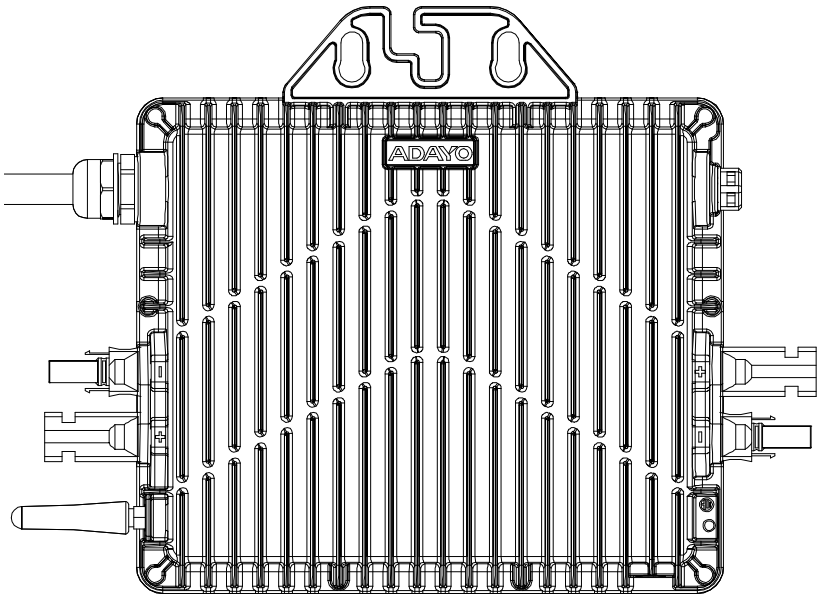
ADAYO

User Manual

ID600A / ID800A Microinverter



Please read the user manual carefully before using
the product and keep it for future reference.

Disclaimer

Thank you for choosing our products and services. Before using the product, please read carefully and fully understand this document to ensure that you can use the product correctly. By using this product, you are deemed to have understood, recognized and accepted all the terms and contents of this document, and the user undertakes to be responsible for his own actions and all consequences arising therefrom.

Incorrect operation of the product or product abnormality caused by force majeure such as fire, typhoon, flood and earthquake may cause unnecessary harm to yourself or others or cause damage to this product and loss of property. All accidents and losses caused by this may have nothing to do with our company. Correspondingly, the service warranty terms promised to you will automatically become invalid.

In compliance with laws and regulations, our company has the final right to interpret product-related documents. If there is any update, revision or termination, no further notice will be given. Our company strives to ensure the accuracy of information such as product functions and features described in the user manual, but does not assume the responsibility for any errors, omissions or subtle differences between the user manual and the product.

If you still have questions, please visit our official website **www.adayopower.com** to get the latest product information.

Contents

1. Important Notes

1.1 Product Range

This manual describes the assembly, installation, commissioning, maintenance and troubleshooting of the following models of Microinverter: **ID600A / ID800A** .

Note:
"600" means 600 W, "800" means 800 W.

1.2 Target Group

This manual is only for qualified technicians. For safety purposes, only those who have been trained or demonstrate relevant skills can install and maintain this microinverter under the guidance of this document.

1.3 Symbols Used

The safety symbols in this user manual are shown as below:

Symbol	Description
 DANGER	This indicates a hazardous situation that can result in deadly electric shocks, other serious physical injuries, or fire incidents.
 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 proceeding.

1.4 Radio Interference Statement

This microinverter has been tested and complies with the requirements of CE EMC, meaning that it will not be affected by electromagnetic interference. Please note that incorrect installation may cause electromagnetic disturbances.

You can turn the equipment off and on to see if radio or television reception is interfered by this equipment. If this equipment does cause harmful interference to radio or television, please try the following measures to fix the interference:

1) Relocate other apparatus'antenna.

2) Move the microinverter farther away from the antenna.

3) Separate the microinverter and the antenna with metal/concrete materials or roof.

4) Contact your supplier or an experienced radio/TV technician for help.

2. About Safety

2.1 Important Safety Instruction

The ID600A / ID800A microinverter is designed and tested according to international safety requirements. However, certain safety precautions must be taken when installing and operating this inverter. The installer must read and follow all instructions, cautions and warnings in this installation manual.

• All operations including transportation, installation, start-up and maintenance must be carried out by qualified, trained personnel.
• Check the product before installation to make sure there is no damage caused during transportation because such damage can compromise the insulation integrity and safety clearances. Choose installation location carefully and adhere to specified cooling 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.
• You should get necessary approvals from local power operator before connecting the inverter to the power grid. This connection must be made only by qualified technical personnel. It is the responsibility of the installer to provide external disconnect switches and Over Current Protection Devices (OCPD).
• Each input of the inverter is connected to one PV module. Do not connect batteries or other sources of power supply. The inverter can be used only if all the technical parameters are observed and applied.
• Do not install the equipment in flammable, explosive, corrosive, extremely hot/cold, and humid environment. Do not use the equipment when safety devices in these environments are not working.
• Personal protective equipment such as gloves and goggles must be used during installation.
• Inform the manufacturer about non-standard installation conditions.
• Do not use the equipment if any operating anomalies are found.
• All repairs must be done with qualified spare parts which must be installed in accordance with their intended use and by a licensed contractor or authorized service representative.
• Liabilities arising from components that are not produced by our company are on the part of their respective manufacturers.
• Whenever the inverter has been disconnected from the public grid, please be extremely careful as some components can retain charge sufficient to create a shock hazard. Before touching any part of the inverter, please ensure the surface and the whole equipment are within the limit of safe temperature and voltage potential.
• Our company is not liable for any damage caused by incorrect or improper operation.
• Electrical installation and maintenance shall be conducted by licensed electrician and shall comply with local wiring rules.

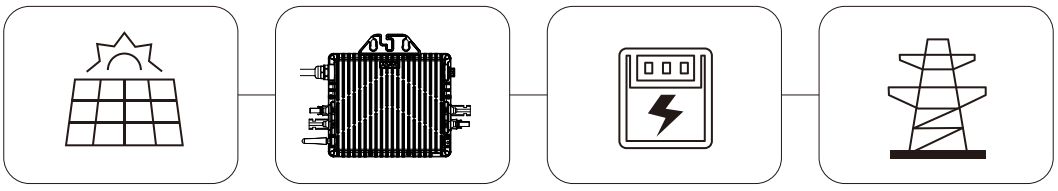
2.2 Explanation of Symbols

Symbol	Usage
	**Treatment** To comply with European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its implementation as national law, electrical equipment that has reached the end of its life must be collected separately and returned to an approved recycling facility. Any device no longer needed must be returned to an authorized dealer or approved collection and recycling facility.
	**Caution** Do not come within 8 inches (20 cm) of the microinverter when it is in operation.
	**Danger of high voltage** High voltage in the microinverter can cause dangers to life.
	**Beware of hot surface** The inverter can become hot during operation. Avoid contact with metal surfaces during operation.
	**CE mark** The inverter complies with the Low Voltage Directive for the European Union.
	**Caution** Risk of electric shock,Energy storage timed discharge.
	**Read manual first** Please read the installation manual first before installation, operation and maintenance.

3. About Product

3.1 About PV Inverter System

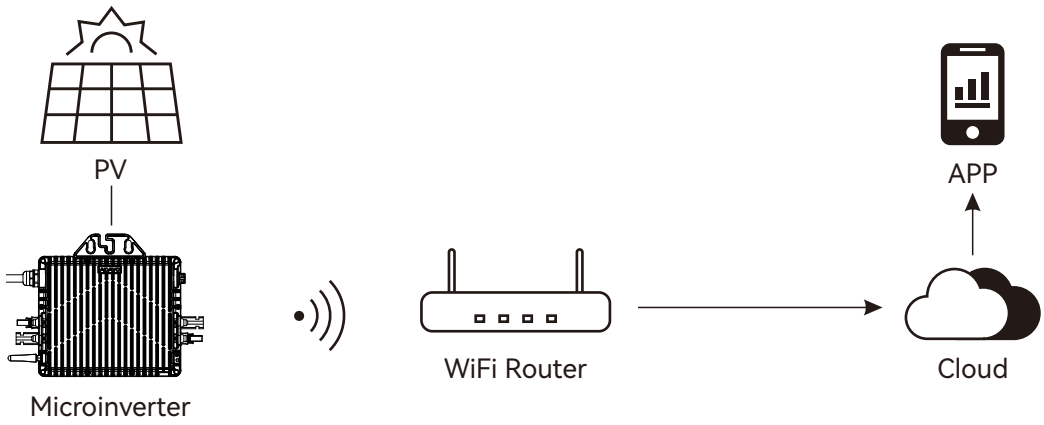
A typical grid-tied PV inverter system includes PV modules, PV inverter, meter and power grid, as shown below. PV inverter converts the DC power generated by PV modules into AC power that meets the requirements of the power grid. The AC power is then fed into the grid via meter.



A	PV module
B	Microinverter
C	Grid-connected metering device
D	Power grid

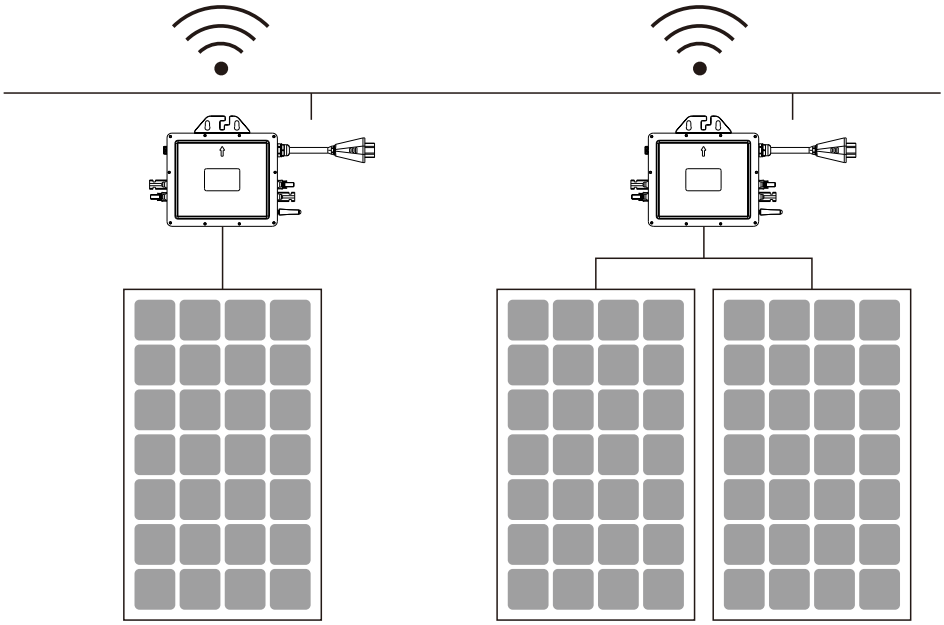
3.2 About Microinverter

PV Microinverter is a module-level solar inverter that tracks the maximum DC power point of each PV module, which is known as Maximum Power Point Tracking (MPPT). This function of module-level MPPT means that when a PV module fails or is shaded, other modules will not be affected, boosting the overall power production of the system. Microinverter can monitor the current, voltage and power of each module to realize module-level data monitoring. Moreover, microinverter only carries a few dozen volts of DC voltage (less than 60 volts), which reduces safety hazards to the greatest extent. The microinverters feature module-level monitoring. Microinverter data are collected by built-in WiFi module and sent to motoring platform Cloud.



3.3 About 2-in-1 Unit

Microinverters can be divided into 1-in-1, 2-in-1etc., depending on how many PV modules are connected to them. This means that the microinverter can connect to one module and two modules respectively, as shown below.

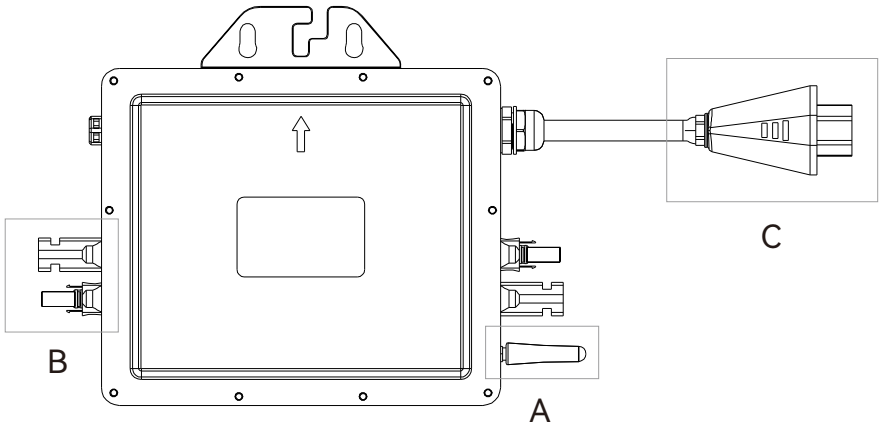


This manual is about 2-in-1 microinverter with the output power up to 800 VA. Each microinverter connects to two PV modules at most with independent MPPT and monitoring, enabling greater energy harvest and easier maintenance.

3.4 Highlights

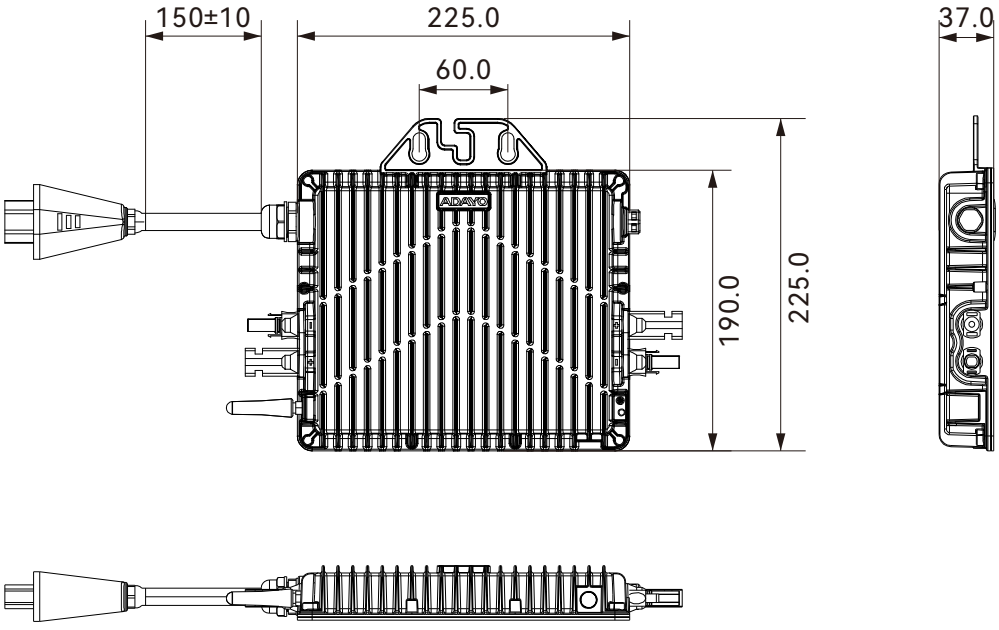
- Maximum output power up to 600/800 W
- Peak efficiency 96.70%
- Static MPPT efficiency 99.80%, Dynamic MPPT efficiency 99.76% in overcast weather
- Power factor: >0.99
- High reliability: IP67 (NEMA 6)

3.5 Terminals Introduction



A	Antenna
B	DC Connector
C	AC Sub Connector

3.6 Dimensions (mm)



4. Installation Preparation

4.1 Position and Space Required

Please install the microinverter and all DC connections under the PV module or on the balcony wall to avoid direct sunlight, rain exposure, snow buildup, UV etc. The flat side of the microinverter should be up and facing the PV module or balcony wall.

Leave a minimum of 2 cm of space around the microinverter enclosure to ensure ventilation and heat dissipation.

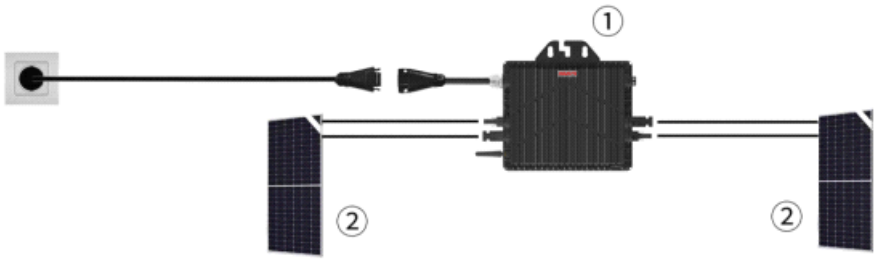
4.2 Connecting Multiple PV Modules to Microinverter

General Guidelines:

1. PV modules should be connected to DC input ports of a microinverter.

2. Use DC extension cable when the original cable is not long enough. Please consult the local power operator to make sure that the DC cable complies with local regulations.

The typical wiring method is shown below:



Note:

The voltage of modules (considering the effect of local temperature) must not exceed the maximum input voltage of the microinverter. Otherwise, the microinverter may be damaged (refer to the Technical Data section to determine the absolute maximum input voltage).

4.3 Installation Tools

Besides tools recommended below, other auxiliary tools can also be used on site.

Screwdriver	Multimeter
Socket Wrench or Allen wrench	Marker pen
Diagonal pliers	Steel tape
Wire cutters	Cable tie
Wire stripper	Torque and adjustable wrench
Utility knife	Dust masks
Safety glove	Safety shoes
Protective goggles	

4.4 AC Branch Circuit Capacity

ID600A / ID800A can be used with 12AWG AC Trunk Cable and the AC Trunk Connector. The number of microinverters on each 12AWG AC branch shall not exceed the limit as shown below.

	ID600A	ID800A	Maximum over current protection device(OCPD)
Maximum number per 12 AWG branch	7	5	20A

Note:

The number of microinverters that can be connected to each AC branch is determined by the ampacity (also known as current-carrying capacity) of the cable.

4.5 Precautions

The equipment is installed based on the system design and the location of installation.

• The installation must be done with the equipment disconnected from the grid (power disconnect switch open) and with the PV modules shaded or isolated.
• Make sure the environmental conditions fit the microinverter's requirement (degree of protection, temperature, humidity, altitude, etc.) as specified in the Technical Data section.
• Avoid direct sunlight to prevent power derating which can be caused by an increase in the internal temperature of the microinverter.
• Keep the inverter in well-ventilated place to avoid overheating.
• Keep the inverter away from gases or flammable substances.
• Avoid electromagnetic interference because it can compromise the normal operation of electronic equipment.

Installation location shall meet the following conditions:

• Install only on structures specifically designed for PV modules (supplied by installation technicians).
• Install microinverter underneath PV modules or on the balcony wall to make sure it works in the shadow. Nonobservance may cause the derating of inverter production.

4.4 AC Branch Circuit Capacity

Open the packaging and take out the product. Please check the accessories first. The packaging list is shown below.

A

B

C

D

E

F

G

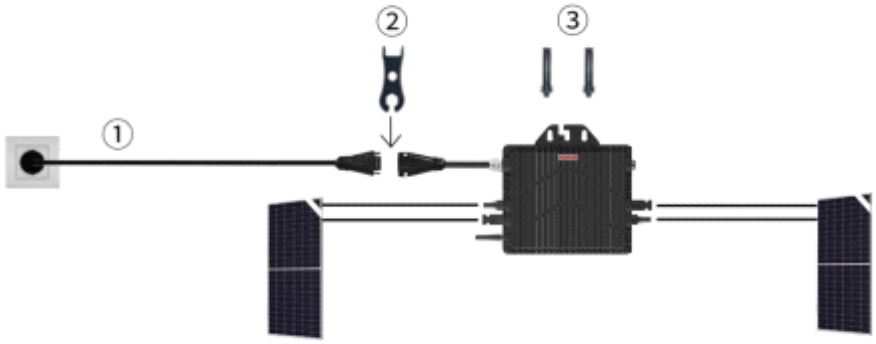
H

No.	Description	Remark
A	Microinverter	Include
B	User Manual	Include
C	AC Plug Cable 2.5m, 3m or 5m (for parallel use)	selectable
D	AC trunk cable 12AWG, 2m (for parallel use)	selectable
E	T-connector 300V/40A*1 + Protective cap (for parallel use)	selectable
F	AC plug cable 1.5m, 3m or 5m (single-machine only)	selectable
G	Disconnect tool	selectable
H	Expansion screw 50mm	selectable

5. Microinverter Installation

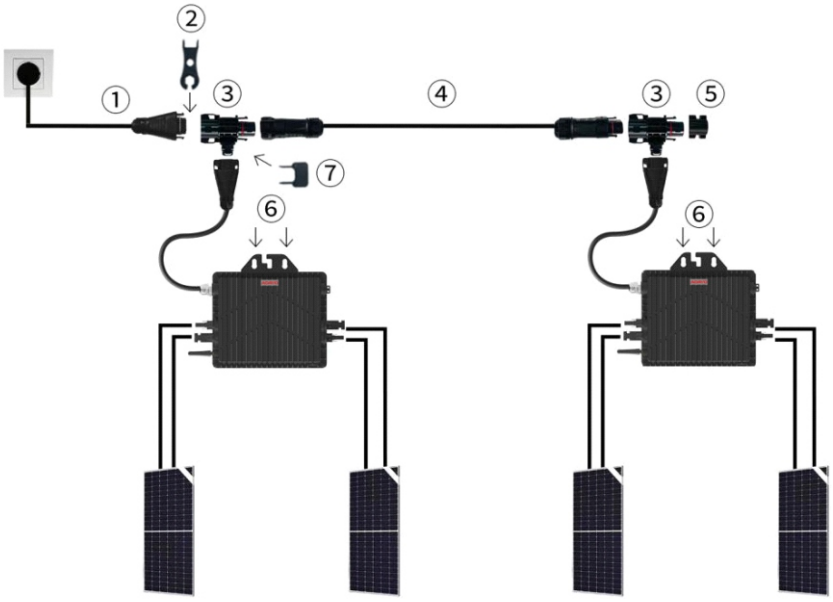
5.1 Accessories

- **Installation in single**



No.	Description
①	AC plug cable 1.5 mm2. Length: 3m or 5m
②	Disconnect tool (Long)
③	Expansion screw 50 mm

- **Installation in parallel**



No.	Description
①	AC plug cable 2.5mm2. Length: 3 m or 5 m
②	Disconnect tool (Long)

③	T-connector 300V/40A
④	AC trunk cable 12 AWG. Length: 2m
⑤	Protective cap
⑥	Expansion screw 50 mm
⑦	Disconnect tool (Short)

Note:

All accessories above are not included in the package and should be purchased separately.

5.2 Installation Steps

The order of Step 1 and Step 2 can be reversed according to your planned needs.

Step 1. Plan and Install the Microinverter

A. Mark the position of each microinverter on the rail or balcony wall according to the PV module layout.

B. Fix the screws on the rail or balcony wall.

C. Hang the microinverter on the screws, and tighten the screws. The flat side of the microinverter should be facing the panel or balcony wall.

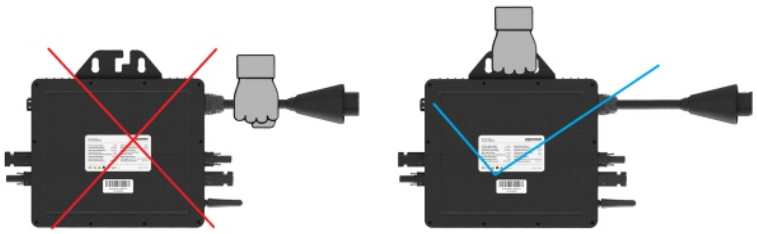
Note:

①. Microinverter installation and DC connections must be done to avoid direct sunlight, rain exposure, snow buildup, UV etc.

②. Leave a minimum of 2 cm of space around the microinverter enclosure to ensure ventilation and heat dissipation.

③. Mounting torque of the M6*10 screw is 9 N·m. Do not over torque.

④. Do not pull or hold the AC cable with your hand. Hold the housing body instead.



Step 2.Installing the AC Trunk Cable

AC trunk cable is used to connect the microinverter to the power distribution box.

A. Select the appropriate AC trunk cable according to the spacing between microinverters. The connectors of the AC trunk cable should be spaced based on the spacing between microinverters to ensure that they can properly matched.

B. Determine how many microinverters you plan to install on each AC branch and prepare AC trunk connectors accordingly.

C. Repeat the above steps to make all the AC Trunk Cables you need. Then lay out the cable on the rail or balcony wall as appropriate so that the microinverters can be connected to the trunk connectors.

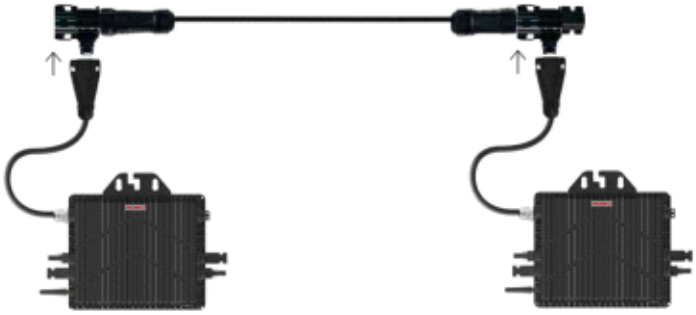
D. Attach the AC trunk cable to the mounting rail or balcony and fix the cable with tie wraps.

E. Connect the AC trunk cables and T-connectors in turn.

F. Plug the protective cap at the back end.

Step 3. Complete the AC Connection

A. Plug the AC sub connector of microinverter into the AC trunk connector until you hear the click.

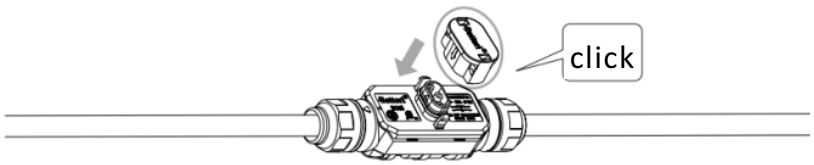


B. ▪ Insert the AC sub connector of microinverter into the connector of AC plug cable.

▪ Insert the AC sub connectors of microinverters into the the corresponding T-connectors and then insert the connector of the AC plug cable into the the front end T-connector.

C. Then connect the AC plug cable to the local power grid.

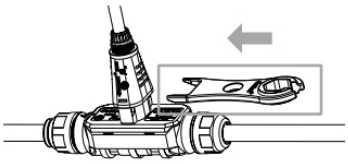
Please plug the AC trunk port cap in any vacant AC trunk port to make it water and dust proof.



Note:

①. Make sure that the AC trunk connectors are kept away from any drainage channels.

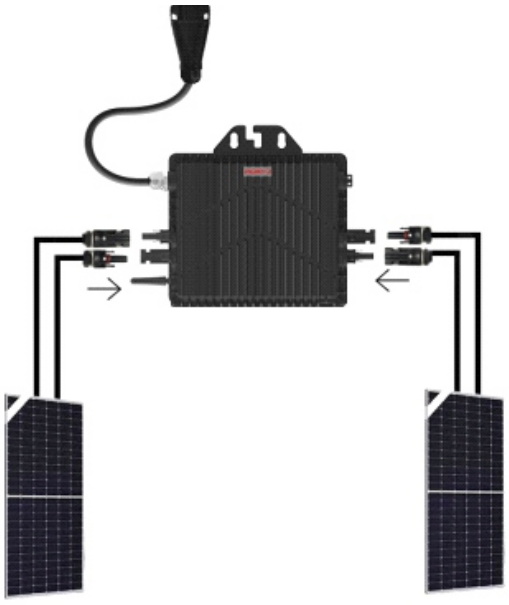
②. In case you need to remove the microinverter AC cable from AC trunk connector, use the disconnect tool to complete the removal.



Step 4. Connect PV Modules

A. Mount the PV modules.

B. Connect the DC cables of PV modules to the DC input side of the microinverter.



Step 5. Energize the System

A. Turn on the AC breaker of the branch circuit.

B. Turn on the main AC breaker of the house. Your system will start to generate power in about two minutes.

Step 6. User Account Registration

Refer to the “User Manual”,“Registration on APP”and “Network Configuration” to register the User Account and make Network Configuration.

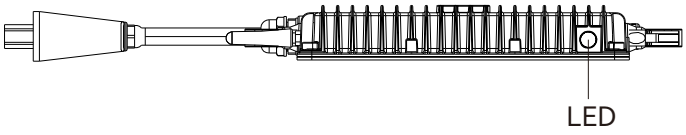
6. Troubleshooting

6.1 Troubleshooting List

Alarm status	Handling suggestions
Over temperature protection	1. Check the ventilation and ambient temperature at the microinverter installation location. 2. If the ventilation is poor or the ambient temperature exceeds the limit, please improve the ventilation and heat dissipation. 3. If the problem persists when ventilation and ambient temperature are appropriate, contact your dealer or technical support team.
Offline	1. Please make sure that the microinverter works normally (check if the DC voltage is within normal range and confirm the status of the LED indicator). 2. Check if the SN on microinverter label is the same as on the monitoring platform. 3. Check the communication status between the built-in WiFi module and monitoring system, and between the built-in WiFi module and the microinverter. If the communication is poor, try to make some improvements. 4. If the alarm occurs frequently and cannot be recovered, contact your dealer or technical support team.
Grid voltage fault	1. If the alarm occurs occasionally, the grid voltage may be just abnormal temporarily. The microinverter can automatically recover after grid voltage becomes normal. 2. If the alarm occurs frequently, check whether the grid voltage is within the acceptable range. If not, contact the local power operator or change the grid undervoltage or overvoltage protection limit in the grid profile via monitoring system with the consent of the local power operator. 3. If the fault still exists, check the AC switch or AC wiring.
Grid frequency fault	1. If the alarm occurs occasionally, the grid frequency may be just abnormal temporarily. The microinverter can automatically recover after grid frequency becomes normal. 2. If the alarm occurs frequently, check whether the grid frequency is within the acceptable range. If not, contact the local power operator or change the grid over frequency protection limit via monitoring system with the consent of the local power operator.
Power grid outage	Please check whether the AC switch, branch breaker and AC wiring is normal.
Grid disconnection	Please check whether the AC switch, branch breaker and AC wiring is normal.

Overload fault	1. If the alarm occurs occasionally, the grid voltage may be just abnormal temporarily. The microinverter can automatically recover after grid voltage becomes normal. 2. If the alarm occurs frequently, check whether the grid voltage is within the acceptable range. If not, contact the local power operator or change the grid undervoltage or overvoltage protection limit in the grid profile via monitoring system with the consent of the local power operator. 3. If the fault still exists, check the AC switch or AC wiring.
PV Input overvoltage	1. Please make sure that the PV module open-circuit voltage is less than or equal to the maximum input voltage. 2. If the PV module open-circuit voltage is within the normal range, contact your dealer or technical support team.

6.2 LED Indicator Status



(1) During start-up
• Green flash slowly
(2) During operation
• Solid green
(3) Fault Status
• Solid red
(4)Networking
• During networking: Red green alternating flash fast • Allow APP to network: Red green alternating flash slowly • Monitoring server is connected: Solid green

Note:

①. The microinverter 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, contact your dealer or technical support team.

②. The faults are reported to the monitoring system. Refer to the app or Monitoring Platform for more information.

6.3 On-site Inspection (For qualified installer only)

Troubleshoot a malfunctioning microinverter according to the following steps.

1	Check if the utility voltage and frequency are within the respective range shown in technical data section of this manual.
2	Check the connection to the utility grid. Disconnect the AC and the DC power. Please note that when the inverter is in operation, disconnect the AC power first to de-energize the inverter, and then disconnect the DC power. Never disconnect the DC wires while the microinverter is producing power.
3	Check the interconnection between all the microinverters on the AC branch circuit. Confirm that each inverter is energized by the utility grid as described in the previous step.
4	Make sure that every AC breaker is functioning properly and is closed.
5	Check the DC connection between the microinverter and the PV module.
6	Make sure that PV modules'DC voltage is within the allowable range shown in the Technical Data section of this manual.
7	If the problem persists, please call customer support.
 WARNING	Do not try to repair the microinverter by yourself. If the troubleshooting fails, please return it to the factory for replacement.

6.4 Routine Maintenance

Troubleshoot a malfunctioning microinverter according to the following steps.

1. Only authorized personnel are allowed to carry out the maintenance operations and are responsible for reporting any anomalies.
2. Always use personal protective equipment provided by the employer during maintenance operation.
3. During normal operation, check the environmental conditions regularly to make sure that the conditions have not changed over time and that the equipment is not exposed to adverse weather conditions and has not been obstructed.
4. DO NOT use the equipment if any problems are detected. Restore its working conditions after the fault is fixed.
5. Conduct annual inspections on various components, and clean the equipment with a vacuum cleaner or special brushes.

 DANGER	Do not attempt to dismantle or repair the microinverter! No user-serviceable parts inside for the safety and insulation reasons!

 **WARNING**	• The AC output wiring harness (AC drop cable on the microinverter) cannot be replaced. The equipment should be scrapped if the cord is damaged. • Maintenance operations must be carried out with the equipment disconnected from the grid (power switch open) and the PV modules shaded or isolated, unless otherwise indicated. • Never clean the equipment with rags made of filamentary or corrosive materials to avoid corrosion and electrostatic charges. • Do not attempt to repair the product. All repairs should be done using only eligible spare parts.
 **CAUTION**	• If all the microinverters are connected to the monitoring system, the monitoring system can limit the output power imbalance of all the microinverters between phases to below 3.68 kW if required. • Each branch should have a circuit breaker. Central protection unit is unnecessary.

7. Decommission

7.1 Decommission

Disconnect the inverter from DC input and AC output, remove all connection cable from the inverter, and remove the inverter from the frame.

Please pack the inverter in the original packaging. If the original packaging is no longer available, you can use a carton box that can hold 5 kg and can be fully closed.

7.2 Storage and Transportation

The packages are specially designed to protect components so as to facilitate transportation and subsequent handling. Transportation of the equipment, especially by road, must be done in a way that can protect the components (particularly the electronic components) from violent shocks, humidity, vibration, etc. Please dispose of the packaging elements in appropriate ways to avoid unforeseen injury.

Please examine the conditions of the components to be transported. Upon receiving the inverter, you should check the container for any external damage and verify the receipt of all items. Please call the carrier immediately if there is any damage or if any parts are missing. In case of any damage caused to the inverter, contact the supplier or authorized distributor to request a repair/return and ask for instructions regarding the process.

The storage temperature range of microinverter is -40 to 85°C.

7.3 Disposal

- If the equipment is not used immediately or is stored for a long period of time, make sure that it is properly packed. The equipment must be stored indoors with good ventilation and without any potential damage to the components of the equipment.
- Take a complete inspection when restarting the equipment after it has stopped operation for a long time.
- Please dispose of the inverters properly in accordance with local regulations after they are scrapped because of potential harms to the environment.

8. Technical Data

WARNING	Be sure to verify the following before installing Microinverter System.

1. Verify that the voltage and current specifications of the PV module match those of the microinverter.

• The maximum open circuit voltage rating of the PV module must be within the operating voltage range of the microinverter.

• We recommend that the maximum current rating at MPP should be equal to or less than the maximum input DC current.

2. The output DC power of PV module shall not exceed 1.35 times of the output AC power of the microinverter.

Model	ID600A	ID800A
PV Input (DC)		
Adaptive PV power (W)	210~420 x 2	210~560 x 2
Start-up Voltage (V)	30	30
Full Load MPPT Voltage Range (V)	33~55	33~55
Operating Votage Range (V)	16~60	16~60
Max Input Current (A)	12A x 2	14A x 2
Maxmum input short-circuit current (A)	16~44V	Simulated PV panel output
Number of MPP Trackers	25A x 2	25A x 2
AC Output		
Rated Output Power (W)	600	800
Nominal Output Current (A)	2.6	3.48
Nominal Grid Voltage (V)	< 230(single-phase)	230(single-phase)
Grid Voltage Range (V)	180~264VAC	180~264VAC
Nominal Grid Frequency (Hz)	50Hz/60Hz	50Hz/60Hz
Max. Total Harmonic Distortion	<3%(rated power)	<3%(rated power)
Power Factor	>0.99	>0.99
Max Parallel	7 pcs	5 pcs
Anti-islanding Protection	Yes	Yes
Power FactorAC Short Circuit Protection	Yes	Yes

Model	ID600A	ID800A
System		
Max. Efficiency	96.70%	96.70%
Protection Class	CLASS I	CLASS I
Protection Level	IP67	IP67
Cooling Method	Natural Cooling	Natural Cooling
Monitoring	WIFI	WIFI
Ambient Temperature Range (℃)	-40 ~ +65	-40 ~ +65
Manufacturer's Warranty	10 Years	10 Years
Mechanical Data		
Dimensions (W x H x D mm)	225 x 225 x 37	225 x 225 x 37
Weight (kg)	3.25	3.25

*1 Nominal voltage/frequency range can vary depending on local requirements.
*2 Refer to local requirements for exact number of microinverters per branch.

Note:

①. Nominal voltage/frequency range can vary depending on local requirements.
②. Refer to local requirements for exact number of microinverters per branch.

9. LED Status Description

Status description	LED Status
Networking	Red green alternating flash fast
Allow APP to network	Red green alternating flash slowly
Monitoring server is connected	Solid green

10. Frequently Asked Questions

(1)WiFi Dongle can't connect to the network

(a)Move the wireless router closer to the inverter, or use a wireless signal booster.

(b)WiFi Dongle only supports connecting to the 2.4GHz frequency network.

(c)The wireless name of the router should be composed of English and numbers.

(d)The Router prohibits the use of dual-band integration function。

(e)When using the APP to configure the network, the network configuration only can be allowed when the two indicators flash slowly.

(2)When using the APP to configure the network for the built-in WiFi Dongle, the network currently connected to the mobile phone cannot be retrieved.

(a)Exit the WIFI setting interface and enter again.

(b)Check if the network currently connected to the phone is at 2.4GHz frequency.

(3)Unable to find the " WXXXXXXXXX " serial number (Please check the label on the back of the inverter for the serial number)

(a)Please make sure that the inverter is powered on and the little collector expert is plugged in.

(b)If the microinverter has been reset, then it will be automatically renamed "WXXXXXXXX" later.

EU Declaration of Conformity

Product: Micro Inverter (integrated NS Protection device)
Modes: ID600A/ID800A

This declaration of conformity is issued under the sole responsibility of the manufacturer. Also this product is under manufacturer's warranty.
This declaration of conformity is not valid any longer: if the product is modified, supplemented or changed in any other way, as well as in case the product is used or installed improperly.

The object of the declaration described above is in conformity with the relevant Union harmonization legislation: The restriction of the use of certain hazardous substances (RoHS) Directive 2011/65/EU and the Radio Equipment Directive(RED) 2014/53/EU.

References to the relevant harmonized standards used or references to the other technical specifications in relation to which conformity is declared:

IEC 62321-3-1:2013	●
IEC 62321-4:2013+A1:2017	●
IEC 62321-5:2013	●
IEC 62321-6:2015	●
IEC 62321-7-1:2015	●
IEC 62321-7-2:2017	●
IEC 62321-8:2017	●
EN IEC 61000-6-3:2021	●
EN IEC 61000-6-1:2019	●
EN IEC 61000-3-2:2019+A1:2021	●
EN IEC 61000-3-3:2013+A2:2021	●
EN 62109-1:2010	●
EN 62109-2:2011	●

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