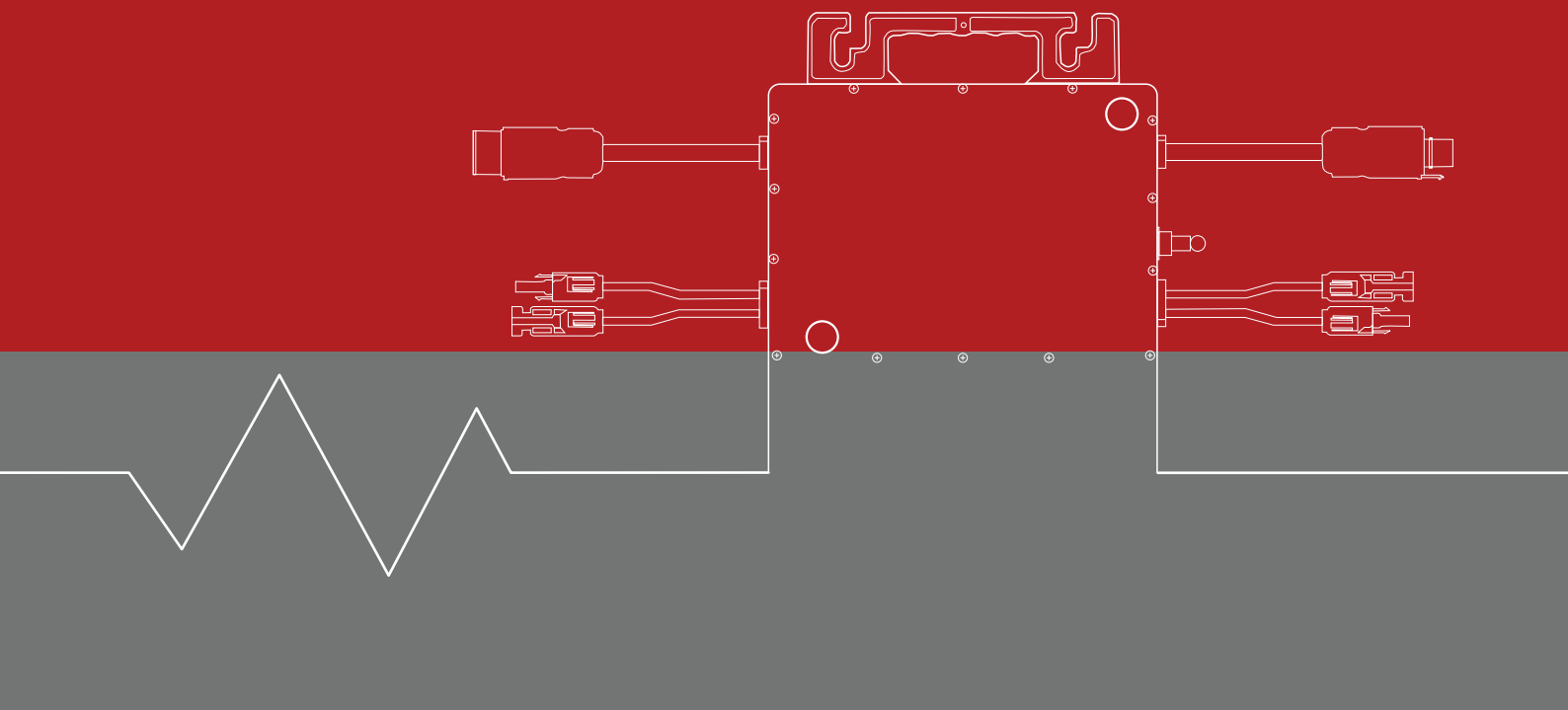


# Microinverter

Ant-800G1-EU



**CHISAGE ESS**

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# 1. Safety Instructions

Ant-800G1-EU Microinverters are designed and tested in strict accordance with relevant national safety standards. However, the installation, commissioning, operation and maintenance of electronic equipment must comply with the relevant safety standards. Therefore, incorrect operation or use will also jeopardize:

- ① The life and personal safety of the operator or the particular purpose.
- ② Other property of the operator or the particular purpose.

To reduce the risk of electrical shock and ensure a safe installation and operation of the Ant-800G1-EU Microinverter, the following symbols appear throughout this document to indicate dangerous conditions and safety instructions. The specific precautions to be taken during operation will also be explained in detail in the corresponding chapters.

## WARNING

Only qualified personnel should install or replace Ant-800G1-EU Microinverter. Qualified personnel must:

- ① Professionally trained.
- ② Have read this manual in its entirety and understood the relevant safety requirements.
- ③ Knowledge of relevant safety regulations of electrical systems.

## 1.1 Safety Instructions

- Only qualified personnel should install and/or replace Ant-800G1-EU Microinverters.
- Perform all electrical installations in accordance with local electrical codes.
- Before installing or using the Ant-800G1-EU Microinverter, please read all instructions and cautionary markings in the technical documents and on the Ant-800G1-EU Microinverter system and the solar array.
- Be aware that the body of the Ant-800G1-EU Microinverter is the heat sink and can reach a temperature of 80°C.
- To reduce risk of burns, do not touch the body of the Microinverter.
- Do NOT disconnect the PV module from the Ant-800G1-EU Microinverter without first disconnecting the AC power.
- Do NOT attempt to repair the Ant-800G1-EU Microinverter. If the microinverter is suspected to be faulty, please contact Ant-800G1-EU Technical Support to start troubleshooting and the replacement process.

# 1. Safety Instructions

## 1.2 Radio Interference Statement

EMC Compliance: The device complies with the relevant EMC requirements ( The EMC code is established to prevent harmful radio interference when electronic products are installed in residential areas). This device complies with the limits for a Class B digital device. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communication. Please take the following steps to resolve this issue:

Consult your distributor or get help from someone who is proficient in radio/TV technology. Any unauthorized changes may result in the impairment of the user's right to use the equipment.

## 1.3 Symbols in Lieu of Words



Caution, risk of electric shock.



Caution, hot surface.



Caution, risk of burn - Do not touch.



CE mark is attached to the solar inverter to verify that the unit follows the provisions of the European Low Voltage and EMC Directives.



Refer to the operating instructions.

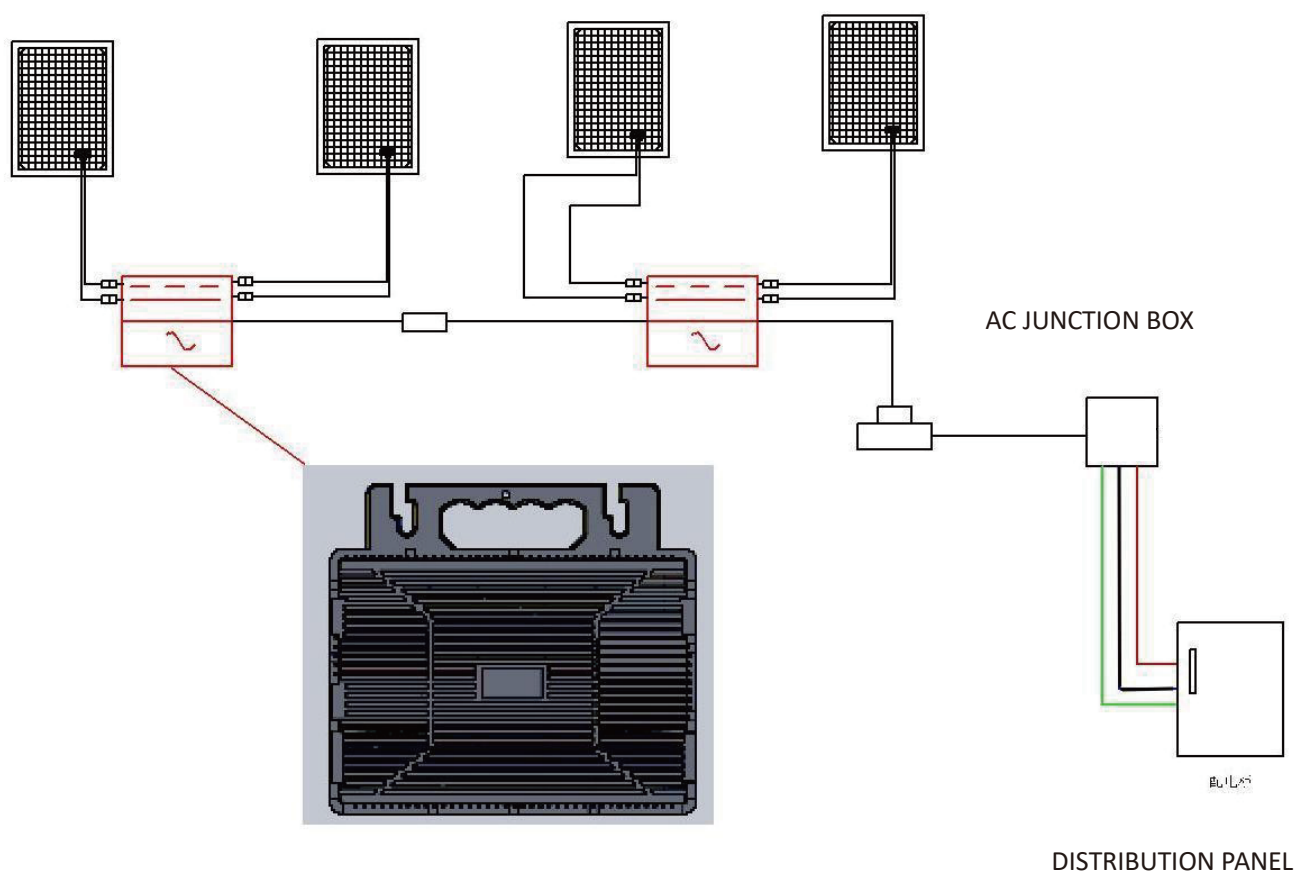
Qualified personnel

Person adequately advised or supervised by an electrically skilled person to enable him or her to perceive risks and to avoid hazards which electricity can create. For the purpose of the safety information of this manual, a "qualified person" is someone who is familiar with requirements for safety, electrical system and EMC and is authorized to energize, ground, and tag equipment, systems, and circuits in accordance with established safety procedures. The inverter and photovoltaic system may only be commissioned and operated by qualified personnel.

## 2. Ant-800G1-EU Microinverter System Introduction

Ant-800G1-EU Microinverter is grid-tied application, comprised of three key elements:

- Ant-800G1-EU Microinverter
- WIFI router
- Energy Monitor and Analysis web-based monitoring and analysis system



## 2. Ant-800G1-EU Microinverter System Introduction

Ant-800G1-EU Microinverter maximizes solar energy harvest ; improves safety; ; increases system reliability; simplifies solar system design, installation, maintenance, and management.

### 2.1 Ant-800G1-EU Microinverters Maximize PV Energy Production

Each Ant-800G1-EU microinverter is individually connected to 2 crystalline silicon solar modules in the array, and has MPPT control function. When PV modules in the array are affected by shade, dust, different orientation, or any situation in which one module underperforms compared with the other units, Ant-800G1-EU Microinverter ensures top performance from the array by maximizing the performance of each module individually within the array. The power generation efficiency of the system is significantly improved.

### 2.2 Safety with Ant-800G1-EU Microinverters

In a typical string inverter installation, PV modules are connected in series. The voltage adds-up to reach high voltage value (from 600Vdc up to 1500Vdc) at the end of the PV string. This extreme high DC voltage brings a risk of electrical shocks or electrical arcs which could cause fire. When using an Ant-800G1-EU Microinverter. DC Voltage is lower than 60V, meets building safety voltage level requirements, greatly reducing the risk of arc pulling and fire.

### 2.3 Reliability of Ant-800G1-EU Microinverter

The distributed Ant-800G1-EU Microinverter system ensures that no single point of system failure exist. The inverter case is designed for outdoor installation and complies with the IP67 environmental enclosure rating.

### 2.4 Simple and Safety Solar System Installation with Ant-800G1-EU Microinverters

Ant-800G1-EU Microinverters are compatible with most PV modules. In order to confirm compatibility of PV module with Ant-800G1-EU Microinverter, feel free to contact your local Ant-800G1-EU Technical Support.

Installation requires a minimum number of accessories and microinverters offer a lot of versatility to the installer: microinverters can indeed be installed on different roofs with different orientation or with modules having different orientation. In the same way, end-users can extend their system whenever they want with microinverters.

## 3. Ant-800G1-EU Microinverter Introduction

Ant-800G1-EU Microinverters are reaching unprecedented power outputs of 800VA, to adapt to today's mainstream power module.

The innovative and compact design maximizes power production. The components are encapsulated with silicone to reduce stress on the electronics, facilitate thermal dissipation, enhance waterproof properties and ensure maximum reliability of the system via rigorous testing methods including accelerated life testing. A 24/7 energy access through apps or web based portal facilitate remote diagnosis and maintenance.

Key Feature of Product Ant-800G1-EU:

- One microinverter connects to two modules
- Max output power reaching 800VA.
- High production level, IP67
- WIFI Communication
- Safety protection relay integrated
- Applicable to crystalline silicon modules

## 4. Ant-800G1-EU Microinverter System Installation

Ant-800G1-EU Microinverter solar system is easy to install. The microinverter can be easily mounted on a module stand. The installation must comply with local regulations and technical rules.

**Special Statement:** we advise installation of an RCD only if required by the local electrical code.

### WARNING

- ① Perform all electrical installations in accordance with local electrical codes.
- ② Only qualified personnel should install and/or replace Ant-800G1-EU Microinverters.
- ③ The PV array and the racking which the microinverters are installed and used must be reliably grounded.
- ④ Before installing or using an Ant-800G1-EU Microinverter, please read all instructions and warnings in the technical documents and on the Ant-800G1-EU Microinverter system itself as well as on the PV array.
- ⑤ In the case of a ground fault, there is a risk of electric shock to this equipment.

### NOTICE

We strongly recommend to install surge protection devices in the dedicated AC box.

### 4.1 Additional Accessories Supplied by Ant-800G1-EU Microinverter System

- AC bus cable end cap
- Disassembly fixture
- Aerial rod

### 4.2 Parts and Tools to be Prepared by the Customer

In addition to your PV array and its associated hardware, you may need the following items:

- An AC connection junction box
- Mounting hardware suitable for module racking
- Sockets and wrenches for mounting hardware



## 4. Ant-800G1-EU Microinverter System Installation

### 4.3 Installation Procedures

#### Step1 Verify that Grid Voltage Matches Microinverter Rating

#### Step2 AC Bus Cable Distribution

- a. Arrange the microinverter with the AC cable in a proper position.
- b. Connect the microinverter's AC male port to a convergence box or to the power grid.
- c. Wiring Method: Fire wire ( L ) - RED; Zero wire(N) - BLACK; Ground wire ( PE ) - YELLOW GREEN.

#### WARNING

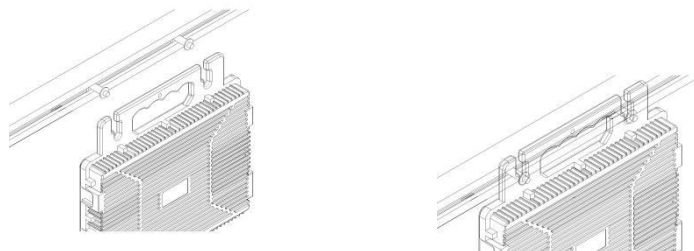
Wiring color code can be different according to local regulations. Check all the wires of the installation before connecting to the AC bus to be sure they match. Improper cabling can irreparably damage the Microinverters. Such damage is not covered by the warranty.

#### WARNING

Do NOT carry the microinverter by the AC cable.

#### Step3 Attach Ant-800G1-EU Microinverters to the Racking

- a. Mark the position of the microinverter on the rack, with respect to the PV module junction box or any other obstructions.
- b. Secure each microinverter to its designated position using the parts and tools recommended by the supplier of the racking. The inverter grounding lug must face the racking during installation.



#### WARNING

It is not allowed to install the microinverter in direct sunlight, rain and snow, including the gap between the modules. Fully shaded mounting points are preferred. Keep as much space as possible around the microinverter for ventilation and heat dissipation. The racking on which the inverter is mounted must be reliably grounded.

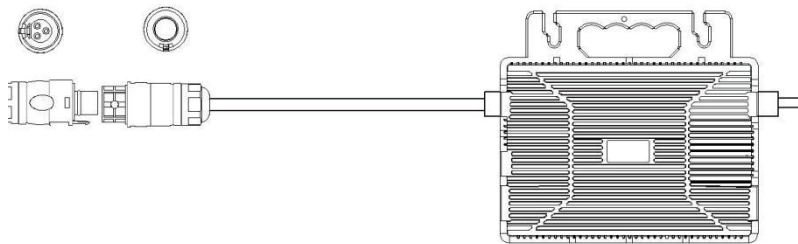
## 4. Ant-800G1-EU Microinverter System Installation

### Step4 Ground the System

Using the grounding lug supplied with the microinverter when working in external grounding.

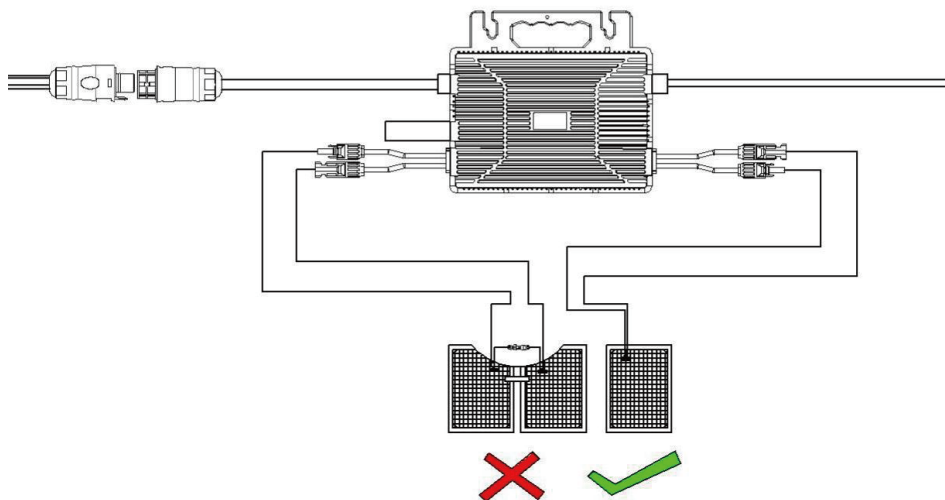
### Step5 Connect the Ant-800G1-EU Microinverter

Insert the AC male connector of the microinverter into the AC female connector to be connected, the AC connector interface is as follows. Make sure to hear the “click” as a proof of connection.



### Step6 Install a Bus Cable End Cap at the End of AC Bus Cable of the Microinverter.

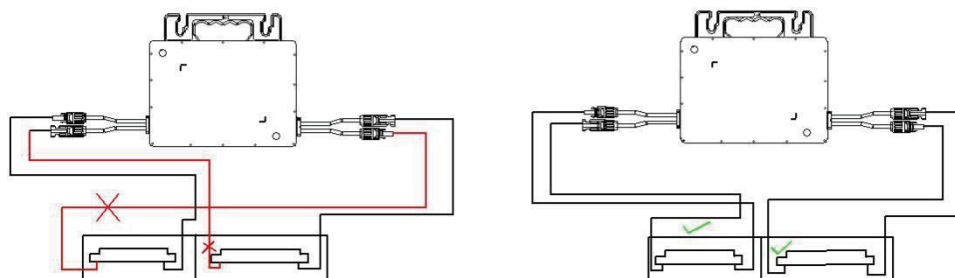
### Step7 Connect Ant-800G1-EU Microinverters to the PV Modules



#### WARNING

The connection cable between the PV module and Ant-800G1-EU Microinverter must be less than 3 meters.

## 4. Ant-800G1-EU Microinverter System Installation



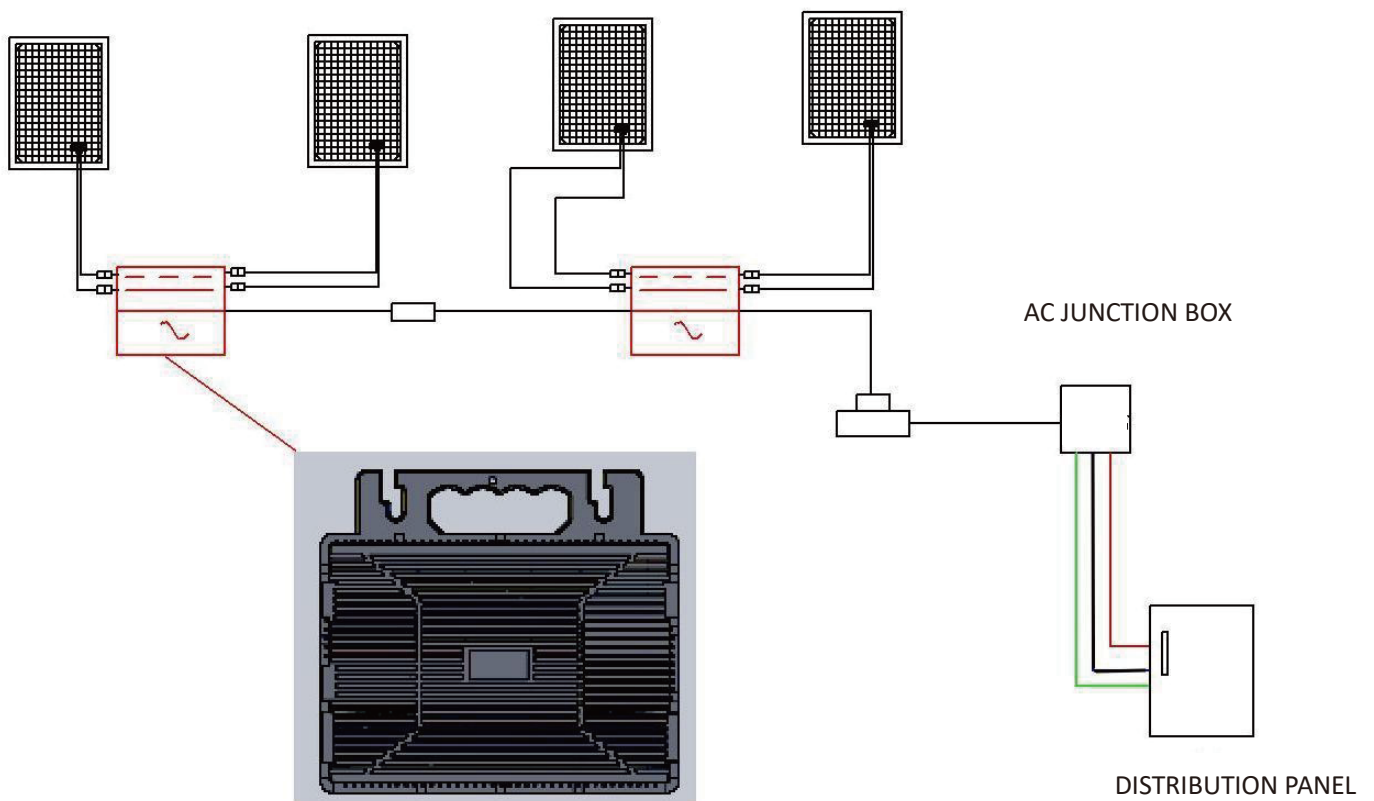
### WARNING

Make sure all of the AC and DC wiring has been correctly installed. Ensure that none of the AC and/or DC wires are pinched or damaged. Make sure that all of the junction boxes are properly closed.

### WARNING

Make sure each PV panel must be carefully connected to the same channel.

## Step8 Connect Ant-800G1-EUMicroinverter to Grid



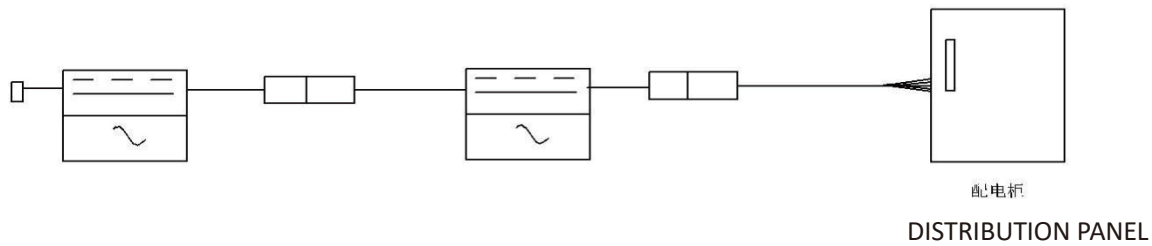
### NOTICE

1. Please install AC breakers with proper rated current according to the local regulation at the grid-connected side (air-break switch).
2. To avoid triggering the protection system by mistake, leakage current breakers are not recommended to install.

## 4. Ant-800G1-EU Microinverter System Installation

### Step9 Use of AC Extension Cable

When AC extension cable is needed, users could connect the AC bus cable and AC extension cable that Ant-800G1-EU provides (optional accessory).



## 5. Ant-800G1-EU Microinverter System Operating Instructions

### To Operate the Ant-800G1-EU Microinverter PV System:

1. Turn ON the AC circuit breaker on each microinverter AC branch circuit.
2. Turn ON the main utility-grid AC circuit breaker. The system will start producing power after approximately one minute of waiting time.
3. LED sequences of the microinverter could be an indicator of microinverter status.

## 6. Troubleshooting

Qualified personnel can use the following troubleshooting steps if the PV system does not operate correctly:

### 6.1 Status Indications and Error Reporting

Operation LEDs can give a good indication of the microinverters status.

#### Operation LED

LEDs does not light up: please check the DC side wiring, or please contact your local distributor.

Steady Red – Hardware default, please check the monitoring platform for more details.

Steady Green-Producing power.

### 6.2 Trouble Shooting Guide

Before going to the site for troubleshooting, the installers can also use their installer accounts to check all information remotely, either on the web or using the mobile app. Access to the module data (DC, AC, voltage and current) provides an initial overview of potential problems. Professional installers can also refer to our Troubleshooting Guide, a detailed guide to troubleshooting and repairing PV installations with Ant-800G1-EU Microinverters.

### 6.3 Ant-800G1-EU Technical Support

The Ant-800G1-EU Technical Support team is available to support professional installers in becoming familiar with our products and to troubleshoot installations when needed.

### 6.4 Troubleshooting for Ant-800G1-EU Microinverter Downtime

Ant-800G1-EU Microinverters do not require any specific regular maintenance.

#### WARNING

Do not attempt to repair Ant-800G1-EU Microinverters. If troubleshooting fails, please return to the manufacturer for replacement.

#### WARNING

Only qualified personnel can access Ant-800G1-EU Microinverter troubleshooting operations.

#### WARNING

- ① Never disconnect the DC wire connectors under load. Ensure that no current is flowing in the DC wires prior to disconnecting.
- ② Always disconnect AC power before disconnecting the PV module wires from the Ant- 800G1-EU Microinverter.
- ③ The Ant-800G1-EU Microinverter is powered by PV module DC power.

## 7. Replace a Microinverter

Follow the procedure to replace a failed Ant-800G1-EU Microinverter

- A. Disconnect the Ant-800G1-EU Microinverter from the PV Module, in the order shown below:
  - 1. Disconnect the AC by turning off the branch circuit breaker.
  - 2. Disconnect the inverter AC connector from the AC Bus.
  - 3. Disconnect the PV module DC wire connectors from the microinverter.
  - 4. Remove the microinverter from the PV array racking.
  
- B. Install a replacement microinverter to the rack. Remember to observe the flashing LED light as soon as the new microinverter is plugged into the DC cables.
  
- C. Connect the AC cable of the replacement microinverter to the AC bus.
  
- D. Close the branch circuit breaker, and verify proper operation of the replacement microinverter.



## 8. Technical Data

### WARNING

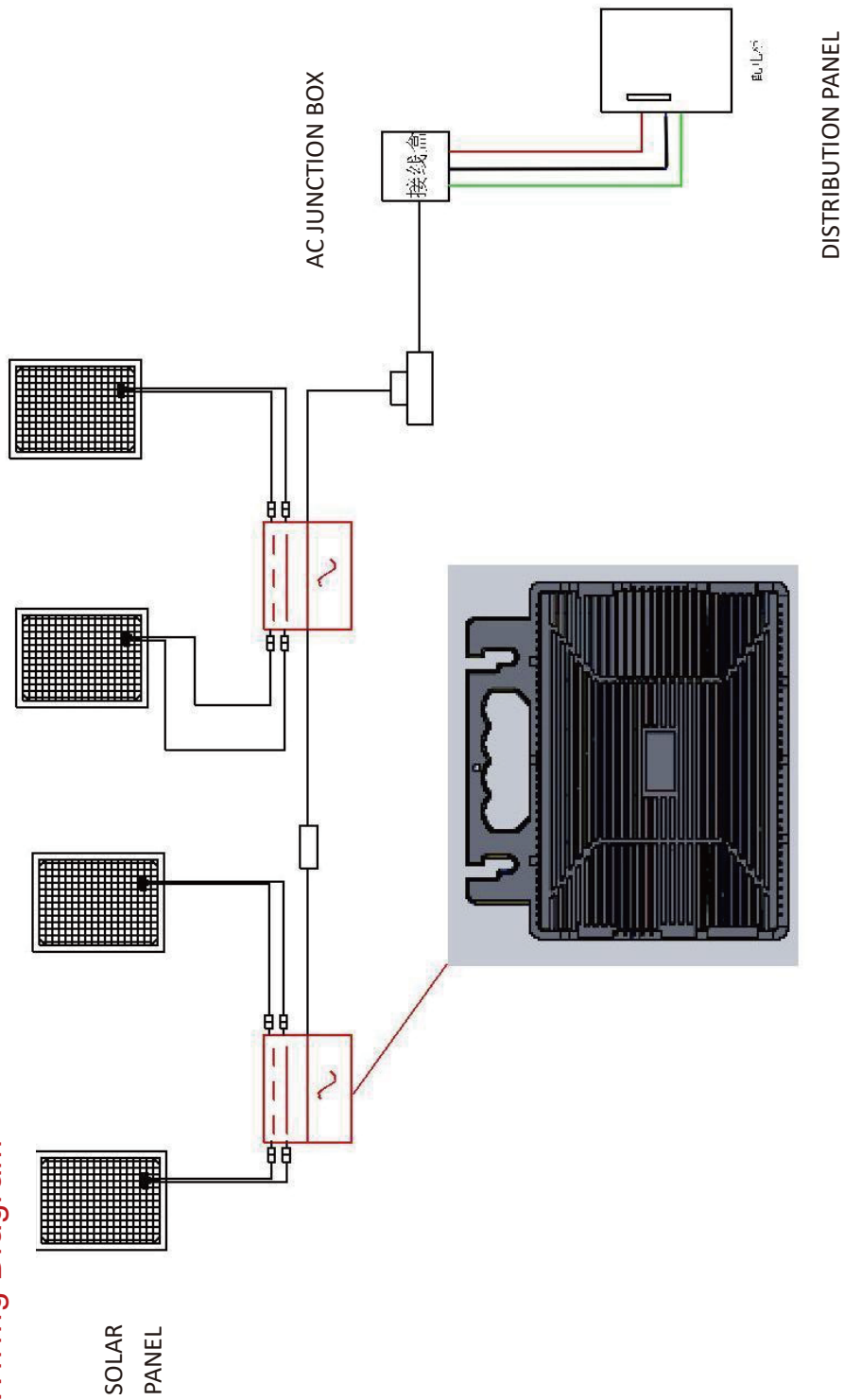
- ① Be sure to verify that the voltage and current specifications of your PV module are compatible with the range allowed on Ant-800G1-EU Microinverter.
- ② DC operating voltage range of the PV module must be within allowable input voltage range of the Ant-800G1-EU Microinverter.
- ③ The maximum open circuit voltage of the PV module must not exceed the specified maximum input voltage of the Ant-800G1-EU Microinverters.

## 8.1 Ant-800G1-EUMicroinverter Datasheet

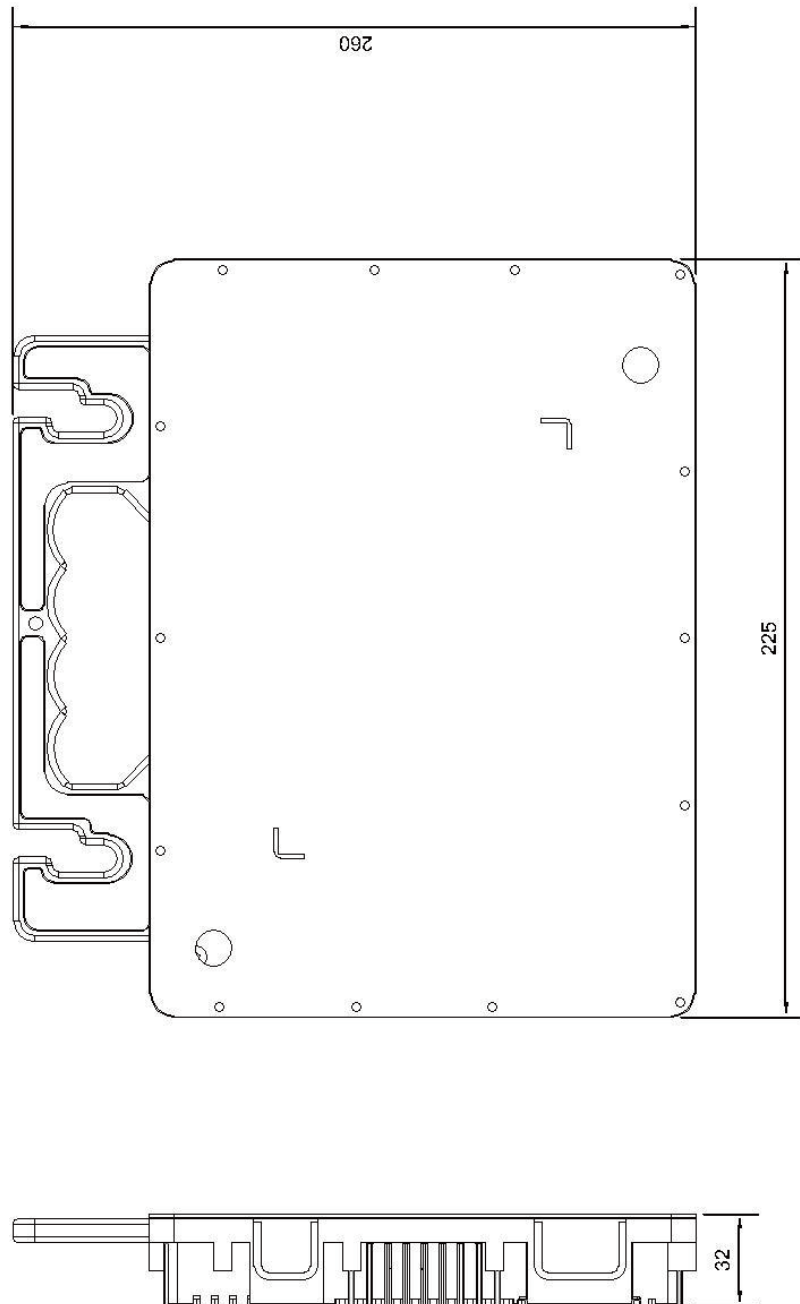
<b>Model</b>	<b>Ant-800G1-EU</b>
<b>Input Data (DC)</b>	
Recommended PV Module Power	210W-500W
Start-up Voltage	20V
MPPT Voltage Range	25-55V
Max. Input Voltage	60V
Max. Input Current	13.5A*2
Max. DC Short Circuit Current	16.5A*2
Number of MPPTs	2
<b>Output Data (AC)</b>	
Max. Continuous Output Power	800W
Nominal Output Voltage	230V
Extended Output Voltage Range	184-253
Nominal Output Current	4A
Nominal Frequency/Range	50Hz/45 - 55
Power Factor	>0.99 default
Total Harmonic Distortion (THD)	<3%
Max. Units Per Branch	4
<b>Efficiency</b>	
Peak Efficiency	96.00%
CEC Efficiency	95.5%
Static MPPT Efficiency	>99.50%
Night Time Power Consumption	<50mW
<b>Mechanical Data</b>	
Ambient Temperature Range	-40°C ~ +65°C
Dimensions(WxHxD)	260mm*225mm*32mm
Weight	2.9kg
Enclosure Rating	IP 67
Cooling	Natural Convection-No Fans
Type of Isolation	High Frequency Transformers
<b>Monitoring &amp; Communication</b>	
Communication	WiFi
Energy Management	Solarman Online Platform
<b>Certifications &amp; Warranty</b>	
Certifications	IEC62109; IEC61000; VDE4105
Warranty	10 Years Standard

# 9. Appendix

## 9.1 Sample Wiring Diagram



## 10. Dimension





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