GROWATT

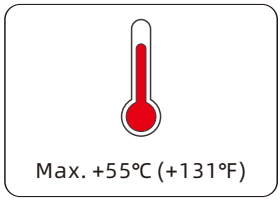


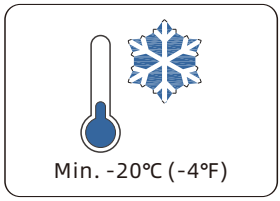

# MINA 3-10kTL-HU

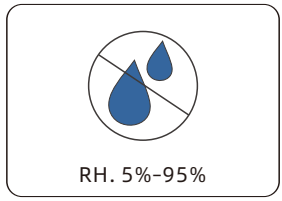
## Quick Guide

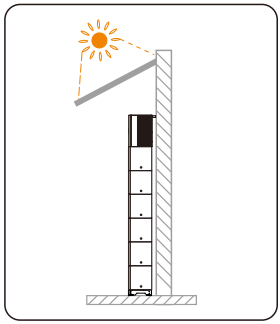
# 1. Installation requirements

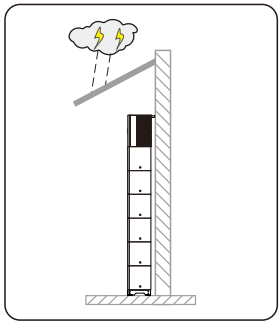
## 1-1 Installation environment requirements

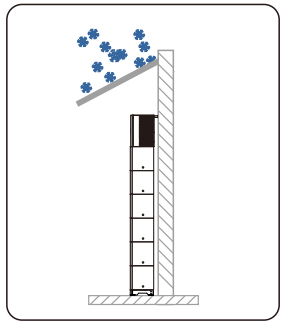


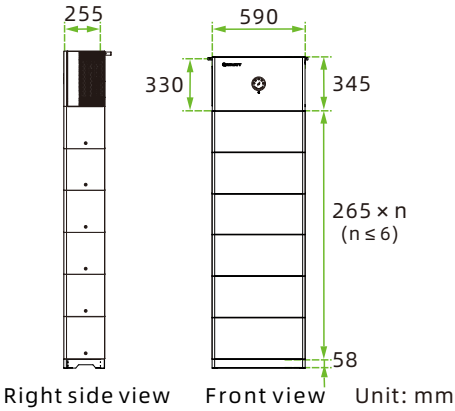




**NOTE:**

- If the equipment is installed outdoors, avoid direct sunlight, rain and snow.
- If the equipment is installed indoors, please ensure proper ventilation.
- Keep the equipment far away from heat sources and the flammable, explosive materials.

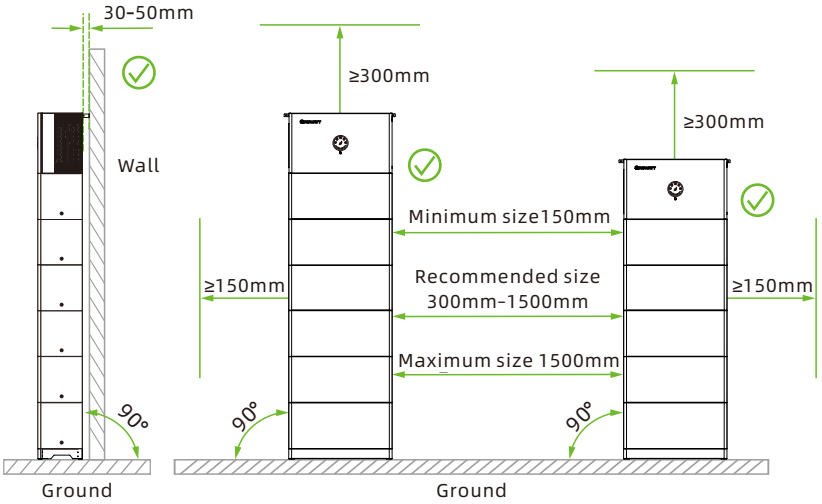
## 1-2 Dimensions



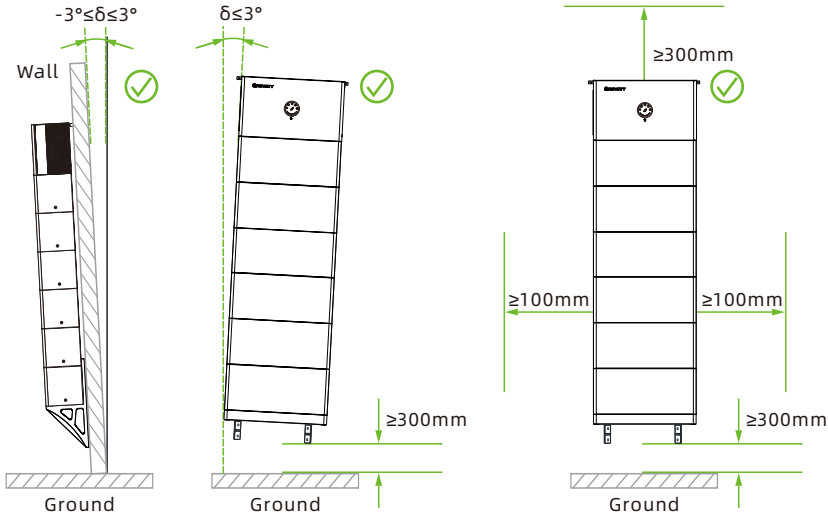

| Number of battery(pcs) | Height (mm) |
|---|---|
| 1 | 668 |
| 2 | 933 |
| 3 | 1198 |
| 4 | 1463 |
| 5 | 1728 |
| 6 | 1993 |

## 1-3 Installation location requirements

### Floor mounting




### Wall mounting




**⚠ NOTE:**

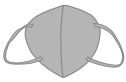
A single column can be configured with up to seven modules (1 inverter + 6 batteries).

## 2. Installation

### 2-1 Installation tools

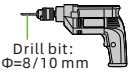

Safety gloves


Goggles


Mask


Safety shoes

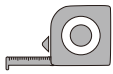

Helmet



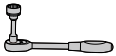
Hammer drill

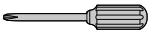

Hammer

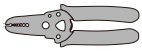

Level

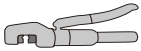

Measuring tape

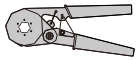

Marker

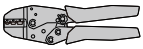

Socket Wrench


Cross-head screwdriver


Wire strippers


Hydraulic pliers


Tube terminal crimping tool


PV terminal crimping tool


Multimeter


RJ45 crimping tool

### 2-2 Packing list

**Inverter**


Inverter × 1


Base × 1


Decorative cover × 1


M4×16 screw × 2


Anti-tipping plate × 2


M6 expansion bolt × 2


1mm shim × 4


2mm shim × 4



Quick guide × 1



Warranty card × 1



Commissioning guide × 1



OT terminal × 1



M6×16 screw × 1



PV terminal core (+/-) × 3



PV terminal (+/-) × 3



Connector wrench × 1



Tubular terminal × 6



8-pin terminal × 1



10-pin terminal × 1



Allen wrench × 1



Network cable × 1

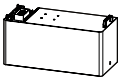


CT × 1



Datalogger × 1

**Battery**



Battery × 1




Warranty card × 1



M4×16 screw × 2

**Wall bracket (optional)**



Wall bracket × 1



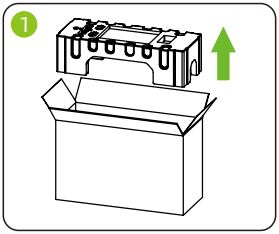
M8×80 expansion bolt × 8

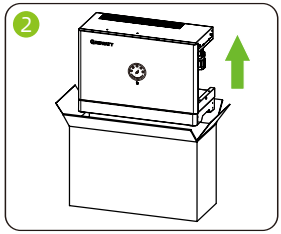


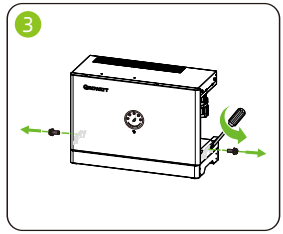
M6×20 screw × 4

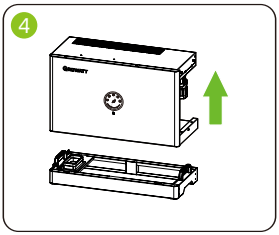
## 2-3 Preparation work before installation

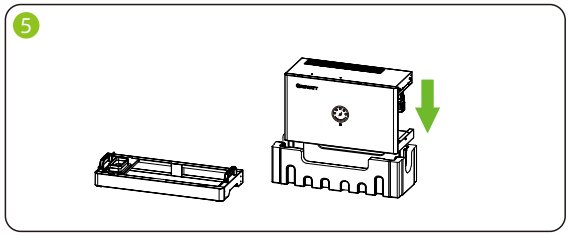
Before shipment, the inverter and base are pre-installed together. The base must first be removed. Follow these steps:



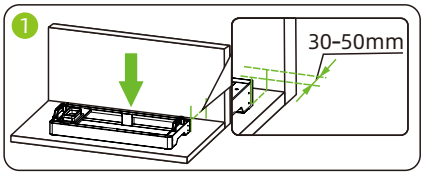



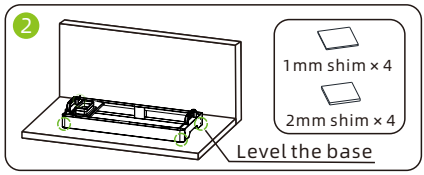



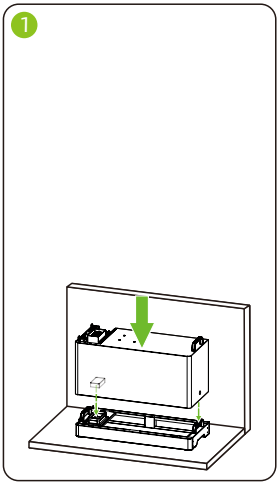
## 2-4 Floor-mounted installation

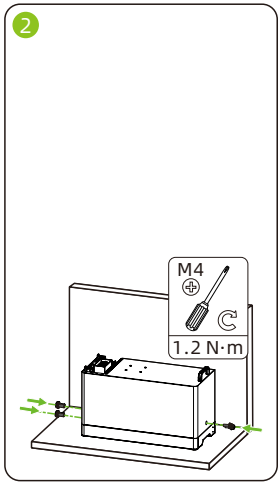
### Mounting base

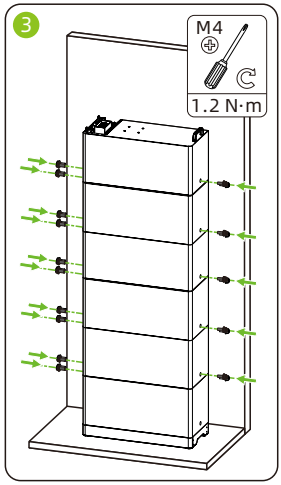


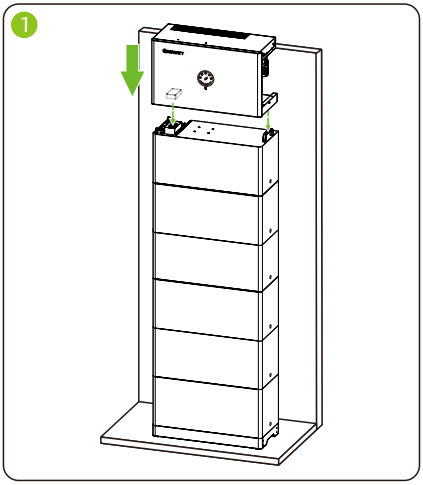

### Mounting battery

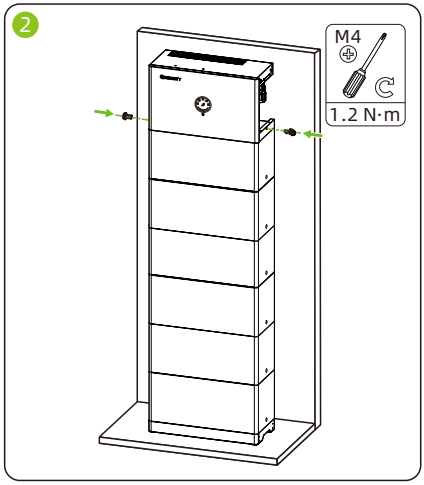


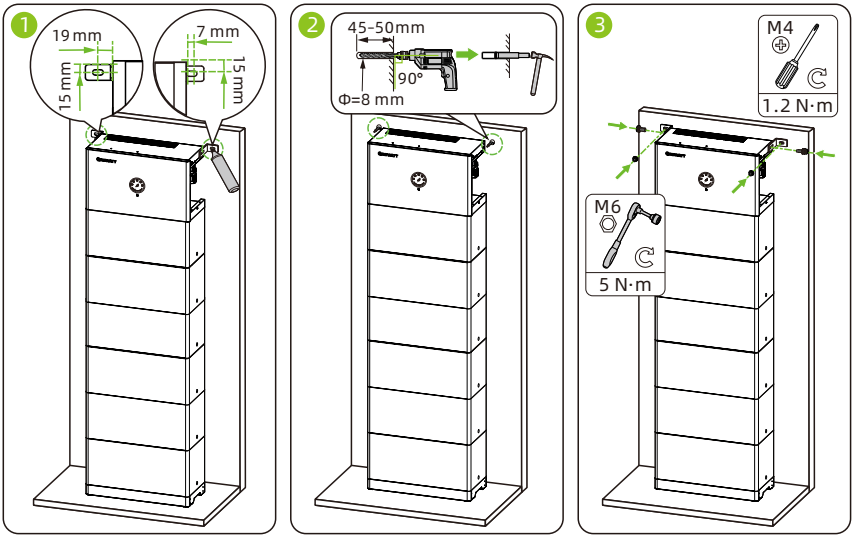




### Mounting inverter



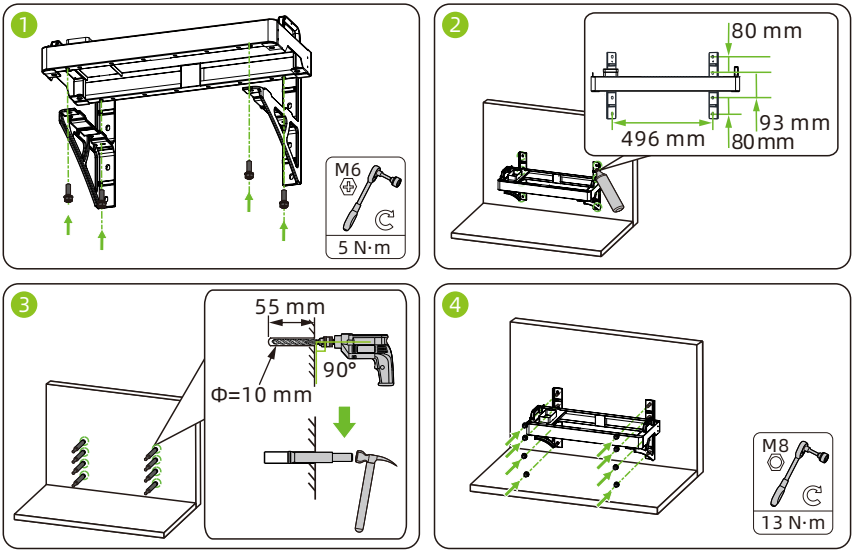



## Mounting Anti-tipping plates

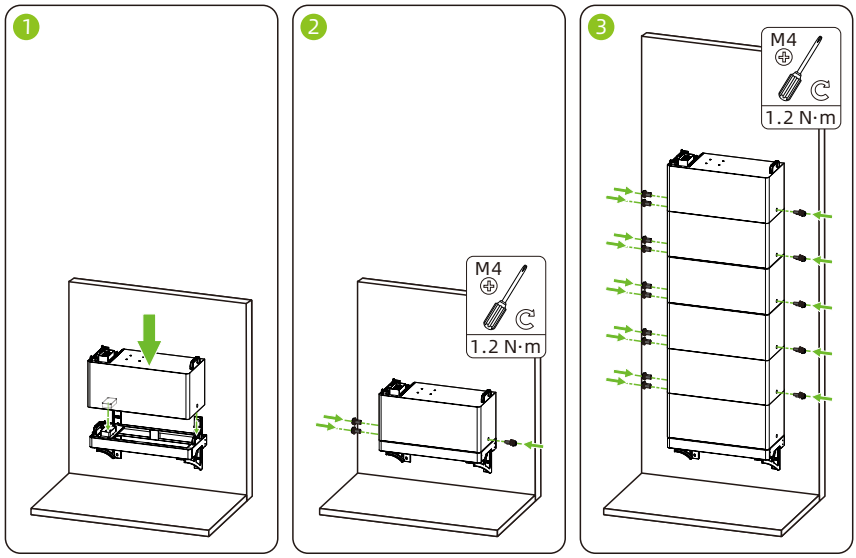



## 2-5 Wall-mounted installation

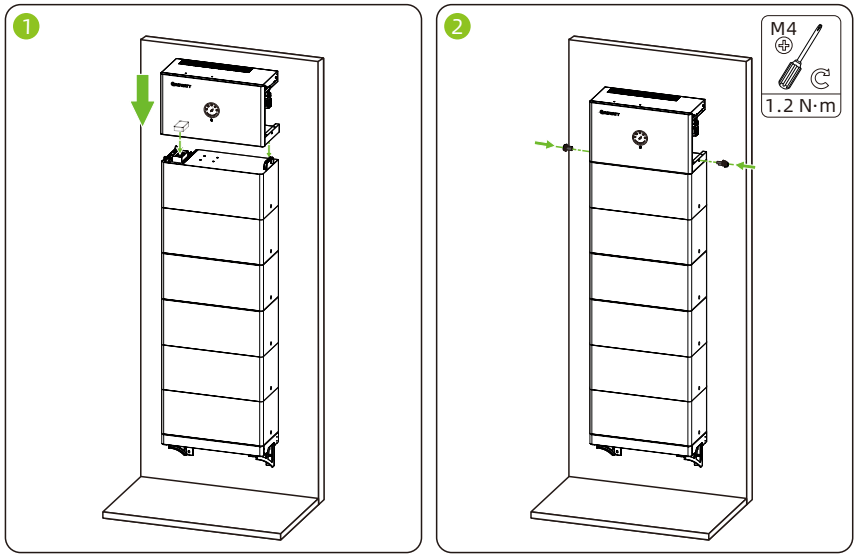
### Install the wall bracket



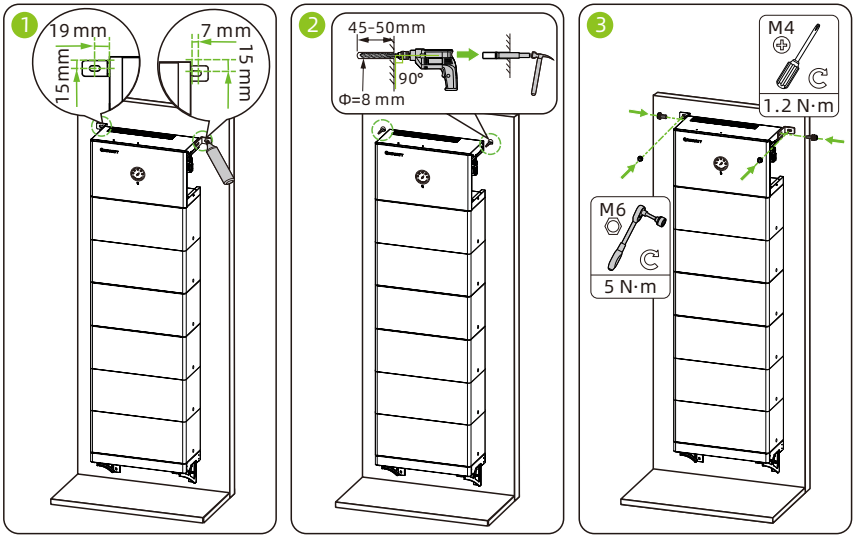
## Mounting battery



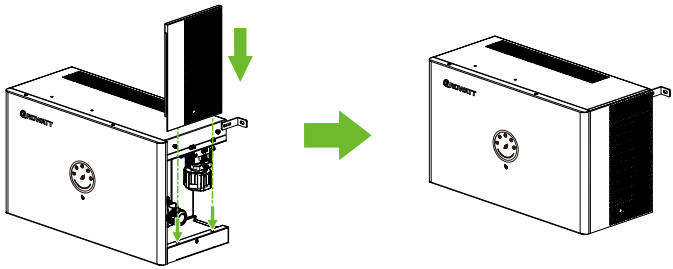

## Mounting inverter



## Mounting Anti-tipping plates




## 2-6 Protective cover installation



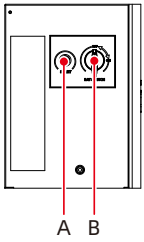
## 3. Electrical connection

### 3-1 Cable dimensions

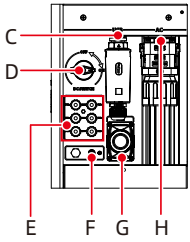
| No. | Cable | Recommended Specifications | | |
|---|---|---|---|---|
| | | MINA 3-4.6kTL-HU | MINA 5-8kTL-HU | MINA 10kTL-HU |
| 1 | Ground cable | 4-6 mm² | 6-10 mm² | 10-16 mm² |
| 2 | AC cable | | | |
| 3 | PV input cable | 4-6 mm² | | |
| 4 | Communication cable | 0.32-0.52 mm² | | |

### 3-2 Connection area and terminal introduction

**Inverter**




Left side view



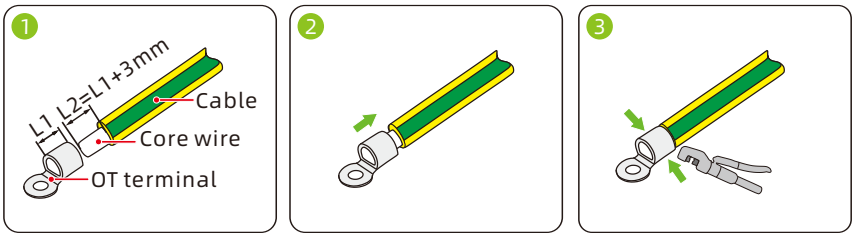

Right side view

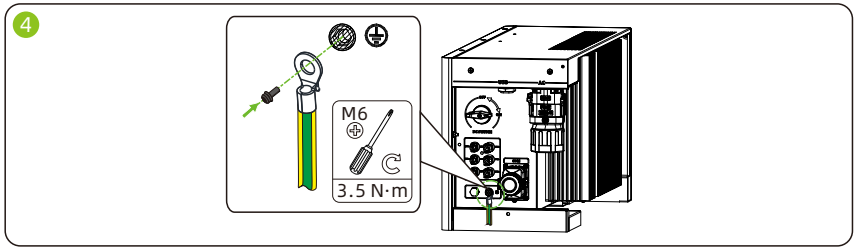
(A) Black start button (B) BAT switch (C) USB

(D) DC switch (E) PV connector (F) Safety grounding

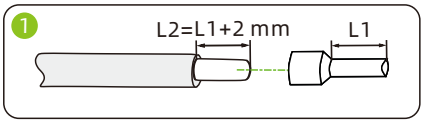
(G) AC connector (H) Communication connector

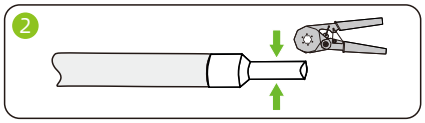
### 3-3 Safety grounding connection

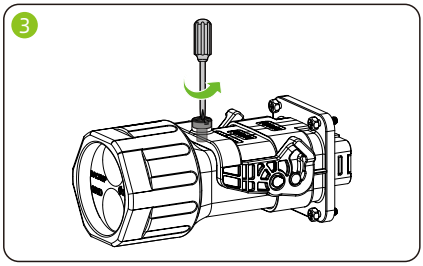


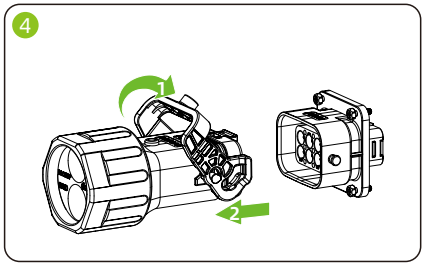


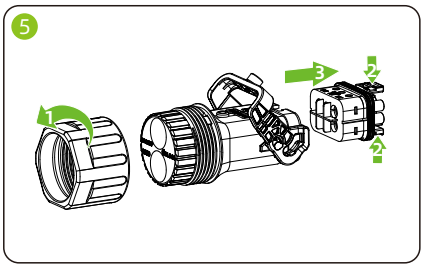

## 3-4 AC connection

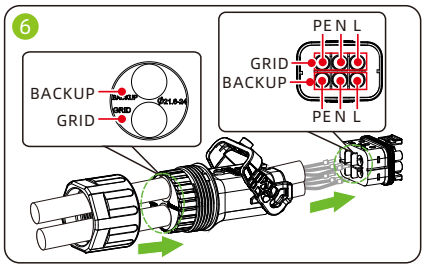


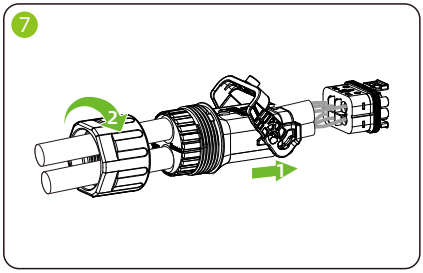



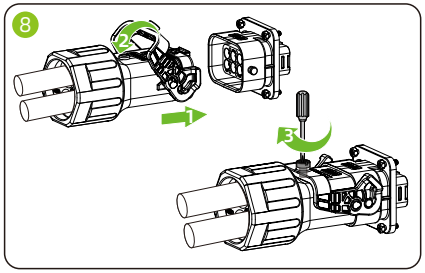



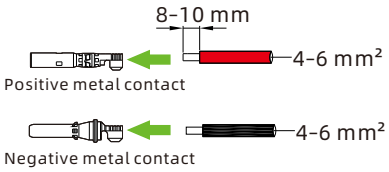



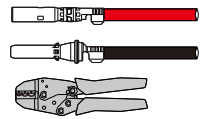
## 3-5 PV connection

### Install

1



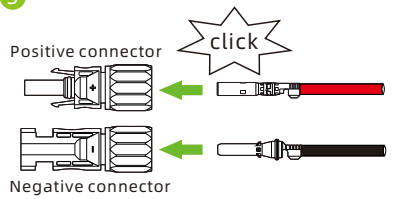

2



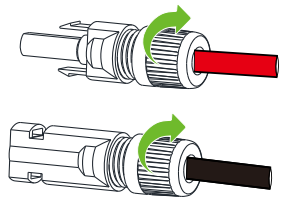
**⚠ NOTE:**

Ensure that the cable cannot be pulled out after being crimped.

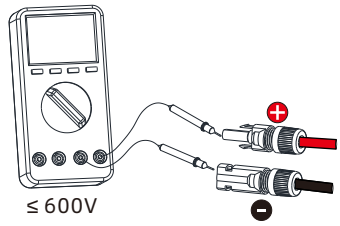
3



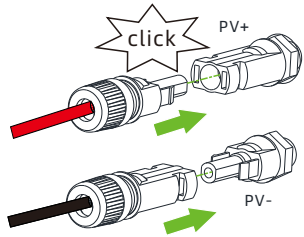

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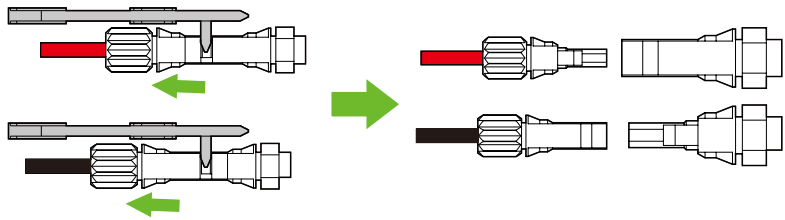
5




6

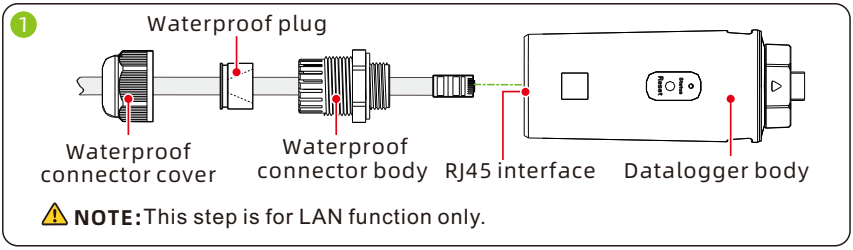



### Remove

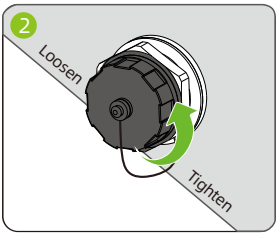


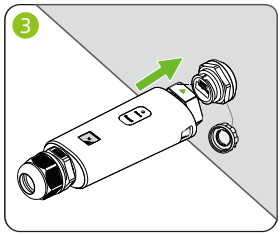
## 3-6 Datalogger connection

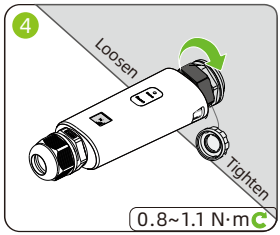
### Install



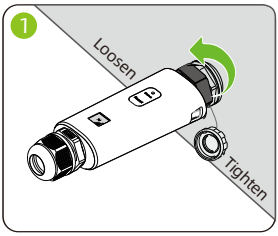

⚠ **NOTE:** This step is for LAN function only.

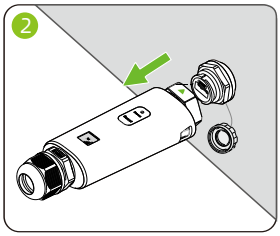


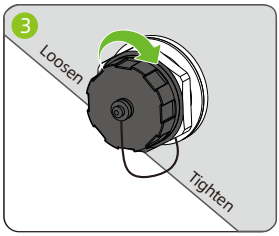




### Remove

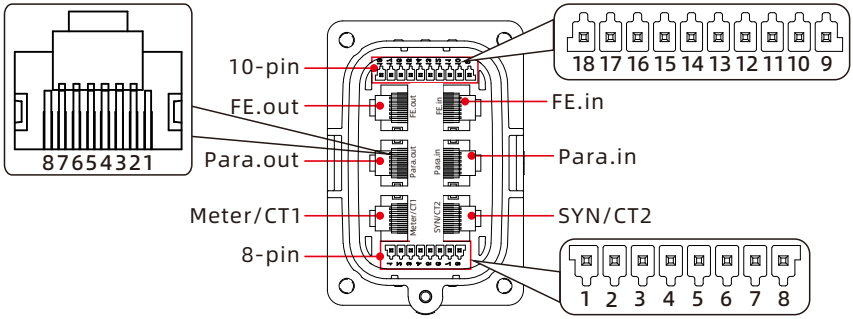


## 3-7 Communication connection

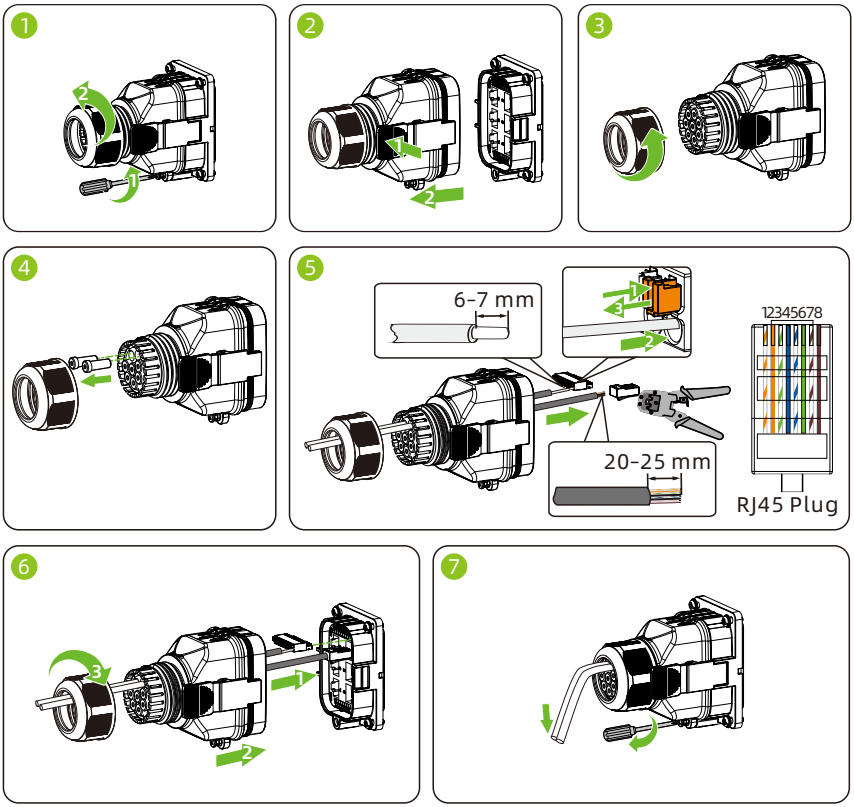
### Terminal Definition



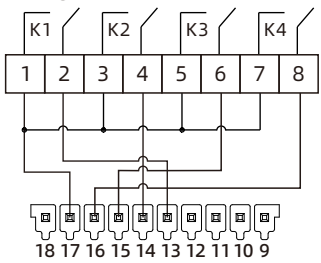

| Port | PIN | Signal | Function |
|---|---|---|---|
| 10-pin terminal | 9 | 12V.Para | Inverter parallel |
| | 10 | GND.S | |
| | 11 | DRY12V.S | Dry contact |
| | 12 | DRY | |
| | 13 | DRM1/5 | RRCR connection |
| | 14 | DRM2/6 | |
| | 15 | DRM3/7 | |
| | 16 | DRM4/8 | |
| | 17 | REF | |
| | 18 | COM | |
| Para.out | 1 | Shinebus485A | External communication |
| | 2 | Shinebus485B | |
| | 3 | GND.S | GND |
| | 6 | NC | / |
| | 4 | SC_SYN_CANH | Inverter parallel |
| | 5 | SC_SYN_CANL | |
| | 7 | CANH_Parallel | |
| | 8 | CANL_Parallel | |

| Port | PIN | Signal | Function |
|---|---|---|---|
| Para.in | 1 | Shinebus485A | External communication |
| | 2 | Shinebus485B | |
| | 3 | GND.S | GND |
| | 6 | NC | / |
| | 4 | SC_SYN_CANH | Inverter parallel |
| | 5 | SC_SYN_CANL | |
| | 7 | CANH_Parallel | |
| | 8 | CANL_Parallel | |
| Meter/CT1 | 1/4 | Meter485B | Meter communication |
| | 2/6 | GND.S | |
| | 3 | 5V.S | |
| | 5 | Meter485A | |
| | 7 | IGRID.LoadP1 | Grid current sampling |
| | 8 | IGRID.LoadN1 | |
| SYN/CT2 | 1 | IO+ | SYN identification |
| | 2 | IO- | |
| | 4 | Meter485A | SYN communication |
| | 5 | Meter485B | |
| | 3 | Shinebus485A | External communication |
| | 6 | Shinebus485B | |
| | 7 | IGRID.LoadP2 | Third-party inverter current sampling |
| | 8 | IGRID.LoadN2 | |
| 8-pin terminal | 1/2/3/4 | NC | / |
| | 5 | VPP485A | VPP RS485 communication |
| | 6 | VPP485B | |
| | 7 | IGRID.LoadP2 | Third-party inverter current sampling |
| | 8 | IGRID.LoadN2 | |

## Install




## RRCR connection



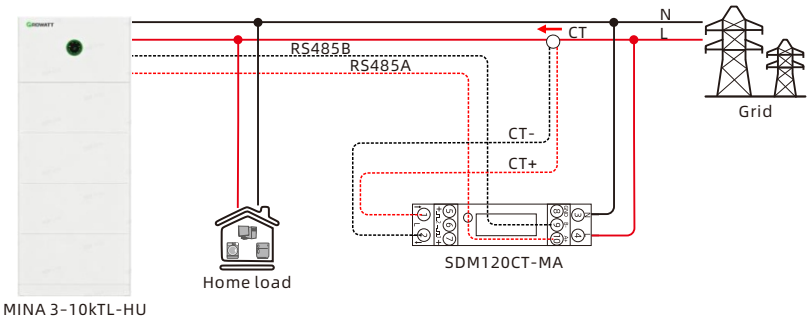

| PIN | Description | Connect to RRCR |
|---|---|---|
| 13 | Relay contact 1 input | K1 - Relay output |
| 14 | Relay contact 2 input | K2 - Relay output |
| 15 | Relay contact 3 input | K3 - Relay output |
| 16 | Relay contact 4 input | K4 - Relay output |
| 17 | GND | Relays common node |

The inverter is preconfigured to the following RRCR power levels. Active power control and reactive power control are enabled separately.

| PCI Connector (10pin terminal) | | | | Active power | Cos(ϕ) |
|---|---|---|---|---|---|
| Pin13 | Pin14 | Pin15 | Pin16 | | |
| Short circuit with Pin17 | | | | 0% | 1 |
| | Short circuit with Pin17 | | | 30% | 1 |
| | | Short circuit with Pin17 | | 60% | 1 |
| | | | Short circuit with Pin17 | 100% | 1 |

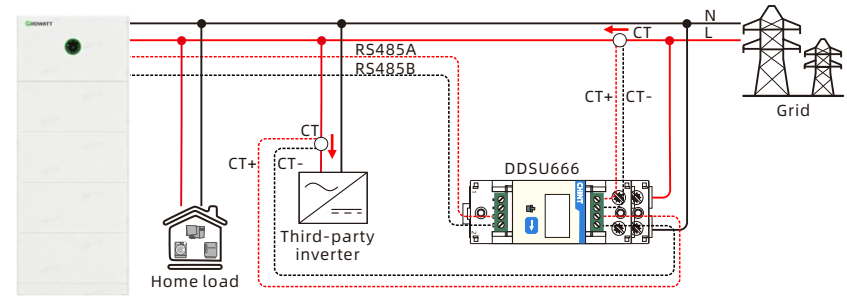
**RS485 connection**

- System wiring with Eastron meter (SDM120CT-MA: with one CT)




| Meter Pin | Description | Connection |
|---|---|---|
| 1 | CT+ | CT-white line |
| 2 | CT- | CT-black line |
| 3 | N | Grid-N |
| 4 | L | Grid-L |
| 9 | RS485B | METER/CT1 RJ45 port_pin 4 |
| 10 | RS485A | METER/CT1 RJ45 port_pin 5 |

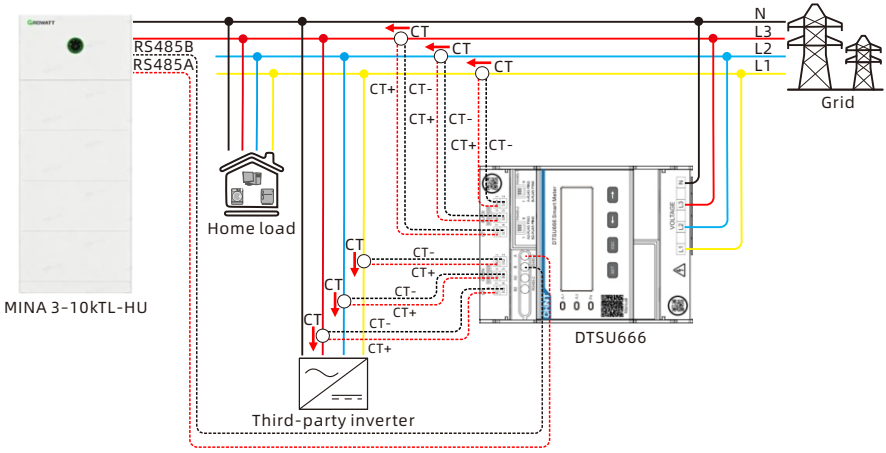
• System wiring with CHINT meter (DDSU666: with two CT)




MINA 3-10kTL-HU

| Meter Pin | Description | Connection |
|---|---|---|
| 3 | L | Grid-L |
| 4 | N | Grid-N |
| 9 | CT+ | CT-white line to Grid |
| 10 | CT- | CT-blue line to Grid |
| 11 | CT+ | CT-white line to Third-party inverter |
| 12 | CT- | CT-blue line to Third-party inverter |
| 24 | RS485B | METER/CT1 RJ45 port_pin4 |
| 25 | RS485A | METER/CT1 RJ45 port_pin5 |

• System wiring with CHINT meter (DTSU666: up to six CT)




MINA 3-10kTL-HU

| Meter Pin | Description | Connection |
|---|---|---|
| L1 | L1 | Grid-L1 |
| L2 | L2 | Grid-L2 |
| L3 | L3 | Grid-L3 |
| N | N | Grid-N |
| IA1* | CT+ | CT-white line to Grid-L1 |
| IA1 | CT- | CT-blue line to Grid-L1 |
| IB1* | CT+ | CT-white line to Grid-L2 |
| IB1 | CT- | CT-blue line to Grid-L2 |
| IC1* | CT+ | CT-white line to Grid-L3 |
| IC1 | CT- | CT-blue line to Grid-L3 |
| IA2* | CT+ | CT-white line to L1 of Third-party inverter |
| IA2 | CT- | CT-blue line to L1 of Third-party inverter |
| IB2* | CT+ | CT-white line to L2 of Third-party inverter |
| IB2 | CT- | CT-blue line to L2 of Third-party inverter |
| IC2* | CT+ | CT-white line to L3 of Third-party inverter |
| IC2 | CT- | CT-blue line to L3 of Third-party inverter |
| B | RS485B | METER/CT1 RJ45 port_pin4 |
| A | RS485A | METER/CT1 RJ45 port_pin5 |

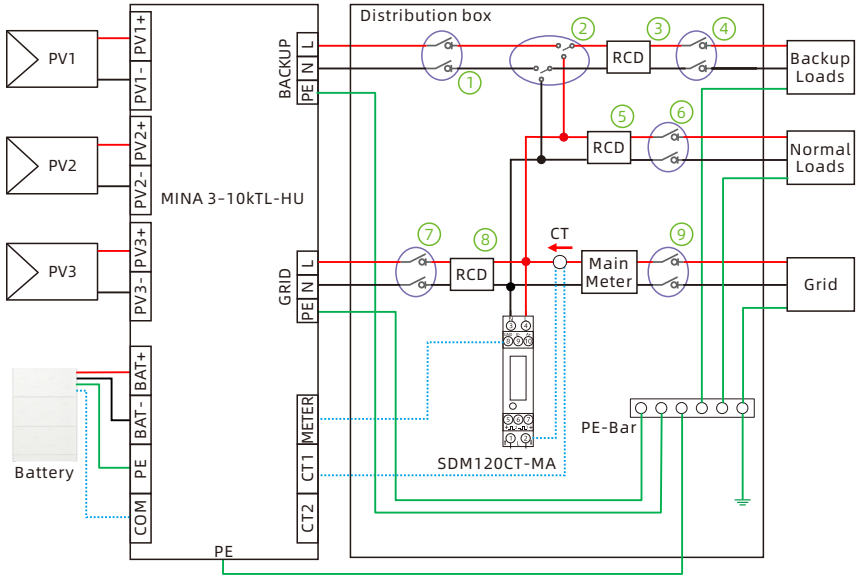
## 4. Wiring diagram

**⚠ NOTE:**

- The recommended values in the table are for reference only. The actual values must comply with local standard and actual conditions.
- The rated current of breaker ⑦ is suggested to lower than that of breaker ⑨.
- If the rated current of on-site power cables are lower than those recommended above, the breakers specification should be considered to match the power cables in first priority.
- The AC port takes power from the grid and should be set according to the grid circuit breaker.

### 4-1 Single Phase Partial Home Backup Wiring

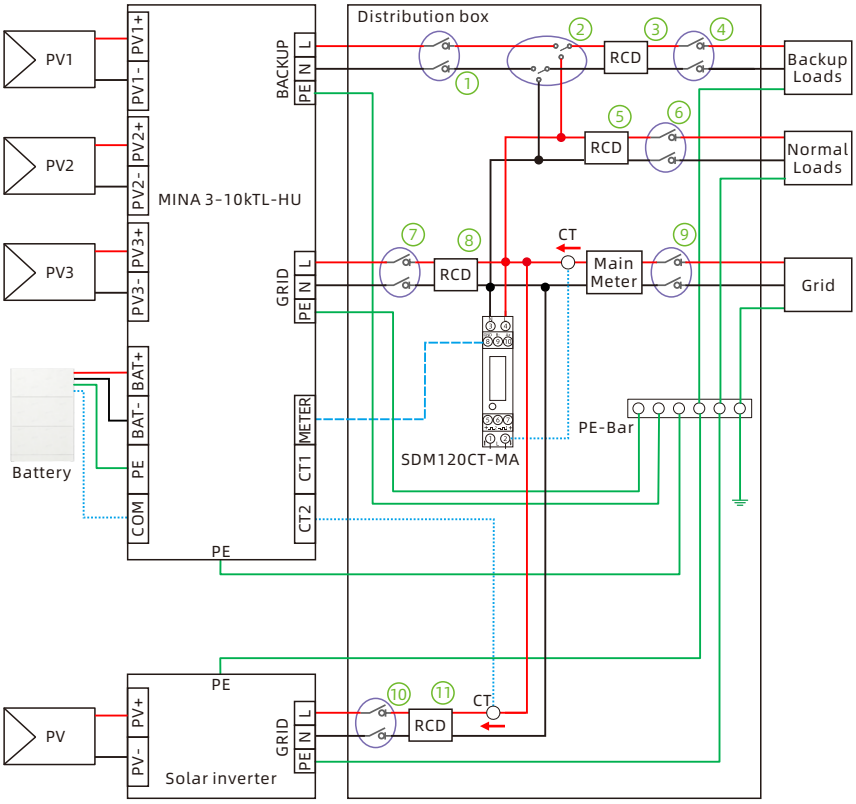
| Model | ①⑦ | ③⑤ | ⑧ | ②④⑥ | ⑨ |
|---|---|---|---|---|---|
| MINA 3-3.6kTL-HU | 20A/230V/400V TypeC AC breaker | 30mA RCD (recommended) | 300mA RCD (recommended) | Depends on loads | Depends on household loads and inverter capacity |
| MINA 4.2-4.6kTL-HU | 25A/230V/400V TypeC AC breaker | | | | |
| MINA 5kTL-HU | 32A/230V/400V TypeC AC breaker | | | | |
| MINA 6-7kTL-HU | 40A/230V/400V TypeC AC breaker | | | | |
| MINA 8-10kTL-HU | 63A/230V/400V TypeC AC breaker | | | | |



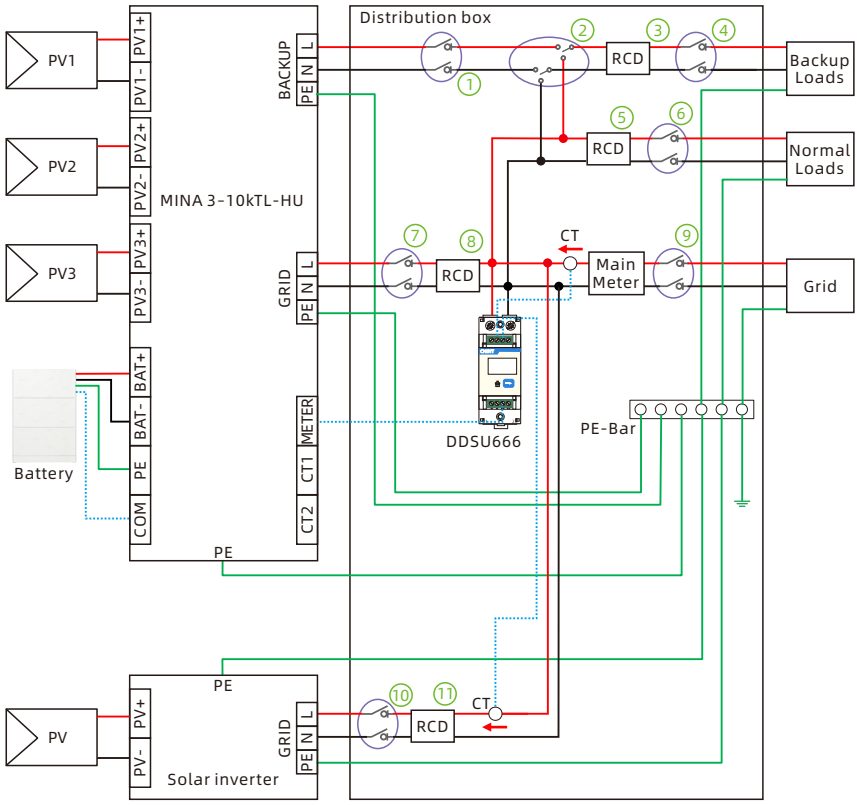
## 4-2 Single Phase Partial Home Backup AC Couple Wiring

| Model | ① ⑦ | ③ ⑤ ⑧ ⑪ | ② ④ ⑥ | ⑨ | ⑩ |
|---|---|---|---|---|---|
| MINA 3-3.6kTL-HU | 20A/230V/400V TypeC AC breaker | 30mA RCD (Comply with local regulation) | Depends on loads | Depends on household loads and inverter capacity | Depends on the specifications of Solar inverter |
| MINA 4.2-4.6kTL-HU | 25A/230V/400V TypeC AC breaker | | | | |
| MINA 5kTL-HU | 32A/230V/400V TypeC AC breaker | | | | |
| MINA 6-7kTL-HU | 40A/230V/400V TypeC AC breaker | | | | |
| MINA 8-10kTL-HU | 63A/230V/400V TypeC AC breaker | | | | |

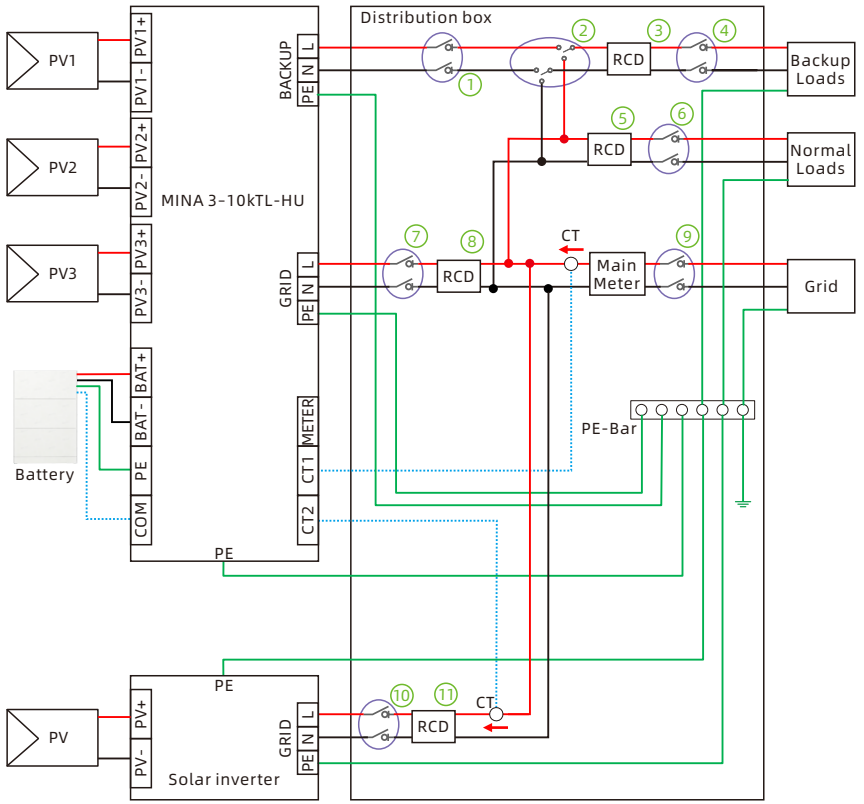
### Single Phase Partial Home Backup AC Couple Wiring- Meter with one CT



## Single Phase Partial Home Backup AC Couple Wiring-Meter with two CT



## Single Phase Partial Home Backup AC Couple Wiring-Dual CT



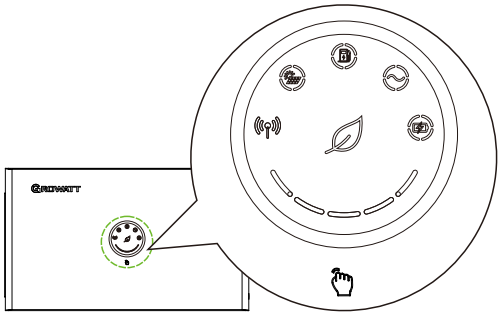
## 5. Power on/off the system

### 5-1 Power on

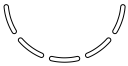
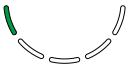
1. Check if all cables are properly connected as required.
2. Check if the PV and grid voltage are within the specified range.
3. Turn on the BAT switch, then turn on the PV switch.
4. Turn on the ON-GRID circuit breaker, then turn on the Backup circuit breaker.
5. When MINA 3-10kTL-HU indicator is green, it indicates that the system is powered on successfully.

### 5-2 Indicator

**Inverter**

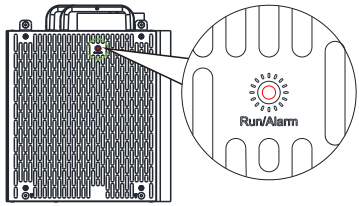


| Indicator | Color | Status | Description |
|---|---|---|---|
| | | On | Communication normal |
| | | On | Cloud platform disconnected |
| | | Off | Datalogger disconnected |
| | | Off | PV disconnected |
| | | On | PV normal operation |
| | | Flash | PV reverse polarity |
| | | On | PV side fault |
| | | Off | DC charger disconnected |
| | | On | DC charger normal operation |
| | | On | DC charger fault |

| Indicator | Color | Status | Description |
|---|---|---|---|
|  | | Off | Grid disconnected |
| | | On | Grid connected standby |
| | | On | Grid connected running |
| | | On | Off-grid running |
| | | Flash | Off-grid overload |
| | | Flash | Grid abnormality |
| | | On | Inverter AC side fault |
|  | | On | Battery normal |
| | | On | Battery hibernation |
| | | Flash | Partial battery fault |
| | | On | All battery fault |
|  |  | Off | Battery has no power |
| |  | ON or Flash | • 0% <SOC≤ 20%<br>• Battery neither charging nor discharging is ON/Battery charging and discharging is flashing |
| |  | ON or Flash | • 20% <SOC≤ 40%<br>• Battery neither charging nor discharging is ON/Battery charging and discharging is flashing |
| |  | ON or Flash | • 40% <SOC≤ 60%<br>• Battery neither charging nor discharging is ON/Battery charging and discharging is flashing |
| |  | ON or Flash | • 60% <SOC≤ 80%<br>• Battery neither charging nor discharging is ON/Battery charging and discharging is flashing |
| |  | ON or Flash | • 80% <SOC≤ 100%<br>• Battery neither charging nor discharging is ON/Battery charging and discharging is flashing |

| Indicator | Color | Status | Description |
|---|---|---|---|
| | | On | System normal |
| | / | / | / |
| | | Light up clockwise | System upgrade |
| | | On | System failure |
| | / | Color rotation | Power on init |
| | / | / | Wake indicator |

**Battery**




| Indicator | Color | Status | Description |
|---|---|---|---|
| Run/Alarm | | On | Normal |
| | | Flash | Upgrade |
| | | On | Fault |
| | | Off | Hibernation |

## 5-3 Power off

1. Turn off the Backup circuit breaker, then turn off the ON-GRID circuit breaker.
2. Turn off the PV switch, then turn off the BAT switch.

Download Manual

Growatt New Energy

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