



**GOODWE**  
YOUR SOLAR ENGINE



# User Manual

**Solar Inverter**  
HT Series

V2.0-2021-10-27

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# 1 Symbol Definition

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Safety warning - Ignore Safety warning may cause minor or moderate injuries.

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Recyclable

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High voltage warning

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Keep this side up

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Hot surface burning warning

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Maximum 4 boxes stacked

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Not to be disposed of as ordinary waste, but to be recycled in special ways

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Fragile

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Keep away from moisture

---



Refer to the documentation

---



Delayed discharge - It takes 90 minutes for the inverter to be fully discharged after power off.

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CE

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## 2 Safety Instructions

HT series grid-tied PV inverters are designed and tested in compliance with relevant safety regulations by manufacturer. Please strictly follow the safety precautions when installing or maintaining the electrical equipment. Any improper operations may cause serious injuries or property loss to the operators and third parties.

- The inverters must be installed or maintained by trained professionals and follow local standards and regulations.
- Disconnect DC input and AC grid from the inverter before installing and maintaining, and don't touch the inverter in 90 minutes to avoid electric shock.
- Do not touch the generated inverter, as its temperature may exceed 60°C.
- All operations must follow local electric standards and get permission from the local Power Supply Department.
- Keep away from children.
- Take anti-static precautions.
- Do not remove the cover and touch or replace components exclude terminals if you are not authorized. Manufacturer will not be liable for any inverter damages or personal injuries caused by these since they're beyond the warranty scope.
- Make sure that the DC input voltage is less than the max input voltage of the inverter. If the inverter is damaged due to this reason, manufacturer will not be liable for the consequence, and the damage is also beyond the warranty scope.
- The PV strings generate high voltage DC when exposed to sunlight, so you have to operate the following stipulates.
- Plug or unplug the connector between DC and AC is forbidden when the inverter is at work.
- Keep the inverter seal to ensure IP66. If you cannot finish the installation in one day, please block off the terminals to avoid risks of water and dust.
- Store the inverters following the requirements below if the inverter is not to be put into use immediately:
  1. Do not unpack the inverter and check its outer package periodically. Check the package every three months is recommended.
  2. Repack the inverter in time if the package is damaged, or insect and rodent bites are found. If the inverter is already unpacked but not to be used immediately, keep it in the original packing box, put some desiccant and seal the box using the tape.
  3. Keep suitable temperature and humidity. Ensure no corrosive or inflammable substance in the ambient air.
  4. Store the inverter in a clean and dry place where away from rain and accumulated water. Avoid dust and water vapor corrosion.
  5. Do not tilt or turn the packing box upside down.
  6. Place the inverters carefully to avoid them from falling when multi inverters are stacked. Otherwise, personal injury or equipment damage may occurs.

# 3 Product Introduction

## 3.1 Product Naming Rules

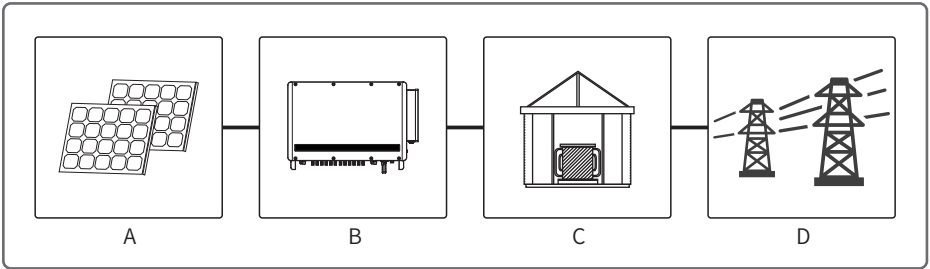
The model involved are GW250K-HT, GW250KN-HT, GW225K-HT and GW225KN-HT

Model Description:

1. GW - abbreviation for GOODWE
2. 250K/225K - rated output power
3. HT - model code

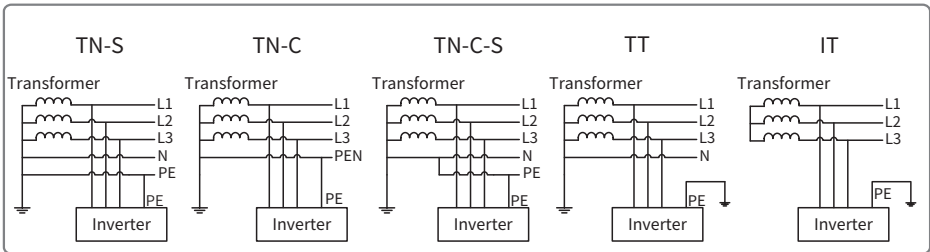
## 3.2 Application

The HT series inverters are three-phase grid-tied PV string inverters that convert the DC power generated by PV strings into AC power and feed the qualified power into the power grid. The inverters are transformerless. The HT inverters can be applied in grid-tied PV systems of large-scale or commercial and industrial PV systems. Typically, there consists of a PV string, inverter, transformer, and utility grid in a grid-tied PV system.

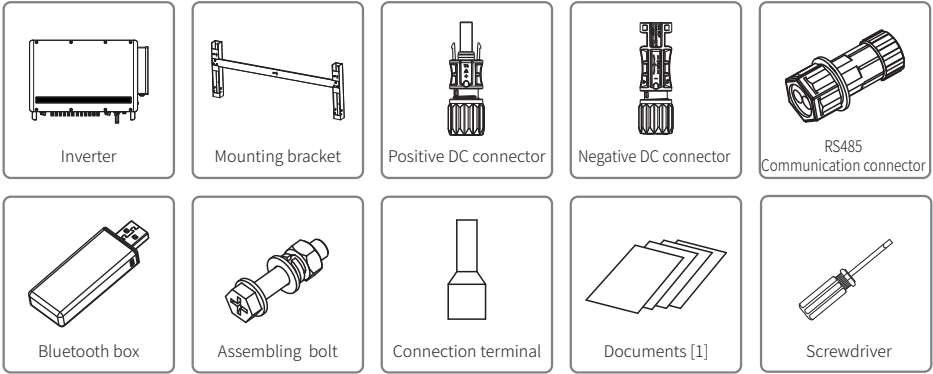


Item	Type	Notes
A	PV string	Monocrystalline silicon, polycrystalline silicon, thin film pv panels without grounding
B	Inverter	HT series GW250K-HT, GW250KN-HT, GW225K-HT, GW225KN-HT
C	Transformer	For voltage step-up to deliver the renewable energy to the utility grid
D	Utility grid	Different models of TN-S, TN-C, TN-C-S, TT, IT are applicable to the following grid structures

The inverter HT supports the following grid systems:



### 3.3 Items supplied

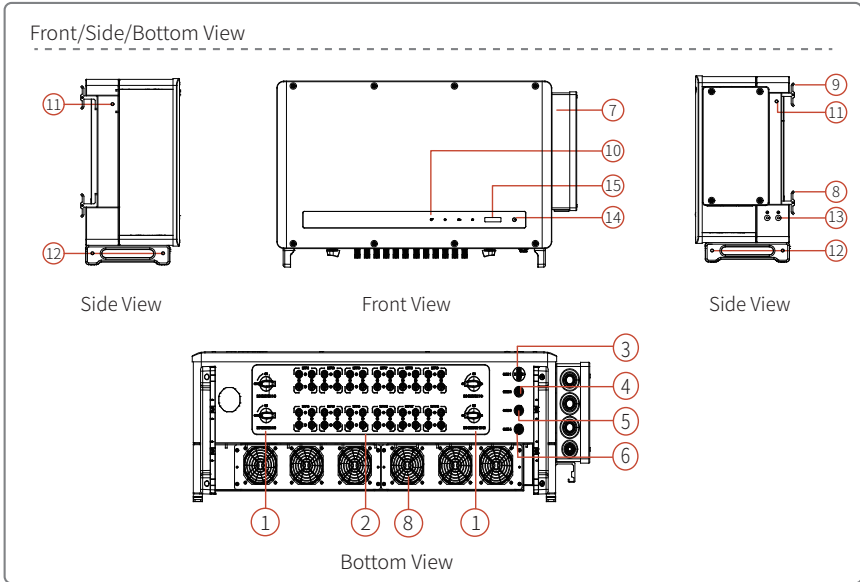


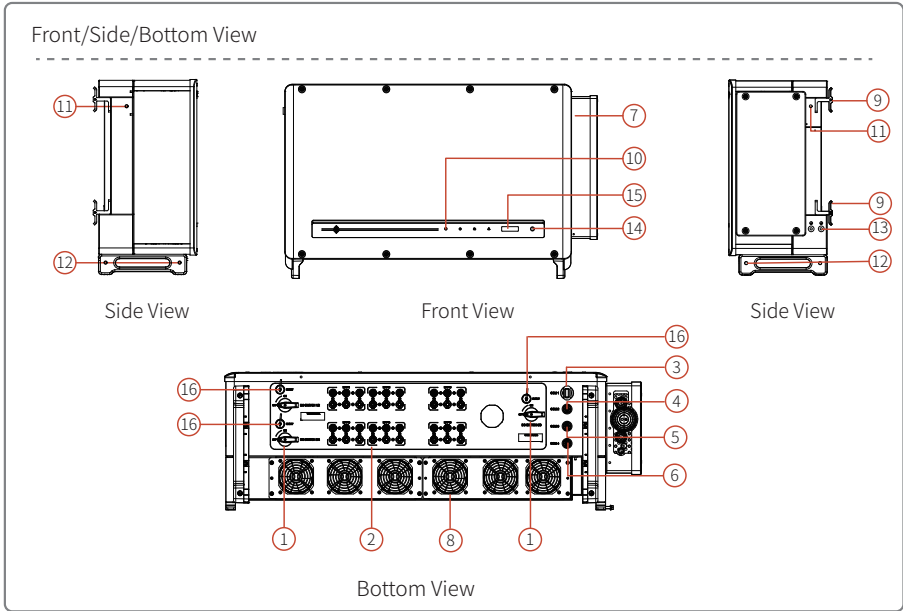
[1] Documents: user manual, business license and certificate.

### 3.4 Appearance

Check the product to confirm it is the right model you purchased after unpacking the package. Product appearance shows as below.

GW250K-HT and GW225K-HT





- |                                       |  |
|---------------------------------------|--|
| 1. DC switch*                         | 9. Hook                                      |
| 2. DC terminal                        | 10. Indicator                                |
| 3. USB port(Bluetooth)                | 11. Mounting hole for lifting ring or handle |
| 4. RS485 Communication port           | 12. Mounting hole for handle                 |
| 5. Tracking system Communication port | 13. Grounding terminal                       |
| 6. Reserved Communication port        | 14. Button(optional)                         |
| 7. AC junction box                    | 15. LCD(optional)                            |
| 8. Fan components                     | 16. RESET                                    |

\*DC switch:

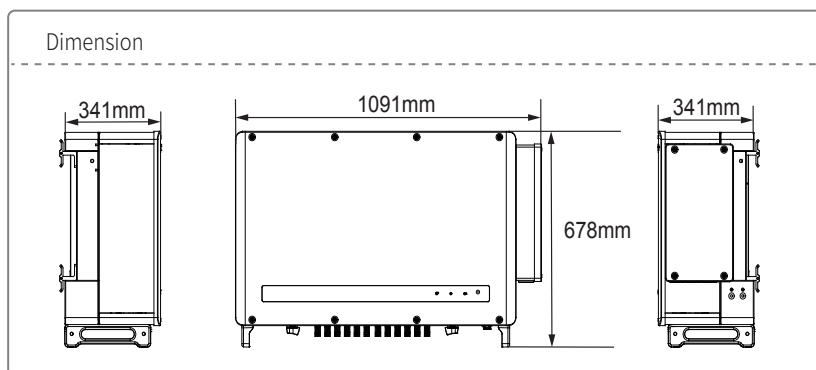
GW250K-HT and GW225K-HT:

- DC switch 1-3 (to control MPPT1-MPPT3 terminals)
- DC switch 4-6 (to control MPPT4-MPPT6 terminals)
- DC switch 7-9 (to control MPPT7-MPPT9 terminals)
- DC switch 10-12 (to control MPPT10-MPPT12 terminals)

GW250KN-HT and GW225KN-HT:

- DC switch 1/2 (to control MPPT1-MPPT2 terminals)
- DC switch 3/4 (to control MPPT3-MPPT4 terminals)
- DC switch 5/6 (to control MPPT5-MPPT6 terminals)

No.	Name	Description
1	DC switch	Used to safely disconnect the DC input when it's necessary. The inverter will automatically start working when input or output meets requirements. Turn the DC switch to "OFF" to cut the DC input or to "ON" before starting the inverter.
2	DC terminal	To connect PV strings.
3	USB port(Bluetooth)	To connect the Bluetooth communication box.
4	RS485 communication port	To connect RS485 communication devices.
5	Tracking system communication port	To connect the tracking system.
6	Reserved communication port	-
7	AC junction box	To connect AC cables.
8	Fan combination	Used for inverter heat dissipation, and need regular cleaning.
9	Hook	To fix the inverter on the mounting bracket.
10	Indicator	Display the operating status of the inverter.
11	Mounting hole for lifting ring or handle	To install the inverter handle and lift ring.
12	Mounting hole for handle	To install the inverter handle.
13	Grounding terminal	To connect the grounding cables and ground the inverter.
14	Button	To operate and configure the inverter.
15	LCD	To check the operating parameters of the inverter.
16	RESET	Reset the DC switch if it is tripped due to the inverter fault. Press the RESET button using the reset tool and turn the switch from OFF to ON.





## Indicator Description

Model without LCD



Model with LCD



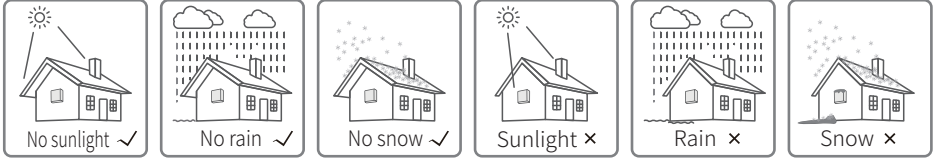
Green Light  
 Green Light  
 Green Light  
 Red light

Code	Status	Description
		Steady ON: power on
		OFF: power off
		Steady ON: normal grid-tied
		OFF: not grid-tied
		Blinking slowly: Self-check before grid-tie
		Blinking fast: Grid-tie soon
		Steady ON: Wireless monitoring is normal
		Single blinking: Wireless module reset
		Double blinking: Not connected to base station
		Four blinking: Server not connected
		Blinking: RS485 communication is normal
		OFF: Wireless module resetting
		Steady ON: System fault
		OFF: No fault

# 4 Installation

## 4.1 Installation Instructions

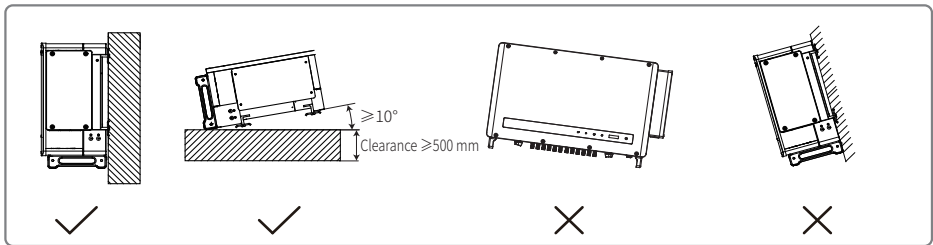
- The inverters work optimally when the ambient temperature is not higher than 45°C.
- The installation height should preferably be parallel to the line of sight for easier operation and maintenance.
- Keep the inverter installed away from flammable and explosive materials.
- Install the inverter in the place with a strong signal and no electromagnetic interference devices or obstructions around.
- Keep the parameter labels and warning signs clear after installation.
- Avoid direct sunlight, rain, and snow.



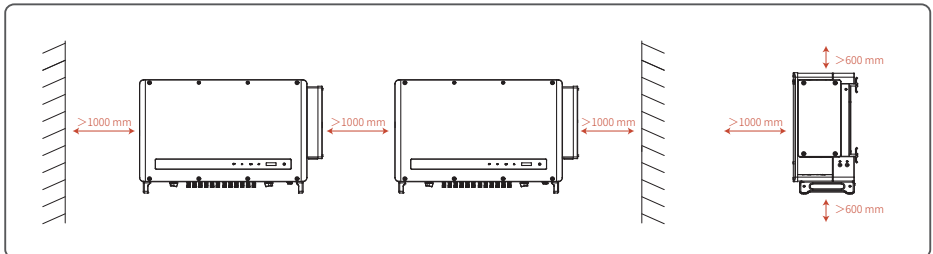
## 4.2 Select Installation Position

The following factors must be considered when choosing the installation position:

- Decide proper installation methods and position that is suitable for the weight and dimension of the inverter.
- Install on the surface or bracket that is solid enough to hold the heavy inverter.
- Install the inverter in a well-ventilated place.
- Installation Angle



- To ensure space for ventilation and installation, the recommended clearances around the inverter are as following.

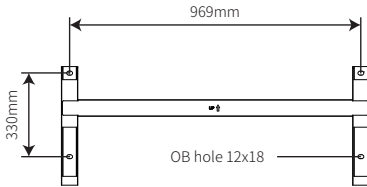


## 4.3 Install the Inverter

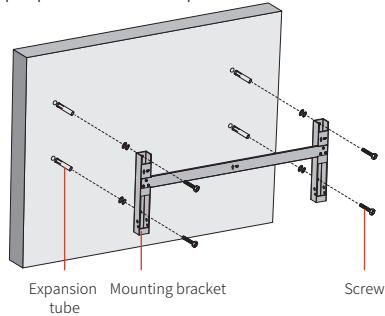
### 4.3.1 Mount on the wall:

- The inverters work optimally when the ambient temperature is not higher than 45°C.
- The installation height should preferably be parallel to the line of sight for easier operation and maintenance.
- Keep the inverter installed away from flammable and explosive materials.
- Install the inverter in the place with a strong signal and no electromagnetic interference devices or obstructions around.
- Keep the parameter labels and warning signs clear after installation.
- Avoid direct sunlight, rain, and snow.

**Step 1:** Mark position holes with the mounting bracket, then drill holes with a diameter of 13 mm and a depth of 65 mm in the wall. The holes are shown below.

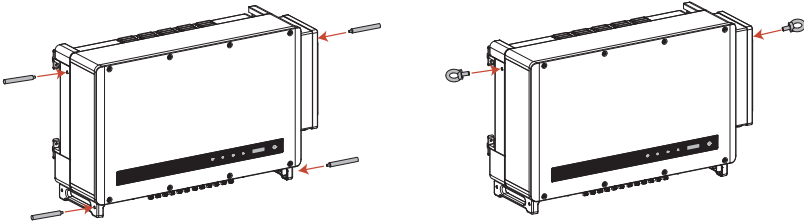


**Step 2:** Fix the mounting bracket on the wall with expansion screws. Customers have to prepare the M10 expansion screws.

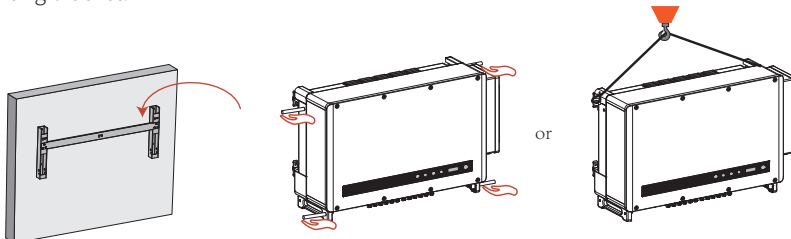


**Step 3:** Install handles or lifting rings on both sides of the inverter.

The handle is optional. Make sure the handle is securely fixed when installing the equipment. Remove the handle and store it properly after installation.

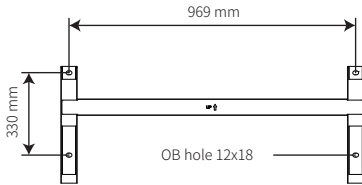


**Step 4:** Install personnel can hold the handles or use lifting devices to hang the inverter on the mounting bracket.

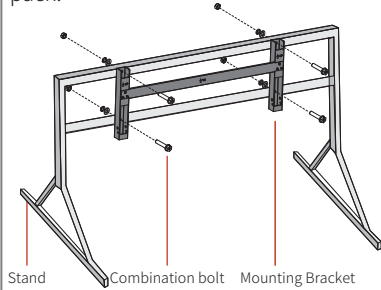


### 4.3.2 Mount on the bracket:

**Step 1:** Mark position holes with the mounting bracket first and drill holes with a diameter of 13 mm and a depth of 65 mm in the wall. The holes are shown below.

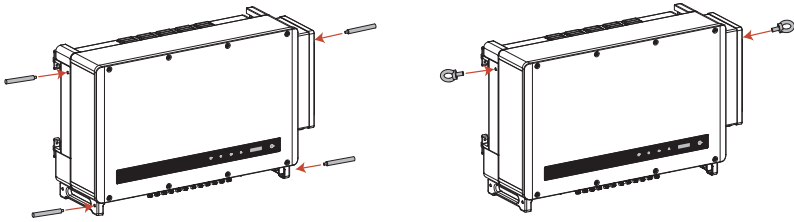


**Step 2:** Fix the mounting bracket on the stand with the combination bolts in the accessory pack.

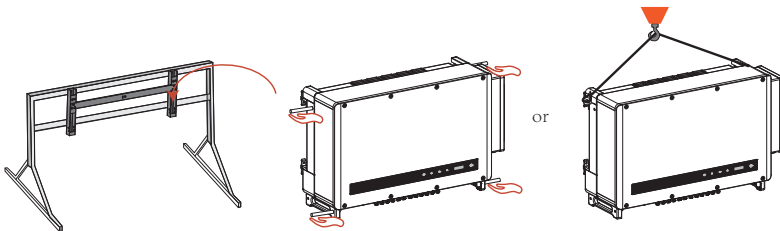


**Step 3:** Install handles or lifting rings on both sides of the inverter.

The handle is optional. Make sure the handle is securely fixed when installing the equipment. Remove the handle and store it properly after installation.



**Step 4:** Install personnel can hold the handles or use lifting devices to hang the inverter on the mounting bracket.



## 4.4 Electrical Connections



The PV string output cannot be grounded. Make sure that the PV insulation resistance to the ground meets the minimum requirement before connecting the PV string to the inverter.

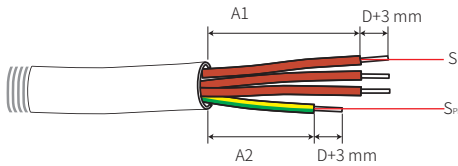
### 4.4.1 AC Terminal Connection

1. Measure the voltage and frequency of the grid-tied connection point to make sure that they meet the requirements for the grid-tied inverter.
2. An extra AC circuit breaker or fuse is recommended. The specification of the breaker or fuse should be 1.25 times of AC output rated current.
3. PE cable of the inverter must be grounded reliably.
4. Disconnect the circuit breaker or fuse between the inverter and grid-tied connection.
5. Follow the steps below to connect the utility electric and the inverter.

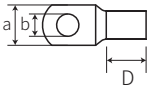
Note: Do not connect copper blocks with aluminum wires. Otherwise electrochemical corrosion will occur.

- If copper cables are applied, please use copper wiring terminals.
- If copper-clad aluminum cables are applied, please use copper wiring terminals.
- If aluminum alloy cables are applied, please use copper-aluminum transition wiring terminals.

**Step 1:** Select a suitable AC cable and strip it. For specific specifications, refer to the table below.



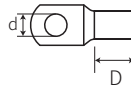
L1/L2/L3



Model: M12

Size:  $a \leq 45 \text{ mm}$ ,  $12.2 \text{ mm} \leq b \leq 13 \text{ mm}$

PE



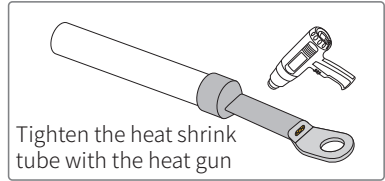
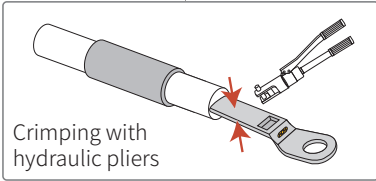
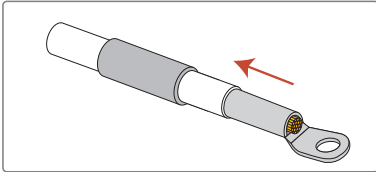
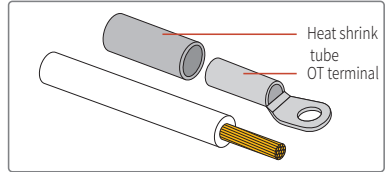
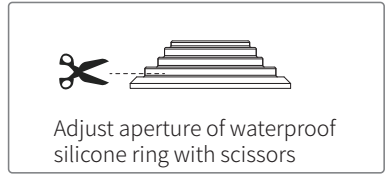
Model: M8

Size:  $8.2 \text{ mm} \leq d \leq 9 \text{ mm}$

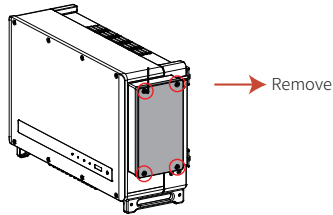
Code	Description	Value
A1	Wire Length	> 500mm (the use of PVC wires is recommended)
A2		A1-80mm
D	Conductor Length	Cold terminal +3 mm
S	Cross-Sectional Area of Conductor	70-300 mm <sup>2</sup>
S <sub>PE</sub>		$\geq S/2$

**Step 2:** Adjust the waterproof silicone ring according to actual needs, and route the AC cables through the ring.

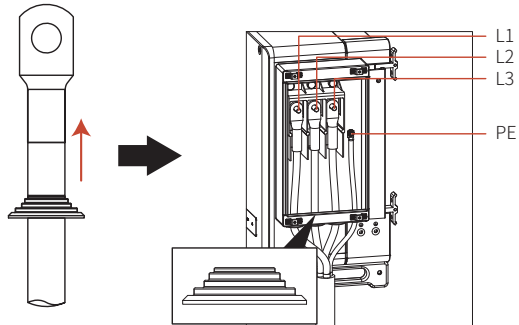
**Note:** To ensure the equipment is sealed, please adjust the aperture of the waterproof silicone ring to match the wire diameter.



**Step 3:** Remove the cover of the AC junction box with a hex wrench.

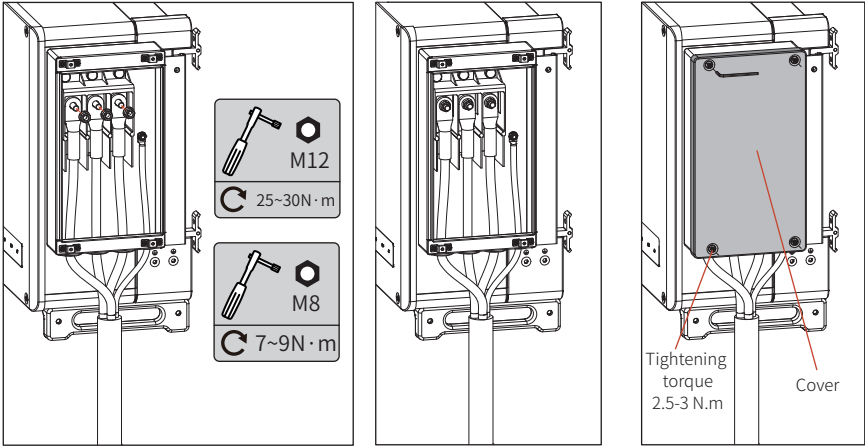


**Step 4:** Connect AC cables to the terminal block.

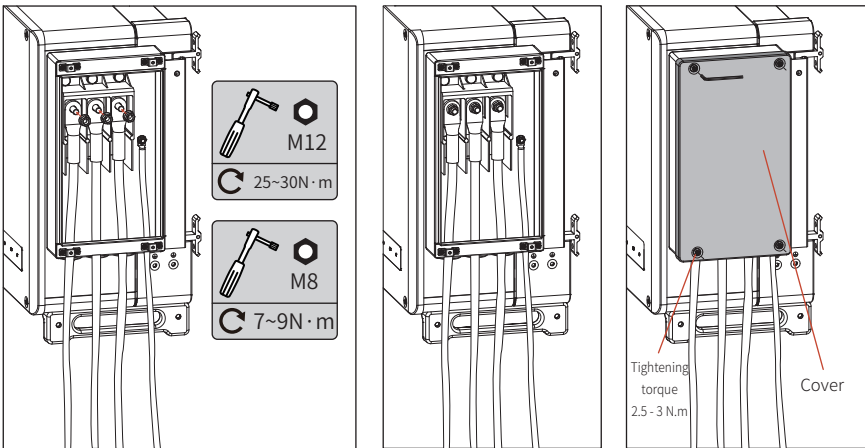


**Step 5:** Tighten the screws and place the fireproofing mud before installing the cover.

### Connection of A Multi-core Cable



### Connection of A Single-core Cable



Please use a torque wrench to tighten the AC Output Cable.

#### 4.4.2 AC Circuit Breaker and Leakage Current Protection Device

Please arrange a circuit breaker for the inverter as a protector to ensure that the inverter can safely disconnect from the grid.

Inverter model	Recommended circuit breaker
GW250K-HT	250 A
GW250KN-HT	
GW225K-HT	
GW225KN-HT	

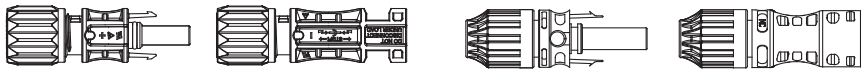
**Note:** the inverters cannot share one circuit breaker.

The inverter is integrated with a leakage current detection unit to detect external leakage current. Upon the leakage current exceeds the limit, the inverter immediately disconnects from the power grid. If a leakage current protection device is installed externally, then the action current of a single inverter should be 2500mA or higher.

#### 4.4.3 DC Terminal Connection

1. Keep the DC switch off before connecting PV strings.
2. Ensure that the polarities of the PV string match with the DC connector. Otherwise, the inverter will be damaged.
3. Keep the open-circuit voltage of each PV string lower than the max input voltage of the inverter under any circumstances.
4. Do not use the DC connector other than the one provided by manufacturer.
5. Do not connect the polarities of the PV string to the PE cable. Otherwise, the inverter will be damaged.
6. PV terminal ports not in use need to be protected carefully.

DC connectors – DEVALAN series and MC4 series.

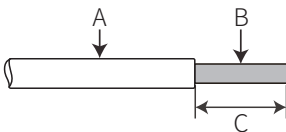


DEVALAN series

MC4 series

Follow the steps below to complete the DC cable connection:

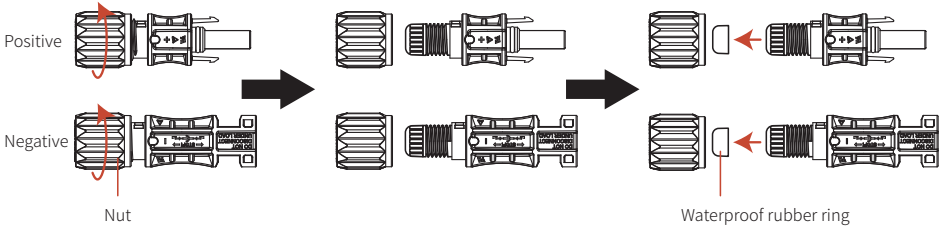
**Step 1:** Select a DC cable and strip it. For specific specifications, refer to the table below.



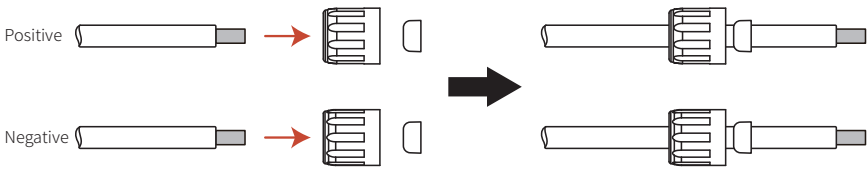
Code	Description	Value
A	Outer diameter	5.5-9 mm
B	Cross-sectional area of conductor	4-6 mm <sup>2</sup>
C	Bare length	Approx 7 mm



**Step 2:** There's a DC terminal in the accessory kit. Separate the nut from the terminal and take out the waterproof rubber ring.

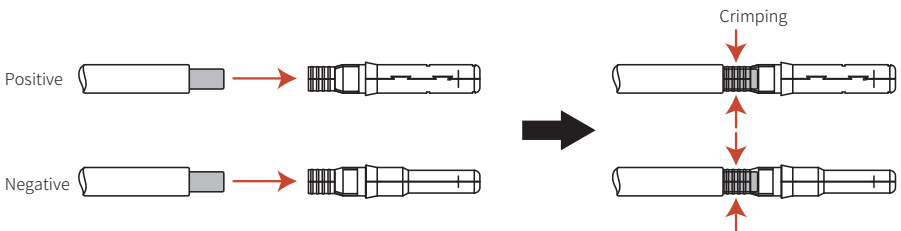


**Step 3:** Route the stripped DC cable through the nut and waterproof rubber ring.

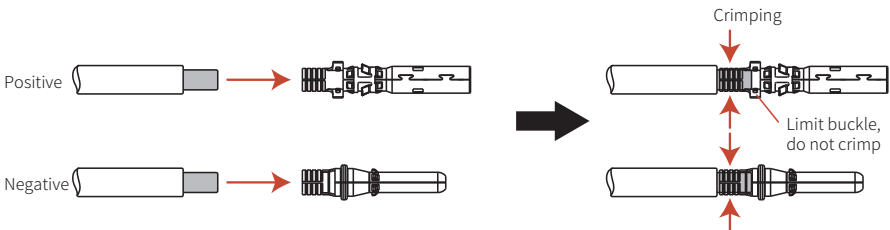


**Step 4:** Connect the conductor of the DC cable to the metal DC terminal and crimp them with a specified crimping tool.

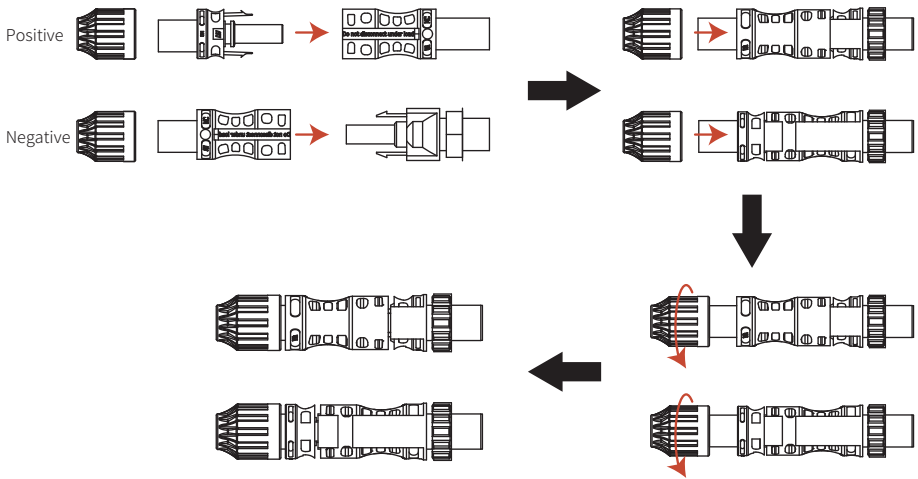
MC4 series



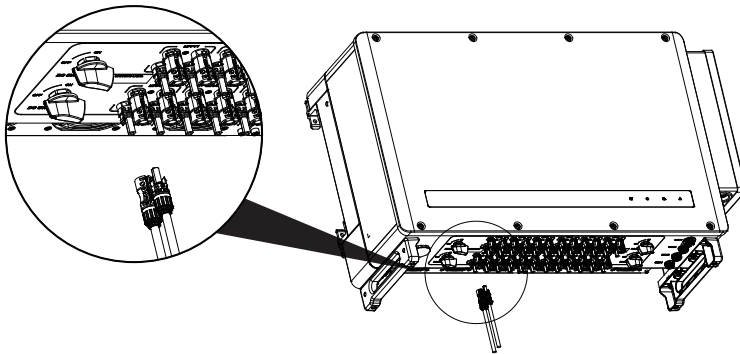
DEVALAN series



**Step 5:** Insert the crimped DC cable into the DC terminal, then place the waterproof rubber ring into the DC terminal and tighten the nut.



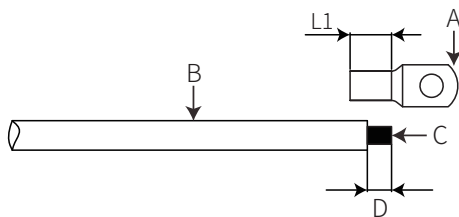
**Step 6:** Connect the completed DC terminals to the inverter as shown below.



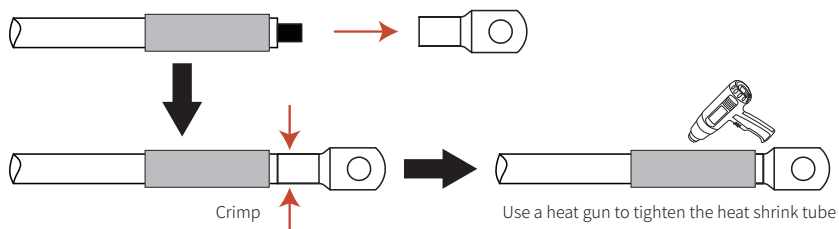
#### 4.4.4 External Ground Terminal Connection

According to EN50178, a PE connector has been added. Customers have to connect this connector to the PE cable when installing the inverter. Please complete the connection following the steps below.

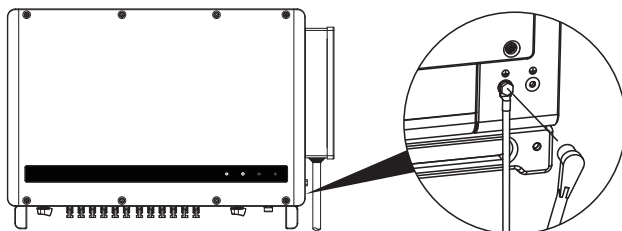
**Step 1:** Strip the selected cable to an appropriate length. (M8 ground terminals prepared by customers)



**Step 2:** Insert the stripped cable into the terminal, and then crimp it with pliers.



**Step 3:** Apply silica gel on the ground terminal to improve its corrosion resistance after the grounding cable is installed.



# 4.5 Communication Connections

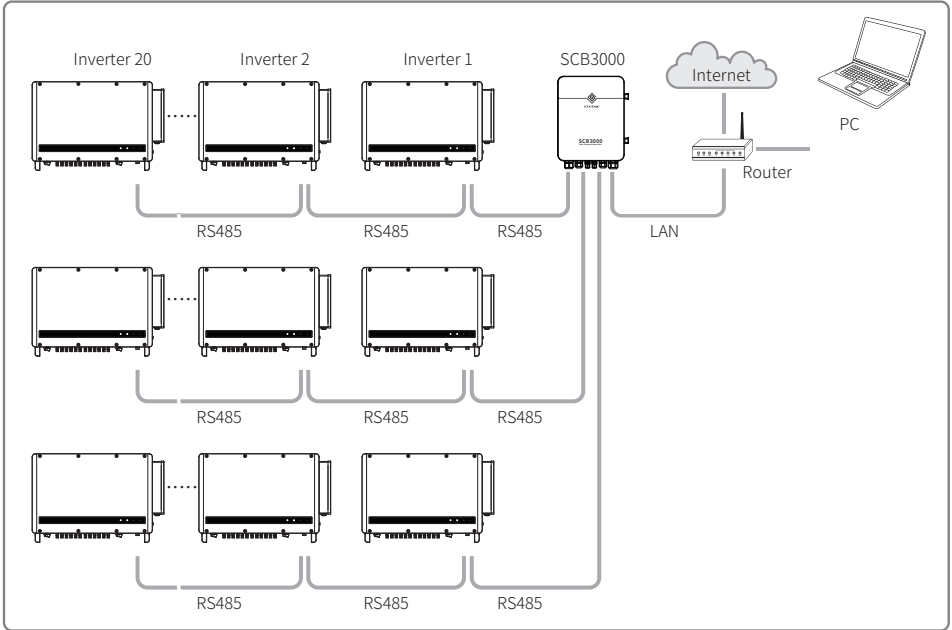
## 4.5.1 RS485 communication

Apply to RS485 models only.

Connect the RS485 port of the inverter to the Data Logger. The total length of the connection cable is less than 1000m.

Keep the communication cable away from power cables to prevent the communication from being interrupted.

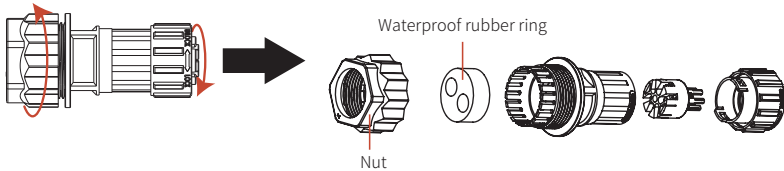
The RS485 wiring method is shown below.



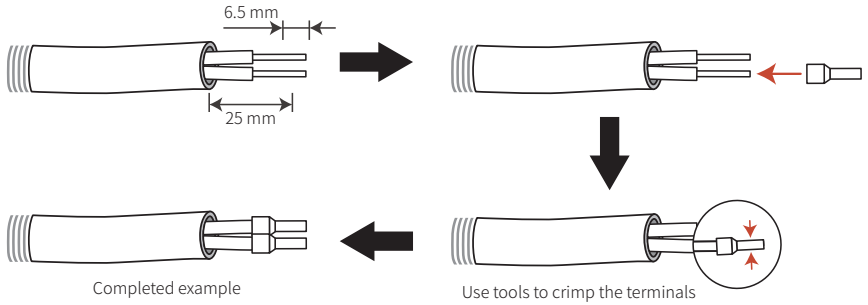
If more than 2 inverters are connected and also connected to the data logger, at most 20 inverters are allowed on the daisy chain.

RS485 communication connect procedure:

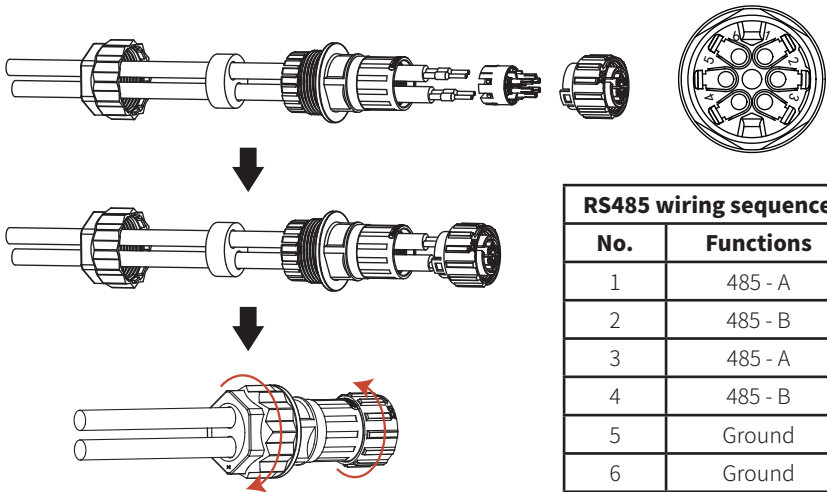
**Step 1:** Disassemble the communication terminal (in the accessory pack).



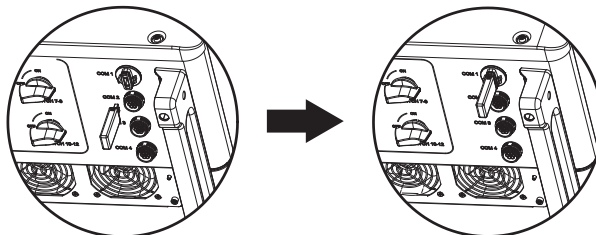
**Step 2:** Strip the selected Shielded Twisted Pair(STP), then crimp it to the terminal.



**Step 3:** Route the RS485 STP through the communication terminal and connect it to the corresponding port according to the sequence. Then assemble the terminals and tighten them.

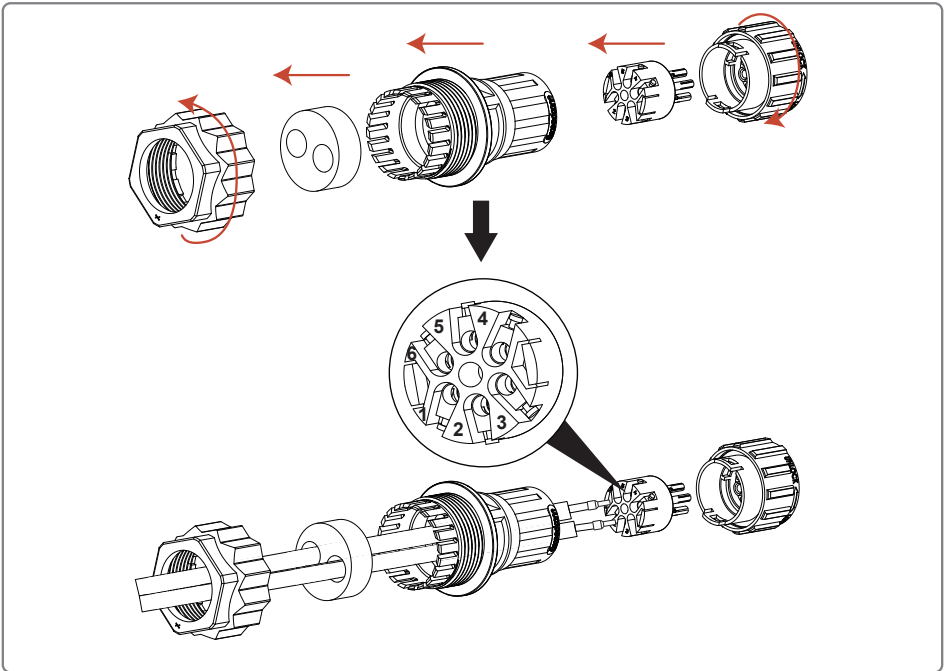
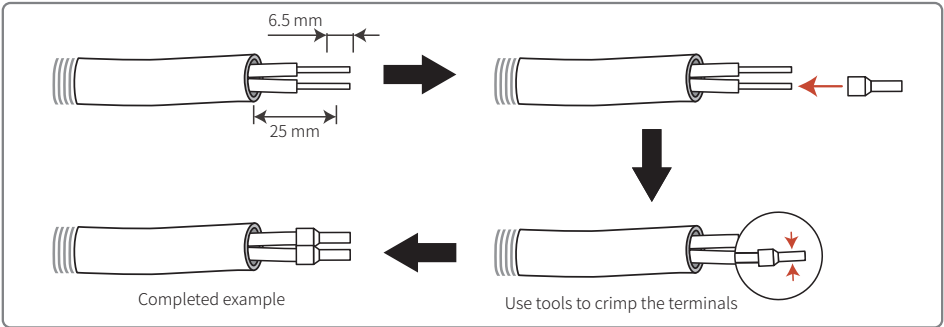
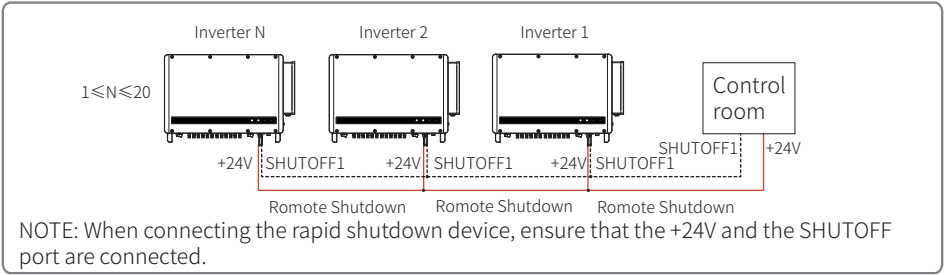


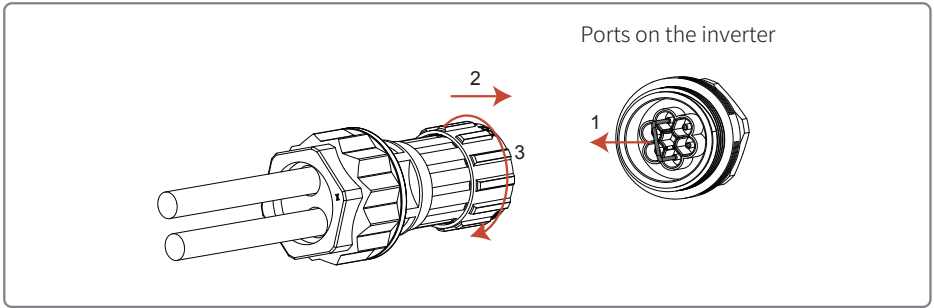
**Step 4:** Connect the communication terminal to the COM port of the inverter. And connect COM2 to the inverter or data logger while COM3 to the tracking bracket system.



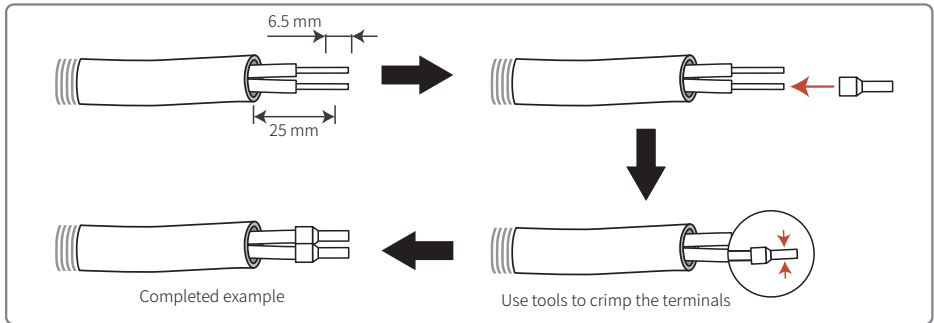
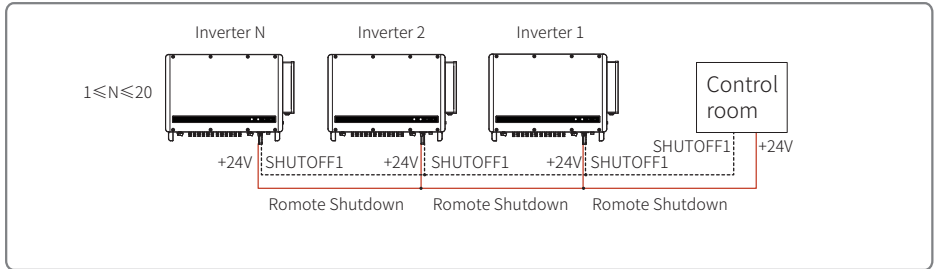
## 4.5.2 Remote Shutdown

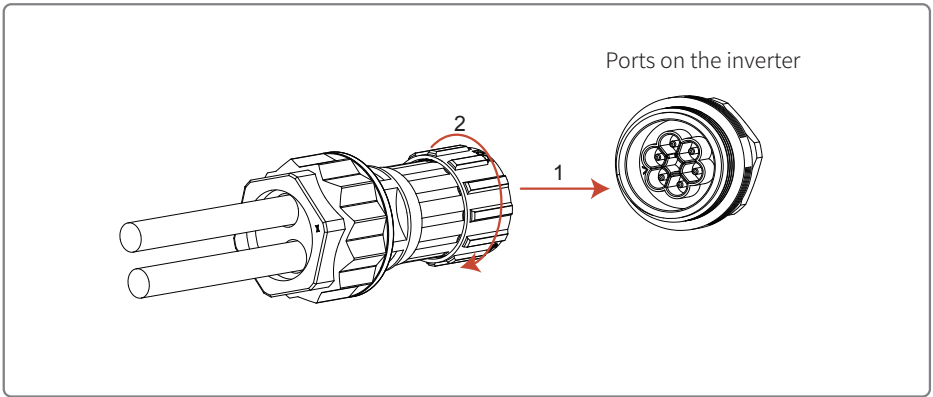
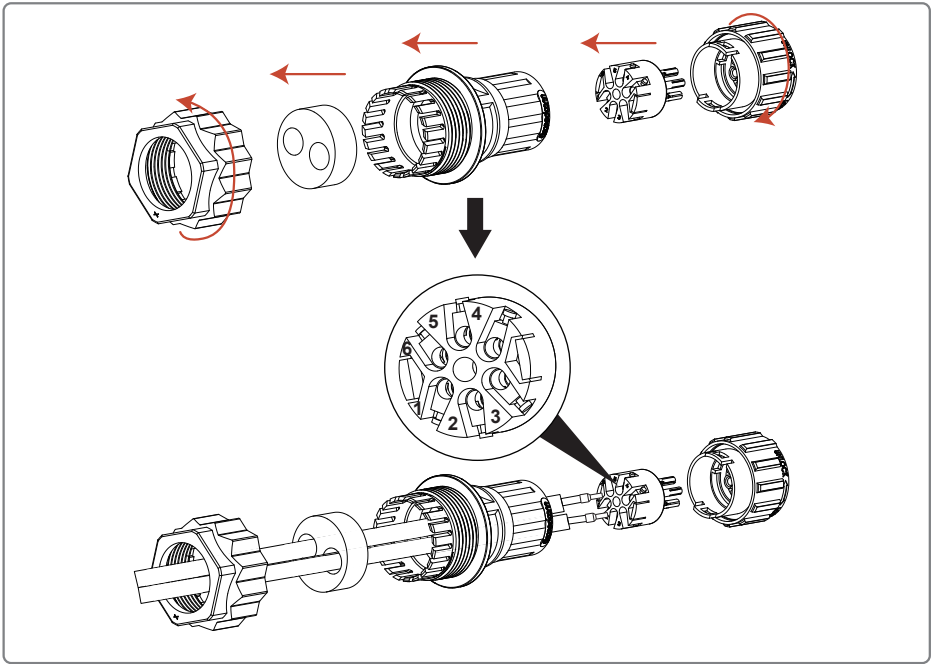
For inverters installed in Europe, refer to the following steps to connect the rapid shutdown device.





For inverters installed in India, refer to the following steps to connect the rapid shutdown device.





#### 4.5.2 PLC 2.0 Communication

- Note:** 1. PLC 2.0 communication only applies to the situation when output is connected to a transformer;  
 2. PLC 2.0 communication requires an SCB3000 communication box.  
 3. Refer to the SCB3000 manual for PLC connection methods.

#### 4.5.3 Cloud Monitoring

After installation, please scan the QR code on the back of this manual or visit [www.sems.com.cn](http://www.sems.com.cn) to download goodwe.cloudview APP. Complete the registration, then you can start the cloud monitoring function.



# 5 Operation Instructions

## 5.1 Description of LCD and Buttons



SolarGo App

**Note:**

For inverters without LCD, please scan the QR code left to download and install the SolarGo App, and complete the corresponding configuration operations in the App.

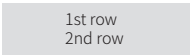
Safety Country Setting:

If the LCD displays **"GW250K-HT Power = XXXXX watts"** or **"GW225K-HT Power = XXXXX watts"**, press and hold for 2s to enter the submenu **"max voltage in China"**. Select safety country in the submenu according to your location and wait for 10s after selecting the country. The LCD will display **"Setting up..."**. Then you will get a feedback like **"Setup successfully"** or **"Setup failed"**.

(1) The LCD shows as following:

Grid-tied power generation  
Power = XXXXX watts

(2) Description of the display:



1st row: status information:

\*The first row shows the status information of the system.

**"Waiting for power generation power = 0 watts"** indicates the inverter is in standby state;

**"Detection timing \*\*sec power = 0 watts"** indicates that the inverter is self-checking and preparing to generate;

**"grid-tied power generation power = XXXXX watts"** indicates that the inverter is in power generation state;

When the system is abnormal, an error message will be displayed. For details, refer to the \*5.2 Failure Information\* table.

\*The operating parameters of the system can be switched and displayed in the status bar by pressing the buttons. Press the buttons to switch the menu and submenu. The detailed contents and procedures can be seen below.

\*The menu display is controlled by the buttons. Long press the button to enter the submenu.

2nd row: This area displays the real-time power generation of the inverter.

(3) Button Description:

The two operations to control the buttons: short press and long press

(4) Details of buttons and LCD screen:

\*The basic functions can be set by pressing the buttons, such as time, language, safety country, etc. And the data can also be checked by pressing the buttons.

\*Menu and submenu status can be displayed on the LCD screen. Long press the button to entry submenu from menu. If there is no submenu, press and hold for 2 seconds to lock the current display interface.

\*For both menu and submenu, the system will automatically revert to the first item of menu after 20 seconds if no button is pressed.

(5) Menu Introduction:

\*After the inverter is powered on, the menu is the initial interface.

\*The status display is the first item of the menu, which displays the current status of the inverter.

When the inverter start to be powered on, the LCD displays "Waiting for power generation". If it is generating, it displays "Grid-tied power generation". If the inverter is faulty, the fault information is displayed.

\*Short press the button once to enter the input voltage display menu, which is used to display the PV voltage in "V".

\*Short press the button once to enter the input current display menu, which is used to display the PV current in "A".

\*Short press the button once to enter the utility voltage display menu, which is used to display the mains voltage in "V".

\*Short press the button once to enter the output current display menu, which is used to display the output current in "A".

\*Short press the button once to enter the utility frequency display menu, which is used to display the mains frequency in "Hz".

\*Check failure code

Short press the button once to enter the failure history menu, which is used to display the fault information of the inverter. And long press for 2 seconds to enter the submenu to check the five latest fault messages, including Error message, failure time (190520 15: 00). Do not operate for 20 seconds to exit the submenu. The screen backlight will go off, and it will automatically return to the status display menu.

\*Check inverter model

Short press the button once to enter the "Model Name" menu and check the model name.

\*Check software version

Short press the button once to enter the software version menu, which displays the current software version like: "Software version: V1.XX.XX.XX". No operation for 20 seconds the backlight will go off and the display will automatically back to the menu.

\*Time setting

Short press the button once to enter the system time setting menu, which is used to set the current time. And long press the button for 2s to enter the submenu "2000-00-00 00:00". Please change the time according to the following rules:

1st&2nd digits: not changed

3rd&4th digits: year(range 2000~2099)

5th&6th digits: month

7th&8th digits: date

9th&10th digits: hour

11th&12th digits: minute

Short press the button to set the time. Long press for 2s to switch to the next digit.

If you entered the submenu but made no changes, the display would go back to the menu automatically in 20 seconds. If you changed the time, the screen would display "Setting up..." in 10s after changes, and you would get feedback like "Setup successfully" or "Setup failed". Finally, it will automatically go back to the status display menu.

\*Set shadow MPPT function.

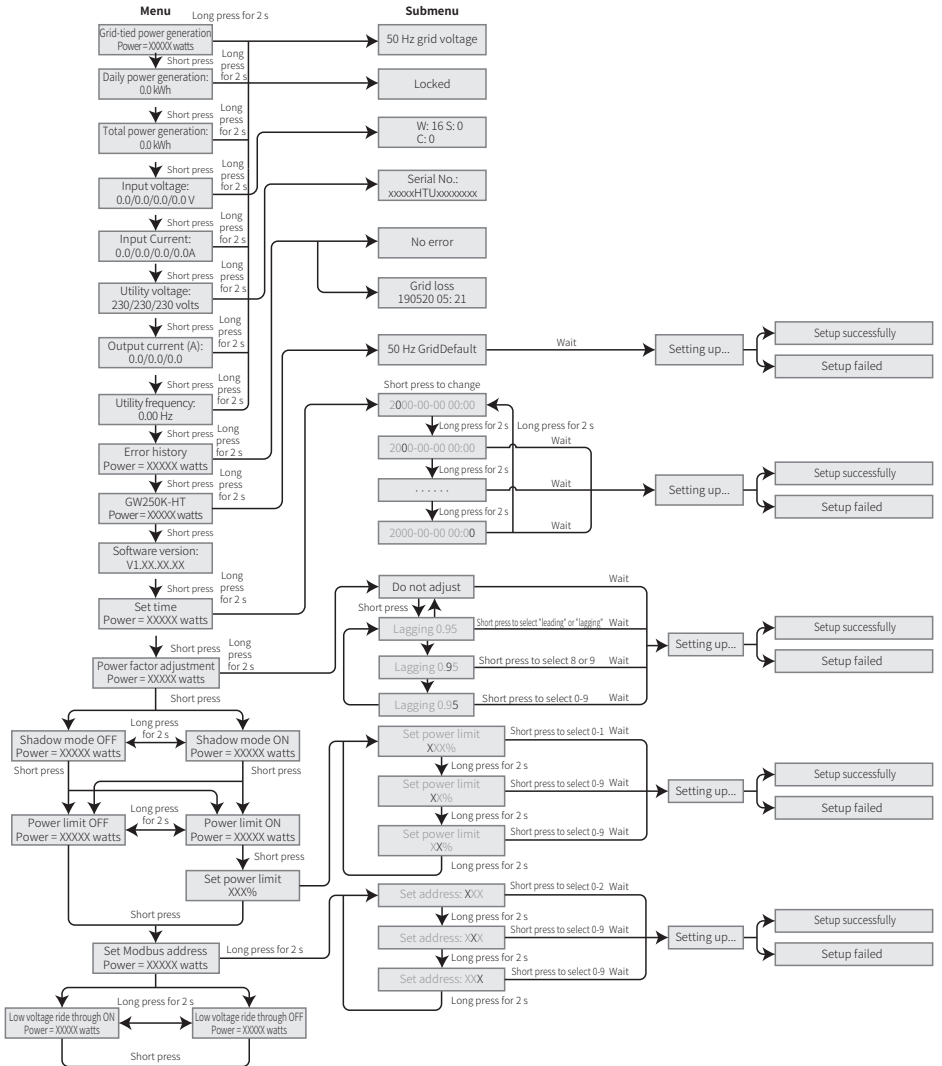
Short press the button once to enter the shadow MPPT function menu. Long press for 2 seconds to turn the shadow MPPT function on or off.

"Shadow mode OFF Power =XXXXX watts" indicates it is off. "Shadow mode ON Power =XXXXX watts" indicates it is on.

(6) Normal power-on

\*When the input voltage is greater than the turn-on voltage, the inverter starts to work and the yellow light is on. After a few seconds, the screen starts to display the following information:

"Grid loss Power =XXXXX watts". If there is utility power at this time, it will display "Detection timing \*\*sec power = 0 watts" in 2s. The "\*\*\* seconds" here will decrease progressively to 0, and you will hear the actuating of the relay. Then the screen will display "grid-tied power generation" and the current power.



## 5.2 Fault Information

When abnormal situation occurs, the following error message may display on the screen:

<b>Error Message</b>	<b>Error Message</b>
Grid outage	GFCI Chk Fail
Vac Fail	AC HCT Fail
Fac Fail	Gnd I Fail
Isolation Fail	DC Bus Low
GFCI Fail	HCT Chk Fail
DCI High	PV over Curr
Over Temperature	PV over Curr
Relay Fail	PV soft OverCurr
Relay Fail	Model Error
EEPROM Fail	PV Over Voltage
ExFan Fail	PV Voltage Low
InFan Fail	PV HCT Fail
Ref-V Chek Fail	Bus Unbalance
DC Bus High	DC Bus High
SPI Comm Fail	PV1..PV12 over Curr

# 6 Frequently Asked Questions

Normally, the inverter requires no maintenance. If the inverter cannot work normally, refer to the following instructions:

When something is wrong, the red indicator on the operation panel will light up, and relevant information will be listed on the APP. Refer to the table below for more details.

Type	Error Message	Error Message
System Errors	Isolation Failure	<ol style="list-style-type: none"> <li>1. Disconnect the DC switch and remove the DC connector, then check the impedance of the positive and negative poles of the DC connector to the earth.</li> <li>2. If the impedance is lower than 100 kilohm, check the impedance of the PV string to the earth.</li> <li>3. If the impedance is higher than 100 kilohms, call the local service center.</li> <li>4. Remove the AC connector and check the impedance of the N wire to the earth wire. If higher than 10 ohms, check the AC connection.</li> </ol>
	Gnd I Fail	<ol style="list-style-type: none"> <li>1. Disconnect the DC switch and check the insulation of the PV string to the earth.</li> <li>2. Turn on the DC switch after checking.</li> <li>3. Call the local service center if the fault resists.</li> </ol>
	Grid voltage abnormality	<ol style="list-style-type: none"> <li>1. Disconnect the DC switch and open the AC junction box to measure the voltage on the live wires and between the live wires in the connector. To confirm whether the voltage matches with the grid-tied inverter specifications.</li> <li>2. If it does not match, check the network cables.</li> <li>3. If it matches, connect the AC connector and turn on the DC switch. The inverter will recover automatically. Call the local service center if the fault resists.</li> </ol>
	Fac Failure	<ol style="list-style-type: none"> <li>1. If the grid frequency returns to a normal state, the inverter will automatically recover.</li> <li>2. Call the local service center if the fault resists.</li> </ol>
	Utility Loss	<ol style="list-style-type: none"> <li>1. Disconnect the DC switch and open the AC junction box to measure the voltage on the live wires and between the live wires in the connector. To confirm whether the voltage matches with the grid-tied inverter specifications.</li> <li>2. If not, check whether the distribution switch is turned off and whether the power supply is operating normally.</li> <li>3. If it matches, connect the AC connector and turn on the DC switch. The inverter will recover automatically. Call the local service center if the fault resists.</li> </ol>
	PV Over Voltage	<ol style="list-style-type: none"> <li>1. Disconnect the DC switch and remove the DC connector to measure the PV string voltage. Confirm whether it exceeds the inverter input voltage specification.</li> <li>2. If yes, reconfigure the PV string.</li> <li>3. If not and the fault persists, call the local service center.</li> </ol>

Type	Error Message	Error Message
Inverter Failures	Relay Fail	<ol style="list-style-type: none"> <li>1. Disconnect the DC switch.</li> <li>2. Turn on the DC switch.</li> <li>3. Call the local service center if the fault persists.</li> </ol>
	DCI High	
	EEPROM Fail	
	Internal Communication Failure	
	DC Bus High	
	GFCI Device Check Failure	
Other Failures	No display (Indicator and display are not lit)	<ol style="list-style-type: none"> <li>1. Disconnect the DC switch, remove the DC connector, and measure the PV string voltage.</li> <li>2. Connect the DC connector, and then turn on the DC switch.</li> <li>3. If the voltage is lower than 500 V, check the PV string configuration.</li> <li>4. If the voltage is higher than 500 V but still no display, call the local service center.</li> </ol>

**Note:** When the sunlight is insufficient, the inverter may start up frequently. This is caused by insufficient PV string power and will not cause damage to the inverter.

# 7 Technical Parameters

## 7.1 Product Specifications

Technical Data	GW250K-HT	GW250KN-HT	GW225K-HT	GW225KN-HT
<b>Input</b>				
Max. Input Voltage (V)	1500	1500	1500	1500
MPPT Operating Voltage Range (V)	500~1500	500~1500	500~1500	500~1500
Start-up Voltage (V)	550	550	550	550
Nominal Input Voltage (V)	1160	1160	1160	1160
Max. Input Current per MPPT (A)	30	60	30	60
Max. Short Circuit Current per MPPT (A)	50	90	50	90
Number of MPPT	12	6	12	6
Number of Strings per MPPT	2	3	2	3
<b>Output</b>				
Nominal Output Power (W)	250,000		225,000	
Max. AC Active Power (W)	250,000		247,500	
Max. AC Apparent Power (VA)	250,000		247,500	
Nominal Output Voltage (V)	800, 3L/PE			
Nominal AC Grid Frequency (Hz)	50 / 60			
Max. Output Current (A)	180.5		178.7	
Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)			
Max. Total Harmonic Distortion	<3%			
<b>Efficiency</b>				
Max. Efficiency	99.0%			
European Efficiency	98.5%			
<b>Protection</b>				
PV String Current Monitoring	Integrated			
Internal Humidity Detection	Integrated			
DC Insulation Resistance Detection	Integrated			
Residual Current Monitoring Unit	Integrated			
Anti-islanding Protection	Integrated			
DC Reverse Polarity Protection	Integrated			
DC Surge Arrester	Type II			
AC Surge Arrester	Type II			

Technical Data	GW250K-HT	GW250KN-HT	GW225K-HT	GW225KN-HT
AC Overcurrent Protection	Integrated			
AC Short Circuit Protection	Integrated			
AC Overvoltage Protection	Integrated			
DC Arc Fault Circuit Interrupter	Optional			
PID Recovery	Optional			
<b>General Data</b>				
Operating Temperature Range (°C)	-30 ~ 60			
Relative Humidity	0~100%			
Max. Operating Altitude (m)	5000 (>4000 derating)			
Cooling Method	Smart Fan Cooling			
Display	LED (LCD optional), Bluetooth + APP			
Communication	RS485 or PLC			
Weight (Kg)	111			
Dimensions (W×H×D mm)	1091×678×341			
DC Connector	MC4 (Max. 6 mm <sup>2</sup> )			
AC Connector	OT / DT terminal (Max. 300 mm <sup>2</sup> )			
Ingress Protection Rating	IP66			
Overvoltage Category	PVII/AC III			
Night Self Consumption (W)	<2			
Topology	Transformerless			



Overvoltage levels:

Overvoltage I: Devices connected to the circuit which can limit instantaneous overvoltage to a relatively low level.

Overvoltage II: Energy-consuming devices powered by fixed power distribution equipment, including appliances, portable tools, and other household and similar equipment. Overvoltage III is also applicable if there are special requirements for the reliability and applicability of the equipment.

Overvoltage III: Devices apply to fixed distribution equipment, including switches in the fixed power distribution equipment and industrial equipment permanently connected to fixed power distribution equipment. The reliability and applicability of the equipment have to meet special requirements.

Overvoltage IV: Devices apply to the power distribution equipment, such as measuring instruments and prepositioned overcurrent protection devices, etc.

Humidity Levels:

Environmental Parameters	Level		
	3K3	4K2	4K4H
Temperature range	0°C - +40°C	-33°C - +40°C	-20°C - +55°C
Humidity range	5% to 85%	15% to 100%	4% to 100%

Environmental levels:

Outdoor inverter: The ambient temperature range is -25°C - +60°C, suitable for an environment with pollution of level 3;

Indoor type II inverter: The ambient temperature range is -25°C - +40°C, suitable for an environment with pollution of level 3;

Indoor type I inverter: The ambient temperature range is 0°C - +40°C, suitable for an environment with pollution of level 2;

Pollution levels:

Pollution level 1: No pollution or dry and non-conductive pollution only;

Pollution level 2: Usually non-conductive pollution only, but there may be temporary conductive pollution caused by condensation;

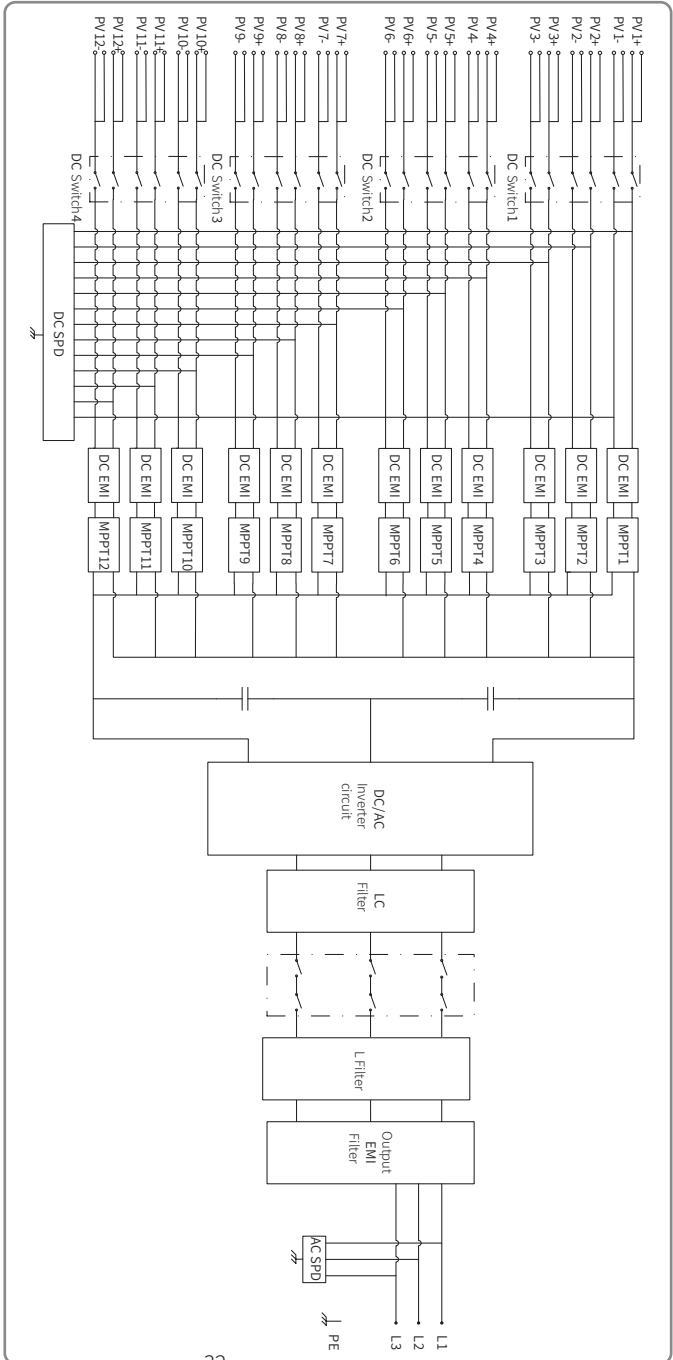
Pollution level 3: Conductive pollution or non-conductive pollution turns to conductive pollution due to condensation;

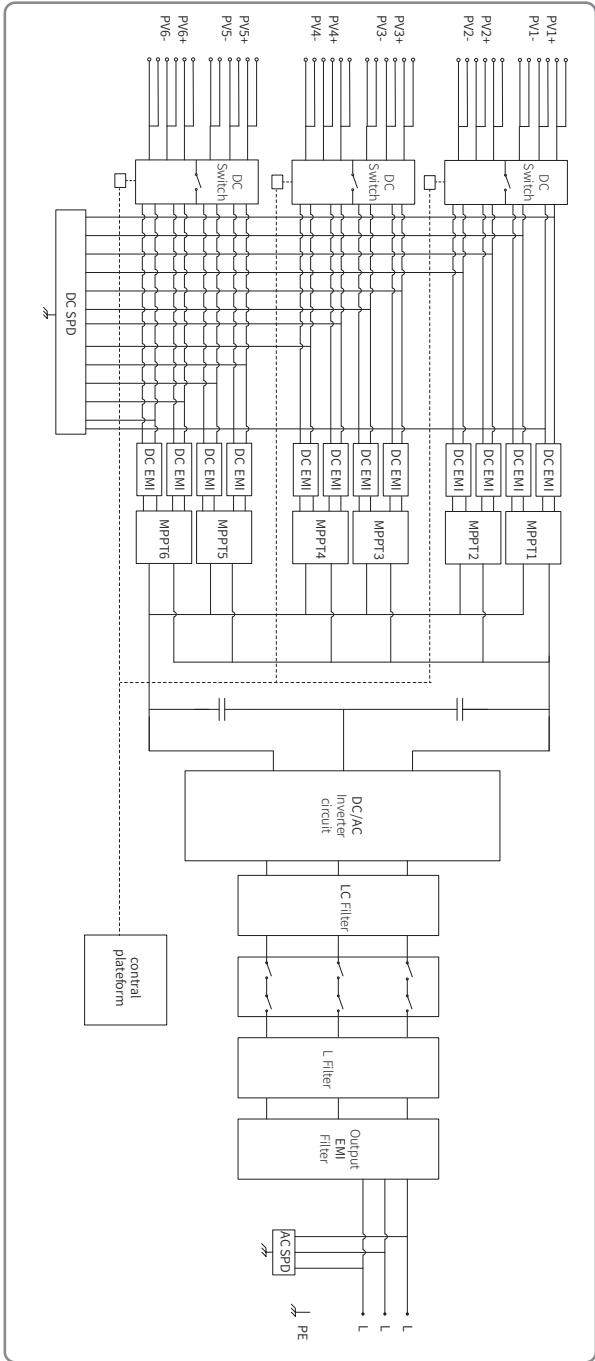
Pollution level 4: Persistent conductive pollution, such as pollution caused by conductive dust or rain and snow.

## 7.2 Main Circuit Diagram

The main circuit diagram is shown as below:

GW250K-HT , GW225K-HT





# 8 Product Maintenance

Regular maintenance will ensure service life and the best efficiency of the inverter.

Note: Before maintenance, turn off the AC circuit breaker, then the DC circuit breaker, and wait for 5 minutes until the residual voltage is released.

## 8.1 Clean Fan

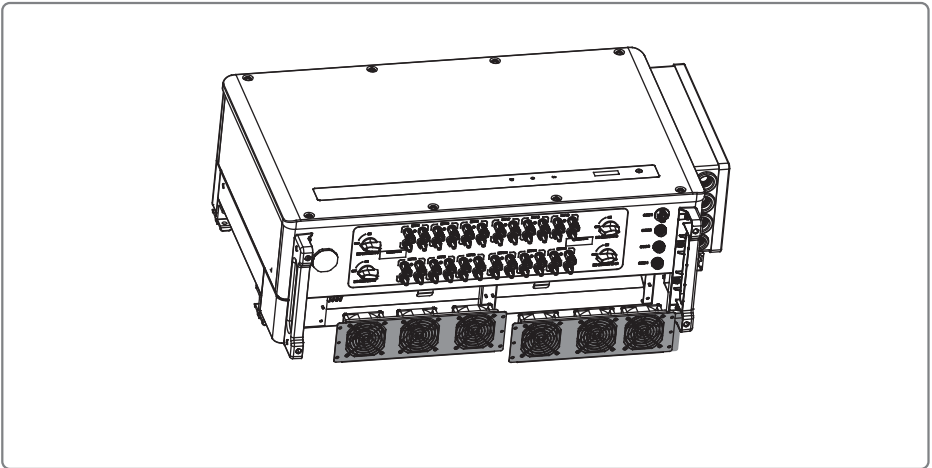
The external fan of the HT series inverter needs to be cleaned with a vacuum cleaner every year. Remove the fan and give it a thorough clean.

1. Turn off the AC circuit breaker first, and then turn off the DC switch;
2. Wait for 5 minutes until the residual voltage is released and the fan stops running;
3. Remove the fan net;

Use a screwdriver to loosen the fan bracket

Carefully disassemble the fan net and fan as shown below. Do not pull out a single fan since the internal circuit of the fan is still connected.

4. Clean with a soft brush, cloth, or compressed air; tighten the screws.



## 8.2 DC Switch Check

The DC switch requires no maintenance if it's in regular use.

Although it's not necessary, we still recommend you to:

- check the DC switch regularly;
- Turn the DC switch on and off 10 times continually once a year.

Turn the switch regularly can clean up the device and extend its service life.

**Note:** Turn off the AC circuit breaker first, and then turn off the DC switch.

Startup sequence

1. Turn the circuit breaker on the AC side to "ON".
2. Turn the DC switch of the inverter to "ON".

Shutdown sequence

1. Turn the circuit breaker on the AC side to "OFF".
2. Turn the DC switch of the inverter to "OFF".



**The inverter may be damaged if you do not follow the sequences above strictly.**

## 8.3 Electrical Connection Check

1. Check whether the cables are connected.
2. Check whether the PE cables are reliably grounded.
3. Check whether the waterproof covers for unused ports are sealed correctly.

**Note:** Maintain period: every six months.




Offical Website




SolarGo APP

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