

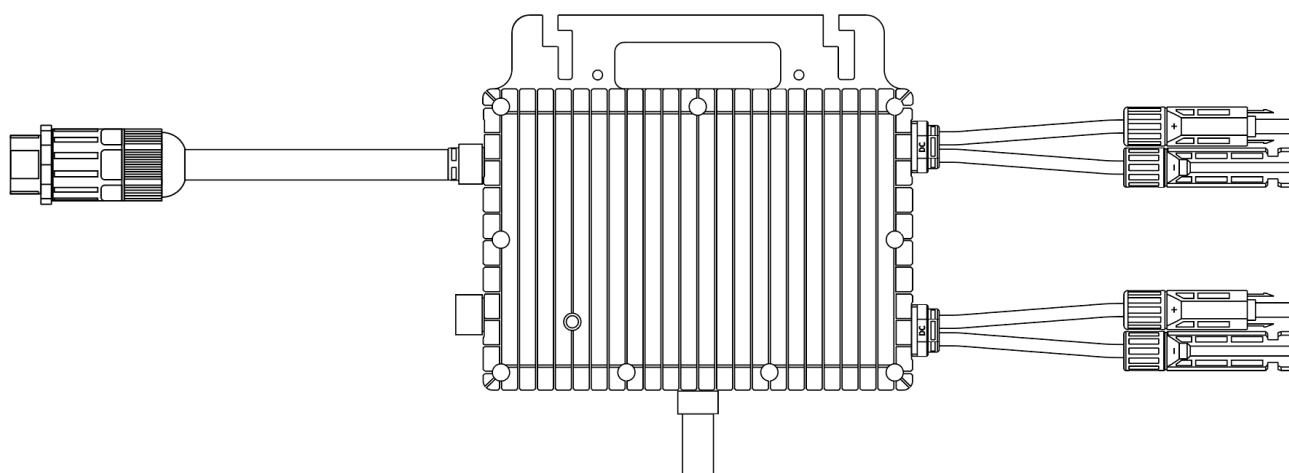


广州北极光新能源技术有限公司

Guangzhou Sunord New Energy Technology Co., Ltd.

User Manual

SMI-600 Intelligent Grid-tied Microinverters



Preamble

About Microinverter

The Sunord SM-600 microinverters efficiently convert direct current (DC) into alternating current (AC) and feed it into the public grid in accordance with grid codes.

Each SM-600 microinverter can operate independently and monitor electricity generation of each PV module in real time. This feature provides a high degree of flexibility and reliability, ensuring that each PV module generates sufficient power and users can directly control the production of a single PV module.

About the manual

This manual is about important instructions for the SM-600 microinverters and should be read by the user before installing or commissioning the microinverters. For safety purposes, technicians responsible for the installation, operation and maintenance of this microinverter must be qualified, trained and skilled, and should strictly follow the instructions in the manual when using the microinverters.

About Safety

Sunord SM-600 microinverters are designed and tested in strict accordance with relevant national safety standards. However, the installation, commissioning and maintenance of this equipment must be complied with relevant safety standards. Therefore, incorrect operation will cause damage to:

- ① Safety of the user or a third party.
- ② Other property of the user or a third party.

To ensure safe installation and operation of the microinverter and to minimize the risk of electric shock, this manual will use the following safety symbols to indicate some safety warnings. Precautions during the specific operation will be detailed in the corresponding chapters.



Danger: Indicates a dangerous situation that may cause a fatal electrocution, serious physical injury, or fire hazards.



Warning: Indicates directions which must be fully understood and followed in their entirety to avoid potential safety hazards, including equipment damage or personal injury.



Caution: Under the premise of ensuring personal safety , the reader should use with caution and fully understand the operations explained before proceeding.

About Safety

The SM-600 Microinverter is designed and tested according to international safety requirements. However, the installer and users must read and follow all instructions, precautions and warnings in this installation manual.

- only a qualified technician who has received training may install and replace this microinverter under the guidance of this document.
- Before installation, check the unit to ensure that it is free of any transport damage. If there is damage or abnormal noise, the insulation integrity or safety clearances of microinverters may be affected. Choose an installation location carefully and adhere to the specified cooling requirements. Unauthorized removal of necessary protections, improper use, and incorrect installation and operation may result in serious safety and shock hazards or equipment damage.
- Do not install the equipment in adverse environments, such as environments that are flammable, explosive, corrosive, extremely hot or cold, or humid. Do not use the equipment when the safety devices do not work or are disabled.
- Before connecting the microinverter to the power distribution grid, contact the local power distribution grid company to obtain the appropriate approvals. This connection must be made only by qualified technical personnel. It is the responsibility of the installer to provide external disconnect switches.
- Please read all instructions and warnings in this manual and the warning labels on the microinverter and solar array before installing and using the SM-600 microinverter. Always wear personal protective equipment such as protective gloves and goggles during installation.
- To avoid the risk of burns, do not touch the SM-600 microinverter housing directly while operating. Case temperature up to 80°C.
- All repairs should be carried out by using only qualified spare parts, which must be installed in accordance with their intended use and by a licensed contractor or authorized Sunord service representative.
- In case of non-standard installation conditions, please consult the manufacturer. Sunord will accept no liability for damage due to the use of components produced by other manufacturers.
- Disconnect AC power before disconnecting the Sunord SM-600 microinverter from the

solar module.

- Electrical Installation & Maintenance shall be conducted by a licensed electrician and shall comply with local wiring regulations. Sunord accepts no liability for damage due to incorrect or improper operation.
- Do not try to repair or disassemble the microinverter. In the event of a failure, please contact Sunord customer service to obtain a return-product authorization code and start the return process. If the microinverter is destroyed or disassembled without permission, it will not be guaranteed.

Radio Interference Statement

This microinverter has been tested and found to comply with the limits for CE EMC, which provides reasonable protection against harmful energy. However, if not installed according to the instructions, the microinverter may cause harmful interference to radio equipment. To confirm that the radio or television reception is affected by interference from this equipment, turn the equipment off and on to test it. If this equipment causes harmful interference to the radio or television equipment, try to correct the interference through one or more of the following measures:

- 1) Relocate the receiving antenna.
- 2) Increase the separation between the microinverter and the receiving antenna.
- 3) Place a shield between the microinverter and the receiving antenna, such as a metal / concrete roof.
- 4) Contact your dealer or an experienced radio/TV technician for help.

其他信息

Other Information

Product information is subject to change without notice. This user manual will be frequently updated. Please refer to Sunord official website at www.sunordenergy.com for the latest version.

Contents

一、 About Product	1
1.1 Technical Specification	1
1.2 Dimension	3
1.3 Terminals Introduction	4
1.4 Status LED Indicator	4
二、 About Safety	5
2.1 Notes.....	5
2.2 AC system installation and usage diagram.....	6
2.3 Installation Accessories.....	6
2.4 ONVIF、 ONVIF-XVR.....	17
2.5 Haikang SADP.....	24
2.6 RTSP Player	25

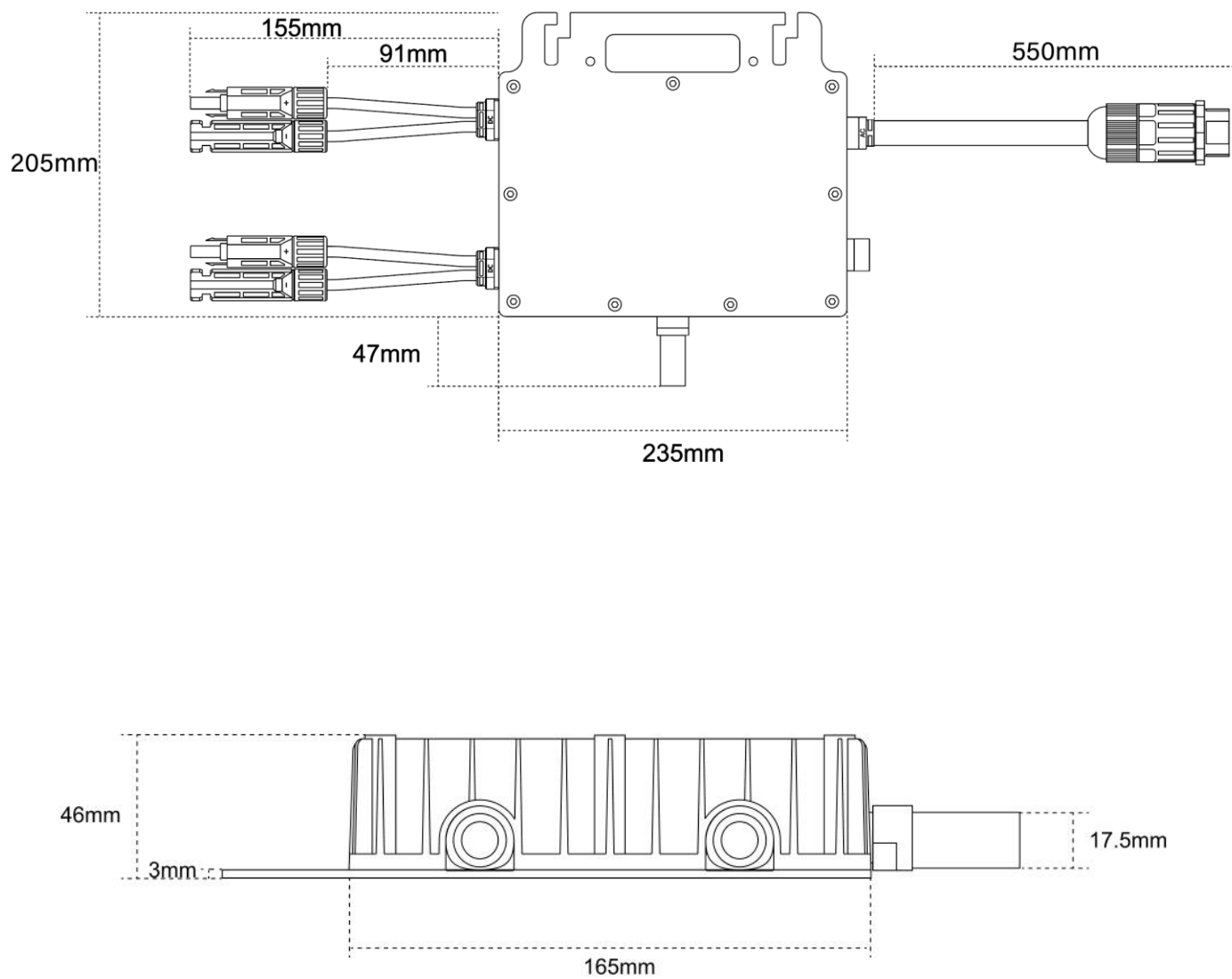
一、About Product

1.1 Technical Specification

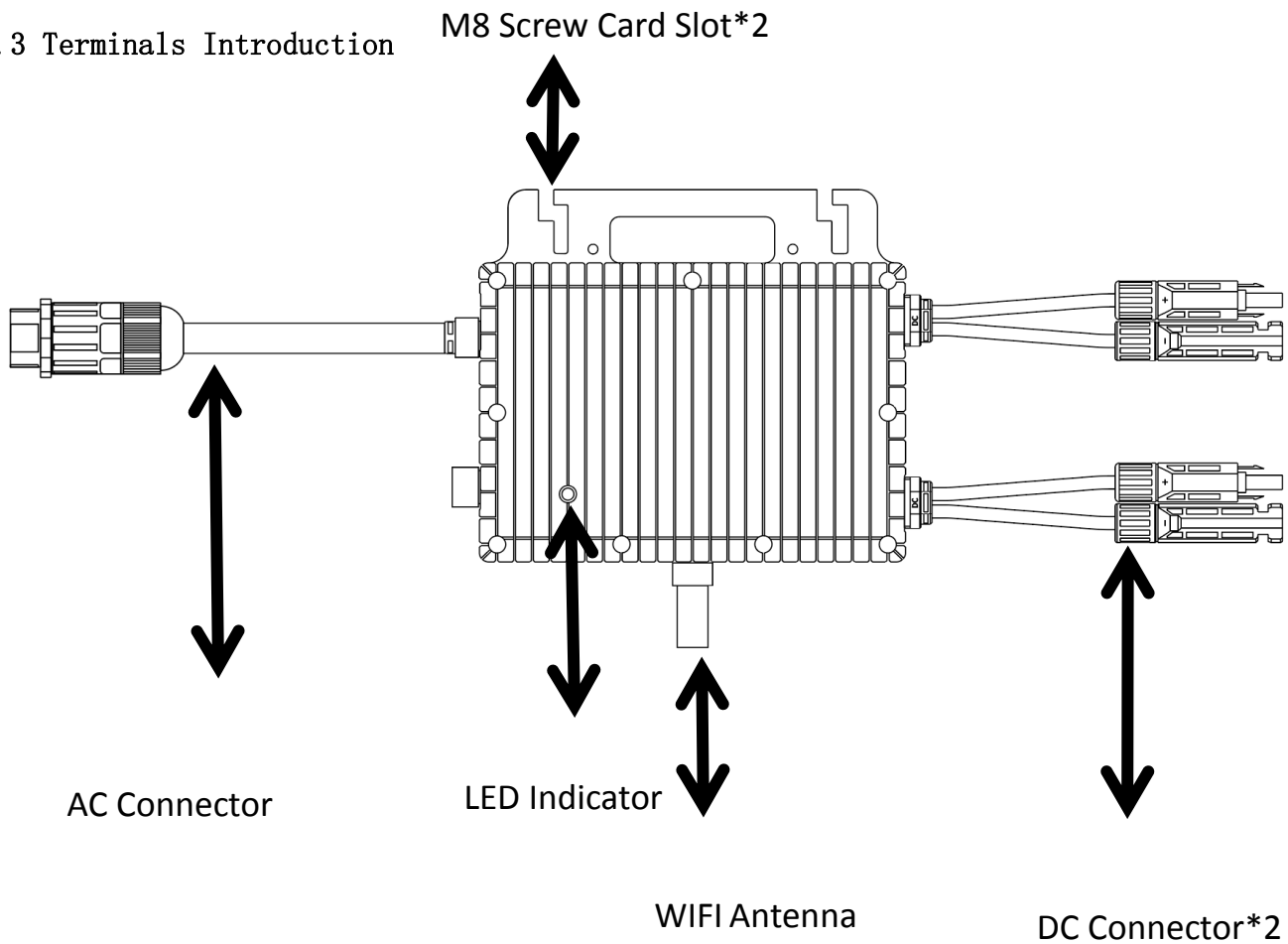
Technical Specification	
Model	SM-600D-2T
DC Input Voltage (V)	20 - 60
Commonly used module power (W)	550
Maximum input voltage (V)	55
MPPT Voltage Range (V)	22-55
Start-up Voltage (V)	22
Maximum Input Current (A)	2*11.5
Maximum Input Short-circuit Current (A)	2*13.6
Number of MPPTs	1
Maximum number of input of photovoltaic modules	2
Maximum Input Current (W)	595
Rated Output Current (A)	2.7
Nominal Output	220-240

Voltage Range (V)	
Nominal Frequency range (Hz)	50Hz
Peak Power Efficiency	>95%
MPPT Efficiency	>98%
Night Time power Consumption (mW)	<50
Ambient Temperature Range (°C)	-40 ~ +65
Dimensions (长*宽*高 mm)	298*235*46
Weight (kg)	
Enclosure rating	IP67
Cooling	Natural convection
Protection	a. Islanding Protection; b. Frequency Protection; c.AC Overvoltage/Undervoltage Protection; d.DC Overvoltage/Undervoltage Protection
Power Transmission Mode	In reverse transmission, the load takes precedence
Communication	WIFI
	2.4Ghz Wireless Cloud Platform

1.2 Dimension



1.3 Terminals Introduction



1.4 Status LED Indicator

(1) Startup Process

- Blue light flashes(5 times): startup success
- Red light flashes(5 times): startup failure.
- Normal operation indicators flashing process: The microinverters are successively connected to the AC→DC connectors, and power on → red light is on for 3 seconds→red light flashes for 30 seconds→blue light flashes(MPPT Maximum power point search)→Blue light keeps on, (MPPT locks)。

(2) Running Process

- Blue light flashing: Producing power.
- Slow blue light flashing: Producing power, but one input is abnormal
- Red flashing: Not producing power, AC grid fault
- Red keeps on: hardware failure; Please refer to the Sunord Monitoring Platform for details, or contact your installer for technical support.

(3) Other Status

- Alternating red and blue flashing: Firmware is corrupted.



Note:

The microinverter has DC power supply. If the LED indicator on the body of the microinverter is not on, check the DC connector. If the DC connector and input voltage are normal, but the LED indicator is still off, contact your local dealer or Sunord

technical support team. Do not disassemble and repair the microinverter without permission.

二、Installation Precautions

2.1 Note: The device must be installed according to the following system design requirements.

1. Installation of Microinverter:
Ensure the mechanical compatibility of the microinverter DC connector with its connected PV module connector.
Installing a microinverter without ensuring that the module connector is compatible with the microinverter DC connector is unsafe and can cause functional problems such as a ground failure that can shut down the microinverters. When installing, disconnect the device from the power grid (disconnect the isolation switch), and shield or isolate the photovoltaic module.
Ensure that the mounting surface or structure can support the weight of the microinverter and bracket, and ensure that its width exceeds the bracket width.
Install the microinverter using the existing holes, do not drill any additional holes in the inverter.
Drilling holes in the frame of a microinverter may void the warranty. Consult the microinverter manufacturer before drilling holes.
A hole in the frame of a microinverter may reduce its structural strength or cause damage to it, and the specific location of the hole needs to be evaluated and confirmed by the manufacturers.
Do not use a percussion drill to install a microinverter. Drilling vibration may damage the micro inverter and void the warranty.
Use a torque wrench or a drill with an adjustable clutch that meets mounting torque requirements.
2. AC Accessories Installation:
Refer to the Technical Specification to ensure that the environmental conditions fit the requirements of the microinverter (degree of protection, temperature, humidity, altitude, etc.)

Installation of the microinverters is carried out based on the system design (provided by installers) .

To avoid overheating, always make sure that the air flow around the microinverter is not blocked.

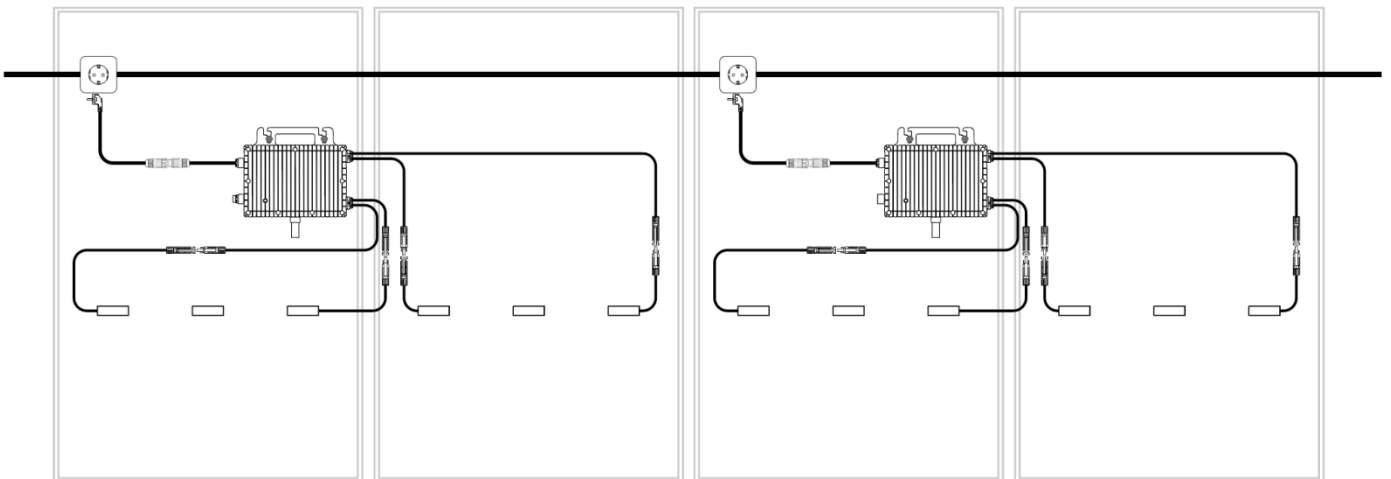
Do not install in places where gases or flammable substances may be present, and avoid electromagnetic interference that can compromise the correct operation of electronic equipment.

To avoid muscle strains or back injuries, use the appropriate lifting equipment to deliver the microinverters, and use lifting AIDS when needed.

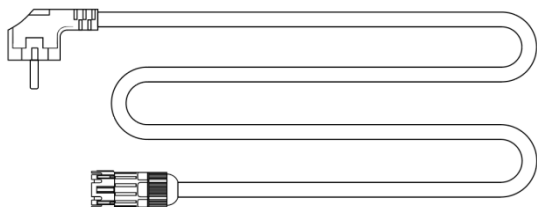
2.2 AC System Installation Diagram

As shown in the following wiring diagram, in the AC module system, the micro inverter is installed on the photovoltaic module bracket. The output end of the AC side of the micro inverter is connected to the AC bus, and then the electricity can be transported to the distribution box and the local power grid through the AC bus.

Installation Ways:



2.3 Accessories



Program	Specification/Mode
European Plugs	AC Power Waterproof Connector 3P 3*1.5 1.5M
M8 Screw	Stainless Steel M8*20 washer for screw

FCC WARNING

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception,

which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum 20cm distance between the radiator and your body: Use only the supplied antenna.

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