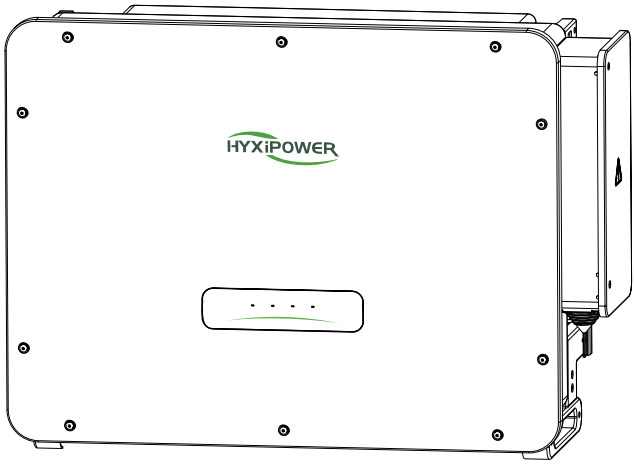
HYXI | HYXiPOWER

User Manual

STRING INVERTER

HYX-S250K-HT / HYX-S305K-HT /
HYX-S320K-HT / HYX-S333K-HT / HYX-S350K-HT



Carefully read this user manual before using the product.
Read and save these instructions.

TRADEMARKS

Contents

Preface

This manual provides the user with product information, detailed installation instructions, usage guidelines, troubleshooting tips, and daily maintenance of the PV inverter.

To ensure the proper installation and use of the inverter and its superior performance, before handling, installation, operation and maintenance of the inverter, please read the instruction manual in detail and follow it.

Please read the operating instructions in detail and follow all safety precautions in the instructions.

Scope of Application

This manual is intended for the following device:

- HYX-S250K-HT
- HYX-S305K-HT
- HYX-S320K-HT
- HYX-S333K-HT
- HYX-S350K-HT

For Readers

This manual is intended for professional technicians who need to install, operate and maintain the product and for users who need to check the product parameters.

All installation operations must be carried out by professional technicians and only by professional technicians.

Use of the Manual

Please read the manual carefully before using the product, the content of the manual will be updated and corrected, but it is inevitable that there is a slight discrepancy or error with the actual product. Users should refer to the actual product purchased and obtain the latest version of the manual by downloading from www.hyxipower.com or through sales channels.

The latest version of the manual is available for download at or through sales channels.

Use of Symbols

To ensure user safety and property protection during product use, relevant information is provided and highlighted with the following symbols.

⚠ DANGER

- Indicates a high potential hazard that, if not avoided, could result in death or serious injury.

⚠ WARNING

- Indicates a moderate potential hazard that could result in death or serious injury if not avoided.

⚠ CAUTION

- Indicates a low potential hazard which, if not avoided, could result in moderate or minor injury.

NOTICE

- Indicates a potential risk which, if not avoided, could result in the equipment not functioning properly or in property damage.

1 Safety Precautions

1.1 General Safety

All relevant safety regulations must be followed during the processes of product installation, trial operation, operation and maintenance. Improper use or misuse may result in:

- Endanger the life and personal safety of the operator or a third party.
- Damage to the product or other property belonging to the operator or a third party.

To avoid the above hazards, strictly follow the safety precautions in the manual.

⚠ DANGER

- It is strictly prohibited to operate the product under adverse weather conditions such as thunderstorms, rain, snow, and winds of force 6 or above (including but not limited to handling, installation, electrical connection, power-on, maintenance, and high-altitude operations, etc.). Hyxi Technology Co., Ltd. shall not be held responsible for any equipment damage caused by earthquakes, floods, volcanic eruptions, mudslides, lightning strikes, fires, wars, armed conflicts, typhoons, hurricanes, tornadoes, extreme weather or force majeure.
- In case of fire, evacuate the building or product area and call the fire alarm number. Under no circumstances should one re-enter the burning area.
- When using tools to secure products or terminals, please tighten them to the specified torque. Otherwise, it may cause damage to the product. Such damage will not be covered by the warranty. Before using the tools, please master the correct usage method to avoid injuring people and damaging the equipment.

ⓘ NOTICE

- The "DANGER", "WARNING", "CAUTION", and "NOTICE" items in the manual do not include all safety precautions that should be observed. All work should be carried out in combination with the actual situation on site.
- This equipment must be used in an environment meeting design specifications; otherwise, equipment failure may occur. Any resulting functional abnormalities, component damage, personal injury, or property loss will not be covered by the warranty.
- The installation, operation and maintenance of the equipment should comply with local and national laws, regulations and codes. The safety precautions in this manual are only supplementary to the local and national laws and regulations.

1.2 Electrical Safety

⚠ DANGER

PV modules exposed to sunlight will generate dangerous voltages !

- When performing electrical connection operation, the operator must wear personal protective equipment.
- Before touching the DC cable, always use the measuring device to ensure that the cable is not live.
- Follow the safety precautions listed in the PV modules and related documentation.
- The inverter cannot be connected to PV modules that require positive or negative grounding.

⚠ DANGER

There may be fatal high voltages inside the product !

- When wiring, make sure to use special insulation tools.
- Pay attention to warning labels on products and follow their safety instructions.
- Follow the safety precautions listed in this manual and other related documents for this product.

⚠ WARNING

- Before connecting the DC connector to the inverter, please first check the positive and negative polarity of the PV module, confirm that there is no error before inserting the DC connector into the corresponding DC terminal.
- During the installation and operation of the inverter, please ensure that the positive or negative electrodes of the PV modules do not short-circuit to the ground. Otherwise, it may cause an AC or DC short-circuit in the inverter, resulting in product damage. Such damage will not be covered by the warranty.
- No load can be connected between the inverter and its directly connected AC circuit breaker to avoid mistripping of the switch.
- Please select the appropriate AC circuit breaker in strict accordance with local laws and regulations, safety standards or the recommended value requirements of the company. Otherwise, it may not be disconnected in time under abnormal circumstances, resulting in safety accidents.

ⓘ NOTICE

- Before making electrical connection, make sure the inverter is not damaged, otherwise it could be dangerous !
- Before electrical connection, make sure that the inverter and all switches connected to it are in the "OFF" state, otherwise it may lead to the risk of electric shock !
- Cables are not allowed to pass through the inlet and outlet of the equipment.

1.3 Operational Safety

⚠ DANGER

High temperatures may cause the insulation layer of cables to age and be damaged. A distance of at least 30mm should be maintained between cables and the periphery of heat-generating devices or heat source areas.

When the product is in operation, please note the following matters:

- Do not touch the shell of the product.
- Do not plug or unplug all connectors on the inverter.
- Do not touch any terminals of the inverter, or it may cause electric shock.
- Do not remove any parts of the inverter, or there may be a risk of electric shock.
- Do not touch the hot parts of the inverter (such as the heat sink, etc.), otherwise there may be a burn hazard.
- Do not connect or disconnect a string or a component in a string, otherwise it may cause electric shock.

1.4 Maintenance Safety

⚠ DANGER

Improper maintenance operation may result in personnel injury or product damage!

- Before maintenance operation, disconnect the grid side AC circuit breaker, and then disconnect the DC switch. If you find a fault that may cause personal injury or equipment damage before maintenance operation, please disconnect the AC circuit breaker and wait until night before operating the DC switch, otherwise it may cause internal fire or explosion of the inverter, resulting in human injury !
- After the inverter is powered off for 25 minutes, use testing equipment to test to ensure that there is no voltage and current, and wear protective equipment to operate and maintain the inverter.
- After the product was shut down, there is still a burn damage. After the product has cooled down, protective gloves should be worn before operating on it. Touching the power grid or the contacts, terminals, etc. inside the product that are connected to it poses an electric shock risk !
- Voltage may be generated on the grid side, and a standard voltmeter should be used to confirm that there is no voltage before touching.

⚠ CAUTION

- In order to prevent unrelated personnel from misoperation or accidents near the product, please place a conspicuous warning sign or set up a safety warning belt around the product.

NOTICE

- When the shell paint of Inverter drops or rusts, please repair in time, otherwise it may affect the use of inverter.
- When cleaning the inverter, please avoid using cleaners, otherwise it may cause damage to the inverter, and the resulting loss will not be covered by the warranty.
- The inverter does not contain parts that need to be maintained. Do not open the inverter chassis (excluding the junction box) and replace the inverter internal components without authorization, otherwise the loss caused by this will not be covered by the warranty.
- In order to reduce the risk of electric shock, do not perform other maintenance operations outside of this manual. If necessary, please contact Hyxi Technology for repairing. Otherwise, any losses caused thereby will not be covered by the warranty.
- Do not open the AC junction box in rain and snow weather. If it is unavoidable, please take protective measures to prevent rain and snow from entering the AC junction box and affecting the operation of the product.
- Before closing the AC junction box, check whether there are any objects left in the AC junction box, such as screws, tools, etc.
- It is recommended that users use a cable sheath to protect the AC cable. If the user uses a cable sheath, please ensure that the cable sheath is located in the AC junction box.

2 Product Overview

2.1 Product Description

The HYX-S(250-350)K-HT is a three-phase string photovoltaic grid-connected inverter. The main function of a three-phase string photovoltaic grid-connected inverter is to convert the direct current generated by photovoltaic modules into alternating current and feed the electrical energy into the power grid.

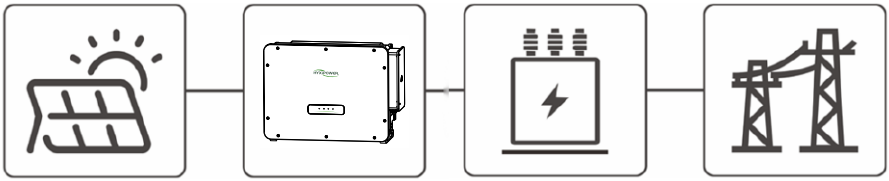
DANGER

- The inverter cannot be connected to PV modules that require positive or negative grounding.
- During the installation and operation of the inverter, please ensure that the positive or negative electrodes of the PV modules do not short-circuit to the ground. If there is a short-circuit, it may cause an AC or DC short-circuit in the inverter, resulting in equipment damage. The damage caused thereby will not be covered by the warranty.
- Do not connect local loads other than the tracking shaft between the inverter and the AC side breaker.
- The inverter is only suitable for the scenario described in the manual and not for other occasions.

NOTICE

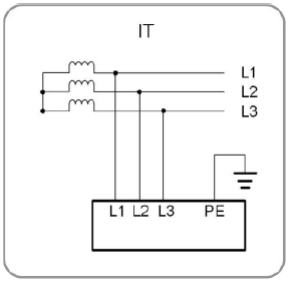
- When designing the system, please ensure that all devices connected to the inverter comply with the specification requirements of the inverter. The PV modules used in the system must comply with class II of 61730-1 (2016).

The typical application scenarios of inverters are shown in the following figure:

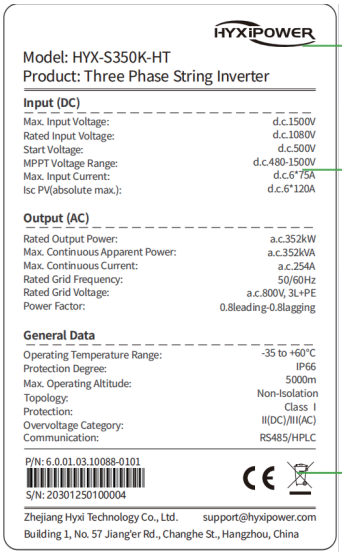


A B C D

Name	Description	Note
A	PV module	Monocrystalline silicon, polycrystalline silicon, thin-film batteries that do not require grounding.
B	Inverter	HYX-S(250-350)K-HT
C	Step-up transformer	Raise the output voltage of the inverter to a level that meets the requirements of the power grid.
D	Grid	The grid form of the inverter is shown as follows:



2.2 Label Description

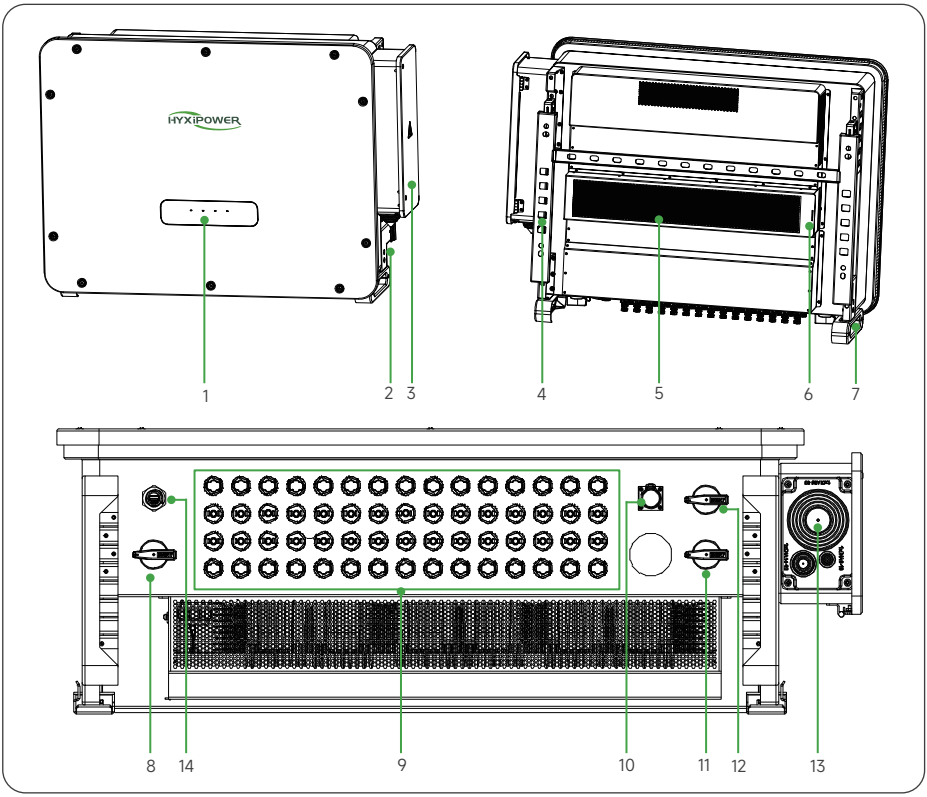


Hyxi trademark, product series and product models.

Product technical parameters

CE marking, product SN and manufacturer information

2.3 Product Appearance

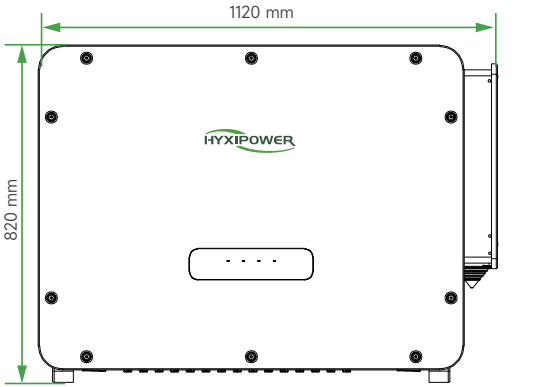


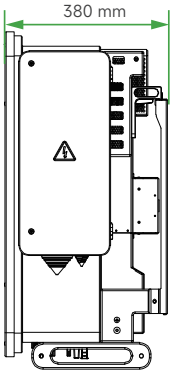
No.	Item	No.	Item
1	LED Indicator light	8	DC Switch 3
2	Grounding protection point of the outer casing	9	DC input terminal area
3	AC junction box	10	COM communication port
4	Bracket	11	DC Switch 1
5	Heat sink	12	DC Switch 2
6	Fan frame	13	AC terminal block
7	Base handle	14	USB debug port

2.4 Symbols on the Label

Symbol	Description
	There is a fatal danger of high pressure ! Disconnect power for at least 5 minutes before servicing the inverter.
	Hot surface ! Do not touch the inverter enclosure while it is in operation.
	Beware of electric shock! High voltage exists when the equipment is in operation, so when operating the equipment, make sure the equipment is powered off.
	Risk of danger! There are potential hazards when the equipment is in operation, please take precautions when operating the equipment.
	Observe enclosed documentation.
	CE certification mark. The inverter complies with the regulations of CE.
	Do not dispose of the product together with the household waste.
	Grounding point. Reliably grounded before connecting to the power supply.

2.5 Product Size & Weight





weight ≦ 126kg

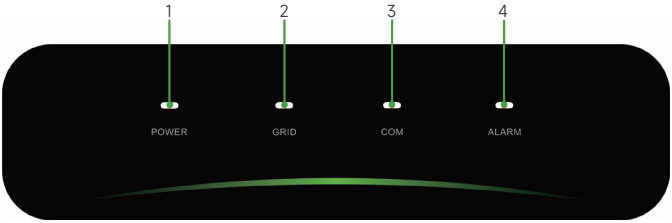
2.6 Instructions for DC Switch

⚠ DANGER

- The DC switch automatically disconnects if the inverter generates a "string reverse connection" or "string current reverse flow" alarm. First, check the fault type using the mobile app. After troubleshooting, wait at least 3 minutes, turn the handle to the "OFF" position to reset the DC switch, and then reclose the switch. For specific steps, please refer to the DC Switch Reset and Closing Operation.
- The DC switch will automatically disconnect if there is an internal fault in the inverter (the alarm/maintenance indicator will be solid red and all three DC switches will automatically disconnect). If the switch is disconnected, please contact the customer service center. Do not close the DC switch by yourself.

The DC switch can safely disconnects the inverter from the PV strings. The inverter is equipped with three DC switches. These switches control the DC terminals in their respective areas. When the equipment detects the reverse connection, reverse irrigation or internal fault of the inverter, the automatic disconnect protection function of the DC switch will be triggered, thus disconnecting the DC input.

2.7 LED Indicator

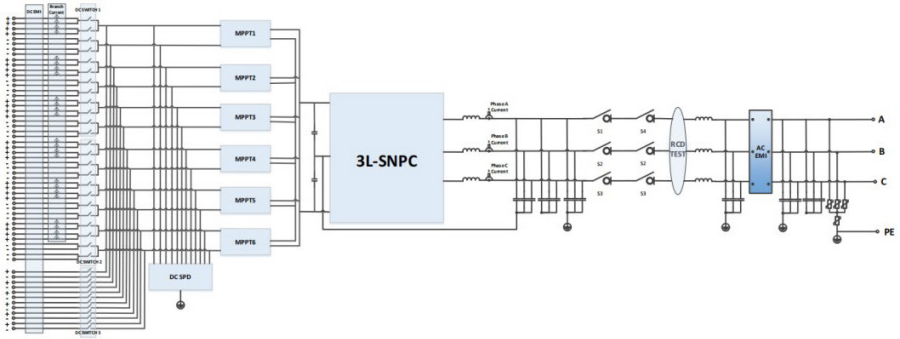


No.	Indicator	Status	Description
1	POWER	ON	Inverter powered on
		OFF	Inverter powered off
2	GRID	ON	Grid normal
		Blinking 1	Grid abnormal
		Blinking 2	Grid disconnected
3	COM.	ON	COM. normal
		OFF	Abnormal meter communication/no meter
4	ALARM	OFF	Normal
		Blinking 1	Inverter internal fault
		Blinking 2	Other faults

* Blinking 1 : Flashing 1 time, with an interval of 1.5 seconds. Blinking 2 : Flashing 2 times, with an interval of 0.2 seconds.

2.8 Description of the Principle

Circuit Diagram



- The DC switch is used to safely cut off the DC current when necessary to ensure the safe operation of the inverter and the safety of personnel.
- The EMI filter filters out electromagnetic interference inside the inverter to ensure that the inverter can meet the requirements of EMC standards.
- The inverter is equipped with a multi-channel MPPT for the DC input , to ensure maximum power even under different PV input conditions.
- The inverter unit converts the DC power into grid-compliant AC power and feeds it into the grid.
- The AC filter filters the high frequency component of the inverter output current to ensure that the output current meets the grid requirements.
- The output relay isolates the inverter AC output from the grid and keeps the inverter safely off the grid in case of inverter or grid failure.
- The AC surge protector (lightning arrester) provides a discharge circuit for the AC side overvoltage energy to prevent the impact of AC side overvoltage from damaging the internal circuit of the inverter.

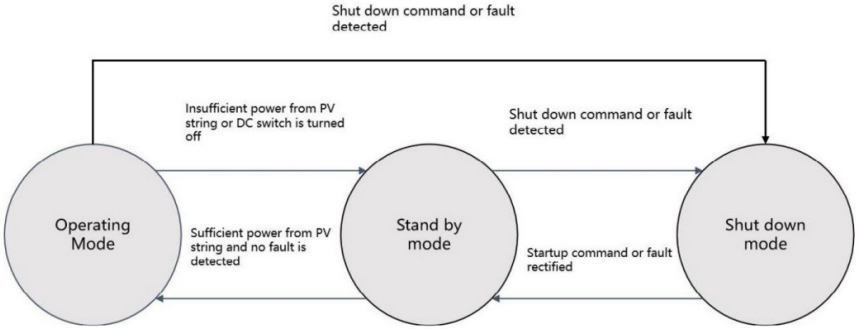
Function Description

Name	Description
Inverter function	The inverter converts direct current into alternating current that meets the requirements of the power grid and feeds it back into the grid.
Data storage and display functions	The inverter stores system information such as operation information and fault records.
Parameter configuration	The inverter offers a variety of parameter configurations. Users can configure the parameters through the HYXiCloud App to meet various requirements or adjust its operational performance to the best.
Communication interface	The inverter provides a standard RS485 communication interface. The standard RS485 communication interface is used to connect to power plant monitoring equipment and upload monitoring data to the monitoring backend via a communication cable. Once the inverter successfully establishes communication with the communication equipment through the communication interface, users can view inverter information and set inverter operation and protection parameters through the smart energy management platform.

Protection function	The inverter is equipped with protection functions such as islanding protection, low-voltage ride-through protection, DC reverse connection protection, AC short circuit protection, leakage current protection, and surge protection.

2.9 Working Mode

The HYX-S(250~350)K-HT has three working modes, the running mode, the standby mode and the shutdown mode.



Working Mode	Explanation
Running mode	In the running mode: • The inverter converts the direct current of the PV into alternating current and feeds it into the grid. • The inverter performs maximum power point tracking to maximize the output energy of the PV. • If the inverter detects a fault or shutdown command, it will enter the shutdown mode. • If the inverter detects that the output power of the PV can not meet the conditions of grid-connected power generation, it will enter the standby mode.
Standby mode	Standby mode mainly means that the external environment does not meet the operating conditions of the inverter. In standby mode: • The inverter continuously performs state detection, and once the operating conditions are met, it enters the running mode. • If the inverter detects a shutdown command or a fault is found during startup detection, it enters shutdown mode.
Shutdown mode	• In standby or running mode, if the inverter detects a fault or shutdown command, it will enter the shutdown mode. • In shutdown mode, if the inverter detects that the fault has been cleared or a startup command is issued, it enters standby mode.

3 Inspection & Storage

3.1 Safe Transport of Inverter

When transporting the inverter, the original or equivalent packaging should be used, and the maximum layers for original carton is three, as this ensures safe transport.

3.2 Unpacking and Inspection

The equipment has been completely tested and strictly inspected before leaving the factory, but it may still be damaged during transportation, please make a detailed inspection before signing the product.

- Check whether there is any damage to the packing box.
- Check if the goods are complete and in accordance with the packing list.
- Unpack and check if the equipment inside is intact.
- If there is any damage or incomplete goods, please contact with the shipping company or directly with Zhejiang Hyxi Technology Co., Ltd.
- Provide photos of the damage to facilitate the provision of services.

3.3 Inverter Storage

If the inverter is not immediately put into use, it is necessary to meet the following requirements when storing the inverter:

- Do not remove the outer packaging of the inverter.
- The inverter needs to be stored in a clean and dry place and protected from dust and water vapor.
- The storage temperature should be kept at -30°C to +60°C and the relative humidity should be kept at 5~95% RH (non-condensating).
- When stacking multiple inverters, it is recommended that they be placed in the same number of layers as originally shipped.
- Please place the inverters carefully to avoid personal injury or equipment damage caused by tipping the equipment.
- Avoid chemically corrosive substances, otherwise it may corrode the inverter.
- During the storage period, regular inspection is required. If insects and rodents bite the inverter or damage the packaging, the packaging material should be replaced in time.
- After long-term storage, the inverter needs to be inspected and tested by professionals before it can be put into use.
- Please do not dispose of the original packaging of the equipment. It is better to store the equipment in the original box after it is dismantled.

4 Mechanical Installation

4.1 Installation Precautions

⚠ DANGER

- Before installing the inverter, be sure that the inverter is free of any electrical connections.
- Make sure to avoid the utility alignments in the wall before drilling holes to avoid any danger.

⚠ CAUTION

- The instructions in the manual must be followed when handling and placing the equipment.
- Improper handling of the equipment may result in minor, serious or contusive injuries.
- The equipment heat sink must be kept uncovered to ensure adequate cooling inside the equipment.
- In order to prevent unrelated personnel from misoperation or accidents near the product, please place a conspicuous warning sign or set up a safety warning belt around the product.

4.2 Unpacking for Confirmation

The inverter has been completely tested and rigorously inspected before leaving the factory, but damage may still occur during transport. Check carefully before unpacking. Check that the product information on the order and box nameplate is consistent and that the product packaging is intact.

If any damage is detected, please contact the shipping company or contact the supplier directly and provide photos of the damage to facilitate the fastest and best service. When the inverter is stored unused, please put it in the original packing box and keep it moisture and dust proof.

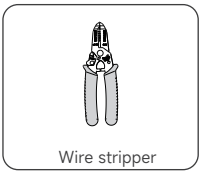
After unpacking the inverter, please check the following items:

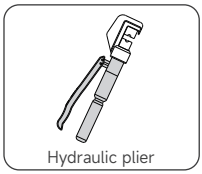
- Make sure the inverter main unit is complete and undamaged.
- Make sure the box contains the quick installation guide, certificate of conformity, packing list, interface accessories and installation accessories.
- Confirm that there is no damage or shortage in the delivered contents of the box.
- Verify that the product information on the order and the inverter mainframe nameplate is consistent.

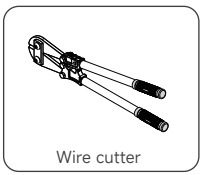
4.3 Pre-Installation Preparation

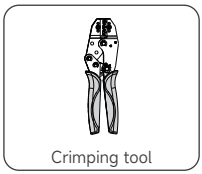
4.3.1 Installation Tools

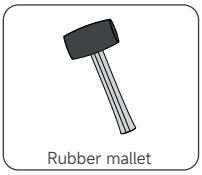
Installation tools include, but are not limited to, the following recommended tools. And if necessary, other auxiliary tools can be used on site.

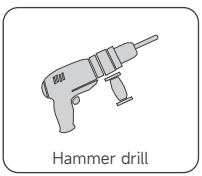

Wire stripper

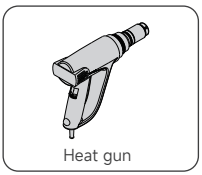

Hydraulic plier

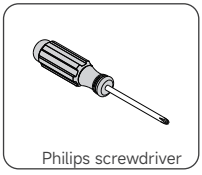

Wire cutter

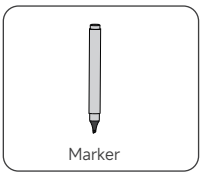

Crimping tool

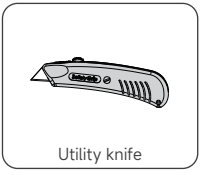

Rubber mallet

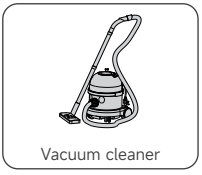

Hammer drill

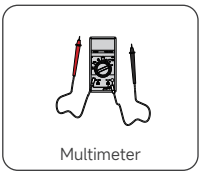

Heat gun

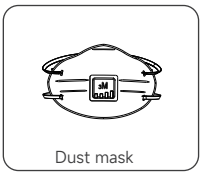

Philips screwdriver

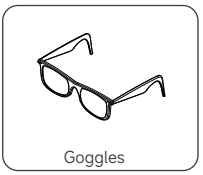

Marker


Utility knife


Vacuum cleaner


Multimeter


Dust mask


Goggles


Insulated shoes

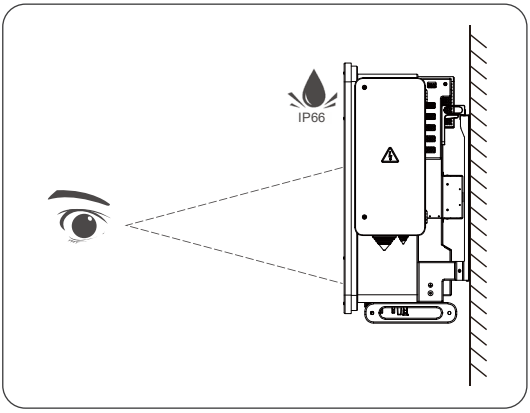

Protective gloves

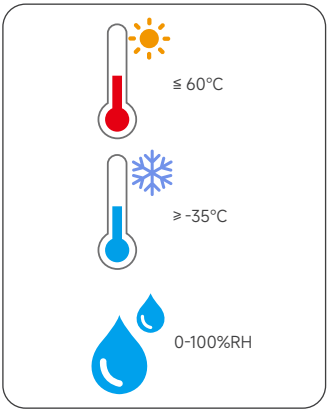
4.3.2 Installation Environment

Installation environment requirements:

- Do not install the inverter in the working and living area.
- Do not install the inverter in noise sensitive areas (such as residential areas, office areas, schools, etc.), otherwise it may cause complaints from residents. If it is necessary to install in the above-mentioned areas, the installation location should be at least 40 meters away from noise-sensitive areas. Or choose other low-noise models.
- If the equipment is installed in public places other than working and living areas (such as parking lot, station, factory, etc.), please install a protective net outside the equipment and erect safety warning signs for isolation, and prohibit unrelated personnel from approaching the inverter to avoid personal injury or property damage caused by accidental contact or other reasons of non-professional personnel during the operation of the equipment.
- If the equipment is installed in a place with dense vegetation, in addition to routine weeding, it is necessary to harden the ground below the equipment, such as laying cement, stones, etc. (the area should not be less than 3m×2.5m).

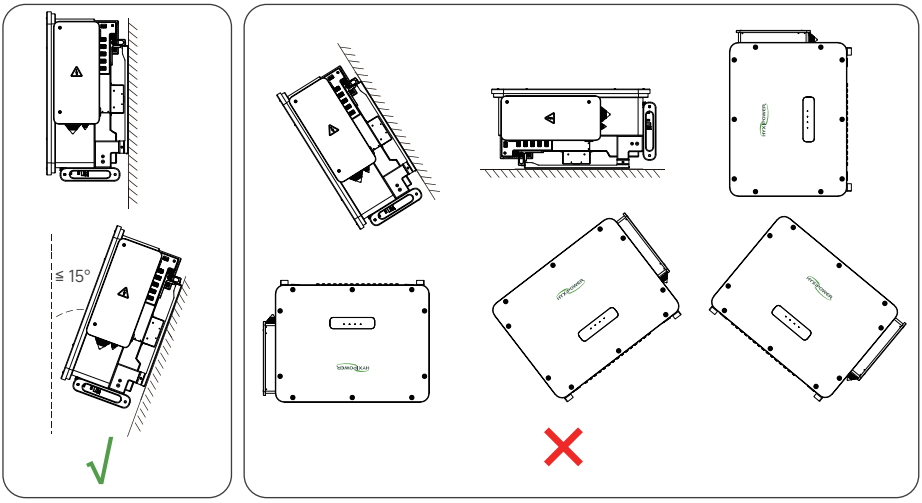
- Do not install inverters in areas containing flammable substances.
- Do not install inverters in areas containing explosives.
- Do not install inverter in the area containing corrosive materials.
- During the operation of the inverter, there is high voltage, and the temperature of the chassis and heat sink is high. Do not install the inverter in an easy to touch position.
- The inverter should be installed in a well-ventilated environment to ensure good heat dissipation.
- Inverter should be installed in the magnetic field intensity < 4 Gauss environment; In high-field-strength environments such as smelters, it is recommended to use a gaussmeter to measure the magnetic field strength at the installation site of the inverter when the smelting equipment is operating normally. If the application scenario is ≥ 4 Gauss, it may cause the inverter to fail to work properly.
- If the inverter is installed in a closed environment, it is necessary to install a heat dissipation device or a ventilation device, and the indoor environment temperature is not higher than the external environment temperature when working.
- It is recommended to choose a shielded installation site, or build a sunshade.
- Inverter installed in salt damage areas will be corroded. Before installing inverter outdoors in salt damage areas, please consult Zhejiang Huanyuxin Technology Co., LTD. Salt-damaged areas refer to regions within 500 meters of the coast or those affected by sea breezes. The areas affected by sea breezes vary depending on meteorological conditions (such as typhoons and seasonal winds) or terrain (with DAMS and hills).



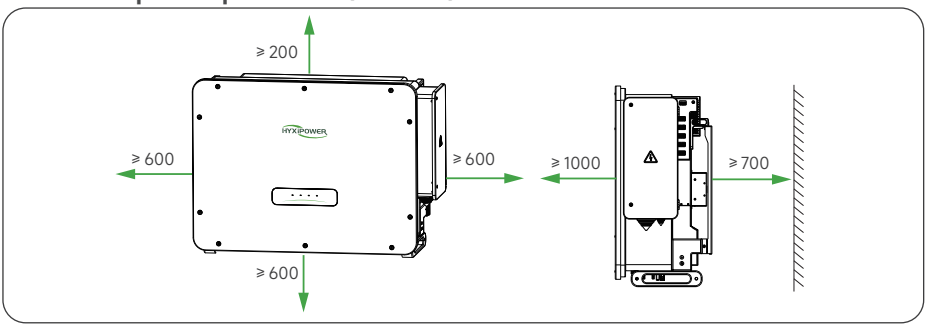


Installation angle requirements:

- The mounting carrier has a load-bearing capacity of at least 4 times the weight of the inverter, and the carrier has fireproof characteristics.
- It is recommended that the inverter be installed vertically or tilted back ⩽ 15° to facilitate the heat dissipation of the machine.
- Do not tilt the inverter forward, backward, upside down, horizontally or sideways.

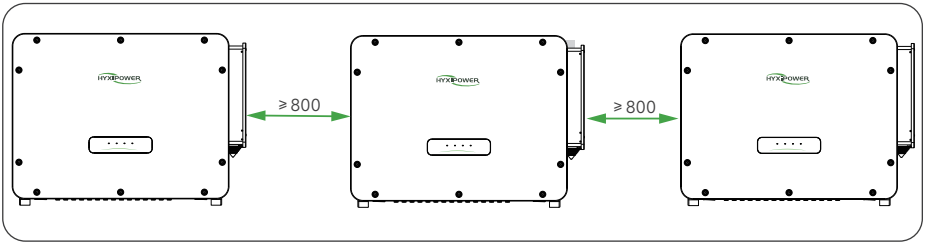


Installation space requirements: (Unit: mm)



- In order to facilitate the installation of the inverter to the engineering installation, and in order to facilitate the bottom of the inverter wiring and subsequent maintenance, it is recommended that 600mm ⩽ bottom space ⩽ 730mm. If you have any questions about this distance, please consult the local technical service engineer.
- The bottom space should also meet the requirements of the bending radius of the AC output line.

In the installation scenario of multiple inverters, when the space is sufficient, the one-figure installation method is recommended. Triangular, back-to-back and wall-close installation methods are not recommended. For the triangular, back-to-back and wall-close installation methods, users need to prepare their own windbreak plates to achieve the isolation of air intake and exhaust of the inverter.



4.4 Handling the Inverter

NOTICE

Improper handling operations may cause injuries to personnel !

- When handling the inverter, please arrange an appropriate number of installers to carry the inverter according to the weight of the inverter, and the installers need to carry the inverter protective equipment such as anti-crush shoes and gloves should be worn.
- During the handling of the inverter, always pay attention to the center of gravity of the inverter to avoid tilting the inverter.
- If the inverter is placed directly on the hard ground, it will cause damage to the metal shell, and it needs to be laid under the sponge pad or foam Such protective materials.
- When handling the inverter, please use the handle on the product, do not use the terminal of the product as a gripper.

4.4.1 Hand Handling

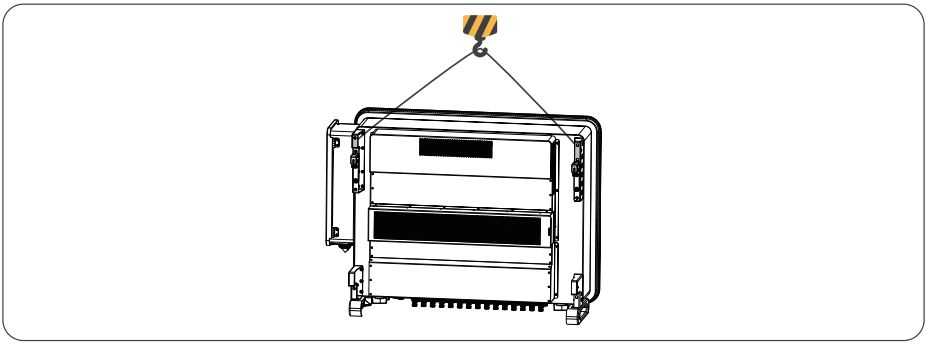
The four screw-in lifters are fixed to the lug and base of the inverter. Lift and move the inverter to the destination through the bottom handle and the four installed lifting hands.

NOTICE

- The hand-raising hand is not distributed with the box. Please obtain it from the accessory package.

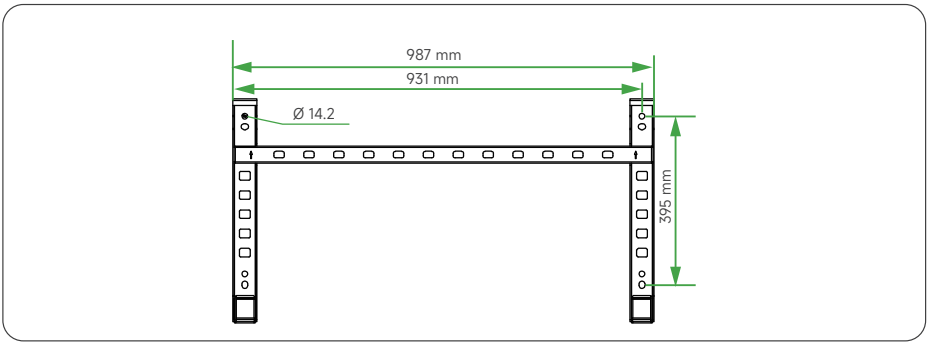
4.4.2 Lifting and handling

Part	Requirement	Source
Crane	Load-bearing capacity of the crane is ≥ 180 kg	Prepared by users
Eye bolt	Two M12 eye bolts, with a lifting capacity of ≥ 260 kg	Prepared by users
Rope	1 rope, with a length of ≥ 2.5 meters and a load-bearing capacity of ≥ 600 kg	Prepared by users



4.5 Mounting Inverter

Bracket size:

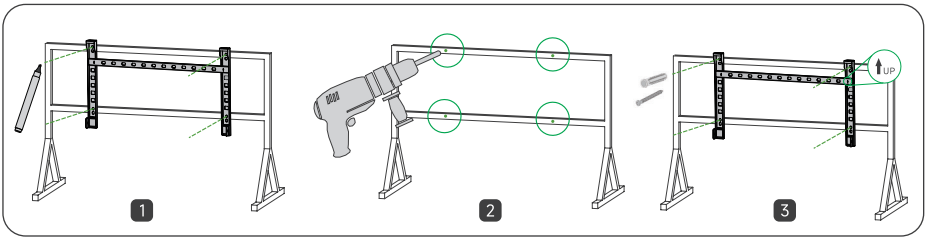


Bracket mounting steps:

Step 1: Use the bracket to determine the drilling position, level the hole position with a digital or bubble level, and mark holes with a marker.

Step 2: Use a hammer drill to drill the holes. It is recommended to carry out rustproof treatment on the perforated areas.

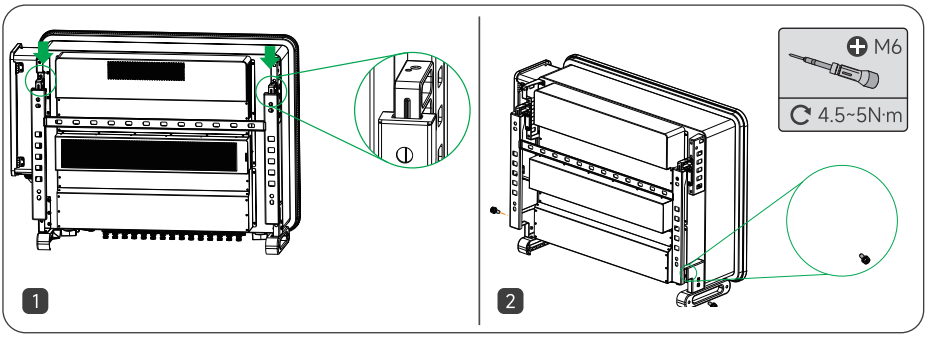
Step 3: Fix the bracket.



Inverter mounting steps:

Step 1: Install the inverter on the bracket, making sure the inverter is embedded in the slot of the bracket.

Step 2: Tighten the screws on the left and right sides of the inverter.



5 Electrical Connection

5.1 Safety Precautions

⚠ DANGER

- PV clusters exposed to sunlight will generate dangerous voltage!
- When performing electrical connection operation, the operator must wear personal protective equipment.
- Always use a measuring device to ensure that the DC cable is not live before touching it.
- Follow the safety precautions mentioned in the PV modules and related documents.
- Before electrical connection, please ensure that the inverter and all switches connected to it are in the "OFF" state, otherwise it may lead to electric shock hazard !
- Make sure the inverter is not damaged and all cables are not live before electrical work.
- Do not close the AC breaker until the electrical connection is completed.

⚠ CAUTION

- The grounding conductor shall not be damaged, and the product shall not be operated before the grounding conductor is installed, otherwise it may cause injury to personnel or damage to the product.Please choose suitable measuring equipment, over-voltage will cause damage to measuring equipment, resulting in injury!
- Faulty wiring may cause damage to the product and the resulting damage will not be covered by the warranty.
- Electrical connection operation must be completed by professional personnel.
- When performing electrical connection operations, the operator must wear personal protective equipment.
- The cables used in photovoltaic power generation systems must be of appropriate specifications, securely connected, and well insulated.
- Cable selection is influenced by the following factors: rated current, cable type, laying mode, ambient temperature and maximum expected line loss.

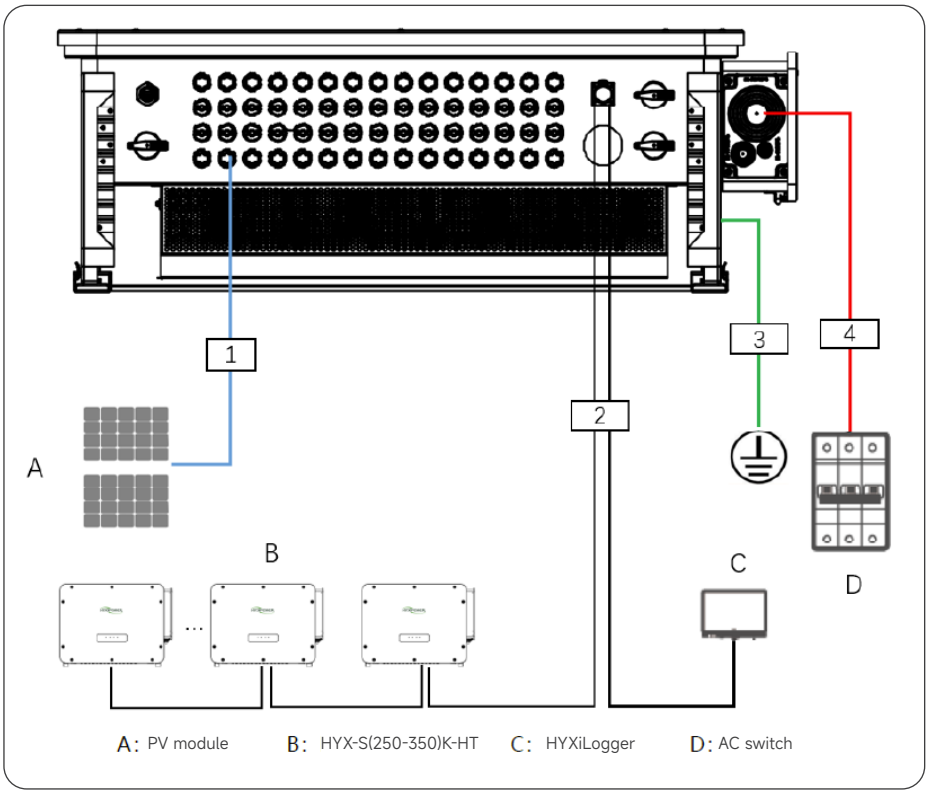
ⓘ NOTICE

- All electrical connections must comply with local and national/regional electrical standards.
- The cables selected by the user shall comply with local laws and regulations.
- The inverter can only be connected to the grid after permission from the electricity authority of the country/region.
- When making electrical connections, please connect the protective ground wire first. When removing the inverter, please remove the protective ground wire last.
- The wiring process must comply with the relevant rules of the local power grid and the relevant safety instructions for PV modules.

NOTICE

- After crimping, the conductor crimping piece of the cold-pressed terminal should completely cover the wire core, and the wire core and the cold-pressed terminal should be tightly combined without any looseness.
- When using the heat gun, please pay attention to the protection to prevent the equipment from being damaged by baking.
- Before connecting the power cable (such as AC cable, DC cable, etc.), make sure that the power cable label is correct before connecting.
- When routing communication cables, separate them from power cables. Additionally, avoid routing them near strong interference sources to prevent signal interference that could affect communication.
- All unused terminals must be covered with the waterproof cover of the inverter to prevent the product protection level from being affected. Moisture entering the interior may cause product damage, and the damage caused by this will not be covered by the warranty.
- Please ensure that the AC output line is connected and fasten, otherwise the inverter may not operate normally, or the AC terminal may be damaged after operation, etc. The damage caused by this will not be covered by the warranty.
- After wiring is completed, please be sure to use fireproof mud and other fireproof/ waterproof materials to seal the gap between the inlet and outlet line holes of the inverter to prevent foreign matter or moisture from entering and affecting the long-term normal operation of the inverter.

5.2 Electrical Connection Overview



The cable requirements are as follows (S is the cross-sectional area of the AC output line conductor, Sp is the cross-sectional area of the protective ground line conductor)) .

No.	Cable	Type	Conductor cross-sectional area range	Outer diameter	Source
1	PV Cable	Satisfy the standard of 1500V PV cable.	4 mm^2 ~ 6 mm^2	5 mm ~ 7.8 mm	Prepared by users
2	RS485 communication cable	Outdoor shielded twisted-pair wire that meets local standards.	0.25 mm^2 ~ 1 mm^2	1 or 2 communication cables: 4 mm ~ 11 mm 3 communication cables: 4 mm ~ 8 mm	Prepared by users
3	Protection ground line	Single-core outdoor copper core cable and M10 OT/DT terminals.	Sp ⩾ S/2	/	Prepared by users

4	AC output cable	Outdoor four-core copper wire/ aluminum wire	Copper core wire: S: 70 ~ 185 mm^2, Sp ≥ S/2 Aluminum core wire: S: 150 ~ 400 mm^2, Sp ≥ S/2	40 ~ 75 mm	Prepared by users
		Outdoor three-core copper wire/ aluminum wire Outdoor single-core PE wire		Three-core wire: 40 ~ 75 mm PE cable: 15 ~ 32 mm	
		Outdoor single-core copper wire/ aluminum wire		18 ~ 40 mm	

NOTICE

- The Sp values in this table are valid only when the conductor material of the PE cable and the AC output cable is the same. Otherwise, the PE cable conductance should be equivalent to that specified in this table by selecting an appropriate cable conductor cross-section. The PE cable specifications are determined by this table or calculated according to IEC 60364-5-54.
- If aluminum conductors are selected, copper-aluminum transition terminals are required to avoid direct contact between the copper busbar and the aluminum conductors.

5.3 Protective Ground Wire Connection

⚠ DANGER

Electric shock danger !

- Please confirm that the ground wire is reliably connected, otherwise it may cause electric shock hazard.

⚠ CAUTION

- As the inverter is transformerless, it is required that the positive and negative poles of the PV modules should not be grounded, otherwise the inverter will not operate normally.
- Before the AC side, PV and communication connection, please make an external protective grounding connection.
- The external grounding protection point provides a guarantee for reliable grounding. Do not use inappropriate grounding conductor to ground, otherwise it may lead damage to the product or injury to personnel.
- It is recommended that both the external protective grounding terminal and the AC side grounding terminal be grounded. If grounding by other methods can meet local standards and relevant safety regulations, grounding connection can be carried out in accordance with local standards and regulations. Hyxi Technology shall not be held responsible for any possible consequences.

5.3.1 External Grounding Requirements

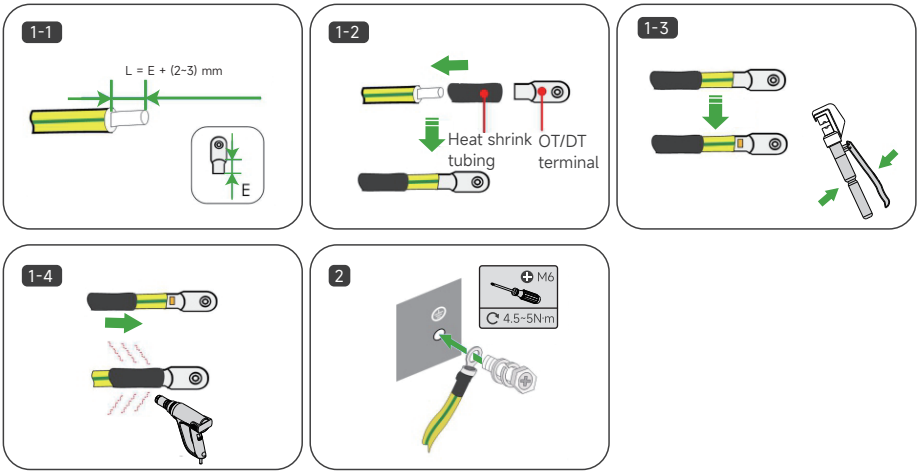
- In the PV power generation system, all non-current-carrying metal parts and equipment housings should be grounded (e.g. PV mounts, etc.).
- The external grounding terminal of a single inverter should be grounded near the end.
- When there are multiple inverters, the external grounding terminals of all inverters and the grounding points of PV mounts should be connected to the equipotential line (depending on the site conditions) to ensure that the external grounding of all inverters is grounded.

5.3.2 Grounding Procedure

Step 1: Make the cable and crimp the OT/DT terminals;

Step 2: Remove the screws on the grounding terminal and use a screwdriver to fix the cable

Step 3: Apply paint to the ground terminal to enhance their anti-corrosion performance.



5.4 AC Side Connection

5.4.1 AC Side Requirements

⚠ DANGER

- Three-phase AC switch should be configured outside the AC side of the inverter. To ensure that the inverter can be safely disconnected from the power grid under abnormal conditions, please select the appropriate overcurrent protection device in accordance with local distribution regulations.

⚠ WARNING

- Do not connect a load between the inverter and the AC switch directly connected to the inverter to avoid causing the switch to trip accidentally.
- Failure to comply with local standards, regulations, or the company's recommended values by employing oversized AC switches, may result in failure to disconnect safely and promptly under abnormal circumstances, leading to serious malfunctions.
- Do not open the main panel of the inverter.
- Before opening the AC junction box, make sure that the AC side and DC side of the inverter are not electrically connected.
- If you need to open the AC junction box in rain and snow weather, please take protective measures to prevent rain and snow from entering the AC junction box.
- Do not leave unused screws in the AC junction box.

⚠ CAUTION

- Each inverter should be equipped with an AC output switch. Multiple inverters cannot be connected to one AC switch simultaneously.

NOTICE

- The inverter is equipped with an integrated residual current monitoring unit, which can distinguish between fault current and capacitor residual current. When the inverter detects that the residual current exceeds the allowable value, it will quickly disconnect from the power grid.
- The distance between each inverter and the AC combiner box / low-voltage cabinet of prefabricated substation shall not be less than 10 meters, or the sum of the distances between two adjacent inverters and the AC combiner box / low-voltage cabinet of prefabricated substation shall not be less than 20 meters.
- The outer diameter of the cable can be measured according to the ruler label in the AC junction box.
- Make sure the cable sheath is inside the AC junction box.
- Please ensure that the AC output line is tightly connected and the insulation protection (three-finger sleeve, cold/heat shrink sleeve, etc.) is good. Otherwise, it may lead to the equipment being unable to operate, or after operation, it may heat up due to unreliable connection, causing damage to the inverter terminal block and other conditions. The equipment damage caused by this is not covered by the equipment warranty.
- In the PLC communication network fast dispatch scenario, connect the AC cables in the AC junction box in the order of L1, L2, and L3 from left to right. The inverter does not support phase sequence adaptation, so connect the cables according to the normal phase sequence.

Recommended specifications for AC circuit breakers

Inverter	Recommended rated voltage	Recommended rated current
HYX-S250K-HT	800 V	250A
HYX-S305K-HT	800 V	350A / 400A
HYX-S320K-HT	800 V	350A / 400A
HYX-S333K-HT	800 V	350A / 400A
HYX-S350K-HT	800 V	350A / 400A

Medium-voltage transformer

The matching medium-voltage transformer shall meet the following requirements:

- For thermal rating, the load profile of the inverter and the surrounding environment at the installation site must be considered.
- The apparent power of the inverter must not exceed the transformer power. The maximum AC current of all parallel-connected inverters must be considered.
- The transformer shall have overload protection and short circuit protection.

- As an integral part of the PV grid-connected power generation system, the carrying capacity of the transformer must be considered when the system fails. Faults include: system short circuit, ground fault, voltage sag, etc.
- When selecting and installing transformers, users must fully consider the environmental conditions such as temperature, humidity, altitude and air quality of the specific installation site.
- The overall technical requirements for the low-voltage cabinet of prefabricated substation are as follows:
    - » The breaking capacity of the molded case circuit breaker and frame circuit breaker in the low-voltage cabinet of the prefabricated substation should be greater than the short-circuit current on the low-voltage side of the transformer.
      For instance, for a step-up transformer with a rated capacity of 3200kVA and a short-circuit impedance of 7%, the short-circuit current on the low-voltage side can be calculated as follows: I=3200/0.8/1.732/0.07/0.9=36.66kA. Therefore, it is required that the molded case circuit breaker Icu of the low-voltage cabinet branch be ≥ 36.66kA under 880Vac conditions.
      For a step-up transformer with a rated capacity of 4480kVA and a short-circuit impedance of 8%, the short-circuit current on the low-voltage side can be calculated as follows: I=4480/0.8/1.732/0.08/0.9=44.91kA. Therefore, under 880Vac conditions, the molded case circuit breaker Icu of the low-voltage cabinet branch should be ≥ 44.91kA.
    - » The circuit breaker needs to consider temperature and altitude derating, and needs to have low voltage cabinet temperature rise test report.
    - » The circuit breaker needs to consider temperature and altitude derating, and needs to have low voltage cabinet temperature rise test report.- In the design of low-voltage cabinet, it is necessary to consider the impact of the arc injection of the molded case circuit breaker on the cabinet and other branch molded case circuit breakers, inside the cabinet.
      The internal part of the cabinet needs to do insulation and isolation design, and the third party test report of the whole machine breaking when the low-voltage side is short circuit should be provided.
      It is recommended to adopt graded protection to ensure that when a single short circuit fault occurs on the low-voltage cabinet of prefabricated substation , the corresponding branch plastic case circuit breaker will normally jump off and break, and the general frame circuit breaker will not jump off.
    - » When PLC communication is used, the box transformer low-voltage distribution room shall reserve the fuse switch or circuit breaker.
      The recommended cable to the HYXiLogger intelligent communication box is an outdoor type UV-resistant multi-core copper wire AC cable with a core diameter of 2.5mm ^{2} or more.
      The cable withstand voltage requirement is an isolation voltage > 1000V, and the distance from the HYXiLogger intelligent communication box to the low-voltage busbar of the box transformer for the PLC cable should be less than 10m.

- The string-type matching communication box requires an external power supply with a voltage of 220Vac, so the power supply and input interface (including switch) need to be reserved in the low-voltage distribution room of the step-up transformer.

5.4.2 AC Side Wiring

Step 1: Use allen wrench to loosen the two screws on the front cover of the AC junction box and open the junction box. During the wiring process, the limit rod connected to the cover keeps the junction box open.

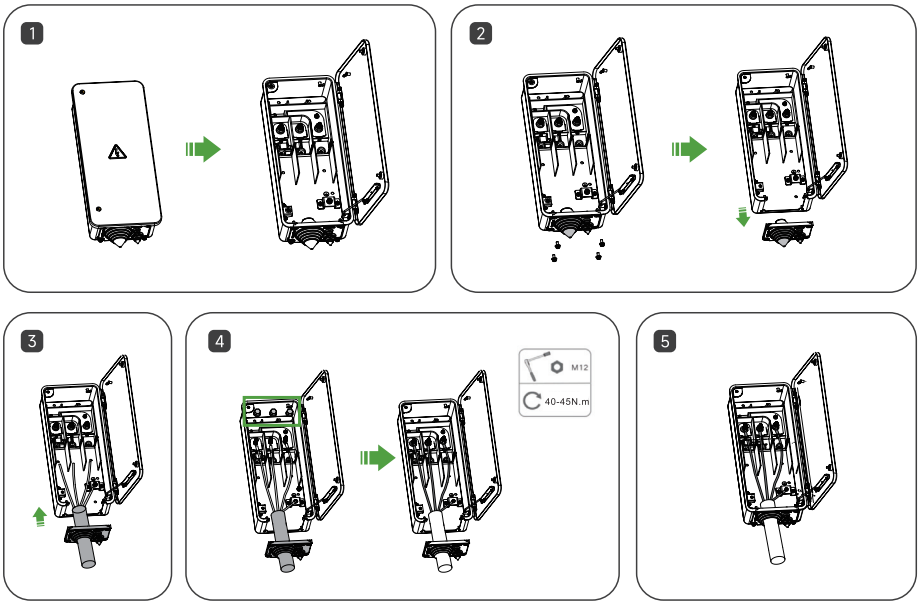
Step 2: Use allen wrench to loosen the screws of the bottom cover, then remove the bottom cover.

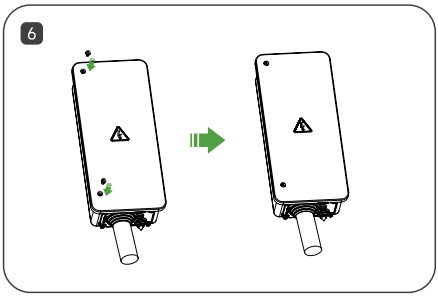
Step 3: Cut a coil of appropriate size according to the cable diameter, and thread the cable through the bottom cover.

Step 4: Crimp the OT/DT terminals. Secure the cables to the corresponding terminals. The installation torque for the terminals should be based on the torque label inside the AC box, which specifies 40-45 N·m. Lower or higher than the specified value may result in poor connection.
Place the crimping screw in the corresponding position and tighten it with a socket wrench. The recommended torque for the M10 grounding screw is 20-25 N·m.

Step 5: Reinstall the bottom cover to its original position and tighten the screws. The recommended torque is 2.0-2.5N·m.

Step 6: Remove the limit rod, tighten the screws, and complete the AC wiring. The recommended torque is 4.2-4.5N·m.





5.5 DC Side Connection

DANGER

- Before connecting the DC input, make sure that the DC side voltage is within the safe voltage range (i.e. below 60V DC), and all DC switches of the inverter are in the "OFF" position. Otherwise, the generated high voltage may cause the risk of electric shock.
- When the inverter is connected to the grid, it is forbidden to maintain the DC input cable, such as accessing or leaving a string or a component in the string. Otherwise it will lead to electric shock or arc fire risk.
- If you need to connect or disconnect DC input terminal, please power off to operate.

WARNING

Make sure the following conditions are met. Otherwise, it may cause damage to the inverter and even pose a fire hazard.

- The maximum open circuit voltage of each PV string shall not exceed 1500V DC under any conditions.
- Make sure that the DC input side polarity is correct, that is, the positive terminal of PV is connected to the positive terminal of inverter DC input terminal, and the negative terminal is connected to the negative terminal of inverter DC input terminal.

NOTICE

- Please ensure that the output of the PV module is well insulated from the ground.
- PV strings connected to the same MPPT must use the same model and number of PV modules.
- The inverter does not support full parallel connection of strings (full parallel connection: individual strings are connected in parallel outside the inverter and then connected to the inverter separately).
- The inverter does not support Y-type PV connectors.

NOTICE

- During the installation of PV strings and inverters, if the positive or negative pole of the PV string is shorted to ground due to improper installation or routing of the distribution cables, this may cause an AC/DC short circuit during inverter operation, resulting in equipment damage. This damage is not covered by the equipment warranty.
- Each PV string should be equipped with an appropriate external fuse.

Terminal configuration description

Before connecting the PV input to the inverter, it is necessary to ensure that each PV string meets the following requirements:

- The maximum open circuit voltage of each PV string does not exceed 1500V DC.
- The maximum allowable working current of each PV string is 25A.
- Under non-operating conditions, withstand current of each PV string is 27A.

Please select the appropriate DC terminal according to the following requirements:

- The inverter does not support Y-type PV connectors.
- Please ensure that the DC input terminals are evenly distributed on each MPPT.
- For 30-channel PV models, the PV5, PV10, PV15, PV20, PV25, and PV30 DC input terminals must be connected.

Terminal description

HYX-S(250-350)K-HT has 30-channel PV input.

- The 30-channel PV unit has three switches: DC Switch 1, DC Switch 2, and DC Switch 3. DC Switch 1 controls PV5, PV10, PV15, PV20, PV25, and PV30; DC Switch 2 controls PV16~PV19, PV21~PV24, and PV26~PV29; and DC Switch 3 controls PV1~PV4, PV6~PV9, and PV11~PV14.

5.5.1 Installing the DC Connector

DANGER

There may be high voltage inside the inverter !

- Before electrical operation, ensure that all cables are not live.
- Before the inverter electrical connection is completed, do not close the AC breaker switch .

NOTICE

- When the cross-section of the DC cable is 4/6 mm^2, use the PV connector provided with the box.
- When the cross-sectional area of DC cable is 10 mm^2, it is recommended to use Amphenox H4SFC8DM and H4SMC8DM PV connectors, which can be purchased by contacting Hyxi Technology or by yourself.

⚠ WARNING

- Before connecting the PV strings to the inverter, ensure that the insulation impedance of each PV string to ground is normal.
- Test method: Use an insulation resistance tester to test the insulation resistance of the PV cable to ground: Apply a DC voltage of 1500V or higher between the PV cable and ground, and check the insulation resistance value.
  - » If the insulation resistance is ⩾ 1MΩ, then it is normal.
  - » If the insulation resistance is less than 1 MΩ, check the insulation of the cable or PV string.

5.5.2 Assembling DC Connectors

Step 1: Remove approximately 7 mm of insulation from all DC cables.

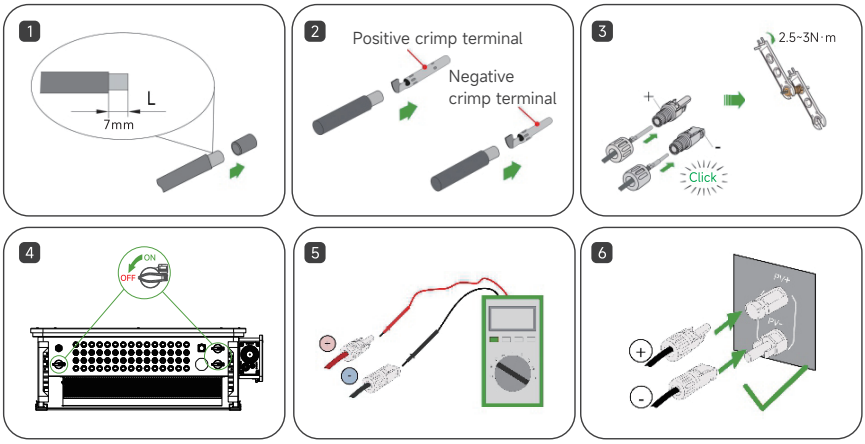
Step 2: Use crimping pliers to bind the end of the cable to the terminal.

Step 3: Insert the cable into the PV connectors, then insert it into the swivel nut and tighten it with a force of 2.5 to 3N·m.

Step 4: Rotate the DC switch to "OFF" manually

Step 5: Use a multimeter to check whether the polarity of the PV string connection cables is correct.

Step 6: Connect the PV connectors to the corresponding terminals until you hear a click. Seal the unused PV terminals with MC4 waterproof plugs.



5.6 Communication Connection

NOTICE

- When routing communication lines, be sure to separate them from power lines to prevent signal interference and communication impact.

Port	PIN	Definition	PIN	Definition	Explanation
RS485-1	1	RS485A IN, RS485 differential signal +	2	RS485A OUT, RS485 differential signal +	Used for cascading multiple inverters or connecting to HYXiLogger of Hyxi .
	3	RS485B IN, RS485 differential signal -	4	RS485B OUT, RS485 differential signal -	
PE	5	PE, shield layer grounding	6	PE, shield layer grounding	/
RS485-2	7	RS485A , RS485 differential signal +	8	RS485B, RS485 differential signal -	Used to connect a RS485 slave device.

Step 1: Unscrew the nut at the lower end of the communication terminal and remove the sealing plug.

Step 2: Press the clips on both sides of the connector to remove the on-site wiring components.

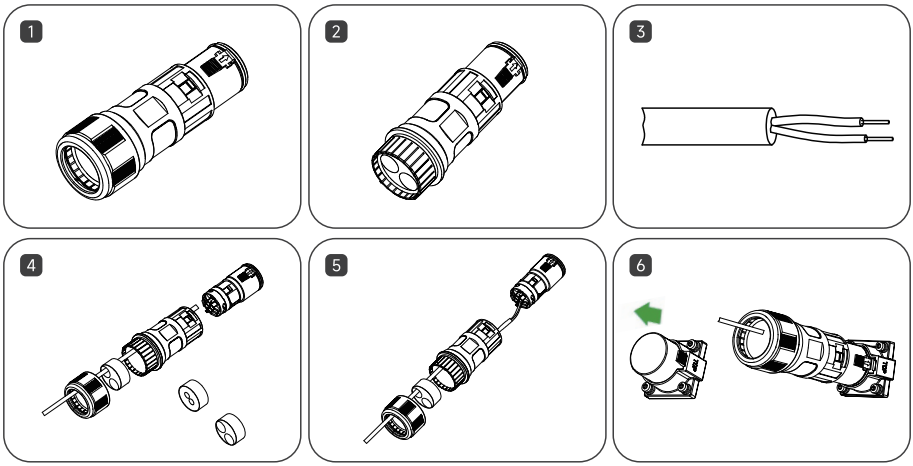
Step 3: Make communication cables and remove the insulation layer of the cables.

Step 4: Pass the cables through the sealing rings in sequence according to their outer diameters.

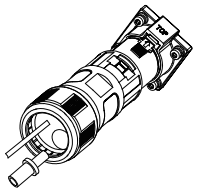
Step 5: Connect the cable to the terminal block according to the wire sequence.

Step 6: Remove the waterproof cover of the communication terminal at the bottom of the inverter and connect the communication connector to the communication terminal.

Step 7: Use a waterproof plug to seal the unused terminals.



7



6 Operation

6.1 Checking before Power-on

⚠ CAUTION

- To ensure the safe, normal and stable operation of PV power generation systems, all newly installed, renovated and repaired grid-connected PV generation system and its grid-connected inverter must be inspected before operation.

No.	Inspection items	Acceptance criteria
1	Overall installation	• The inverter is installed correctly and securely. • The installation space is well-organized, the environment is clean and tidy, and there are no construction residues.
2	Appearance	• The inverter is in good condition, with no warping or deformation, and no paint peeling or rust. • The appearance of the cables is intact without any damage, and they are neatly laid out.
3	Switch	The "DC SWITCH" and the subsequent AC output switch are in the "OFF" state.
4	PE cable	• The PE cable is connected correctly, securely, and reliably. • The bonding resistance shall be less than 0.1Ω.
5	AC power cable	AC power cables are connected correctly and securely.
6	AC junction box	• The AC junction box is clean and tidy, with no construction residue. • After the inspection was completed, make sure the AC junction box is closed and the screws on the door are tightened.
7	DC power cable	DC power cables are connected correctly and securely.
8	Unused terminals	• Unused DC terminals are sealed with sealing plugs. • Unused COM and USB ports are plugged with waterproof plugs.

6.2 System Power-on

If all the above items meet the requirements, please follow the steps below to start the inverter for the first time.

Step 1: Please ensure that the DC input terminals of PV5, PV10, PV15, PV20, PV25, and PV30 in the 30-channel PV inverter must be connected.

Step 2: Rotate the bottom DC SWITCH1 of the 30-channel PV inverter to "ON". Observe the indicator light of the inverter.

Step 3: If the inverter indicator light is ON, turn the remaining DC switches to "ON".
One minute after powering on, if the PV connection indicator light does not illuminate, do not close "DC SWITCH2 and DC SWITCH3". Immediately disconnect "DC SWITCH1" and check if the input cable is reversed or if the input voltage meets the startup voltage requirements.
After correcting the issue, repeat step 2. If the PV connection indicator light still does not illuminate, disconnect "DC SWITCH1" and contact technical support.

NOTICE

- Please strictly follow the above procedure; otherwise, product damage may occur, and the resulting loss will not be covered by the warranty. (You can view the fault history through the HYXiCloud App; see "History" for details). The fault will be automatically cleared after the AC circuit breaker between the inverter and the grid is closed.
- Before closing the AC circuit breaker between the inverter and the power grid, use a multimeter in AC voltage mode to measure the AC voltage to ensure it is within the inverter's allowable range; otherwise, it may damage the inverter.
- When DC power is on but AC power is not on, the inverter indicator light may turn red, and the inverter will report a "power outage" fault.

Step 4: Close the AC circuit breaker between the inverter and the power grid.

Step 5: Install the HyxiCloud. For details, please refer to 7 Human-Computer Interaction.

Step 6: When the inverter is connected to the grid for the first time, it is necessary to use the HyxiCloud to set the initial protection parameters.Under normal lighting conditions and when the grid conditions meet the grid connection requirements, the inverter will operate normally.

Step 7: After the initialization is completed, the App automatically enters the home page. The indicator light of the inverter is constantly on, and the inverter is in grid-connected operation.

7 Human-Computer Interaction

7.1 Installing the App

Method 1

Download and install the HYXI App through the following application stores:

- App Store (iOS)
- Google Play

Method 2

Scan the following QR code to download and install the HYXI App according to the prompt information:

7.2 APP Configuration

For specification configuration, please scan the following QR code to check HYXI APP_User Manual.

8 System Maintenance

DANGER

- Please use dedicated protective equipment and dedicated insulated tools to avoid electric shock or short circuit.

WARNING

- Before performing maintenance, please power off the equipment and follow the instructions on the delayed discharge label to wait for the appropriate time to ensure that the equipment is powered off before operating it.

8.1 Routine Maintenance

NOTICE

- When performing system cleaning, electrical connection and grounding reliability maintenance, perform a system power-off operation to ensure that all "DC SWITCH" switches of the inverter are in the "OFF" state.
- If you need to open the AC junction box in rainy or snowy weather, please take protective measures to prevent rain and snow from entering the AC junction box. If you cannot prevent rain and snow from entering the AC junction box, do not open the AC junction box in rainy or snowy weather.

Maintenance list

Inspection items	Inspection method	Maintenance method	Maintenance intervals
Inlet and outlet cleaning	Regularly check the inlet and outlet for dust accumulation or foreign objects.	Power off the inverter, clean dust and foreign objects, and if necessary, remove the inlet baffle for cleaning.	Once every six months a year. (Depending on the dust content of the environment, this can be adjusted to once every 3 to 6 months.)
Fan	Check whether there is any abnormal noise when the fan is running.	• Clean the foreign objects on the fan. • If there is still abnormal noise, replace the fan.	Once 6 months or once a year.

System running status	• Check whether the inverter appearance is damaged or deformed. • Check whether the inverter has abnormal sound during operation. • When the inverter is running, check whether the inverter parameters are set correctly。	Contact our service engineer.	Once every 6 months.
Electrical connection	• Check whether the cable connections are loose or disconnected. • Check whether there is damage to the cable, focusing on whether there are cuts on the skin of the cable in contact with the metal surface. • Check whether the sealing plug of unused DC input terminal falls off. • Check whether the waterproof cover of unused COM and USB ports are covered.	• Power off the inverter and secure the loose or disconnected cables. • Power off the inverter and replace the damaged cable. • Install sealing plugs on unused DC input terminals. • Replace the waterproof covers on the unused COM and USB ports.	Six months after the initial commissioning, and then once every 6 months to one year thereafter.
Grounding reliability	• Check whether the grounding cable is reliably grounded. • Use a multimeter to check if the impedance to ground at the inverter's grounding screw is ≤ 4Ω.	Tighten the screws on both sides of the grounding wire and confirm that the impedance meets the requirements.	Six months after the initial commissioning, and then once every 6 months to one year thereafter.
Clearing the weeds around the inverter	Check if there are any weeds around the inverter.	• Check and weed before the withered grass season. • Clean up promptly after cleaning to prevent accumulation around the inverter.	Based on the local withered grass season.

8.2 Powering Off the Inverter

⚠ WARNING

- Even after the inverter system is powered off, residual electricity and heat still remain in the chassis, which may cause electric shock or burns. Therefore, wait at least 15 minutes after powering off the inverter system before operating it again, and wear personal protective equipment.

Step 1: Send the shutdown command through the app or management system.

Step 2: Disconnect the AC switch between the inverter and the power grid.

Step 3: Rotate the "DC SWITCH" to "OFF" state.

8.3 Powering Off for Maintenance

⚠ WARNING

- To avoid personal injury and equipment damage, when troubleshooting or replacing inverters or external PV strings, the string current must be measured with a DC current range of the clamp meter (even if the DC switch has been opened) before disconnecting the DC terminals to ensure that there is no current in the string. Then, quickly plug and unplug the terminals for adjustment.

Step 1: Wear personal protective equipment.

Step 2: If the inverter is not shut down due to a fault, issue a shutdown command via the APP or management system. If the inverter has already shut down due to a fault, please proceed to the next step.

Step 3: Disconnect the AC switch between the inverter and the power grid

Step 4: Use the DC current range of the clamp meter to measure the DC current of each input PV string of the inverter.

» If there is no current in the PV string, please proceed to the next step.

» If there is current in the PV string, you need to wait until the solar irradiance decreases at night. When there is no current in the PV string, proceed to the next step.

Step 5: Open the AC junction box, install the limit rod, and use a multimeter to measure the voltage to ground of the AC terminal block to ensure that the AC side of the inverter is de-energized.

Step 6: Disconnect all DC input switches of the inverter and ensure that all switches are in the "OFF" position. If the DC switch is already off. Please proceed to the next step.

Step 7: Wait 15 minutes and then perform fault analysis or maintenance on the inverter.

⚠ WARNING

- If the inverter has an unusual odor, emits smoke, or has an obviously abnormal appearance, maintenance personnel are strictly prohibited from opening the main control panel for inspection.
- If the inverter has no unusual odor, smoke, or obvious abnormal appearance, please follow the alarm troubleshooting suggestions to inspect or restart the inverter. During the inverter restart process, avoid standing directly in front of the inverter.

8.4 Replacing the inverter

NOTICE

- Before disassembling the inverter, both AC and DC power must be turned off.

Step 1: Disassembling the inverter.

» Disconnect all electrical connections of the inverter, including RS485 communication cable, DC input cable, AC output cable and PE cable.

» Remove the inverter from the bracket.

» Remove the bracket.

Step 2: Packaging the inverter.

» If you still have the original packaging for the inverter, please place it inside the original packaging and securely seal the packaging with tape.

» If you can not find the original packaging of the inverter, please secure it in a rigid cardboard box that is appropriate for the weight and size of this inverter.

Step 3: Disposal of the inverter: When the inverter reaches the end of its service life, please dispose of it in accordance with the applicable electrical waste disposal law in the area where it was installed.

Step 4: Install the new inverter. For detailed steps, refer to 4 Mechanical Installation and 5 Electrical Connection.

9 Appendix

9.1 Technical Parameter

Model	HYX-S250K-HT	HYX-S305K-HT	HYX-S320K-HT
DC Input			
Max. Input Voltage		1500V	
Rated Input Voltage		1080V	
Start-up Voltage		500V	
MPPT Voltage Range		480V~1500V	
Max. PV Input Current Per MPPT		75A	
Max. Input Short-circuit Current		120A	
Number of MPPT		6	
Number of String		30	
AC Output			
Rated output power	250kW	305kW	320kW
Maximum Apparent Power	275kVA	305kVA	352kVA
Rated Output Voltage		800V, 3L / PE	
Rated Output Frequency		50Hz / 60Hz	
Rated Output Current	162.3A	180.4A	230.9A
Maximum Output Current	180.5A	198.5A	254A
Power Factor		>0.99 (0.8 leading and 0.8 lagging)	
THDi		< 3%	
Efficiency			
Maximum Efficiency		⩾ 99.04%	
European Efficiency		⩾ 98.8%	
MPPT Efficiency		99.9%	
Protection			
DC Reverse Connection Protection		Yes	
DC Switch		Yes	
DC Bus Overvoltage Protection		Yes	
DC Overcurrent Protection		Yes	
AC Overvoltage Protection		Yes	
AC Overcurrent Protection		Yes	
AC Over/under-Frequency Protection		Yes	
DC Surge Protection		Type II	
AC Surge Protection		Type II	
Night Time Reactive Power Compensation		Yes	
Anti-islanding Protection		Yes	
Residual Current Monitoring Unit		Yes	
General Specifications			
Working Temperature		-35 ~ + 60° C	
Relative Humidity		0 ~ 100 %RH	
Maximum Operating Altitude		5000 m (derated when the altitude is greater than 4000 m)	

Model	HYX-S250K-HT	HYX-S305K-HT	HYX-S320K-HT
Cooling Method		Smart air cooling	
Man-machine Interaction Mode		LED; WLAN+App	
Communication Method		RS485 / HPLC	
Weight		≤ 126kg	
Dimensions (W x H x D)		1130*820*380mm	
Inverter Topology		Transformerless	
Degree of Protection		IP66	
Overvoltage Level		PV II / AC III	

Model	HYX-S333K-HT	HYX-S350K-HT
DC Input		
Max. Input Voltage	1500V	
Rated Input Voltage	1080V	
Start-up Voltage	500V	
MPPT Voltage Range	480V~1500V	
Max. PV Input Current Per MPPT	75A	
Max. Input Short-circuit Current	120A	
Number of MPPT	6	
Number of String	30	
AC Output		
Rated output power	333kW	352kW
Maximum Apparent Power	333kVA	352kVA
Rated Output Voltage	800V, 3L / PE	
Rated Output Frequency	50Hz / 60Hz	
Rated Output Current	240.3A	254A
Maximum Output Current	254A	254A
Power Factor	>0.99 (0.8 leading and 0.8 lagging)	
THDi	< 3%	
Efficiency		
Maximum Efficiency	≥ 99.04%	
European Efficiency	≥ 98.8%	
MPPT Efficiency	99.9%	
Protection		
DC Reverse Connection Protection	Yes	
DC Switch	Yes	
DC Bus Overvoltage Protection	Yes	
DC Overcurrent Protection	Yes	
AC Overvoltage Protection	Yes	
AC Overcurrent Protection	Yes	
AC Over/under-Frequency Protection	Yes	
DC Surge Protection	Type II	
AC Surge Protection	Type II	
Night Time Reactive Power Compensation	Yes	
Anti-islanding Protection	Yes	

Model	HYX-S333K-HT	HYX-S350K-HT
Residual Current Monitoring Unit	Yes	
General Specifications		
Working Temperature	-35 ~ + 60° C	
Relative Humidity	0 ~ 100 %RH	
Maximum Operating Altitude	5000 m (derated when the altitude is greater than 4000 m)	
Cooling Method	Smart air cooling	
Man-machine Interaction Mode	LED; WLAN+App	
Communication Method	RS485 / HPLC	
Weight	≤ 126kg	
Dimensions (W x H x D)	1120*820*380mm	
Inverter Topology	Transformerless	
Degree of Protection	IP66	
Overvoltage Level	PV II / AC III	

9.2 Quality Assurance

Zhejiang Hyxi Technology Co., Ltd. (hereinafter referred to as the Company) will repair or replace the product with a new one free of charge.

Evidence:

During the warranty period, customers need to show the invoice and date of purchase of the product.

At the same time, the trademark on the product should be clearly visible, or the right not to quality assurance.

Conditions:

The replacement defective products shall be disposed of by the Company; the customer shall allow reasonable time for the Company to repair the defective equipment.

Liability Exemption:

We have the right not to carry out quality assurance if the following circumstances occur:

- The whole machine and parts have exceeded the free warranty period.
- Shipping damage.'
- Incorrect installation, modification or use.
- Operation in very harsh environments beyond those described in this manual.
- Machine failure or damage caused by installation, repair, alteration or disassembly not by our service organization or personnel
- Installation and use beyond the scope specified in the relevant international standards.
- Damage caused by an abnormal natural environment.

NOTICE

- In case of changes in product dimensions and parameters, the latest information of our company shall prevail without prior notice.

9.3 Contact Information

If you have any questions about this product, please contact us.

In order to provide you with faster and better after-sales service, we need your assistance in providing the following information.

- Equipment model : _____
- Serial number of the device: _____
- Fault code / name: _____
- A brief description of the fault phenomenon: _____

_____

_____

_____

Version: UM_HYX-S(250-350)K-HT_V1.1-202603_EN
The manual is subject to change without notice while the product is being improved.

Zhejiang Hyxi Technology Co., Ltd.

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