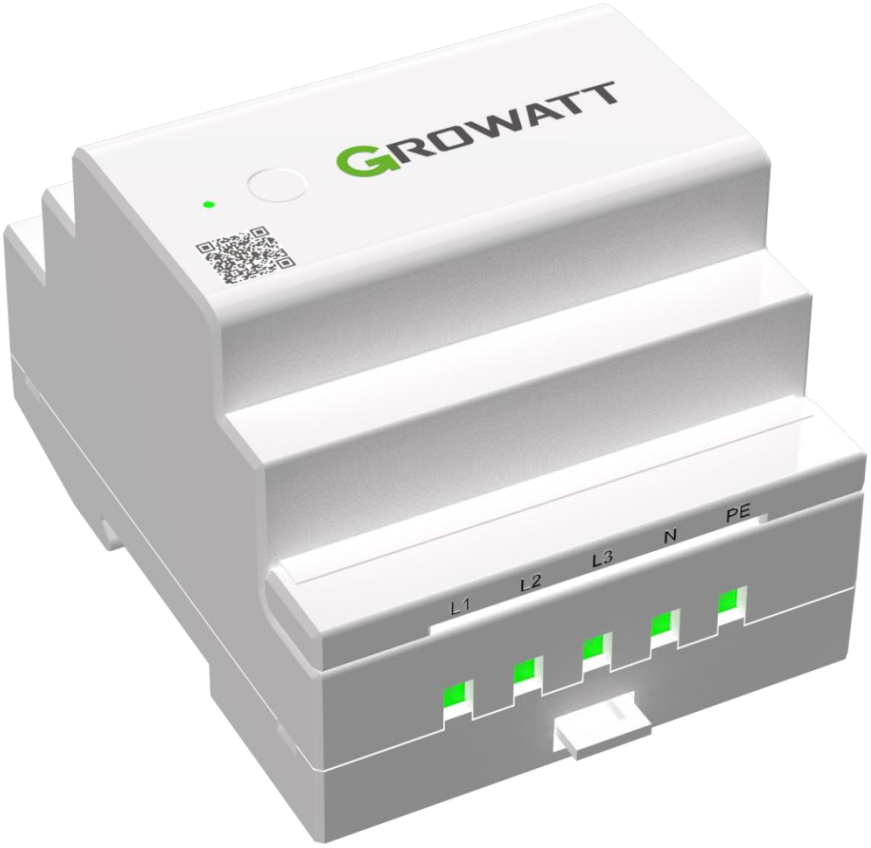
GROWATT




# GroHomeManager-X

# Installation Guide

# About this document

This document describes the installation, electrical connection, operation, commissioning, maintenance, and troubleshooting of GroHomeManager-X. Before installing and operating the GroHomeManager-X system, please ensure that you are familiar with the product features, functions, and safety considerations provided in this document.

Statement:

Our company will update the content of this manual based on product upgrades and optimizations. The updated information will be reflected in the latest version of this manual and will not be notified to users separately. Users can download and obtain the latest version of the manual information through the official website or by scanning the QR code in the manual. This manual is only for reference and guidance to users, and the actual application is subject to the actual product. Copyright and interpretation rights belong to Shenzhen Guruiwatt New Energy Co., Ltd., and all rights are reserved. Without permission, copying or excerpting the content of the document is prohibited.

Wiring precautions:

①Comply with laws, regulations, and norms: The selection, installation, and wiring of cables must comply with local laws, regulations, and relevant technical standards.

②Power cord placement requirements: When laying power cords, it is strictly prohibited to circle or twist. If the length of the power cord is insufficient, it must be replaced with a suitable length, and it is strictly prohibited to make joints or solder in the cable.

③Cable placement and arrangement: Similar cables should be bundled neatly, with a straight appearance and no outer skin damage. Different types of cables should be placed separately, and it is strictly prohibited to entangle or cross each other.

④Cable trough and wire hole protection: Cable trough and wire hole should have no sharp edges, and the parts of the pipe or wire hole must be protected to avoid damage to the cable from sharp edges, burrs and other items.

General precautions:

①It is strictly prohibited to install the equipment in areas with strong vibration, strong noise sources, or strong electromagnetic interference to avoid affecting the normal operation and performance of the equipment.

②Site selection must comply with local laws, regulations, and relevant standards to ensure that the equipment installation environment is within the technical specifications. Going beyond the technical scope may lead to equipment performance degradation and even safety hazards.

③Electrical connections must be made by personnel who have received professional training and are wearing appropriate personal protective equipment.

④Before connecting the power cord, be sure to confirm that the label identification of the power cord is accurate to ensure the correctness and safety of the electrical connection.

⑤It is strictly prohibited to make any unauthorized modifications to the equipment. Unauthorized modifications may not only damage the performance of the equipment, but also increase safety risks and even cause serious personal injury.

Symbol usage:

In order to ensure the personal safety and property safety of users when using the product, and to use the product more efficiently, the following symbols will be highlighted in this manual. Please read carefully to better understand and use the content in this manual.

| Mark | Explanation |
| --- | --- |
|  DANGER | Used to warn of high-risk situations that, if not avoided, could lead to death or serious personal injury |
|  WARNING | Used to warn of dangerous situations that, if not avoided, may result in death or serious personal injury |
|  CAUTION | Used to warn of low-risk situations that, if not avoided, may cause minor or moderate injury |
|  NOTICE | Used to warn of potential dangerous situations that, if not avoided, may cause equipment to malfunction |
|  Information | To ensure the optimal operation of the system, you must read and understand the information to effectively help solve problems |

# Record of Changes

Instructions: Use the table below to record information regarding changes made to the document over time.

Table 1 -Record of Changes

| Version Number | Date | Author/Owner | Description of Change |
|---|---|---|---|
| <V1.0.0> | 2025.7.15 | Hh | Initial Version |
| <V2.0.0> | 2025.9.26 | Hh | Installation optimization |
| | | | |
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# 1 Product Overview

## 1.1 Product Overview

GroHomeManager-X is an intelligent monitoring host that serves as the core of the entire home energy management system. It adopts a device-gateway-server-client architecture model, integrates meter functions, can be connected to the Internet of Things through router WiFi/Lan, and can communicate with devices such as photovoltaic inverters, energy storage inverters, EVCharges, intelligent loads, and intelligent switches through RF wireless or RS485 wired communication, realizing functions such as monitoring, analysis, scheduling, or intelligent energy management of photovoltaic power.

GroHomeManager-X serves as a gateway and also has meter functions. It features a compact size, high precision, and simple installation. It can be used to connect single-phase, three-phase, and split-phase power grid systems and is placed at the input and output ports of the grid connection. It can monitor the energy output and power supply of the entire household system as well as the power intake of the grid. Based on the photovoltaic power generation and electricity consumption habits, we recommend the best energy strategies for users to maximize the use of photovoltaic energy.

## 1.2 Product Explain

### 1.2.1 Product Packaging

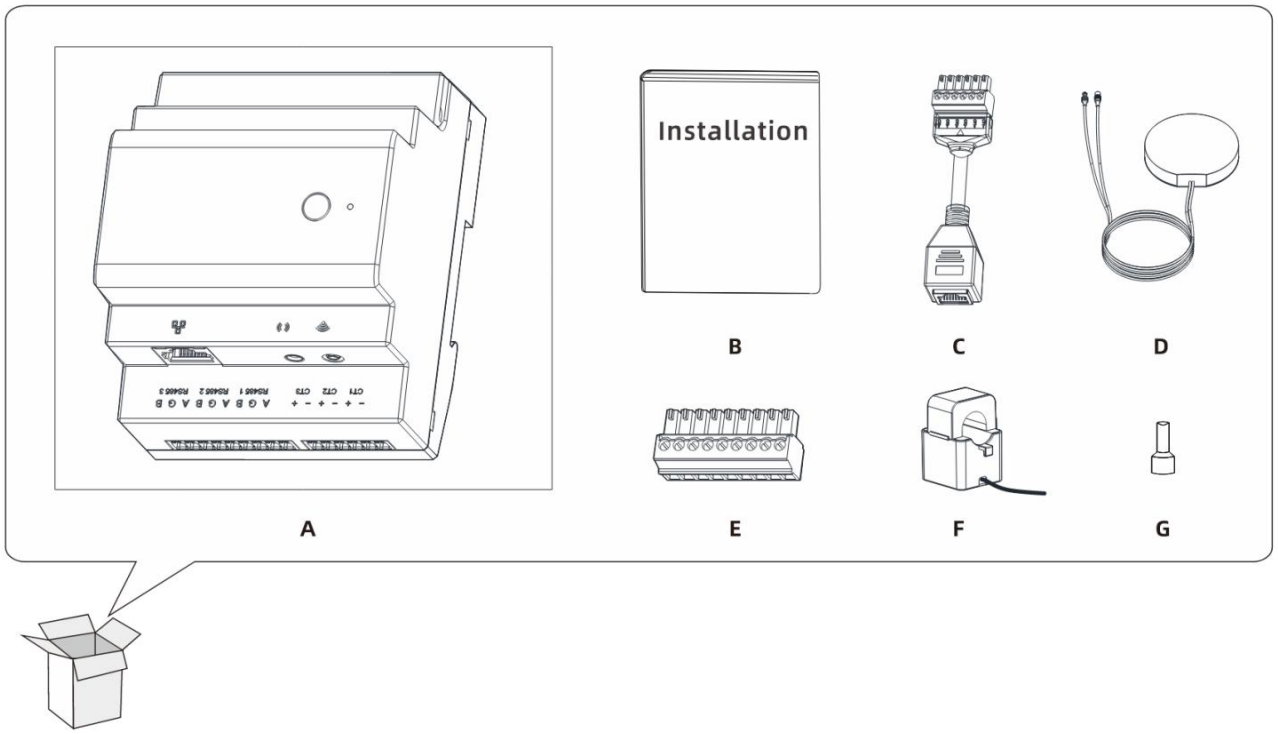



Figure 1 Product Packaging

### 1.2.2 Product Appearance

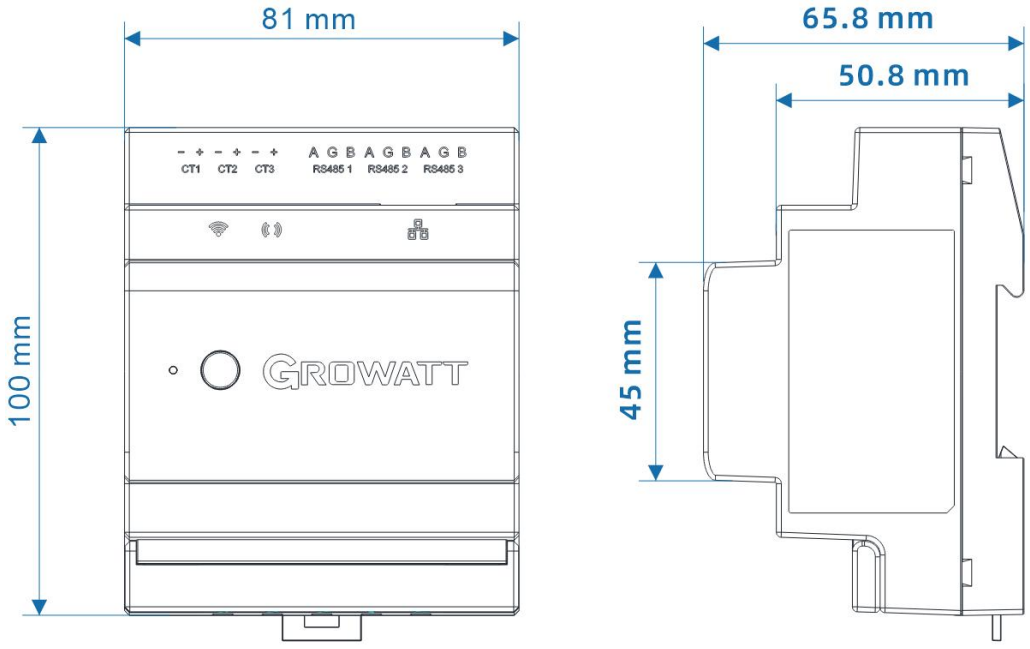



Figure 2 Product size drawing

### 1.2.3 Power Module

The GroHomeManager-X power module consists of L1, L2, L3, N, and PE, which can be used for single-phase, three-phase, and split-phase power grid system connections. It is placed at the grid-connected input and output ports, and performs voltage measurement. The appearance of the power module is shown in the figure below.

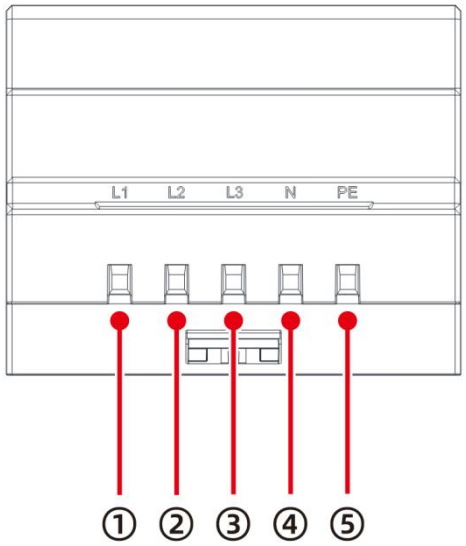



Figure 3 GroHomeManager-X Power Module

| Number | Identification | Description |
|---|---|---|
| ① | L1 | The first phase line of L1 represents the three different phases of three-phase AC power in a three-phase power system. |
| ② | L2 | The second phase line of L2 represents the three different phases of three-phase AC power in a three-phase power system. |
| ③ | L3 | The third phase line of L3 represents three different phases of three-phase AC power in a three-phase power system. |
| ④ | N | The neutral wire is a wire connected to the ground, used to provide the midpoint of the loop. |
| ⑤ | PE | PE grounding wire is used for safe grounding. |

Table 2 GroHomeManager-X Power Module Identification Description

### 1.2.4 Communication Module

The GroHomeManager–X communication module is equipped with an Ethernet port, 3 wired RS485 interfaces, 3 CT interfaces, WiFi antenna port, and RF antenna port. The appearance of the communication module is shown in the following figure.

It supports the following functions:

Uplink networking: Connect to the network through Ethernet port/WiFi

Downlink device communication: Data exchange with photovoltaic and other devices via RS485 interface or RF

Current measure: current measure through the CT interface

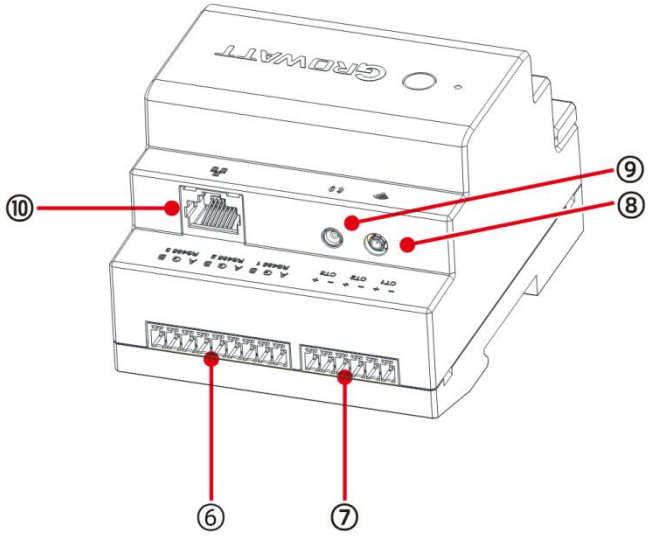



Figure 4 GroHomeManager–X Communication Module

| Number | Identification | Description |
|---|---|---|
| ⑥ | 3–Channel RS485 interface<br>A G B A G B A G B<br>RS485 1 RS485 2 RS485 3 | Half-duplex communication interface, through which wired RS485 communication can be carried out with photovoltaic/energy storage inverters. The default baud rate of this interface is 9600 |
| ⑦ | 3–Channel CT interface<br>– + – + – +<br>CT1 CT2 CT3 | Current transformer access interface for real-time current monitoring |
| ⑧ | WiFi antenna port | WiFi external antenna access interface enhances the propagation and reception of WiFi signals |

| | | |
|---|---|---|
| ⑨ | RF antenna port | RF external antenna access interface enhances the propagation and reception of RF signals |
| ⑩ | Ethernet port | The Ethernet port belongs to the RJ45 interface type and transmits data through standard network protocols. The interface supports 10/100M Ethernet |

Table 3 GroHomeManager-X Communication module identification description

### 1.2.5 User interaction module

The GroHomeManager-X user interaction module is equipped with indicator lights, buttons, and product QR codes. The appearance of the user interaction module is shown in the following figure。

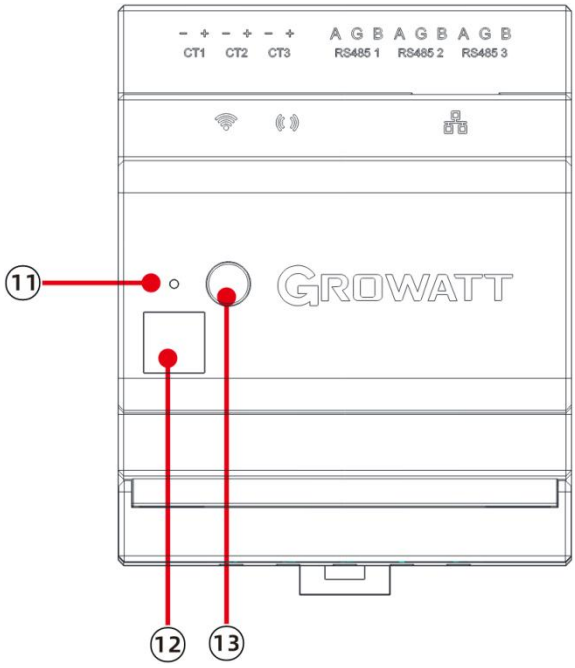



Figure 5 GroHomeManager-X User interaction module

| Number | Identification | Description |
|---|---|---|
| ⑪ | Indicator light | Used to display device status and operation |
| ⑫ | KEY | Used to control various functions of the equipment |
| ⑬ | Product QR code | Used for network configuration, addition, and function settings of devices on the APP side |

Table 4 GroHomeManager-X User interaction module identification description

| Indicator light status | Working state |
|---|---|
| Steady White | 1. Initializing, please wait patiently<br>2. Restore factory default settings (long press button 6S to take effect) |
| Steady Yellow | In Bluetooth mode, please continue to follow the APP instructions for networking/sub-device addition process. If networking/sub-device addition process is not required, please click the button to exit this mode |
| Yellow Flashing Slowly | RF pairing mode , please continue to follow the APP instructions to add sub-devices, without RF pairing, double-click the button to exit pairing mode |
| Yellow Flashing | It is in Bluetooth local upgrade mode. Please wait patiently for the upgrade to complete. |
| Steady Red | Not connected to router, not connected to Photovoltaic equipment/RF sub-devices, please continue to follow the APP instructions for networking and sub-device addition process. |
| Steady Green | If the Photovoltaic equipment/RF sub-device is not connected, please continue with the sub-device addition process according to the APP instructions. |
| Green Flashing | The link to the photovoltaic equipment or RF sub-equipment is abnormal, please check whether the RS485 wiring method is correct, or check the ShineRFStick-X2 indicator light to determine the abnormal situation. |
| Steady Blue | Connected router, not connected server, connected PV/RF sub-device<br>1. Check if the router can access the internet<br>2.Does the router restrict the server and port number? The collector needs to use port 7006 |

| | |
|---|---|
| Blue Flashing | Unable to connect router, connected Photovoltaic equipment/RF sub-device<br>1. WiFi wireless connection method<br>(1)Check if the router account password filled in during the configuration process is correct<br>(2)Check the router:<br>a)The wireless name of the router should be composed of English and numbers, and special characters are not supported： (¯﹃¯…·€¥)<br>b)For security reasons, please use an encrypted wireless network<br>c)Networks that do not support secondary authentication and bridged wireless signals<br>2. LAN wired connection method<br>(1)Ethernet cable not connected<br>(2Restart the router and confirm that the router's automatic IP allocation function is available<br>(3)If a static IP Address is used, determine whether the IP Address is consistent with the router setting network segment |
| Blue Flashing Slowly | Connected router, connected server, connected photovoltaic/RF sub-device, in normal working mode, slow flash times represent the number of connections of the device |
| Attention：<br>1. When the initial network configuration is made, the device will automatically enter Bluetooth mode.<br>2. When Bluetooth is turned on, there is no data interaction with the APP, and Bluetooth will be automatically turned off after 30Min<br>3. When a single device is connected, the slow flash frequency is 1S, and the fast flash frequency is 0.5S. When multiple devices are connected, the number of flashes during slow flash represents the number of PV/RF slave devices connected<br>4. When the Bluetooth mode is turned on, the indicator light prioritizes displaying the yellow light and is always on. Please check the network/sub-device configuration in the APP. If you need to view GroHome device information through the indicator light, click the button to exit the Bluetooth mode | |

Table 5 GroHomeManager-X Indicator light working status description

| Button interaction behavior | Working state |
|---|---|
| Click | Enter Bluetooth mode, please follow the APP instructions for network configuration/setup process. If network configuration/setup is not required, please click the button to exit this mode |
| Double click | Enter RF pairing mode, please follow the APP instructions to add devices |
| Long press | Long press 6S until the indicator light white light is always on, restore the factory default settings |

Table 6 GroHomeManager-X Button working status description

### 1.2.6 RF slave ShineRFStick-X2

ShineRFStick-X2 is compatible with all GROWATT photovoltaic inverters with USB interfaces. It can be connected to the RF host through RF to achieve wireless monitoring and maintenance of photovoltaic systems. The appearance is shown in the following figure

①Support RF wireless communication connection

②Support parameter settings and firmware upgrades

③Support local data saving and resume

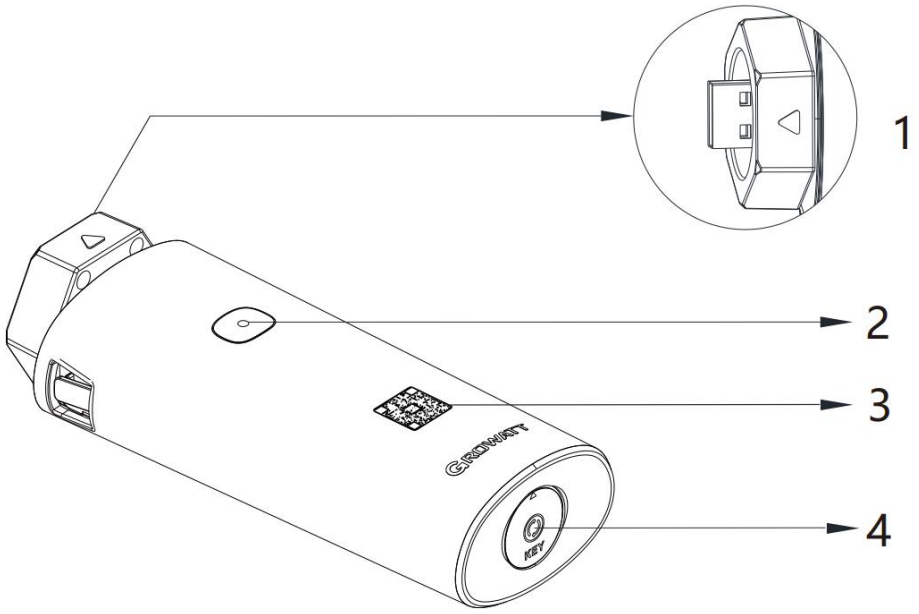



Figure 6 ShineRFStick-X2 Product overview map

| Number | Identification | Description |
|---|---|---|
| 1 | USB Port | For connecting GROWATT photovoltaic devices with USB ports |
| 2 | Indicator light | Used to display device status and operation |
| 3 | Product QR code | Used for adding RF equipment to the host |
| 4 | Key | Used to control various functions of the equipment |

Table 7 ShineRFStick-X2 User interaction module identification description

| Indicator light status | Working state |
|---|---|
| Steady White | 1.Initializing, please wait patiently for 30S.<br>2.Restore factory default settings (long press button 6S to take effect) |
| Steady Yellow | In Bluetooth mode, please click the button to exit this mode |
| Yellow Flashing Slowly | RF pairing mode, please follow the APP instructions of the RF host to add the device, no pairing is required, double-click the bottom button to exit pairing mode |
| Yellow Flashing | It is in upgrade mode. Please wait patiently for the upgrade to complete. |
| Steady Red | If the RF host is not connected and the photovoltaic device is not connected, please continue to follow the APP instructions of the RF host to add the device |
| Steady Green | If the photovoltaic equipment is not connected, please check whether the collector and inverter are connected normally. If the phenomenon persists after repeated plugging and unplugging, please contact Growatt customer service |
| Steady Blue | If no RF host is configured, perform RF pairing according to the host RF pairing process |

| | |
|---|---|
| Blue Flashing | Unable to connect to RF host, connected photovoltaic equipment/RF equipment<br>1. Please check if the host is powered on/online<br>2. Please check whether the leader/follower is within the recommended distance range<br>3. Please check whether the host antenna is damaged<br>4. If it appears repeatedly, please contact Growatt customer service |
| Blue Flashing Slowly | Connected to RF host, connected to photovoltaic equipment/RF equipment, in normal working mode |
| Attention:<br>1. Slow flash frequency 1S, flash frequency 0.5S | |

Table 8 ShineRFStick-X2 Indicator light working status description

| Button interaction behavior | Working state |
|---|---|
| Click | Enter Bluetooth mode, please follow the APP instructions to set up the process, if you do not need to set, please click the button to exit this mode |
| Double click | Enter RF pairing mode, please follow the instructions of the RF host APP to add devices |
| Long press | Long press 6S until the indicator light white light is always on, restore the factory default settings |

Table 9 ShineRFStick-X2 Button working status description

### 1.2.6 CT

Current transformer, used for real-time current monitoring, needs to be clamped on the wire for measurement. There is no need to disconnect the original power line. The network port quick CT can be inserted into the network port.

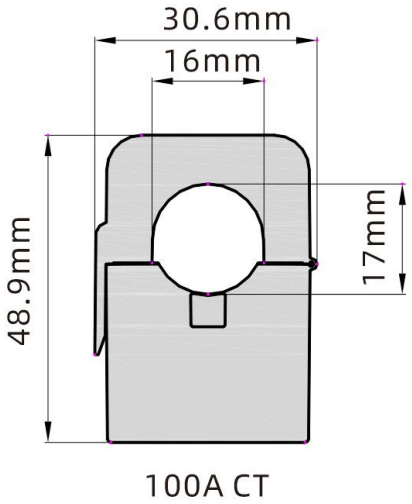



Figure 7 CT Overview of appearance

## 1.3 Product specifications

### 1.3.1 GroHomeManager-X Product specifications

| Type | Item | | Parameter |
|---|---|---|---|
| Common parameters | Appearance (length/width/height) | | 81*100*66mm |
| | Weight | | 312g |
| | User manual language | | English |
| | Protection level | | IP20 |
| | Antenna | | External disk adsorption antenna |
| | Installation | | DIN 35 rail mounting |
| | Certification | | CE/ROHS |
| Electrical parameters | Single phase | Rated voltage | 230VAC |
| | | Phase voltage range | 100VAC~416VAC |
| | Three phase four-wire | Rated voltage | 230VAC/400VAC |
| | | Phase voltage range | 100VAC~416VAC |
| | Three-phase three-wire | Rated voltage | 230VAC/400VAC |
| | | Line voltage range | 173VAC~416VAC |
| | Split phase | Rated voltage | 120VAC/240VAC |
| | | Phase voltage range | 100VAC~150VAC |
| | Average power consumption (MAX) | | 9W(15W) |
| | Working environme | Working temperature | -30~60℃ |

| | | | |
|---|---|---|---|
| | nt | Working humidity | <85%RH(No condensation) |
| | | Storage temperature | -40~70℃ |
| Measurement parameter | Support measurement mode | | Single-phase, split-phase, three-phase three-wire, three-phase four-wire |
| | Support measurement data | | Voltage/Current/Active/Reactive/Power Factor/Frequency |
| | Support measurement frequency | | 45-65Hz |
| Communication parameters | RS485 | Communication baud rate | 9600bps(Default) |
| | | Communication distance | 500m(STP) |
| | | Number of Facilities Management | 6 units (3-channel RS485 interface, 2 units per channel) |
| | RF | | 1.Frequency range: 860~ 930MHz (868/915MHz RF)<br>2.Maximum transmit power: 868MHz 14dBm/915MHz 17dBm<br>3.Maximum transmission distance: 120m (depending on the installation environment) |
| | WiFi | | 1.Frequency range: 2412~ 2484 MHz (2.4 GHz WiFi)<br>2.Support 802.11 b/g/n protocol, with a maximum speed of 150Mbps.<br>3.Maximum output power 19.5dBm, receiving sensitivity up to -97dBm |

| | | |
|---|---|---|
| | | 4.Transmission distance: open 50m |
| | BLE | 1.Compliant with Bluetooth V4.2 (2.4GHz)<br>2.Transmission distance: open 10m |
| | LAN | 1.10/100 M Self-Adaptation<br>2.Communication distance: 100m (Cat5e¯SFTP or above) |
| Application parameters | Supported servers | ShineServer |
| | User configuration interface | APP configuration |
| | Data upload cycle | 5Min |
| | Communication protocol with photovoltaic equipment | ModBus RTU |
| | Communication protocol with server | MQTT |

Table 10 GroHomeManager¯X Product specifications

### 1.3.2 ShineRFStick-X2 Product specifications

| Type | Item | Parameter |
|---|---|---|
| Common parameters | Appearance (length/width/height) | 122mm/47mm/32mm |
| | Weight | 65g |
| | User manual language | English |
| | Protection level | IP65 |
| | Installation | USB straight plug |
| | Certification | CE/ROHS |
| Electrical parameters | Working voltage | 5V(+/¯5%) |
| | Working current | 250mA |

| | | | |
|---|---|---|---|
| | Average power consumption (MAX) | | 2.5W(5W) |
| | Working environment | Working temperature | -30~60℃ |
| | | Working humidity | < 85% RH (No condensation) |
| | | Storage temperature | -40~70℃ |
| Common parameters | RF | | 1. Frequency range: 860~ 930MHz (868/915MHz RF)<br>2. Maximum transmit power: 868MHz 14dBm/915MHz 17dBm<br>3. Maximum transmission distance: 120m (depending on the installation environment) |
| | User configuration interface | | APP configuration |
| | Data upload cycle | | 5Min |
| | Communication protocol with photovoltaic equipment | | ModBus RTU |

Table 11 ShineRFStick-X2 Product specifications

# 2 Installation instructions

## 2.1 GroHomeManager-X Installation

### 2.1.1 Guide rail mounting

1. Clip the GroHomeManager-X onto the DIN 35mm standard rail of the AC distribution box.

2. Press the top of the GroHomeManager-X to fasten the buckle to the guide rail, or turn the buckle down to push the GroHome to the guide rail and release the buckle for fastening.

3.Gently shake the GroHomeManager-X to confirm secure installation.

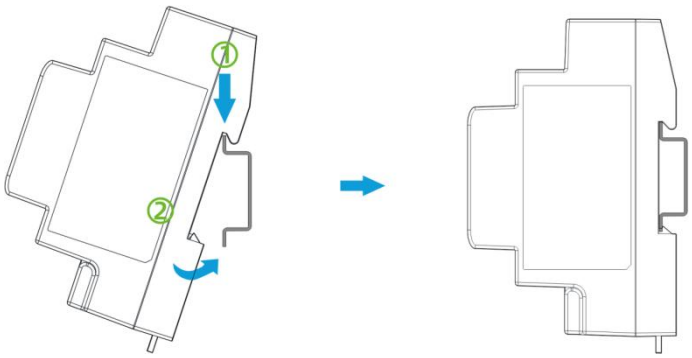



Figure 8 GroHomeManager-X guide rail installation

| | |
|---|---|
| WARNING | 1.This meter is installed after the metering meter and switch at the grid entrance, and the switch is the disconnection device of this meter. The switch is included in the building installation and needs to be installed within the range that the operator can easily access.<br>2.Before installing this device, make sure the power is cut off to avoid the risk of electric shock.<br>3.Regularly check the fixing status of the guide rails and equipment to ensure that there is no looseness or detachment.<br>4.The AC distribution box should be equipped with lightning protection devices. When installing lightning protection devices, relevant local electrical safety standards should be followed.<br>5.After installation, the equipment should not be disassembled without authorization. Repairs and replacements should be carried out by qualified professionals to avoid the risk of electric shock. |

### 2.1.2 Antenna installation

1. Insert the two antenna terminals of the disc antenna into their corresponding antenna holes to ensure a secure and reliable connection, in order to ensure the stability of signal transmission and the normal operation of the antenna.

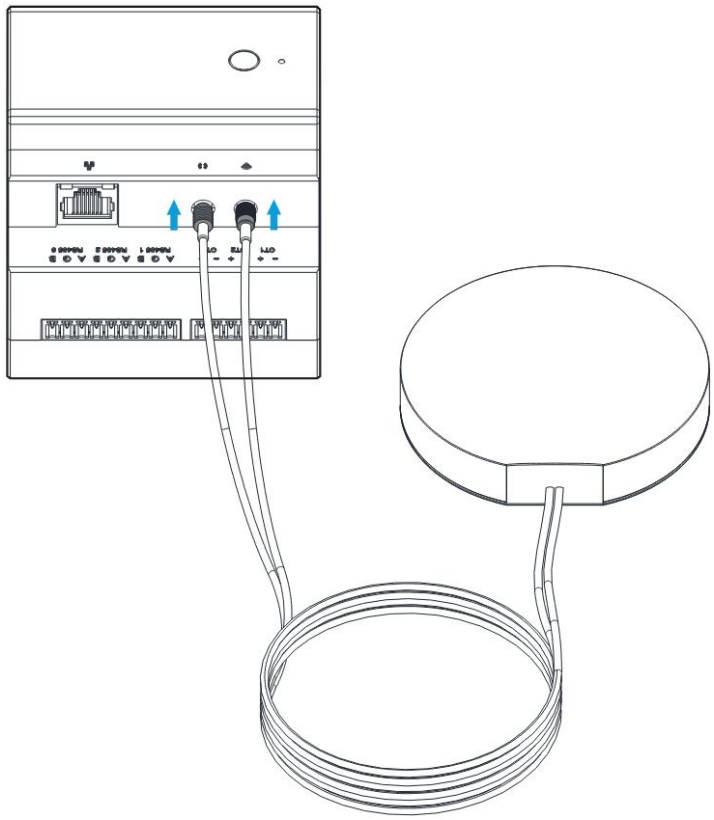


Figure 9 GroHomeManager-X Antenna installation

| | |
|---|---|
| Information | 1.If the GroHome device is placed in a metal distribution box or the wall of the distribution room is made of metal material, and there is adhesive backing behind the disc antenna, it can be torn off and pasted and placed outside the metal distribution box or metal wall. Otherwise, it will seriously hinder the propagation and reception of wireless signals, resulting in a significant decrease in signal quality, thereby affecting the performance and communication stability of the device.<br>2.The antenna should be kept away from sources of electromagnetic interference, such as large power equipment, high-frequency signal transmitters, wireless communication base stations, high-power motors, large transformers, etc.<br>3.When installing the disc antenna, try to face the router and the photovoltaic equipment end as directly as possible. |

### 2.1.3 AC end connection

1. When using a 28–14 AWG cable for the AC power port, remove the insulation layer of the cable by about 7–8mm, insert the exposed wire end into the corresponding terminal, ensure good contact, and then tighten and fix the bolt.

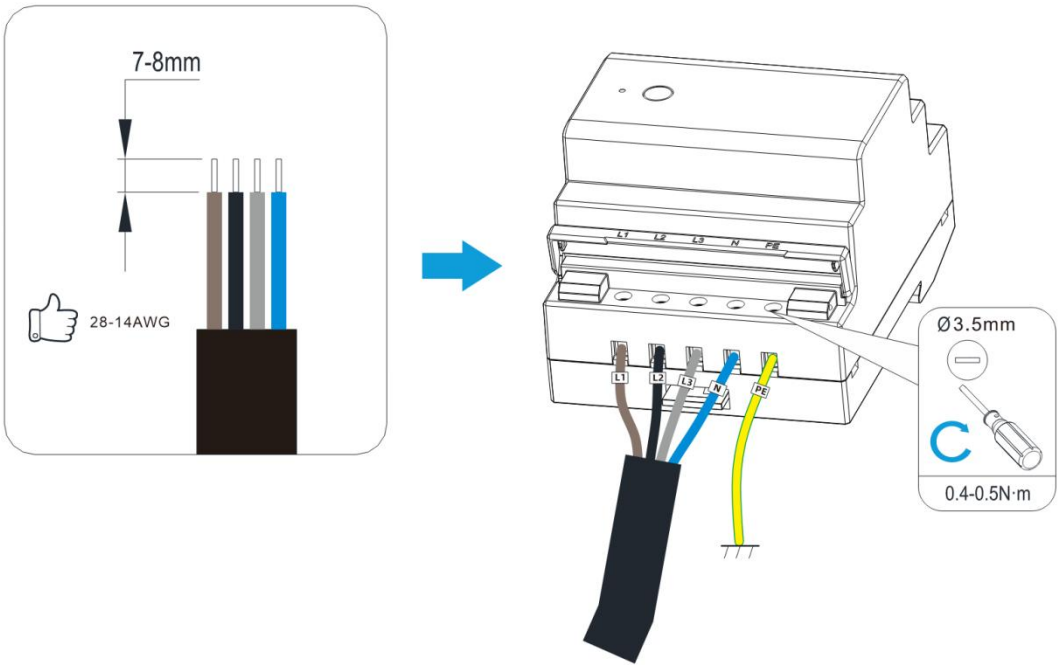



Figure 10 GroHomeManager–X Installs the AC end of the power supply

| | |
|---|---|
| WARNING | **Wiring precautions:**<br>①Cable specifications and quality: The cables used must meet the requirements of relevant technical and safety specifications to ensure sufficient load–bearing capacity and stable electrical performance. In addition, the connection points must be firm to ensure good and loose contact between the cables and wires, avoiding electrical failures or safety hazards caused by poor contact.<br>②Avoid pulling and damaging: During the electrical connection process, do not apply excessive tension or pulling to cables or wires to avoid damaging the insulation layer of the cable or causing damage to the internal conductors. Excessive pulling may cause short circuits or other electrical faults in the circuit.<br>③Reasonably reserve bending space: When installing all cables, sufficient bending space should be reserved to avoid damage to internal conductors or insulation layer rupture caused by excessive |

| | |
|---|---|
| | bending of the cables. Especially when turning or passing through narrow spaces, ensure that the bending radius of the cable does not exceed its maximum allowable range.<br>④Reduce cable stress: In order to reduce the stress caused by external forces on the cable, necessary auxiliary measures should be taken, such as using appropriate brackets, fixtures, or protective pipes, to ensure that the cable maintains a stable position during operation and avoid cable damage caused by excessive stretching or bending.<br>⑤To avoid the impact of high temperature environment: Adequate safety distance should be maintained between the cable and the heating device to avoid the cable being exposed to heat radiation or direct contact with the heating source in high temperature environment. Long-term exposure to high temperature environment will cause the insulation layer of the cable to age, soften, and even break. It should be ensured that the insulation material of the cable can withstand the temperature in the actual working environment to ensure its long-term reliability and safety. |

### 2.1.4 CT end connection

1. The connection method of the network port CT is to directly insert the network port cable into the fast network port terminal to ensure stable and firm contact, in order to achieve reliable connection of data transmission. For details on the CT buckle direction, please refer to section 2.3 on system wiring.

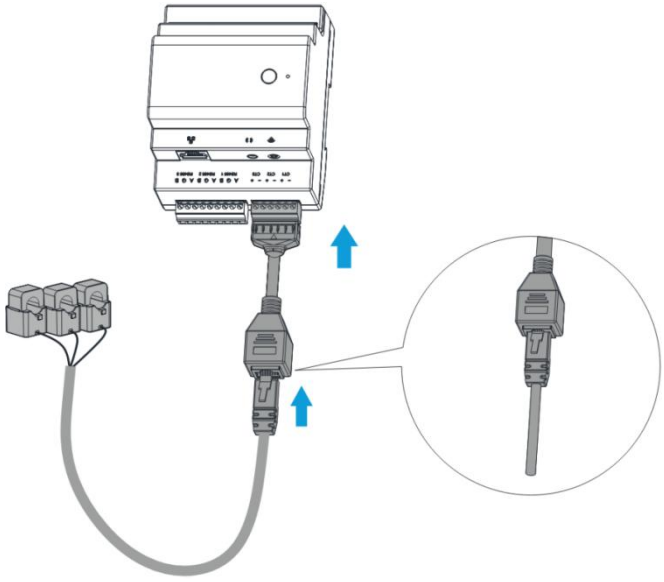
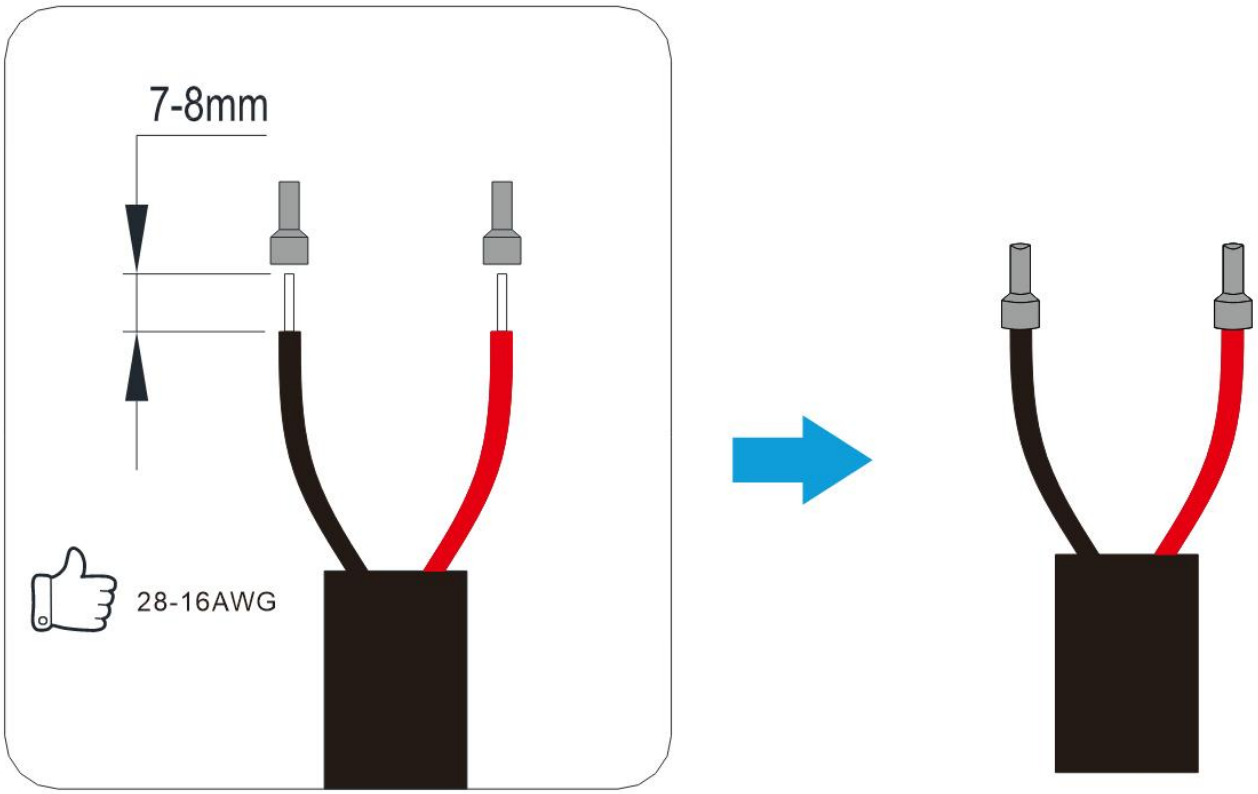
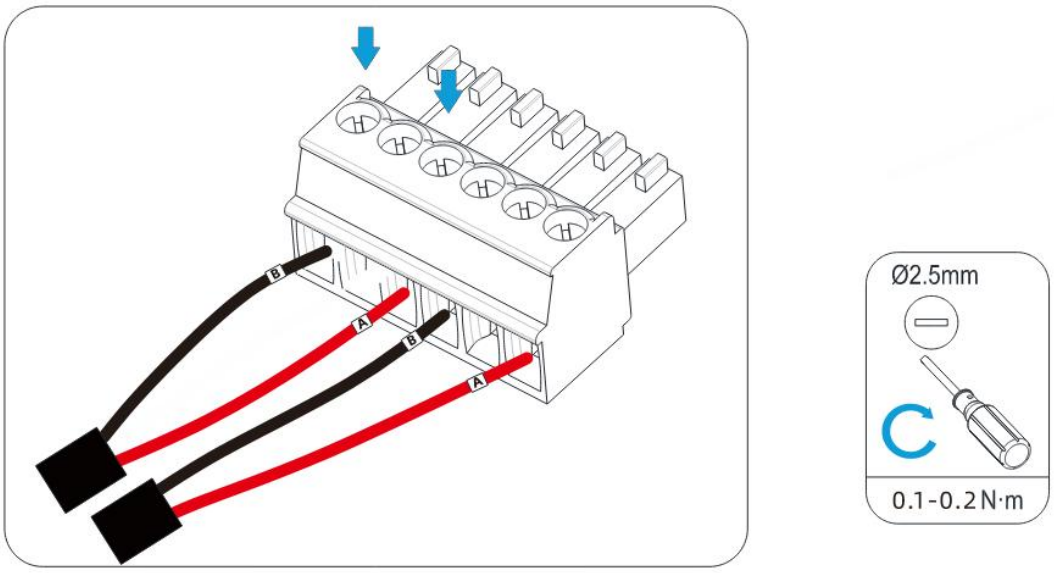


Figure 11 GroHomeManager-X Installs the CT end

### 2.1.5 RS485 end installation

When installing the RS485 port, it is recommended to use 28–16 AWG cables. Peel off the insulation layer of the wire by about 7–8mm, insert the exposed wire end into the corresponding crimping terminal, ensure good contact, and then tighten and fix it. When using RS485 for connection, it is recommended to use a twisted pair shielded wire for connection. The shielding layer of the twisted-pair shielded wire is connected to the PE end of the distribution box.



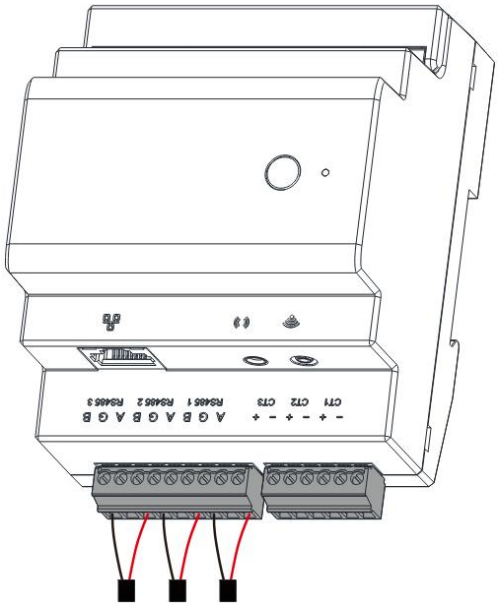
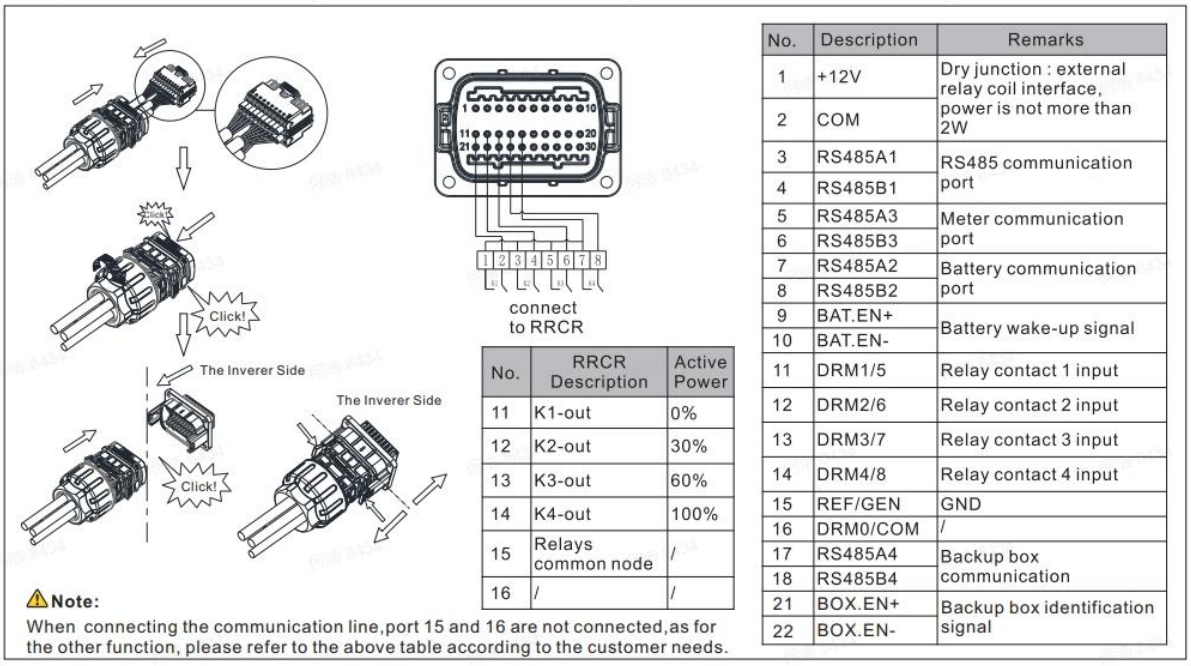


Figure 12 GroHomeManager-X Install the RS485 port

**RS485 wiring at the photovoltaic equipment end**

1.MID/MOD-XH

When the MID/MOD-XH model is connected via RS485, select RS485A1 at port 3 and RS485B1 at port 4 at the terminal, corresponding to the A and B signals of the RS485 port of the GroHomeManager-X device.The shielding layer of the RS485 connection line is connected to the ground of the distribution box. If RF connection is used, this step of wiring is not required.




| No. | RRCR Description | Active Power |
|---|---|---|
| 11 | K1-out | 0% |
| 12 | K2-out | 30% |
| 13 | K3-out | 60% |
| 14 | K4-out | 100% |
| 15 | Relays common node | / |
| 16 | / | / |

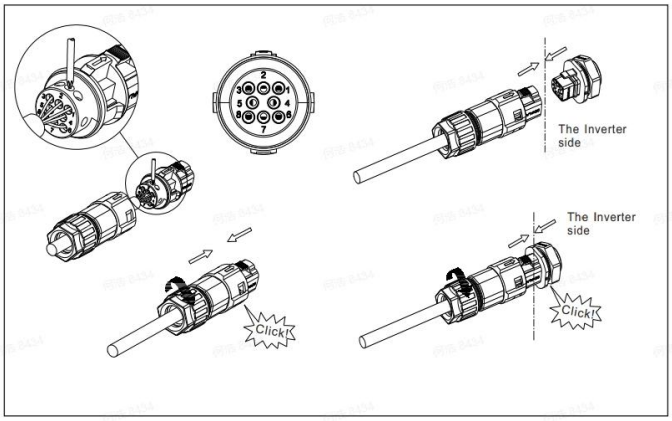
| No. | Description | Remarks |
|---|---|---|
| 1 | +12V | Dry junction : external relay coil interface, power is not more than 2W |
| 2 | COM | |
| 3 | RS485A1 | RS485 communication port |
| 4 | RS485B1 | |
| 5 | RS485A3 | Meter communication port |
| 6 | RS485B3 | |
| 7 | RS485A2 | Battery communication port |
| 8 | RS485B2 | |
| 9 | BAT.EN+ | Battery wake-up signal |
| 10 | BAT.EN- | |
| 11 | DRM1/5 | Relay contact 1 input |
| 12 | DRM2/6 | Relay contact 2 input |
| 13 | DRM3/7 | Relay contact 3 input |
| 14 | DRM4/8 | Relay contact 4 input |
| 15 | REF/GEN | GND |
| 16 | DRM0/COM | / |
| 17 | RS485A4 | Backup box communication |
| 18 | RS485B4 | |
| 21 | BOX.EN+ | Backup box identification signal |
| 22 | BOX.EN- | |

⚠Note:
When connecting the communication line,port 15 and 16 are not connected,as for the other function, please refer to the above table according to the customer needs.

Figure 13 MID/MOD-XH RS485 wiring diagram

2.MIN-XH

When the MIN-XH model is connected via RS485, select RS485A2 at port 3 and RS485B2 at port 4 at the terminal, corresponding to the A and B signals of the RS485 port of the GroHomeManager-X device.The shielding layer of the RS485 connection line is connected to the ground of the distribution box. If RF connection is used, this step of wiring is not required.



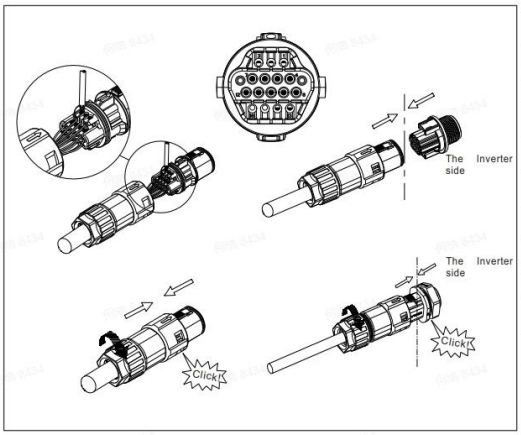

SYS COM Port Pin Definitions

| NO | Definition |
|---|---|
| 1 | Enable-: Connect BDC enable signal port negative |
| 2 | Enable+: Connect BDC enable signal port positive |
| 3 | RS485A2:Connect Min ShineBus or Third party monitoring equipment |
| 4 | RS485B2:Connect Min ShineBus or Third party monitoring equipment |
| 5 | RS485A1:Signal for meter |
| 6 | RS485B1:Signal for meter |
| 7 | BAT-B: Connect BDC communication RS485B or CANL |
| 8 | BAT-A: Connect BDC communication RS485A or CANH |

Figure 14 MIN-XH RS485 wiring diagram

3.MIN-XH2

When the MIN-XH2 model is connected via RS485, select RS485A2 at port 3 and RS485B2 at port 4 at the terminal, corresponding to the A and B signals of the RS485 port of the GroHomeManager-X device.The shielding layer of the RS485 connection line is connected to the ground of the distribution box. If RF connection is used, this step of wiring is not required.




⚠ Notice:
The ratio of connected CT must be 100A/40mA

SYS COM Port Pin Definitions

| No | Definition |
|---|---|
| 1 | Enable-: Connect the BAT enable signal port negative |
| 2 | Enable+: Connect the BAT enable signal port positive |
| 3 | RS485A2: Connect Min ShineBus or third party monitoring equipment |
| 4 | RS485B2: Connect Min ShineBus or third party monitoring equipment |
| 5 | RS485A1: Signal for meter or communication with SYN |
| 6 | RS485B1: Signal for meter or communication with SYN |
| 7 | BAT-B: Connect the BAT communication RS485B or CANL |
| 8 | BAT-A: Connect the BAT communication RS485A or CANH |
| 9 | RS485A3: VPP protocol communication port |
| 10 | RS485B3: VPP protocol communication port |
| 11 | SYN.EN+: SYN identification signal |
| 12 | SYN.EN-: SYN identification signal |
| 13 | +12V: Connect the SYN |
| 14 | GND : Connect the SYN |
| 15 | CT signal-out(Black wire) |
| 16 | CT signal-in(White wire) |

Figure 15 MIN-XH2 RS485 wiring diagram

4.SPH 4-10KTL3 BH-UP

When the SPH 4-10KTL3 BH-UP model is connected via RS485, the RI45 port will be inserted into the 485–1 interface at the device end. Select RS485B for Line 1 and RS485A for Line 5 of the network cable, corresponding respectively to the B signal and A signal of the RS485 interface of the Grohommanager–x device. If RF connection is used, this step of wiring is not required.

| No. | CAN | METER | COM | DRMS | 485-1/485-2 | 485-3 |
|---|---|---|---|---|---|---|
| 1 | / | RS485B | DRY+ | DRM1/5 | RS485B | RS485B |
| 2 | / | GND | / | DRM2/6 | GND | GND |
| 3 | / | / | DRY- | DRM3/7 | / | / |
| 4 | CANH | / | / | DRM4/8 | / | / |
| 5 | CANL | RS485A | / | REF | RS485A | RS485A |
| 6 | GND | / | / | COM | / | / |
| 7 | / | / | / | / | / | / |
| 8 | WAKEUP | / | / | / | / | / |

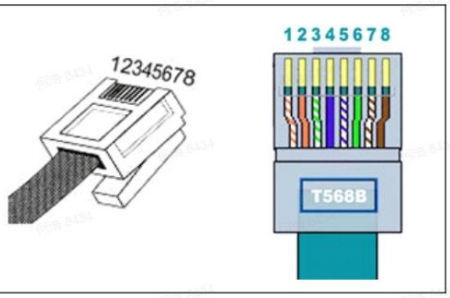



Figure 16 SPH 4-10KTL3 BH-UP RS485 wiring diagram

## 2.2 ShineRFStick-X2 Installation

1.Rotate and twist the USB interface cover of the photovoltaic device counterclockwise.

2.Rotate the lock at the top of the collector to ensure that the triangle mark is on the front and centered.

3.Connect the interface of the collector to the USB interface of the photovoltaic device, ensure that the triangle mark is on the front, press the lock and rotate clockwise until the lock is tightened.

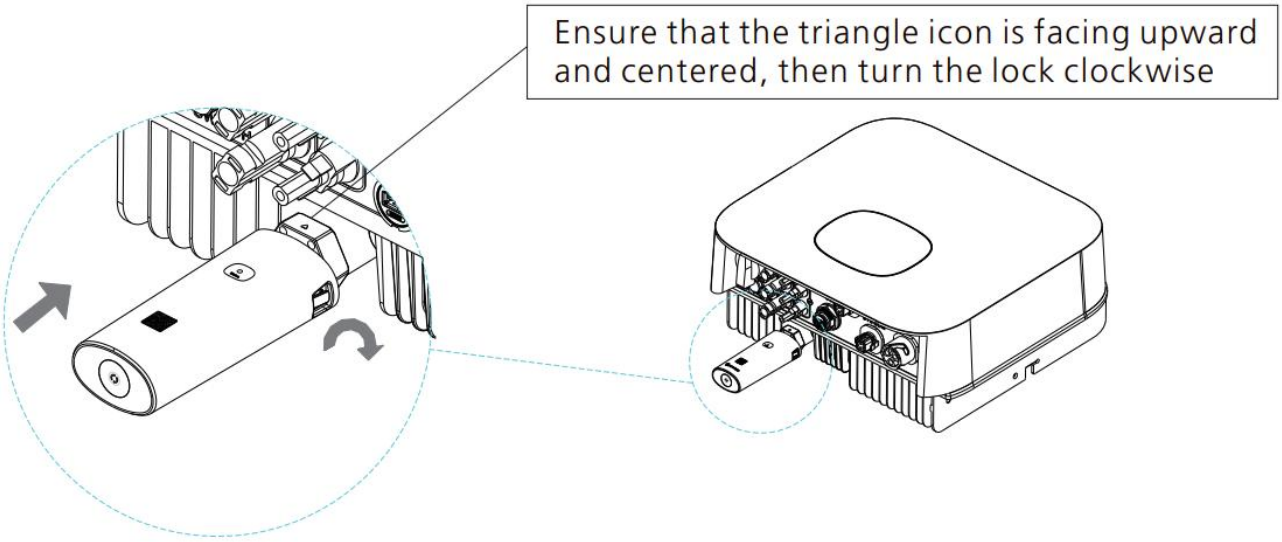



Figure 17 ShineRFStick-X2 slave mounting

| | |
|---|---|
| CAUTION | 1.This product can only be powered by the Growatt inverter USB interface. Do not connect other USB interfaces or adapters.<br>2.It is prohibited to use this device in places where wireless devices are not allowed.<br>3.Do not attempt to repair or modify the equipment. If you need service, please contact us.<br>4.When the inverter error panel displays low insulation impedance, the inverter casing may have a problem with grounding. Please do not perform the operation of plugging and unplugging the collector at this time to avoid danger. |

## 2.3 System wiring

Users can choose the corresponding wiring method according to their own needs, and GroHomeManager-X can automatically recognize the working mode through the wiring method.

### 2.3.1 Single-phase grid-connected system

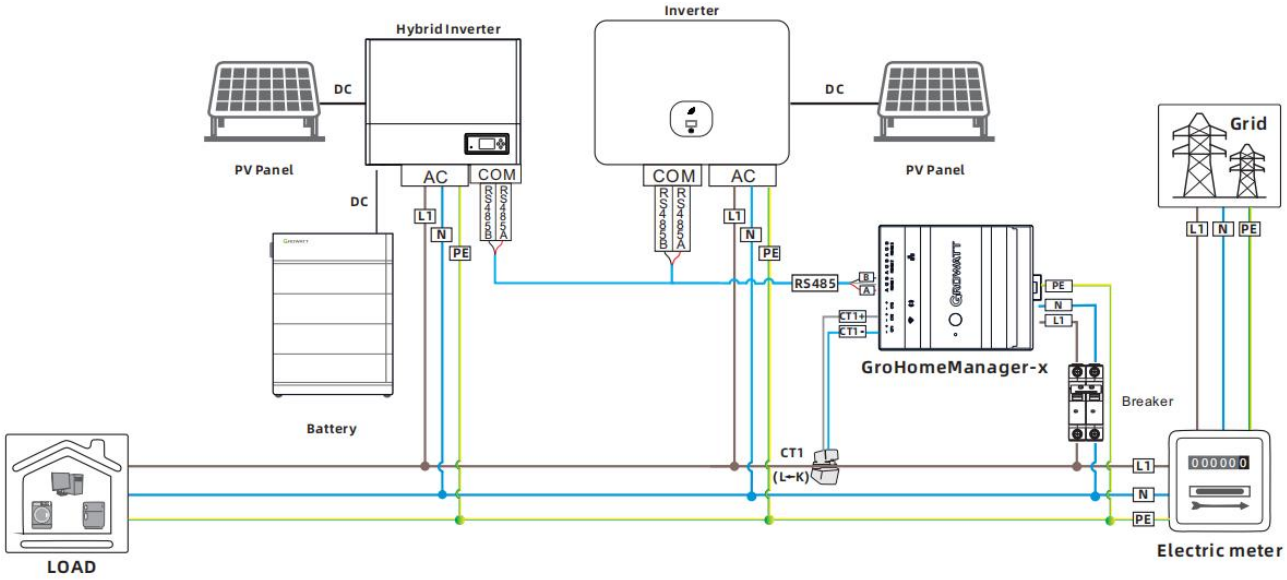



Figure 18 Single-phase grid-connected system

### 2.3.2 Single-phase micro-inverse grid-connected anti-backflow system

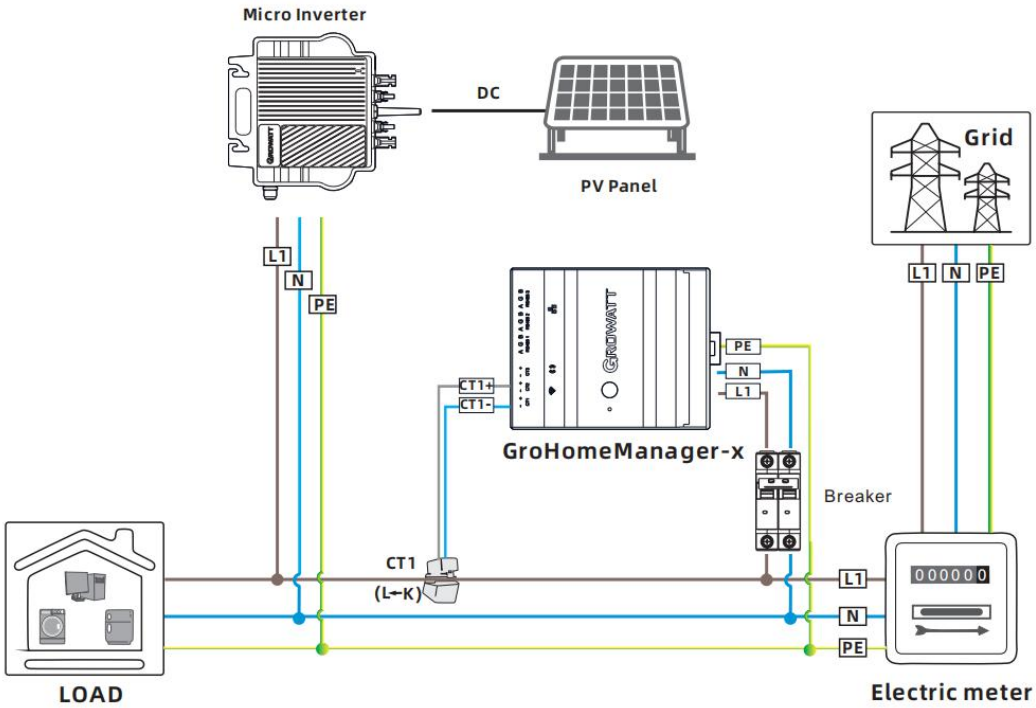



Figure 19 Single-phase micro-inverse grid-connected anti-backflow system

### 2.3.3 Single-phase HEMS system

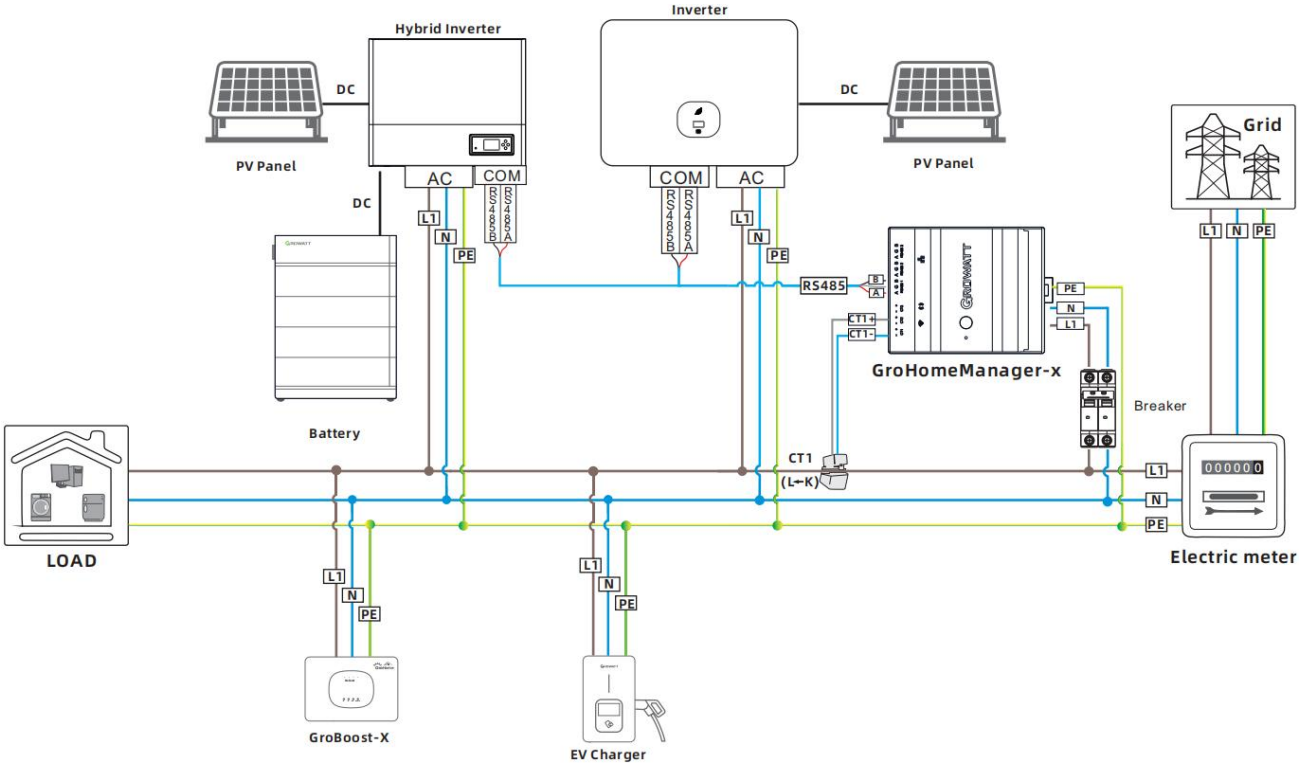



Figure 20 Single-phase HEMS system

| Wiring system name | GroHomeManager-X side | Grid side | Photovoltaic equipment side |
|---|---|---|---|
| Single-phase system | L1 | L1 | L1 |
| | L2 | / | / |
| | L3 | / | / |
| | N | N | N |
| | PE | PE | PE |
| | CT1- | L1<br>K(Power grid)->L(Load) | / |
| | CT1+ | | / |
| | CT2-/CT3- | / | / |
| | CT2+/CT3+ | / | / |
| | RS485-1/2/3-A | / | A |
| | RS485-1/2/3-G | / | / |
| | RS485-1/2/3-B | / | B |

Note:

1. Optional wired RS485 and wireless RF.

2.Just insert the network port quick CT into the corresponding network port.

3./ indicates no wiring required.

Table 12 Single-phase system wiring

### 2.3.4 Split phase inverse system

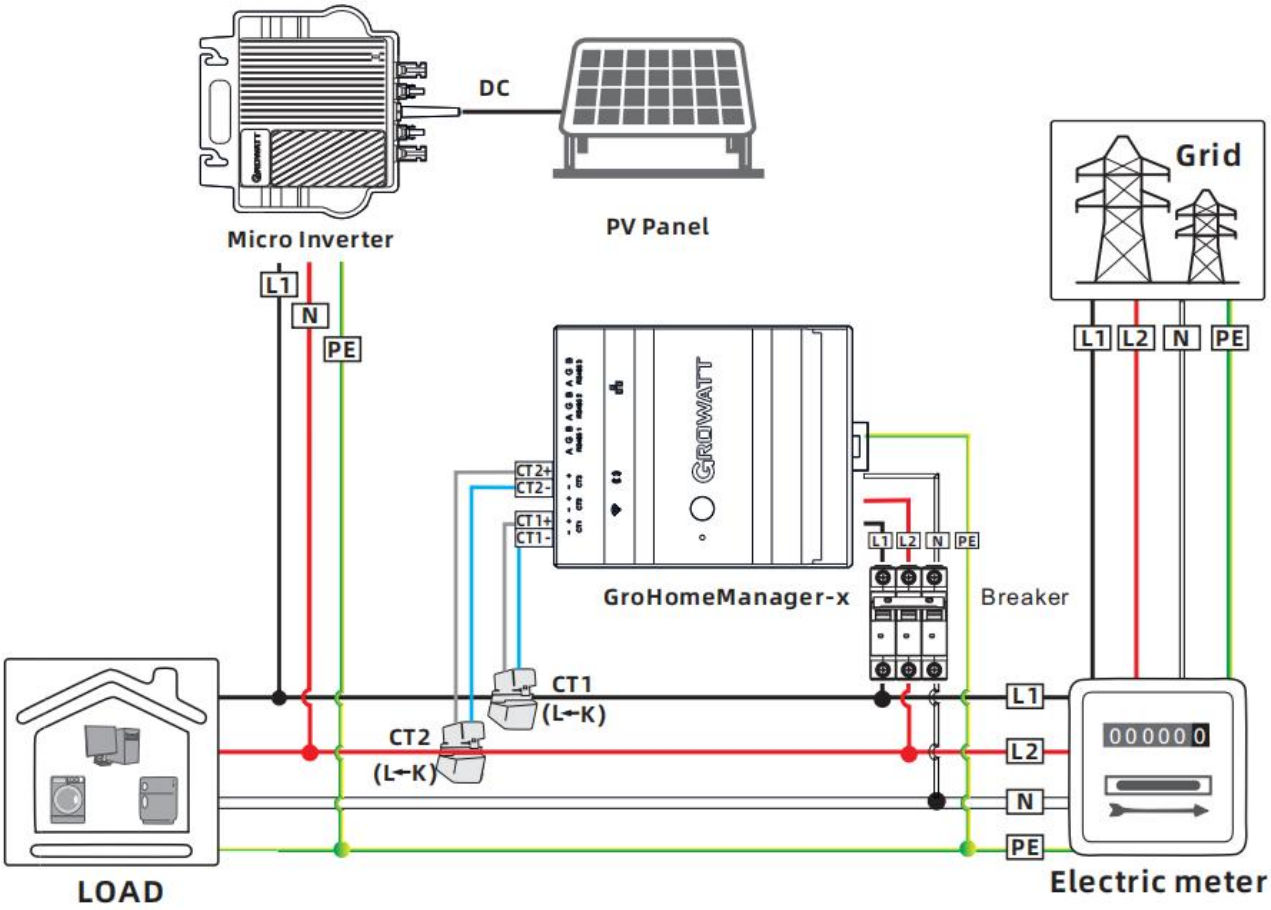



Figure 21 Split phase inverse system

| Wiring system name | GroHomeManager-X side | Grid side | Micro-reverse side |
|---|---|---|---|
| Split phase inverse system | L1 | L1 | L1 |
| | L2 | L2 | N |
| | L3 | / | / |
| | N | N | / |
| | PE | PE | PE |
| | CT1- | L1 K(Power grid)->L(Load) | / |
| | CT1+ | | / |
| | CT2- | L2 K(Power grid)->L(Load) | / |
| | CT2+ | | / |

| | | | |
|---|---|---|---|
| | CT3- | / | / |
| | CT3+ | / | / |
| | RS485-1/2/3-A | / | / |
| | RS485-1/2/3-G | / | / |
| | RS485-1/2/3-B | / | / |

Table 13 Split-phase micro-inverse system wiring

### 2.3.5 Splitting system

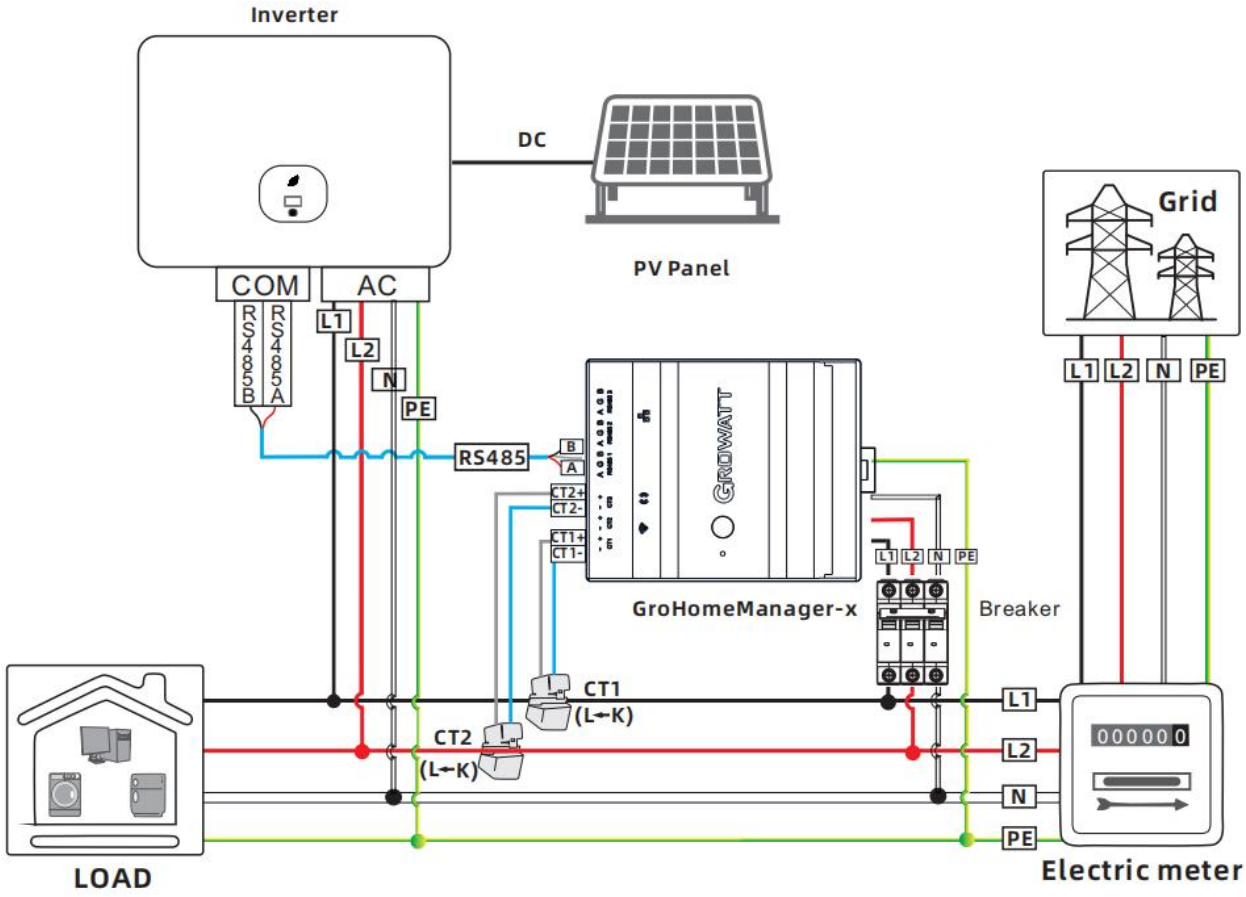



Figure 22 Splitting system

| Wiring system name | GroHomeManager-X side | Grid side | Photovoltaic equipment side |
|---|---|---|---|
| Splitting system | L1 | L1 | L1 |
| | L2 | L2 | L2 |
| | L3 | / | / |
| | N | N | N |
| | PE | PE | PE |
| | CT1− | L1 K(Power grid)−>L(Load) | / |
| | CT1+ | | / |
| | CT2− | L2 K(Power grid)−>L(Load) | / |
| | CT2+ | | / |
| | CT3− | / | / |
| | CT3+ | / | / |
| | RS485−1/2/3−A | / | A |
| | RS485−1/2/3−G | / | / |
| | RS485−1/2/3−B | / | B |

Table 14 Split−phase system wiring

### 2.3.6 Three-phase three-wire system

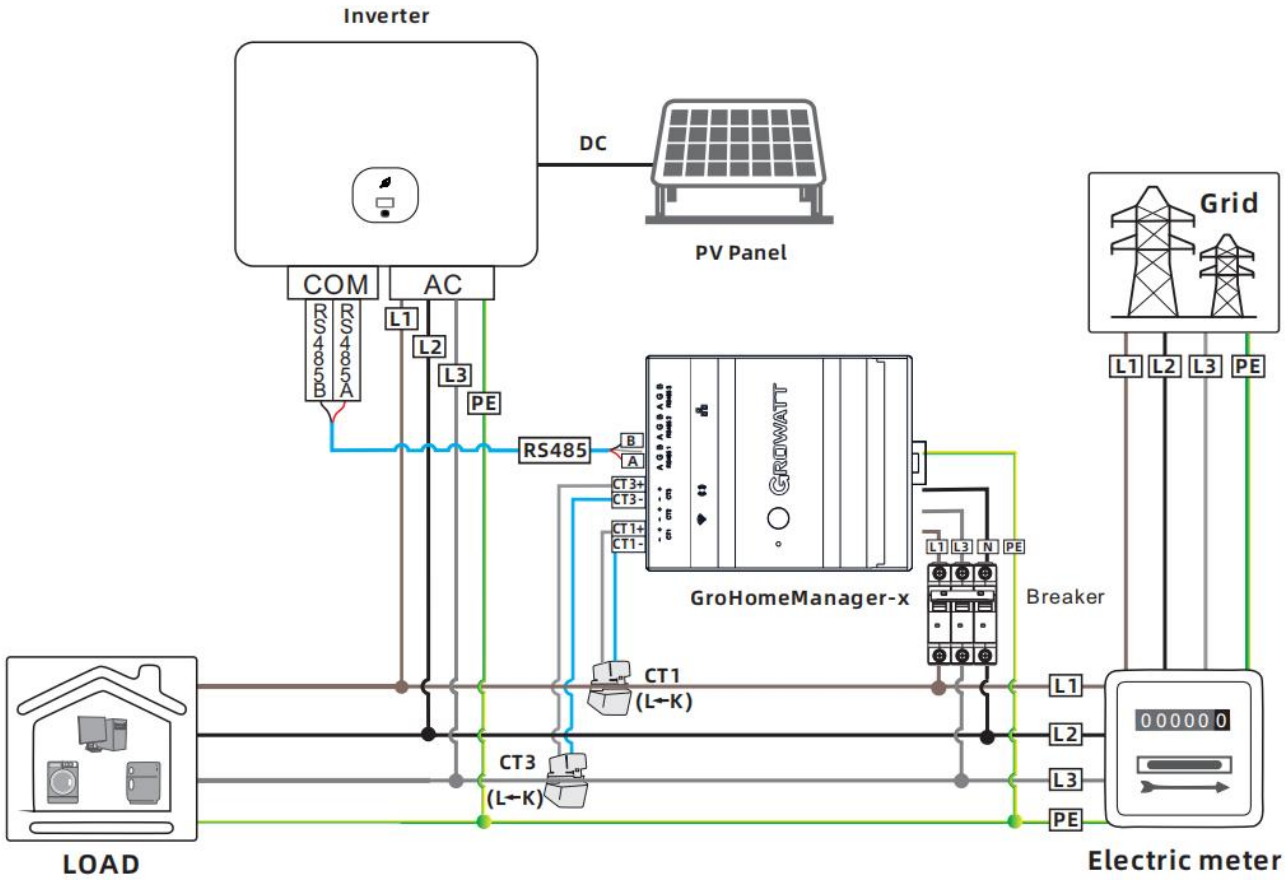



Figure 23 Three-phase three-wire system

| Wiring system name | GroHomeManager-X side | Grid side | Photovoltaic equipment side |
|---|---|---|---|
| Three-phase three-wire system | L1 | L1 | L1 |
| | L2 | / | / |
| | L3 | L3 | L3 |
| | N | L2 | L2 |
| | PE | PE | PE |
| | CT1- | L1 K(Power grid)->L(Load) | / |
| | CT1+ | | / |
| | CT2- | / | / |

| | | | |
|---|---|---|---|
| | CT2+ | / | / |
| | CT3– | L3 K(Power grid)–>L(Load) | / |
| | CT3+ | | / |
| | RS485–1/2/3–A | / | A |
| | RS485–1/2/3–G | / | / |
| | RS485–1/2/3–B | / | B |

Table 15 Three–phase three–wire system cables

### 2.3.7 Three-phase four-wire system

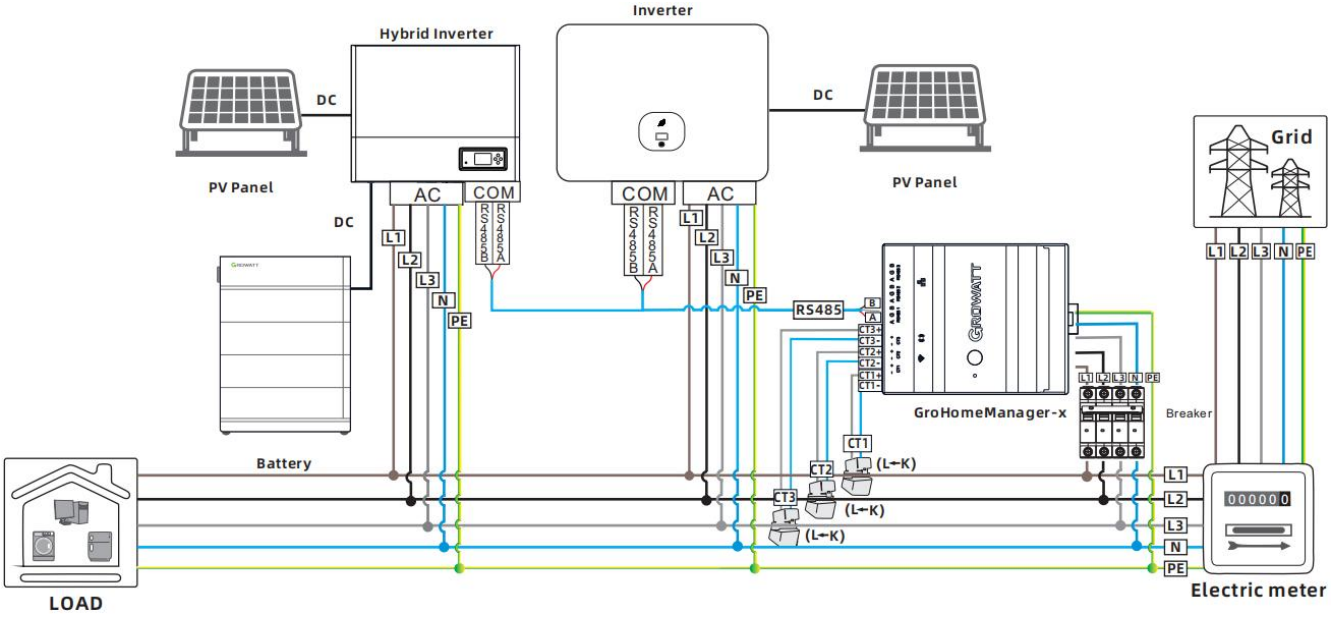



Figure 24 Three–phase four–wire system

### 2.3.8 Three-phase four-wire HEMS system

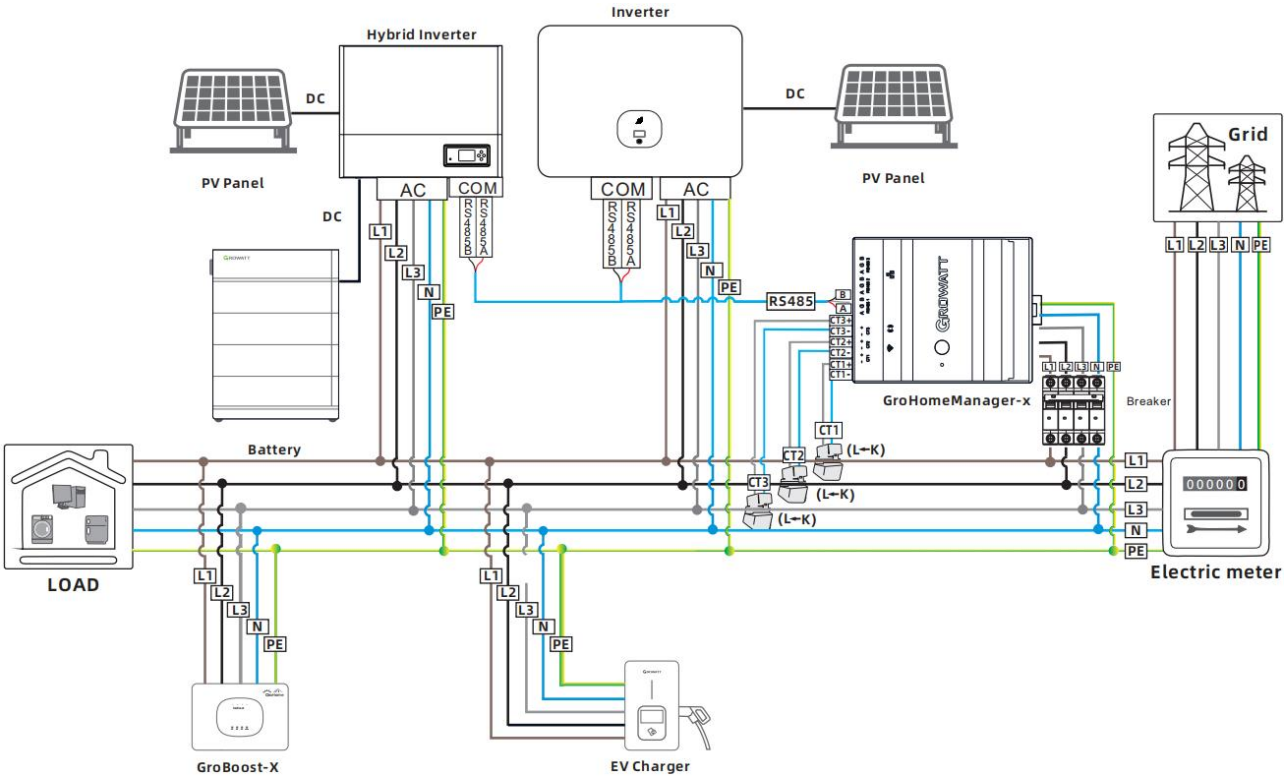



Figure 25 Three-phase four-wire HEMS system

| Wiring system name | GroHomeManager-X side | Grid side | Photovoltaic equipment side |
|---|---|---|---|
| Three-phase four-wire system | L1 | L1 | L1 |
| | L2 | L2 | L2 |
| | L3 | L3 | L3 |
| | N | N | N |
| | PE | PE | PE |
| | CT1- | L1 K(Power grid)->L(Load) | / |
| | CT1+ | | / |
| | CT2- | L2 K(Power grid)->L(Load) | / |
| | CT2+ | | / |
| | CT3- | L3 | / |

| | | | |
|---|---|---|---|
| | CT3+ | K(Power grid)–>L(Load) | / |
| | RS485–1/2/3-A | / | A |
| | RS485-1/2/3-G | / | / |
| | RS485-1/2/3-B | / | B |

Table 16 Three-phase four-wire system cables

| | |
|---|---|
| NOTICE | 1.It is recommended to use single-strand wires for wiring. If multiple-strand wires are used for wiring, matching crimping terminals must be used.<br>2.Before installing the equipment, the voltage input and power supply should be isolated. The network port quick CT should be inserted into the corresponding network port terminal first, and then the wiring installation should be carried out to avoid the high-voltage signal generated by the open circuit on the secondary side of the current transformer, which may cause serious damage.<br>3.Wired RS485 and wireless RF can be optionally installed.<br>4. Just insert the network port quick CT into the corresponding network port.<br>5.The power supply of the power supply system shall be in good contact with the earth, and the position of the air switch shall be confirmed so that the power supply can be cut off in time in case of an accident.<br>6.After installation, check that GroHomeManager-X and photovoltaic equipment are properly grounded. |

# 3 GroHomeManager-X configuration

## 3.1 GroHomeManager-X Configuration

1.Scan the QR code below to download ShinePhone, or you can searchfor ShinePhone in Apple Store or Google Play, then download and install it.

2.Once the APP is installed, you can configure the datalogger and add the PV plant as prompted. For details about configuring the datalogger,refer to GroHomeManager-X Configuration Guide. Scan the QR code below to download the documentation.

Figure 26 ShinePhone APP

Figure 27 GroHomeManager-X Configuration Guide

# 4 Contact

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For local customer support, please visit

https://en.growatt.com/support/contact

Growatt New Energy