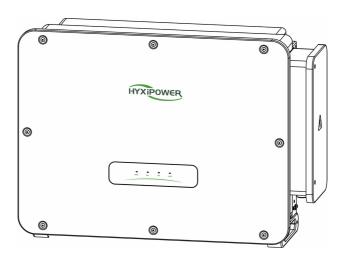


User Manual

STRING INVERTER

HYX-S75K-T / HYX-S100K-T / HYX-S110K-T / HYX-S120K-T



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Preface

Overview

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

It does not contain all information about the PV system.

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 devices:

- HYX-S75K-T
- HYX-S100K-T
- HYX-S110K-T
- HYX-S120K-T

For readers

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

All installation operations must be carried out exclusively 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 for symbols

In order to ensure the safety of the user's person and property when using the product, relevant information is provided and highlighted using the following symbols.

A DANGER

· Indicates a hazard with a high level of risk which, if not avoided, will 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.

(I) NOTICE

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

1. Safety Precautions

1.1 General Safety

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 should be used in an environment that meets the requirements of design specifications, otherwise it may cause equipment failure, and the resulting equipment functional abnormalities or component damage, personal safety accidents, property losses, etc., are not within the scope of equipment quality assurance.
- The installation, operation and maintenance of the equipment should comply with local laws, regulations
 and codes. The safety precautions in the manual are only supplementary to the local laws and
 regulations.
- If an external residual current device (RCD) (type A is recommended) is mandatory, the switch must be triggered at a residual current of 300mA (recommended). RCD of other specifications can also be used according to local standard.

1.2 Public Grid

MOTICE

- All electrical connections must meet local and national electrical standards.
- · The inverter may only be connected to the grid with the permission of the local electricity authority.

1.3 Photovoltaic String

A DANGER

- When performing electrical connection work, you must wear personal protective equipment.
- Use a multi-meter DC block to measure the positive and negative DC cable polarity to ensure that the
 polarity is correct; and the voltage is within the allowable range.
- After the DC cable is connected, please make sure that the cable is tightly connected and not loose.

1.4 Inverter

A DANGER

- Before plugging or unplugging the PV connector or AC connector, please use a multi-meter to measure to make sure there is no there is no voltage or current.
- Make sure that the voltage and frequency of the grid connection point are in accordance with the grid connection specification of the inverter.
- Do not open the inverter housing when the inverter is operating or energized to protect personnel and property safety.
- After removing all electrical equipment and disconnecting the inverter, wait at least 5 minutes for the internal capacitors to discharge.
- The protective ground of the inverter must be securely connected and, for multiple inverters, ensure that all inverters are connected to the protective ground.
- When multiple inverters are installed, ensure that all inverter enclosures are connected equipotentially to the protective ground.
- The protective ground should be installed first when installing the equipment; the protective ground is removed last when dismantling the equipment.

▲ WARNING

- After the inverter is installed, labels and warning signs shall be clearly visible, and obscuring, altering or damaging them is prohibited.
- · After the inverter is shut down, there is still a risk of burns.
- During operations, wear personal protective equipment such as protective clothing, insulated shoes, goggles, safety helmets, and insulated gloves.

1.5 Personnel Requirements

NOTICE

- Personnel responsible for the installation and maintenance of HYXiPOWER equipment must first be strictly trained to understand the various
- The personnel responsible for the installation and maintenance of HYXiPOWER equipment must first undergo strict training to understand the various safety precautions and master the correct operation methods.
- Only qualified professionals or trained personnel are allowed to install, operate and maintain the
 equipment
- The personnel who operate the equipment, including operators, trained personnel, professionals should
 have the special operating qualifications required by the local country, such as high voltage operation,
 special equipment operation qualification, etc.

2. Product Overview

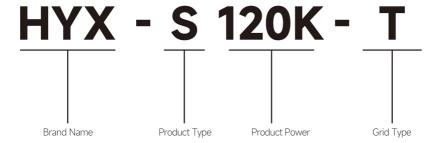
This chapter mainly introduces the appearance of the grid-connected inverter, packaging accessories, nameplate, technical parameters, etc.

2.1 Product Description

HYX-S (75-120) K-T is a three-phase string type PV grid-connected inverter. The main function of a three-phase string type photovoltaic grid-connected inverter is to convert the DC power generated by photovoltaic modules into AC power and feed electrical energy into the grid.

This paper mainly covers the following product models:

- HYX-S75K-T
- HYX-S100K-T
- HYX-S110K-T
- HYX-S120K-T



2.2 Photovoltaic Grid-Connected Power Generation System

The PV grid-connected power generation system is composed of PV modules, inverter, meter, load and grid.

The inverter is the core component of the solar PV grid-connected power generation system.

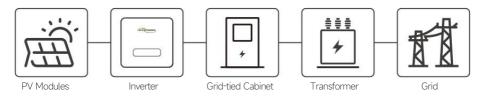
The solar energy is converted into DC energy by the PV modules, which is then transformed into sinusoidal AC energy by the PV grid-connected inverter, matching the frequency and phase of the public grid, and then feeds this energy into the grid.

The photovoltaic grid-connected inverter is only applicable to solar photovoltaic power generation grid-connected systems, and only uses crystalline silicon solar cells with ungrounded positive and negative electrodes as DC input.

Network Application

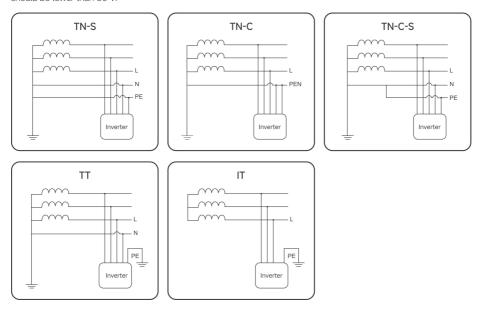
HYX-S (75~120) K-T series on-grid string inverters are suitable for commercial and industrial rooftop and small on-grid ground power station systems.

The system generally consists of PV modules, string inverters and power distribution units



2.2.1 Grid Forms Supported by PV Grid-Connected Inverters

Power grid types supported by the HYX include TN-S, TN-C, TN-C-S, TT, and IT. In a TT power grid, the N-PE voltage should be lower than 30 V.



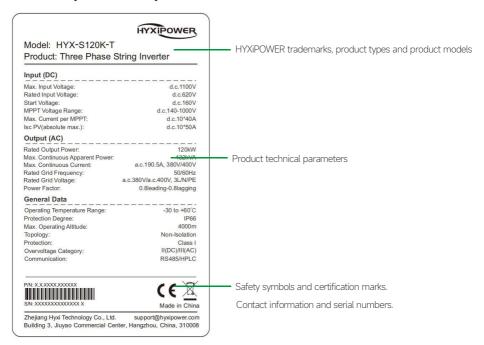
▲ WARNING

- The inverter is only applicable to the grid-connected power generation system described in this paper.
- Since the inverter is transformer less type, it is required that both the positive and negative terminals of the PV module cannot be grounded, otherwise the inverter will not operate normally.
- During the installation and operation of the inverter, please make sure that the positive or negative pole of
 the PV module will not be short-circuited to the ground, if short-circuited, it may cause the inverter
 AC/DC short circuit, resulting in equipment damage, and the resulting damage will not be covered by the
 warranty.

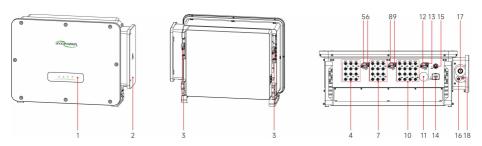
↑ CAUTION

- For TT type grids, the neutral line voltage to ground must be less than 30V.
- Never connect local loads, such as household appliances, lighting loads, etc., between the inverter and the AC circuit breaker.

2.3 Nameplate Description



2.4 Product Appearance



No.	Name	No.	Name
1	LED Indicator Panel	10	DC Input Terminal (P13-PV20)
2	AC Junction Box	11	DC SWICH 2
3	Mounting Hook	12	DC SWITCH lock hole
4	DC Input Terminal (PV1-PV6)	13	COM.1 (USB)
5	DC SWICH 1	14	COM.2
6	DC SWITCH lock hole	15	Vent Valve
7	DC Input Terminal (PV7-PV12)	16	Reserved PE Terminal Hole
8	DC SWICH 2	17	AC Terminal Block Hole
9	DC SWITCH lock hole	18	Reserved Terminal Hole

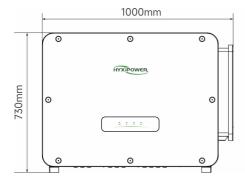
2.4.1 Symbol Description

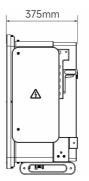
Symbol	Description	
A C	Disconnect power for at least 5 minutes before servicing the inverter.	
	Do not touch the inverter housing while it is in operation.	
4	Only install and operate the inverter with professional personnel.	
\wedge	Do not remove the DC input connector or the AC output connector when the inverter is running.	
(€	CE mark of conformity.	
Πi	Read the manual.	
<u>X</u>	Do not dispose of the inverter as household waste.	
<u> </u>	High touch current, earth connection essential before connecting supply.	
&	RCM mark of conformity.	

2.5 Product Mode

Product Name	Model	Rated Output Power
Three-phase string inverter	HYX-S75K-T	75kW
Three-phase string inverter	HYX-S100K-T	100kW
Three-phase string inverter	HYX-S110K-T	110kW
Three-phase string inverter	HYX-S120K-T	120kW

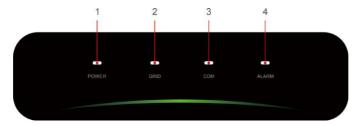
2.6 Dimensions & Weight





Weight: 94kg

2.7 LED Indicator Panel



2.7.1 LED Indicator Status Description

No.	Indicator	Status	Description
1	DOWED	ON	Inverter Powered ON
1	POWER	OFF	Inverter Powered OFF
		ON	Grid Normal
2	GRID	Blink 1	Grid Abnormal
		Blink 2	Grid Disconnected
7	0014	ON	Meter COM. Normal
3	COM.	OFF	Meter COM. Abnormal
		OFF	Normal
4	ALARM	Blink 1	Inverter Internal Alarm
		Blink 2	Other Alarm

^{*} NOTE: Blink 1, interval 1.5 seconds; Blink 2, interval 0.2 seconds.

2.8 Description of The Principle

2.8.1 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.

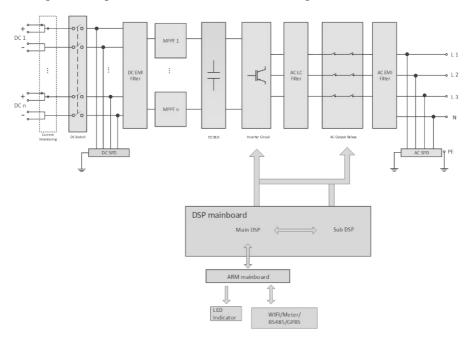
The DC input is equipped with 10 MPPTs to ensure maximum power even under different PV input conditions.

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.

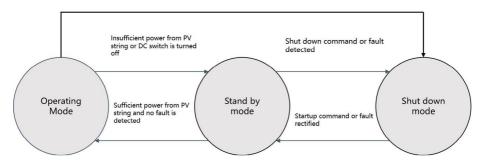
The AC surge protector provides a drain circuit for the AC side overvoltage energy to prevent the impact of AC side overvoltage from causing the inverter internal circuit of the inverter is damaged.



2.8.2 Working Modes

The HYX-S(75~120)K-T can work in Standby, Operating, or Shutdown mode:

Shut down command or fault detected



2.9 Functional Description

The functions of the inverter can be summarized as follows:

Inverter function:

The inverter converts DC power into AC power that meets the requirements of the grid and feeds it into the grid.

Data storage function:

The inverter stores operating information, fault records, and other system information.

Parameter configuration:

The inverter provides a variety of parameter configurations, which can be configured via cell phone APP to meet various requirements or to optimize its operation.

The user can configure the parameters through the mobile phone APP to meet various needs or adjust its operation to the best performance.

Communication interface:

The inverter provides communication accessory port for the communication module and uploading the data to the cloud through wired or wireless communication.

After the communication equipment is successfully established, users can view the inverter related information or set the inverter operating parameters, protection parameters, etc. through the HYXiPOWER Smart Energy Management Platform.

Protection functions

The inverter is equipped with protection functions such as islanding protection, DC reverse connection protection, AC short circuit protection, leakage current protection, surge protection, etc.

Earth Fault Alarm:

The device gives an alarm if there is a grounding fault. If the AC side is poorly grounded or not grounded, the LED indicator turns red.

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 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.

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 -25°C to +60°C and the relative humidity should be kept at 0 ~ 100% RH (non-condensing).
- 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

A DANGER

- Before installing the inverter, be sure that the inverter is free of any electrical connections.
- · Drilling must avoid the utility lines in the wall 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.

4.2 Pre-Installation Preparation

4.2.1 Installation Tools

Installation tools include, but are not limited to, the following recommended tools and, if necessary, other auxiliary tools can be used in the field.



Wire stripper



Hydraulic plier



Wire cutter



MC4 crimping tool



Rubber mallet



Hammer drill



Heat gun



Slotted screwdriver



Marker



Utility knife



Vacuum cleaner



Multi-mete



Dust mask



Goggles



Insulated shoes

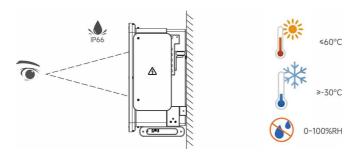


Protective gloves

4.2.2 Installation Environment

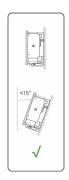
Installation environment requirements:

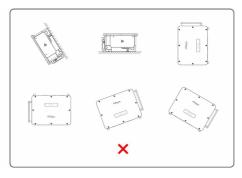
- The inverter has IP66 protection level and can be used for indoor or outdoor installation.
- The installation location should be convenient for electrical connection, operation and maintenance.
- No flammable and explosive materials should be present in the installation environment.
- It must not be installed in a location that is accessible to children.
- Temperature should meet: -30 to +60°C: Humidity should meet: 0 ~ 100% RH.
- Avoid direct sunlight, rain and snow on the inverter, and choose a sheltered place for the installation to extend the life of the inverter.
- It is very important to make sure the inverter is ventilated and dissipated smoothly, please install the inverter in a
 ventilated environment.
- The inverter will generate some noise during operation, so it is not recommended to install it in the living area.



Installation angle requirements:

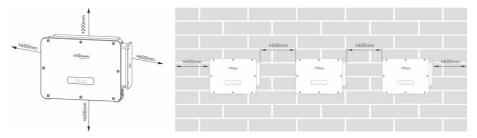
- The mounting carrier has a load-bearing capacity of at least 4 times the weight of the inverter, and the it is fire resistant.
- It is recommended that the inverter be installed vertically or tilted back ≤ 15° to facilitate the heat dissipation of the machine.
- Do not tilt the inverter forward, backward,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





Installation space requirements:

Make sure there is enough space around the inverter to ensure ventilation. The installation space requirements for a single inverter are shown in the figure below.



4.3 Handling the Inverter

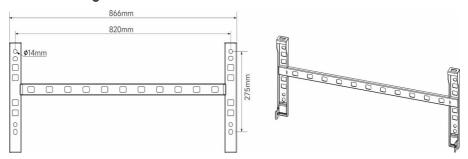
Before installation, the inverter needs to be removed from the packing box and moved to the selected installation site, when moving the inverter, the following guidance instructions need to be observed:

- · Always pay attention to the weight of the inverter.
- · Use the handles on both sides of the inverter to lift the inverter.
- Two installers move the inverter together, or use a suitable moving tool.
- · Do not loosen the unit unless it is securely fastened.

4.4 Installing the Inverter

After carrying the inverter to the installation site, install the mounting plate to the wall with the expansion bolt assembly, and then hang the inverter on the plate.

4.4.1 Mounting Plate Size

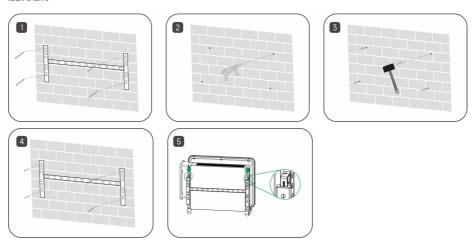


4.4.2 Installation Steps

Wall mount installation:

- Step 1: Place the mounting plate horizontally on the wall, recommend to select the hole position shown in the picture and mark the drilling position.
- Step 2: Drill a hole at the location shown, the depth of the hole is about 70mm.

- · Step 3: Place the expansion tube and install the mounting plate using the expansion bolt assembly.
- · Step 4: Secure the mounting plate with M12 screws.
- Step 5: Hang the mounting bracket of the inverter onto the plate and tighten them with M12 screws and finally lock them.



Bracket mount installation:

- Step 1: Place the mounting plate horizontally on the bracket, recommend to select the hole position shown in the picture and mark the drilling position.
- Step 2: Drill a hole at the location shown. Rust proofing of the perforations is recommended
- Step 3: Secure the mounting plate



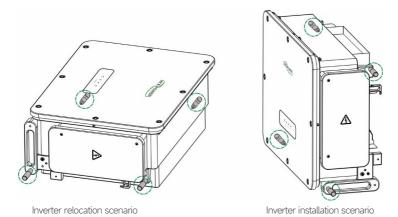
4.5 Installing the Inverter

Prior to installation, the inverter needs to be removed from the box and moved to the selected installation location. It is recommended to use the screw-in handles (optional) and base handles to move the inverter. Attach the four screw-in handles to the lugs and base of the inverter. Lift and move the inverter to the destination by means of the bottom handle and the four installed handles.

When moving the inverter, it is necessary to observe the following guidance instructions:

- Take care to maintain balance when moving the inverter so that the machine does not fall and injure the operator.
- Move the inverter with several installers or use suitable tools...

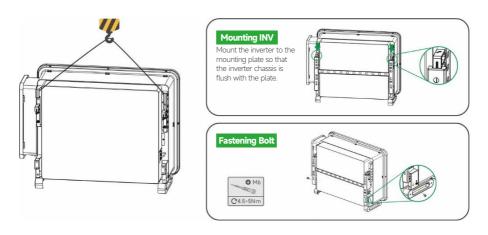
- The inverter will cause damage to the metal casing if it is placed directly on a hard surface. Foam or cardboard should be placed underneath it to avoid damaging the casing.
- When handling the inverter, please use the handles on the product, do not use the terminals etc. of the product as grips.



Lifting the inverter:

If the installation position is high and it is not possible to mount the inverter directly to the project mounting, pass the rope for lifting (which must meet the load-bearing requirements of the product) through the two lifting holes and then lift the inverter.

When lifting the inverter, please pay attention to keep the balance, so that the inverter will not collide with the wall or obstacles and damage the shell.



5. Electrical Connection

5.1 Installation Precautions

A DANGER

- · High voltage may be present in the inverter.
- Exposure of the PV module to sunlight will generate dangerous voltages.
- Do not close the AC/DC circuit breaker before completing the electrical connection and prevent misconnection.
- Make sure that all cables are not energized before making electrical connections.

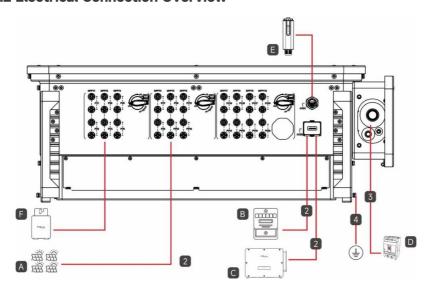
▲ WARNING

- · Any improper operation during wiring may result in equipment damage or personal injury or death.
- The wiring operation must be done by professional technicians only.
- The cables used in the PV power generation system must be firmly connected, intact, well insulated and
 of appropriate specifications.

⚠ CAUTION

- The wiring process must follow the relevant rules of the local power grid and the relevant safety instructions of PV modules.
- All electrical installations must comply with the electrical standards of the country and region where they
 are installed.
- The inverter can be connected to the grid only after obtaining the permission of the local power department or provider.

5.2 Electrical Connection Overview



No.	Name	No.	Name
Α	PV modules	D	AC Switch
В	Smart Meter	Е	DCS
С	Inverter	F	Optimizer

No.	Cable	Туре	Specifications
1	PV cable	Outdoor multi-core copper wire cable complying with 1,000V and 18A standard	4mm²~ 6mm²
2	Communication cable (Optional)	Two-core outdoor shielded twisted pair cable	0.2mm²~ 1mm²
3	AC Output power cable(Multi-core)	1. When choosing the grounding point of chassis shell and applying to the scene without N wire, it is recommended to use three-core (L1, L2, L3) outdoor cables and M12 OT/DT terminals (L1, L2, L3). 2. When selecting the grounding point inside the junction box with grounding wire and applying to the scenario without N-wire, it is recommended to use four-core (L1, L2, L3, PE) outdoor cables, M12 OT/DT	Conductor cross-sectional area: Copper cable: S: 70mm²-240mm²; Spe: ≥ S/2 Aluminum cable or copper clad aluminum cable: S: 95mm²-40mm²; Spe: ≥ S/2

		terminals (L1, L2, L3) and M10 OT/DT terminals (PE). 3. When selecting the chassis enclosure grounding point with ground wire and applying to the scene with N wire, it is recommended to use four-core (L1, L2, L3, N) outdoor cables, M12 T/DT terminals (L1, L2, L3, N). 4. When selecting the grounding point in the junction box to connect to the grounding wire and applying to the scenario with N-wire, it is recommended to use five-core (L1, L2, L3, N, PE) outdoor cables, M12 OT/DT terminals (L1, L2, L3, N and M10 OT/DT terminals (PE).	
4	AC Output power cable(Single-core)	Single Conductor Outdoor Cable and M12 OT/DT Terminals	Conductor cross-sectional area: Copper cable: S: 70mm²-240mm²; Spe: ≥ S/2 Aluminum cable or copper clad aluminum cable: S: 95mm²-40mm²; Spe: ≥ S/2.
5	Additional grounding cable	Outdoor single-core copper wire cable.	Conductor cross-sectional area Spe ≥ 16 mm².

5.3 Connecting the PE cable

Since the inverter is transformer less, the positive and negative terminals of the PV string must not be grounded, otherwise the inverter will not operate properly.

M WARNING

- Before connecting the AC side, the PV string and the communication connection, please make an
 external ground connection.
- The ground connection of the external protective earth terminal is not a substitute for the connection of the PE terminal in the AC wiring, but must ensure that both are reliably grounded. Otherwise, HYXIPOWER will not take any responsibility for the 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.

▲ WARNING

· Make sure this terminal is permanently grounded.

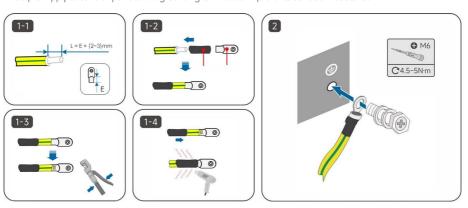
5.3.2 Grounding Procedure

NOTICE

- Pay attention not to damage the core wire when stripping a cable.
- The cavity formed after crimping the conductor strip of the OT terminal needs to wrap the core wire completely. The core wire needs to contact the OT terminal closely.
- Wrap the wire crimping area with the heat shrink tubing or the PVC insulation tape. The following figure
 uses the heat shrink tubing as an example.
- · When using the heat gun, protect devices from being scorched.
- The cross-sectional area of the secondary grounding cable must be the same as the cross-sectional area
 of the PE core in the AC cable.

The secondary grounding cable and terminal block are to be prepared by the customer.

- Step 1: Make the cable and crimp the terminal block.
- Step 2: Remove the screws from the grounding terminal and use a screwdriver to secure the cable.
- · Step 3: Apply silicone or paint to the grounding terminal to improve its corrosion resistance.



5.4 AC Side Connection5.4.1 AC Side Requirements

Before connecting to the grid, make sure that the grid voltage and frequency meet the requirements of the inverter, please refer to the "Technical Data" for detailed parameters.

Otherwise, contact the power company to solve the problem.

(I) NOTICE

- · Inverters can only be connected to the grid with the local power company's access permit.
- A three-phase AC switch needs to be installed on the AC side of the inverter. To ensure that the inverter
 can safely disconnect itself from the power grid when an exception occurs, select a proper overcurrent
 protection device in compliance with local power distribution regulations.

AC Circuit Breakers

An independent two-pole circuit breaker must be installed on the output side of the inverter to ensure safe disconnection from the grid. The recommended specifications are as follows.

Inverter Model	Recommended Rated Voltage	Recommended Rated Current
HYX-S75K-T	400V	150A
HYX-S100K-T	400V	200A
HYX-S110K-T	400V	225A
HYX-S120K-T	400V	250A

NOTICE

- · Multiple inverters must not share a single AC circuit breaker.
- No load may be connected between the inverter and the AC circuit breaker.

Leakage current protector

The inverter is equipped with an integrated comprehensive leakage current monitoring unit. The installation of an RCD (residual current monitoring device) is determined according to the requirements of local laws and regulations.

The inverter can be externally connected to an RCD of type A to protect it when the DC component of the leakage current exceeds the limit value. The following RCD specifications are for reference:

Model	Recommended RCD Spec
HYX-S75K-T	≥ 1,000mA
HYX-S100K-T	≥ 1,000mA
HYX-S110K-T	≥ 1,100mA
HYX-S120K-T	≥ 1,250mA

OT/DT Terminal Requirements

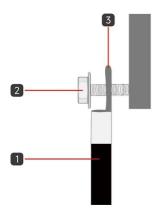
Use copper terminals when using copper core cables.

Use copper terminals when using copper-clad aluminum cables.

When aluminum alloy cables are used, use copper to aluminum conversion terminals.

OT/DT Terminal Requirements

If aluminum cable is selected, copper-aluminum transition terminals are required to avoid direct contact between the copper terminal and aluminum cable



No.	Name
1	Aluminum cable
2	Nut
3	Copper-aluminum transition terminals

NOTICE

- Please make sure that the terminals selected can make direct contact with the copper row, if in doubt, please contact the terminal manufacturer.
- Please make sure that the copper row and aluminum conductor will not be in direct contact, otherwise it
 will lead to chemical corrosion and affect the reliability of the electrical connection.

5.4.2 AC Side Wiring

(i) NOTICE

- Ensure that the cable jacket is inside the connector.
- Ensure that the exposed core wire is totally inserted into the cable hole.
- Ensure that AC terminations provide firm and solid electrical connections. Failing to do so may cause inverter malfunction and damage to its AC connectors.
- · Ensure that the cable is not twisted.

MARNING

- When wiring, the AC output wires should match exactly with the "L1", "L2", "L3", "N" ports of the AC terminals, "L1", 'L2', 'L3', 'N', 'PE' ports of the AC terminal, if the cables are connected incorrectly, it will lead to damage of the inverter.
- Make sure that the wire cores are fully connected to the AC terminal holes and are not exposed.
- Make sure the cables are tightly connected, otherwise the terminal may overheat during operation and cause damage to the inverter.
- AC output terminal has three-phase four-wire system, three-phase five-wire system wiring form, specific to
 the actual wiring scenario shall prevail, this article to three-phase five-wire system as an example for
 introduction.
- The length of the protective ground wire should be reserved, in the AC output line due to force majeure
 and under tension, to ensure that the protective ground wire last bear stress.
- Please provide your own M8 ground OT terminal and M12 AC OT terminal.

AC Connector Wiring Instructions

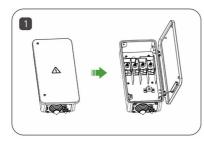
Installation Steps

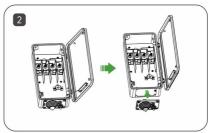
Step 1: Disconnect the AC side circuit breaker and loosen the junction box front cover screws. Use the limit lever to keep the junction box open during wiring.

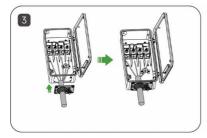
Step 2: Remove the sealing sleeve and cut off the appropriate sealing ring according to the outer diameter of the cable.

Step 3: Pass the cable with the protective layer removed through the sealing ring and secure the screws on the bottom sealing plate.

Step 4: Secure the crimped OT/DT terminal cable to the corresponding terminal. (Refer to the torque label inside the AC box for terminal installation torque values). Step 5: Remove the connecting rod, place it in place, close the terminal box, and tighten the screws on its front cover.











5.5 DC Side Connection

A DANGER

- Before connecting the DC input power cable, ensure that the DC voltage is within the safe range (lower than 60V DC), and that the DC SWITCH is set to the OFF position. Failure to do so could generate high voltage, which may cause electric shocks.
- When the inverter is operating, it is not allowed to operate the DC input power cable, such as connecting
 or disconnecting a PV string or a PV module in a PV string. Failure to do so may result in electric shock.
- If no PV string is connected to a DC input terminal of the inverter, do not remove the watertight cap from the terminal. Otherwise, the IP rating of the inverter will be affected.

▲ WARNING

Ensure that the following conditions are met. Otherwise, the inverter may be damaged, or even a fire could happen.

- PV modules connected in series in each PV string are of the same specification.
- The open-circuit voltage of each PV string is always lower than or equal to 1,100V DC.
- The maximum short-circuit current of each PV string must be lower than or equal to 25A.
- The DC input power cable is correctly connected. The positive and negative terminals of a PV module are connected to corresponding positive and negative DC input terminals of the inverter.

▲ WARNING

 If the DC input power cable is reversely connected, do not operate the DC switch and positive and negative connectors. Wait until the solar irradiance declines at night and the PV string current reduces to below 0.5A, and then turn off the DC switch. Remove the positive and negative connectors to correct the polarity.

(i) NOTICE

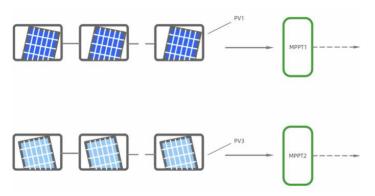
- Because the output of the PV string connected to the inverter cannot be grounded, ensure that the PV module output is insulated to ground.
- The PV strings connecting to the same MPPT route should contain the same number and model of PV modules or Smart PV optimizers.
- During the installation of PV strings and the inverter, the positive or negative terminals of PV strings may
 be short-circuited to ground if power cables are not properly installed or routed. An AC or DC short
 circuit may occur and damage the device, when the inverter is operating. The caused device damage is
 not covered under any warranty.

5.5.1 PV Input Configuration

The inverter has two PV input areas, each equipped with an independent MPPT that can operate

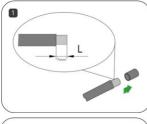
independently. In order to make full use of the PV panel input power, the PV strings in the same input area should have the same structure, including: the same type, number of panels, tilt angle and azimuth angle.

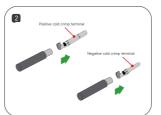
The structure of PV strings in different input areas can be different, including: different panel types, different number of cells in the string, different tilt and azimuth angles.

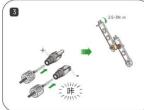


5.5.2 Assembling DC Connectors

- Step 1: Strip all DC cable insulation by approximately 7 mm.
- Step 2: Use crimping pliers to bundle the cable ends at the terminals.
- Step 3: Insert the cable through the cable sealing sleeve, insert it into the insulating sleeve and fasten it, and pull the cable gently to make sure it is tightly connected. Use 2.5 ~ 3N·m force to tighten the sealing sleeve and insulation sleeve.
- Step 4: Use a multi-meter to check the correct polarity of the PV string connection cable.









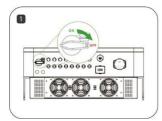
5.5.3 Installing the DC Connector

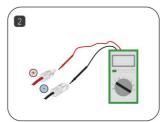
A DANGER

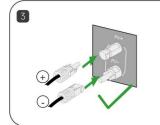
- · High voltage may be present in the inverter!
- Make sure that all cables are not energized before performing electrical operations.
- The AC circuit breaker switch must not be closed until the inverter electrical connections are complete.

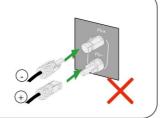
△ CAUTION

- If the DC input polarity is reversed, the inverter will be in a fault or alarm condition and will not operate
 properly.
- Please follow the above requirements to choose the correct terminals, otherwise the damage caused to the equipment will not be covered by the warranty.
- Step 1: Turn the DC switch to "OFF" manually.
- Step 2: Check the PV string cable connections for correct polarity and make sure that the open circuit voltage does not exceed the inverter input limit of 1,000V.
- Step 3: Connect the PV connectors to the corresponding terminals until a click is heard and seal the vacant DC terminals with MC4 waterproof plugs









5.6 Communication Connection

5.6.1 DCS Installation (WIFI module)

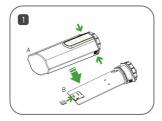
- Step 1: Remove the waterproof cover at the communication interface of the inverter,
- Step 2: Insert DCS into the corresponding communication terminal at the bottom of the inverter and tighten it to ensure it is secure.





5.6.2 DCS Installation (4G module)

- Step 1: Remove the protective cover of DCS and insert the SIM card;
- Step 2: Install the waterproof cover of DCS;
- Step 3: Remove the waterproof cover at the communication interface of the inverter;
- Step 4: Insert DCS into the corresponding communication terminal at the bottom of the inverter and tighten it to ensure it is secure.



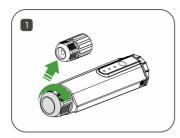


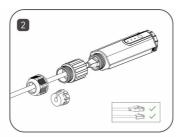


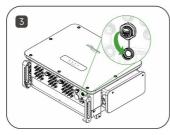


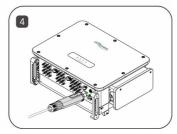
5.6.3 DCS Installation (Ethernet module)

- Step 1: Replace the bottom plug of DCS with the Ethernet plug;
- Step 2: Insert the network cable connector into the network junction;
- Step 3: Remove the waterproof cover at the communication interface of the inverter;
- Step 4: Insert DCS into the corresponding communication terminal at the bottom of the inverter and tighten it to ensure it is secure.



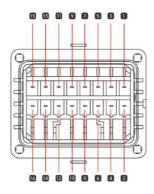






5.7 COM1/DRM/Meter

COM.2

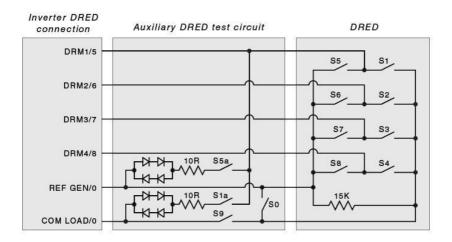


PIN	Definition	Function	Description	
1	GND		GND port for the DIN1 to	
'	OND		DIN5 signals or COM LOAD/0 for DRM	
2	DRM1/5/DIN1			
3	DRM2/6/DIN2	DRM/Dry contact for grid	DRM/Dry contact for grid	
4	DRM3/7/DIN3	Ripple Control/DRM/Rapid	scheduling	
5	DRM4/8/DIN4	shutdown		
6	DIN5		For the rapid shutdown DI signal, NS	
0	DIIVO		protection or REF GEN/0 for DRM	
7	GND		GND port for the DIN1 to	
,	OND		DIN5 signals or COM LOAD/0 for DRM	
8	RS485_MO_A		Reserved	
9	RS485_MO_B		Nesel ved	
10	RS485_GRID_A			
11	RS485_GRID_B	DC40Fiti	DC40F	
12	RS485_GRID_A	RS485 communication	RS485 communication for cascade	
13	RS485_GRID_B			
14	RS485_METER_A			
15	RS485_METER_B		Smart Meter connection	
16	PE	PE for the signal cable	PE for shielded communication cable	

DRM Function DRM

In Australia and New Zealand, the inverter supports the demand response modes as specified in the standard AS/NZS 4777.

The following figure shows the wiring between the inverter and the external DRED.



Mode	Inverter DRM Connection	Request
DRM0	REF GEN & COM LOAD	When switches S0 and S9 are switched on, the solar inverter should be turned off. When switch S0 is switched off, and switch S9 is switched on, the solar inverter should be grid-tied.

Enable the DRM function through the HYXiPOWER APP. If there are any problems, contact your distributor first. If the problem persists, contact HYXiPOWER.

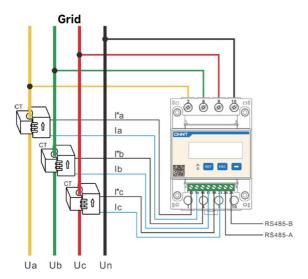
The DRM function is only applicable to devices for Australia and New Zealand.

(i) NOTICE

- . The inverter only supports DRMO.
- Multiple inverter combinations and multiple phase inverter combinations should not be used for current firmware.
- Generation and export limit control functions have not been tested to AS/NZS 4777.2:2020.

Meter Cable Connection

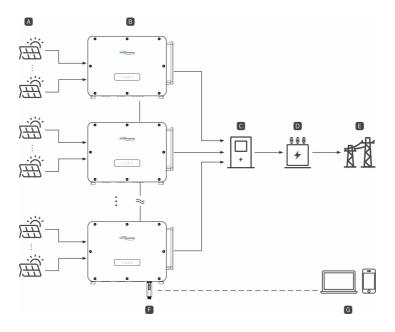
The following figures show the cable connections between the inverter and DTSU666 meter



5.7.1 Cascade Connection

DCS networking -RS485

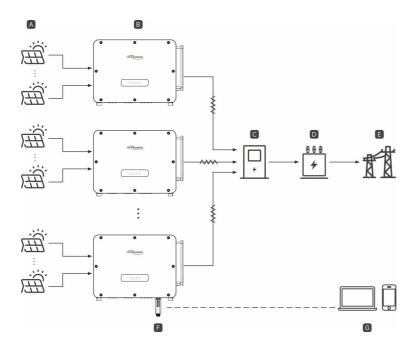
The following figure shows a scenario where the inverters are networked via RS485



No.	Name	No.	Name
А	PV Module	Е	Grid
В	Inverter	F	DCS
С	Grid Connection Cabinet	G	HYXiPOWER Cloud
D	Step-up transformer		

DCS networking -PLC

The following figure shows a scenario where the inverters are networked via PLC.



No.	Name	No.	Name
Α	PV Module	Е	Grid
В	Inverter	F	DCS
С	Grid Connection Cabinet	G	HYXiPOWER Cloud
D	Step-up transformer		

6. Operation

This chapter introduces the operation of PV inverter, which mainly covers the inspection before inverter operation, inverter grid connection operation, inverter shutdown and inverter routine maintenance and repair precautions.

This chapter introduces the operation of PV inverter, mainly involves the inspection of inverter before operation, inverter grid connection operation, inverter shutdown, and inverter routine maintenance.

6.1 Pre-Operation Inspection

Before running the PV grid-connected inverter, the following items (not limited to) must be strictly checked:

- Confirm that the installation location of the inverter meets the requirements of Section 4.2.2 and ensure easy installation, disassembly, operation and maintenance of the inverter.
- · Verify that the mechanical installation of the inverter meets the requirements of Section 4.4.
- Verify that the electrical connections to the inverter meet the requirements of Section 5.3.
- · Verify that all switches are in the "off" position.
- Make sure no construction tools, etc. are left on the top of the machine or in the junction box (if the machine has
 one).
- AC circuit breakers are selected in accordance with this manual and local standards.
- · All safety signs and warning labels are securely attached and clearly visible.
- Verify that the PV module open circuit voltage meets the requirements of the DC side parameters of the inverter in the Appendix.

↑ 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.

6.2 Grid-Connected Inverter Operation

Please strictly follow the following steps to turn on the inverter and complete the grid-connected operation of the inverter:

- Step 1: Make sure that all items checked in section 6.1 are satisfied.
- Step 2: Close the AC side circuit breaker of the inverter public grid and the DC switch integrated with the inverter.
- Step 3: Observe the status of the inverter LEDs (see 2.7.1 LED Status Description for details).

6.3 Inverter Shutdown

↑ CAUTION

- · Burning hazard!
- After the inverter has been shut down, there is still a risk of burns. After the inverter has cooled down, it is
 necessary to wear protective gloves before operating the inverter.

It is not necessary to shut down the inverter under normal circumstances, but it is necessary to shut down the inverter when maintenance or repair work needs to be performed.

Follow the steps below to disconnect the inverter from the AC and DC power sources, as failure to do so may result in injury or damage to the equipment.

- Step 1: Disconnect the external AC circuit breaker and prevent reconnection due to misuse.
- Step 2: Disconnect the external DC circuit breaker and turn the DC switch of the inverter to "OFF".
- Step 3: Wait for at least 5 minutes until the internal capacitor is completely discharged.
- Step 4: Use a current clamp to check the DC cable to make sure there is no current.

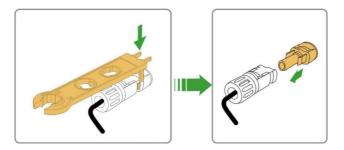
6.4 Inverter Removal

↑ CAUTION

- · Danger of burns and electric shocks!
- After disconnecting the inverter from the grid and the PV panels, wait at least 5 minutes before touching the internal conductive components.

NOTICE

- · Before dismantling the inverter, both AC and DC must be powered down.
- If the inverter has more than two DC terminals, the outer DC connector needs to be removed before the inner DC connector can be removed.
- Step 1: Refer to "5. Electrical Connections" and follow the steps in reverse order to disconnect all electrical connections from the inverter. To remove the DC connector, use the MC4 wrench to loosen
- the locking part of the DC connector and install the waterproof plug.
- Step 2: Refer to "4. Mechanical Installation" and follow the steps in reverse order to remove the inverter.
- Step 3: If necessary, remove the mounting plate.
- Step 4: If the inverter is to be put into use at a later date, store the inverter properly as described in "3.2 Inverter storage".



6.5 Abolition of Inverter

⚠ CAUTION

- Some parts and equipment of the inverter, such as capacitors, may cause environmental pollution.
- Please do not dispose of this product with household waste, and dispose of it in accordance with the regulations for disposal of electronic waste used at the installation site.

6.6 Routine Maintenance and Overhaul

In the solar PV grid-connected power generation system, the PV grid-connected inverter can automatically complete the operation of grid-connected power generation, stopping and switching on, etc. even when the day and night change and the season change.

In the solar photovoltaic grid-connected power generation system, the inverter can automatically complete the operation of grid-connected power generation and stop-start without human control. In order to ensure and extend the service life of the inverter, in addition to using the inverter in strict accordance with the contents of this manual, it is necessary to perform the necessary routine maintenance and repair of the inverter.

6.6.1 Maintenance Precautions

Improper maintenance operations can cause injury to personnel or damage to equipment.

A DANGER

- Disconnect the grid-side AC circuit breaker, then disconnect the DC switch.
- Wait at least 5 minutes until the internal components are discharged before performing maintenance or service operations.
- Use test equipment to verify that no voltages or currents are present.

↑ CAUTION

- When performing electrical connections and maintenance, post warning signs to
- prevent non-personnel from entering the electrical connection or maintenance area.
- Restart the inverter only after troubleshooting faults that affect the safety performance of the inverter.
- The inverter does not contain service parts inside, do not replace the internal components of the inverter without permission.
- Please contact HYXiPOWER after-sales service for maintenance, unauthorized disassembly of the machine HYXiPOWER will not assume any warranty and joint and several responsibilities.
- Comply with electrostatic protection norms and wear anti-static bracelets to avoid unnecessary contact
 with the circuit board.

6.6.2 Maintenance Instructions

The inverter cleaning steps are as follows:

- Step 1: Disconnect the input and output sides and wait 10 minutes.
- Step 2: Clean the inverter surface and the air inlet and outlet with a soft brush or vacuum cleaner.
- Step 3: Repeat section 6.1 and restart the inverter.

6.6.3 Inverter Periodic Maintenance

Inspection content	Inspection method	Maintenance
Save inverter operation data	recorded in the monitoring software to a file.	Once / quarter
	 Check the monitoring software and view various parameter settings of the inverter through the hand-held keyboard. 	
Inverter operation condition	Observe whether the inverter is firmly installed, and whether there is damage or deformation. Listen to the inverter for abnormal sounds. When the system is connected to the grid, check various variables. Check whether the inverter housing is heating normally, and use a thermal image to monitor the system heating.	
Inverter cleaning	Check the humidity and dust in the environment around the inverter, and clean the inverter if necessary.	Once / half year
Electrical connection	Check whether the system cable connection is loose and the inverter wiring terminals are loose, and then tighten them according to the method specified in Section 5.5.2. Check the cable for damage, especially if there are cuts on the skin that contact the metal surface.	
Safety functions	Check the inverter LEDs and system shutdown function. Simulate the shutdown and check the shutdown signal communication. Check the warning label and replace it if necessary.	Once / half year

7. System Commissioning

7.1 Installing the App

Method 1

Download and install the App through the following application stores:

- · App Store (iOS)
- Google Play

Method 2

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



7.2 APP User manual

For more information on using the HYXIPOWER APP, please refer to the user manual "HYXIPOWER APP".



7.3 System debugging

For system configuration and debugging, please refer to the user manual "HYXiPOWER Local Debugging APP".



8. Appendix

8.1 Technical Parameter

Product Model	HYX-S75K-T	HYX-S100K-T	HYX-S110K-T	HYX-S120K-T
PV Input				
Max. Input Voltage	1,100V			
Nominal Input Voltage		60	10V	
Start-up Voltage		16	0V	
MPPT Operating Voltage Range		140 - 1	1,000V	
MPPT Full Load Voltage Range		500 -	850V	
Max. Input Current Per MPPT		40	DA .	
Max. Input Current Per String		20	DA	
Max. Short-Circuit Current		50	DA .	
Number of MPPT		1	0	
Max. Input Number Per MPPT		2	0	
Max. Backfilling Current		C	IA .	
AC Output				
Nominal Output Power	75kW	100kW	110kW	120kW
Max. Apparent Power	82.5kVA	110kVA	121kVA	132kVA
Nominal Output Voltage		3L / N / PE, 220 /	380V, 230 / 400V	
Nominal AC Grid Frequency		50 /	60Hz	
Nominal Output Current	108.2A / 380V 113.9A / 400V	151.9A / 380V 144.3A / 400V	167.1A / 380V 158.7A / 400V	182.3A / 380V 173.2A / 400V
Max. Output Current	125.3A / 380V 119.0A / 400V	167.2A / 380V 158.8A / 400V	185.7A / 380V 176.4A / 400V	190.5A / 380V 190.5A / 400V
Adjustable Power Factor		> 0.99 / 0.8 lead	ling0.8 lagging	
THDi	< 3%			
Efficiency				
Max. Efficiency		98	8%	
European Weighted Efficiency	98.3%			
MPPT Efficiency	99.9%			
Protection				
Active Anti-islanding Protection	Yes			
Residual Current Monitoring	Yes			
DC Reverse Polarity Protection	Yes			
DC Switch	Yes			
AC Short-circuit Protection	Yes			
AC Overvoltage Protection	Yes			

AC Overcurrent Protection	Yes		
DC Surge Protection	Yes		
AC Surge Protection	Туре II		
Ground Fault Detection	Туре II		
AFCI	Optional		
PID recovery	Optional		
General Data			
Operating Temperature Range	-30 to +60°C		
Relative Operating Humidity	0 - 100 %RH 4,000m		
Operating Altitude			
Cooling	Smart Air Cooling		
Display	LED/ WLAN+App		
Communication	RS485 / 4G / WIFI / HPLC		
Weight 94kg			
Dimensions (W*H*D) 1000*730*375mm			
opology Non-Isolated			
Degree of Protection	IP66		
Overvoltage Level PV II / AC III			

Note 1: Under the AS4777 standard, the rated apparent power is 75kVA, 100kVA, 110kVA and 120kVA respectively.

8.2 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

(I) NOTICE

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

8.3 Contact Information

· Equipment model·

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.

•	Serial number of the device:
	Fault code / name:
	A brief description of the fault phenomenon:

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The manual is subject to change without notice while the product is being improved.



Zhejiang Hyxi Technology Co., Ltd.

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