

User Manual

EQ-400-P

EQ-450-P

EQ-500-P

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Overview

This User Manual introduces safety precautions, product features, storage, installation and connection, power-on, system activation, equipment maintenance and replacement, and troubleshooting method of EQ-400-P, EQ-450-P and EQ-500-P single-phase microinverters.

To ensure optimal reliability and comply with warranty requirements, carefully read this manual before installing and operating the device, and strictly follow the instructions provided.

Intended users

This manual is intended for the following personnel:

- Professional technical personnel

(All installation and maintenance operations must be performed by qualified technical personnel with appropriate certifications.)

Symbol conventions

The following symbols may appear in this manual, with their meanings defined as below:

Label	Description
 DANGER	Indicates an imminent hazardous situation which, if not avoided, will result in death, or serious personal injury.
 WARNING	Indicates a potential hazardous situation which, if not avoided, could result in death or serious personal injury.
 CAUTION	Indicates a potential hazardous situation which, if not avoided, may cause moderate or minor injury, or equipment damage.
 NOTE	Indicates supplementary notes or explanations that contain essential information, with no risk of personal injury or equipment damage.

Version Record

Revision	Date	Description
Rev03	December 2025	Update 4.1.2 Inspect Compatibility of Photovoltaic Module. Update 11 Technical Specification.
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1 Safety Precautions

1.1 Declaration

Before transportation, storage, installation, use or maintenance of the product, please thoroughly read this User Manual, all descriptions and safety warning signs on the microinverter and photovoltaic equipment, as well as relevant safety manuals. Violating these descriptions may result in equipment damage, invalid warranty and even personal injury.

All operations, including transportation, installation, startup and maintenance, must be performed by trained technical professionals. In addition to contents of this User Manual, it is required to comply with relevant international, national or regional laws, regulations, standards and specifications, and industry practices.

Please check that the equipment is intact before installation. In case of damage, insulation integrity or safety of the equipment may be affected.

Before connecting the microinverter to the power grid, please contact a local electric power company for approval.

The company shall not assume any responsibility caused by violation of safety operation requirements or violation of safety standards in the design, production and use of the equipment.

The equipment should be used in environments consistent with design specifications; otherwise, malfunction, operational failure, or part damage thus incurred should be excluded from the warranty scope, and the Company will not assume the liability for possible personal injury and property loss thus incurred.

Transportation, storage, installation, operation, use and maintenance of the equipment should comply with the requirements of applicable laws, regulations, standards and specifications.

Reverse engineering, decompiling, disassembling, adaptation, implantation or other derivative operations are not allowed for equipment software. It is not allowed to

study internal implementation logic, acquire source code of equipment software and infringe upon intellectual property rights, or disclose any performance test results of equipment software by any means.

The Company will not assume the liability for any consequences arising from any of the following situations:

- The permission of national or regional electric power departments is not obtained.
- Installation/operating environments do not conform to relevant international, national or regional standards.
- Local laws, regulations and specifications are violated during operation/maintenance.
- The equipment is installed and used by ineligible personnel.
- The equipment is operated not in accordance with the product manual and this User Manual.
- Equipment damage is caused by improper operation such as unauthorized disassembly and replacement of equipment or modification of software code.
- Damage is caused by storage conditions not consistent with product document requirements.
- Damage is caused by you or any of your authorized third parties during transportation.
- Self-contained parts and tools do not conform to requirements of local laws and regulations and relevant standards.
- Damage is caused by negligence, improper operation or intentional act;
- Damage is caused by force majeure events such as natural disasters, wars and armed conflicts.

1.2 Personal Safety



Live work is strictly prohibited during equipment installation, or when the cables are installed and removed. Electric arc or spark will be produced when the cable core comes into contact with the conductor, which may result in personal injury.



When the equipment is powered on, nonstandard and improper operation may lead to electric shock, resulting in casualties or property losses.



It is strictly prohibited from wearing watches, bracelets, rings, necklaces or other conductive articles during operation to prevent electric shock or burns.



Dedicated insulation tools with insulation and dielectric strength levels consistent with local laws, regulations, standards and specifications must be used during operation to avoid electric shock or short-circuit failure.



Operators must wear dedicated protective articles such as protective clothing, insulated shoes, safety goggles, safety helmets and insulated gloves during operation.

- All operations, including transportation, installation, startup and maintenance, must be performed by trained technical professionals.
- Installers must comply with all safety instructions and precautionary measures specified in this User Manual, as well as requirements of authorized bodies and other local organizations.
- Never deactivate protection devices for the equipment or ignore warnings, cautions and precautionary measures specified in this User Manual and on the equipment.
- If any faults that may lead to personal injury or equipment damage are identified during operation, immediately terminate operation, report to the person in charge, and adopt effective protective measures.
- Do not power on the equipment before completion of equipment installation or without the approval of professionals.
- The equipment casing is very hot during operation, and there will be a risk of burn, so please do not touch the casing.
- Installers and maintainers must be well-trained and understand safety precautions and relevant standards of their own countries/regions.
- Special operators such as field operators, workers at heights and special

equipment operators must bear the qualifications according to local national/regional requirements.

- Please keep children out of the installation site during installation.

1.3 Safety of Microinverter



Ensure that the equipment is undamaged before electrical connection.

- The microinverter does not contain parts that can be maintained by the user, so never try to maintain parts of the microinverter without permission. Unauthorized disassembly, repair or damage to the microinverter and parts thereof will invalidate the warranty and may cause personal injury. If the microinverter breaks down, please contact our technical support department.
- Do not operate the microinverter by any other means than those specified in this User Manual. Unauthorized use may cause personal injury or equipment damage.
- The use of unapproved accessories may lead to equipment failure or personal injury.
- Improper installation of the microinverter may lead to electric shock. To reduce these risks, please ensure that the circuit breaker is in the OFF position, and disconnect input and output from the microinverter before installation, maintenance or cleaning.
- Check whether the cables and the connectors are intact. Never use damaged or unqualified cables or connectors to operate the microinverter.
- The maximum open-circuit voltage of the photovoltaic module cannot exceed the maximum DC input voltage of the microinverter. Incompatible photovoltaic modules may damage the equipment and invalidate the warranty.
- The quantity of microinverters connected to each photovoltaic branch cannot exceed the maximum quantity specified in this User Manual.
- The microinverter should be installed below the photovoltaic module and protected from the sun, rain, UV radiation and other harmful weather events.

- Water contained in the cables will damage the microinverter. Therefore, please do not directly connect the microinverter to the cables in a humid environment; otherwise, the warranty will be invalidated.
- The microinverter is not available for intelligent photovoltaic modules, fuel cells, wind or water turbines and DC generators, etc. With different properties from standard photovoltaic modules, such equipment may damage the microinverter.
- Please install the microinverter according to installation regulations and local electrical specifications.
- When the microinverter is connected to a photovoltaic module, the DC cable of the photovoltaic module should be marked with “PV Wire” or “PV Cable” , and the connector should be an MC4 connector.
- The microinverter may need to be set in the power grid configuration file according to local requirements. The microinverter can only be installed by eligible personnel approved by local electric power department.
- If there is no power grid configuration file consistent with local electric power department requirements, please contact our technical support department and apply for a new customized power grid configuration file.
- First, complete all installation procedures and obtain approval from the power grid operator (according to local requirements). Then, connect the microinverter to the power grid.
- Never alter, damage or cover signs and nameplates on the equipment.
- Never clean electrical components, nameplates and signs inside and outside the equipment using water, alcohol, oil or other solvents.

1.4 Cable Safety



Disconnect the circuit before installing and maintaining the cables.

- Do not damage the copper conductors of cables when stripping the cable sheaths. If the exposed wire is damaged, the system may not be able to work properly.

- Ensure that all cables conform to local regulations and are connected correctly. Ensure that all AC Junction Boxes are closed correctly.
- All cables must be securely connected, well-insulated, and properly sized. The cables must not be wound, looped or twisted.
- Do not keep the cable connector uncovered for a long time. The unused AC connectors must be covered.
- Do not expose terminals or cable connectors to sustained tension, or do not pull the bend the cable joints.
- Do not lay cables using too tight cable clips.
- Cable inlets must be free of sharp edges to avoid damage caused by sharp edge and burr.
- Ensure that cable connectors are free from dirt or debris.
- Support the cables at an interval of at least 1m.
- Damaged cables must be replaced by professionals to avoid risks.
- Cables used under high temperature may have insulation aging or damage, so please keep them far away from heating components or heat sources.

1.5 Environmental Safety



The equipment must not be placed or installed in flammable, explosive, corrosive, humid, or volatile gas/smoke environments.



Keep the equipment far away from heat or ignition sources such as fireworks, candles, heaters or other heating devices.



Do not block the vent and the cooling system, or cover them with other articles during operation to avoid equipment damage arising from high temperature.

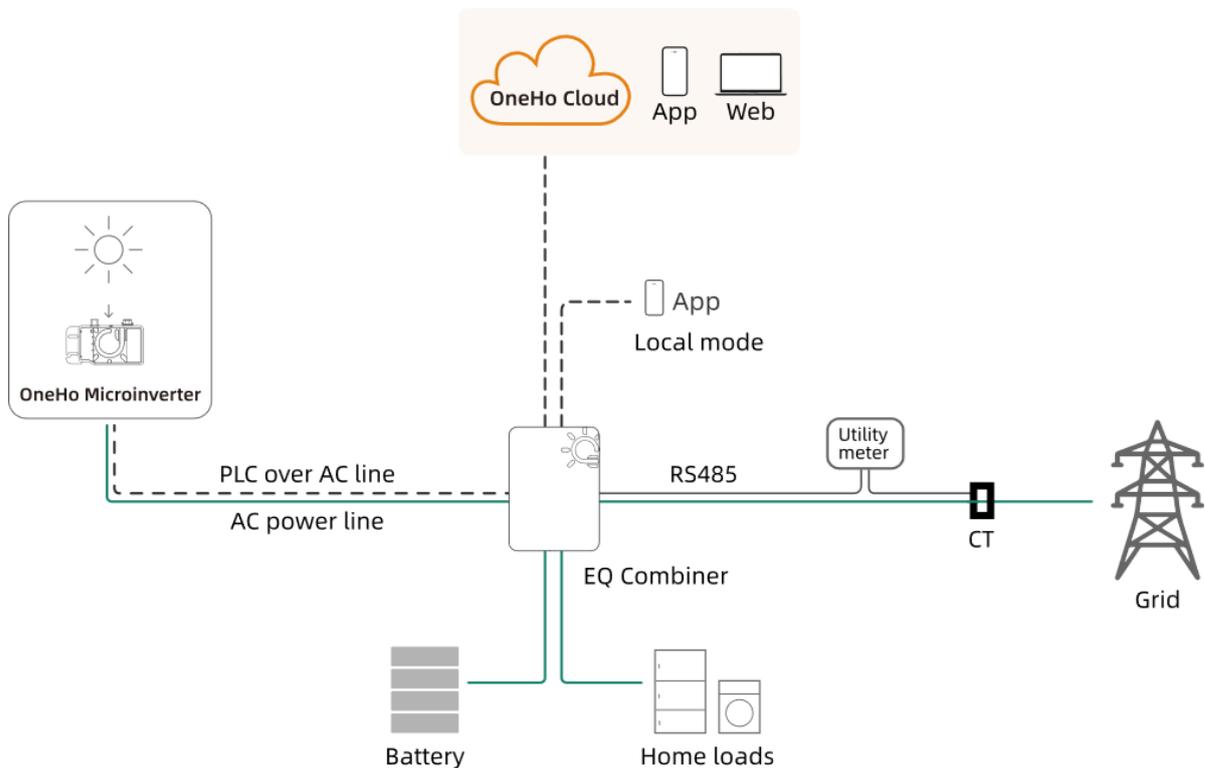
-
- The microinverter should be installed below the photovoltaic module and protected from the sun, rain, UV light and other harmful weather events.
 - The equipment must not be installed, used and operated in severe weather such

as thunder, rain, snow and wind of above Beaufort force 6.

- The equipment must not be installed where there is metallic and magnetic conductive dust.
- The equipment must not be installed where fungus, mold and other microorganisms are prone to grow.
- The installation site should be selected according to requirements of local laws, regulations and relevant standards.
- The equipment must not be installed in places susceptible to flooding.
- Do not expose terminals or connectors to pressurized liquids.
- Do not keep soaking terminals or connectors in liquids.
- Do not install the equipment where there are volatile gases, corrosive gases or organic solvents.
- Do not install the equipment where there are strong vibration, obvious noise sources and substantial electromagnetic interference.
- After equipment installation, please remove empty packing materials such as cartons, foam, plastics and cable ties from the installation site.

2 Product Introduction

2.1 OneHo Photovoltaic System



The system mainly consists of the followings:

- OneHo Microinverter:** OneHo Microinverter, as a constituent part of photovoltaic power generation system, effectively converts DC power outputted by the photovoltaic module into AC power consistent with power grid requirements to power on household loads or feed in power grid.
- EQ Combiner:** It is an energy management device that can ensure correct connection of microinverter, battery and load and realize connection to power grid.
- OneHo Cloud:** OneHo Cloud is a Web-based energy management portal that can view detailed information of photovoltaic system, manage the system and solve its problems.

- **App:** It is a mobile application program applicable to iOS and Android devices. It enables the user to view operational data of photovoltaic system at any time and functions on remote setup, quick fault location, notification, and yield and income analysis, etc.

2.2 Microinverter

2.2.1 Product Features

OneHo Microinverter is an efficient intelligent device designed specifically for household, industrial and commercial photovoltaic systems. With peak efficiency of 97.4% and MPPT tracking efficiency of 99.9%, it can maximize the solar utilization rate and completely convert each ray of sunlight into electric power. In addition, it can improve operational stability and efficiency of photovoltaic system due to light weight and intelligent monitoring capability.

2.2.2 Model Specification

This User Manual contains the following models:

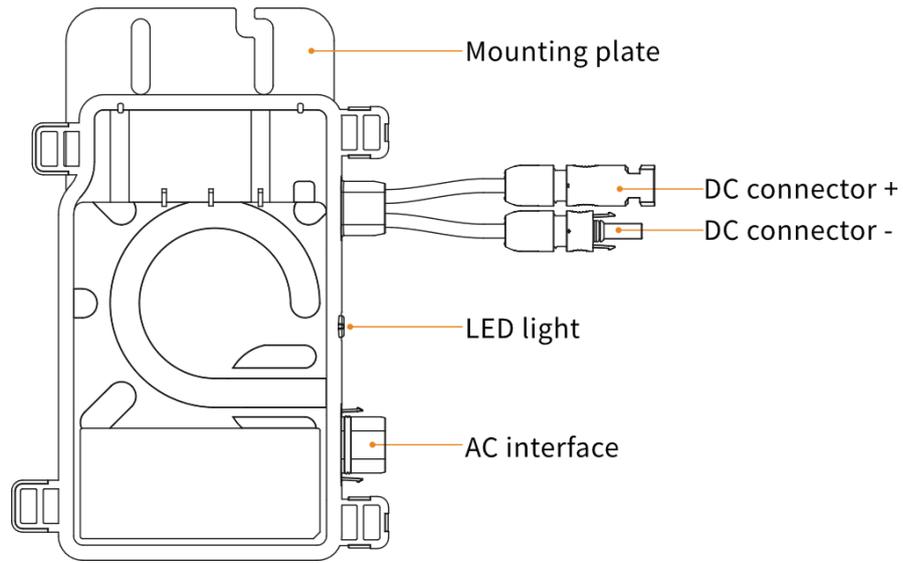
- EQ-400-P
- EQ-450-P
- EQ-500-P

Model Specification

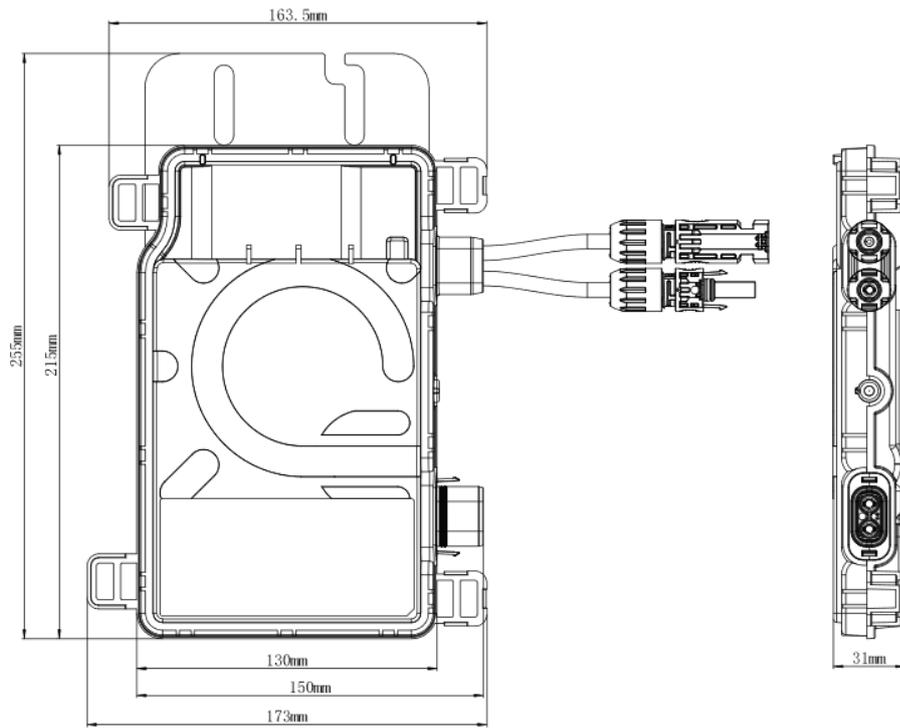
Item	Description
EQ	Series name.
400/450/500	Rated output apparent power. 400: Rated output apparent power is 400W. 450: Rated output apparent power is 450W. 500: Rated output apparent power is 500W.
P	Communication mode: PLC

2.2.3 Appearance and Dimensions

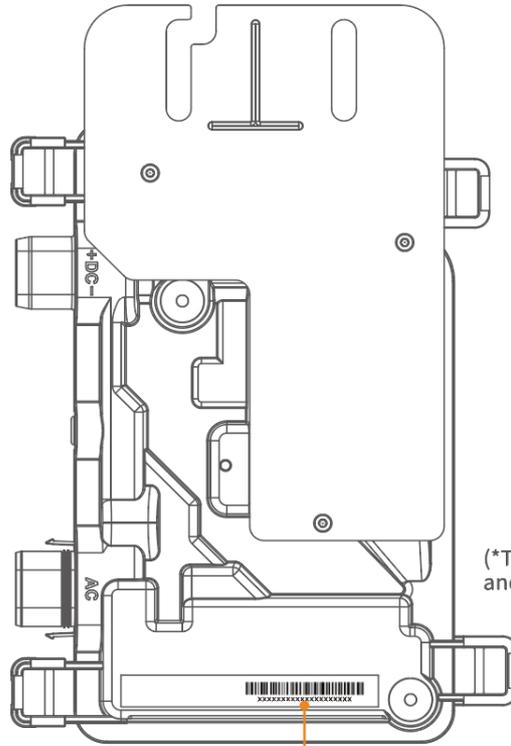
Appearance description



Dimensions

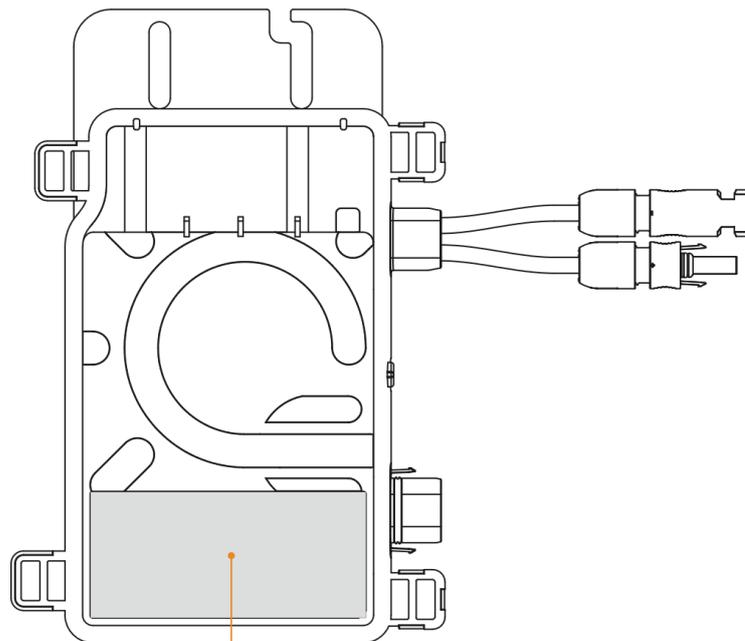


2.2.4 Nameplates and Signs



(*The barcode is for diagram only, and actual product should apply)

Dismountable label



Nameplate position

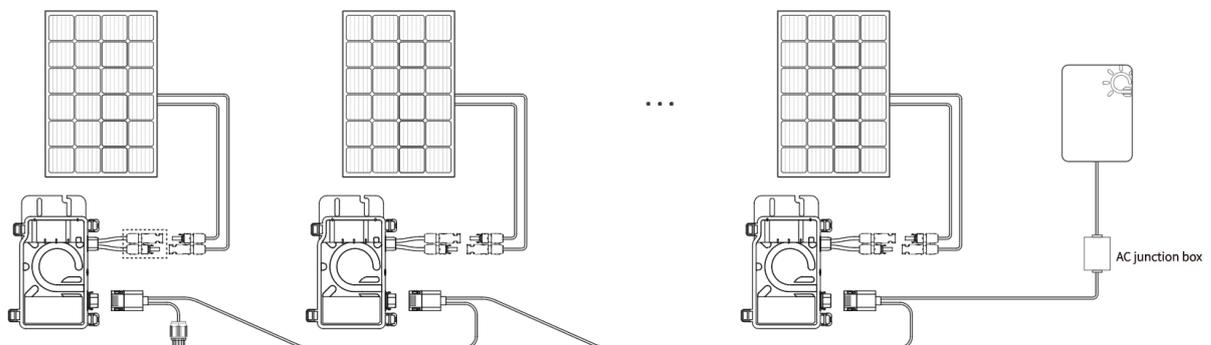
Nameplate description

Icon	Description
	The product has passed the CE certification.
	The product has passed the TUV certification. (The ID number here is for reference only. Please refer to the actual product.)
	There is a risk of electric shock. High voltage may endanger life during operation.
	Class II or double-insulated electrical equipment needs not to be grounded.
	Please read this User Manual before using the equipment.
	Waste electrical and electronic equipment (WEEE) cannot be disposed of as household waste. Instead, they should be returned to the manufacturer or disposed of according to local regulations.

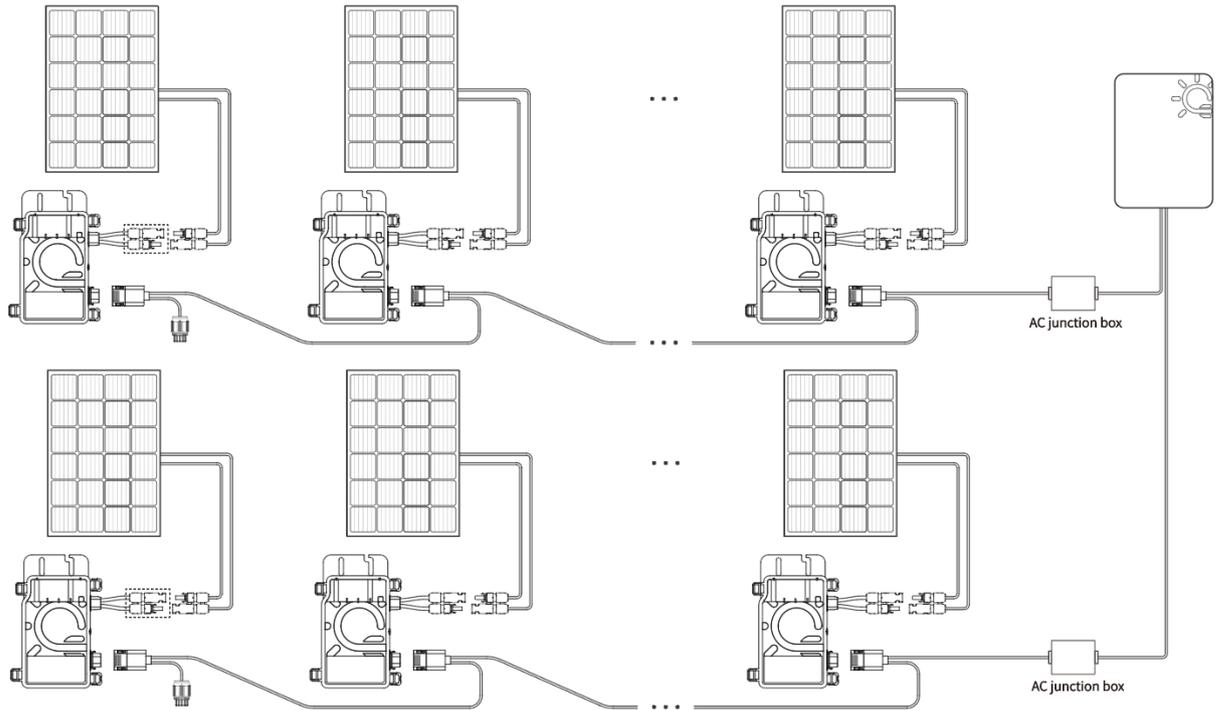
2.3 Application Scenarios

EQ-400-P, EQ-450-P, EQ-500-P series microinverters are mainly used in scenarios such as roofs and sheds. Several microinverters can be connected in parallel using dedicated AC Connection Cable.

- Connection diagram of single-branch:



- Connection diagram of multi-branch:



3

Storage of Microinverter

If the microinverter is not used immediately, it should be stored according to the following requirements:

- Do not remove outer package of the microinverter.
- The equipment should be stored at temperature of $-40^{\circ}\text{C}\sim+85^{\circ}\text{C}$ and relative humidity of $0\%\text{RH}\sim60\%\text{RH}$.
- The equipment should be stored in a clean and dry place far away from dust and moisture.
- The number of stacking layers cannot exceed that specified in the label on the outer package. The microinverters should be piled up carefully to avoid personal injury or damage arising from tilting.
- The equipment should be inspected every three months during storage. In case of damaged package, replace it promptly.
- If the equipment is stored for at least two years, it must be inspected and tested by professionals before use.

4 Preparation before Installation

4.1 Inspection before Installation

4.1.1 Safety Precautions



- Live work is strictly prohibited during installation.
- All operations must be performed by trained technical professionals.
- Operators must wear dedicated protective articles such as protective clothing, insulated shoes, safety goggles, safety helmets and insulated gloves during operation.
- Please recheck all contents in “1 Safety Precautions” .

4.1.2 Inspect Compatibility of Photovoltaic Module

Item	EQ-400-P	EQ-450-P	EQ-500-P
DC connector	MC4		
Power range of compatible photovoltaic module	320W~560W	360W~630W	400W~700W
Maximum input voltage	60V		
Maximum input short current	25A		



Incompatible photovoltaic modules may damage the equipment and invalidate the warranty.

4.1.3 Plan the Quantity of Microinverters of Each Branch

The quantity of microinverters on each branch (20A) cannot exceed the followings:

EQ-400-P	EQ-450-P	EQ-500-P
9	8	7

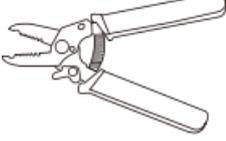
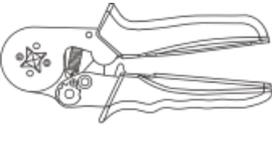
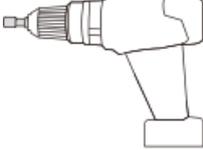
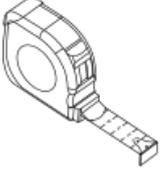
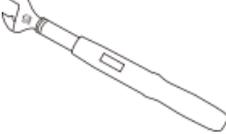
4.2 Installation Tools and Materials

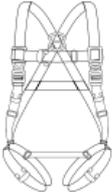
In addition to microinverters, photovoltaic modules and brackets, the followings are needed:

4.2.1 Cables and Accessories

S/N	Item	Model	Diagram	Description
1	AC Connection Cable	W-2513A-72 W-2520A-72 W-2523A-72		Connect several microinverters in parallel. The space between connectors is 1.3m, 2m or 2.3m.
2	AC Cable Sealing Cap (optional)	SEAL-MA-50		Seal the unused connectors on the AC Connection Cable.
3	Terminator	TERM-A-20		Seal the head end of the AC Connection Cable.
4	DC Extension Cable (optional)	W-4010D-01		Extend the DC connecting line, with length of 1m.
5	Disconnect Tool	DISC-01-10		Assist in installing and disconnecting the connector.

4.2.2 Tools and Materials

Installation tools			
			
Diagonal pliers	Wire stripper	Wire crimper	Electric screwdriver
			-
Steel measuring tape	Torque wrench	Marking pen	-
Installation Materials			
			
T-shaped screws and nuts (M8)	Cable ties	Cold-pressed terminals	AC junction box
	-	-	-
AC cable (2×2.5mm ² , OD: Ø9~Ø11mm)	-	-	-
Personal Protective Articles			
			
Safety helmet	Safety goggles	Protective mask	Insulated gloves

 <p>Protective clothing</p>	 <p>Insulated shoes</p>	 <p>Safety belt</p>	-
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NOTE

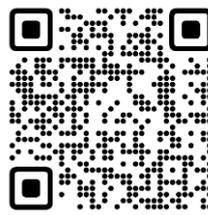
The installation tools used include without limitation the aforesaid tools. Please use other auxiliary tools if necessary.

4.2.3 Other Items

- EQ Combiner: Energy system management, operation, maintenance and monitoring.
- OneHo Installer APP: Used to build the station, adjust and test it, and track the installation progress.



OneHo-Installer APP



Download Center

4.3 Select the Installation Site



For specific requirements regarding installation environment safety, please view all contents in "1.5 Environmental Safety".

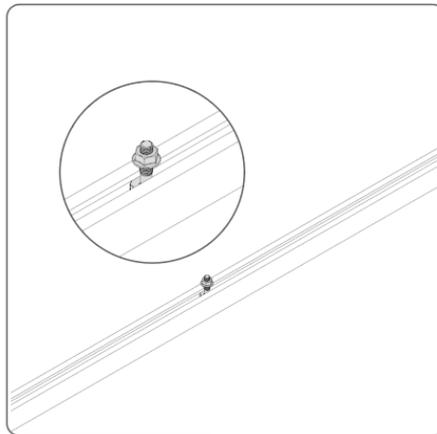
The microinverter should be installed below the photovoltaic module and protected from the sun, rain, UV light and other harmful weather events.

Besides, the microinverter should be kept at least 2cm from surrounding items and well-ventilated.

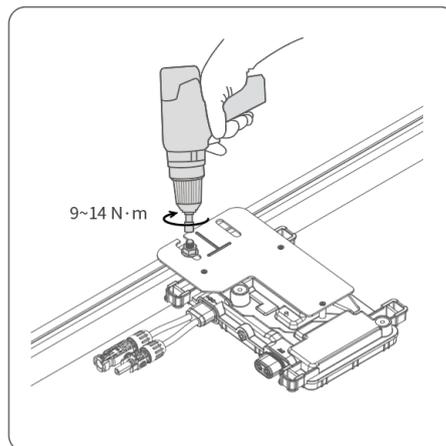
5 Installation and Connection

5.1 Plan and Install the Microinverter

1. Mark the mounting position of each microinverter on the bracket according to layout of photovoltaic modules.
2. Place the T-shaped screw (M8) on the standard photovoltaic bracket.



3. Hang the microinverter on the screw and tighten it using a torque of 9~14N·m.

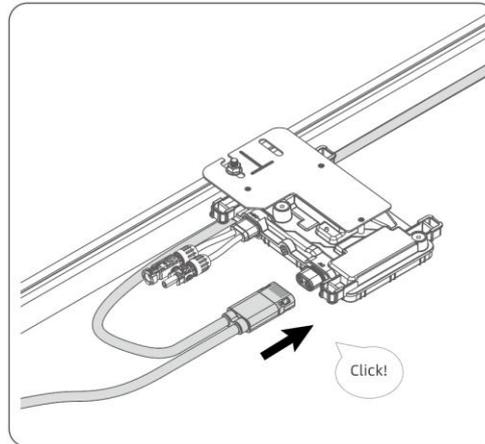
**NOTE**

The equipment can be fixed using one screw in the installation environment of standard photovoltaic bracket.

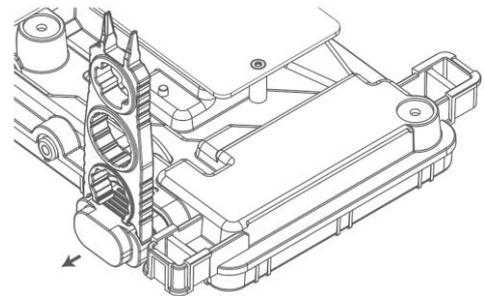
In other environments, please make an assessment according to practical situation, and fix the equipment using two screws when necessary.

5.2 Connect the AC Cable

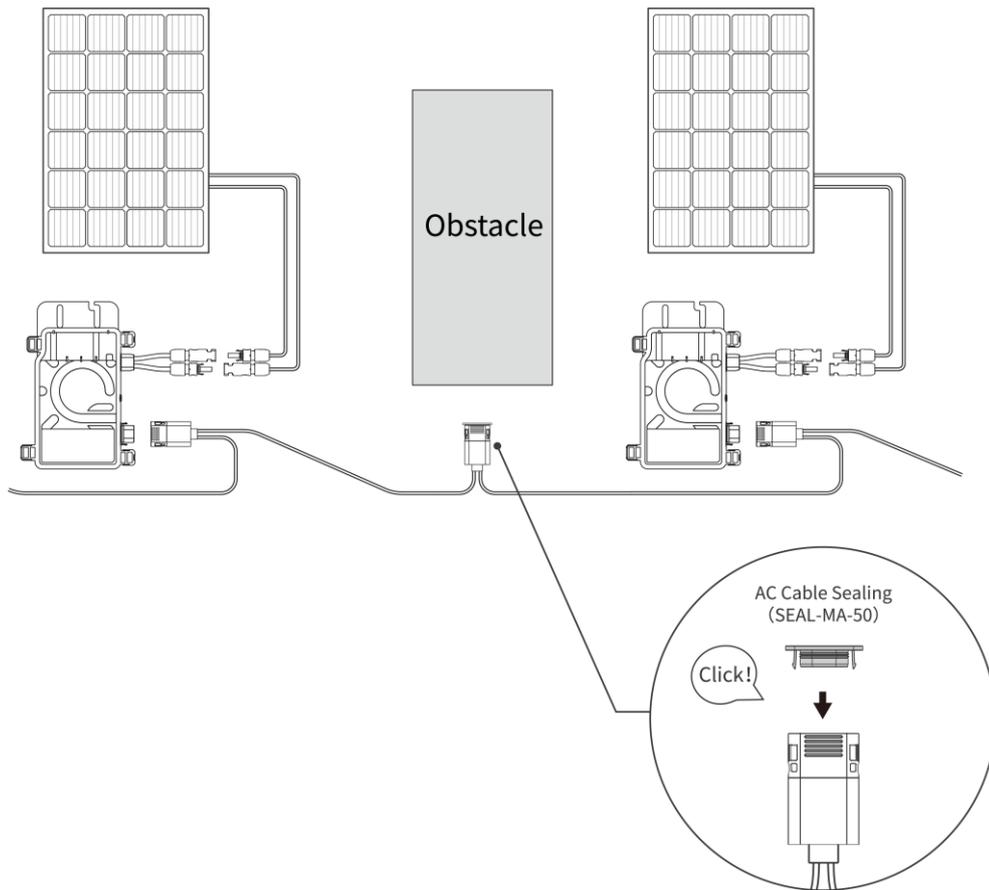
Connect microinverters on the same branch in parallel using dedicated parallel line. You will hear a “click” sound when the microinverter is connected.

**NOTE**

Before wiring, use the Disconnect Tool (DISC-01-10) to remove the protective caps.



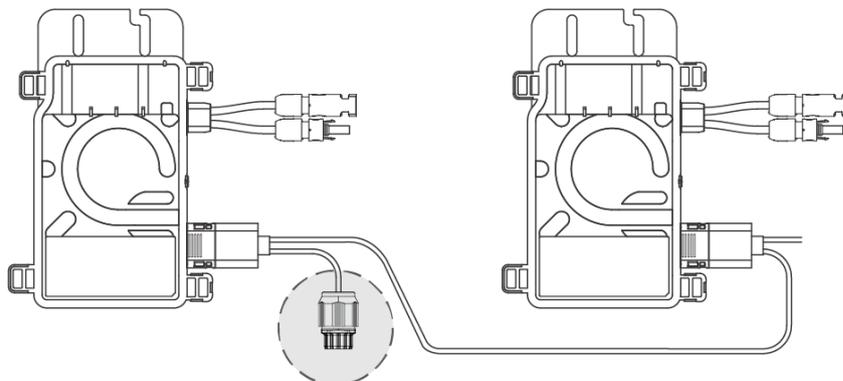
To keep off obstacles during connection, there may be unused connectors on the cable. In this case, they must be sealed with designated AC Cable Sealing Caps (SEAL-MA-50). You will hear a “click” sound when connected.



All unused connectors must be sealed with dedicated seal cover to avoid a short circuit when the system is powered on.

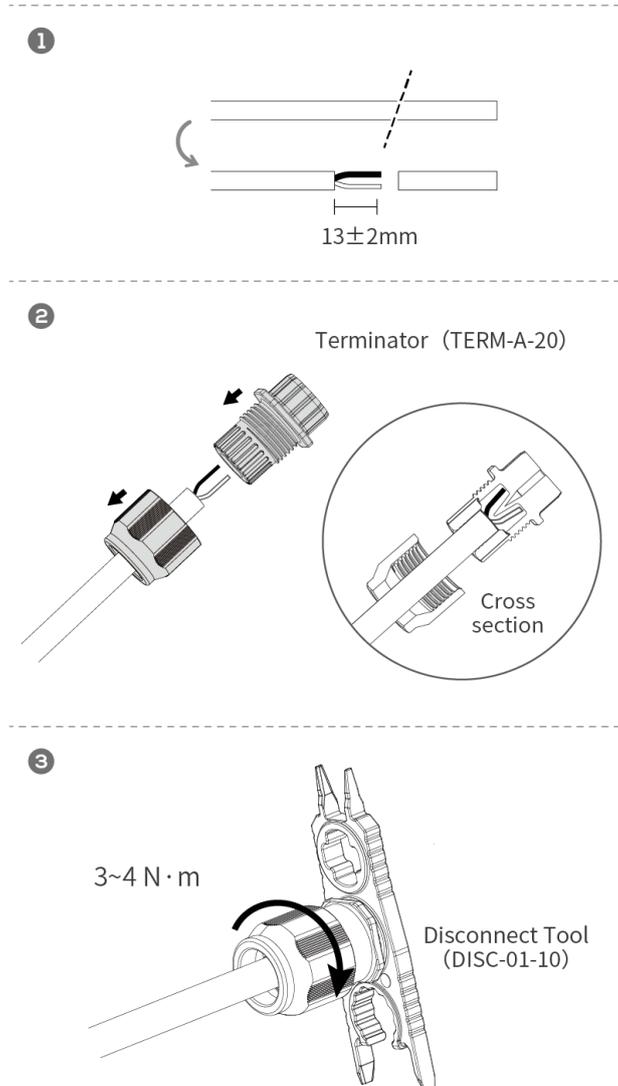
5.3 Treat the Head End of the AC Cable

The head end of the AC cable is the start part, as shown below.



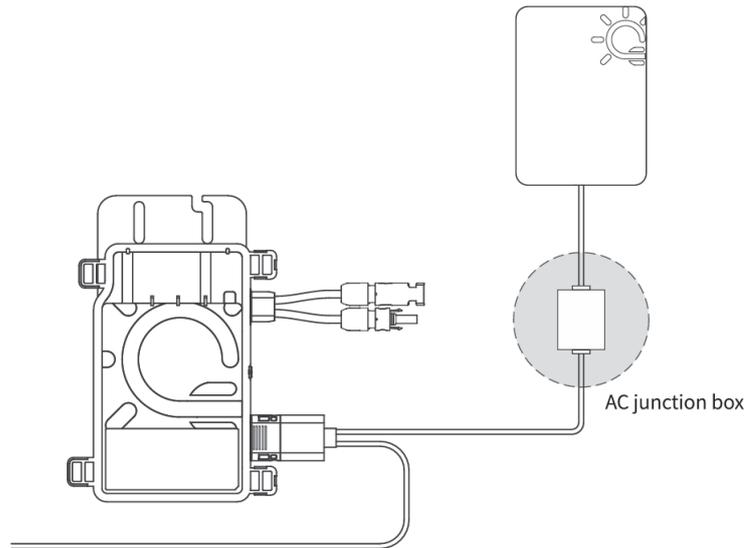
1. Strip the cable sheath for about 13mm from the conductor wire, and expose two cable cores.

2. Slide the plug nut to the cable, and cover the plug so that two cable cores enter the two stripped ends in the plug.
3. Fix the plug using Disconnect Tool and tighten the nut. The torque should be 3~4 N·m and cannot be too large.



5.4 Treat the Tail End of the AC Cable

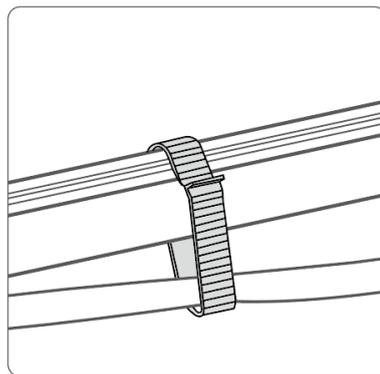
For the wiring method inside the AC junction box, please refer to Appendix 2: Wiring Diagram.



The combiner must be equipped with a dual 20A circuit breaker and a 30mA RCD of Type B.

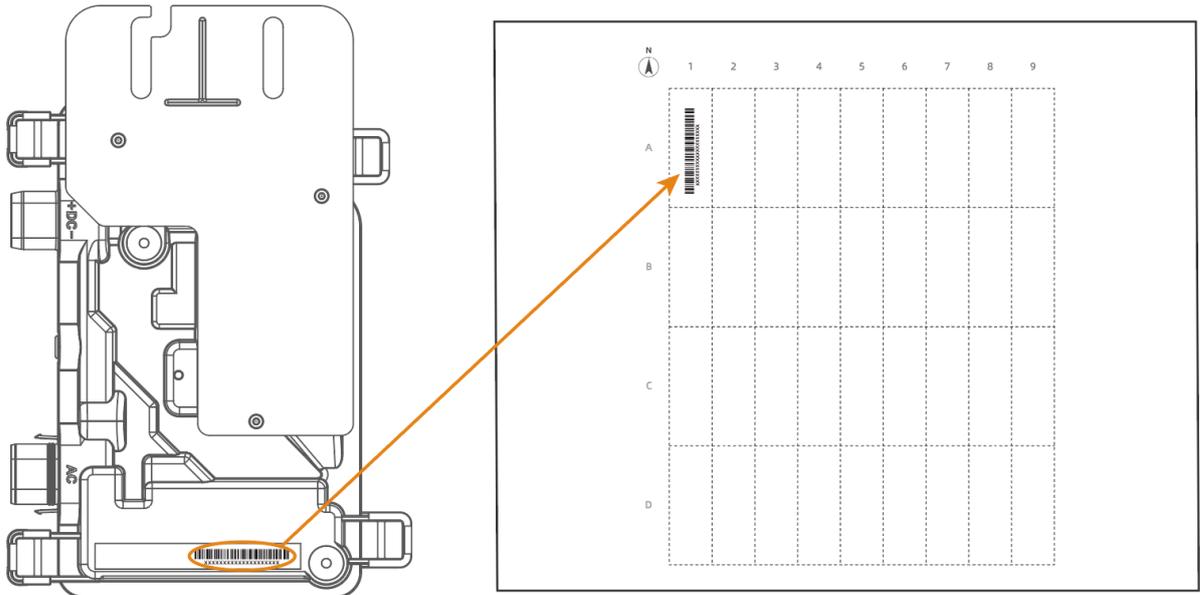
5.5 Manage the Cable

Fix the cables on the mounting bracket of the photovoltaic panel using cable tie at an interval of at least 1m to prevent the cables and the connectors from touching the roof.



5.6 Prepare the Installation Map

Each microinverter is provided with a dismantlable label, which can be torn off and pasted onto corresponding position of the drawing to build the installation map.



The drawing in the installation map can be obtained from the package to record SN of the microinverter and physical position of the equipment in the photovoltaic system. Please keep it properly.

For a larger installation map, please obtain the electronic edition from the last page of this User Manual and print it.

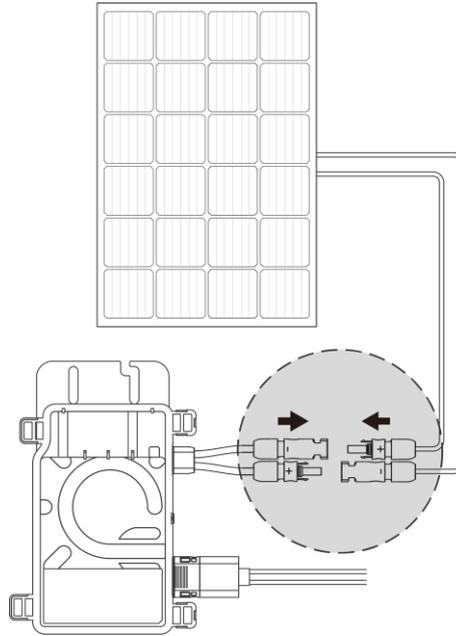


1. Ensure the barcode is applied with the correct and consistent orientation.
2. The reverse side of the drawing is used to paste the equipment label only and cannot be used for other purposes; otherwise, system input will be affected.

5.7 Connect the Photovoltaic Module

1. Connect the photovoltaic module to the DC connector of the microinverter. You will hear a “click” sound when the photovoltaic module is connected.

If the connecting line of the photovoltaic module is not long enough, please use the DC Extension Cable (W-4010D-01) attached.



Please connect positive and negative poles correctly without confusion.



1. Before wiring, remove the protective caps from the device's connectors.
2. The "+" and "-" markings on the DC connector indicate only the male/female, not the actual current polarity.

2. Then, inspect the LED light of the microinverter. If it is on, it indicates that the photovoltaic module is connected successfully.
3. Install the photovoltaic module on the photovoltaic bracket.

6 Activate the System

Please install combiner and activate the system using OneHo-Installer APP.

For specific instructions on system activation, please refer to OneHo-Installer APP user manual.



OneHo-Installer App



Download center

NOTE

The system is activated for network configuration and grid-connected settings of the equipment, in order to conform to local power grid connection standards and monitor operation and maintenance of power station.

7 System Operation & Maintenance and Data Monitoring

After the system is activated, OneHo-Installer APP can be used for power station management, equipment operation and maintenance, and power station data monitoring.

Functional category	Functional characteristic	Detailed operation
Power station management	Power station sorting, screening, power station information modification, power station equipment viewing and editing, component layout modification, anti-backflow parameter setting, and power station fault notification setting, etc.	Refer to the manual of OneHo-Installer APP.
Equipment operation & maintenance	View power station statistics, configure power station equipment and handle tickets.	
Data monitoring	Single power station overview, historical data statistics, component data viewing, equipment replacement, revenue conversion, power station transfer, and installer information viewing, etc.	

8 Routine Maintenance



- Please use dedicated protective tools and insulation tools to prevent electric shock or short-circuit faults.
- Before maintenance, please turn off the AC circuit breaker on the power grid side and wait for more than 10min until the equipment is powered off.
- After the inverter is powered off, it still has residual power and residual heat, which may lead to electric shock or burn. Thus, after the inverter cools down, wear insulated gloves to operate it.



There are no repairable parts inside the equipment, so do not try to open the casing or replace any components. Please contact your installer if necessary. Otherwise, any damages thus incurred should be excluded from the warranty scope.

To ensure long-term stable operation of the microinverter, routine maintenance should be conducted as described in this chapter.

Item	Maintenance method	Maintenance cycle
System cleaning	Inspect the equipment appearance and surrounding areas to ensure proper heat dissipation, and keep the surface and surrounding areas clean.	Every 6 months to 1 year
System operation status	Observe whether the equipment surface is damaged or deformed. Check whether the microinverter produces abnormal sound during operation. Check whether all parameters of the microinverter are set correctly during operation.	Every 6 months

Electrical connection	Check whether all cables fall off or become loose. Check whether cables are damaged, especially when they come into contact with metal surfaces. Check whether cable sheaths are scratched.	Carry out inspection 6 months after initial commissioning, and then every 6 months to 1 year.
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9 Troubleshooting

9.1 LED Light of Microinverter

The LED light is the most important fault sign used to determine the basic operating status of the microinverter.

Status	Description
Green-slow flash (1s)	Normal operation
Green-fast flash (0.2s)	Normal power generation, no communication with gateway
Orange-fast flash (0.2s)	No power generation, Non-grid fault
Orange-slow flash (1s)	No power generation, AC grid fault
Green/orange-alternating flash (1s)	Online upgrading
Green-solid, orange-slow flash (1s)	Firmware corruption
Orange-solid, green-slow flash (1s)	Starting up

Next, how to troubleshoot issues according to LED light status will be introduced below.

9.1.1 Green-fast flash

Represents no communication with the gateway.

Solution:

1. Check whether the gateway can communicate normally with the Ethernet.
2. Check the status of the gateway and ensure that the PLC communication status

between the microinverter and the gateway is normal.

9.1.2 Orange-fast flash

Represents that no power generation, Non-grid fault.

Solution:

1. Check if the PV voltage is within the specified range.
2. Check if the micro-inverter operating temperature is within the specified range.

9.1.3 Orange-slow flash

It indicates that an alarm is given and power will not be generated.

Solution:

1. Check whether the switch of the distribution box is in the ON position.
2. Measure the power grid frequency using a multimeter, or contact the power grid operator about checking whether the power grid frequency is within an acceptable range.
3. Reinsert and check whether the AC branch connector is tightened.

9.1.4 Green-solid, orange-slow flash

Represents that there may be an internal fault in the microinverter.

Solution:

1. Disconnect DC input of the photovoltaic module and reassemble it after 3-5min.
2. If the fault cannot be removed, please contact us for technical support.

9.2 App Fault Message

When the microinverter breaks down, APP will display a fault Message (alarm) and prompt relevant solutions.

Fault description	Solution
PV1 overvoltage	Please check the input voltage at the PV port of the microinverter.
PV1 overcurrent	<ol style="list-style-type: none"> 1. If an alarm is given occasionally, the equipment's protection function may be enabled. After a while, the microinverter will recover automatically. 2. If an alarm is given frequently, please contact a local installer.
PV2 overvoltage	<ol style="list-style-type: none"> 1. Please check the input voltage at the PV port of the microinverter.
PV2 overcurrent	<ol style="list-style-type: none"> 1. If an alarm is given occasionally, the equipment's protection function may be enabled. After a while, the microinverter will recover automatically. 2. If an alarm is given frequently, please contact a local installer.
BUS overvoltage	<ol style="list-style-type: none"> 1. If an alarm is given occasionally, the equipment's protection function may be enabled. After a while, the microinverter will recover automatically. 2. If an alarm is given frequently, please contact a local installer.
BUS undervoltage	<ol style="list-style-type: none"> 1. If an alarm is given occasionally, the equipment's protection function may be enabled. After a while, the microinverter will recover automatically. 2. If an alarm is given frequently, please contact a local installer.
AC overvoltage	<ol style="list-style-type: none"> 1. If an alarm is given occasionally, the grid voltage may be abnormal temporarily. After the grid voltage returns to normal, the microinverter will recover automatically. 2. If an alarm is given frequently, please check if the grid voltage is within the permissible range. If the grid voltage exceeds the range, please contact a local electric power operator, or a local installer to regulate the grid

	<p>overvoltage protection limit.</p>
10min average overvoltage	<ol style="list-style-type: none"> 1. If an alarm is given occasionally, the grid voltage may be abnormal temporarily. After the grid voltage returns to normal, the microinverter will recover automatically. 2. If an alarm is given frequently, please check if the grid voltage is within the permissible range. If the grid voltage exceeds the range, please contact a local electric power operator, or a local installer to regulate the grid overvoltage protection limit.
AC undervoltage	<ol style="list-style-type: none"> 1. If an alarm is given occasionally, the grid voltage may be abnormal temporarily. After the grid voltage returns to normal, the microinverter will recover automatically. 2. If an alarm is given frequently, please check if the grid voltage is within the permissible range. If the grid voltage exceeds the range, please contact a local electric power operator, or a local installer to regulate the grid overvoltage protection limit. 3. If the fault still exists, please check the AC switch or the AC line.
AC overfrequency	<ol style="list-style-type: none"> 1. If an alarm is given occasionally, the grid frequency may be abnormal temporarily. After the grid frequency recovers to normal, the microinverter will recover automatically. 2. If an alarm is given frequently, please check if the grid frequency is within the permissible range. If the grid voltage exceeds the range, please contact a local electric power operator, or a local installer to regulate the grid overvoltage protection limit.
AC underfrequency	<ol style="list-style-type: none"> 1. If an alarm is given occasionally, the grid frequency may be abnormal temporarily. After the grid frequency recovers to normal, the microinverter will recover automatically. 2. If an alarm is given frequently, please check if the grid frequency is within the permissible range. If the grid voltage exceeds the range, please contact a local electric power operator, or a local installer to regulate the grid overvoltage protection limit.
Equipment fault	<ol style="list-style-type: none"> 1. If an alarm is given occasionally but the microinverter still can work normally, no special measure should be adopted. 2. Please check if the AC switch, the branch circuit breakers and the AC line are normal. 3. If an alarm is given frequently and cannot be eliminated, please contact a local installer.

Communication fault	<ol style="list-style-type: none"> 1. Please check if the network is connected correctly. 2. If the fault still exists, please contact a local installer.
Overtemperature	<ol style="list-style-type: none"> 1. Please check ventilation and ambient temperature in the mounting position of the microinverter. 2. If the ventilation condition is poor or the ambient temperature exceeds the limit, please improve the ventilation and heat dissipation conditions. 3. If ventilation and ambient temperature are appropriate, but the fault still exists, please contact a local distributor.
Insulation resistance	<ol style="list-style-type: none"> 1. If the insulation resistance is low in cloudy and rainy weather, restart the equipment when it is sunny. 2. If the fault still cannot be eliminated after the equipment is restarted repeatedly, contact after-sales service staff.
Island	<ol style="list-style-type: none"> 1. If an alarm is given occasionally, the grid frequency may be abnormal temporarily. After the grid voltage returns to normal, the microinverter will recover automatically. 2. If all microinverters in the station give an alarm frequently, please contact a local electric power operator. Confirm if there is a grid island. 3. If an alarm is still given or only a few microinverters give an alarm, please contact a local installer.
Frequency hopping	<ol style="list-style-type: none"> 1. If an alarm is given occasionally, the grid frequency may be abnormal temporarily. After the grid frequency recovers to normal, the microinverter will recover automatically. 2. If an alarm is given frequently, please if the grid frequency variation rate is within the permissible range. If it exceeds the range, please contact a local electric power operator, or a local installer to adjust the grid frequency variation rate limit through OneHo monitoring platform.
Grid-connected file error	<ol style="list-style-type: none"> 1. Please check if the grid-connected file is correct, and upgrade it again. 2. If the fault still exists, please contact a local installer.

If the fault cannot be removed, please contact OneHo for technical support.

10 Equipment Replacement and Treatment



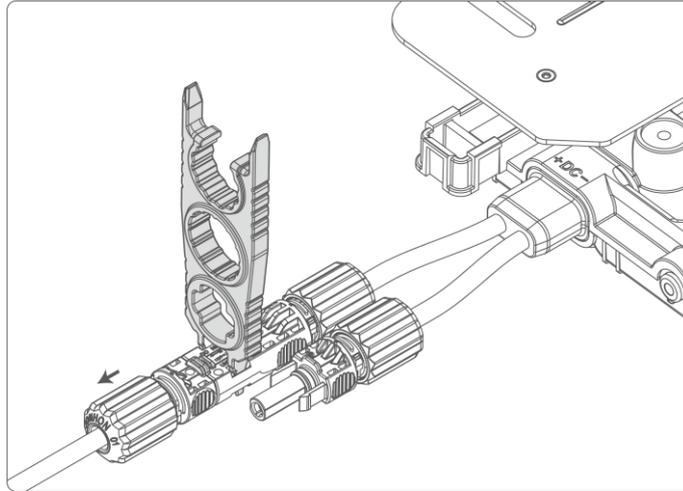
- Please use dedicated protective tools and insulation tools to prevent electric shock or short-circuit faults.
- Before operation, please turn off the AC circuit breaker on the power grid side and wait for more than 10min until the equipment is powered off.
- After the inverter is powered off, it still has residual power and residual heat, which may lead to electric shock or burn. Thus, after the inverter cools down, wear insulated gloves to operate it.

If the microinverter still cannot work properly after fault removal, please contact the installer or our technical support department. The equipment can be disassembled and replaced after warranty conditions are verified.

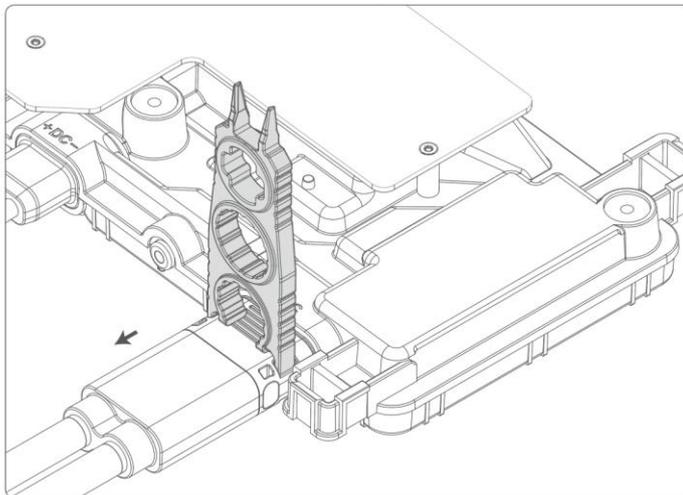
10.1 Disassemble the Microinverter

The microinverter can be disassembled as follows:

1. Turn off the AC circuit breaker.
2. Cover the photovoltaic module using a non-transparent cover.
3. Inspect and ensure the DC cable between the photovoltaic module and the microinverter has no residual current before disassembling the photovoltaic module safely.
4. Disconnect the DC connector between the microinverter and the photovoltaic module using Disconnect Tool (DISC-01-10).



5. Disconnect the AC connector of the microinverter using Disconnect Tool (DISC-01-10).



6. Loosen the screw that fix the microinverter and remove the device from the bracket.

10.2 Replace the Microinverter

1. Disassemble the microinverter as stated above.
2. Install a new one as described in "4 Preparation before Installation" and "5 Installation and Connection" .
3. Replace the microinverter on the App. For details, see the user manual of OneHo-Installer App.

10.3 Dispose of the Microinverter

If the original package is stored, place the equipment in the original package and seal it securely using tape.

If the original packaging is lost, seal the equipment using a hard carton suitable for the inverter's weight and dimension.

Then, dispose of the equipment according to applicable electrical waste disposal act where it is located.

11 Technical Specification

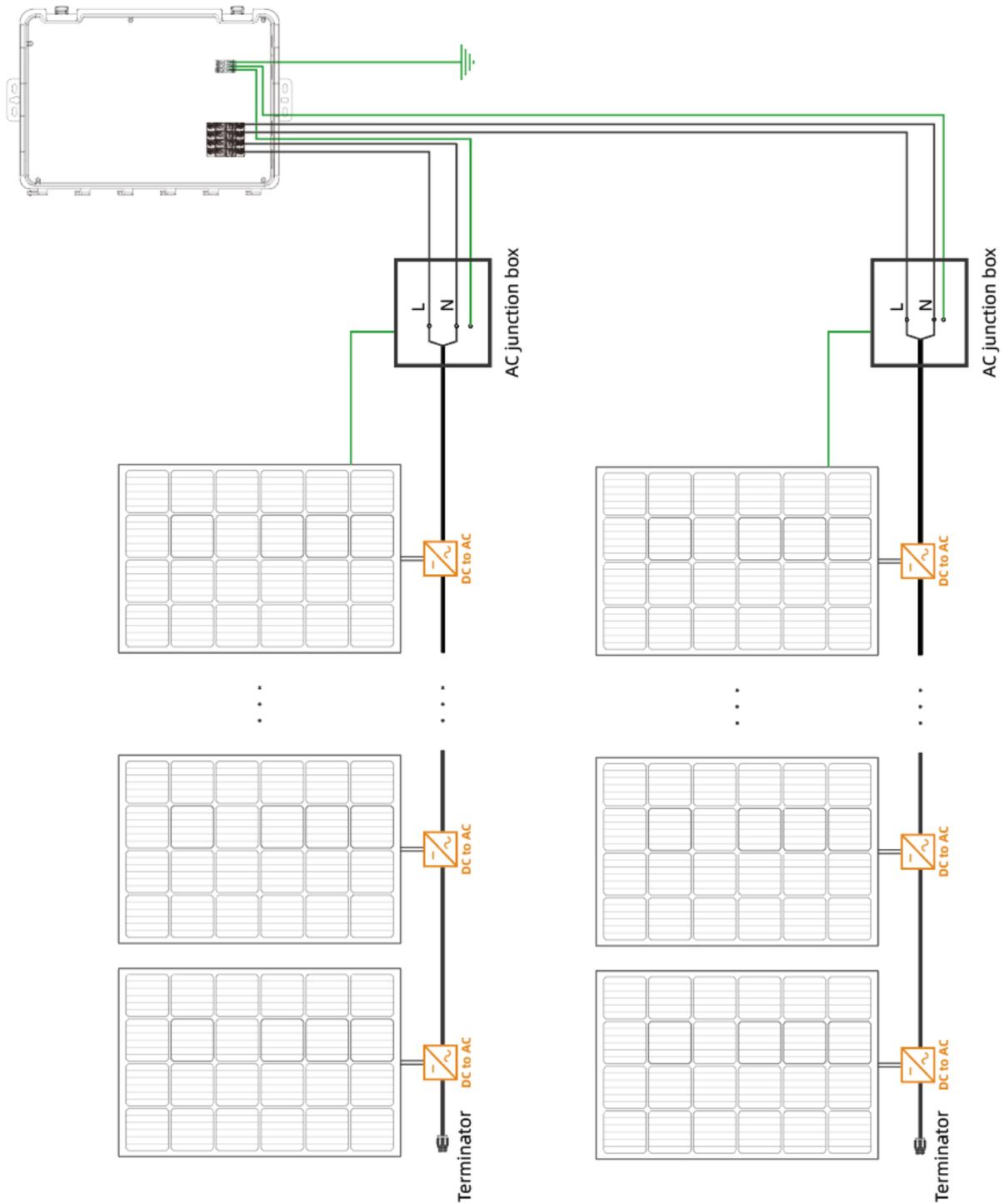
Parameter	Unit	EQ-500-P	EQ-450-P	EQ-400-P
Input (DC)				
PV module compatibility	W	400~700	360~630	320~560
Maximum input voltage	V	60		
Minimum starting voltage	V	22		
Operating voltage range	V	12~60		
MPPT voltage range	V	16~55		
Maximum continuous input DC current	A	16		
Maximum input DC short-circuit current	A	25		
MPPT quantity	/	1		
Overvoltage class of DC port	/	II		
Output (AC)				
Peak output power	VA	550	495	440
Rated output apparent power	VA	500	450	400
Rated output voltage/range	V	230/184~276		
Rated output current	A	2.17	1.95	1.74
Rated frequency	Hz	50		
Default power factor	/	> 0.99		
Power factor (adjustable)	/	0.8 leading...0.8 lagging		
THDI	/	<3%		
Power consumption at night	mW	≤20		
Maximum quantity of accessible microinverters per branch (20A branch current)	/	7	8	9
Overvoltage class of AC port	/	III		

Efficiency parameter		
Peak efficiency	/	97.4%
European efficiency	/	97%
MPPT efficiency	/	99.9%
General parameters		
Ambient temperature	°C	-40~+65
Storage temperature	°C	-40~+85
Relative humidity range	RH	0%~100%
DC interface type	/	MC4
Dimensions (width × height × depth) (excluding Mounting plate)	mm	215×173×31
Net weight (excluding Mounting plate)	Kg	1.48
Enclosure protection class	/	IP67
Protective Class	/	II
Cooling method	/	Natural heat dissipation
Pollution class	/	Class 3
Altitude	m	4000
Operational noise	dB	<50
Others		
Communication mode	PLC	
Isolation mode	Transformer isolation	
Compliance		
Security	IEC/EN 62109-1, IEC/EN 62109-2	
EMC	IEC/EN 61000-6-1, IEC/EN 61000-6-3	
Certification (power grid compliance)	EN 50549-1, VDE-AR-N 4105, DIN VDE V 0124-100, TOR type A+R25, CEI 0-21	
Warranty		
Limited warranty	25 years	

Appendix 1: Terms and Abbreviations

A	
AC	Alternating current
APP	Application
D	
DC	Direct current
E	
EMC	Electro Magnetic Compatibility
L	
LED	Light emitting diode
M	
MPPT	Maximum power point tracking
P	
PV	Photovoltaic
R	
RH	Relative humidity
S	
SN	Serial number
W	
WEEE	Waste electrical and electronic equipment

Appendix 2: Wiring Diagram



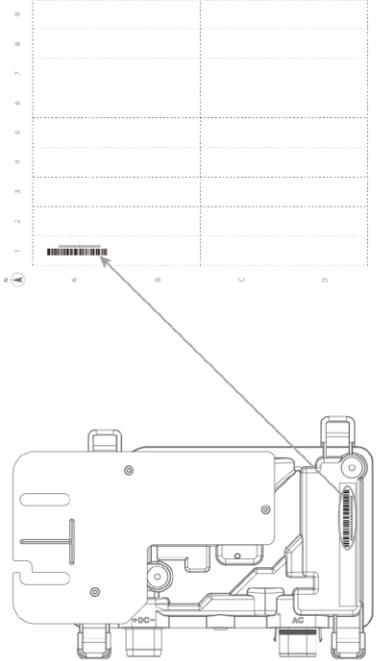
Appendix 3: Front side of INSTALLATION MAP

To Sheet/Vers la fiche/Zu Blatt/Tabel _____ ↑

↓ _____ To Sheet/Vers la fiche/Zu Blatt/Tabel



INSTALLATION MAP/
Plan d'installation/Montageanleitung/installatiekaart



(MAP is on the back/
MAP au verso/
Karte auf der Rückseite/
Tekening op de achterkant)

User/Utilisateur/Kunde/Gebruiker: _____ **PV panel/Panneau photovoltaïque/PV-Modul/PV-paneel:** _____

Installer/Installateur: _____ **Azimuth angle/Azimut:** _____

Sheet/Fiche/Blatt/Tabel: _____ **Tilt angle/Inclinaison/Neigung/Helling:** _____

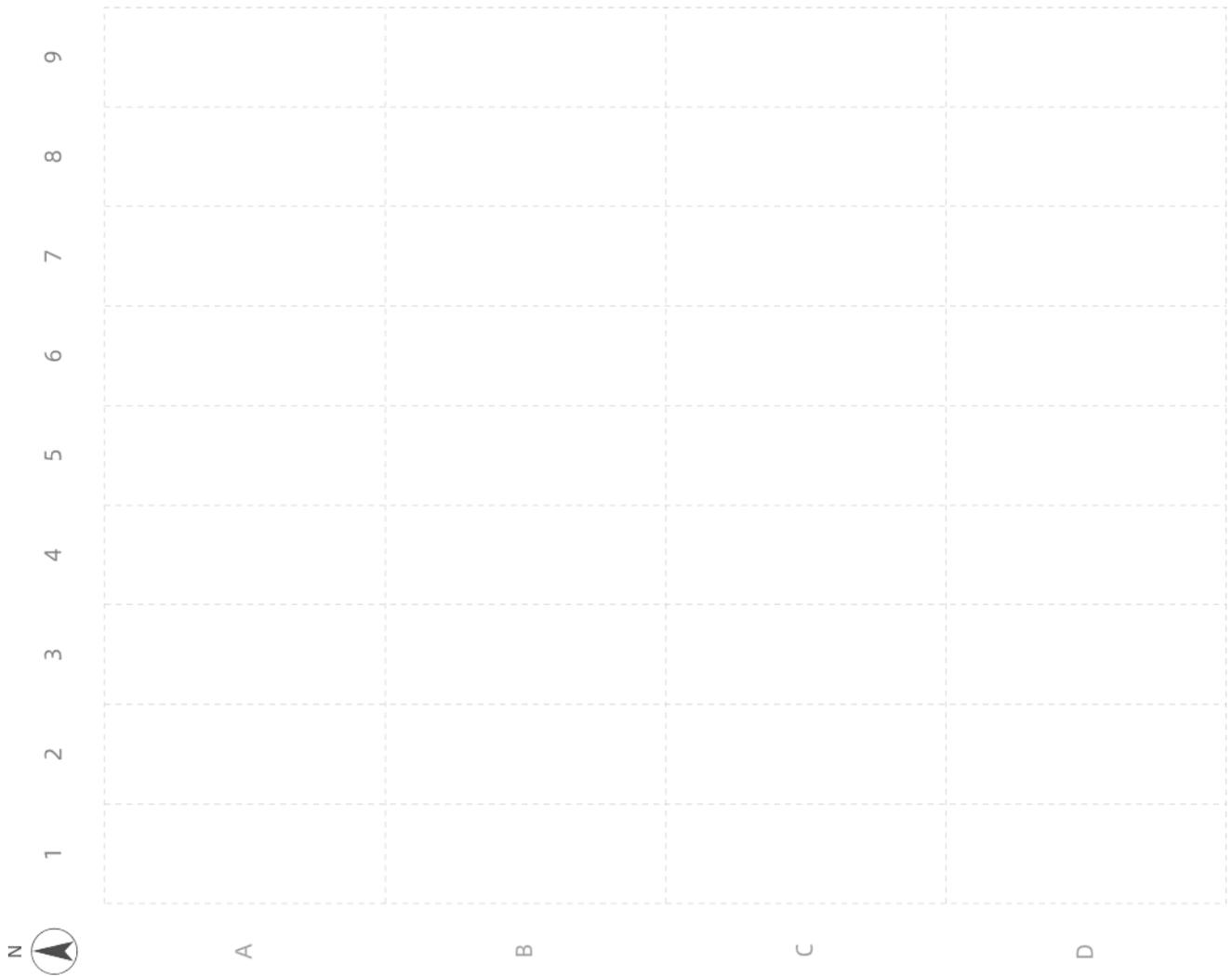
Gateway SN label location/
Emplacement de collage de l'étiquette SN de la Gateway/
Hier Gateway-SN-Etiket aufkleben/
Plakplaats voor het SN-label van de gateway

※ Ensure the barcode is applied with the correct and consistent orientation.
 ※ Veuillez vous assurer que le code-barres est collé avec une orientation correcte et uniforme.
 ※ Beim Einkleben des Barcodes muss die Orientierung des Barcodes konstant bleiben.
 ※ Zorg er bij het plakken van de barcode voor dat de barcode consistent georiënteerd blijft.

To Sheet/Vers la fiche/Zu Blatt/Tabel _____ ↑

0830N024 Rev01 Region: Global

Appendix 4: Reverse Side of INSTALLATION MAP





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 www.oneho-pe.com

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