GOODWE

User Manual

Grid-Tied PV Inverter

MS Series

5-10kW

V1.2-2024-11-25

Trademarks

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NOTICE
The information in this user manual is subject to change due to product updates or other reasons. This guide cannot replace the product labels or the safety precautions in the user manual unless otherwise specified. All descriptions here are for guidance only.

CONTENT

1　About This Manual

This manual describes the product information, installation, electrical connection, commissioning, troubleshooting, and maintenance. Read through this manual before installing and operating the product. All the installers and users have to be familiar with the product features, functions, and safety precautions. This manual is subject to update without notice. For more product details and latest documents, visit https://en.goodwe.com.

1.1 Applicable Model

This manual applies to the listed inverters below (MS for short):

Model	Nominal Output Power	Nominal Output Voltage
GW5000-MS	5kW	220/230/240V[1]
GW6000-MS	6kW	
GW7000-MS	7kW	
GW8500-MS	8.5kW	
GW10K-MS	10kW	

[1]. For Brazil: Nominal Output Voltage is 220V.

1.2 Target Audience

This manual applies to trained and knowledgeable technical professionals. The technical personnel has to be familiar with the product, local standards, and electric systems.

1.3 Symbol Definition

Different levels of warning messages in this manual are defined as follows:

⚠ DANGER
Indicates a high-level hazard that, if not avoided, will result in death or serious injury.

⚠WARNING
Indicates a medium-level hazard that, if not avoided, could result in death or serious injury.

⚠ CAUTION
Indicates a low-level hazard that, if not avoided, could result in minor or moderate injury.

NOTICE
Highlight and supplement the texts. Or some skills and methods to solve product-related problems to save time.

1.4 Updates

The latest document contains all the updates made in earlier issues.

V1.0   2022-10-30

First Issue

2   IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS
Please strictly follow these safety instructions in the user manual during the operation.

NOTICE
The inverters are designed and tested strictly complies with related safety rules. Read and follow all the safety instructions and cautions before any operations. Improper operation might cause personal injury or property damage as the inverters are electrical equipment.

2.1 General Safety

NOTICE
• The information in this user manual is subject to change due to product updates or other reasons. This guide cannot replace the product labels or the safety precautions in the user manual unless otherwise specified. All descriptions here are for guidance only. • Before installations, read through the quick installation guide. For additional information, please see the user manual. • All installations should be performed by trained and knowledgeable technicians who are familiar with local standards and safety regulations. • Use insulating tools and wear personal protective equipment when operating the equipment to ensure personal safety. Wear anti-static gloves, cloths, and wrist strips when touching electron devices to protect the inverter from damage. • Strictly follow the installation, operation, and configuration instructions in this manual. The manufacturer shall not be liable for equipment damage or personal injury if you do not follow the instructions. For more warranty details, please visit https://en.goodwe.com/warranty.

2.2 DC Side

⚠ DANGER
Connect the DC cables using the delivered PV connectors. The manufacturer shall not be liable for the equipment damage if other connectors or terminals are used.

⚠ WARNING
• Ensure the component frames and the bracket system are securely grounded. • Ensure the DC cables are connected tightly, securely and correctly. • Measure the DC cable using the multimeter to avoid reverse polarity connection. Also, the voltage should be under the permissible range. • Do not connect the same PV to multiple inverters. Otherwise, the inverters may be damaged. • The PV modules used with the inverter must have an IEC61730 class A rating.

2.3 AC Side

⚠ WARNING
• The voltage and frequency at the connection point meet the inverter grid connection requirements • Additional protective devices like circuit breakers or fuses are recommended on the AC side. Specification of the protective device should be at least 1.25 times the rated AC output rated current. • Make sure that all the groundings are tightly connected. • You are recommended to use copper cables as AC output cables. Contact the manufacturer if you want to use other cables.

2.4 Inverter Installation

⚠ DANGER
• Do not apply mechanical load to the terminals, otherwise the terminals can be damaged. • All labels and warning marks should be visible after the installation. Do not scrawl, damage, or cover any label on the device. • Testing to AS/NZS 4777.2:2020 for multiple inverter combinations has not been conducted. • Warning labels on the inverter are as follows.

⚡	DANGER High voltage hazard. Disconnect all incoming power and turn off the product before working on it.	⚡ ⟳ 5min	Delayed discharge. Wait 5 minutes after power off until the components are completely discharged.
📖	Read through the user manual before working on this device.	⚠	Potential risks exist. Wear proper PPE before any operations.
♨	High-temperature hazard. Do not touch the product under operation to avoid being burnt.	⏚	Grounding point.
C E	CE Mark	🗑	Do not dispose of the inverter as household waste. Discard the product in compliance with local laws and regulations, or send it back to the manufacturer.

2.5 Personal Requirements

NOTICE
• Personnel who install or maintain the equipment must be strictly trained, learn about safety precautions and correct operations. • Only qualified professionals or trained personnel are allowed to install, operate, maintain, and replace the equipment or parts.

2.6 EU Declaration of Conformity

GoodWe Technologies Co., Ltd. hereby declares that the inverter with wireless communication modules sold in the European market meets the requirements of the following directives:
• Radio Equipment Directive 2014/53/EU (RED)
• Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)
• Waste Electrical and Electronic Equipment 2012/19/EU
• Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

GoodWe Technologies Co., Ltd. hereby declares that the inverter without wireless communication modules sold in the European market meets the requirements of the following directives:
• Electromagnetic compatibility Directive 2014/30/EU (EMC)
• Electrical Apparatus Low Voltage Directive 2014/35/EU (LVD)
• Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)
• Waste Electrical and Electronic Equipment 2012/19/EU
• Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)
You can download the EU Declaration of Conformity on https://en.goodwe.com.

3   Product Introduction

3.1 Application Scenarios

The inverter is a single-phase PV string grid-tied inverter, which converts the DC power generated by the PV module into AC power for loads or the grid. The intended use of the inverter is as follows:

| PV String | Circuit Breaker (optional) | Inverter | Circuit Breaker | Utility Grid |
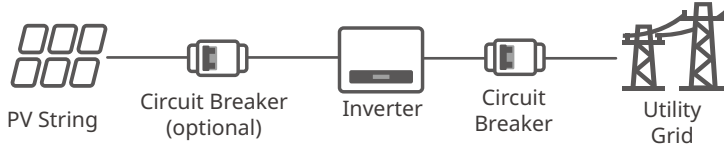
3.2 Supported Grid Types

For the grid type with neutral wire, the N to ground voltage must be less than 10V.

TN-S   TN-C   TN-C-S   TT
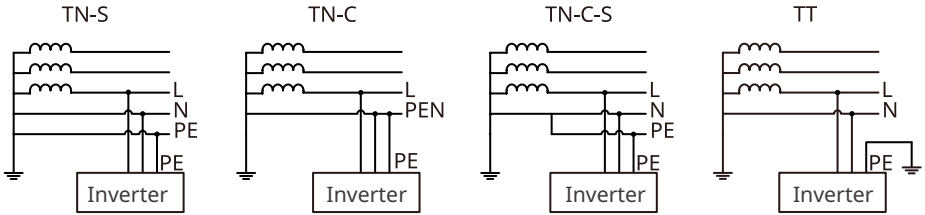
3.4 Appearance

3.4.1 Parts
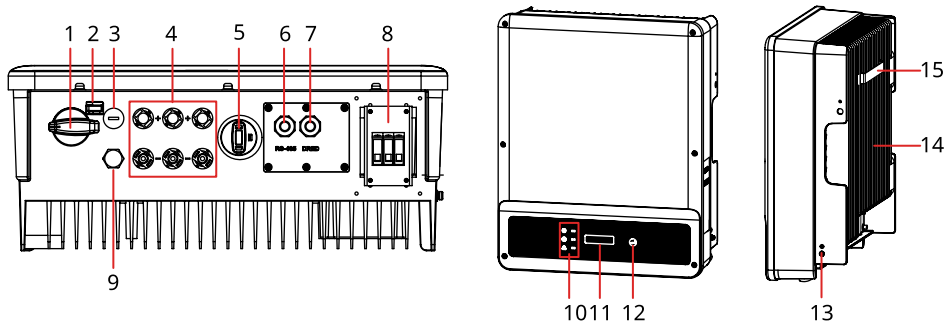
No.	Parts	Description
1	DC Switch	Start or stop DC input.
2	DC switch Locking Hole[1]	Only for Australia. Turn the DC switch to OFF and lock it to avoid electric shock when you have to work on the inverter.
3	Reserved Port	Reserved.

No.	Parts	Description
4	PV Input Terminal	Used to connect the PV module DC input cables.
5	COM Port for communication module or USB.	• Connect a communication module like WiFi, GPRS, 4G, etc. The module type may differ depending on actual needs. • Update the software version of the inverter using a USB flash driver.
6	RS485 Communication Cable Port(optional)	Used to connect the RS485 Communication Cable.
7	CT/DRED/Remote Shutdown Communication Cable Port	Used to connect the CT, DRED, or remote shutdown communication cable.
8	AC Output Terminal	Used to connect the AC output cable, which connects the inverter and the utility grid.
9	Ventilation Valve	-
10	Indicator	Indicates working state of the inverter.
11	LCD	Used to check the parameters of the inverter.
12	Button	Used to select menus displayed on the screen.
13	PE Terminal	Used to connect the PE cable.
14	Heat Sink	Used to cool the inverter.
15	Mounting Plate	Used to install the inverter.

3.4.2 Dimensions
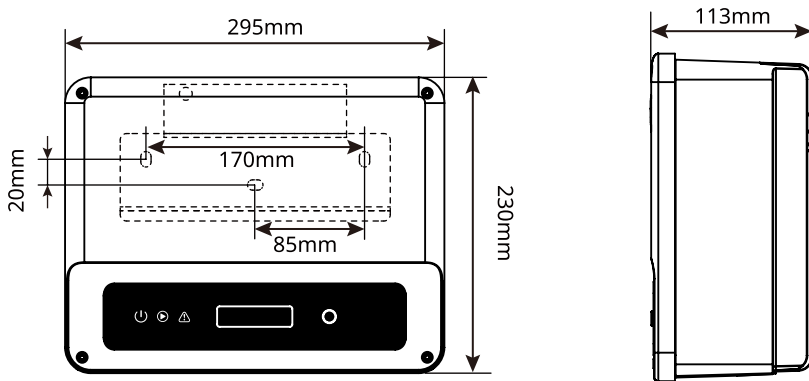
3.4.3 Indicators

Indicator	Status	Description
(⏻) Power	━━━━━	ON = WiFi is connected/active.
	▪▪▪▪▪▪▪▪	BLINK 1 = WiFi system is resetting.
	▪▪ ▪▪	BLINK 2 = WiFi not connect to the router.
	▪▪▪▪ ▪▪▪▪	BLINK 4 = WiFi server problem.
	━━━ ━━	BLINK = RS485 is connected.
	────	OFF = WiFi is not active.
(▶) Operating	━━━━━	ON = The inverter is feeding power.
	────	OFF = The inverter is not feeding power at the moment.
(⚠) Faulty	━━━━━	ON = A fault has occurred.
	────	OFF = No fault.

3.4.4 Nameplate

The nameplate is for reference only.

GW trademark, product type, and product model

Technical parameters

Safety symbols and certification marks

Contact information and serial number

4   Check and Storage

4.1 Check Before Receiving

Check the following items before receiving the product.

1. Check the outer packing box for damage, such as holes, cracks, deformation, and other signs of equipment damage. Do not unpack the package and contact the supplier as soon as possible if any damage is found.
2. Check the inverter model. If the inverter model is not what you requested, do not unpack the product and contact the supplier.
3. Check the deliverables for correct model, complete contents, and intact appearance. Contact the supplier as soon as possible if any damage is found.

4.2 Deliverables

⚠ WARNING
Connect the DC cables with the delivered terminals. The manufacturer shall not be liable for the damage if other terminals are used.

NOTICE
• Communication module types: WiFi, 4G, GPRS etc. The actual module delivered depends on the communication method of the selected inverter.
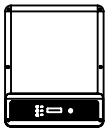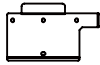
Inverter x 1	Mounting plate x 1	Expansion bolt x 6	PV connector x 3
Communication Module x N	Pin Terminal x 4	OT terminal x 1	Screw x 1
AC Cover x 1	2 PIN terminal x 1	4 PIN terminal x 1	Documentation x 1
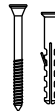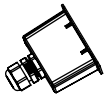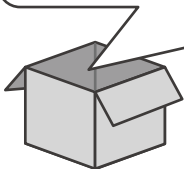
4.3 Storage

NOTICE
The storage time of the inverter should not exceed two years. If the storage time exceeds two years, it must be inspected and tested by professionals before being put into use.

If the equipment is not to be installed or used immediately, please ensure that the storage environment meets the following requirements:

1. Do not unpack the outer package or throw the desiccant away.
2. Store the equipment in a clean place. Make sure the temperature and humidity are appropriate and no condensation.
3. The height and direction of the stacking inverters should follow the instructions on the packing box.
4. The inverters must be stacked with caution to prevent them from falling.
5. If the inverter has been long term stored, it should be checked by professionals before being put into use.

5   Installation
5.1 Installation Requirements
Installation Environment Requirements

1. Do not install the equipment in a place near flammable, explosive, or corrosive materials.
2. Install the equipment on a surface that is solid enough to bear the inverter weight.
3. Install the equipment in a well-ventilated place to ensure good dissipation. Also, the installation space should be large enough for operations.
4. The equipment with a high ingress protection rating can be installed indoors or outdoors. The temperature and humidity at the installation site should be within the appropriate range.
5. Install the equipment in a sheltered place to avoid direct sunlight, rain, and snow. Build a sunshade if it is needed.
6. Install the equipment in a well-ventilated place to ensure good dissipation. Also, the installation space should be large enough for operations.
7. Do not install the equipment in a place that is easy to touch, especially within children's reach. High temperature exists when the equipment is working. Do not touch the surface to avoid burning.
8. Install the equipment at a height that is convenient for operation and maintenance, electrical connections, and checking indicators and labels.
9. The altitude to install the inverter shall be lower than the maximum working altitude 4000m (3000m for Australia).
10. The inverter is easy to be corroded when installed in salt areas. Please consult the inverter manufacturer before installing it outdoors in salt areas. A salt area refers to the region within 1000m offshore or affected by the sea breeze. The area prone to the sea breeze varies depending on weather conditions (e.g. typhoon, monsoon) or terrain (such as dams and hills).
11. Install the inverter away from high magnetic field to avoid electromagnetic interference.If there is any radio or wireless communication equipment below 30MHz near the inverter, you have to:
    - Install the inverter at least 30m far away from the wireless equipment.
    - Add a low pass EMI filter or a multi winding ferrite core to the DC input cable or AC output cable of the inverter.

Children No Touch
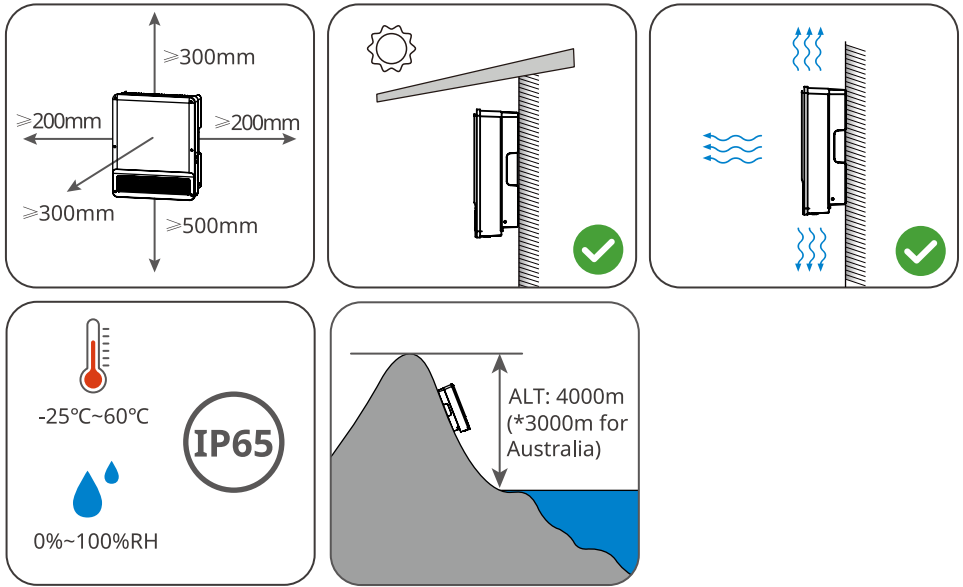
Mounting Support Requirements

- The mounting support shall be nonflammable and fireproof.
- Make sure that the support surface is solid enough to bear the product weight load.
- Do not install the product on the support with poor sound insulation to avoid the noise generated by the working product, which may annoy the residents nearby.

Installation Angle Requirements

- Install the inverter vertically or at a maximum back tilt of 15 degrees.
- Do not install the inverter upside down, forward tilt, back forward tilt, or horizontally.
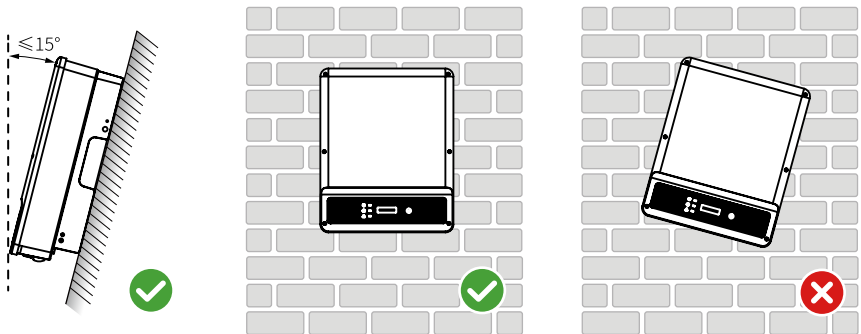
Installation Tool Requirements

The following tools are recommended when installing the equipment. Use other auxiliary tools on site if necessary.

Goggles	Safety shoes	Safety gloves	Dust mask	DC terminal crimping tool
Diagonal pliers	Wire stripper	Hammer drill	Heat gun	DC wiring wrench
Marker	Level	Heat shrink tube	Rubber hammer	Vacuum cleaner
Multimeter	Cable tie	M3/M5 Torque wrench		

5.2 Inverter Installation

5.2.1 Moving the Inverter

⚠ CAUTION

• Operations such as transportation, turnover, installation and so on must meet the requirements of the laws and regulations of the country or region where it is located.
• Move the inverter to the site before installation. Follow the instructions below to avoid personal injury or equipment damage.
  1. Consider the weight of the equipment before moving it. Assign enough personnel to move the equipment to avoid personal injury.
  2. Wear safety gloves to avoid personal injury.
  3. Keep balance to avoid falling down when moving the equipment.

NOTICE
• Avoid the water pipes and cables buried in the wall when drilling holes. • Wear goggles and a dust mask to prevent the dust from being inhaled or contacting eyes when drilling holes. • The DC switch lock is prepared by the customer. • Make sure the inverter is firmly installed in case of falling down.

Step 1 Put the mounting plate on the wall or the support horizontally and mark positions for drilling holes.

Step 2 Drill holes to a depth of 80mm using the hammer drill. The diameter of the drill bit should be 10mm.

Step 3 Secure the mounting plate using the expansion bolts.

Step 4 (Only for Australia.) Install the DC switch lock.

Step 5-6 Install the inverter on the mounting plate.

Step 7 Install the anti-theft lock.

4 For Australia only.
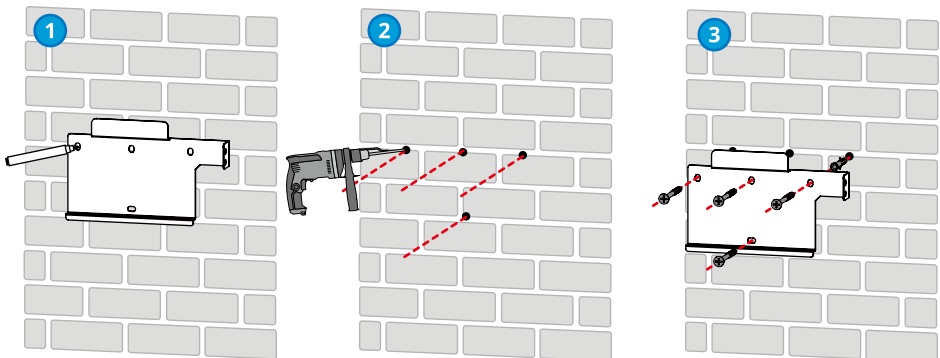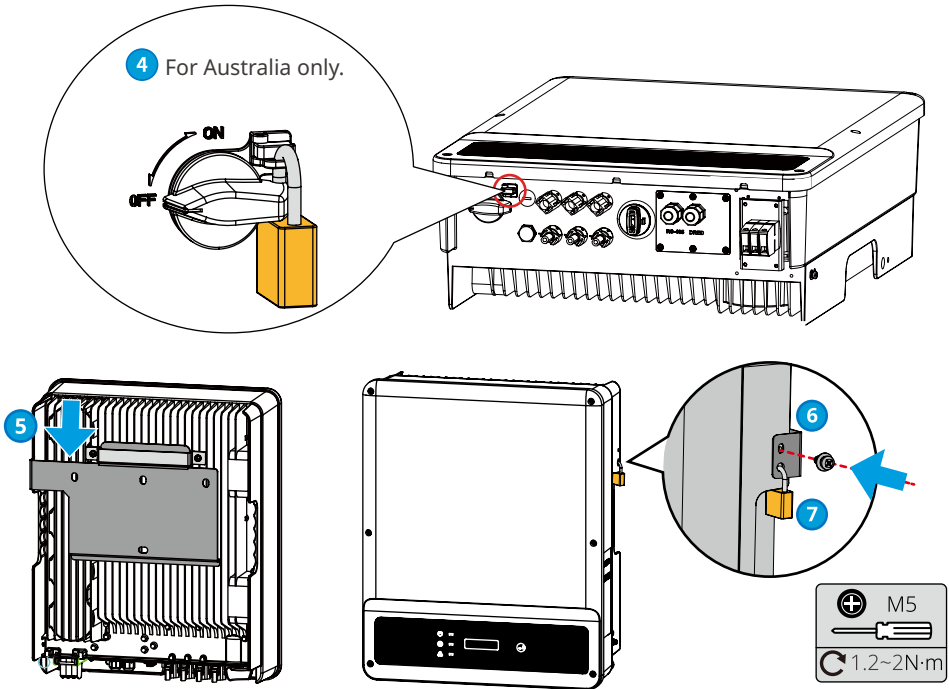
6　Electrical Connection

6.1 Safety Precaution

⚠ DANGER
• Disconnect the DC switch and the AC output switch of the inverter to power off the inverter before any electrical connections. Do not work with power on. Otherwise, an electric shock may occur.
• Perform electrical connections in compliance with local laws and regulations. Including operations, cables, and component specifications.
• If the cable bears too much tension, the connection may be poor. Reserve a certain length of the cable before connecting it to the inverter cable port.

NOTICE
• Wear personal protective equipment like safety shoes, safety gloves, and insulating gloves during electrical connections.
• All electrical connections should be performed by qualified professionals.
• Cable colors in this document are for reference only. The cable specifications shall meet local laws and regulations.

6.2 Connecting the PE Cable

⚠ **WARNING**

- The PE cable connected to the enclosure of the inverter cannot replace the PE cable connected to the AC output port. Make sure that both of the two PE cables are securely connected.
- Make sure that all the grounding points on the enclosures are equipotential connected when there are multiple inverters.
- To improve the corrosion resistance of the terminal, you are recommended to apply silica gel or paint on the ground terminal after installing the PE cable.
- The PE cable is prepared by the customer. Recommended specifications:
  - Type: single-core outdoor copper cable
  - Conductor cross-sectional area: 6mm^2 for GW5000-MS, GW6000-MS, GW7000-MS, GW8500-MS; 10mm^2 for GW10K-MS.
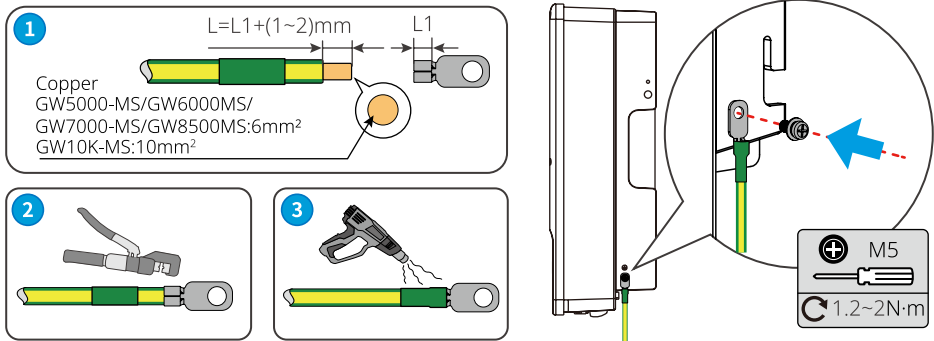
6.3 Connecting the PV Input Cable

⚠ **DANGER**

Confirm the following information before connecting the PV string to the inverter. Otherwise, the inverter may be damaged permanently or even cause fire and cause personal and property losses.
1. Make sure that the max short circuit current and the max input voltage per MPPT are within the permissible range.
2. Make sure that the positive pole of the PV string connects to the PV+ of the inverter. And the negative pole of the PV string connects to the PV- of the inverter.

⚠ **WARNING**

- Connect the DC cables using the delivered PV connectors. The manufacturer shall not be liable for the damage if other connectors are used.
- The PV strings cannot be grounded. Ensure the minimum isolation resistance of the PV string to the ground meets the minimum isolation resistance requirements before connecting the PV string to the inverter.
- The DC input cable is prepared by the customer. Recommended specifications:
  - Type: the outdoor photovoltaic cable that meets the maximum input voltage of the inverter.
  - Conductor cross-sectional area: 4~6mm^2 (MC4).
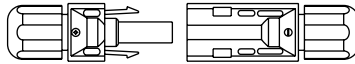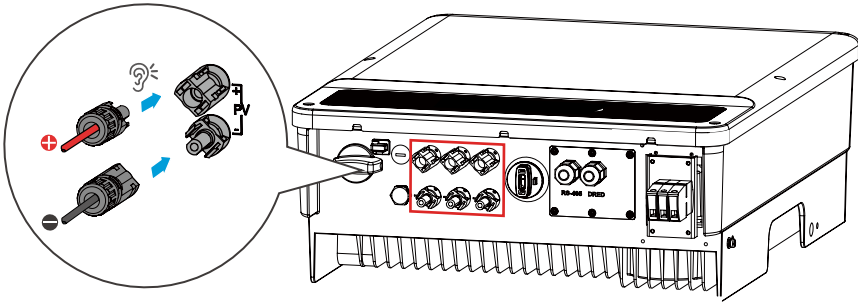
MC4 Series

NOTICE
Seal the PV input terminals using waterproof covers when they are not to be used. Otherwise, the ingress protection rating will be influenced.

Connecting the DC Input Cable

Step 1 Prepare DC cables.

Step 2 Crimp the crimp contacts.

Step 3 Disassemble the PV connectors.

Step 4 Make the DC cable and detect the DC input voltage.

Step 5 Plug the PV connectors into the PV terminals.

MC4 PV connector
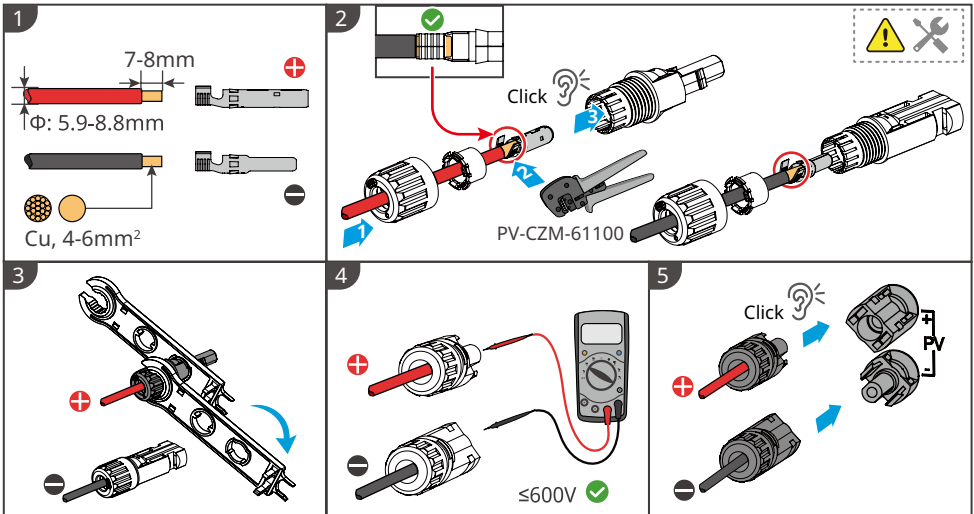
6.4 Connecting the AC Output Cable

⚠ WARNING
• Do not connect loads between the inverter and the AC switch directly connected to the inverter.
• The Residual Current Monitoring Unit (RCMU) is integrated into the inverter. The inverter will disconnect the utility grid rapidly once it detects any leak current over the permissible range.

NOTICE
• Install one AC circuit breaker for each inverter. Multiple inverters cannot share one AC circuit breaker.
• An AC circuit breaker shall be installed on the AC side to make sure that the inverter can safely disconnect the grid when an exception happens. Select the appropriate AC circuit breaker in compliance with local laws and regulations. Recommended AC circuit breakers:

Inverter model	AC circuit breaker
GW5000-MS	32A
GW6000-MS	40A
GW7000-MS	50A
GW8500-MS	
GW10K-MS	63A

Select and Install RCD depending on local laws and regulations.Type A RCDs (Residual Current Monitoring Device) can be connected to the outside of the inverter for protection when the DC component of the leakage current exceeds the limit value. The following RCDs are for reference:

Inverter model	AC circuit breaker
GW5000-MS	300mA
GW6000-MS	
GW7000-MS	
GW8500-MS	
GW10K-MS	

⚠ WARNING
• Pay attention to the silkscreens L, N, PE on the AC terminal. Connect the AC cables to the corresponding terminals. The inverter may be damaged if the cables are connected inappropriately.
• Make sure that the whole cable cores are inserted into the AC terminal holes. No part of the cable core can be exposed.
• Make sure that the cables are connected securely. Otherwise, the terminal may be too hot to damage the inverter when the inverter is working.

Step 1 Make the AC output cable.
Step 2 Disassemble the DC routing hole's end cap.
Step 3 Use the cable gland for routing wires.
Step 4 Plut the AC connector into the inverter.

1

7-9mm

Φ: 13-18mm

20-25mm

Copper, 2.5mm²≤S≤10mm²

2

4

3

2

4

4

1

4

R9-485   DRED

L N PE

3

3

3

1

3

3

2 ⊖ M4
↻ 1.5~1.8N·m

3 ⊕ M3
↻ 0.8~1N.m

3

L N

PE

1

3

2

4
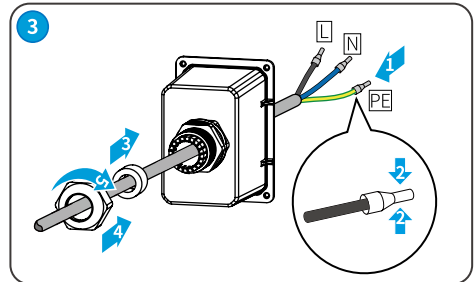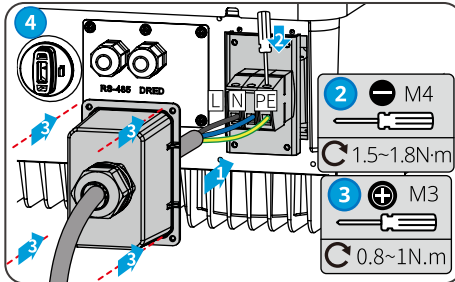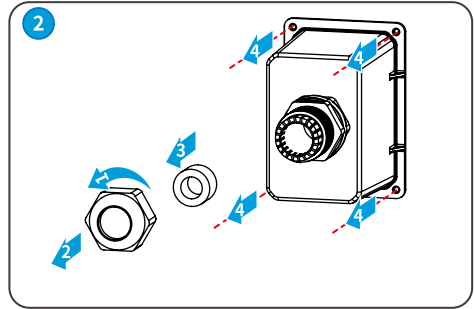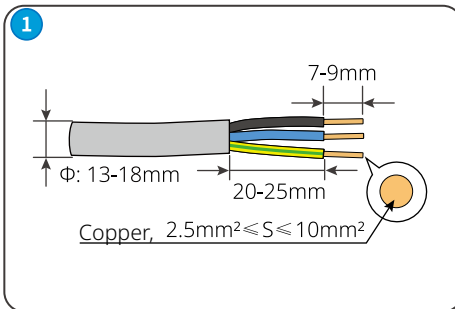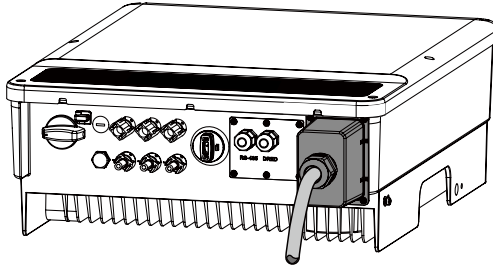
NOTICE
• Make sure that the cable is connected correctly and securely. Clear the debris after completing the connection. • Seal the AC output terminal to ensure the ingress protection rating.

6.5 Communication
6.5.1 Communication Network Introduction
Power Limit Network

Notice
• By connecting smart meter or RS485 communication devices, the functions such as output power limit or load monitoring can be realized. • After connecting the smart meter, enable the "Power Limit" function through the SolarGo App.

The PV station generates power for self-consumption, but the electric equipment cannot consume all the generated power. The inverter can monitor the on-grid electric data in real-time and adjust the output power to avoid the residual current feeding back to the utility grid.
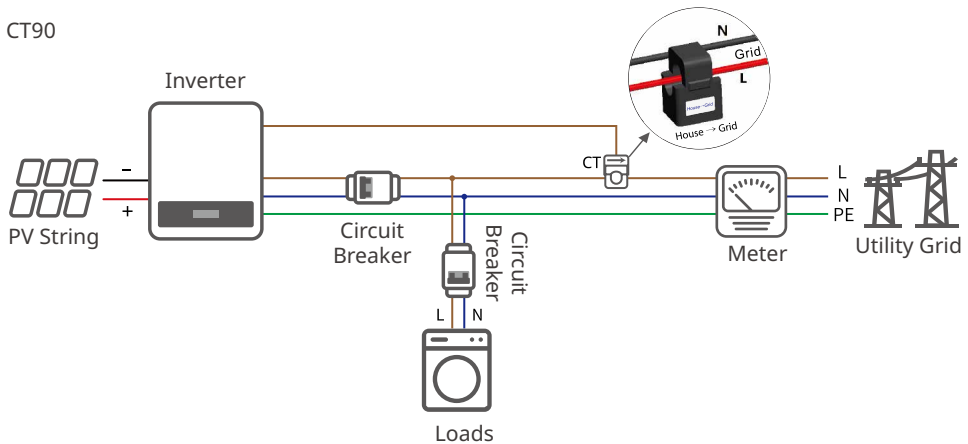
Notice
After completing cable connections, set related parameters via LCD or SolarGo app to enable export power limit control or output power limit control.

6.5.2 Connecting the Communication Cable (optional)

NOTICE
• DRED (Demand response enabling device) is only for Australian and New Zealand installations, incompliance with Australian and New Zealand safety requirements. • Contat the after-sales service to get the DRED terminal if you need to use DRED function. • DRED function is off by default. Start this function via SolarGo App if it's needed. • Remote shutdown is only for Europe installations, in compliance with European safety requirements. And Remote shutdown device is not provided by GOODWE. • Remote shutdown function is off by default. Start this function via SolarGo App if it's needed.

6.5.3 Connecting the RS485 Cable


```
1: RS485+
2: RS485-
3: RS485+
4: RS485-
```
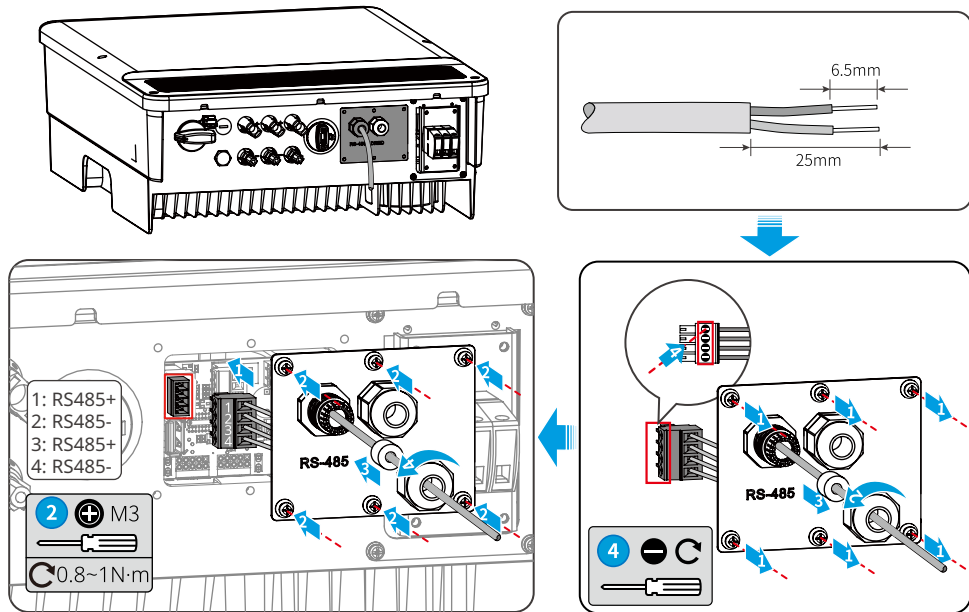
6.5.4 Connecting the CT Cable


```
1: CT-
2: CT+
```
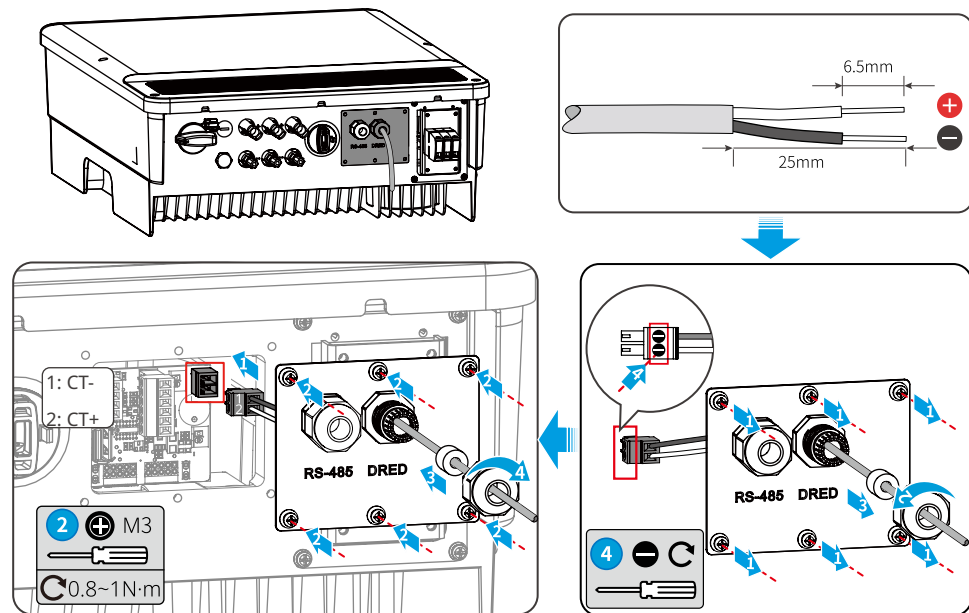
6.5.4 Connecting the DRED or Remote Shutdown Communication Cable

- DRED: Australia
- Remote Shutdown: Europe

DRED
1: COM/DRMO
2: REFGEN
3: DRM4/8
4: DRM3/7
5: DRM2/6
6: DRM1/5

Remote Shutdown
2: REFGEN
3: DRM4/8

DRED   Remote Shutdown

RS-485   DRED

6.5mm

25mm
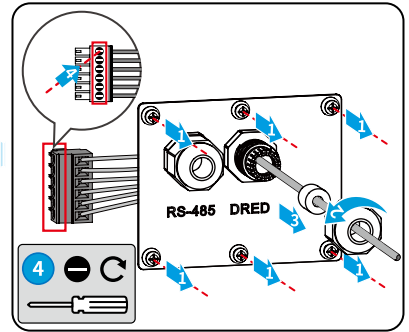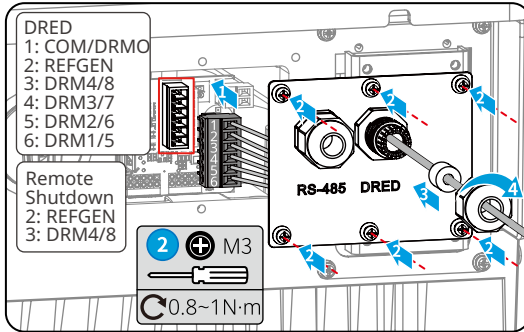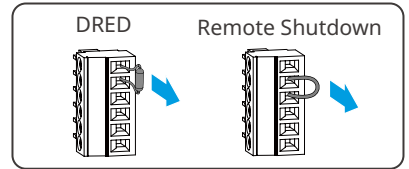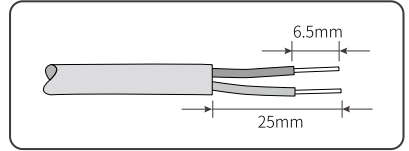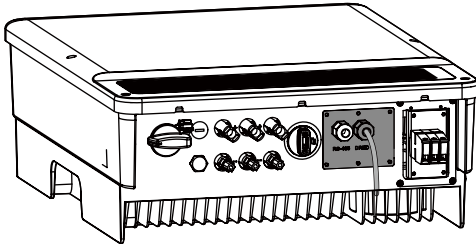
6.5.7 Installing the Communication Module (optional)

Plug a communication module into the inverter to establish a connection between the inverter and the smartphone or web pages. The communication module can be a WiFi module, GPRS moduel, or 4G module. Set inverter parameters, check running information and fault information, and observe system status in time via the smartphone or web pages.

WiFi kit, 4G kit, GPRS module: optional.
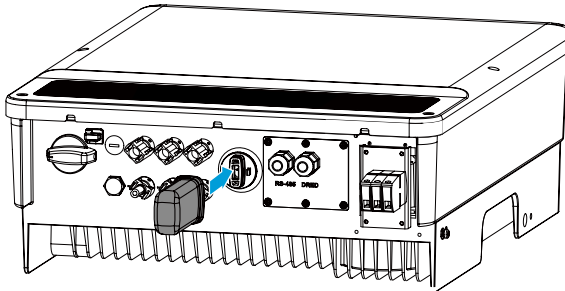
NOTICE
Refer to the delivered WiFi module user manual to get more introduction to the module. For more detailed information, visit https://en.goodwe.com.

7 Equipment Commissioning

7.1 Check Before Power ON

No.	Check Item
1	The product is firmly installed at a clean place that is well-ventilated and easy to operate.
2	The PE, DC input, AC output, and communication cables are connected correctly and securely.
3	Cable ties are intact, routed properly and evenly.
4	Unused ports and terminals are sealed.
5	The voltage and frequency at the connection point meet the inverter grid connection requirements.

7.2 Power On

Step 1 Turn on the AC switch between the inverter and the utility grid.

Step 2 (optional) Turn on the DC switch between the inverter and the PV string.

Step 3 Turn on the DC switch of the inverter.

For Australia only.

Inverter

PV

DC Isolator (Optional)

AC Breaker

Grid

ON

OFF

DC Switch
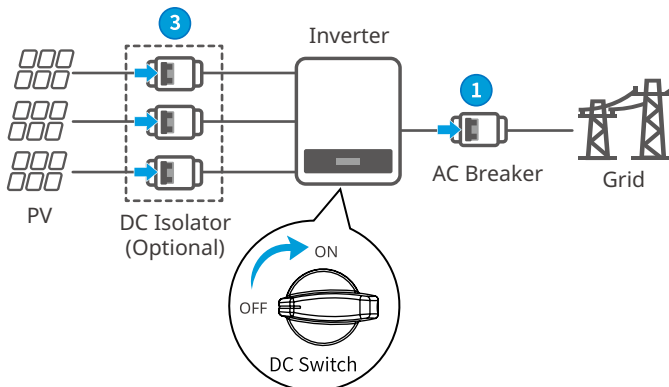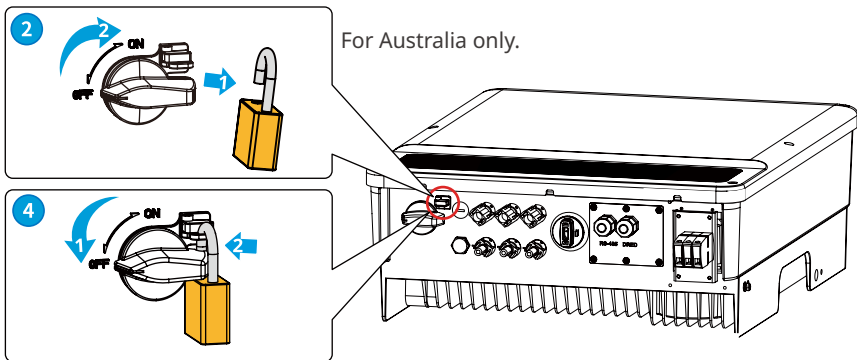
8   System Commissioning

8.1 Indicators and Buttons

Indicator	Status	Description
(¹) Power	▬▬▬▬	ON = WiFi is connected/active.
	▪▪▪▪▪▪▪	BLINK 1 = WiFi system is resetting.
	▪▪ ▪▪	BLINK 2 = WiFi not connect to the router.
	▪▪▪▪ ▪▪▪▪	BLINK 4 = WiFi server problem.
	▬▬ ▬▬	BLINK = RS485 is connected.
	―――	OFF = WiFi is not active.
(▶) Operating	▬▬▬▬	ON = The inverter is feeding power.
	―――	OFF = The inverter is not feeding power at the moment.
⚠ Faulty	▬▬▬▬	ON = A fault has occurred.
	―――	OFF = No fault.

8.2 Setting Inverter Parameters via LCD

NOTICE
• Inverter software version shown in this document is V1.00.00.13. The screenshots are for reference only. The actual interface may differ. • The name, range, and default value of the parameters are subject to change or adjustment. The actual display prevails. • To prevent the generating capacity from being influenced by wrong parameters, the power parameters should be set by professionals.

LCD Button Description

This part describes the menu structure, allowing you view inverter information and set parameters more conveniently.

Main menu

Normal Pac = xxx W	Long press for 2s →	50Hz Grid Default

Short press ↓

E-Today =xxx .xx KWh Pac = xxx W	Long press for 2s

Short press ↓

E-Total =xxx .xx KWh Pac = xxx W	Long press for 2s

Short press ↓

Vpv1=xxx V Ipv1=xxx A	Long press for 2s

Short press ↓

Vpv2=xxx V Ipv2=xxx A	Long press for 2s →	Lock

Short press ↓

Vpv3=xxx V Ipv3=xxx A	Long press for 2s

Short press ↓

Iac=xx A Pac=xxx W	Long press for 2s

Short press ↓

Fac=xxx Hz Pac=xxx W	Long press for 2s

Short press ↓

Error History Pac = xxx W — Long press for 2s → No Error | E01 110822 01:01

Short press ↓

Model Pac = xxx W
- Long press for 2s → Password: 1111 (Short press to select 0~9, Initial Password: 1111)
- Long press for 2s → Password: 1111 (Short press to select 0~9)
- Long press for 2s → Password: 1111 (Short press to select 0~9)
- Long press for 2s → Password: 1111 (Short press to select 0~9)
- wait for 10s → New Zealand → Short press and wait for 10s → Setting... → Set OK / Set Fail

Short press ↓

Ver:V1.XX.XX Pac=xxx W

Short press ↓

Set Language Pac=xxx W — Long press for 2s → English ↔ Angielski (Short press) → Wait → Setting... → Set OK / Set Fail

Short press ↓

Set Time Pac = xxx W
- Long press for 2s → 2000-00-00 00:00 (Short press to select 0~9)
- Long press for 2s → 2000-00-00 00:00 (Short press to select 0~9)
- Long press for 2s → ......
- Long press for 2s → 2000-00-00 00:00 (Short press to select 0~9)
- → Setting... → Set OK / Set Fail

Short press ↓

Next page

Previous page

RSSI : 0%
Pac = xxx W
Short press

W/L Reset
Pac = xxx W
— Long press for 2s → W/L Resetting — Wait →
W/L Reset OK　　W/L Reset Fail

W/L Reload
Pac = xxx W
Short press
— Long press for 2s → W/L Reloading — Wait →
W/L Reload OK　　W/L Reload Fail

PF Adjust
Pac = xxx W
— Long press for 2s → Short press → Disable
Short press

Long press for 2s
Long press for 2s → Lagging 0.95
Short press short press to select "Leading" or "Lagging"
Long press for 2s → Lagging 0.95
Short press to select 8~9
Long press for 2s → Lagging 0.95
Short press to select 0~9

Setting… → Set OK / Set Fail

Shadow MPPT OFF
Pac = xxx W
Short press
Or — Long press for 2s — Shadow MPPT ON
Pac = xxx W
Short press

Long press for 2s
Long press for 2s → Set Shadow Time XX min
Long press for 2s → Set Shadow Time XX min

Wait → Setting… → Set OK / Set Fail

Power Limit OFF
Pac=xxx W
Or — Long press for 2s — Power Limit ON
Pac=xxx W
Short press

Set Power Limit
XXX%
Short press
— Long press for 2s →

Long press for 2s
Long press for 2s → Set Power Limit XXX%
Short press to select 0~1
Long press for 2s → Set Power Limit XXX%
Short press to select 0~9
Long press for 2s → Set Power Limit XXX%
Short press to select 0~9

Wait → Setting… → Set OK / Set Fail

Set Modbus Addr
Pac=xxx W
Short press

— Long press for 2s →
Long press for 2s
Long press for 2s → Set Addr: XXX
Short press to select 0~2
Long press for 2s → Set Addr: XXX
Short press to select 0~9
Long press for 2s → Set Addr: XXX
Short press to select 0~9

Wait → Setting… → Set OK / Set Fail

Shadow MPPT OFF
Pac = xxx W
Or — Long press for 2s — Shadow MPPT ON
Pac = xxx W

8.2.1 Inverter Parameter Introduction

Parameters	Description
Normal	Home page. Indicates the real-time power of the inverter. Long press for 2s to check the current safety code.
E-Today	Check the generated power of the system for that day.
E-Total	Check the total generated power of the system.
Vpv	Check the DC input voltage of the inverter.
Ipv	Check the DC input current of the inverter.
Vac	Check the voltage of the utility grid.
Iac	Check the AC output current of the inverter.
Fac	Check the frequency of the utility grid.
Error History	Check historical error message records of the inverter.
Model	Indicates the specific inverter model. Long press for 2s to set the safety code. Set the safety country in compliance with the local grid standards and application scenario of the inverter.
Ver	Check the software version.
Set Language	Set language accordingly. Languages: English, Portuguese, Spanish.
Set Time	Set time according to the actual time in the country/region where the inverter is located.
W/L Reset	Power off and restart the WiFi module.
W/L Reload	Restore the factory settings of the WiFi module. Reconfigure the WiFi module network parameters after restoring the factory settings,
PF Adjust	Set the power factor of the inverter according to actual situation.
Shadow MPPT	Enable the shadow scan function if the PV panels are shadowed.
Power Limit	**Soft limit**: Set the power feed into the utility grid according to local requirements and standards. **Hard limit**: The inverter and the utility grid will automatically disconnect when the power feeds into the grid excesses the required limit.
Set Power Limit	Set the power feed back into the utility grid according to the actual situation.
Set Modbus Addr	Set the actual Modbus address.

8.3 Upgrading the Firmware Via USB Flash Disk

Step 1 Contact the after-sales service to obtain the upgrade package.
Step 2 Save the upgrade package in the USB flash drive.
Step 3 Insert the USB flash drive into the USB port, and upgrade the software version of the inverter following the prompts.

8.4 Setting Inverter Parameters via SolarGo App

SolarGo app is a mobile application that communicates with the inverter via Bluetooth module, WIFi module or GPRS module. Commonly used functions are as follows:
   1. Check the operating data, software version, alarms, etc.
   2. Set grid parameters, communication parameters, etc.
   3. Equipment maintenance.
For more details, refer to the SolarGo APP User Manual. Scan the QR code or visit https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SolarGo_User%20Manual-EN.pdf to get the user manual.

SolarGo App

SolarGo App User Manual

8.5 Monitoring via SEMS Portal

SEMS Portal is an monitoring platform used to manage organizations/users, add plants, and monitor plant status.
For more details, refer to the SEMS Portal User Manual. Scan the QR code or visit https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SEMS%20Portal-User%20Manual-EN.pdf to get the user manual.

SEMS Portal

SEMS Portal User Manual

9   Maintenance

9.1 Power Off the Inverter

⚠ DANGER
• Power off the inverter before operations and maintenance. Otherwise, the inverter may be damaged or electric shocks may occur. • Delayed discharge. Wait until the components are discharged after power off.

Step 1 (Optional) Send shutdown command to the inverter.
Step 2 Turn off the AC switch between the inverter and the utility grid.
Step 3 Turn off the DC switch of the inverter.

9.2 Removing the Inverter

⚠WARNING
• Make sure that the inverter is powered off. • Wear proper PPE before any operations.

Step 1 Disconnect all the cables, including DC cables, AC cables, communication cables, the communication module, and PE cables.
Step 2 Grab the handles or hoist the inveter to remove the inverter from the mounting plate.
Step 3 Remove the mounting plate.
Step 4 Store the inverter properly. If the inverter needs to be used later, ensure that the storage conditions meet the requirements.

9.3 Disposing of the Inverter

If the inverter cannot work anymore, dispose of it according to the local disposal requirements for electrical equipment waste. The inverter cannot be disposed of together with household waste.

9.4 Troubleshooting

Perform troubleshooting according to the following methods. Contact the after-sales service if these methods do not work.
Collect the information below before contacting the after-sales service, so that the problems can be solved quickly.
1. Inverter information like serial number, software version, installation date, fault time, fault frequency, etc.
2. Installation environment, including weather conditions, whether the PV modules are sheltered or shadowed, etc. It is recommended to provide some photos and videos to assist in analyzing the problem.
3. Utility grid situation.

Type of fault		Troubleshooting
System failure	Isolation Failure	1. Turn off DC switch first, then take off DC connector and AC connector. Check the impedance between PV (+) & PV (-) to earth. 2. If impedance is less than 100KΩ, please check the insulation of PV string wiring to the earth. 3. If impedance is larger than 100KΩ, please contact local service office. 4. Take off AC connector, measure the impedance between neutral wire and PE line. If it is larger than 10KΩ, please check AC wiring. Inverters for the Australian and New Zealand markets can also be alerted in the following ways in the event of insulation impedance failure: 1. The inverter is equipped with the buzzer: the buzzer sounds continuously for 1 minute in case of failure; If the fault is not resolved, the buzzer sounds every 30 minutes. 2. Add the inverter to the monitoring platform, and set the alarm reminder, the alarm information can be sent to the customer by emails.
	Ground I Failure	1. Turn off DC switch first, then take off DC connector and AC connector, check the insulation of PV string wiring to earth. 2. Restart the DC switch. 3. If the problem still exists, please call the local service office.
	Vac Failure	1. Turn off DC switch first, then take off the AC connector and DC connector, measure the voltage between live line and neutral wire in connector. Check if it conforms to the grid-connected specification of inverter. 2. If not, please check grid wiring. 3. If conforming to the specification, please connect AC connector, restart DC switch.The inverter will connect grid automatically. If the probiem still exists, please call the local service office.
	Fac Failure	1.Turn off DC switch first, then take off the AC connector and DC connector, check if the AC line and PE line are right. 2.If the problem still exists, please call the local service office.
	Utility Loss	1. Turn off DC switch first, then take off the AC connector and DC connector, measure the voltage between live line and neutral wire in connector. Check if it conforms to the grid-connected specification of inverter. 2. If not, please check if the distribution switch is connected and the grid is normal. 3. If conforming to the specification, reconnect AC connector and DC connector. If the problem still exists, please call the local service office.

System failure	PV Over Voltage	1. Turn off DC switch first, then take off the AC connector and DC connector, check PV string voltage. Check if it exceeds the input voltage in inverter specification. 2. If it does, please reconfigurate PV panel string. 3. If the problem still exists, please call the local service office.
	Over Temperature	1. Turn off DC switch first, then take off the AC connector and DC connector 2. Reduce ambient temperature. 3. Move the inverter to a cool place. 4. If the problem still exists, contact local service office for help.
Inverter failure	Relay-Check Failure	1. Disconnect the DC connector and AC. 2. Reconnect the DC connector. 3. If the problem still exists, please call the local service office.
	DCI Injection High	
	EEPROM R/W Failure	
	SPI Failure	
	DC BUS High	
	GFCI Failure	
Others	No display	1. Turn off DC switch, take off DC connector, measure the voltage of PV array. 2. Plug in DC connector, and turn on DC switch. 3. If PV array voltage is lower than 150V, please check configuration of invert module. 4. If voltage is higher than 150V and the problem still exists, please contact local office.

NOTICE
When sunlight is insufficient, the PV inverter may continuously start up and shut down automatically due to insufficient power generation from the PV panels, which would not lead to inverter damage.

Explanation of some faults:

Fault	Explanation
Consistent Fail	Check the heat sink, air intake, and air outlet for foreign matter or dust.
DCI High	Turn the DC switch on and off ten consecutive times to make sure that it is working properly.
EEprom R/W Fail	Check whether the cables are securely connected. Check whether the cables are broken or whether there is any exposed copper core.
SPI Fail	Check whether all the terminals and ports are properly sealed. Reseal the cable hole if it is not sealed or too big.
Ref 2.5v Fail	The reference voltage limitation is exceeded, which leads to detection deviation of voltage and current.
AC HCT fail	Error in AC current sensor.
E:	Error message.

9.5 Routine Maintenance

⚠️ WARNING
• Make sure that the inverter is powered off. • Wear proper PPE before any operations.

Maintaining Item	Maintaining Method	Maintaining Period
System Clean	Check the heat sink, air intake, and air outlet for foreign matter or dust.	Once 6-12 months
DC Switch	Turn the DC switch on and off ten consecutive times to make sure that it is working properly.	Once a year
Electrical Connection	Check whether the cables are securely connected. Check whether the cables are broken or whether there is any exposed copper core.	Once 6-12 months
Sealing	Check whether all the terminals and ports are properly sealed. Reseal the cable hole if it is not sealed or too big.	Once a year

10　Technical Parameters

Technical Data	GW5000-MS	GW6000-MS	GW7000-MS
Input			
Max. Input Power (W)	10000	12000	13500
Max. Input Voltage (V)	600	600	600
MPPT Operating Voltage Range (V)	80~550	80~550	80~550
MPPT Voltage Range at Nominal Power (V)	150~500	200~500	240~500
Start-up Voltage (V)	80	80	80
Nominal Input Voltage (V)	360	360	360
Max. Input Current per MPPT (A)	12.5	12.5	12.5
Max. Short Circuit Current per MPPT (A)	15	15	15
Max. Backfeed Current to The Array (A)	0	0	0
Number of MPP Trackers	3	3	3
Number of Strings per MPPT	1	1	1
Output			
Nominal Output Power (W)	5000	6000	7000
Nominal Output Apparent Power (VA)	5000	6000	7000
Max. AC Active Power (W)[*1]	5500	6600	7700
Max. AC Apparent Power (VA)[*2]	5500	6600	7700
Nominal Power at 40℃ (W) (Only for Brazil)	5000	6000	7000
Max Power at 40℃ (Including AC Overload) (W) (Only for Brazil)	5500	6600	7700
Nominal Output Voltage (V)	220/230	220/230	220/230
Nominal AC Grid Frequency (Hz)	50/60	50/60	50/60
Max. Output Current (A)	25.0	30.0	35.0
Nominal Output Current (A)	22.7/21.7	27.3/26.1	31.8/30.4
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
Max. Total Harmonic Distortion	<3%		
Maximum Output Overcurrent Protection (A)	68	68	68
Efficiency			
Max. Efficiency	97.7%	97.7%	97.7%
European Efficiency	97.3%	97.3%	97.3%

Protection	
PV Insulation Resistance Detection	Integrated
Residual Current Monitoring	Integrated
PV Reverse Polarity Protection	Integrated
Anti-islanding Protection	Integrated
AC Overcurrent Protection	Integrated
AC Short Circuit Protection	Integrated
AC Overvoltage Protection	Integrated
DC Switch	Integrated
DC Surge Protection	Type II
AC Surge Protection	Type III (Type II Optional)
Emergency Power Off	Optional
Remote Shutdown	Optional
General Data	
Operating Temperature Range (°C)	-25~+60
Relative Humidity	0~100%
Max. Operating Altitude (m)[*3]	4000
Cooling Method	Natural Convection
User Interface	LED, LCD
Communication	WiFi, RS485 or LAN (Optional)
Communication Protocols	Modbus-RTU (SunSpec Compliant)
Weight (kg)	22.5
Dimension (W×H×D mm)	415×511×175
Topology	Non-isolated
Self-consumption at Night (W)	<1
Ingress Protection Rating	IP65
Anti-corrosion Class	C4
DC Connector	MC4 (4-6 mm^2)
AC Connector	AC Connector
Environmental Category	4K4H
Pollution Degree	III
Overvoltage Category	DC II / AC III
Protective Class	I
The Decisive Voltage Class (DVC)	PV: C AC: C Com: A
Active Anti-islanding Method	AFDPF + AQDPF [*4]

Country of Manufacture (Only for Australia)	China	

Technical Data	GW8500-MS	GW10K-MS
Input		
Max. Input Power (W)	13,500	13,500
Max. Input Voltage (V)	600	600
MPPT Operating Voltage Range (V)	80~550	80~550
MPPT Voltage Range at Nominal Power (V)	250~500	280~500
Start-up Voltage (V)	80	80
Nominal Input Voltage (V)	360	360
Max. Input Current per MPPT (A)	12.5	12.5
Max. Short Circuit Current per MPPT (A)	15	15
Max. Backfeed Current to The Array (A)	0	0
Number of MPP Trackers	3	3
Number of Strings per MPPT	1	1
Output		
Nominal Output Power (W)	8500	10000
Nominal Output Apparent Power (VA)	8500	10000
Max. AC Active Power (W)[*1]	9350	10000
Max. AC Apparent Power (VA)[*2]	9350	10000
Nominal Power at 40℃ (W) (Only for Brazil)	8500	10000
Max Power at 40℃ (Including AC Overload) (W) (Only for Brazil)	9350	10000
Nominal Output Voltage (V)	220/230	220/230
Nominal AC Grid Frequency (Hz)	50/60	50/60
Max. Output Current (A)	42.5	45.5
Nominal Output Current (A)	38.6/37	45.5/43.5
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)	
Max. Total Harmonic Distortion	<3%	
Maximum Output Overcurrent Protection (A)	78	78
Efficiency		
Max. Efficiency	97.7%	97.7%
European Efficiency	97.3%	97.3%
Protection		

PV Insulation Resistance Detection	Integrated
Residual Current Monitoring	Integrated
PV Reverse Polarity Protection	Integrated
Anti-islanding Protection	Integrated
AC Overcurrent Protection	Integrated
AC Short Circuit Protection	Integrated
AC Overvoltage Protection	Integrated
DC Switch	Integrated
DC Surge Protection	Type II
AC Surge Protection	Type III (Type II Optional)
Emergency Power Off	Optional
Remote Shutdown	Optional
General Data	
Operating Temperature Range (℃)	-25~+60
Relative Humidity	0~100%
Max. Operating Altitude (m)[3]	4000
Cooling Method	Natural Convection
User Interface	LED, LCD
Communication	WiFi, RS485 or LAN (Optional)
Communication Protocols	Modbus-RTU (SunSpec Compliant)
Weight (kg)	22.5
Dimension (W×H×D mm)	415×511×175
Topology	Non-isolated
Self-consumption at Night (W)	<1
Ingress Protection Rating	IP65
Anti-corrosion Class	C4
DC Connector	MC4 (4-6 mm²)
AC Connector	AC Connector
Environmental Category	4K4H
Pollution Degree	III
Overvoltage Category	DC II / AC III
Protective Class	I
The Decisive Voltage Class (DVC)	PV: C AC: C Com: A
Active Anti-islanding Method	AFDPF + AQDPF [4]
Country of Manufacture (Only for Australia)	China

For MS 16A inverter

Technical Data	GW5000-MS	GW6000-MS	GW7000-MS
Input			
Max. Input Power (W)	10000	12000	13500
Max. Input Voltage (V)	600	600	600
MPPT Operating Voltage Range (V)	80~550	80~550	80~550
MPPT Voltage Range at Nominal Power (V)	150~500	200~500	240~500
Start-up Voltage (V)	80	80	80
Nominal Input Voltage (V)	360	360	360
Max. Input Current per MPPT (A)	16	16	16
Max. Short Circuit Current per MPPT (A)	20	20	20
Max. Backfeed Current to The Array (A)	0	0	0
Number of MPP Trackers	3	3	3
Number of Strings per MPPT	1	1	1
Output			
Nominal Output Power (W)	5000	6000	7000
Nominal Output Apparent Power (VA)	5000	6000	7000
Max. AC Active Power (W)[*1]	5500	6600	7700
Max. AC Apparent Power (VA)[*2]	5500	6600	7700
Nominal Power at 40℃ (W) (Only for Brazil)	5000	6000	7000
Max Power at 40℃ (Including AC Overload) (W) (Only for Brazil)	5500	6600	7700
Nominal Output Voltage (V)	220/230/240	220/230/240	220/230/240
Output Voltage Range (V)	180~265	180~265	180~265
Nominal AC Grid Frequency (Hz)	50/60	50/60	50/60
AC Grid Frequency Range (Hz)	45~55 / 55~65	45~55 / 55~65	45~55 / 55~65
Max. Output Current (A)	25.0	30.0	35.0
Max. Output Fault Current (Peak and Duration) (A)(at 5ms)	74	74	74
Inrush Current (Peak and Duration) (A)(at 50μ s)	150	150	150
Nominal Output Current (A)	21.7	26.1	30.4
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		

Max. Total Harmonic Distortion	<3%		
Maximum Output Overcurrent Protection (A)	68	68	68
Efficiency			
Max. Efficiency	97.7%	97.7%	97.7%
European Efficiency	97.3%	97.3%	97.3%
Protection			
PV Insulation Resistance Detection	Integrated		
Residual Current Monitoring	Integrated		
PV Reverse Polarity Protection	Integrated		
Anti-islanding Protection	Integrated		
AC Overcurrent Protection	Integrated		
AC Short Circuit Protection	Integrated		
AC Overvoltage Protection	Integrated		
DC Switch	Integrated		
DC Surge Protection	Type II		
AC Surge Protection	Type III (Type II Optional)		
AFCI	Optional		
Emergency Power Off	Optional		
Remote Shutdown	Optional		
General Data			
Operating Temperature Range (°C)	-25~+60		
Relative Humidity	0~100%		
Max. Operating Altitude (m)[*3]	4000		
Cooling Method	Natural Convection		
User Interface	LED, LCD		
Communication	WiFi, RS485 or LAN (Optional)		
Communication Protocols	Modbus-RTU (SunSpec Compliant)		
Weight (kg)	22.5		
Dimension (W×H×D mm)	415×511×175		
Noise Emission (dB)	< 30		
Topology	Non-isolated		
Self-consumption at Night (W)	<1		
Ingress Protection Rating	IP65		
Anti-corrosion Class	C4		
DC Connector	MC4 (4-6 mm²)		

AC Connector	AC Connector
Environmental Category	4K4H
Pollution Degree	III
Overvoltage Category	DC II / AC III
Protective Class	I
The Decisive Voltage Class (DVC)	PV: C AC: C Com: A
Active Anti-islanding Method	AFDPF + AQDPF *4
Country of Manufacture (Only for Australia)	China

Technical Data	GW8500-MS	GW10K-MS
Input		
Max. Input Power (W)	13,500	13,500
Max. Input Voltage (V)	600	600
MPPT Operating Voltage Range (V)	80~550	80~550
MPPT Voltage Range at Nominal Power (V)	250~500	280~500
Start-up Voltage (V)	80	80
Nominal Input Voltage (V)	360	360
Max. Input Current per MPPT (A)	16	16
Max. Short Circuit Current per MPPT (A)	20	20
Max. Backfeed Current to The Array (A)	0	0
Number of MPP Trackers	3	3
Number of Strings per MPPT	1	1
Output		
Nominal Output Power (W)	8500	10000
Nominal Output Apparent Power (VA)	8500	10000
Max. AC Active Power (W)[*1]	9350	10000
Max. AC Apparent Power (VA)[*2]	9350	10000
Nominal Power at 40°C (W) (Only for Brazil)	8500	10000
Max Power at 40°C (Including AC Overload) (W) (Only for Brazil)	9350	10000
Nominal Output Voltage (V)	220/230/240	220/230/240
Output Voltage Range (V)	180~265	180~265
Nominal AC Grid Frequency (Hz)	50/60	50/60
AC Grid Frequency Range (Hz)	45~55 / 55~65	45~55 / 55~65

Max. Output Current (A)	42.5	45.5
Max. Output Fault Current (Peak and Duration) (A)(at 5ms)	90	90
Inrush Current (Peak and Duration) (A) (at 50μ s)	150	150
Nominal Output Current (A)	37	43.5
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)	
Max. Total Harmonic Distortion	<3%	
Maximum Output Overcurrent Protection (A)	78	78
Efficiency		
Max. Efficiency	97.7%	97.7%
European Efficiency	97.3%	97.3%
Protection		
PV Insulation Resistance Detection	Integrated	
Residual Current Monitoring	Integrated	
PV Reverse Polarity Protection	Integrated	
Anti-islanding Protection	Integrated	
AC Overcurrent Protection	Integrated	
AC Short Circuit Protection	Integrated	
AC Overvoltage Protection	Integrated	
DC Switch	Integrated	
DC Surge Protection	Type II	
AC Surge Protection	Type III (Type II Optional)	
AFCI	Optional	
Emergency Power Off	Optional	
Remote Shutdown	Optional	
General Data		
Operating Temperature Range (℃)	-25~+60	
Relative Humidity	0~100%	
Max. Operating Altitude (m)[*3]	4000	
Cooling Method	Natural Convection	
User Interface	LED, LCD	
Communication	WiFi, RS485 or LAN (Optional)	
Communication Protocols	Modbus-RTU (SunSpec Compliant)	
Weight (kg)	22.5	
Dimension (W×H×D mm)	415×511×175	

Noise Emission (dB)	< 30
Topology	Non-isolated
Self-consumption at Night (W)	<1
Ingress Protection Rating	IP65
Anti-corrosion Class	C4
DC Connector	MC4 (4-6 mm²)
AC Connector	AC Connector
Environmental Category	4K4H
Pollution Degree	III
Overvoltage Category	DC II / AC III
Protective Class	I
The Decisive Voltage Class (DVC)	PV: C AC: C Com: A
Active Anti-islanding Method	AFDPF + AQDPF *4
Country of Manufacture (Only for Australia)	China

Only for Brazil

Technical Data	GW7000-MS
Input	
Max. Input Power (W)	13,500
Max. Input Voltage (V)	600
MPPT Operating Voltage Range (V)	80~550
MPPT Voltage Range at Nominal Power (V)	200~500
Start-up Voltage (V)	80
Nominal Input Voltage (V)	360
Max. Input Current per MPPT (A)	16
Max. Short Circuit Current per MPPT (A)	20
Max. Backfeed Current to The Array (A)	0
Number of MPP Trackers	3
Number of Strings per MPPT	1
Output	
Nominal Output Power (W)	7000
Nominal Output Apparent Power (VA)	7000
Max. AC Active Power (W)*1	7700
Max. AC Apparent Power (VA)*2	7700
Nominal Power at 40℃ (W) (Only for Brazil)	7000

Max Power at 40℃ (Including AC Overload) (W) (Only for Brazil)	7700
Nominal Output Voltage (V)	220
Output Voltage Range (V)	176~242
Nominal AC Grid Frequency (Hz)	60
AC Grid Frequency Range (Hz)	55~65
Max. Output Current (A)	35.0
Max. Output Fault Current (Peak and Duration) (A)(at 5ms)	74
Inrush Current (Peak and Duration) (A)(at 50μs)	150
Nominal Output Current (A)	31.8
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)
Max. Total Harmonic Distortion	<3%
Maximum Output Overcurrent Protection (A)	NA
Efficiency	
Max. Efficiency	97.7%
European Efficiency	97.3%
Protection	
PV Insulation Resistance Detection	Integrated
Residual Current Monitoring	Integrated
PV Reverse Polarity Protection	Integrated
Anti-islanding Protection	Integrated
AC Overcurrent Protection	Integrated
AC Short Circuit Protection	Integrated
AC Overvoltage Protection	Integrated
DC Switch	Integrated
DC Surge Protection	Type III
AC Surge Protection	Type III
AFCI	Optional
Remote Shutdown	Optional
General Data	
Operating Temperature Range (℃)	-25~+60
Relative Humidity	0~100%
Max. Operating Altitude (m)[*3]	4000
Cooling Method	Natural Convection

User Interface	LED, LCD
Communication	WiFi, RS485 or LAN (Optional)
Communication Protocols	Modbus-RTU (SunSpec Compliant)
Weight (kg)	22.5
Dimension (W×H×D mm)	415×511×175
Noise Emission (dB)	< 30
Topology	Non-isolated
Self-consumption at Night (W)	<1
Ingress Protection Rating	IP65
Anti-corrosion Class	C4
DC Connector	MC4 (4-6 mm²)
AC Connector	AC Connector
Environmental Category	4K4H
Pollution Degree	III
Overvoltage Category	DC II / AC III
Protective Class	I
The Decisive Voltage Class (DVC)	PV: C AC: C Com: A
Active Anti-islanding Method	AFDPF + AQDPF [4]
Country of Manufacture (Only for Australia)	China

*1. For Belgium Max. AC Active Power (W): GW5000-MS is 5000, GW6000-MS is 6000, GW7000-MS is 7000, GW8500-MS is 8500, GW10K-MS is 10000.
*2. For Belgium Max.Output Apparent Power (VA): GW5000-MS is 5000, GW6000-MS is 6000, GW7000-MS is 7000, GW8500-MS is 8500, GW10K-MS is 10000.
*3. For Australia Max. Operating Altitude (m) is 3000.
*4. AFDPF: Active Frequency Drift with Positive Feedback, AQDPF: Active Q Drift with Positive Feedback.

Official Website

Contact Information