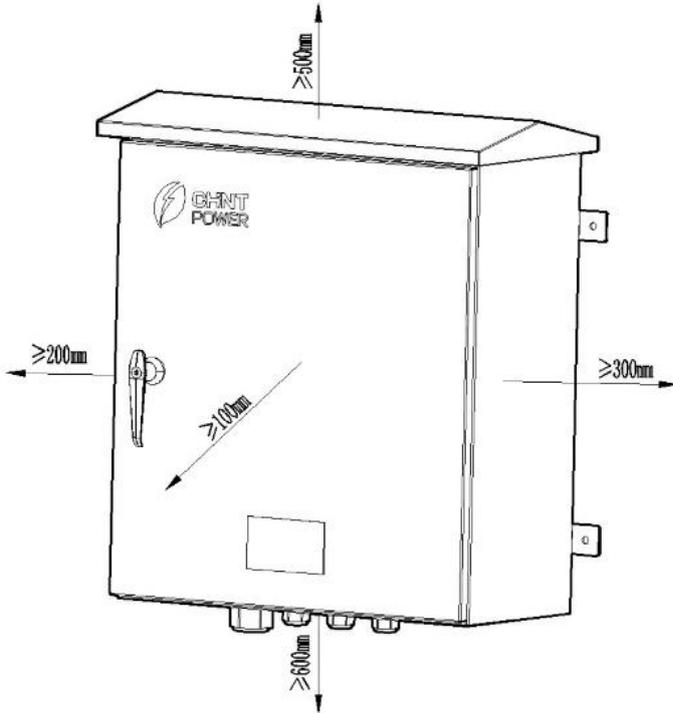
3.2.3 Installation space

Figure 3-1: Installation space

3.3 Installation procedures

⚠️	**WARNING!** All the installation and wiring connections should be performed only by qualified technical personnel.
⚠️	**CAUTION!** Heavy device, move it carefully in case of falling off!

Install the AC communication box on the integrated mounting bracket as shown below:

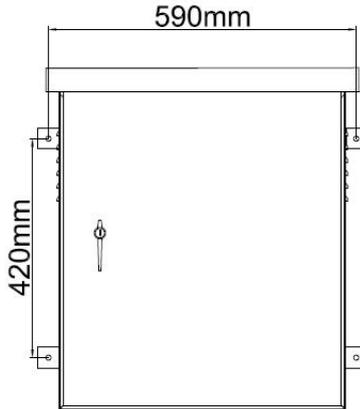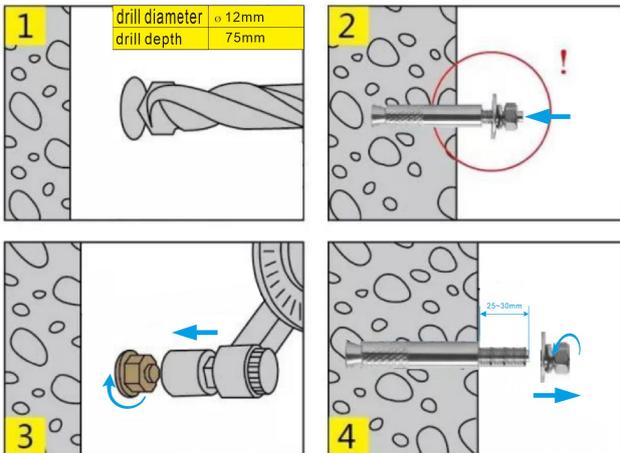1. Mark the hole positions according to the dimensions of the mounting lugs.

Figure 3-2: Mark the hole positions

2. Drill holes with a Φ12mm drill at the marked position and then install expansion bolts as shown below.
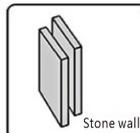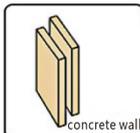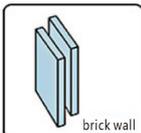
Figure 3-3 Install expansion bolts

3. Secure the communication box onto wall with securing screw.
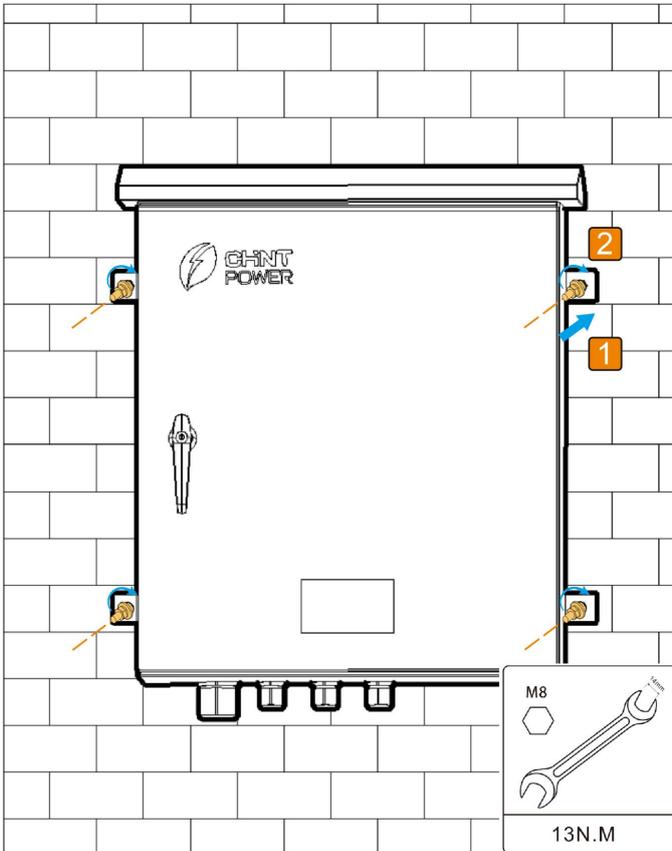

Figure 3-4 Secure the communication box

4 Electrical Connection

> **WARNING!**
>
> Be careful of high AC voltage! Check all the input and output cables or terminals to ensure there's no voltage before electrical connection to avoid electric shock!

4.1 Cable specification

The following table describes the cables to be prepared by yourself in the networking scenario.

No.	Cable	Recommended Model or Specifications	Cross-sectional Area Range (Type Value)
1	Three-phase AC power cable	Three-core (L1, L2, and L3) outdoor armored copper cable	6mm² ～ 8mm² (6mm²)
2	RS485 communications cable	Computer cable (DJYP2VP2-22 2x2x1) or armored shielded twisted pair that can be used outdoors, as well as OT-M4 terminals	0.5–1 mm2 (1 mm2) 20–18 AWG (18 AWG)
3	Single-phase AC power cable	Standard connection: two-core outdoor armored copper cable Connection through a tube: single-core outdoor copper cable	4–6 mm2 (4 mm2)
4	Network Cable	Standard Ethernet cable	/

Table 4-1 cables specifications

![CHINT POWER logo]

The working principle of the communication box is as shown in the following figure.
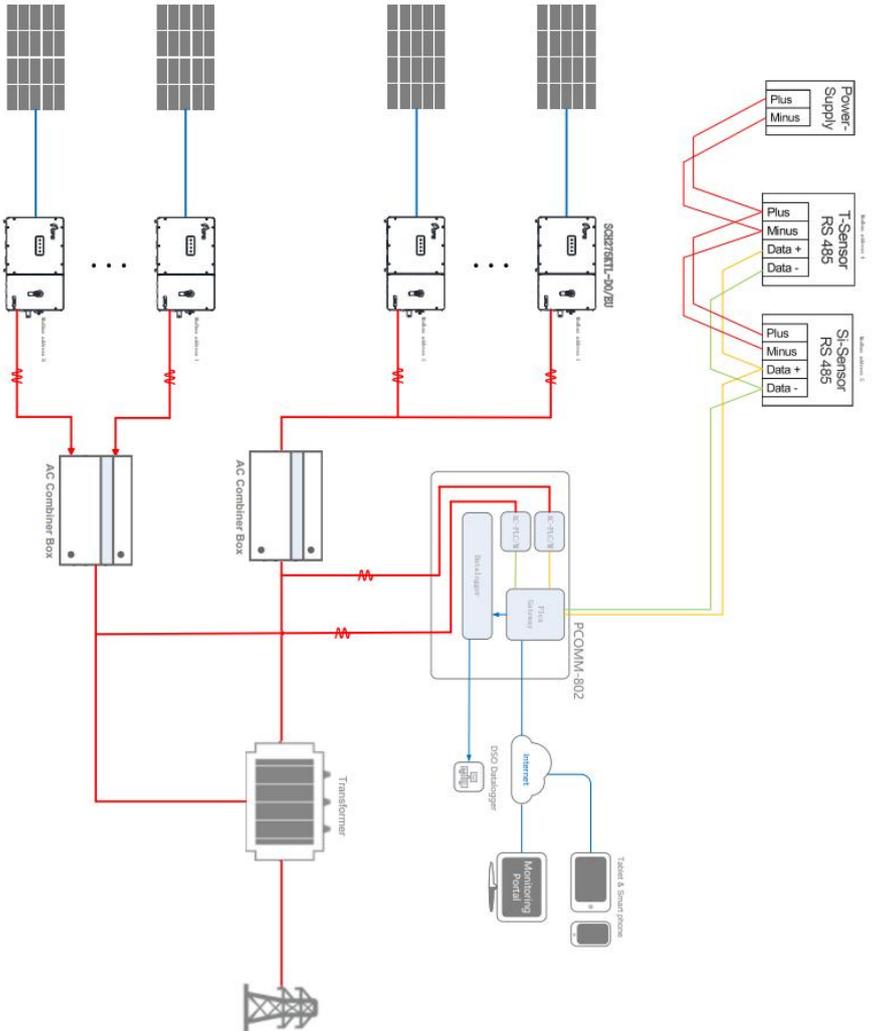

Figure 4-1: working principle of the communication box
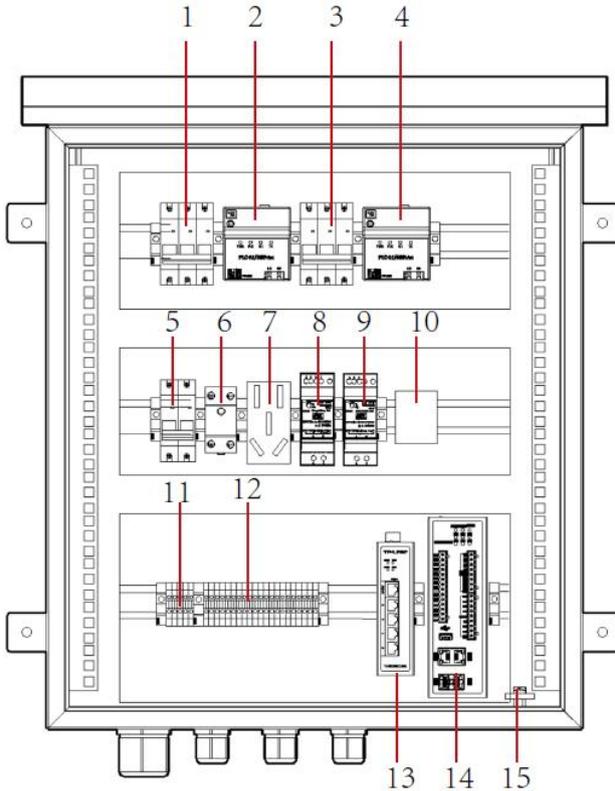
4.2 Internal wiring terminals

Figure 4-2: Internal wiring terminals

No.	Component Name	No.	Component Name
1	Miniature circuit breaker-1	2	PLC power carrier module-1
3	Miniature circuit breaker-2	4	PLC power carrier module-2
5	Ac power main switch	6	Over and under voltage protector
7	Guide socket	8	Switch power supply
9	Switch power supply	10	Network card
11	Power supply terminal	12	RS485/AI/DI/DO Signal terminal
13	Ethernet switch	14	Data logger
15	Grounding bar		

Table 4-2 Wiring terminals

![CHINT POWER logo]

4.3 Open the door

⚠️ **WARNING!**
Make sure the power supply is disconnected before opening and closing the communication box.

In order to guarantee the protection performance of the communication box, one lock is provided on its door.

Insert key into keyhole of the lock and turn it in counterclockwise direction to open the door.
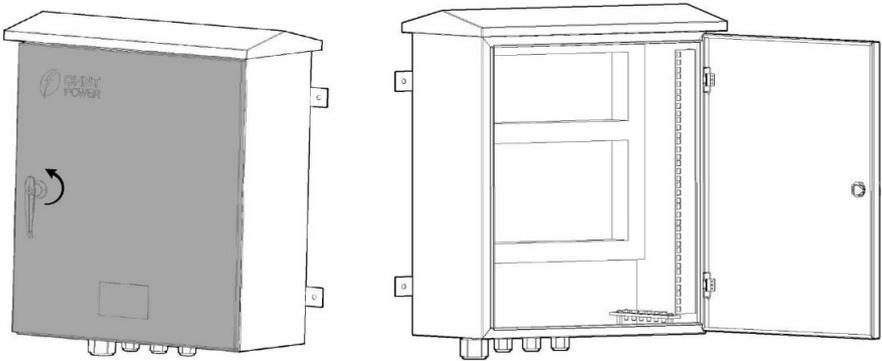

Figure 4-3: Open the door

4.4 Wiring

ℹ️ **IMPORTANT!**
Connect cables in accordance with the installation laws and regulations of the countryorregion where the project is located.

4.4.1 Connecting the Three-Phase AC Power Cable

1. Remove the locking cap and plug from the cable gland. Route the cable through the locking cap and then the cable gland.
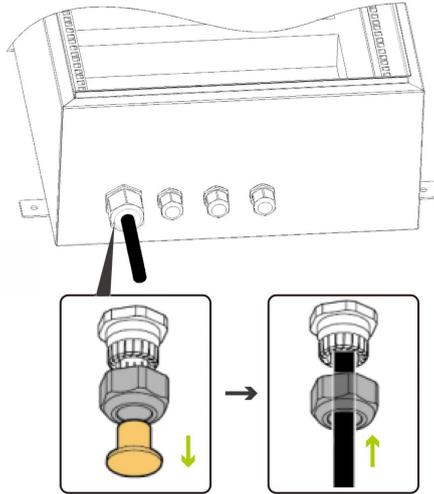
Figure 4-4: Route the cable

2. Remove an appropriate length of the jacket and insulation layer from the cable.

10-12 mm (0.39-0.47 in.)
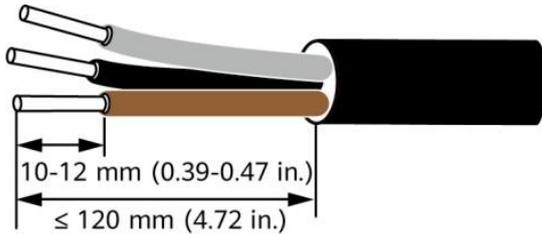
≤ 120 mm (4.72 in.)

Figure 4-5: Strip the cable

3. Insert exposed core wires into tubular terminals and crimp them by crimping pliers.
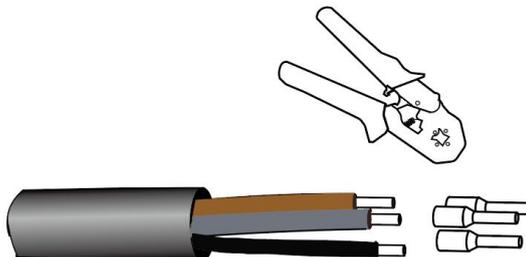

Figure 4-6: Crimp tubular terminal

4. Connect the L1, L2, and L3 wires to the three-phase input switch.

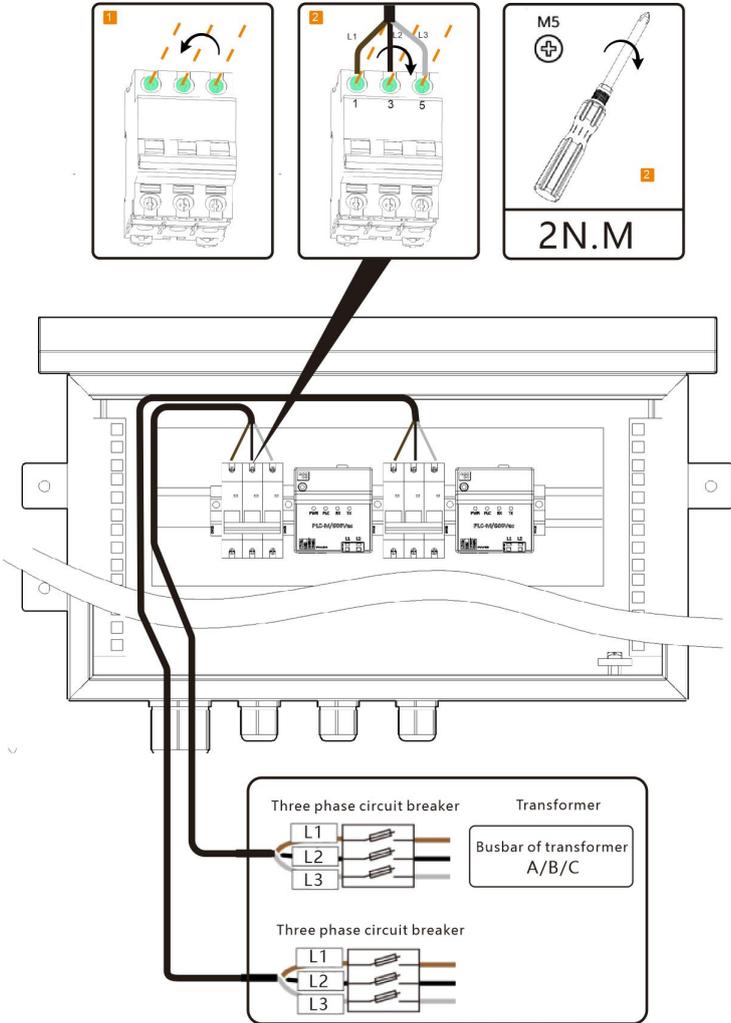   Note: Ensure that the L1, L2, and L3 wires are connected in correct phase sequence.

Figure 4-7: Connect three-phase AC wires

5. Tighten the locking cap. Check that the cable is connected correctly and securely. Seal the cable gland and cable hole using the supplied firestop putty.

4.4.2 Connecting the Single-Phase AC Power Cable

1. Remove the locking cap and plug from the cable gland. Route the cable through the locking cap and then the cable gland.

Figure 4-8: Route the cable

2. Remove an appropriate length of the jacket and insulation layer from the cable.

10-12 mm (0.39-0.47 in.)
≤ 130 mm (5.12 in.)

Figure 4-9: strip the cable

3. Insert exposed core wires into tubular terminals and crimp them by crimping pliers.

Figure 4-10: Crimp tubular terminal

4. Connect the cable to the single-phase input switch.

Note: Connect the L and N (L) wires to the L and N (L) terminals of the station-service power source for the transformer station through an MCB.

Figure 4-11: Connect single-phase AC wires

5. Tighten the locking cap. Check that the cable is connected correctly and securely. Seal the cable gland and cable hole using the supplied firestop putty.

4.4.3 Connecting RS485 Communications Cable

Connect RS485 communications cables to the RS485 signal terminal.

1. Remove the locking cap and plug from the cable gland. Route the cable through the locking cap and then the cable gland.

Figure 4-12: Route the cable
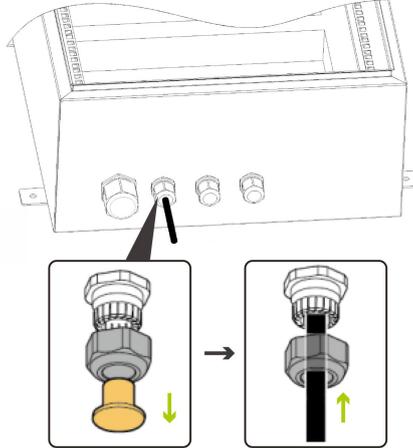
2. Remove an appropriate length of the jacket and insulation layer from the cable.
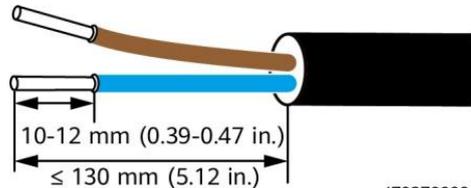
8-10 mm (0.31-0.39 in.)

≤ 160 mm (6.30 in.)
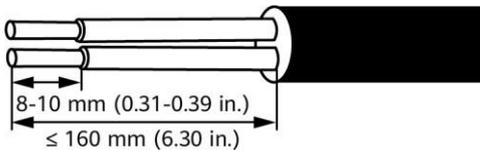
Figure 4-13: strip the cable

3. Insert exposed core wires into tubular terminals and crimp them by crimping pliers.
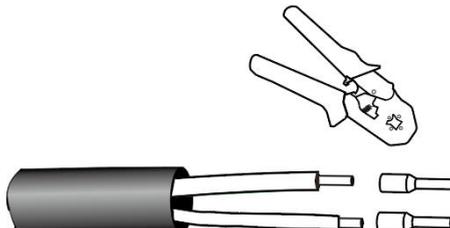
Figure 4-14: Crimp tubular terminal
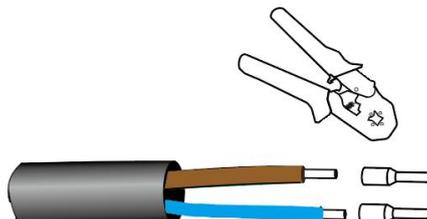
4. Connect the cable to the RS485 signal terminal.

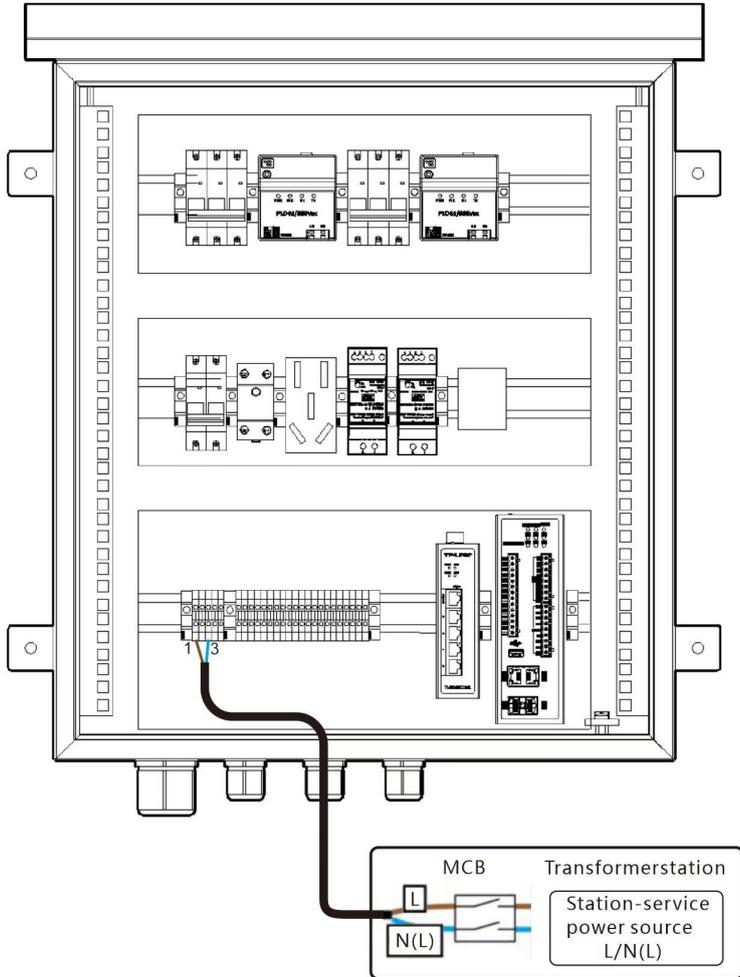Note: Connect the 485 + and 485 – wires to the correct RS485 terminals.

Figure 4-15: Connect RS485 cable

5. Tighten the locking cap. Check that the cable is connected correctly and securely. Seal the cable gland and cable hole using the supplied firestop putty.

![CHINT POWER logo]

4.4.4 Connecting Network Cable

4.4.4.1 Connect network cables to data logger

1. Remove the locking cap and plug from the cable gland. Route the cable through the locking cap and then the cable gland.
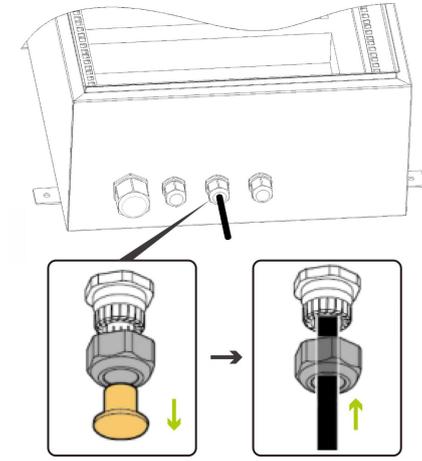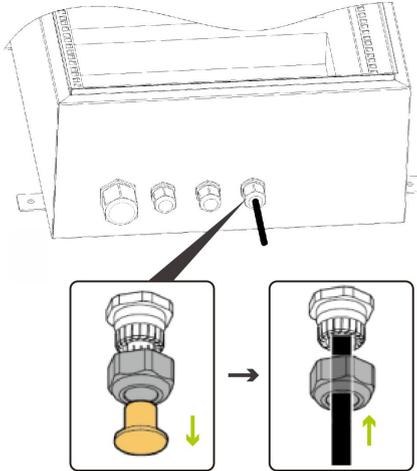

Figure 4-16: Route the cable

2. Remove an appropriate length of the jacket and insulation layer from the cable and then crimp them by crimping pliers as shown below.

Figure 4-17: Crimp tubular terminal

3. Connect the network cable to the Ethernet Switch.
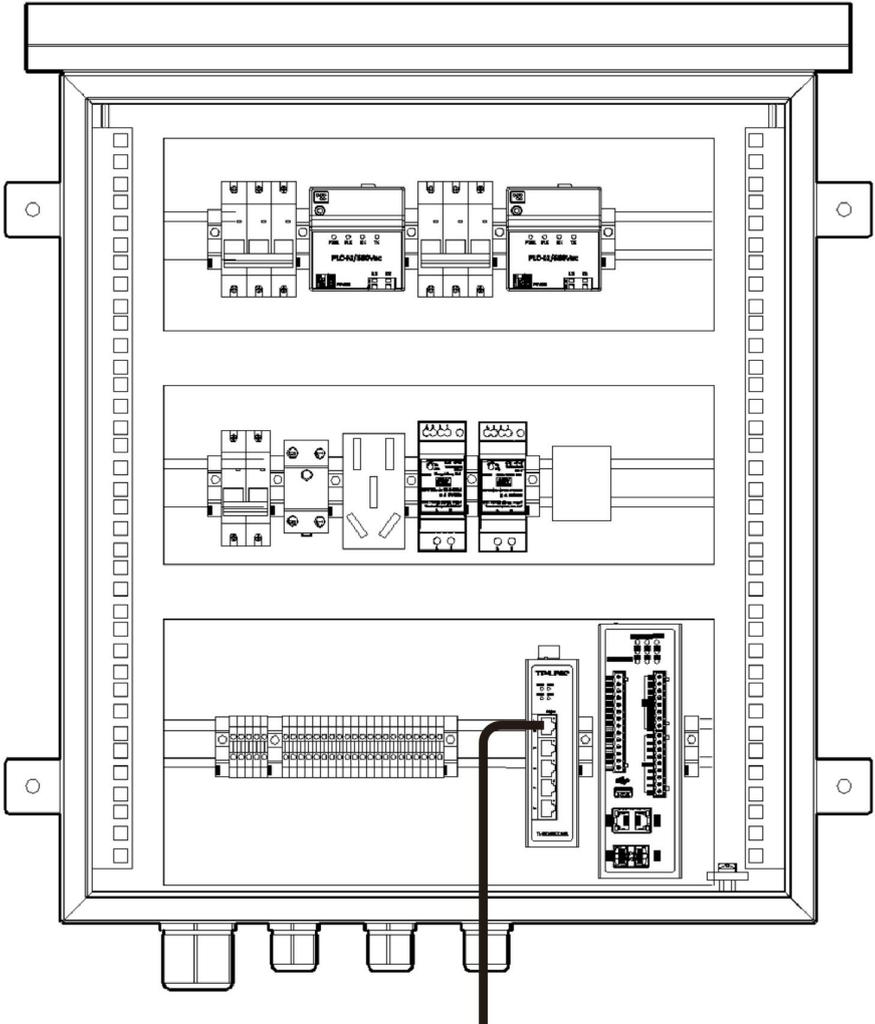
Figure 4-18: Connect the network cable

4. Tighten the locking cap. Check that the cable is connected correctly and securely. Seal the cable gland and cable hole using the supplied firestop putty.

4.5 Verifying the installation and wiring

1.   The communication box and all components are installed properly.
2.   All upstream switches for the communication box and all switches inside the communication box are OFF.
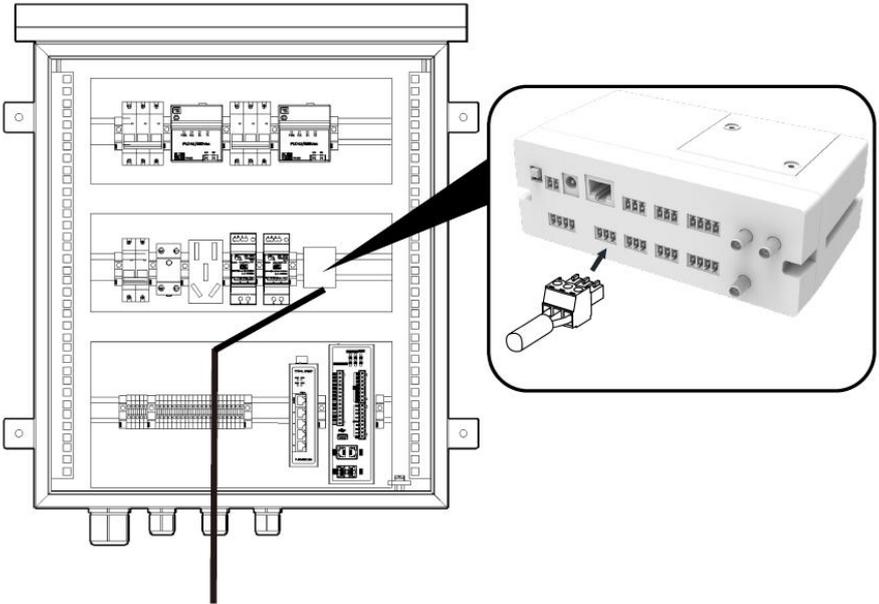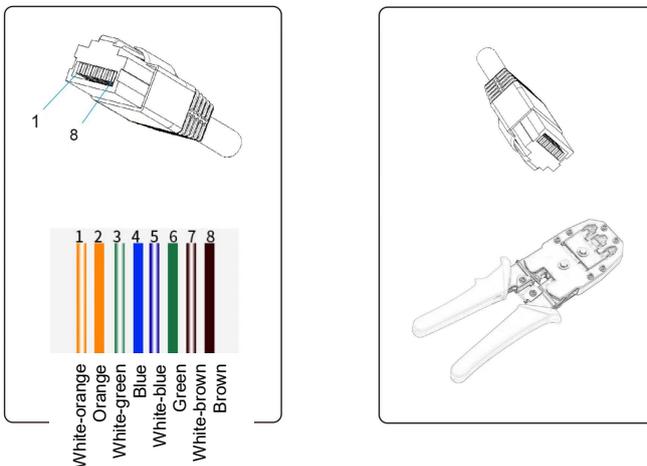3.   All cables are connected correctly and securely, without exposed metal. Cables are bound neatly, and cable ties are secured evenly and properly in the same direction. There are no sharp edges at the cutting positions. There are no sundries such as unnecessary adhesive tape or cable ties on cables.
4.   The locking caps on all waterproof connectors in use at the bottom of the communication box are tightened. All waterproof connectors in use are applied with firestop putty. Idle cable holes at the bottom of the communication box are plugged and the locking caps are tightened.
5.   The communication box interior is clean, without dust, dirt, or foreign matter.

4.6 Close the door

After completing the operation, lock shall be locked to avoid accidental turning the operation handle and opening of the communication box further, thus causing the risk of electric shock!

Insert key into keyhole of the lock and turn it in clockwise direction to close the door.
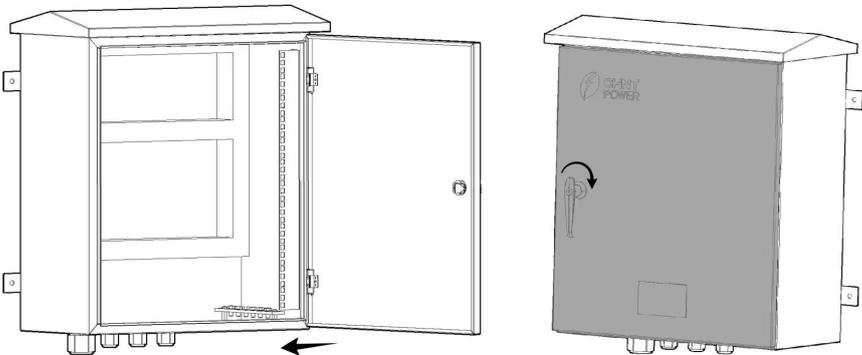
Figure 4-22: Close the door

IMPORTANT!

Before leaving the site after construction, make sure that the communication box is locked firmly, to prevent the door is damaged by heavy rain or strong wind as well as the internal items get wet.

5 Operation

	CAUTION!
⚠️	The communication box can only be put into service after the installation and inspection is completed!
	The paint on the communication box exterior is intact. Immediately repaint the part where paint has fallen off to prevent corrosion.

5.1 Power on and power off

	WARNING!
⚠️	Live operation is forbidden for this communication box. Therefore, please make sure its superior protection elements are disconnected before opening and closing the commutation box.

5.1.1 Power on

1. Turn on the single-phase power switch that controls the power supply from the remote transformer station to the commutation box.

2. Turn on the three-phase power switch that controls the power supply from the remote transformer station to the commutation box.

3. Check that the input voltages of all switches of the commutation box are within appropriate operating voltage ranges using a multimeter.

4. Turn on the single-phase input switch in the commutation box.

5. Turn on the three-phase input switch in the commutation box.

	IMPORTANT!
ℹ️	If any abnormal conditions, open the power supply switch first and then check relevant items carefully.

5.1.2 Power off

Power off in the reverse order to that of powering on the communication box.

5.2 APP Commissioning

5.2.1 APP Download

The inverter conducts human-computer interaction through the mobile APP. Apple users can download the iOS version in the Apple store, and Android users can download the APP called "Chint Connect" in the Google store, or directly scan the QR code below to download. （Support Android 4.4 and IOS 11.0 system or higher version system）.

5.2.2 APP Setting

After powering on, the communication box will automatically create a wireless network that uses user devices (tablets, smartphones, etc.) as a visual access point.

First, open the Bluetooth function on your phone, then open Chint Connect APP and operate as below.

1. If it's necessary, touch the bottom "APP Settings" to change language, synchronize cloud data, choose platform or check APP version. Then touch "Smart Link" icon to enter "smart link" interface.

2. Touch "Next" button to enter "Connect to the adapter" interface.
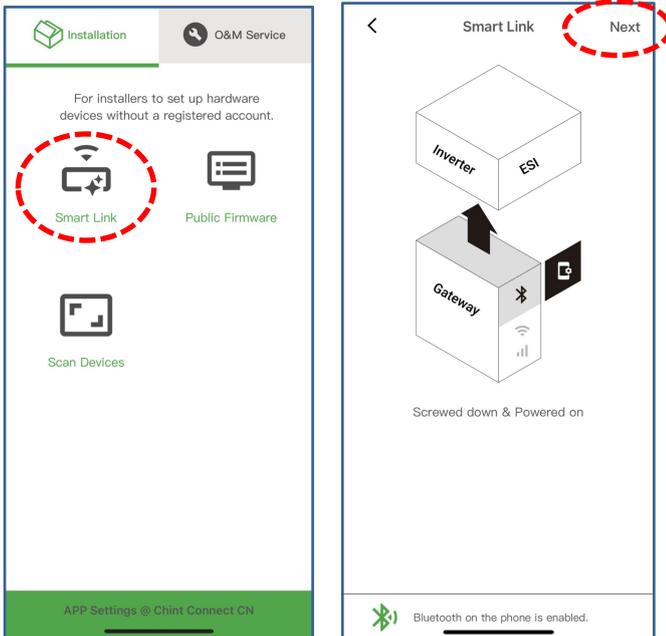
Figure 5-1: Touch "Smart Link" icon and then "Next" button

3. Touch wireless network named CPLK-XXXXXXX (XX can be found on LINKIT label), or touch the green QR to scan LINKIT bar code, inverter begins to connect network.

4. Touch "Internet Settings" on the home page, to click "Ethernet" button and enter "DHCP" configuration page. Confirm if the IP address is DHCP or static, then enable DHCP function or disable the DHCP function to setup static IP.
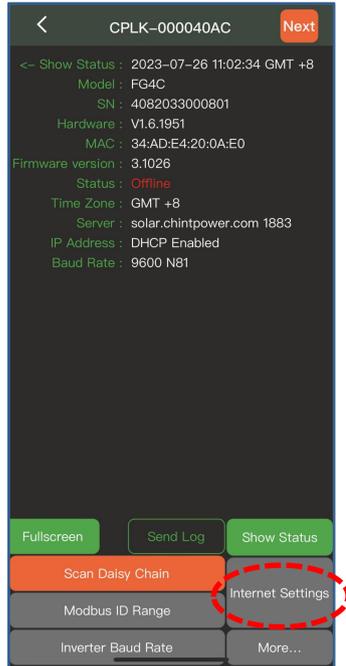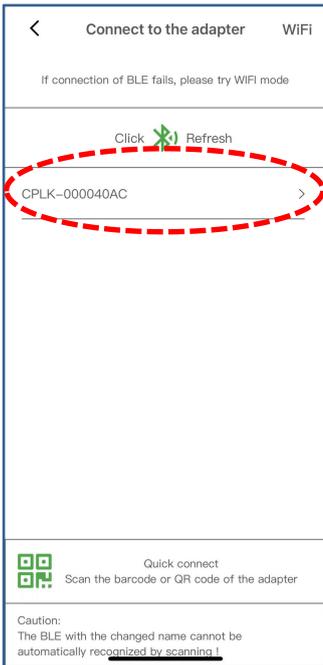
Figure 5-2: Touch wireless network name and then setup "Internet Settings"

5. Touch "Modbus ID Range" on the home page, user can delete the existing Modbus ID by clicking the "trashcan" icon or add other Modbus ID range by clicking the "+" icon on the "Modbus ID Range" interface.
    To add a new device ID, you need to setup start ID and end ID, choose product and protocol, finally click the "Save" button in top right corner.

IMPORTANT!

- The inverters belong to one sub-station must be set as different Modbus address.
- If the two or more sub-stations are installed nearby (within 1km), the inverters must be set as different Modbus address.
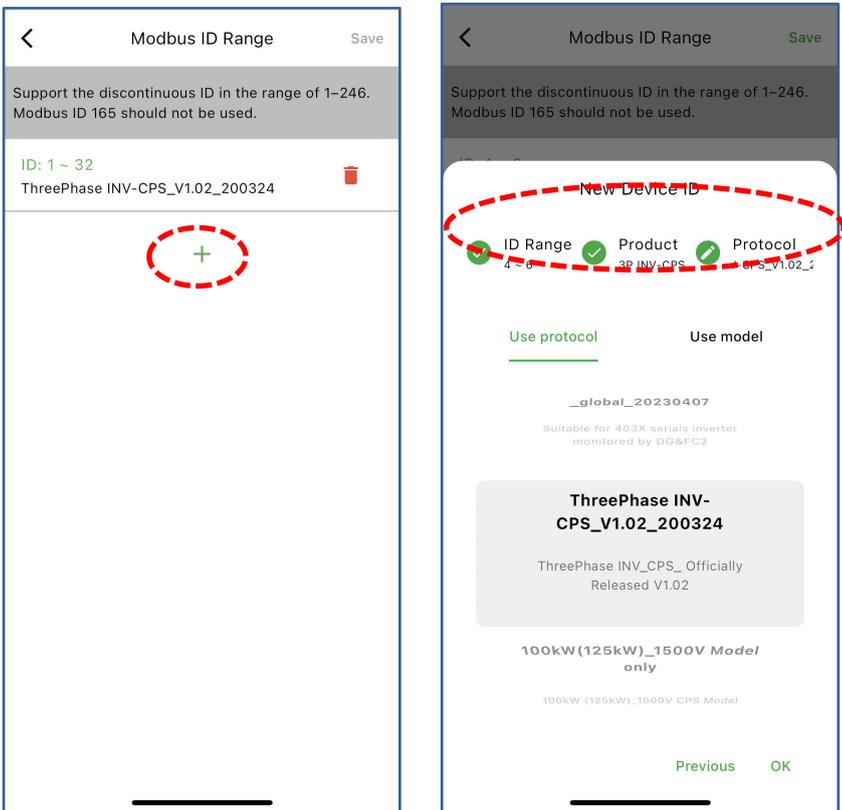
Figure 5-3: Add a new device ID

6. Touch "Inverter Baud Rate" on the home page, user can change baud rate parameters.

7. Touch "More" button, user can change more other parameters as required. Click "Reset", the gateway will clear all the current setting parameters and restore the factory settings. Click "Reboot", the gateway will automatically power off and restart without changing the current setting parameters.
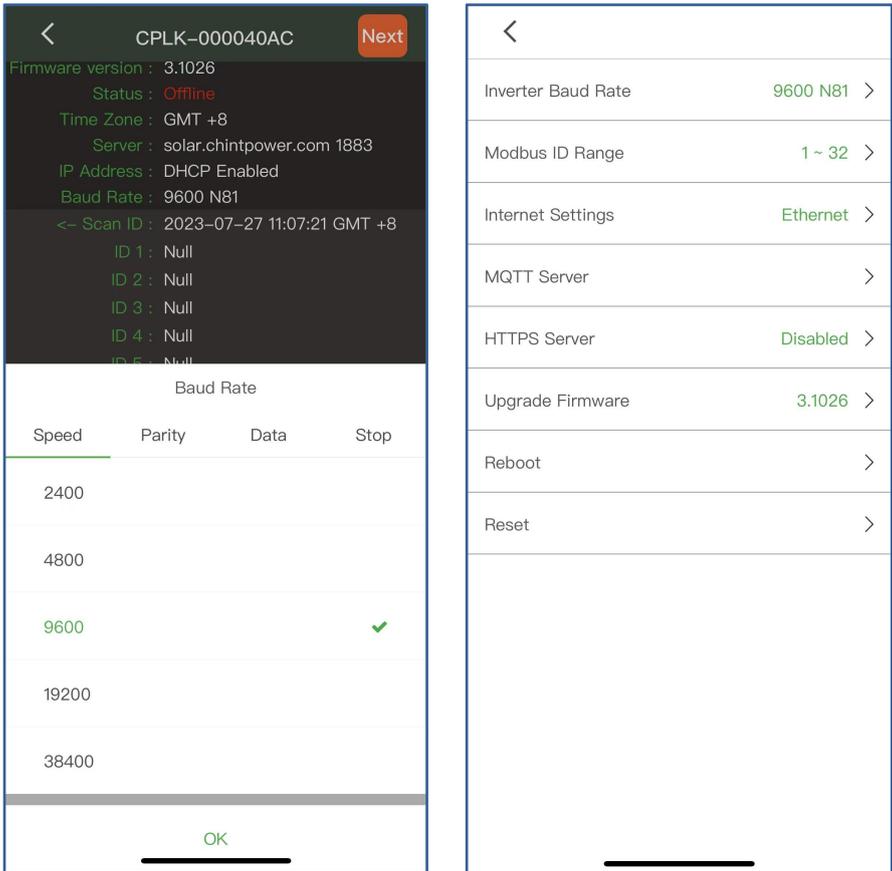
Figure 5-4: Setup "Inverter Baud Rate" and "More" parameters

8. Touch "Scan Daisy Chain" on the home page, the gateway quickly scans the daisy chain once, and lists the device list with the default ID. After touching "Stop the scan", you can read the scan result by clicking "Scan Result". Touch "Show Status", you can see the status of every ID. You can also click "Send Log" to upload the data to Cloud.
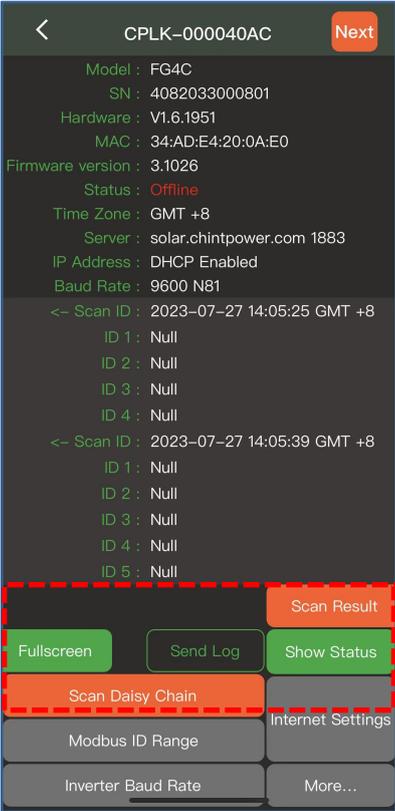
Figure 5-5: Scan and send log

5.3 Software Configuration

5.3.1 Preparation

● Make sure the power supply of the data acquisition device is normal, and all the equipment in the communication box are running normally.
● Tools: Ethernet Cable, Laptop
● Software: Install the data acquisition device management tools, including the following three tools:
  1. Configuration Tool: Used to configure the database and generate project files.
  2. Management Tool: Used to modify the IP and other parameters of the data acquisition device.
  3. Monitor: Used to monitor real-time data, message interaction status, channel status, etc.

5.3.2 Software Development Environment

● **Configured by laptop**

The data acquisition device has two network ports: Net1 and Net2. The default IP of Net1 is 192.168.11.177, and the default IP of Net2 is 192.168.12.177. After connecting laptop to network ports, it is necessary to configure an IP in the same network segment as the default IP of the corresponding network port, so that the laptop can communicate with the data acquisition device, which is the prerequisite for configuring the data acquisition device.

For example, connect laptop to port 1 and configure its IP as 192.168.11.178, then use the CMD command to test whether the laptop can access Net1 successfully.

You can operate in accordance with the following steps:

  1. Click "Local connection" button, choose "Properties" and then "Internet Protocol Version4 (TCP/IPv4)";
  2. Click "Advanced…" button and then configure the IP address as '192.168.11.178' (If connected to NET1) or as '192.168.12.178' (If connected to NET2);

Figure 5-6: Configure IP address

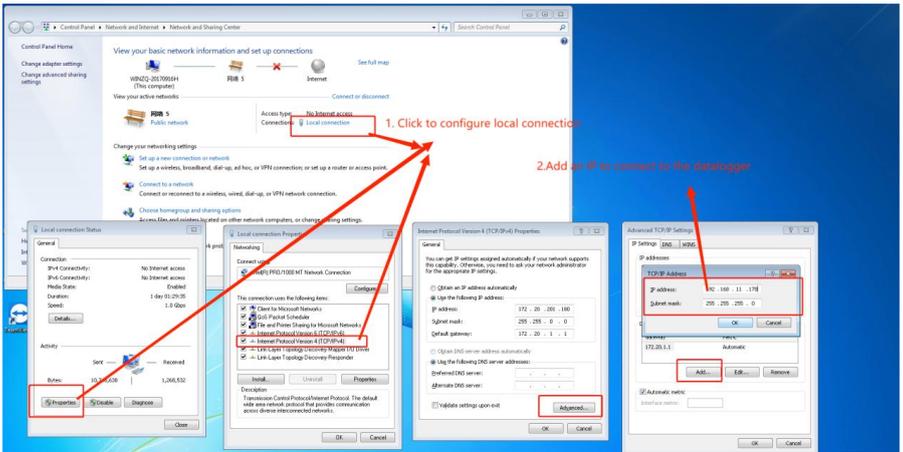3. After configuring the IP of the laptop and connecting the network cable to the corresponding network port of the data acquisition device, you can use the CMD command to access the address of the corresponding network port of the data acquisition device.
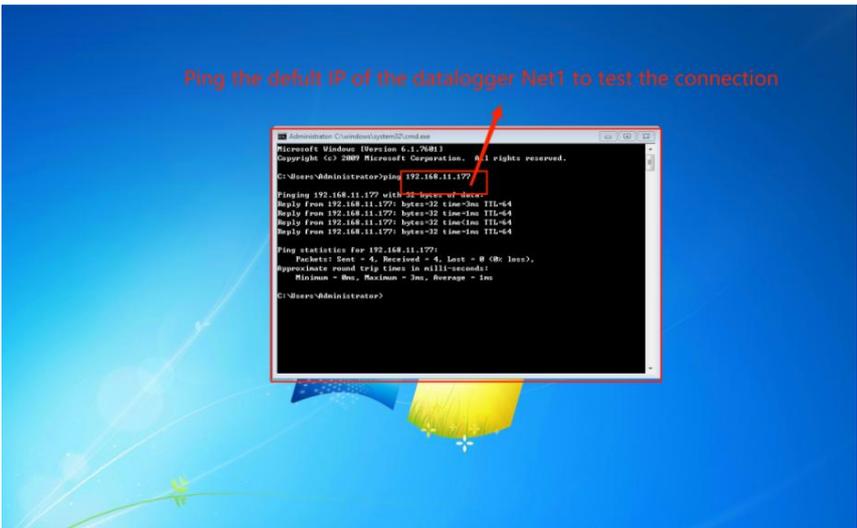
Figure 5-7: Use CMD command to access the address

● **Data acquisition device configuration**

Open the "PBoxMgr" management tool, select the data acquisition device that needs to be modified the IP address, and you can set the IP address for different network cards (the same network card can add multiple IPs). If you need to pass through a router, you need to fill in the gateway address of the router in the gateway address, and then check "Set as default gateway".

You can operate in accordance with the following steps:

1. Select the data acquisition device that needs to be modified the IP address.
2. Click "IP-Configuration" button.
3. Select "NetworkCard" and configure the IP address (If you need to pass through a router, you need to fill in the gateway address of the router in the gateway address, and then check "Set as default gateway")
4. Click "Add" button to add the configured IP to the corresponding network card.
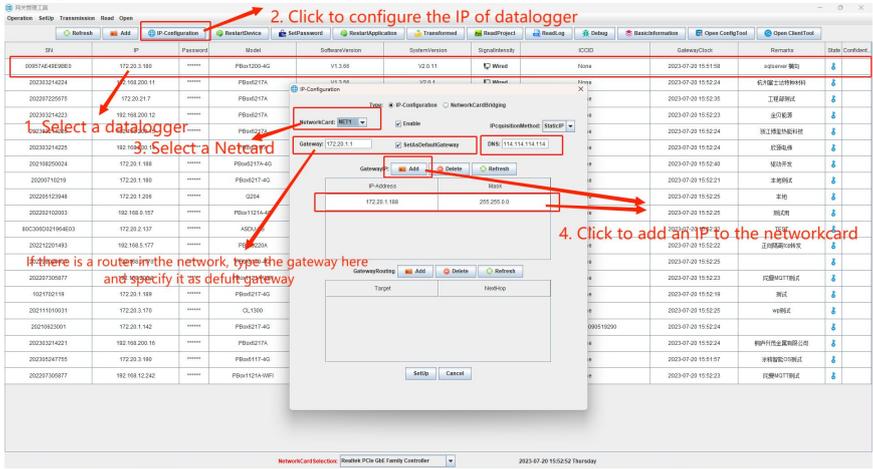
Figure 5-8: Data acquisition device configuration

● **Another scenario**

If uses one network cable to provide local and remote connection functions, you can follow the steps as below:

1. Connect the laptop network cable to datalogger NET2, and configure the laptop network IP address: 192.168.12.178;
2. Open CMD command, PING the IP address of datalogger '192.168.12.177';
3. If "PING" is normal (can receive PING return information), open PBoxMgrTool software, search the datalogger, and display its IP address and other information.

4. Select the datalogger to be modified, click "IP-Configuration" button, and the IP configuration dialog box will pop up. Select the NET1 network card, double-click in the IP address, and enter the IP address to be modified: 192.168.1.110, mask: 255.255.255.0, default gateway: 192.168.1.1, check "SetAsDefaultGateway", click the "SetUp" button to complete the NET1. During the IP configuration process, the IP address of the NET1 network card of the datalogger is set to 192.168.1.110 at this time, and the default gateway for Internet access is set at the same time.
5. In the list of datalogger, select datalogger, click the debug button, select network debugging, find ipconfig in the drop-down box, you can view the IP address information of the datalogger, and the IP address information of all network cards will be listed, find route in the drop-down box, you can view the route of the machine The table will list the routing table of datalogger, one of which is 0.0.0.0 is the default route for surfing the Internet.

5.3.3 Project file downloading

1. Basic Steps:

Using the "PBoxConfig" tool to configure a new project (select the correct protocol, create a new channel device and measuring point), use the "PBoxMgrTool" tool to download the project configuration file into the data acquisition and restart the application. Finally, open the "PBoxClient" to observe the real-time data.

You can operate in accordance with the following steps:

1. Click "new" to create a new project file
2. Select a location for the project file
3. Specify a name for the project file
4. Click "OK" to get into the project interface

Figure 5-9: configure a new project

2. Add a channel

For a new project, the steps to add a channel are as follows:

1. Click "Task-list" to manage the channels
2. Click "Add" to add new channels
3. Double-click to choose the type of the channels (Collect or Transmit)
4. Select the protocol applicable to this channel in the "Protocol" column
5. Configure the parameters of the channel according to the channel type, such as baud rate, IP, etc.
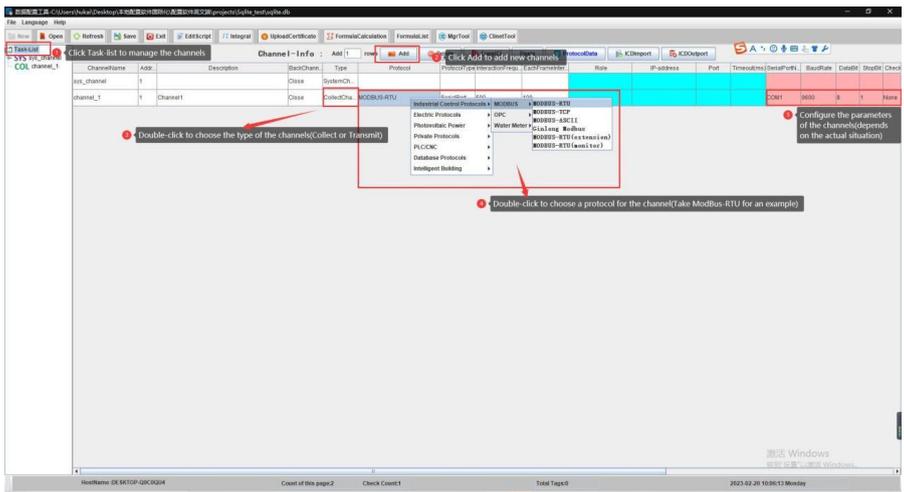

Figure 5-10: add a channel

3. Add devices on the channel

You can operate in accordance with the following steps:

1. Click the channel to manage the devices
2. Click "Add" to add devices into the channel
3. Can fill in the number of rows you want to add for adding multiple of devices at once
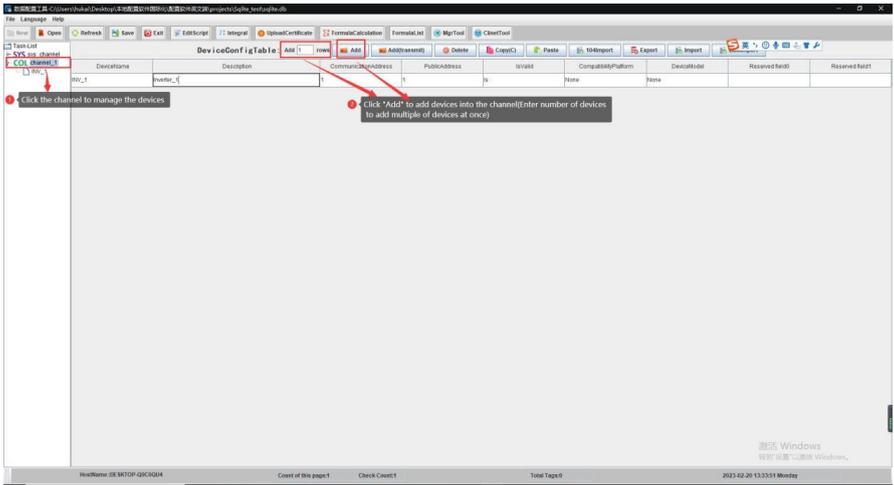4. Click "Paste" to paste the same device

Figure 5-11: Add devices on the channel

4. Add measurement points on the device

You can operate in accordance with the following steps:

1. Click the device to manage.
2. Click to choose the type for the tags ('telemetry' or 'telecommand').
3. Click "Add" to add tags of the devices (Enter a number on the left to add multiple tags at once)
4. Click "DeviceImport" to import the tag list that has been established (Ask our technical guys to get the standard mapping template)
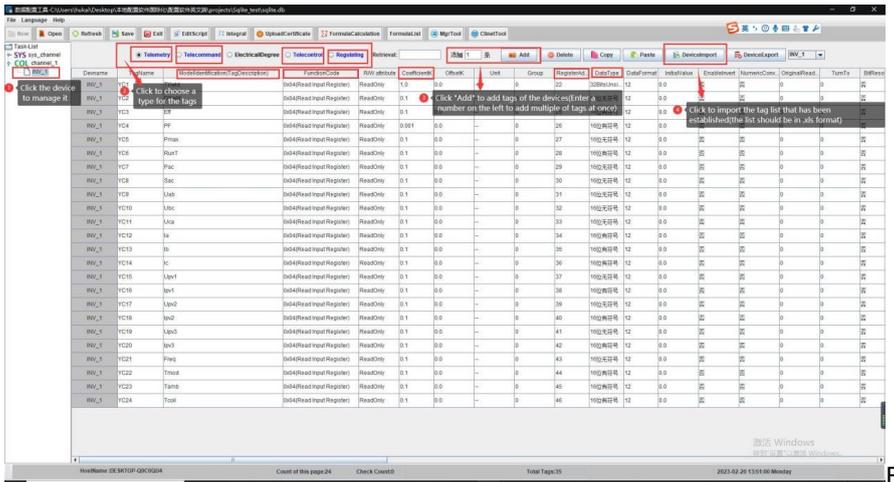
igure 5-12: Add measurement points on the device

5. Create a new transmit channel

The steps are shown as below.

1. Click "Task-list" to manage the channels
2. Click "Add" to add another channel as transmit channel
3. In the "type" column, select the channel type as "collectchannel" or "transmitchannel.
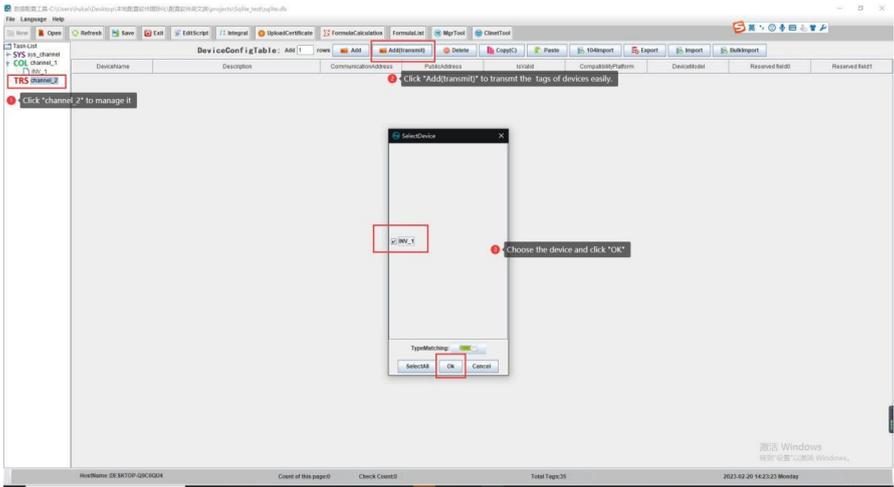4. Configure the parameters of the channel according to the channel type, such as baud rate, IP, etc.

Figure 5-13: Create a new transmit channel

6. Add a device on the transmit channel

the steps are shown as below:

1. Click the new-created transmit channel
2. Click "ADD (transmit)" to set the built collection device as a transmit device.
   At this time, the collected measurement points are automatically brought into the forwarding device, and the register addresses and data types of the forwarded measuring points can be modified in batches according to the transmit requirements.

The general transmit telemetry is a floating-point number, the function code is 03 or 04, the remote signaling is a binary input function 01 or 02, and the register address 0-N is incremented.

Figure 5-14: Add a device on the transmit channel

7. Save completed configuration project

After configuration, click the "Save" button on the toolbar to save the completed configuration project.
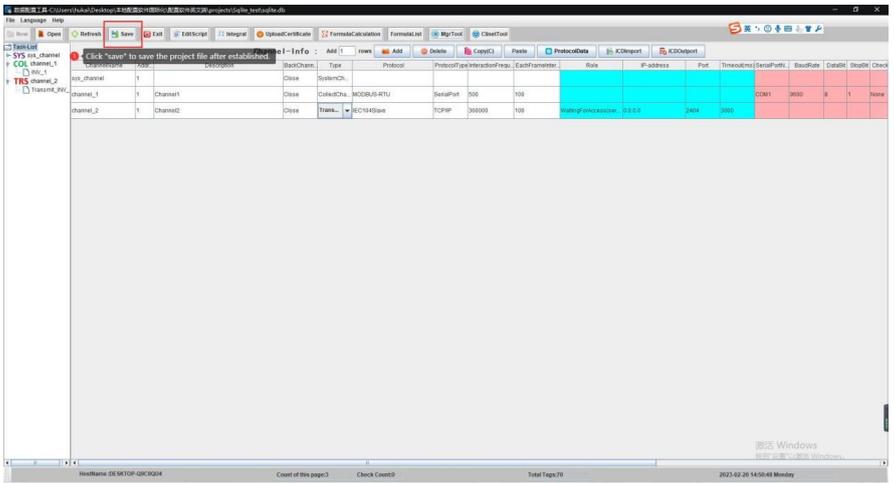

Figure 5-15: Save completed configuration project

8. Download the project file

You can download the project file to the data acquisition device as below:

1. Click "datalogger", click "Transformed"
2. A project selection dialog box pops up, and the save path is selected by default
3. Click "Start downloading" to begin
4. After downloading is complete, a prompt will be displayed and a prompt box will pop up. You can choose to restart the application and the prompt will be completed, as shown in the figure below.
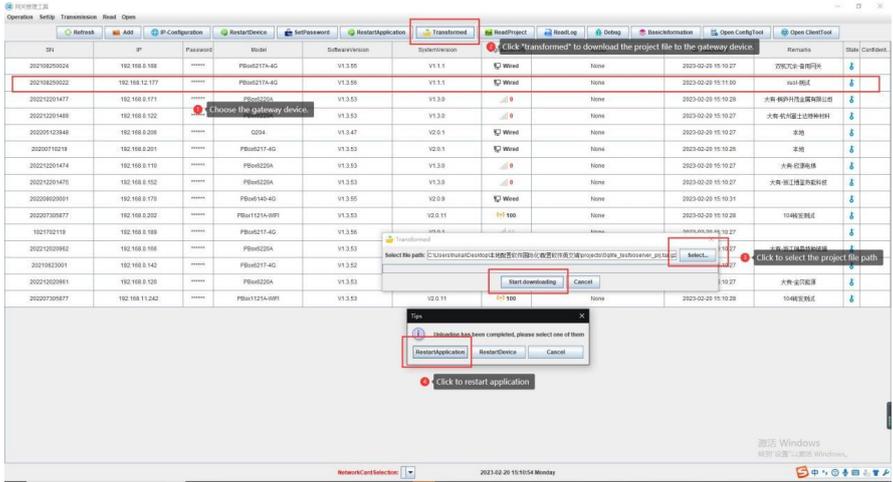

Figure 5-16: Download the project file

9. Real-time data monitoring

You can real-time monitor the data as below:

1. After downloading the project file, open the "PBoxClient" software, prompt to enter the IP address, enter the IP address of the datalogger, and you can enter the data viewing page.
2. Click the device you want to monitor on the left, and you can choose to enter the channel information on the right to view the status of each channel, as shown in the figure below.

Figure 5-17: Real-time data monitoring

3. You can also click the "channelmonitoring" button and click "TurnOnMonitoring" button to print the sending and receiving status of the current channel in real time, as shown in the figure below.

Figure 5-18: print the sending and receiving status

4. We will provide a standard project file (suffix tar.gz), customers only need to click "download" to download the project file into the data acquisition device, so as to run the corresponding collection and transmit programs, and open "PBoxClient" to monitor real-time data

5.3.4 Firmware upgrading

In order to ensure the stable operation of the device, it may involve upgrading the firmware. We will customize the corresponding upgrade package (suffix tar.gz). After the user gets the upgrade package, connect the laptop to the data acquisition device (refer to step 2.1 And 2.2), open the "Mgr" tool, click "download project", select the upgrade package we provide, after the download is complete, click restart the device to complete the upgrade.
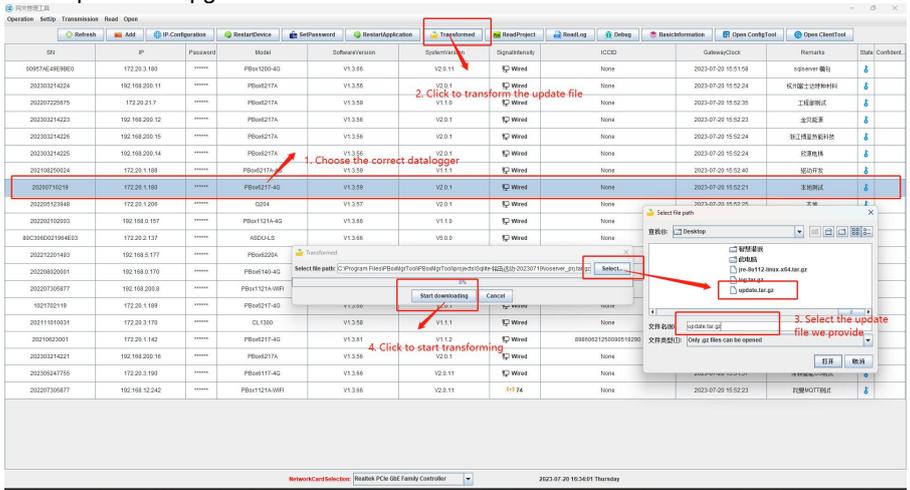

Figure 5-19: Firmware upgrading

1. Choose the correct datalogger
2. Click to transform the updated file
3. Select the updated file we provided
4. Click "Start downloading" to begin. After downloading is completed, choose to restart the device on the pop-up interface, and the upgrade can be completed after the restart is complete.

5.3.5 LAN Port Bridging of the Datalogger

Select a line, click the IP configuration button, and then select the LAN port bridge to switch to the "LAN port bridge" configuration page, configure the LAN port bridge for the gateway, and click the setting button to take effect;

CAUTION!

The IP acquisition method can only be configured as a static IP. If it is configured as DHCP, the bridging configuration will not take effect;

At least one IP address must be configured for bridging to work.

IMPORTANT!

- The number of LAN ports that can be bridged is inconsistent for different models of dataloggers, and the LAN ports in gray are not allowed to be configured;
- The bridging will take effect only after it is selected. If this option cannot be chosen, the bridging will be invalid and the network status will be restored to the state of IP configuration.

Figure 5-20: LAN Port Bridging of the Datalogger

Field name	Directions
LAN port Listing	NET1 represents the first LAN port of the datalogger, NET2 represents the second LAN port, and so on, at least one LAN port need to be selected, the Network bridging will take effect
ActiveAndStandbyMode	Enabled by default; if you select No, close the bridge and restore the network state to the state configured in the IP configuration
IPacquisitionMethod	Only static IP can be selected
Gateway	If the datalogger accesses the Internet through this LAN port, then you need to fill in the LAN port information; the LAN port here refers to the IP of routers and other devices
Set as default gateway	If the datalogger connects the Internet through 4G, then do not need to choose the option. If the datalogger connects the Internet through LAN port, then choose the option; the default LAN port can only has one, if more than one is set, the LAN port with a smaller NET index will take effect first; if modified this item will cause the LAN port to disconnect and reconnect in about 10 seconds
DNS	Domain name resolution server, the default is OK.
IP address	The IP address of the LAN port, up to 10 different IP addresses can be added
Subnet Mask	The subnet mask of the LAN port, which is automatically filled after filling in the IP address.
Tarket	Which ranges of IP addresses match this route, for example: 192.168.100.0/24
NextHop	The next point of the route, for example: 192.168.0.1, means that the data of the 192.168.100.xxx network segment goes from 192.168.0.1

6 Regular Maintenance

To keep the device working normally for a long time, it is necessary to check its working status regularly. Regular maintenance items are as follows:

- Cleaning

- Tighten the cables and check whether the GND cable is damaged.

- Check the disconnect switch for any abnormal condition.

Please contact the dealer or manufacturer immediately if any problem is found.

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