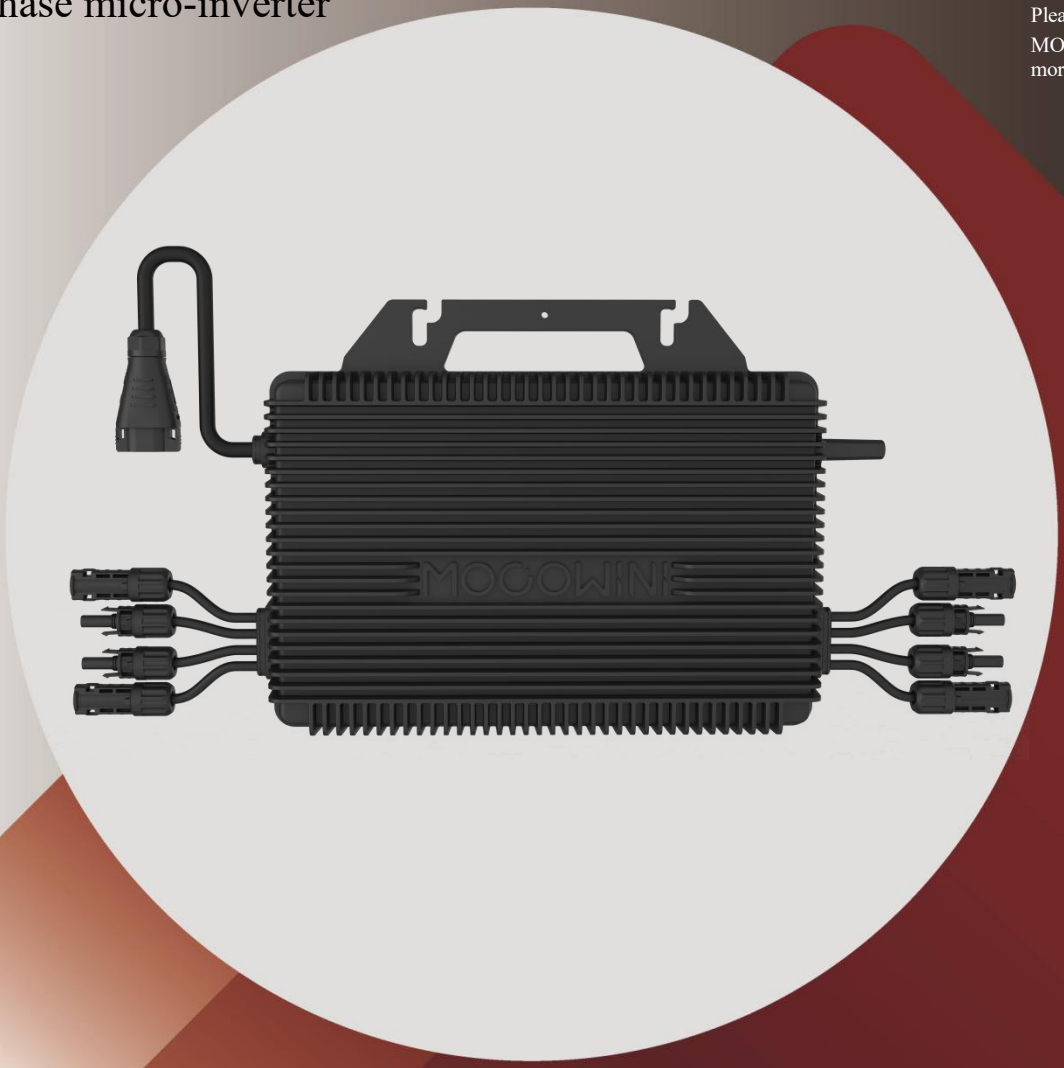
MOCOWINI 海量能源
阳光照进美好生活

User Manual

M4-1600/1800/2000
Single-Phase micro-inverter

Version 1.0

Please scan QR code to download MOCOWINI APP and get more technical support.



TRADEMARK

Warning

The content of this manual may be continually reviewed and amended, due to product enhancements or any other reasons. Unless otherwise stated, this manual is not a substitute for the safety instructions or labelling on the equipment. All descriptions herein are for reference only.

Other Information

Product information is subject to change without notice. The user manual will be updated regularly, please visit the official website of Hangzhou Hailiang New Energy: www.mocowini.com to obtain the latest.

CONTENTS

I About This Manual

This manual contains product information, installation, electrical connections, tuning and testing, troubleshooting and maintenance. Please read this manual carefully before installing and operating the product. All installers and users should understand product features, functions and safety precautions. This manual is subject to change without notice. Please refer to MOCOWINI official website at www.mocowini.com for more product details and the latest documentation.

1.1.Target Group

This manual is only for qualified technicians with PV system installation. The technician should be familiar with the product, local standards and the electrical system. The instructions contained in this manual should be strictly followed during installation, operation and maintenance.

1.2.Validity

Product Model	Nominal Output Power	Nominal Output Voltage
Y24-1600	1600W	220/230/240 V
Y24-1800	1800W	
Y24-2000	2000W	

1.3.Symbol Definition

Symbol	Description
 DANGER	This indicates a hazardous situation that can result in deadly
 WARNING	This indicates that directions must be strictly followed to avoid safety hazards including equipment damage and personal injury.
 CAUTION	This indicates that the act is forbidden. You should stop, use caution and fully understand the operations explained before
	This symbol indicates highlighted information or additional text. Or some tips and tricks for solving product-related problems.

II Safety Instructions

2.1.Safety Requests

WARNING

The micro-inverter is designed and tested in strict accordance with relevant safety standards. The installer must read and follow all safety instructions and cautions before any operation. The micro-inverter is electrical equipment and incorrect operation may result in personal injury or property damage.

a) Only qualified professionals who have read this manual should install and replace MOCOWINI micro-inverter.

b)The electrical installation of MOCOWINI micro-inverter must comply with local electrical regulations.

c) Check the product before installation to make sure there is no damage caused during transportation.

- If damaged, the insulation performance or safe distance range of the micro inverter may be affected.
- Choose installation location carefully and adhere to specified installation requirements.
- Unauthorized removal of necessary protections, improper use, incorrect installation and operation may cause damage to the equipment or incur serious safety and shock hazards.

d)When using the micro-inverter, make sure that the parameters of the operating environment are within the range shown in the technical specifications.

e)Please read all instructions and warning signs within this manual and on the PV modules, before installing and using the MOCOWINI micro-inverter.

f)Before disconnecting the micro-inverter from the PV module, the AC side power grid must be disconnected first.To avoid scalding, make sure that the surface temperature of the micro-inverter is safe, do not directly touch the shell of the micro-inverter.

g)Do not attempt to repair the micro-inverter. If the micro-inverter is suspected to be faulty, please contact MOCOWINI Customer Service to start troubleshooting and obtain a RMA (Return Merchandise Authorization)code to start the replacement process if needed. Private damaging or opening the micro-inverter will void the warranty.

h)In case of non-standard installation or abnormal equipment, please consult your local dealer.

2.2.PV Side Safety Requests

WARNING

a) Ensure that component shells and mounting systems are reliably grounded.

b) Ensure that the positive and negative connectors of the PV modules are not short-circuited to ground. Otherwise, it will cause serious damage to the micro-inverter.

c) Ensure that the DC cables are firmly, securely and correctly connected.

d) Ensure that the PV module voltage is within the voltage range allowed by the micro-inverter. Over-specification ranges are not permitted.

e) Do not connect batteries or other sources of power supply with the input side of micro-inverter.

2.3.AC Side Safety Requests

WARNING

a) Ensure that the voltage and frequency of the micro-inverter meet the requirements for grid connection.
b) It is recommended that additional protective devices such as AC breakers or fuses be installed on the AC side. The protective device should be sized at least 1.25 times the maximum AC output current.
c) Ensure that all grounding wires are securely connected. When there are multiple micro-inverters, ensure that all grounding points on the body are equipotential connections.

2.4.Micro-inverter Safety Requests

DANGER

All labels and warning signs should be clearly visible once installed. Do not scribble, damage or cover any labels on the equipment.
The warning label on the micro inverter is as follows.

Symbol	Description
	Caution Do not come within 8 inches (20 cm) of the micro-inverter when it is in operation.
	Delayed discharging After power-off, wait for 5 minutes to return to normal after the components are fully discharged.
	Danger of high voltage The high voltage generated by micro-inverter can endanger life.
	Beware of hot surface The micro-inverter will generate heat during operation. Do not touch the metal surface.

	CQC Mark This micro inverter complies with China CQC standards.
	Read manual first Read the user manual carefully before installation, operation and maintenance
	Earthing point

DANGER

a) Damage to equipment that may result from unauthorized dismantling or modification is not covered by the warranty.
b) Do not touch the operating equipment to avoid injury due to high temperature.
c) lease install the equipment out of the reach of children.
d) Please install the equipment in the location away from electromagnetic interference.

2.5.Personal Safety Requests

Only qualified professional technicians can install and operate the micro-inverter.Professional technicians must:

a)be professionally trained.

b)read this manual thoroughly, and master the safety matters related to operation

c)be familiar with relevant safety regulations for electrical systems.

2.6.Radio Interference Statement

This micro-inverter complies with the requirements of EMC (EMC regulations are designed to provide reasonable protection against harmful interference in a residential installation). This equipment can radiate radio frequency energy, if not installed or used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by the following measures:

a) Relocate the receiving antenna away from other devices.

b) Contact local dealer or an experienced radio/TV technician for help.

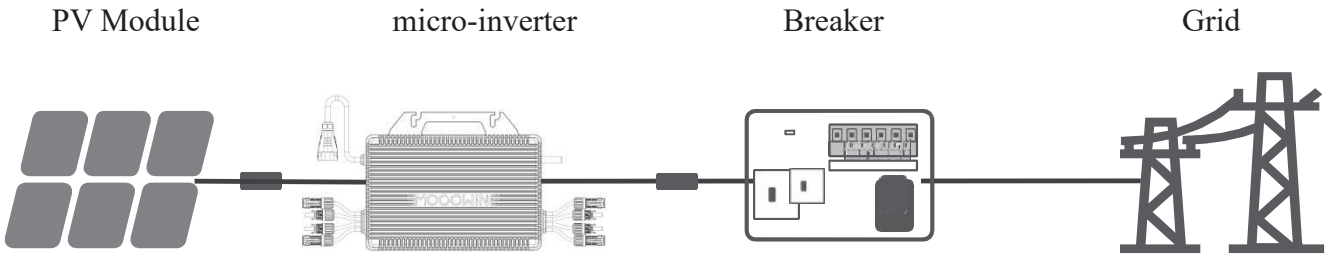
*Note：Any unauthorized changes may result in a loss of the user's right to use the device.

III Product Introduction

3.1. Product Overview

The MOCOWINI micro-inverter is a miniature single-phase grid-tied photovoltaic inverter. The micro-inverter converts the DC power generated by the PV modules into AC power for use, and can also be provided to the grid. MOCOWINI micro-inverter can maximize the energy output of the whole solar array when it encounters unsatisfactory conditions such as shadow occlusion, dirt accumulation, illumination deviation or mismatch in practical application, to maximize the power generation performance of photovoltaic system.

The diagram of micro-inverter is as follows:



3.2. Product Function Introduction

The N2 series of MOCOWINI micro-inverters have an output of up to 2000W to adapt to balcony/roof and other household photovoltaic scenarios.Product innovation and rigorous design maximize power generation.

The product is encapsulated with all silicone gel to reduce stress on electronic components, promote heat dissipation, enhance water resistance, and ensure product reliability through rigorous testing methods (including accelerated life test). Through the APP or portal website, it is possible to check the running status of the system anytime, which is convenient for operation and maintenance.

M4Series Highlights

a) Single unit connects to 4 pcs of 500W Modules
b) Maximum output power up to 2000W
c) IP67 High protection level
d) WiFi/SUB-1G for stable communication
e) Safety protection relay integrated, enabling grid isolation protection
f) Module-level rapid shutdown for safer use
g) Suitable for most crystalline silicon modules and thin film modules
h) 4 input channels with independent MPPT for module-level monitoring function
i) Maximum 125% DC over-sizing

N2Series Communication Method：

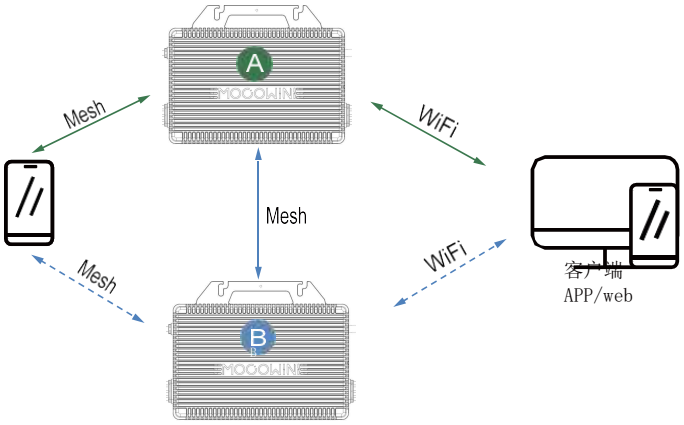
a) Multiple devices communicate through Bluetooth MASH, and one device links to the cloud server through WiFi to monitor the operating status of the micro-inverter in real time.

b) WiFi:Supports 2.4G frequency band. Set the router to 2.4G mode

c) The maximum input length supported by the router wireless signal name is 32 bytes.

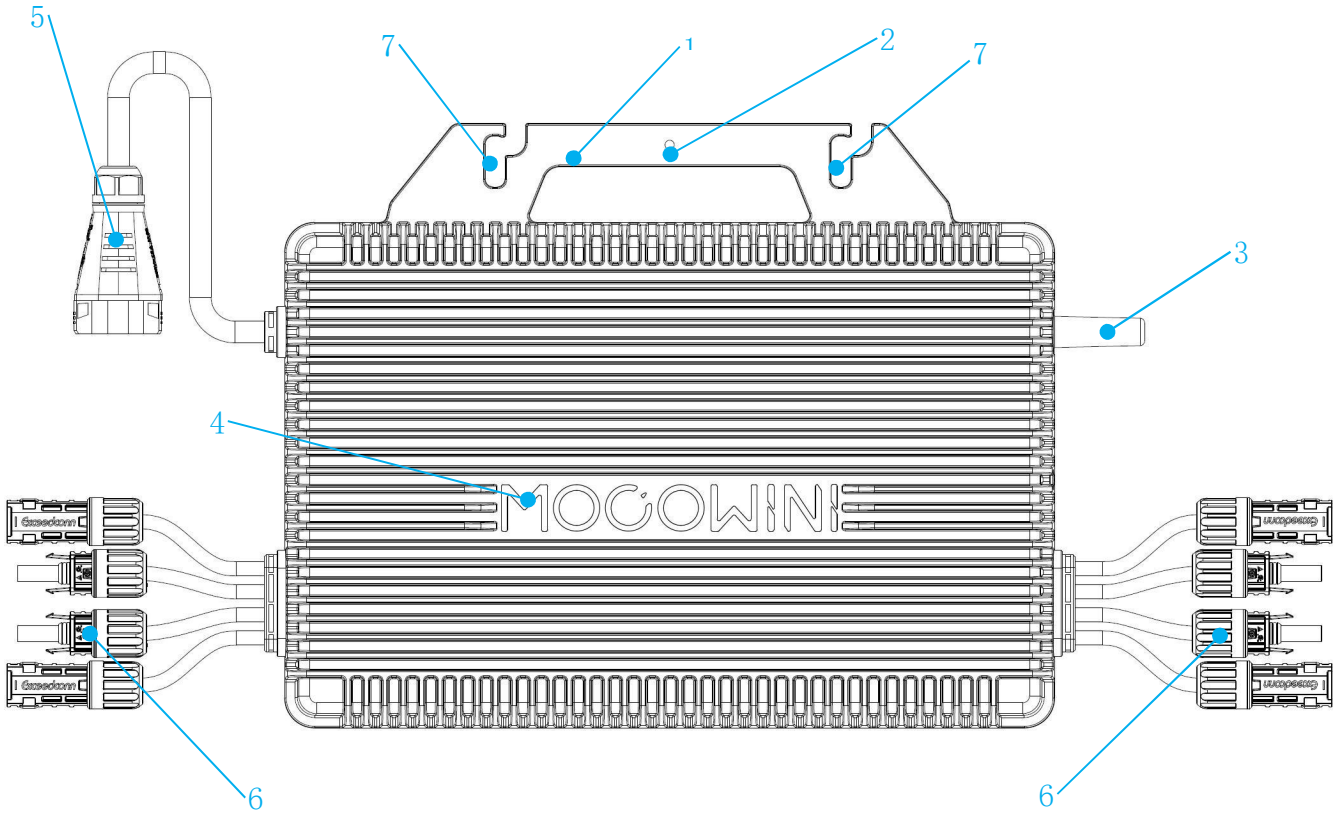
d) In order to ensure the communication quality, it is recommended to choose a router with high wireless gain or more antennas, and wireless repeater or outdoor router if needed.

When multiple micro-inverters work in parallel, the device with a strong signal can be designated as the communication root node through the MOCOWINI APP. Please refer to the MOCOWINI APP instruction for details.



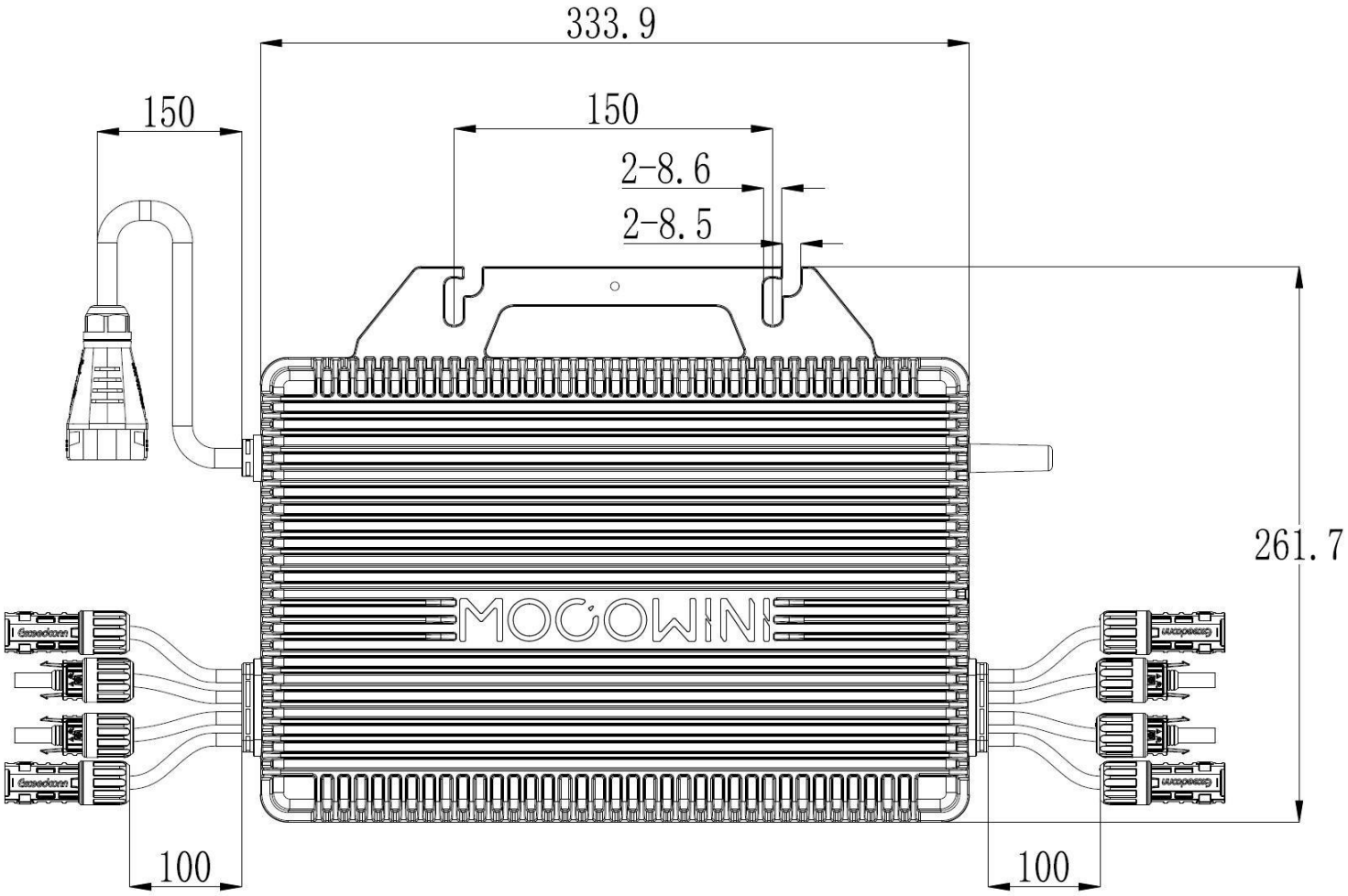
3.3. Appearance

3.3.1. Terminals Introduction



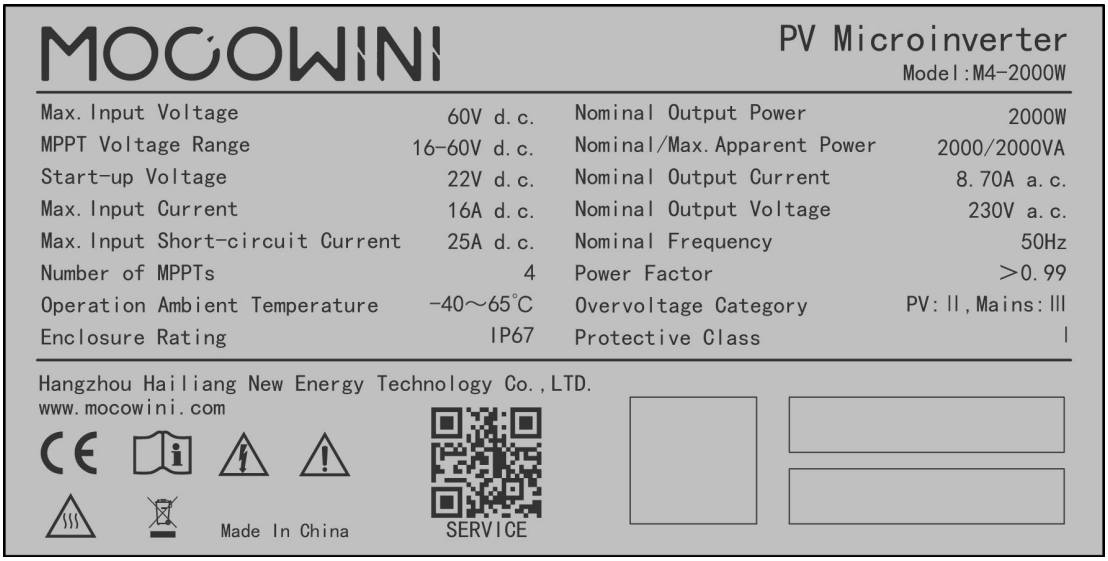
No.	Component or Position	Description
1	Handle	For handling during transport or installation
2	Grounding screw hole	Connect with the ground point of earth wire
3	Antenna	Wireless communication, support 2.4G WiFi and Bluetooth,Sub-1G is optional
4	LOGO	
5	AC Connector	Connect with the grid
6	PV Connector	Connect with PV modules
7	Mounting Hole	Install micro-inverter

3.3.2. Dimension(mm)



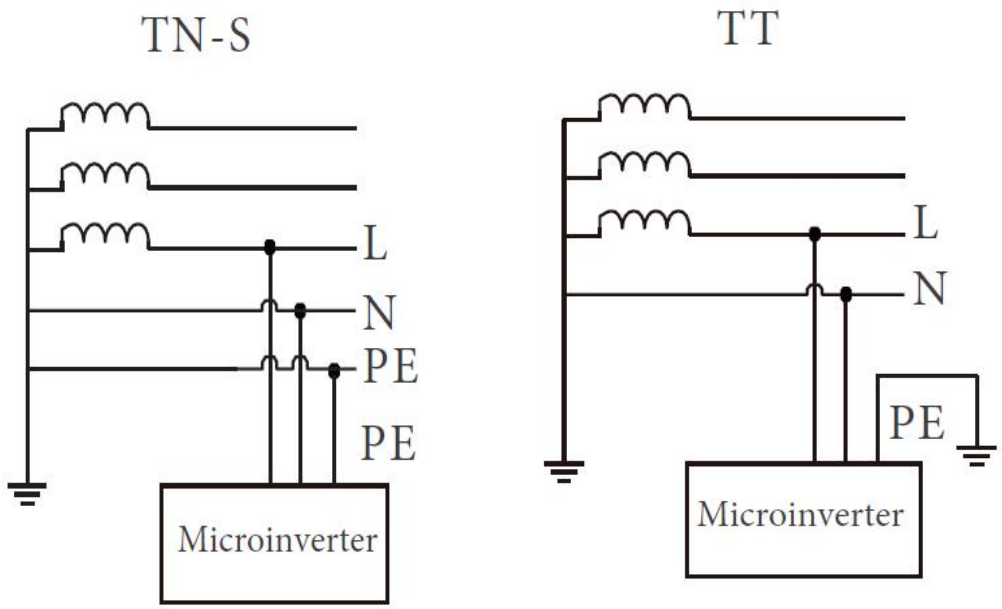
3.3.3. Label Description

Nameplate for reference only.

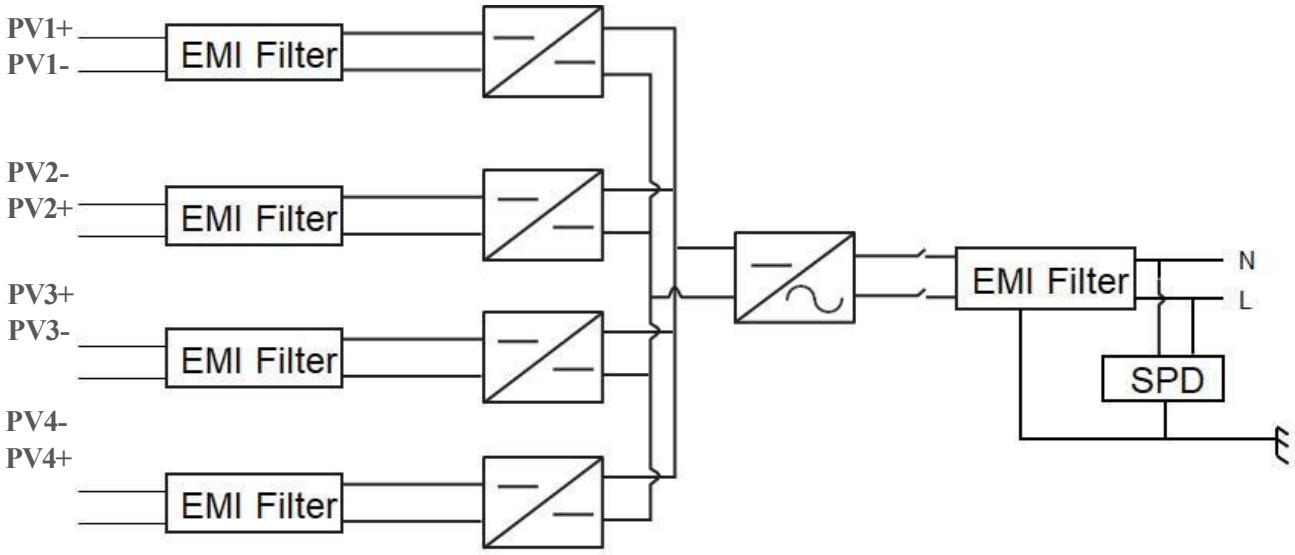


3.4. Type of Grid Connection

The product supports the following two types of grid connection.



3.5. Circuit Diagram



IV Product Receiving and Storage

4.1. Receiving and Check

a) Check the packaging box for damage, such as holes, cracks, deformation and other signs of packaging damage. If damage is found, please do not open the package and contact the supplier as soon as possible.

b) Check the micro-inverter model. If the micro-inverter model is not what you requested, please do not unpack the package and contact the supplier.

c) Check whether the accessory model is correct and complete, as well as whether the appearance is intact. If damage is found, please contact the supplier as soon as possible.

4.2. List of Main Annexes

No.	Name	Quantity	Description
1	Micro-inverter	1	Std.
2	Socket Head Cap Screw M8*25	2	Opt.
3	Plain Washer	2	Opt.
4	Spring Washer	2	Opt.
5	Nut	2	Opt.
6	PV Spanner	1	Opt.
7	AC Bus Adaper	1	Opt.
8	AC Bus T-Head	1	Opt.
9	AC Bus T-Head Removal Tool	1	Opt.
10	AC Bus Protection Cover	1	Opt.
11	DC Connector Dust Plugs-Male	2	Opt.
12	DC Connector Dust Plugs-Female	2	Opt.

4.3. Storage

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

a) Do not open the out er packaging.

b) Store the equipment in a clean place.

c) Ensure that the temperature and humidity are appropriate and that there is no moisture condensation.

d) Stacking height and orientation of the micro-inverter should follow the instructions on the box.

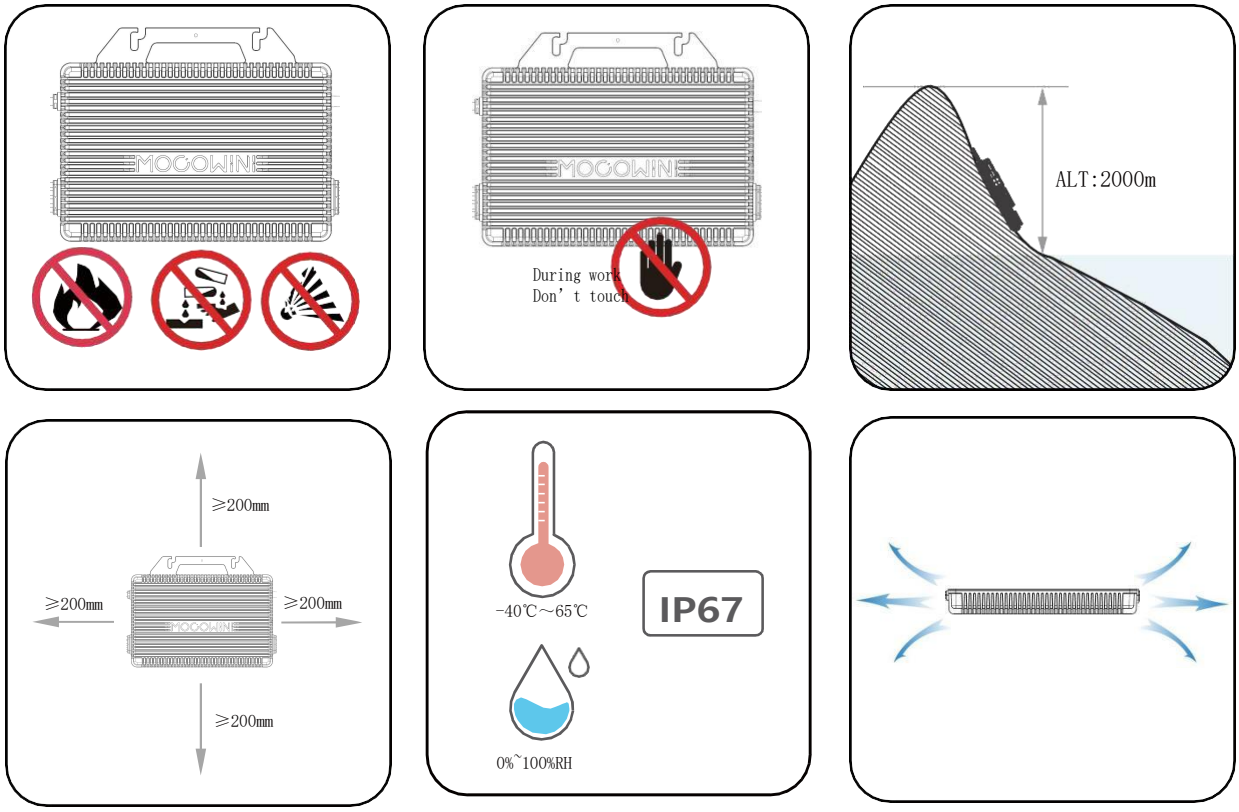
e) Micro-inverters must be stacked carefully to prevent falling.

f) If the micro-inverter has been stored for a long time, it should be inspected by a professional before being put into use.

V Installation

5.1. Installation Environmental Requirements

a) Do not install the micro-inverter near flammable, explosive or corrosive substances.
b) Install the micro-inverter on a solid surface sufficient to withstand the its weight.
c) Please install the equipment in a well-ventilated place to ensure good heat dissipation. In addition, the installation space should be large enough for easy operation.
d) Install the equipment in a cool place, away from direct sunlight, rain, snow, and ultraviolet radiation.
e) Do not install the equipment in a place that is easy to touch, especially where children can reach it. It's high temperature while the equipment operating, do not touch the surface to avoid scalding.
f) Please install the equipment in a place where it is easy for O&M and electrical connection, and where it is easy to check the height of the indicators and labels.
g) Please install the equipment in the location away from electromagnetic interference.



5.2.Mounting Bracket Requirements

a) Mount the micro-inverter on a PV specific bracket. Ensure that the PV mount is strong enough to support the weight of the micro-inverter.
b) Ensure the mechanical compatibility of the micro-inverter connector with the connector of the PV module to which it is connected.

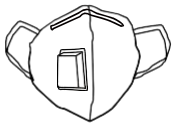
5.3.Installation Tools Requirements

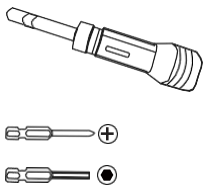
The following tools are required to install the micro-inverter, and other auxiliary tools may be used on site.


Protective Glasses

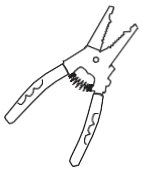

Insulated Shoes

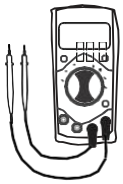

Insulated Gloves


Mask

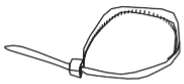

Screwdriver

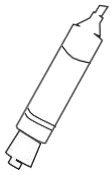

Diagonal Pliers


Wire Stripper


Multi meter

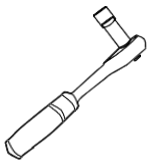

Heat Gun

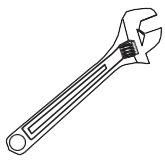

Zip ties

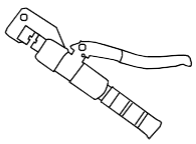

Marker

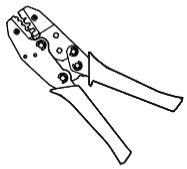

Surveyor's Level


Heat Shrink Tubing


M8 hexagonal spanner


Spanners


Hydraulic Tong

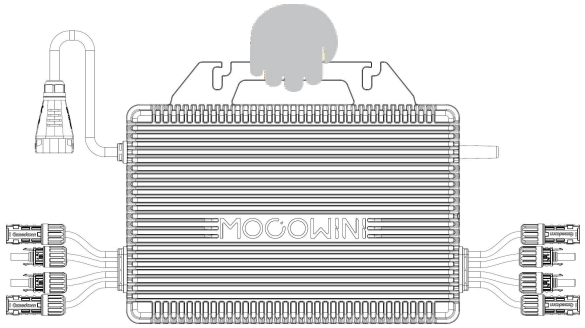

Wire Crimpers

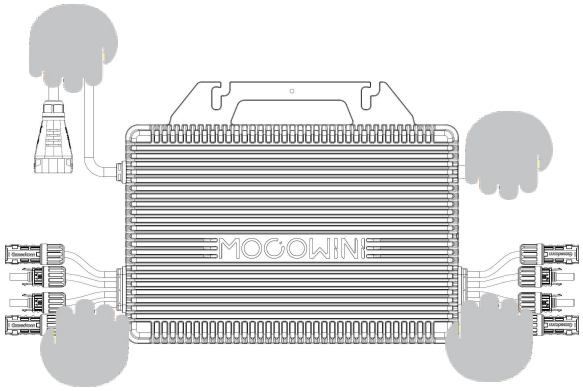
5.4.Micro-Inverter Installation

Please carry the micro-inverter to the site before installation. Follow the instructions below to avoid personal injury or equipment damage.

WARNING

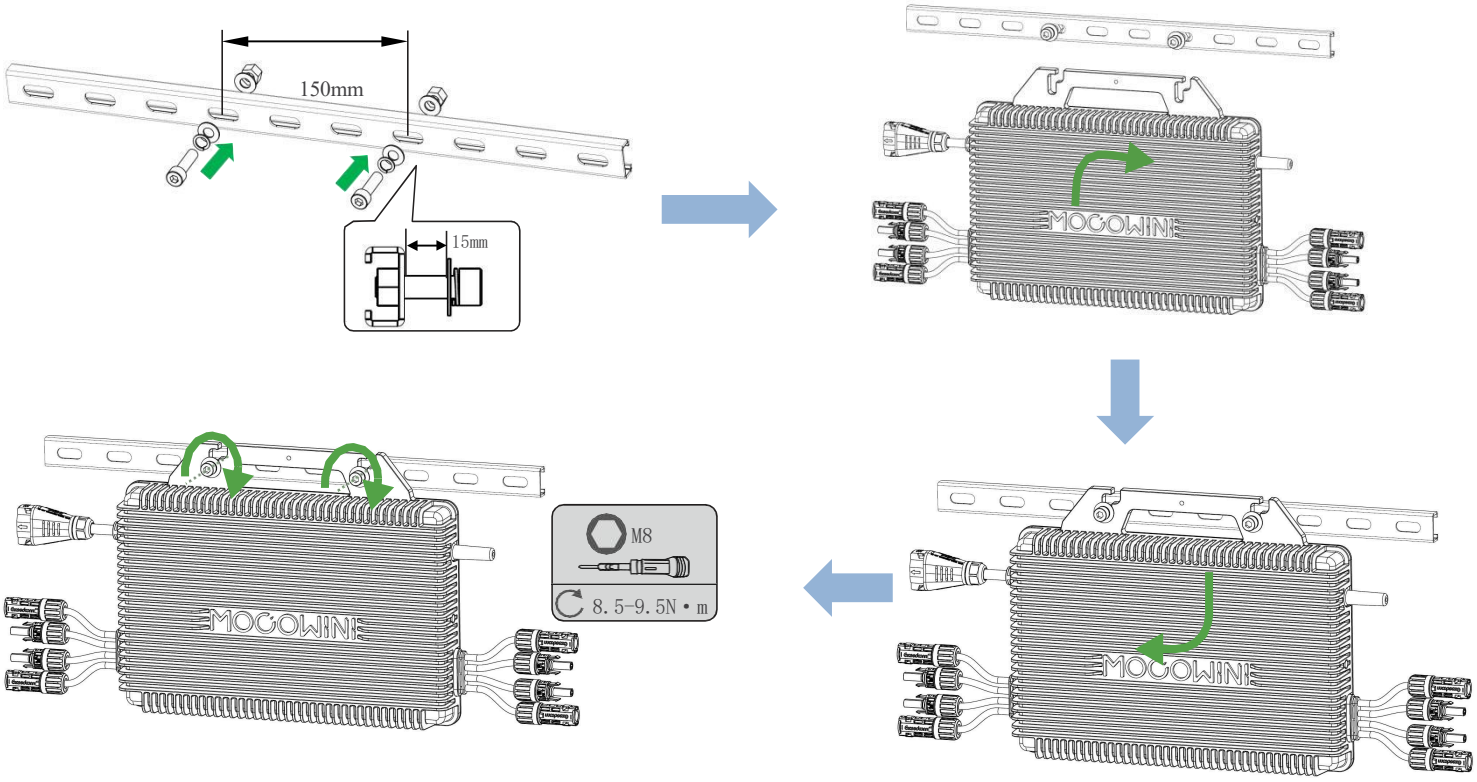
a) Please consider the weight of the equipment before handling it. And arrange for sufficient personnel to operate the equipment to avoid personal injury.
b) Wear safety gloves to avoid personal injury.
c) While handling equipment, please keep balance to avoid falling.
d) Do not bump or hit the antenna, otherwise it may be damaged.
e) It is forbidden to pick up the cable directly by hand, and it is recommended to lift the handle of the micro-inverter to carry and install it.
f) A clearance of at least 10cm should be left around the micro-inverter enclosure to ensure ventilation and heat dissipation.





WARNING

g) Before installation, please position the installation location of the micro-inverters and PV modules, and it is recommended to mark the relevant position on the rail.
h) Fix the micro-inverter on the mounting rail.
i) Wear goggles and dust masks when drilling holes, to prevent dust inhalation or touch the eyes.
j) Prepare suitable M8 screws and fix them to the bracket in a suitable position according to the size of
k) the rail and the thickness of the micro-inverter handle (9mm)



VI Electrical Connection

6.1. Safety Precautions

WARNING

a) Before making any electrical connection, please disconnect the PV module connectors and the AC output switch of the micro-inverters, as well as the power supply to the micro-inverters

b) Electrical connection should comply with local laws and regulations, including operation, cables and component specifications.

c) Avoid excessive tension on the cable, which may result in a poor connection. It is necessary to reserve a certain length of cable in front of the micro-inverter.

Precautions:

a) Personal protective equipment such as safety shoes, safety gloves, insulated gloves must be used during electrical connection.

b) All electrical connections shall be made by qualified professionals.

c) The cable colors in the document are for reference only. Cable specifications shall comply with local requirements, laws and regulations.

d) Micro-inverters must be licensed by the power sector of the country/region where they are located.

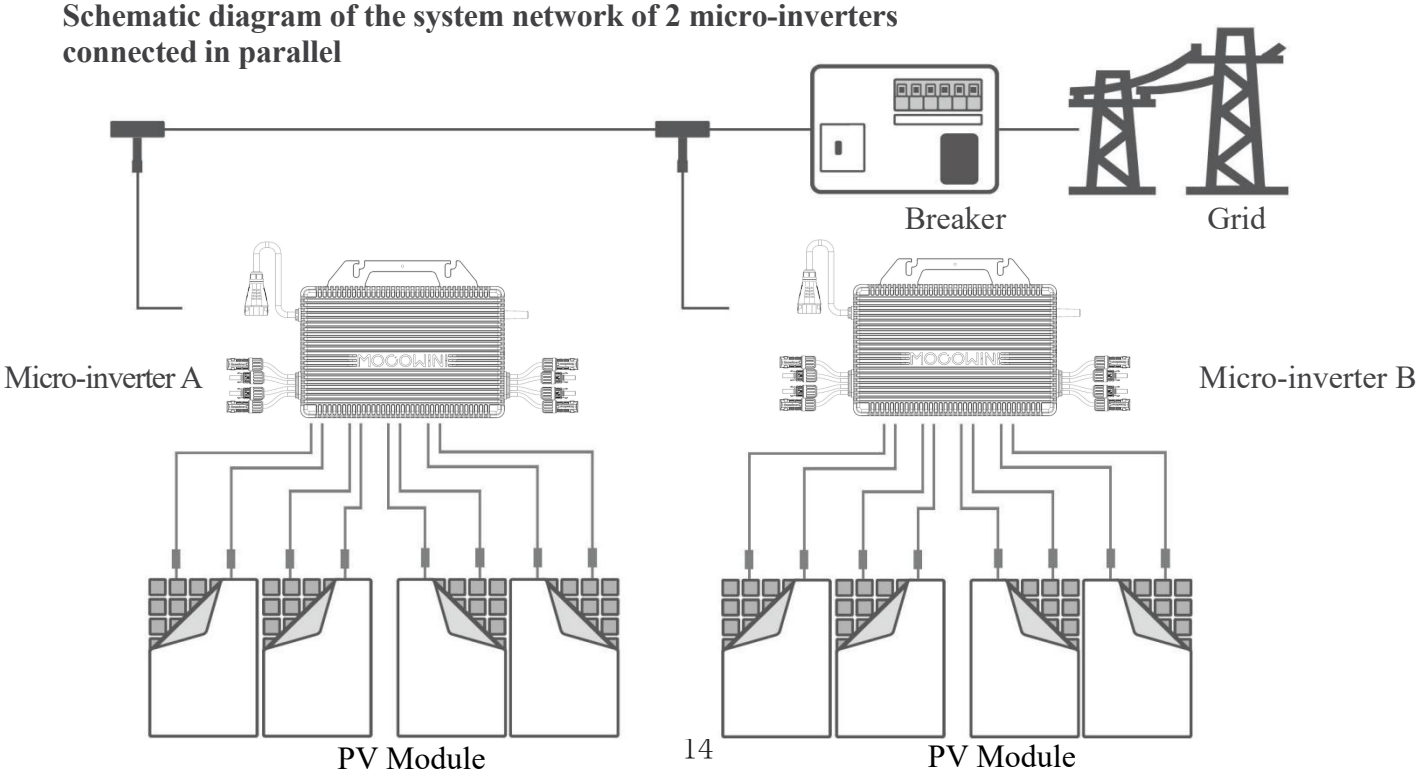
e) Positioning before connecting to the grid.

f) Before electrical connections, please prepare the cables according to the installation plan.

g) After the inverter is installed, remove the removable serial number label from the micro-inverter, paste it on a paper, create an installation plan, and then register the power station by scanning the serial number through the APP.

h) Monitor the operating status of the micro-inverter.

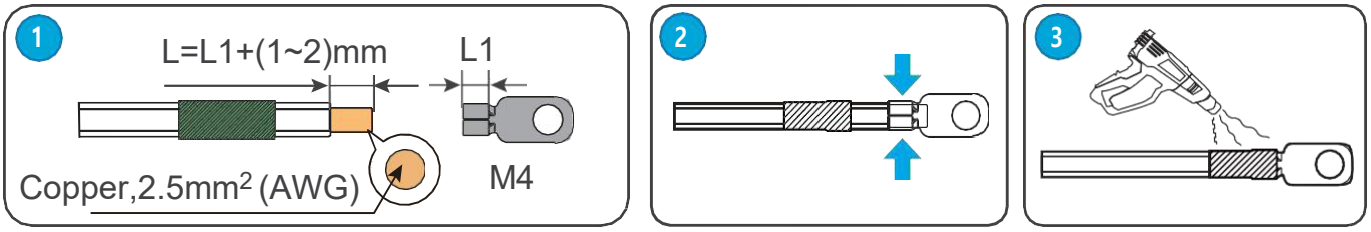
Schematic diagram of the system network of 2 micro-inverters connected in parallel

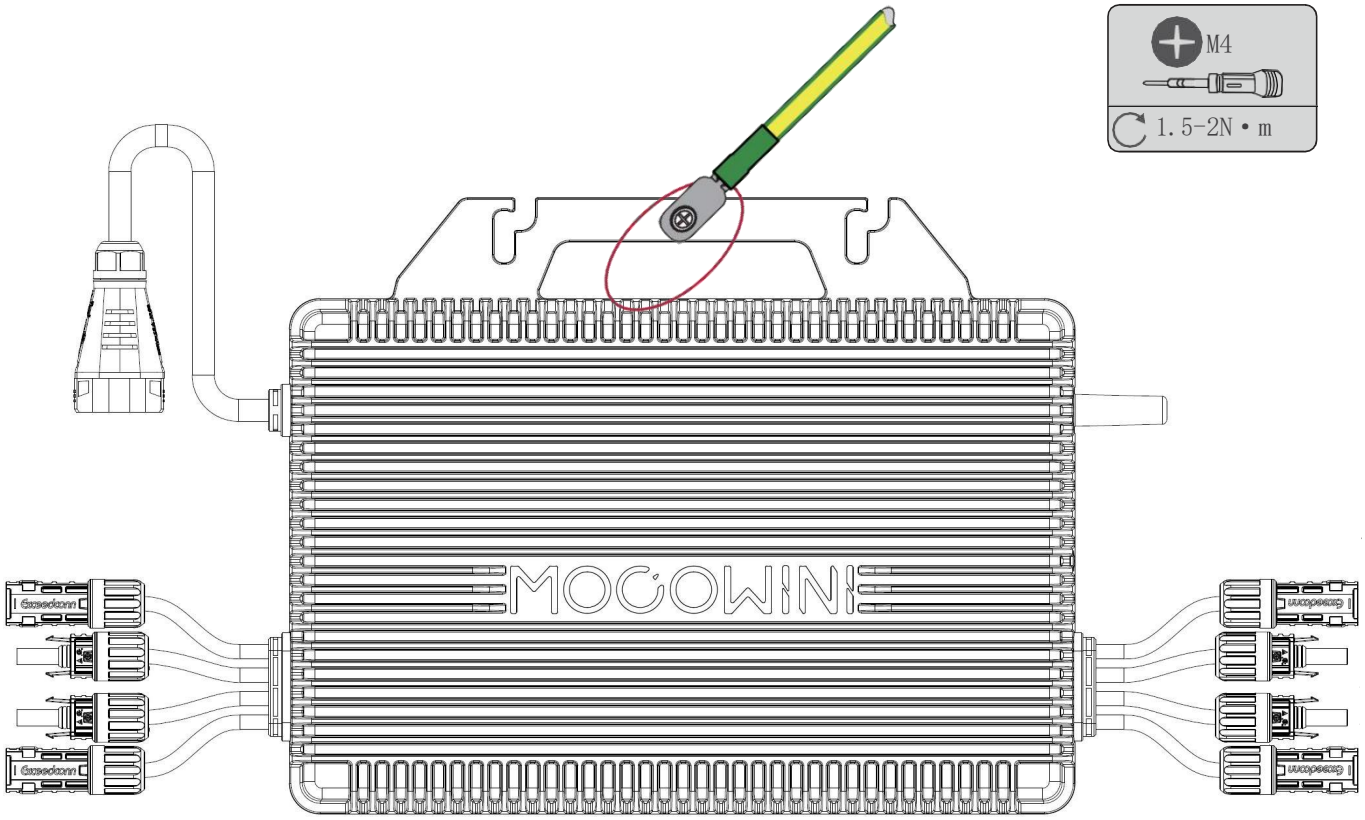


6.2. PE Cable Connection

WARNING

a)When connecting multiple micro-inverters, ensure that all grounding points are equipotential.
b)In order to improve the corrosion resistance of the grounding terminal, it is recommended to coat the grounding terminal with silica gel or paint after the PE cable is installed.
c)PE cable is prepared by customer.Recommended specification:2.5mm2(14AWG)。M4 grounding OT terminal is prepared by customer.





6.3. AC Cable Connection

WARNING

a)Micro-inverters are only allowed to be connected to the grid.

b)An AC circuit breaker should be installed on the AC side to ensure that the inverter can be safely disconnected from the grid under abnormal conditions. Please select the appropriate AC circuit breaker according to local laws and regulations.

c)Pay attention to the "L", "N" and "PE" marks on the AC connectors. Connect the wires to the corresponding terminals. If it is not properly wired, the micro-inverter may be damaged.

d)Make sure the power cord core is fully plugged into the AC connector. The cable core shall not be exposed.

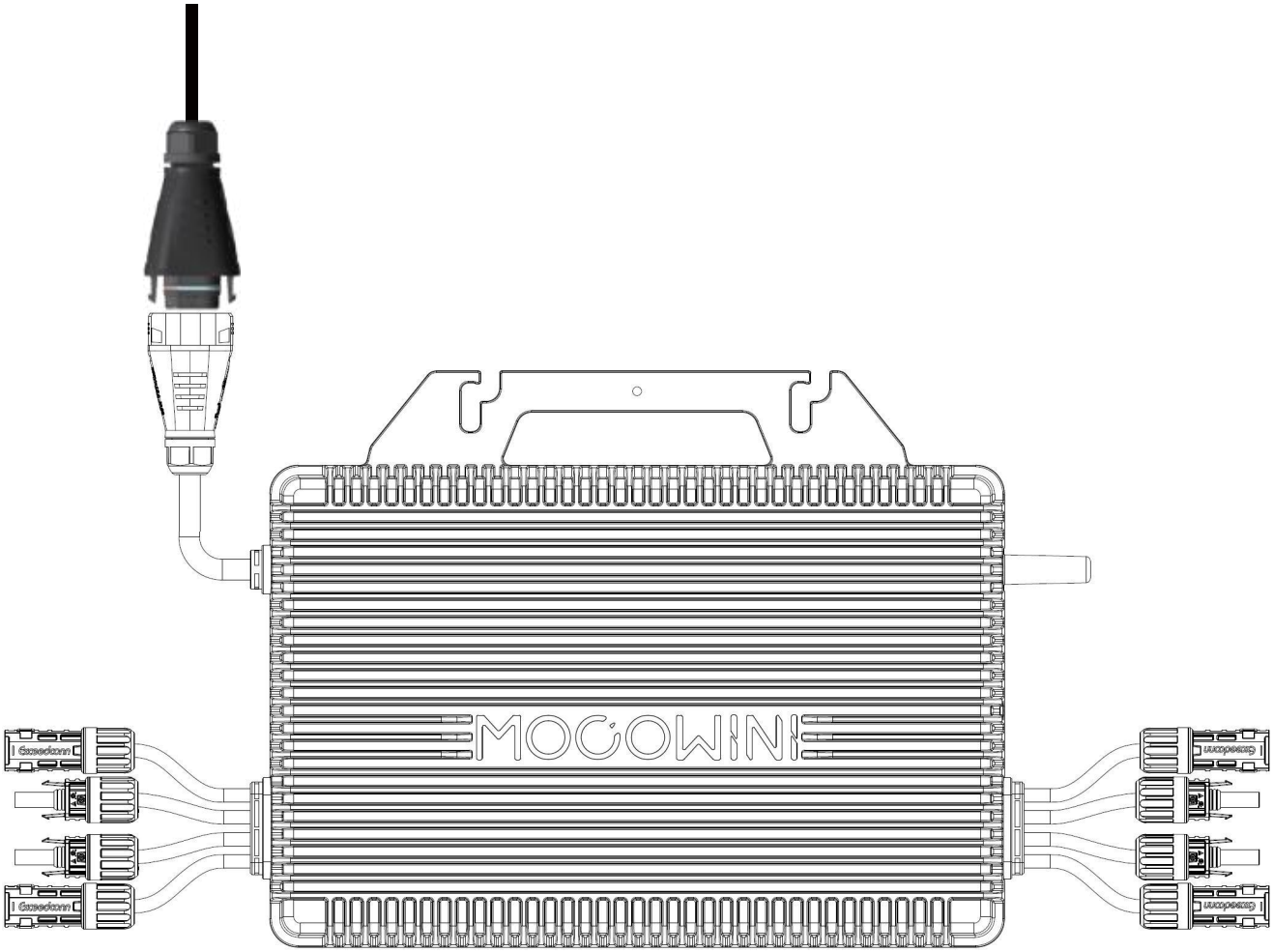
e)Make sure the power cord core is fully plugged into the AC connector. The cable core shall not be exposed.

f)When the AC connector is not used, seal the AC connector with a sealing plug. Otherwise, it will affect the protection level.

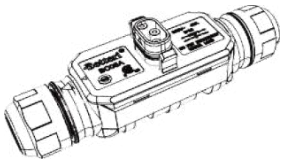
g) AC cables can be purchased from the manufacturer or prepared by the user.Recommended specification:4mm² or 10AWG、 12AWG。

h)Direct plug-in type (terminal connector is optional) for single micro-inverter.

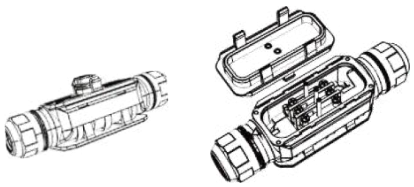
6.3.1. Schematic diagram of single micro-inverter connection:



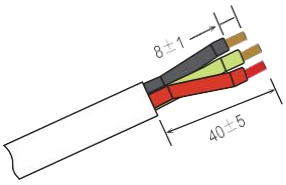
6.3.2. Schematic diagram of two micro-inverter connection:



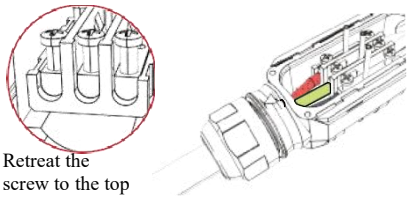
1.Take one main thread body of connector.



2.Using the main unlock tool, open the lid.

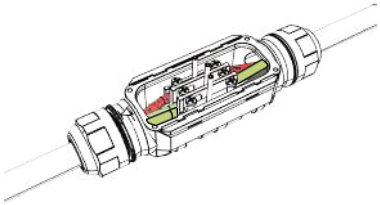


3. According to the requirements of the system, intercept a certain length of cable and strip both ends of the cable, with the outer core stripped of 40±5mm and the inner core stripped of 8 ± 1mm.



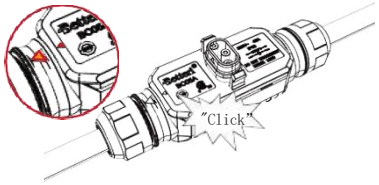
Retreat the screw to the top end baffle

4. Before wiring, use 2# phillips screwdriver to retreat the screw to the top end baffle, then the cable passes through the body shell, and insert the inner core wire into the inside of the terminal according to L,PE,N mark on the box body, lock the screw,screw torque 0.4±0.1N · m.

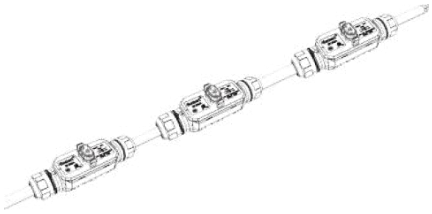


5.Repeat step 4, connect the other end of the cable , lock the two nuts, torque 4.0±0.5N·m.

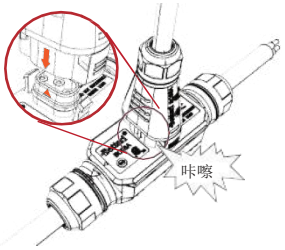
5.



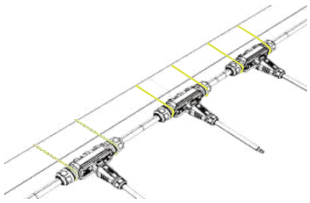
6.Press follow the guiding arrow on the box body and the box cover, lifted the box cover,-clamping in place will have a clear sound.



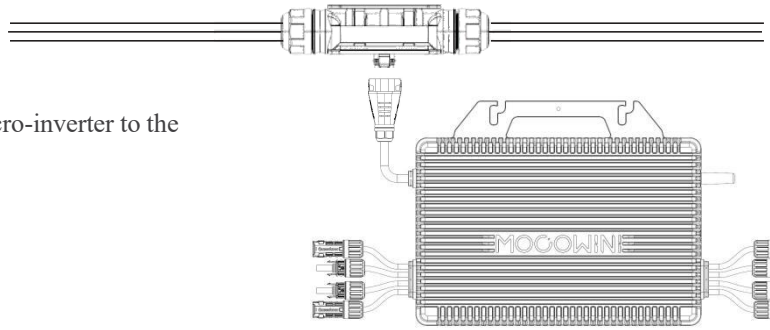
7.Take a suitable number of connectors for backup use as required by system.



8.Install the branch line onto the main line.During installation,align the guiding arrows of the main line and the branch line and insert them into the mainline. There will be a clear sound when the branch lines clamped in place.



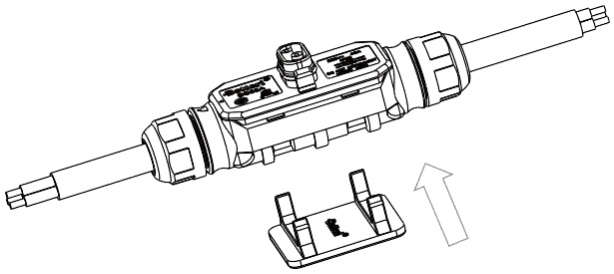
9.Tight with tie belt or steel wire belt, etc., the connector will be tied tightly in the appropriate position of the bracket, to ensure the solid and reliable.



10.Connect the micro-inverter to the T - connector.

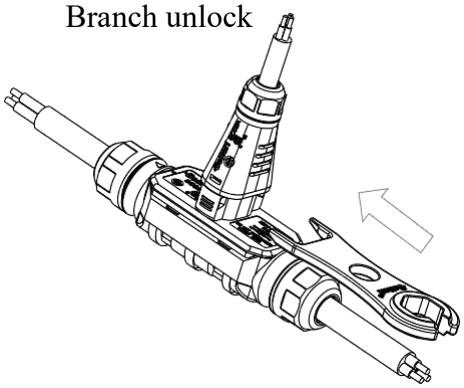
6.3.3. AC Cable unlock

Main line unlock



Use the unlocking tool to align the card slot on the opposite side of the box body, press hard, the box cover will spring open for a certain distance automatically, and then separate the box cover by hand.

Branch unlock

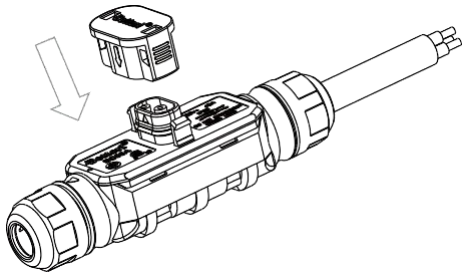


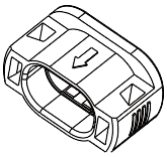
Use the unlocking tool to align the clasp slot (the unlocking tool incline is downward), and push hard inward. The clasp will spring open for a certain distance, and then separate the branch lines by hand.

6.3.4. Cable accessories and usage

Main cable hard protective cover

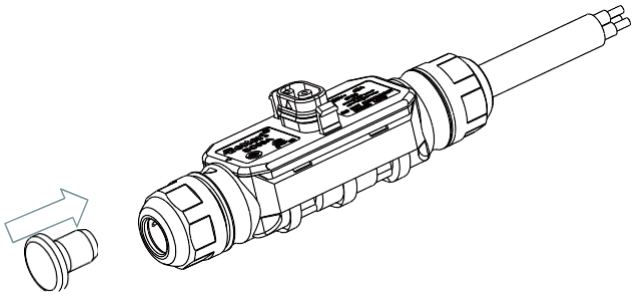
When installing the system, when a main line is temporarily not use, use this protective cover, align the clasp and buckle it, and there will be a clear sound when the clasp is clamped in place.





Main line end protective cover

The system end seal protection use this protective cover, after insertion, lock the nut.



6.4. PV Cable Connection

DANGER

a)Before connecting the PV module to the micro-inverter, please confirm the following information. Otherwise, the micro-inverter may be permanently damaged or even cause a Fire incidents, resulting in personal and property damage.

- Ensure that the maximum short-circuit current and maximum input voltage of per MPPT are consistent with the micro-inverter
- Ensure that the negative connector of the PV module is connected to the positive connector of the micro-inverter, and the positive connector of the PV module is connected to the negative of the micro-inverter.

b) Don't plug and unplug the connector while the micro-inverter is operating.

WARNING

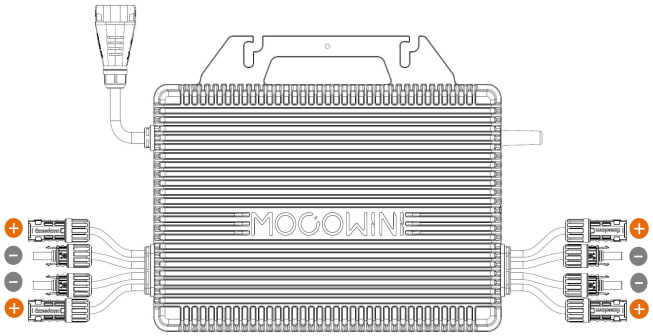
c) Use the MC4 PV connector to connect the PV cable, if other connectors are used, the manufacturer is not liable for damage.

d) Before connecting the PV module to the micro-inverter, ensure that the minimum isolation resistance to ground meets the requirements.

e) Connect the connectors of the two PV modules in parallel to the connector of the micro-inverter.

f) DC cables can be purchased from the manufacturer or prepared by the user. It should meet over current requirements.

g) When PV connectors not in use, seal the PV connectors with a waterproof cover. Otherwise, it will affect the protection level.



VII Equipment Debugging

7.1. Check Before Power On

a) The micro-inverter is firmly installed in a clean, ventilated, and easy to operate place.

b) PE cable, PV DC input and AC output cables should be connected correctly and reliably.

c) Cable ties are intact and arranged neatly and evenly.

d) Unused ports need to be blocked with dust plugs.

e) The contact voltage and frequency meet the grid-tied requirements of the micro-inverter.

7.2. Power On Procedure

Step 1： Connect the PV connectors of the micro-inverter and the PV module.

Step 2： Close the AC circuit breaker between the micro inverter and the grid.

VII System Debugging

8.1. System Indicator light description

Indicator color status	Description
The red and green lights flash alternately once per second 	System self-checking
The green light flashes once every two seconds 	The system is generating power normally
The green light flashes once per second 	The system is running and an alarm is displayed
The red light flashes twice per second 	System failure
Note: The micro-inverter is powered by DC side. If the LED light is not on, please check the DC side connection. If the connection and input voltage are normal, but the LED light is still not on, please contact your local dealer.	

8.2. APP Set Inverter Parameters

Mocowini APP is a mobile application dedicated to Hangzhou's Hailiang new energy products. It connects to the Internet server through Bluetooth and WiFi. The commonly used functions are as follows:

1. Set networking parameters and communication parameters.
2. User information management.
3. Check running data, alarm messages, software version, etc.
4. Equipment maintenance.

Visit www.mocowini.com or scan the installer APP and read the user manual.

MocoWini APP

APP User Manual

IX System Maintenance and Troubleshooting

9.1. Troubleshooting

Fault Code	Fault cause	Suggested measure
102	No device detected	1. Place the device close to the router or communication port. 2. Check whether the network configuration is complete and correct.
103	Over temperature fault	1. Check the ventilation and ambient temperature of the installation point. 2. If the ventilation is poor or the ambient temperature is high, improve the ventilation or heat dissipation. 3. If the heat dissipation and ambient temperature are normal, contact professional engineers, dealers, and after-sales service for technical support.
104	Hardware failure	For technical support, please contact your dealer or after-sales services.
105	Hardware failure	1. Check whether the resistance the photovoltaic array and the protection ground (PE) exceeds 50kΩ. If the value does not exceed the threshold, check whether a short circuit exists and rectify the fault. 2. Check whether the protection ground cable(PE Cable) is correctly connected. 3. If the insulation resistance is lower than the default value in an environment with high humidity, such as rainy days, reset the insulation monitoring system(ISO). in this case, you may need to temporarily disconnect the power supply and wait fro the environment to dry before measuring. 4. If the preceding checks are normal, contact professional personnel or the dealer or after-sales service for technical support.
106	Hardware failure	

Fault code	Fault cause	Suggested measure
107	Power grid fault	1. Check the connection between the photovoltaic module and the micro-inverter to ensure that the connection is correct and reliable. 2. If the problem occurs occasionally, it may be a temporary anomaly in the power grid. When the power grid is detected to return to normal, the micro inverter will automatically resume operation. 3. If the problem occurs frequently, check whether the power grid frequency/voltage is within the allowable range. 4. If the preceding checks are normal, contact professional personnel or contact the dealer or after-sales service for technical support.
201	The input voltage of the PV1/2 port exceeds DC-60V	1.Check the connection between the photovoltaic module and the micro-inverter to ensure that the connection is correct and reliable. 2.Make sure that the open-circuit voltage of the photovoltaic module does not exceed the maximum operating voltage of the micro-inverter to ensure compliance with the voltage requirements of the micro-inverter. 3.Check whether the photovoltaic module is abnormal. 4. If all the above check results are normal, consult professional personnel or contact the dealer or after-sales service for technical support.
202	The input voltage of port PV1/2 is lower than that of DC-16V	1.Check the connection between the photovoltaic module and the micro-inverter to ensure that the connection is correct and reliable. 2. Ensure that the two sets of photovoltaic modules connected to the micro-inverter are of the same model and specification. 3. Check whether the photovoltaic module is abnormal. 4. If all the above check results are normal, consult professional personnel or contact the dealer or after-sales service for technical support.

Fault code	Fault cause	Suggested measure
203	The input voltage of the PV port is lower than DC-16V	1.Check the connection between the photovoltaic module and the micro-inverter to ensure that the connection is correct and reliable. 2. Ensure that the two sets of photovoltaic modules connected to the micro-inverter are of the same model and specification. 3. Check whether the photovoltaic module is abnormal and ensure that it is not damaged, shielded, or dirty . 4. If all the above check results are normal, consult professional personnel or contact the dealer or after-sales service for technical support.
204	Hardware failure	1.Check the connection between the photovoltaic module and the micro-inverter to ensure that the connection is correct and reliable. 2. Ensure that the short circuit current of the photovoltaic module does not exceed the maximum short circuit current of the micro-inverter to ensure compliance with the specifications of the micro-inverter. 3.Check whether the photovoltaic module is abnormal. 4. If all the above check results are normal, consult professional personnel or contact the dealer or after-sales service for technical support.
205	Hardware failure	1. Check the connection between the photovoltaic module and the micro-inverter to ensure that the connection is correct and reliable. 2. Ensure that the short circuit current of the photovoltaic module does not exceed the maximum short circuit current of the micro-inverter to ensure compliance with the specifications of the micro-inverter. 3. Check whether the photovoltaic module is abnormal. 4. If all the above check results are normal, consult professional personnel or contact the dealer or after-sales service for technical support.

Fault code	Fault cause	Suggested measure
206	Hardware failure	1. Check the connection between the photovoltaic module and the micro-inverter to ensure that the connection is correct and reliable. 2. Ensure that the short circuit current of the photovoltaic module does not exceed the maximum short circuit current of the micro-inverter to ensure compliance with the specifications of the micro-inverter. 3. Check whether the photovoltaic module is abnormal. 4. If all the above check results are normal, consult professional personnel or contact the dealer or after-sales service for technical support.
207	Software fault	1.Turn off the AC output switch and DC input switch, and reconnect them 5 minutes later. 2. If the problem persists after the preceding operations, contact professional personnel or the dealer or after-sales service for technical support.
208	Hardware failure	
209	Hardware failure	1. Check the configuration of the PV array to ensure that the power of the PV module matches that of the micro-inverter and that cables are correctly connected to the PV array to avoid input exceptions caused by improper configuration. 2.Turn off the AC output switch and DC input switch, and reconnect them 5 minutes later to reset the micro-inverter and the PV system. 3. If the problem persists after the preceding operations, contact professional personnel or the dealer or after-sales service for technical support.
210	Hardware failure	

Fault code	Fault cause	Suggested measure
301	Software fault	1. Check the configuration of the PV array to ensure that the power of the PV module matches that of the micro-inverter and that cables are correctly connected to the PV array to avoid input exceptions caused by improper configuration. 2. Turn off the AC output switch and DC input switch, and reconnect them 5 minutes later to reset the micro-inverter and the PV system. 3. If the problem persists after the preceding operations, contact professional personnel or the dealer or after-sales service for technical support.
302	Hardware failure	
303	Hardware failure	
304	10min the over voltage is faulty	1. If the problem occurs occasionally, the power grid may be temporarily abnormal. When the power grid is detected to return to normal, the micro-inverter will automatically resume operation. 2. If the fault occurs frequently, check whether the power grid frequency/voltage is within the allowable range. 3. If all the above check results are normal, consult professional personnel or contact the dealer or after-sales service for technical support.
305	Over voltage fault	
306	Over voltage fault	
307	Under voltage fault	
308	Under voltage fault	
309	Over frequency fault	
310	Over frequency fault	
311	Under frequency fault	
312	Under frequency fault	
313	Software fault	
314	Software fault	1. If the problem is caused by an external fault, such as abnormal power grid or abnormal frequency, the micro-inverter usually automatically returns to normal operation after these problems are eliminated. 2. If the problem occurs frequently and the photovoltaic power station cannot work normally, please contact the distributor or after-sales service department in time for further equipment inspection and troubleshooting.

Fault code	Fault cause	Suggested measure
315	Hardware failure	1. Check the configuration of the PV module to ensure that the power of each component matches and cables are correctly connected to avoid input exceptions caused by improper configuration. 2. Turn off the AC output switch and DC input switch, and reconnect them 5 minutes later to reset the micro-inverter and the PV system. 3. If the problem persists, please contact the dealer or after-sales service department in time.
316	Island protection	1. If the problem occurs occasionally, the power grid may be temporarily abnormal. When the power grid is detected to return to normal, the micro-inverter will automatically resume operation. 2. If the fault occurs frequently, check whether the power grid frequency/voltage is within the allowable range. 3. If all the above check results are normal, consult professional personnel or contact the dealer or after-sales service for technical support.

9.2. Routine Maintenance

Disconnect the micro-inverter from the power grid and photovoltaic modules before operation and maintenance. Otherwise, it may damage the micro-inverter or cause an electric shock.

Items	Method	Maintenance cycle
System cleaning	Check the appearance of the product for foreign objects or dust.	Every 6 t o 12 months
Electrical connection check	Check whether cables are securely connected. Check whether the cable is broken and the copper core is exposed.	Every 6 t o 12 months
Seal check	Check that all terminals and ports are properly sealed. If the cable holes are not sealed or are too large, reseal them.	Once every 12 months

9.3. Micro-inverter Shutdown

DANGER

a) Please power down the micro-inverter before operation and maintenance.Otherwise, it may damage the micro-inverter or cause electric shock.
b) Delayed discharge, please wait until the parts is powered down and then discharge it.

Operation Procedure

Step 1： Turn off the AC switch between the micro-inverter and the power grid.

Step 2： Disconnect the PV connector between the micro-inverter and the PV module.

9.4. Micro-inverter Disassemble

WARNING

a) Ensure that the micro-inverter is powered off
b) Wear personal protective equipment before operation.

Operation Procedure

Step 1：Remove all cables, including DC cables, AC cables, and PE cables.

Step 2：Remove the micro inverter from the photovoltaic bracket and place it in the original packaging or equivalent wrapping paper box.

Step 3：Store the micro-inverter inverter properly. If you need to continue to use the inverter, ensure that the storage conditions met the requirements.

9.5. Micro-inverter Disposal

Please dispose of the micro-inverters properly in accordance with local electrical equipment waste regulations, if the micro-inverter can not work properly. The micro-inverter can not be disposed of together with household waste.

X Technical Parameters

Model	Y24-1600	Y24-1800	Y24-2000
Input Data (DC)			
Max.Input Voltage (Vdc)		60	
MPPT Voltage Range (Vdc)		16-60	
Start-up Voltage (Vdc)		22	
Max. Input Current Imax(A)	4*14	4*15	4*16
Max. Input Short-circuit Current Isc(A)		25	
Number of MPPTs		4	
Output Date (AC)			
Nominal Output Power (Wp)	1600	1800	2000
Rated/Max. Apparent (VA)	1600/1600	1800/1800	2000/2000
Max. Active Power (Wp)	1600	1800	2000
Rated Output Current (A/V)	7.27/6.96/6.67	8.18/7.83/7.50	9.09/8.70/8.33
Rated Voltage/Range (V)		220/230/240	
Rated Frequency/Range (Hz)		50/60	
Power Factor		＞0.99	
THDi		＜3%	
Efficiency			
Peak Efficiency		96.50%	
MPPT Efficiency		99.80%	
Night Power Consumption （mW）		＜50	
Protection Function			
Ground Fault Monitoring、Output Over Voltage Protection、Output Over Current Protection、Anti-islanding Protection、Surge Protection			
Features			
Active Power Regulation、Reactive Power Regulation、High-frequency transformer isolation			
Others			
Dimensions (W*H*D, mm)		334*262*43	
Enclosure		Aluminium Alloy	
Weight (kg)		5.15	
Operation Ambient Temperature (℃)		-40～65	
Type of Isolation		Galvanically Isolated HF Transformer	
Enclosure Rating		IP67	
Cooling		Natural Convection (No Fans)	
Altitude (m)		2000	
Grid Compliance		IEC 61727,IEC 62116,PORTARIA N^{O} 140&515	
Safety/EMC Compliance		IEC 62109-1:2010,IEC 62109-2:2011,EN 62109-1:2010, EN62109-2:2011,EN IEC 61000-6-1:2019,EN IEC 61000-6-3:2021	
Protective Class		Class 1	
Pollution Degree		PD3	
DC Connector Type		MC4	
Communication		Built-in WiFi, Sub-1G, WiFi&Sub-1G	

*Design and specifications are subject to change without notice

Appendix

Installation drawing template

EPC:	Photovoltaic module type	Quantity:	table_____
User	Inverter Model:	Quantity:	

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Row 1								
Row 2								
Row 3								
Row 4								
Row 5								
Row 6								
Row 7								
Row 8								
Row 9								
Row 10								

The mounting diagram shows the physical location of each microinverter on the mounting bracket. Each MOCO-WINI inverter has a serial number label, which is peeled off and glued to the corresponding position on the mounting diagram.

MOCOWINI 海量能源

Hangzhou Hailiang New Energy Technology Co.,Ltd.

Phone: +86-571-86959319

Email：service@mocowini.com

Binjiang District, Hangzhou City, Zhejiang Province, China