SUNGROW
Clean power for all

# Quick Installation Guide

## Hybrid Inverter

MG10/12/15TL




MG10/12/15TL-QIEN-Ver12-202609

EN

1. Contents may be periodically updated or revised due to product development. The information in this guide is subject to change without notice. In no case shall this guide substitute for the user manual or related notes on the device.
2. Make sure to read over, fully understand and strictly follow the detailed instructions of the user manual and other related regulations before installing the equipment. The user manual can be downloaded by visiting the website at http://support.sungrowpower.com/; or it can be obtained by scanning the QR code on the side of the equipment or the back cover of this guide.
3. Only qualified personnel may perform these operations. They must be trained in the installation and commissioning of electrical systems and in hazard management, and must be familiar with this manual and local regulations and directives.
4. Before installation, check that the package contents are intact and complete compared to the packing list. Contact SUNGROW or the distributor in case of any damaged or missing components.
5. The cable used must be intact and well insulated. Operating personnel must wear appropriate personal protective equipment (PPE) at all times.
6. Any violation may result in death, personal injury, or damage to the device and will void the warranty.

## Safety

The inverter has been designed and tested strictly according to international safety regulations. Read all safety instructions carefully prior to any work and observe them at all times when working on or with the inverter. Incorrect operation or work may cause:

- injury or death to the operator or a third party;
- damage to the inverter or other properties.

Please follow the safety instructions related to the PV strings and the utility grid.

### ⚠ DANGER

Lethal voltage!

- PV strings will produce electrical power when exposed to sunlight and can cause a lethal voltage and an electric shock.
- Only qualified personnel can perform the wiring of the PV panels.

### ⚠ NOTICE

Danger to life from electric shock due to lethal voltage!

- All electrical connections must be in accordance with local and national standards.
- The inverter may be connected to the utility grid only with the permission of the local utility company.

## Inverter

The warning labels on the inverter body are as follows.

| | |
|---|---|
| CE | CE mark of conformity.<br>EU/EEA Importer. |
|  | The inverter does not have a transformer. |
|  | Burn danger due to hot surface that may exceed 60 °C. |
|  | Do not dispose of the inverter together with household waste. |
|  | Disconnect the inverter from all the external power sources before maintenance! |

| | |
|---|---|
|  | Read the user manual before maintenance. |
|  | Read the user manual before maintenance! |
|  | Danger to life due to high voltages!<br>Only qualified personnel can open and maintain the inverter. |
|   | Do not touch live parts for 10 minutes after disconnection from the power sources. |
|  | Additional grounding point. |

Users may also attach other warning signs as per the requirements of the local standards or installation specifications.

### ⚠ DANGER

Danger to life from electric shocks due to live voltage

- Do not open the enclosure at any time. Unauthorized opening will void warranty and warranty claims and in most cases terminate the operating license.
- When the enclosure lid is removed, live components can be touched which can result in death or serious injury due to electric shock.

Lethal danger from electric shock due to possibly damaged inverter

- Only operate the inverter when it is technically faultless and in a safe state.
- Operating a damaged inverter can lead to hazardous situations that can result in death or serious injuries due to electric shock.

### ⚠ WARNING

Risk of inverter damage or personal injury

- Do not pull out the PV connectors and AC connector when the inverter is running. Disconnect the AC circuit breaker, the circuit breaker of battery and set the DC load-break switch of the inverter to OFF. Wait 10 minutes for the internal capacitors to discharge. Verify that there is no voltage or current before pulling any connector.

### ⚠ WARNING

All warning labels and the nameplate on the inverter body

- must be clearly visible.
- must not be removed, covered, or pasted over.

### ⚠ CAUTION

Risk of burns due to hot components!

- Do not touch any hot parts (such as the heat sink) during operation. Only the DC switch can safely be touched at any time.

### ⚠ NOTICE

Only qualified personnel can perform the country setting. Unauthorized alteration may cause:

- A breach of the type-certificate marking.

Risk of inverter damage due to electrostatic discharge (ESD)!

By touching the electronic components, you may damage the inverter. For inverter handling, be sure to:

- avoid any unnecessary touching.
- wear a grounding wristband before touching any connectors.

Battery

**DANGER**

Batteries deliver electrical power and may cause burns or a fire when short-circuited or incorrectly installed. Lethal voltages are present in the battery terminals and cables in the inverter. Severe injuries or death may occur if the cables and terminals in the inverter are touched.

**NOTICE**

Improper settings or maintenance can permanently damage the battery.
Incorrect inverter parameter settings will lead to premature aging of the battery.

## EU Declaration of Conformity

within the scope of the EU directives

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

Low Voltage Directive 2014/35/EU (LVD)

Electromagnetic compatibility 2014/30/EU（EMC)

Restriction of the use of certain hazardous substances 2011/65/EU and 2015/863/EU (RoHS)

The manufacturer, Sungrow Power Supply Co., Ltd., China, hereby confirms that the products MG10TL, MG12TL, and MG15TL comply with the essential requirements and other relevant provisions of Directive 2014/35/EU (LVD), 2014/30/EU (EMC), 2011/65/EU, and 2015/863/EU (RoHS).

The communication module that comes with the inverter and the technical parameters of wireless communication are listed in the table below. The model of the communication module actually delivered shall prevail. The EU Declaration of Conformity for the communication module can be found at support.sungrowpower.com.

### WiNet-S/WiNet-S2:

| | | |
|---|---|---|
| Radio technology | WLAN | 802.11b/g/n20/n40 |
| Radio spectrum | 802.11b/g/n20<br>802.11n40 | 2412 MHz ~ 2472 MHz<br>2422 MHz ~ 2462 MHz |
| Maximum transmission power | ≤ 20 dBm | |

Technical parameters listed above apply to EU countries only.

Manufacturer: Sungrow Power Supply Co., Ltd.
No. 1699, Xiyou Road, Hefei 230088, P.R. China
For EU only
EU/EEA Importer: Sungrow Deutschland GmbH
Balanstraße 59, 81541 München, Germany

## Security Declaration

For details on the product's network security vulnerability response process and vulnerability disclosure, please visit the following website:
https://en.sungrowpower.com/security-vulnerability-management

For more information on network security, please refer to the user manual of the communication module or the Data Logger that comes with the product.

# Backup Wiring Diagram 1

## Loads Connected to the Grid：

| | ①* | ② ③ ④ | ⑤ | ⑥ | ⑦ ⑧ |
|---|---|---|---|---|---|
| MG10/12/15TL: | ≥ 1 .1* Max. Battery Current/ 100V DC breaker | ≤63A/230V/400V AC breaker | Depends on loads | Depends on household loads and inverter capacity | 30mA RCD (Comply with local regulation) |

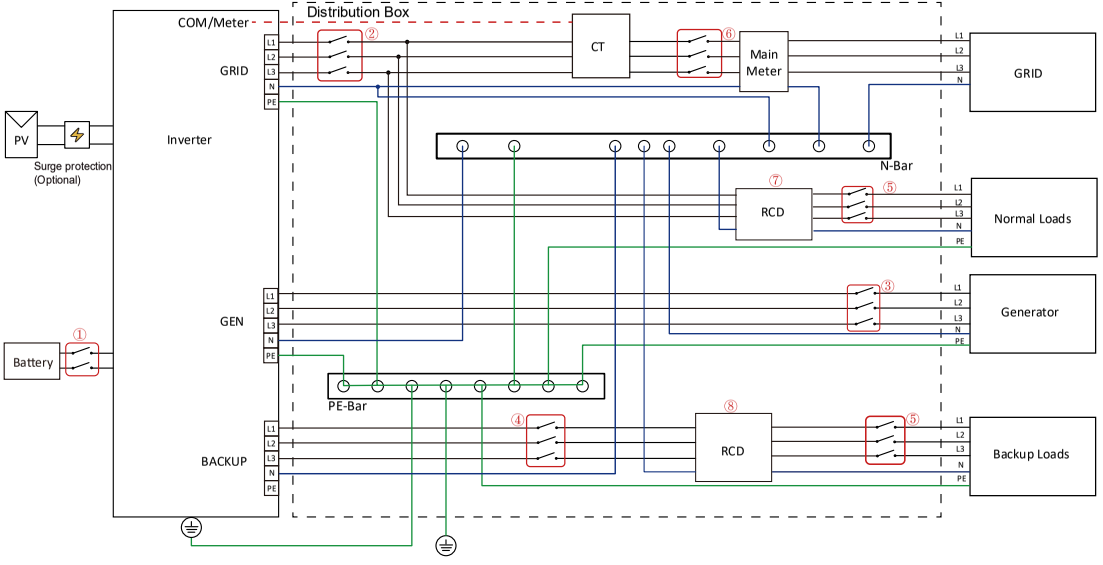
Note 1:* If the battery is integrated with a readily accessible internal DC breaker, no additional DC breaker is required; if the battery does not have a readily accessible internal DC breaker, an additional DC breaker is required for each battery.

Note 2:The recommended values in the table are for reference only.The actual values must comply with local standard and actual conditions.

Note 3:The rated current of breaker ② is suggested to lower than that of breaker ⑥.

Note 4: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.

Note 5:The AC port takes power from the grid and is set according to the grid circuit breaker.




Note :The inverter supports the above wiring schemes. Select the appropriate scheme according to the local grid type and distribution standards.

# Backup Wiring Diagram 2

## Loads Connected to the Grid：

| | ①* | ② ③ ④ | ⑤ | ⑥ | ⑦ ⑧ | ⑨ |
|---|---|---|---|---|---|---|
| MG10/12/15TL: | ≥ 1 .1* Max. Battery Current/ 100V DC breaker | ≤63A/230V/400V AC breaker | Depends on loads | Depends on household loads and inverter capacity | 30mA RCD (Recommended) | 300mA RCD (Recommended) |

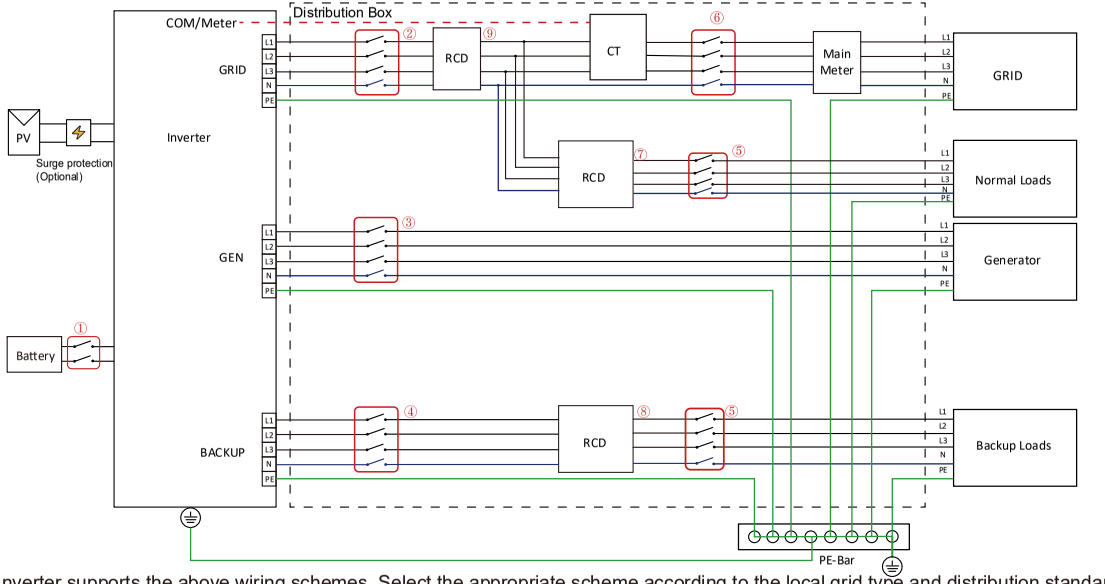
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if the battery does not have a readily accessible internal DC breaker, an additional DC breaker is required for each battery.

Note 2:The recommended values in the table are for reference only.The actual values must comply with local standard and actual conditions.

Note 3:The rated current of breaker ② is suggested to lower than that of breaker ⑥.

Note 4: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.

Note 5:The AC port takes power from the grid and is set according to the grid circuit breaker.




Note :The inverter supports the above wiring schemes. Select the appropriate scheme according to the local grid type and distribution standards.

## Scope of delivery

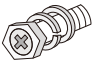

Inverter (×1)

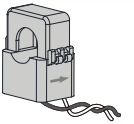

Wall-mounting bracket (×1)


Battery connector (×1)


AC connector (×1)


Expansion bolt set (×3)

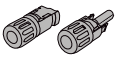

M5×12 screw set (×2)

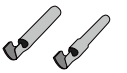

Current transformer (CT) (×3)


Signal plug-in connector (×2)


OT terminal (AC) (×15)


Wire ferrule (DIN end) (×18)


PV connector set (×3)


Crimp contact set (×3)


WiNet-S2 (×1)

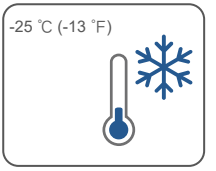

Desiccant (×1)

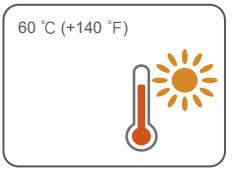

Documents (×1)

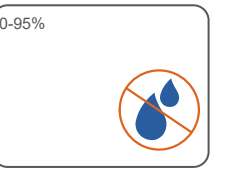
* The images shown here are for reference. The actual product and quantity are based on delivery.

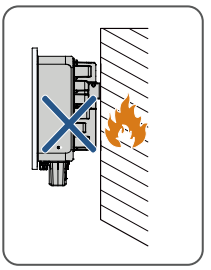
## Mounting Location

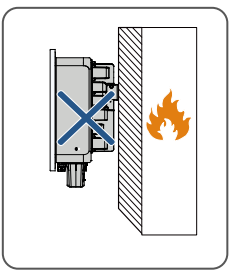


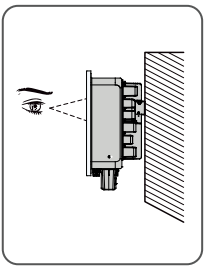


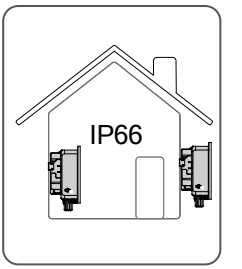



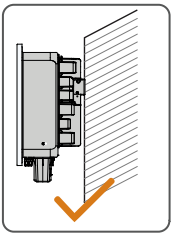



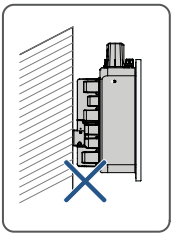



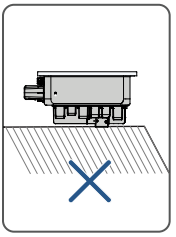


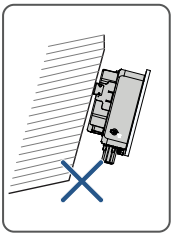


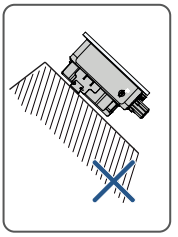


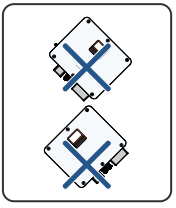


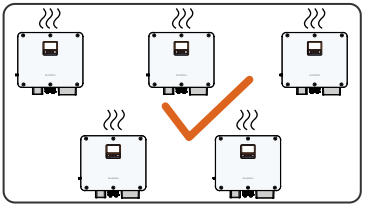


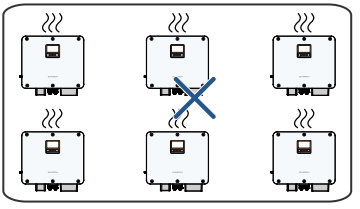


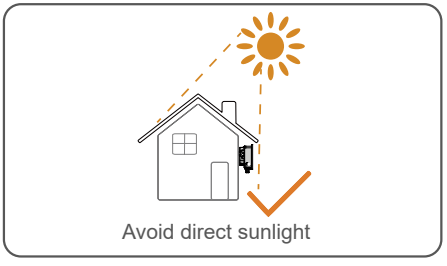


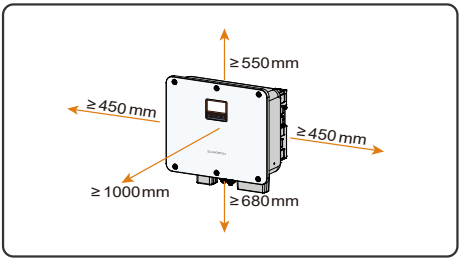


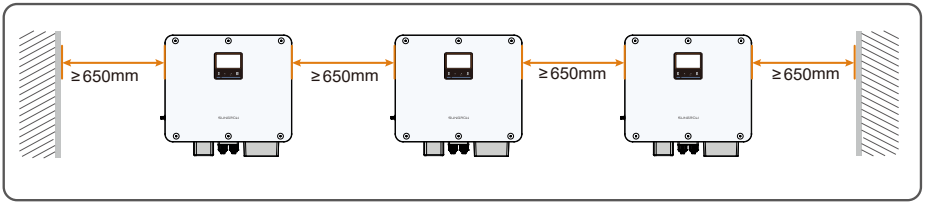


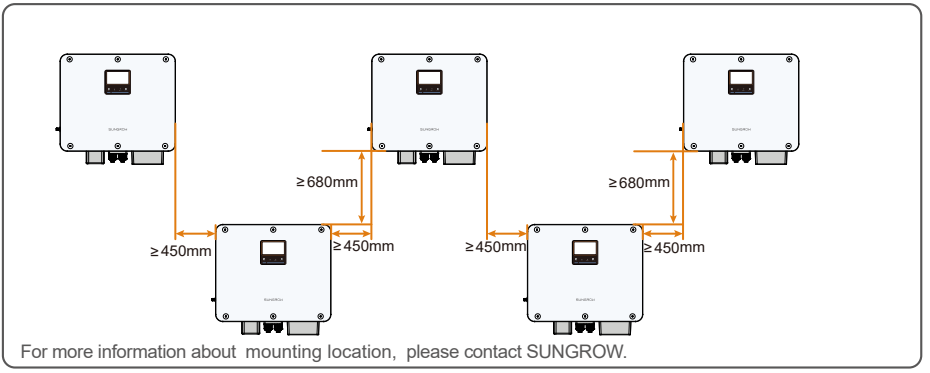






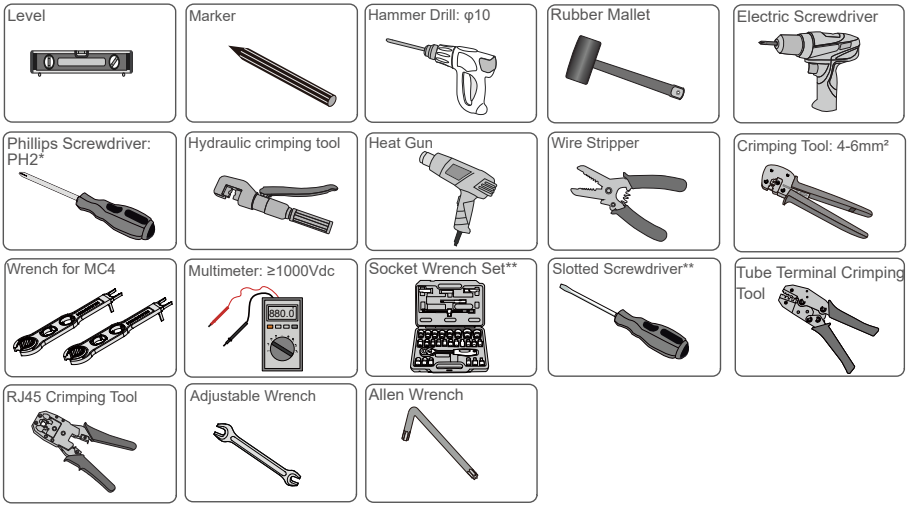




For more information about mounting location, please contact SUNGROW.

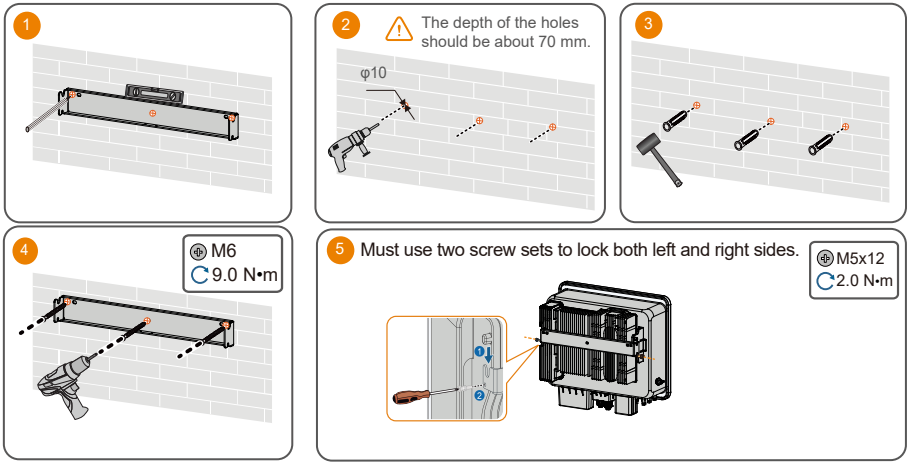
## Installation Tools



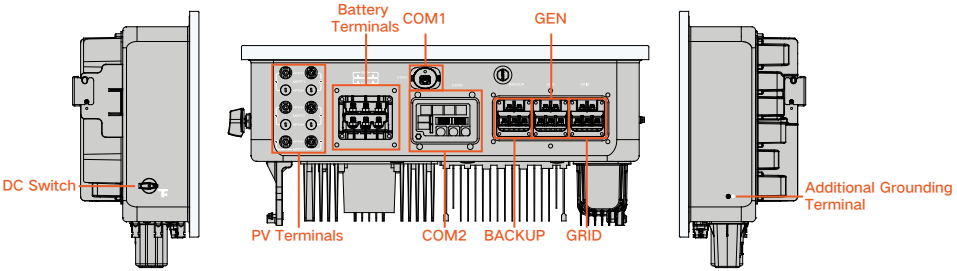

*A magnetic screwdriver with a shaft length of at least 200 mm is recommended.

**Magnetic tools are recommended.

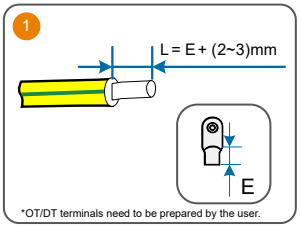
## Mounting

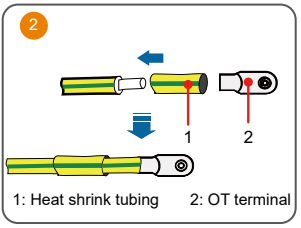


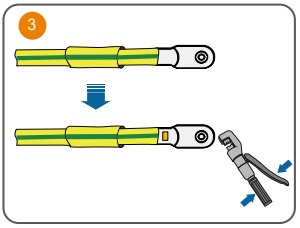

## Terminal Description

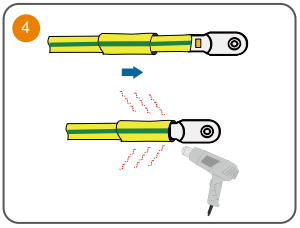


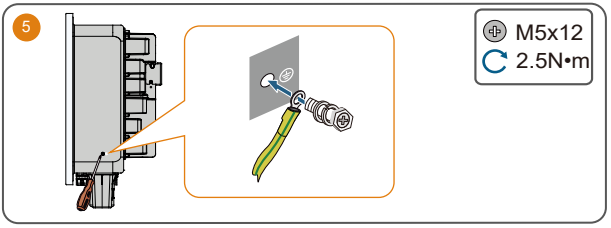
## PE Connection



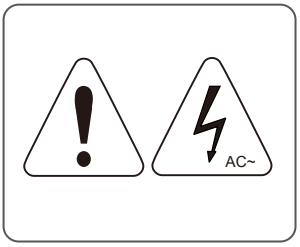



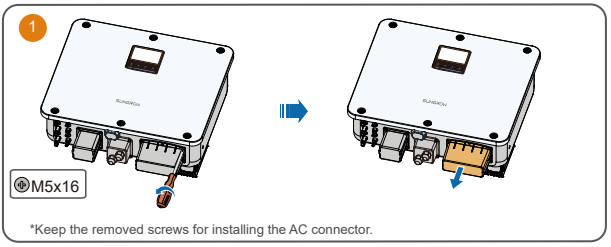



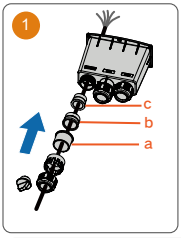



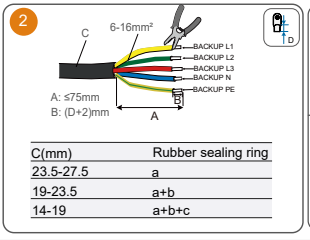

## AC Cable Connection



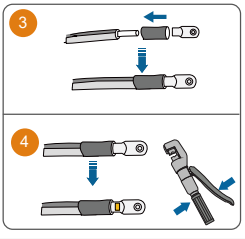



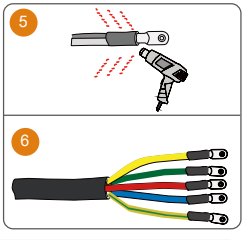

## BACKUP

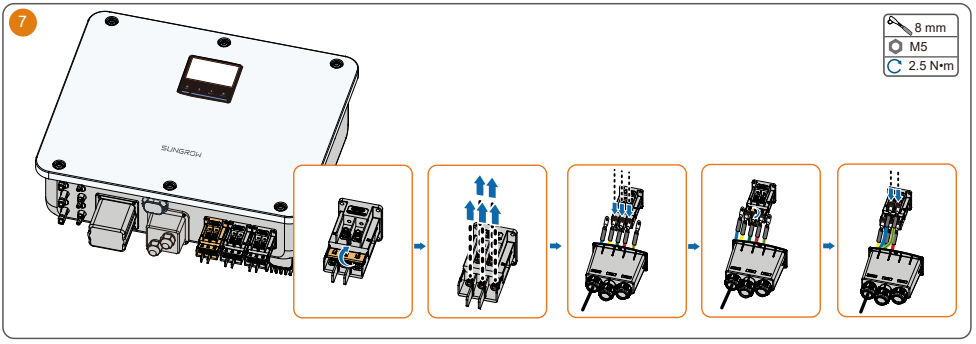


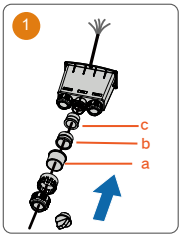

| C(mm) | Rubber sealing ring |
|---|---|
| 23.5-27.5 | a |
| 19-23.5 | a+b |
| 14-19 | a+b+c |

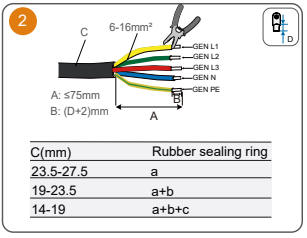


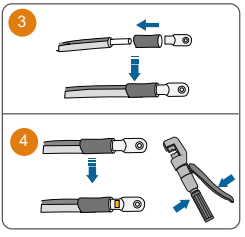



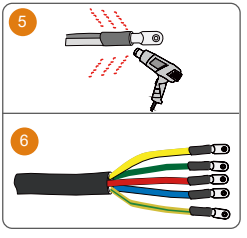
## GEN

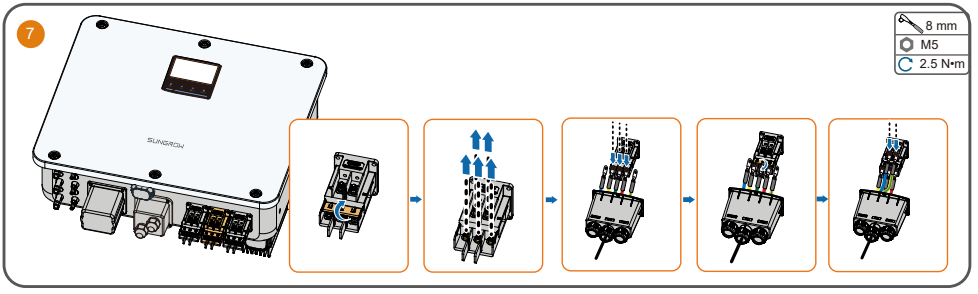


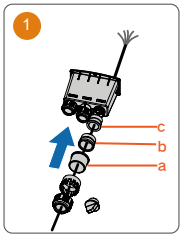

| C(mm) | Rubber sealing ring |
|---|---|
| 23.5-27.5 | a |
| 19-23.5 | a+b |
| 14-19 | a+b+c |

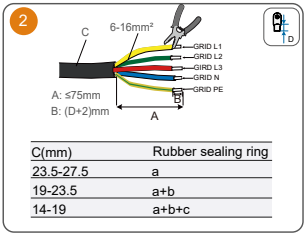


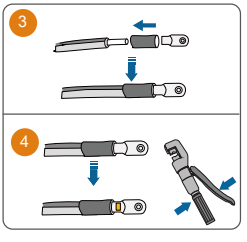



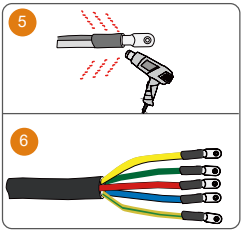

## GRID

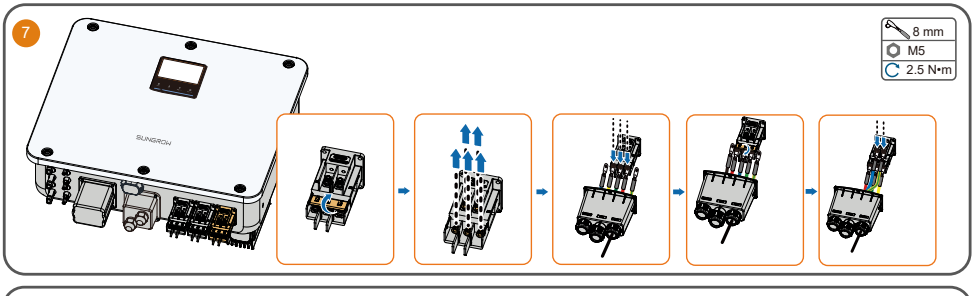


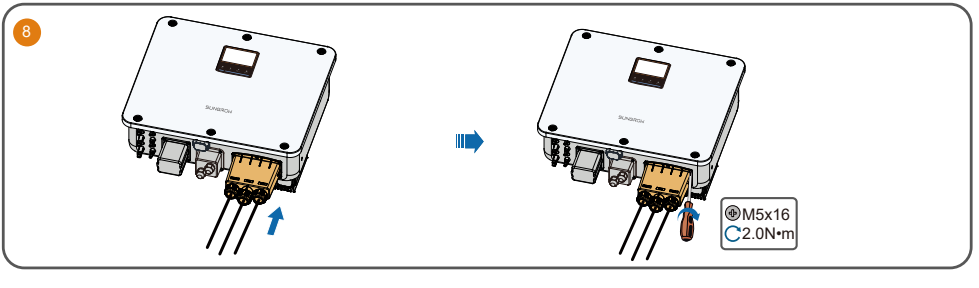




| C(mm) | Rubber sealing ring |
|---|---|
| 23.5-27.5 | a |
| 19-23.5 | a+b |
| 14-19 | a+b+c |

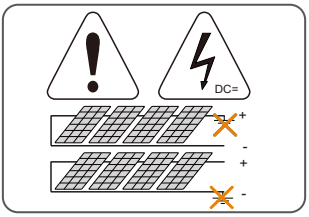


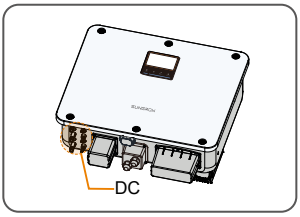



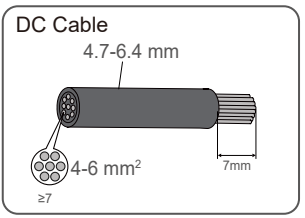



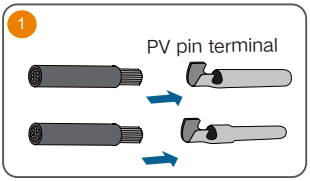



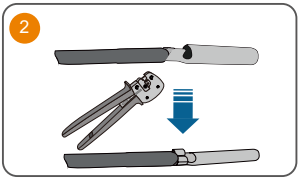
## DC Cable Connection

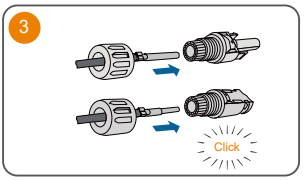


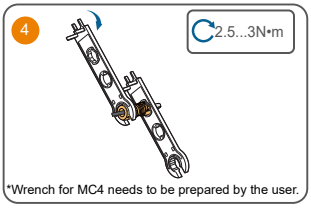



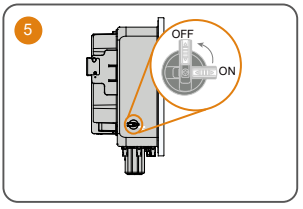



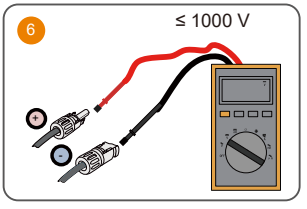



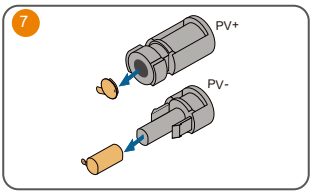



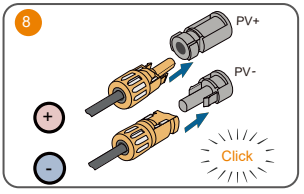



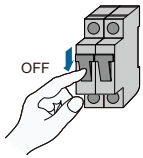




## Battery Connection

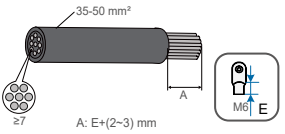
### Battery DC Breaker

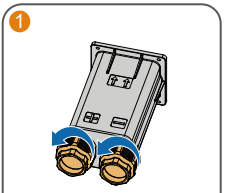


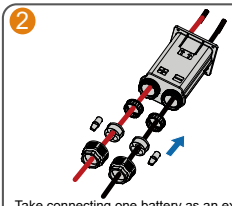

If the battery does not have a readily accessible internal DC breaker, an additional DC breaker is required for each battery.

DC breaker:≥ 1 .1* Max. Battery Current/100V

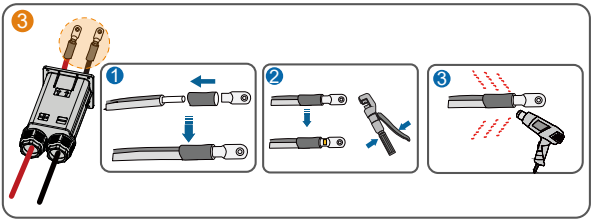
### Battery Cable

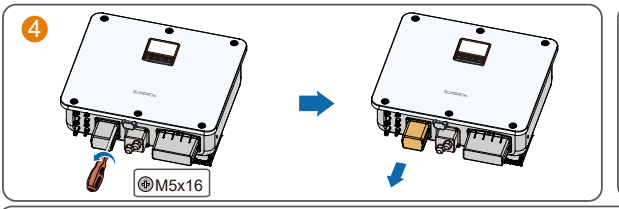


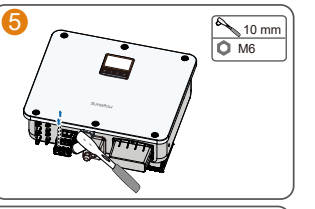



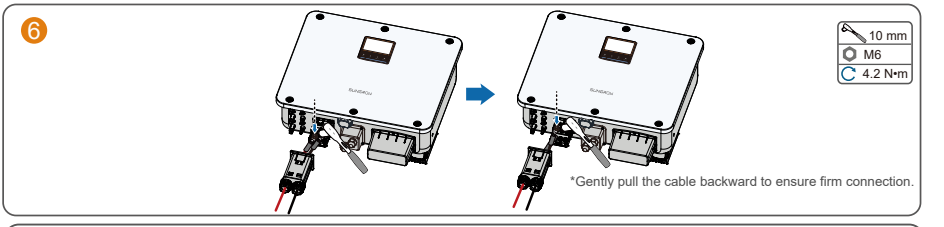



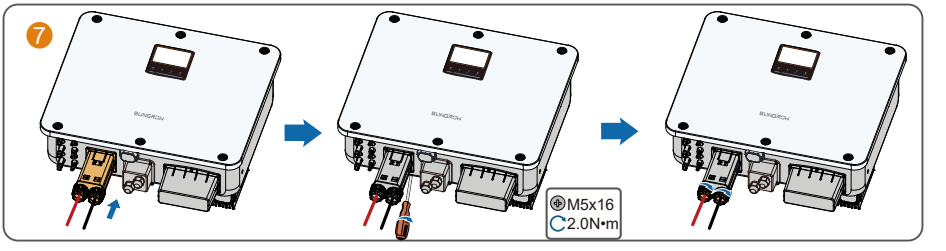

Take connecting one battery as an example.





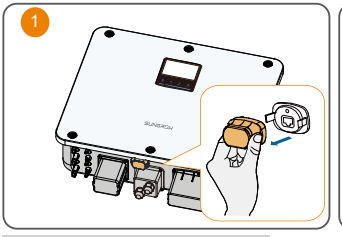



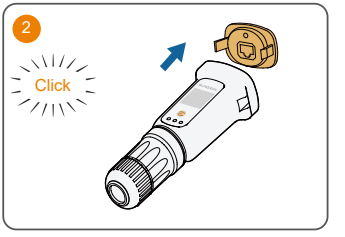

**NOTICE**

- Do not reverse the positive and negative terminals of the battery, otherwise the inverter may be damaged.
- Up to 20 MBL series batteries with the same model can be in parallel. MG10/12/15TL has 3 sets of battery power terminals and can be directly connected to 3 batteries. For 4 to 20 MBL series batteries connection to one inverter, a busbar must be used.
- In the scenario with busbars, at least 2 sets of power terminals on the inverter shall be connected. For the power cable between the inverter and the busbar, when connecting 2 sets of power terminals, a 50 mm² cable must be used, when connecting 3 sets of power terminals, a 35 mm² cable can be used.
- It is prohibited to connect multiple MBL160-PFs with power cables hand-in-hand parallel to MG10/12/15TL inverter.

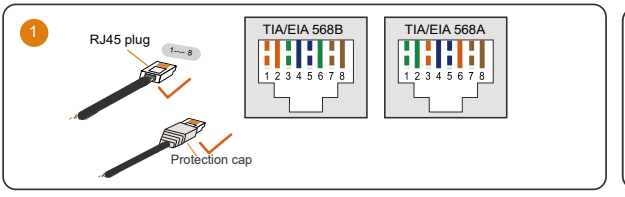
## WiNet-S2 Connection

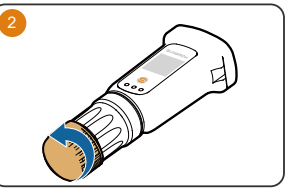
### WLAN communication

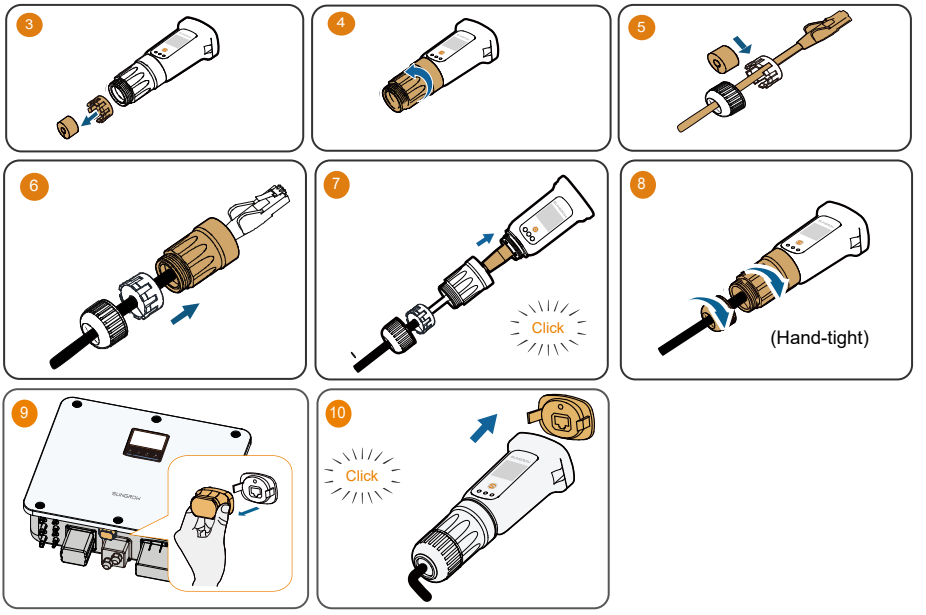


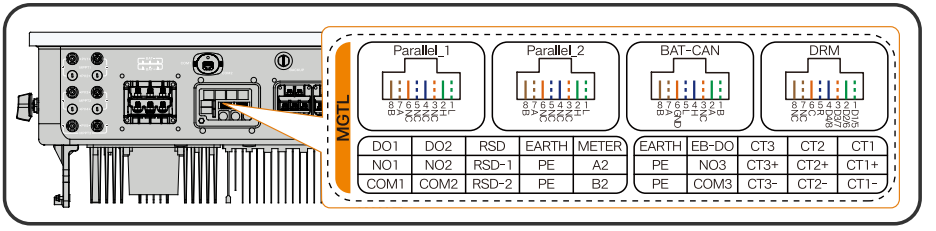

### Ethernet Communication



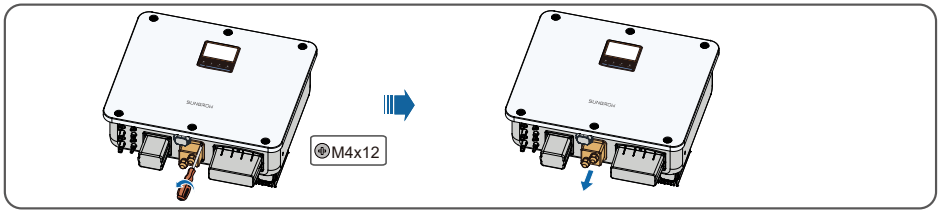






## COM2 Terminal Communication Connection



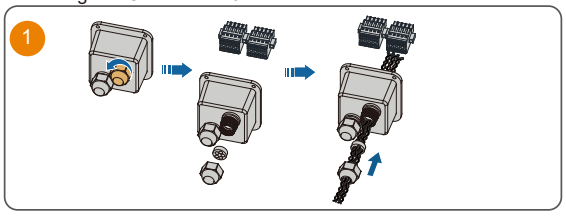

| Label | Description |
|---|---|
| Parallel_1 | For master-slave parallel communication. |
| Parallel_2 | For master-slave parallel communication. |
| BAT-CAN | For li-ion battery communication via CAN protocol. |
| DRM | Reserved (Detail availability contact SUNGROW). |
| DO1/2(NO1/2, COM1/2) | For ground fault alarm, intelligent load control or generator control. |
| RSD(DI,PGND) | Reserved (Detail availability contact SUNGROW). |
| METER(A,B) | For smart energy meter. |
| EARTH | For EMC grounding. |
| EB-DO(NO3,COM3) | For EnergyBridge, used for ground fault alarm, intelligent load control, or generator control. |
| CT1/2/3(CT1/2/3+,CT1/2/3-) | For grid CT signal sampling. |



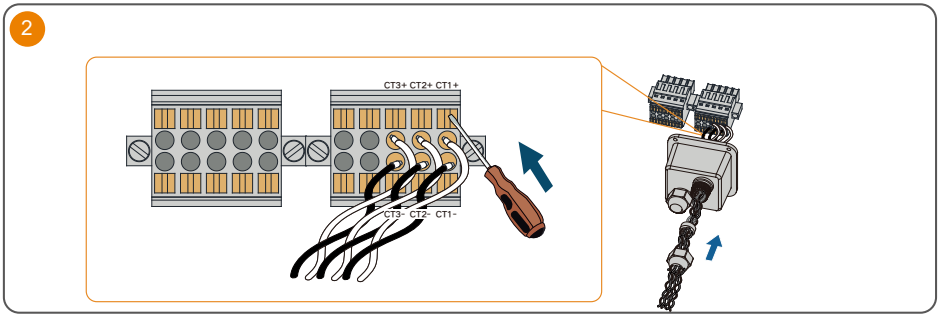

## CT Connection

* The length of CT cable is 10m.

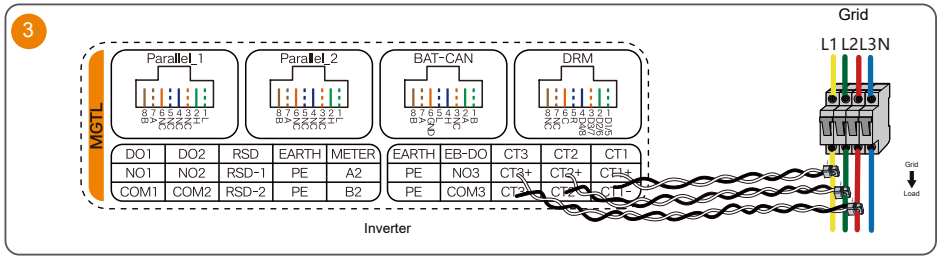
1



2



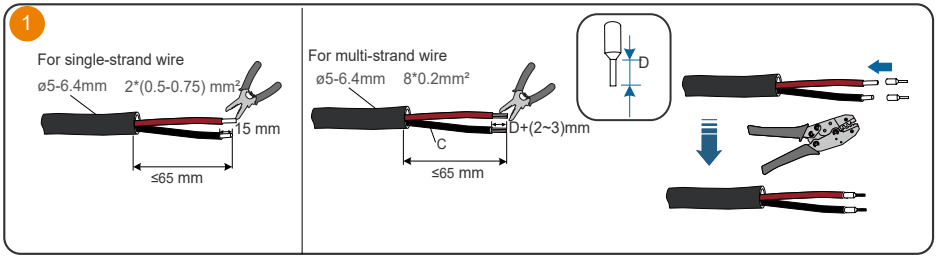

3

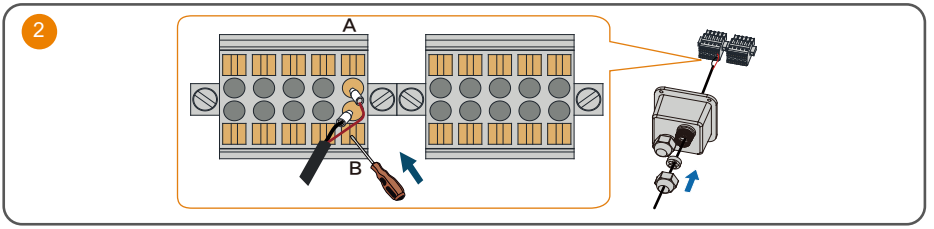


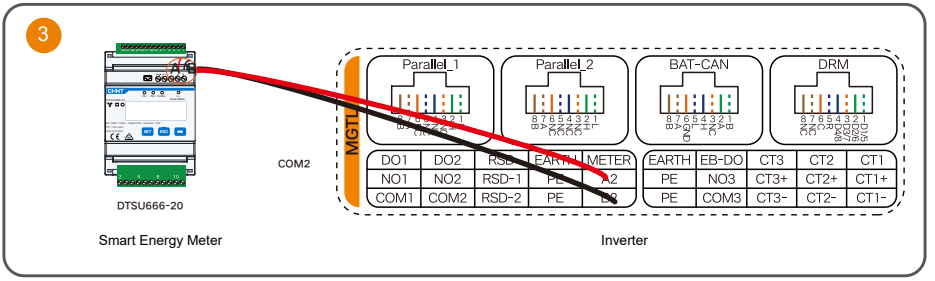

## Smart Energy Meter Connection (Optional)

* The smart energy meter is not included as standard delivery but is available for seperate purchase.

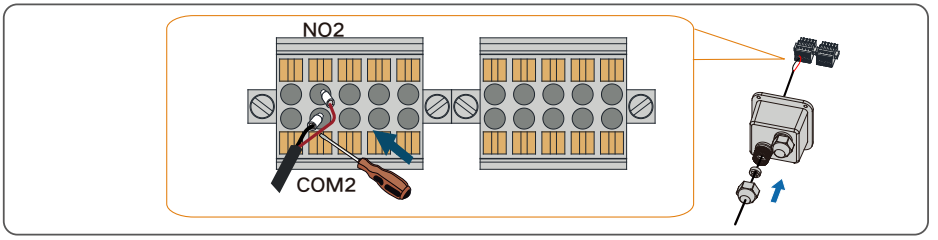
1



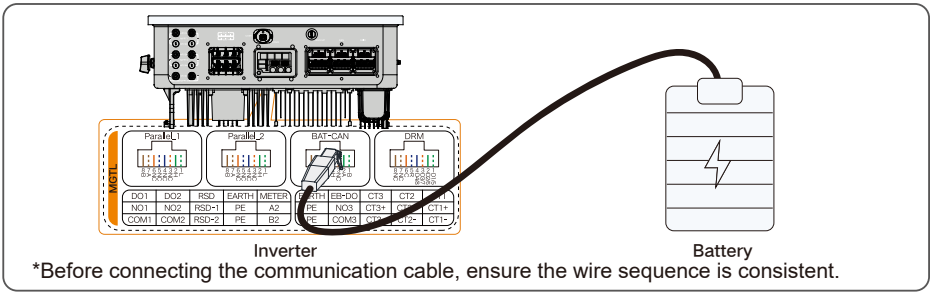


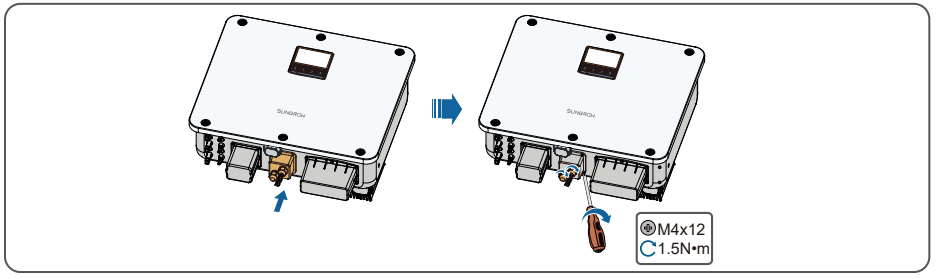

## DO Connection (For GEN Communication)



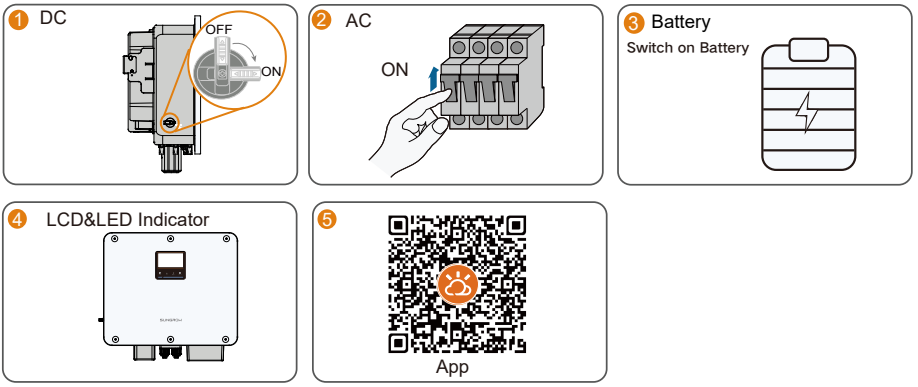

## Li-ion Battery Communication



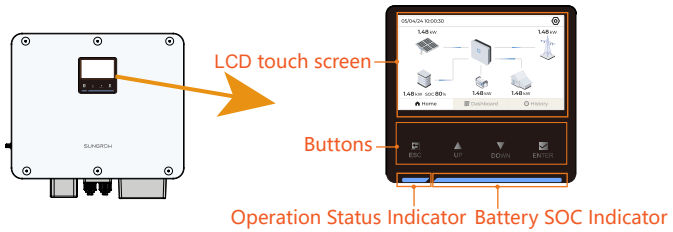

*Before connecting the communication cable, ensure the wire sequence is consistent.



## Power on




Wait 5 minutes after completing the previous step before proceeding to the next one.




## LED Indicator

| LED indicator | LED state | Definition |
|---|---|---|
| | ON | The inverter is running in the on/off-grid mode. |
| | Twinkling | The inverter is at standby or startup state (without on/off-grid operation).<br>The inverter is recovering from a fault. |
| | ON | A system fault has occurred. |
| | OFF | Both the AC and DC sides are powered down. |

## Battery SOC Indicator

| Battery SOC Indicator | SOC |
|---|---|
| | 0<SOC≤20% |
| | 20%<SOC≤40% |
| | 40%<SOC≤60% |
| | 60%<SOC≤80% |
| | SOC＞80% |

The dynamic flow direction of the LED light bar indicates the battery's charging/discharging status.

- SOC 0% → SOC 100%: Charging
- SOC 0% ← SOC 100%: Discharging

More information in the QR code or
at http://support.sungrowpower.com/

SUNGROW

Sungrow Power Supply Co., Ltd.

www.sungrowpower.com

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