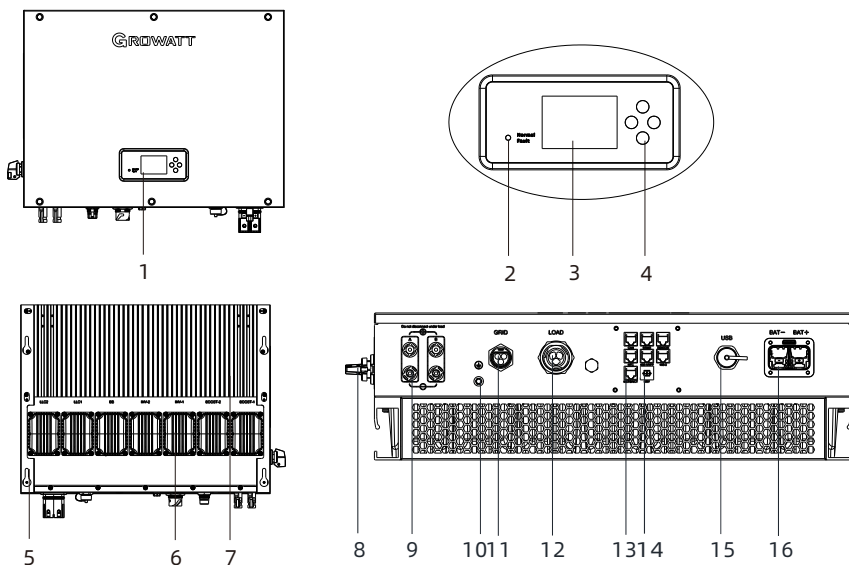


SPH 3000-6000 TL-HU
Quick Guide



Shenzhen Growatt New Energy Co.,Ltd.

1. Overview



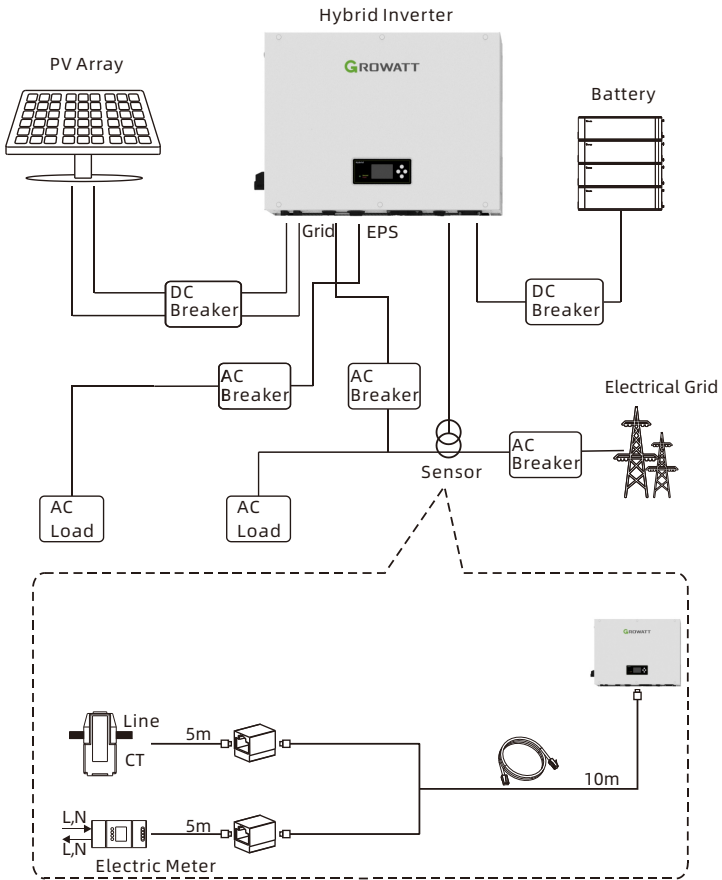
| | | | |
|---|--------------------|----|------------------------------|
| 1 | Front panel | 9 | PV connection terminal |
| 2 | Dual-colour LED | 10 | Grounding screw |
| 3 | LCD display | 11 | AC grid connection terminals |
| 4 | Buttons | 12 | EPS connection terminal |
| 5 | Wall mounting hole | 13 | Communication port |
| 6 | Magnetic device | 14 | COM connection terminal |
| 7 | Heat sink | 15 | USB port |
| 8 | PV switch | 16 | Battery power terminal |

Note:

1. The content of this document is continually reviewed and amended, where necessary. Growatt reserves the right to make changes to the material at any time and without notice. Unless otherwise agreed, this document is for quick installation guidance only. All information and suggestions in this document do not constitute a warranty of any kind, express or implied. Growatt reserves all rights for final explanation.
2. This document is for quick installation guidance. For details, please refer to the User Manual.
3. Device damage caused by failure to follow the instructions is not covered under any warranty.

2. Installation

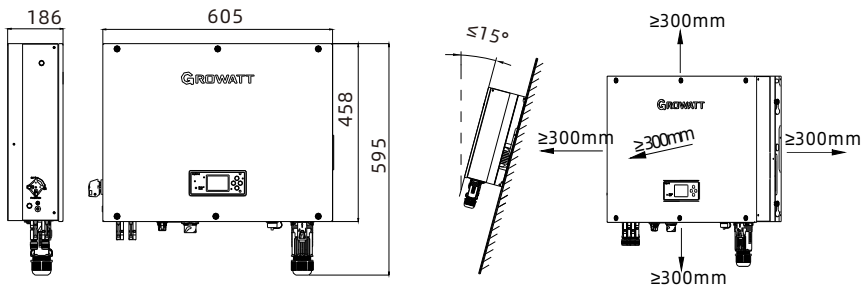
2-1 System overview



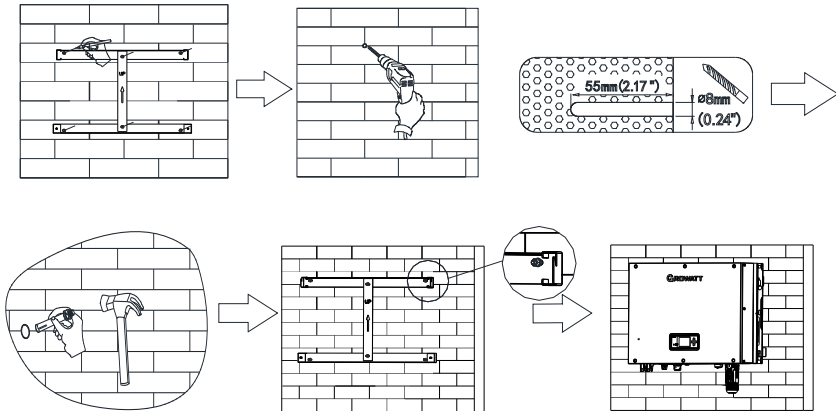
Note:

1. When installing the hybrid inverter, you need to consider the position of the battery and the distribution panel.
2. You can connect either a CT or a meter. For areas where active power output should be strictly limited, you are recommended to install a meter.

2-2 Installation requirements



2-3 Wall-mounted



Step1: Determine the hole positions based on the position of the wall mount bracket and mark them with a marker.

Step2: Drill holes with an electric drill to a depth of 55mm (hole diameter: 8mm).

Step3: Install the expansion screws into the holes.

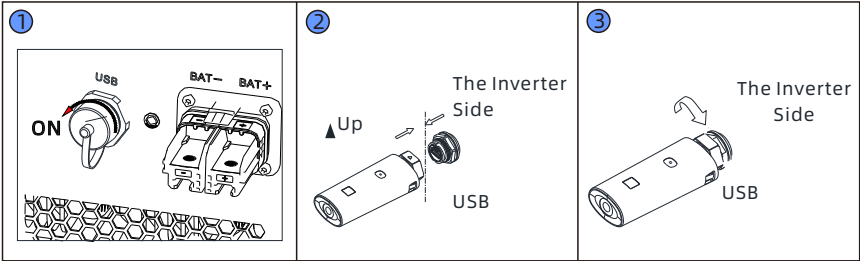
Step4: Install and secure the wall mount bracket.

Step5: Install the inverter onto the and make sure it is secured.

Note:

When drilling holes, avoid the water pipes and power cables buried in the wall.

2-4 Connecting the communication module



Follow the installation steps:

1. Remove the waterproof cover from the USB port.
2. Plug in the communication module.
3. Secure the communication module.

3. Cable connections

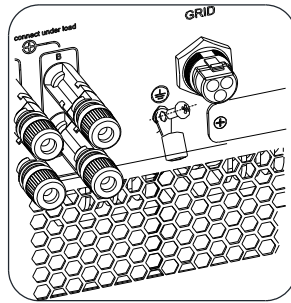
Please prepare the cables listed below before electrical connections.

| NO. | Cable name | Type | Recommended specification |
|-----|---------------------|---|---------------------------|
| 1 | Grounding cable | A yellow and green multi-core copper cable | Diameter AWG 10-12 |
| 2 | AC output cable | Two or three multi-core copper cables (in different colors) | Diameter AWG 10-12 |
| 3 | PV input cable | PV cable (such as PV1-F) | Diameter AWG 10-11 |
| 4 | Battery power cable | Orange and black multi-core copper cables | Diameter AWG 1-2 |
| 5 | Communication cable | Cat5e | / |

Note:

1. The lithium battery comes with the power cables and communication cable. You can find and use them directly.
2. Make sure all switches are OFF before connecting cables. For personal safety, do not operate with power on.

3-1 Grounding terminal



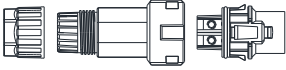
Ground point

3-2 Connecting and remove the EPS connector

| | | |
|---|--|--|
| <p>①</p> <p>Locking nut Seal ring and Thread sleeve Connection terminal Anti-tamper cover</p> | <p>②</p> <p>Secure the cables to the terminals according to the correct polarity</p> | <p>③</p> <p>Push the threaded sleeve into the socket, then tightened the cap on the terminal</p> |
| <p>④</p> <p>The Inverter Side</p> <p>Tightening the EPS connector</p> | <p>⑤</p> <p>The Inverter Side</p> <p>Install the anti-tamper cover</p> | <p>⑥</p> <p>The Inverter Side</p> <p>Locking the screws</p> |
| <p>①</p> <p>The Inverter Side</p> <p>Remove the screw</p> | <p>②</p> <p>The Inverter Side</p> <p>Remove the anti-tamper cover</p> | <p>③</p> <p>The Inverter Side</p> <p>Removing the EPS connector</p> |

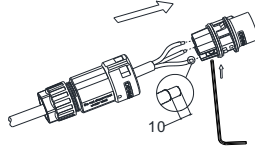
3-3 Connecting and remove the AC grid connector

①



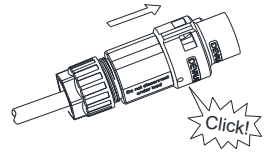
Locking nut Seal ring and Connection terminal
Threaded sleeve

②



Secure the cables to the terminals according to the correct polarity

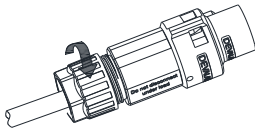
③



Insert the terminal into the sleeve

④

Rotate to tighten the nut



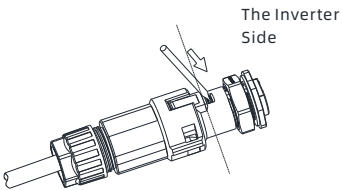
⑤

Connect the Grid connector to the inverter

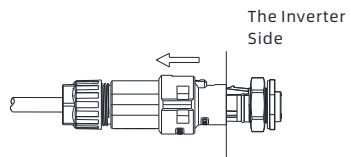


Lock the housing

①





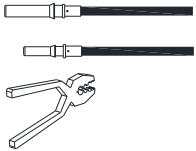


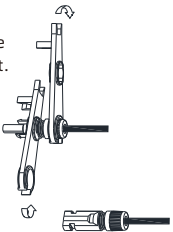
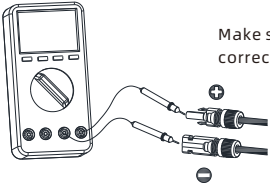
②



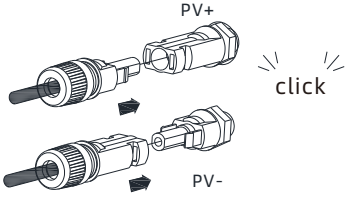
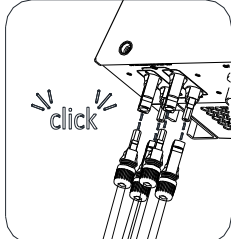
Removing the AC connector

3-4 Connecting the DC input cables

3.4.1 Assembling the PV input connectors

| | | |
|--|---|---|
| <p>①</p> <p>Positive metal contact</p>  <p>8-10 mm</p>  <p>8-10 mm</p> <p>Negative metal contact</p> | <p>②</p>  <p>Ensure that the cable cannot be pulled out after being crimped.</p> | <p>③</p> <p>Positive connector</p>  <p>Negative connector</p>  <p>Give the wire and crimp a slight tug to make sure they are secure</p> |
| <p>④</p> <p>Tighten the locking nut.</p>  | <p>⑤</p> <p>2</p>  <p>Make sure the cable polarity is correct.</p> | |

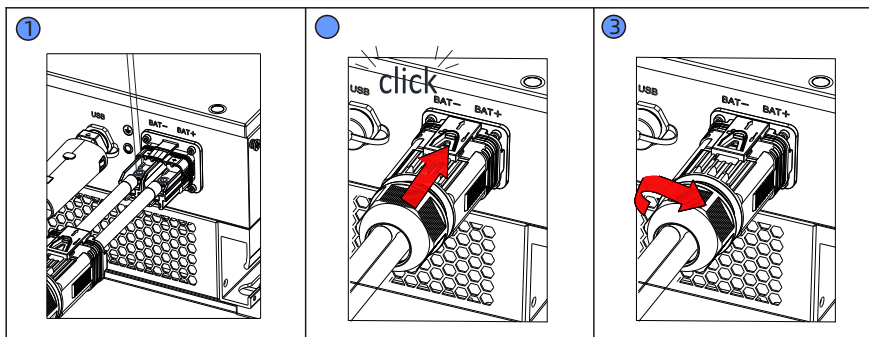
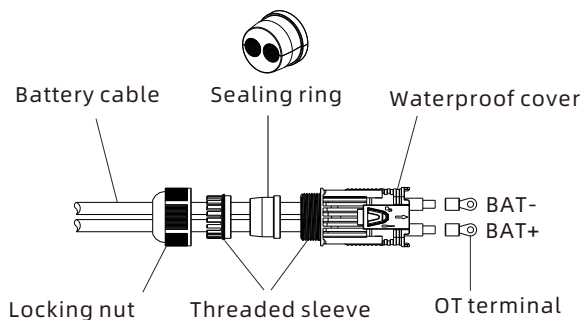
3.4.2 Connecting the PV connectors

| | |
|--|--|
| <p>①</p>  <p>PV+</p> <p>click</p> <p>PV-</p> | <p>②</p>  <p>click</p> |
|--|--|

Note:

1. Before connecting the PV connectors, please confirm that the PV input voltage and current are not beyond the specified range.
2. When connecting the PV connectors, identify the positive and negative terminals and connect them to the inverter respectively following the color convention.
3. A "click" sound will be heard when the terminal is connected. Please gently pull the PV cable back to make sure it is securely connected.

3.4.3 Connecting the battery power cables



Installation steps are as follows:

1. Thread the battery power cables through the locking nut, waterproof rubber plug and the waterproof cover.
2. Align the OT terminals with the battery terminals, ensuring the correct polarity. Then tighten the screws.
3. Tighten the locking nut, then fasten the waterproof cover.

3.4.4 Install the communication cables

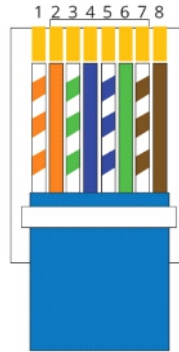
- 1 Remove the two rotary nuts from the waterproof cover by turning them counterclockwise.
- 2 Pull out the anti-tamper clip.
- 3 Loosen the screws on the snap handle.
- 4 Move the handle toward the inverter and remove the waterproof cover.
- 5 Pass the external communication cable through the rotary nut, cable support sleeve and waterproof cover body in sequence.

7

CAN
DRMS
Inbuilt
Meter1
NTC
485-1/485-3
485-2
-COM+
Meter1/CT1

- 8
- 9
- 10
- 11

- ⑥ Connect the RJ45 connector to the communication cable, and then insert it into the corresponding communication port on the inverter.
 - ⑦ Connect all communication cables that following steps 4-5.
 - ⑧ Align the waterproof cover with the positioning post, insert it into the base, and turn the buckle handle in the opposite direction of the inverter to tighten it.
 - ⑨ Tighten the screw on the handle.
 - ⑩ Install the anti-tamper clip.
 - ⑪ Block the empty support sleeve without communication cables with a waterproof plug, and tighten the rotary nut clockwise.
- 3.4.5 Pin definition of the RJ45 connector



| NO. | CAN | DRMS | Inbuilt Meter1 | NTC | 485-1 /485-3 | 485-2 | METER1/ Ct1 | COM |
|-------|---------|--------------------|----------------|-------|--------------|---------|-------------|------|
| Pin 1 | / | DRM1/5 | CT1+ | GND.S | 485-1_B | 485-1_B | RS485_B | DRY- |
| Pin 2 | / | DRM2/6 | CT1- | GND.S | GND.S | GND.S | CT+ | DRY+ |
| Pin 3 | / | DRM3/7 | / | GND.S | / | / | CT+ | / |
| Pin 4 | CAN_H | DRM4/8 | CT2+ | GND.S | 485-1_B | 485-1_B | CT+ | / |
| Pin 5 | CAN_L | REF | CT2- | NTC | 485-1_A | 485-1_A | RS485_A | / |
| Pin 6 | GND.S | COM | / | NTC | / | / | CT_Check | / |
| Pin 7 | GND.S | PIN7-PIN8 shorting | / | NTC | 485-3_B | 485-3_B | GND.S | / |
| Pin 8 | WAKE.UP | PIN7-PIN8 shorting | / | NTC | 485-3_A | 485-3_A | CT1- | / |

4. Post-installation check

| NO. | Acceptance criteria | NO. | Acceptance criteria |
|-----|--|-----|---|
| 1 | The hybrid inverter is installed correctly and reliably. | 2 | The communication module (ShineWiFi-X, ShineLink-X or Shine4G-X) is installed correctly and securely. |
| 3 | Cable routing is proper and meets all requirements. No damaged or skin-scratched | 4 | The ground cable is properly connected. |
| 5 | All switches are OFF. | 6 | All cables are connected correctly and securely. |
| 7 | Cable ties are neatly cut without sharp burs. | 8 | All unused/vacant ports are sealed. |
| 9 | Post-installation cleanup. | | |

5. Powering on/off the SPH inverter

Note:


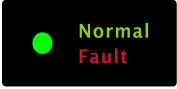
Before powering on the inverter, please make sure all components remain within their permitted operating ranges. Otherwise it will cause damage to the inverter.

Perform the following steps to power on the system:

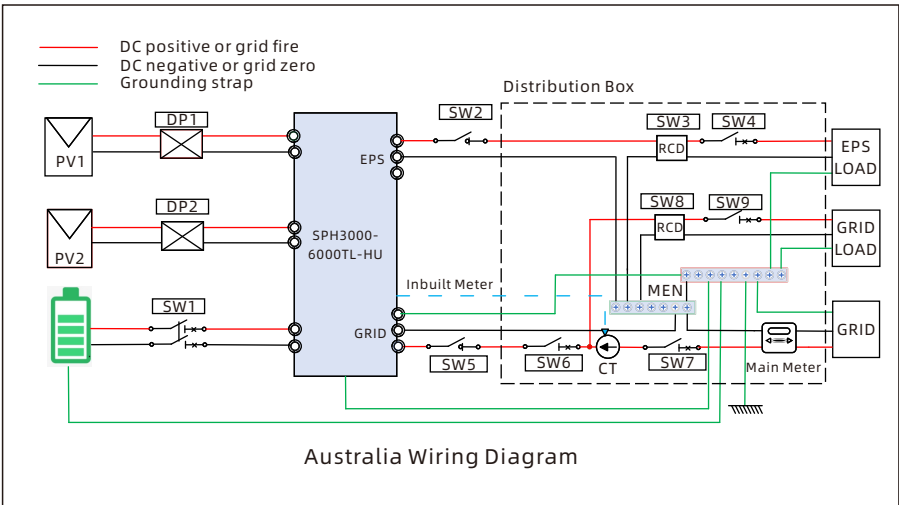
1. Turn on the PV switch.
2. Turn on the breaker between the grid and the inverter.
3. Turn on the breaker between the battery and the inverter, then turn on the switch on the battery.
4. For details about configuring the inverters, please refer to the User Manual.

You can power off the inverter in reverse order.

6. Operating status of the SPH inverter

| Symbol | Designation | Description | |
|---|----------------------|--|-------------------|
|  | Push buttons | Operate the display screen and set system parameters | |
|  | SPH status indicator | Steady green | SPH runs normally |
| | | Steady red | Fault state |
| | | Blinking green | Alarm state |
| | | Blinking red | Software update |

7. System wiring diagram



7. Service and contact

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Manual



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