

# AgilePID

## User Manual

**Sineng Electric Co., Ltd.**

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The manual is applicable to AgilePID products of Sineng Electric Co., Ltd.

The manual uses the labels shown in the following table for different purposes, and different labels may be used in combination.

| Identification sign                                                               | Identification definition                                      |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------|
|  | <b>Warning signs that need attention</b>                       |
|  | <b>Danger of electric shock that may cause personal injury</b> |
|  | <b>Dangerous! Please take care</b>                             |

This manual will be upgraded irregularly due to product upgrade and other reasons, without prior notice.

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## Safety Precautions

This manual contains important precautions and instructions that must be observed during installation, operation and maintenance of AgilePID products, and you must read this manual carefully before installation.



### Warning

- Install AgilePID products in strict accordance with the instructions in this manual, otherwise it may cause equipment damage or endanger the safety of operators!
  - The AgilePID product must be installed, debugged and maintained by the engineer appointed by the manufacturer or its agent, otherwise it may endanger personal safety and cause equipment failure. Equipment damage caused by this is not covered by warranty.
  - Operators shall be fully familiar with the relevant standards and operational safety regulations of their region/country, and operate according to relevant regulations.
  - Make sure to read this manual and the surface safety signs and instructions of AgilePID products carefully before doing any operations on AgilePID products.
- 



### Danger

- The AgilePID products must be grounded reliably. Grounding of equipment must comply with local electrical regulations. Otherwise, it will endanger the personal safety of operators
  - There is dangerous voltage inside AgilePID products during normal operation! Do not disassemble the internal cover without authorization or permission, so as to avoid equipment damage or personal injury!
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## Introduction to the Manual

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Please read this manual completely before unpacking and installing the product. This manual contains the following chapters:

**Label Description** - This chapter summarizes various labels appearing in the manual and explains them for better reading.

**Safety Precautions** - important safety precautions before operation.

**Chapter I Product Introduction** - This chapter briefly describes PID products and working principle.

**Chapter II Product Installation** - This chapter introduces the storage conditions, handling instructions and installation instructions required for reliable operation of PID products.

**Chapter III Electrical Connection** - This chapter provides corresponding instructions for connecting PID products to external power cables, communication cables, protective grounding cables and functional grounding cables.

**Chapter VI Product Operation** - This chapter introduces the on-off and off-line operation of PID products.

**Chapter V Product Specifications** - This chapter provides the specifications and parameters of PID products.

**Chapter VI Product Maintenance** - This chapter introduces the maintenance of PID products, including periodic maintenance and routine maintenance.

**After-sales Service Information** - This chapter provides contact information for after-sales service of products.

## Chapter I Product Introduction

### 1.1 Product Functions

The AgilePID of this product aims at the PID (potential induced degradation) problem in photovoltaic power generation system, and may automatically adjust the rising voltage of PID device to raise or lower the PV- to-ground potential according to the panel voltage and inverter state, thereby suppressing the PID effect of the panel. The application of this product may significantly increase the power generation of the power station.

### 1.2 Appearance Introduction

#### 1.2.1 Brief introduction of appearance

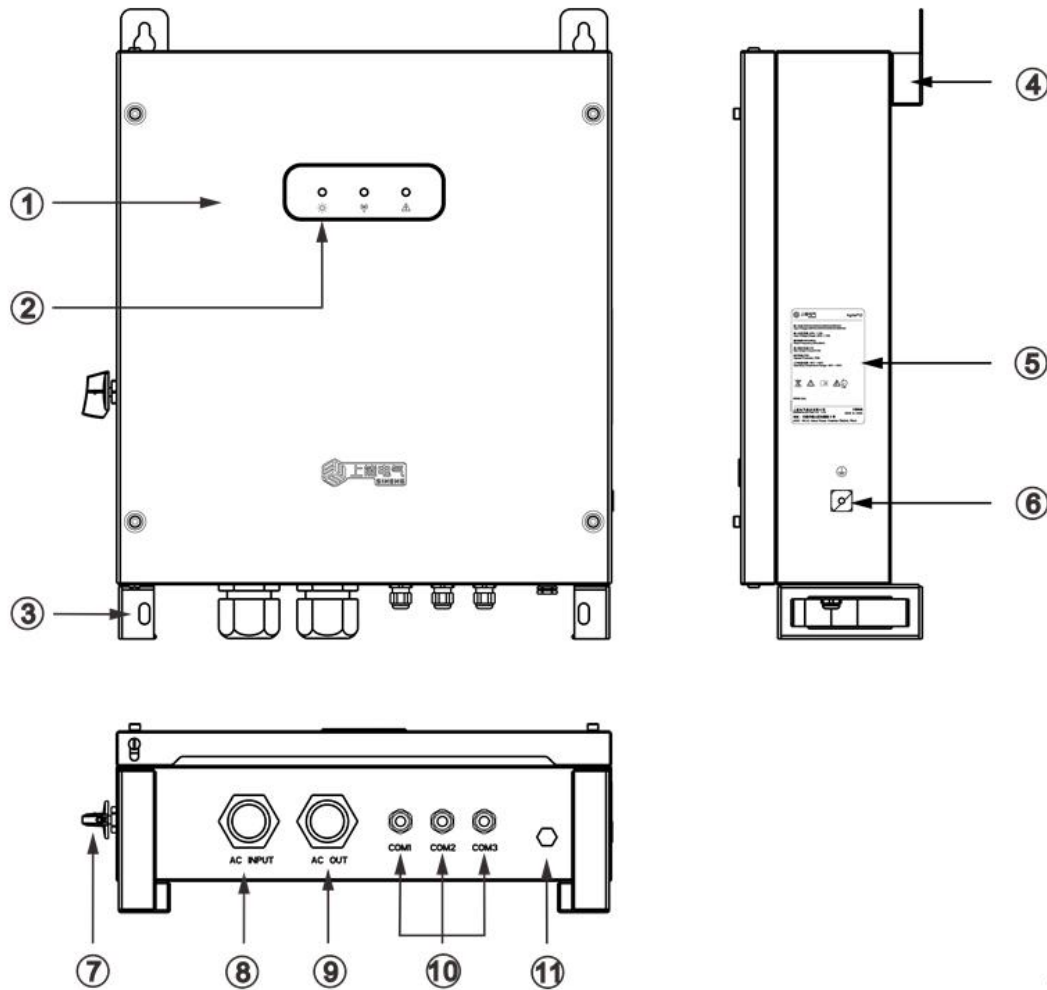


Figure 1-1 Overall Dimensions and Appearance

Table 1-1 Description of Agile PID Outline Structure

| S/N | Name                     | S/N | Name                                 | S/N | Name                     |
|-----|--------------------------|-----|--------------------------------------|-----|--------------------------|
| ①   | Upper cover plate        | ②   | Upper cover plate of auxiliary cabin | ③   | Chassis support foot     |
| ④   | Top lug                  | ⑤   | Nameplate                            | ⑥   | External grounding point |
| ⑦   | Switch                   | ⑧   | Ac input cable lock                  | ⑨   | AC output cable lock     |
| ⑩   | Communication cable lock | ⑪   | Breather valve                       |     |                          |

## 1.2.2 Description of panel indicator light

Table 1-2 Description of Panel Indicator Light

| Symbol                                                                            | Color | State      | Meaning               |
|-----------------------------------------------------------------------------------|-------|------------|-----------------------|
|  | Green | ON         | Working               |
|                                                                                   |       | Flickering | Standby               |
|                                                                                   |       | OFF        | Not working           |
|  | Blue  | Flickering | Communication normal  |
|                                                                                   |       | OFF        | No communication      |
|  | Red   | ON         | Equipment abnormality |
|                                                                                   |       | Flickering | Abnormal AC side      |
|                                                                                   |       | OFF        | No abnormalities      |

## 1.2.3 Nameplate and label

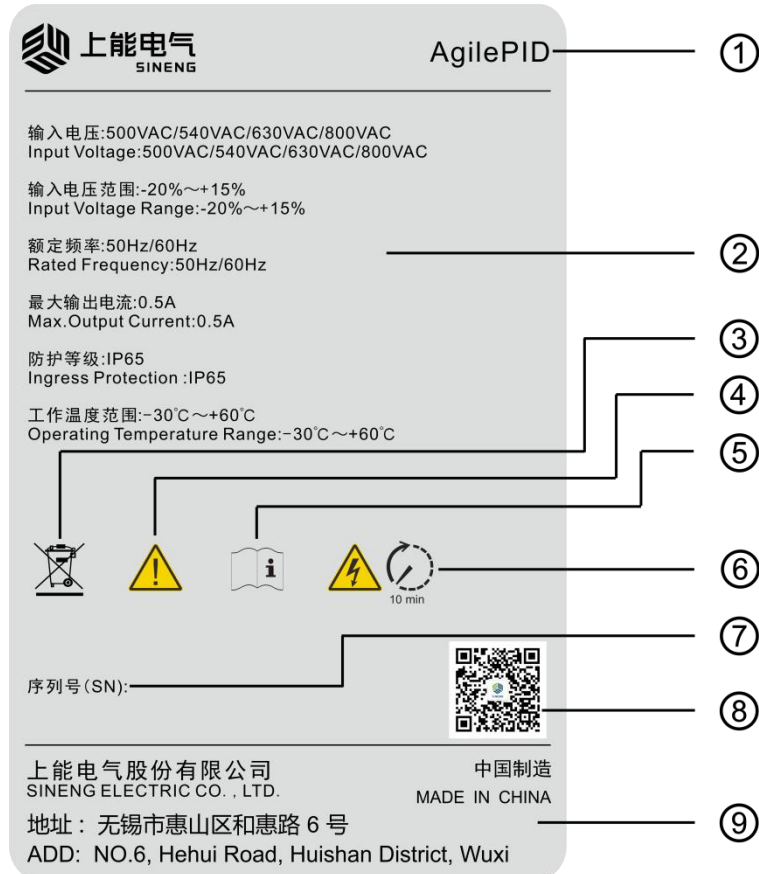


Figure 1-2 Nameplates and Labels

Table 1-3 Marking Instructions

| S/N | Indication                                                                          | Name                        | Meaning                                                                                                                                                                                        |
|-----|-------------------------------------------------------------------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ①   |                                                                                     | PID product model           |                                                                                                                                                                                                |
| ②   |                                                                                     | Main technical parameters   |                                                                                                                                                                                                |
| ③   |  | EU WEEE label               | If the user intends to discard this product, it must be sent to an appropriate place for recovery and recycling, and cannot be treated as domestic garbage.                                    |
| ④   |  | Danger warning              | PID products belong to power electronic products, especially after power-on, there will be potential risks, which must be operated by professionals, and safety protection shall be done well. |
| ⑤   |  | Check the user manual label | Professionals shall refer to the user manual when installing or maintaining PID products.                                                                                                      |

|   |                                                                                   |                                          |                                                                                                                                  |
|---|-----------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| ⑥ |  | Indication of delayed electric discharge | PID products may only be discharged to safe voltage after being powered down for 10 minutes, and professionals may operate them. |
| ⑦ |                                                                                   | Serial No.                               | PID product serial number information                                                                                            |
| ⑧ |  | QR code                                  | Scan the QR code and follow the WeChat official account of Sineng Electric Co., Ltd.                                             |
| ⑨ |                                                                                   | Manufacturers' information               | Manufacturer's name & address                                                                                                    |

### 1.3 System Application

AgilePID products are generally used in conjunction with intelligent subarray controllers, which may take power from PID products. This product supports the application of double winding transformer (PV sub-lineup  $\leq 12.5\text{MW}$ ) and double split transformer (PV sub-lineup  $\leq 25\text{MW}$ ). In the double winding transformer scenario, a PID product is configured and a knife fuse switch is reserved on the low voltage bus. In the double split transformer scenario, two PID products are configured, and two knife melting switches are reserved on the low voltage bus. The working principles of double winding and double split transformer scenes are shown in Figures 1-3 and 1-4.

This product supports inverter systems with three-phase AC voltages of 500VAC, 540VAC, 630VAC and 800VAC and DC side voltages of 1000V, 1100V and 1500V.

This product is only applicable to IT systems, that is, there is no electrical connection between AC side and DC side and the ground. It is forbidden to connect the neutral lines of inverter and AC distribution cabinet, otherwise there will be high voltage danger. When the AC side is connected, the AC input cable needs to be directly connected with the bus bar on the low voltage side of the box transformer, and it is forbidden to connect with the built-in isolation transformer of the box transformer.

When applying PID products, it is necessary to pay attention to the selection of lightning arresters on the low voltage side of AC bus box and box transformer. The selection requirements are shown in Table 1-4:

Table 1-4 Requirements for Type Selection of Lightning Protector

| Rated voltage                                                                           | Wiring method       | Maximum continuous operation voltage of lightning arrester |
|-----------------------------------------------------------------------------------------|---------------------|------------------------------------------------------------|
| 500VAC                                                                                  | 3+1 connection mode | ≥385V AC                                                   |
| 540VAC                                                                                  |                     |                                                            |
| 800VAC                                                                                  |                     | ≥750V AC                                                   |
| Note: varistor is selected as lightning protector, and gas discharge tube is prohibited |                     |                                                            |

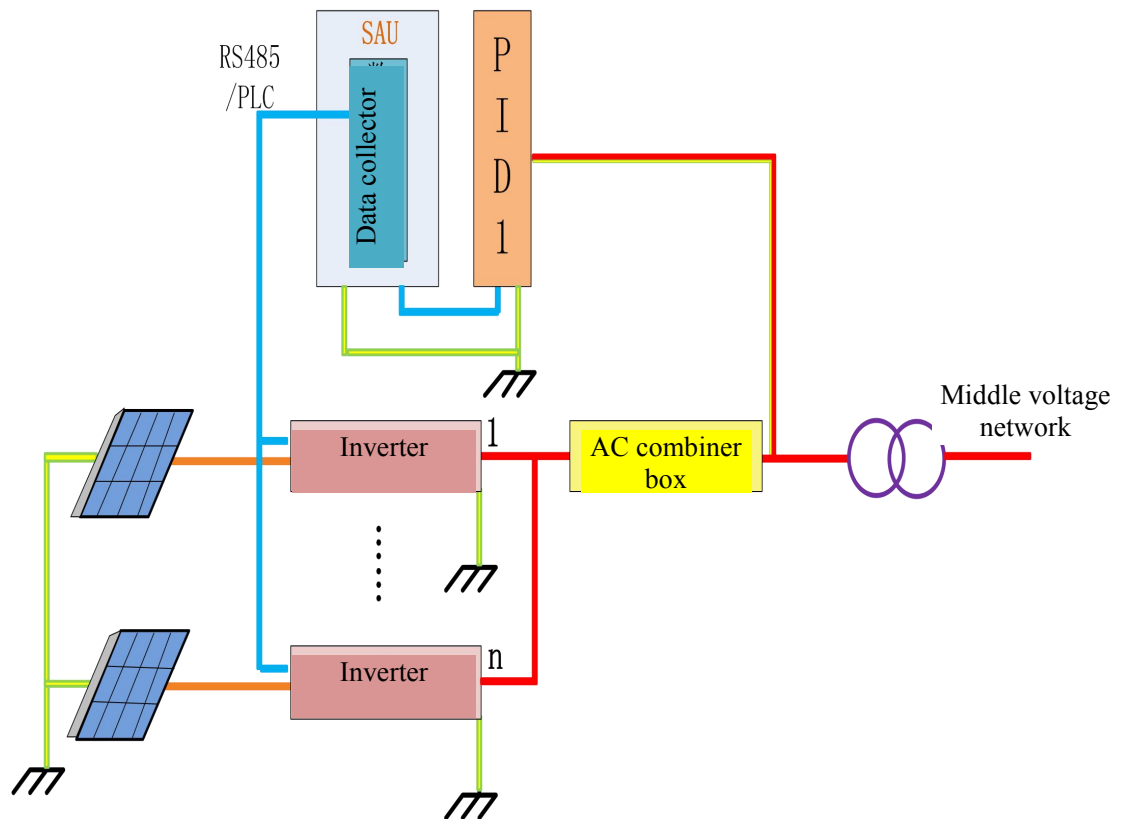


Figure 1-3 Working Principle of Double Winding Transformer

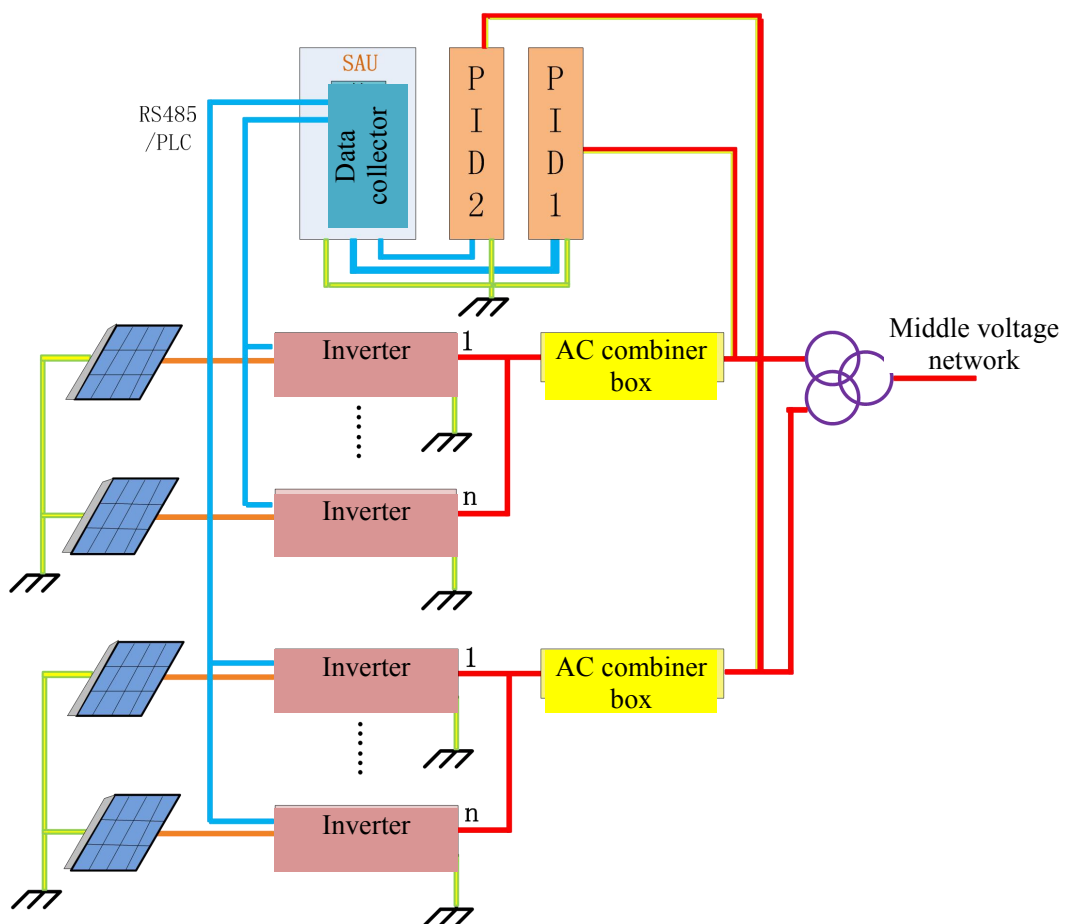


Figure 1-4 Working Principle of Double Split Transformer

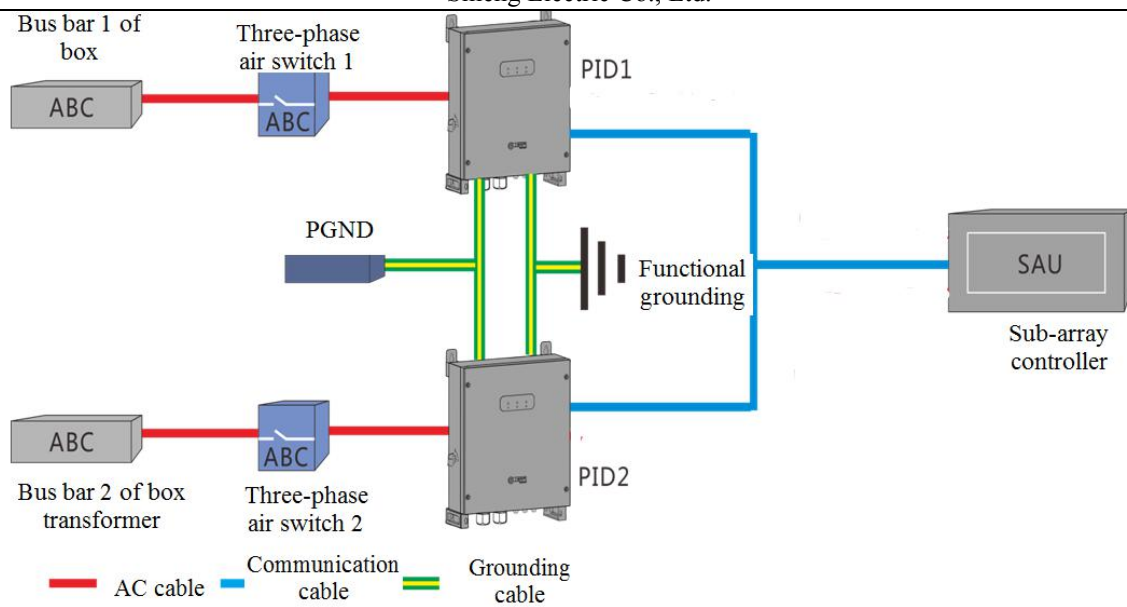


Figure 1-5 Wiring Diagram of Double Split Transformer

## Chapter II Product Installation

This chapter introduces the on-site environmental conditions, installation steps and other relevant instructions required for the storage and reliable operation of PID products.

### 2.1 Storage before Installation



#### Warning

- PID products shall be stored indoors, and the package shall be complete. It is strictly forbidden to store PID products without packaging, otherwise the damage, service life reduction or other losses of PID products caused by this will have nothing to do with our company.
- It is forbidden to stack more than 3 units! It is forbidden to store PID products horizontally or upside down!
- PID products shall be stored in the temperature range of  $-40 \sim 70^{\circ}\text{C}$ , relative humidity of  $0 \sim 100\%$  and no condensation.

### 2.2 Handling and Packaging Disassembly



#### Warning

- Before handling, make sure that the packaging of PID products is complete and undamaged! If the package is damaged, please stop the follow-up operation! And contact our company or freight company.
- Please carefully observe the instructions and warning signs on PID product packaging before operation!
- Please keep balance when disassembling and handling PID products, so as to avoid personal injury caused by falling.
- When PID products are placed on the ground, cushion materials such as foam or paper skin shall be placed at the bottom to avoid damaging the shell.

Unpack PID products according to the steps in fig. 2-1, and place the taken-out products in a flat environment to avoid inclination or impact.

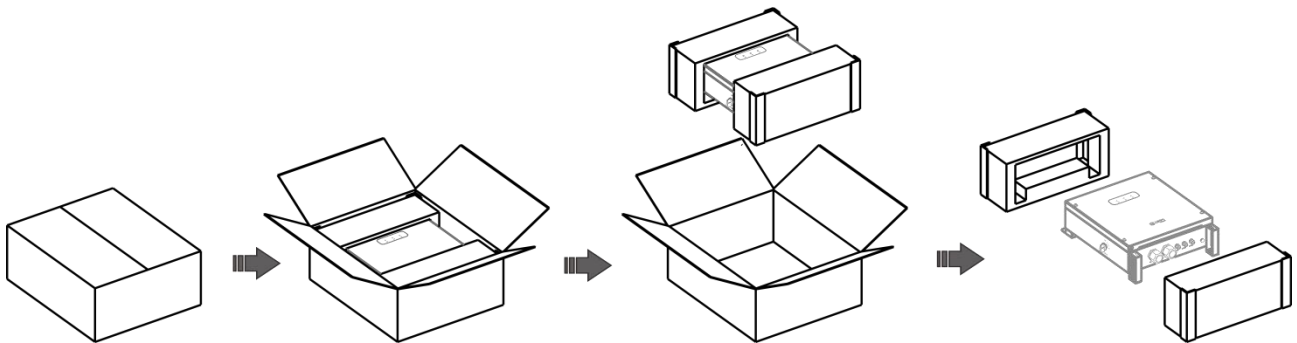


Fig. 2-1 Schematic Diagram of PID Product Disassembly and Packaging

### 2.3 Product Installation



#### Warning

- Before installation, make sure that the packaging of PID products is complete and undamaged!

#### 2.3.1 Installation tools

| S/N | Name                                     | S/N | Name                                            | S/N | Name                                              |
|-----|------------------------------------------|-----|-------------------------------------------------|-----|---------------------------------------------------|
| ①   | Tool knife                               | ②   | Tape measure or level                           | ③   | Marking pen                                       |
| ④   | Electric drill (bit $\Phi 12/\Phi 14$ )  | ⑤   | Hexagon wrench M6                               | ⑥   | Cross screwdriver: M3, M4, M5, M6, M8             |
| ⑦   | Hexagon socket wrench M8, M10            | ⑧   | Diagonal pliers                                 | ⑨   | Wire stripper                                     |
| ⑩   | Wire pressing pliers (H4TC0001)          | ⑪   | Wrench for removing DC plug terminal (H4TC0001) | ⑫   | Multimeter (measuring range $\geq 1500\text{V}$ ) |
| ⑬   | Wire clamp (output cable terminal, etc.) | ⑭   | Heat shrinkable sleeve, insulating tape         | ⑮   | Heat gun                                          |

Note: Operators need to bring their own insulating shoes, insulating gloves, dust masks and protective glasses

#### 2.3.2 Installation environment requirements

- The protection level of PID products is IP65, which may be installed indoors and outdoors.

- The installation area of PID products shall be far away from flammable, explosive and high-voltage interference equipment.
- The mounting frame or wall of PID products shall have certain fireproof performance.

### 2.3.3 Installation angle

When installing PID products, please be vertical to the ground and install them forward.

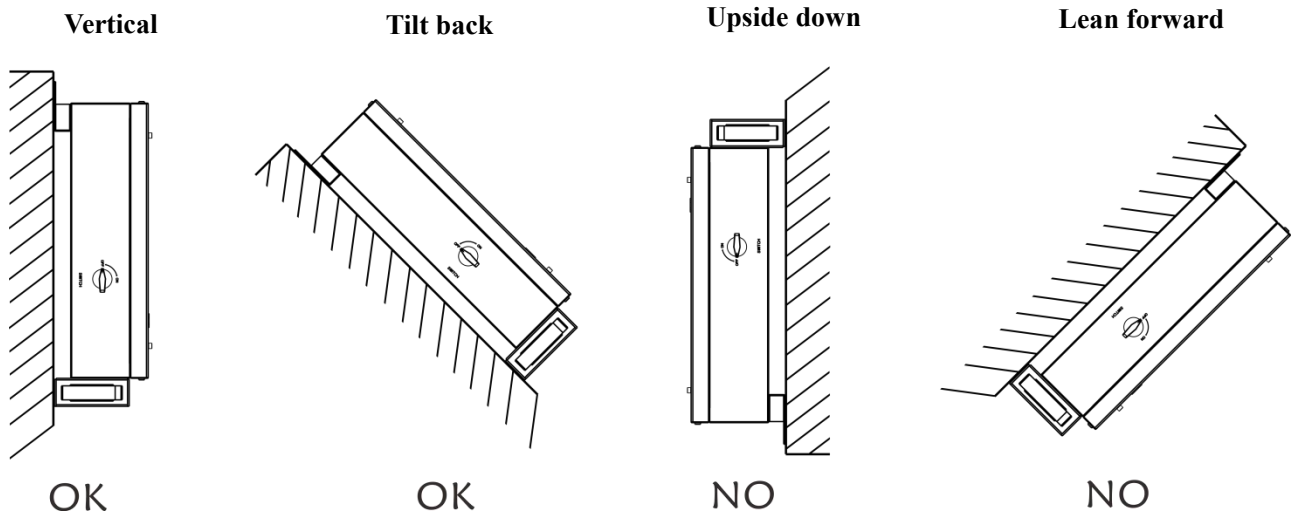


Figure 2-2 Schematic Diagram of Installation Angle of PID Products

### 2.3.4 Installation requirements

See Figure 2-3 for the dimensions of PID product installation backplane:

The installation process of PID product bracket is shown in Figure 2-4. According to the installation dimension drawing, measure the position of installation hole on the bracket and mark it with a marker pen; use a  $\phi 10$  drill bit to drill holes at the positions marked by the marker pen; pre-tighten the bracket with two M8 combination bolts; hang the PID product on the combination bolt and tighten it; take two M8 combination bolts to fasten the chassis support foot on the bracket, and the installation is completed.

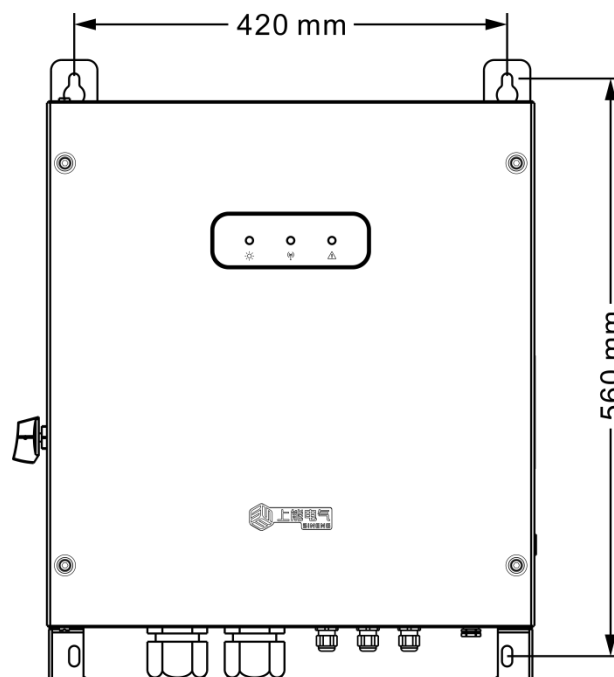


Figure 2-3 Installation Dimension Drawing

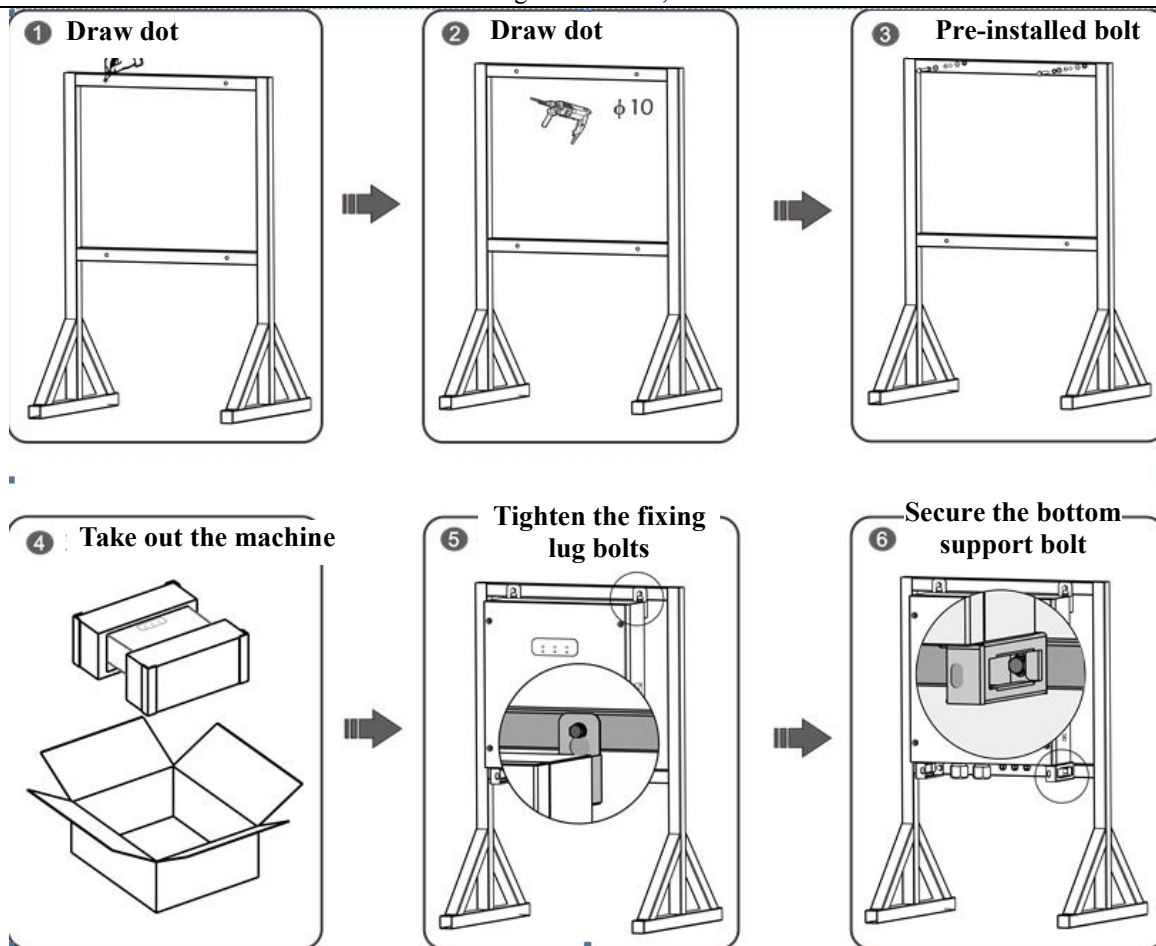


Figure 2-4 Schematic Diagram of PID Product Bracket Installation

- Note: 1. The combined bolt here needs two flat pads and one elastic pad, and a flat pad is placed between the nut and the bracket to increase the contact area, thus increasing the fastening reliability.
2. M8×60 combination bolts are provided in the accessory package of the product. If the length cannot meet the installation requirements, users shall bring their own M8 combination bolts.
3. If it is installed against the wall, the customer shall bring four M8 expansion bolts.
4. It is recommended that the bearing capacity of the bracket be  $\geq 100\text{KG}$ .

## Chapter III Electrical Connection



### Danger

- Insulation layer of power cable must be kept intact, without damage and scratch. Otherwise, it may lead to short circuit and fire!
- Before connecting PID products, it must be checked and confirmed that all connecting cables of the equipment are free of dangerous voltage, and obvious warning signs must be set at the external distribution switches of the equipment to avoid misoperation of the external switches of the equipment and threaten the personal safety of operators!
- Before connecting PID products, make sure that the AC connection port is disconnected from the power grid and there is no voltage at the AC port!



### Warning

- Cable connection shall be carried out in strict accordance with the labels in PID products, otherwise the equipment will be damaged.
- Cable connection of PID products must be safe and reliable. Cable selection and tightening torque must meet the requirements of this manual, otherwise it may lead to fire and equipment damage.
- Operators shall not open the upper cover of the main cabin without permission. If the tamper-proof label is torn and PID products are damaged, it will not be covered by our warranty.
- When the operator opens the upper cover of the wiring compartment, please pay attention to the foaming of the upper cover, and do not scratch or damage it, otherwise it will cause the PID product to enter the water.
- Please try not to open the connection compartment of PID products in rain and snow to avoid the risk of water ingress.

Table 3-1 List of User Operation Cables for PID Products

| User cable classification  | Cable function description                                    | Remarks                    |
|----------------------------|---------------------------------------------------------------|----------------------------|
| Protective grounding cable | Grounding cable                                               | Approximate grounding      |
| AC input cable             | Connect the box transformer to the input side of PID products | Armored multi-strand cable |
| Communication cable        | RS485 communication signal cable                              | Shielded cable             |

### 3.1 Connecting Protective Grounding Wire



### Warning

- PID products must be grounded reliably, otherwise it will cause personal injury or abnormal operation of the products!

PID products need to be grounded nearby, and the connection steps of protective grounding wire are as follows:

- (1) Before PID product installation, lead the ground wire from the ground wire bus to the product installation position;
- (2) Use wire stripping pliers to strip a section of bare copper core from the ground wire with corresponding specifications, and the length of bare copper core is 3 mm longer than the terminal of OT terminal;
- (3) Crimp the OT terminal to the bare copper core with wire crimping pliers;
- (4) Heat shrinkable sleeve with suitable size is sleeved on the terminal of OT terminal, and the length is generally recommended to be 1.5-2 times of the terminal;
- (5) Blow the heat shrinkable sleeve tightly with a hot air gun to wrap the terminal and cable tightly, and the cable is manufactured (the manufacturing process is shown in Figure 3-2);
- (6) Fasten the OT terminal of grounding wire at the grounding interface with M6 screws. Please refer to Table 3-2 for fastening torque.

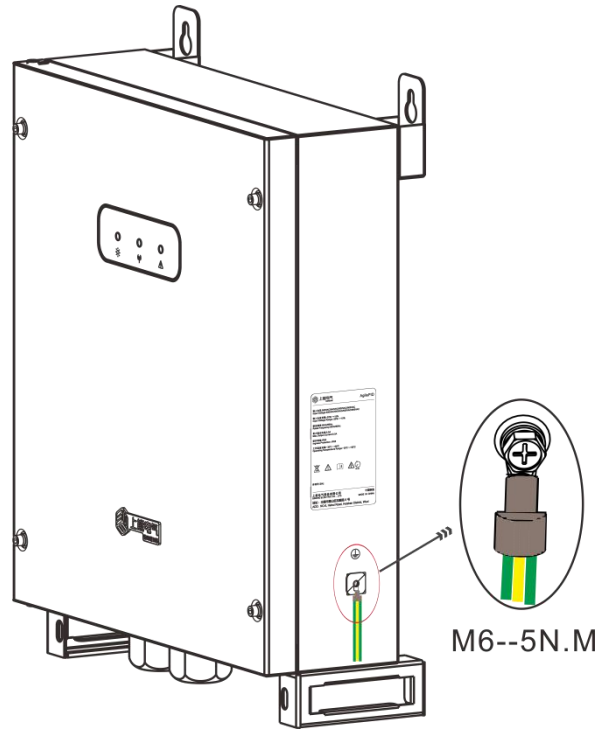


Figure 3-1 Schematic Diagram of Protective Grounding Wire Connection

Note:

After the grounding terminal is fastened, it is recommended to apply silica gel or brush outdoor paint on the outside of the terminal to improve the anticorrosion performance of the terminal.

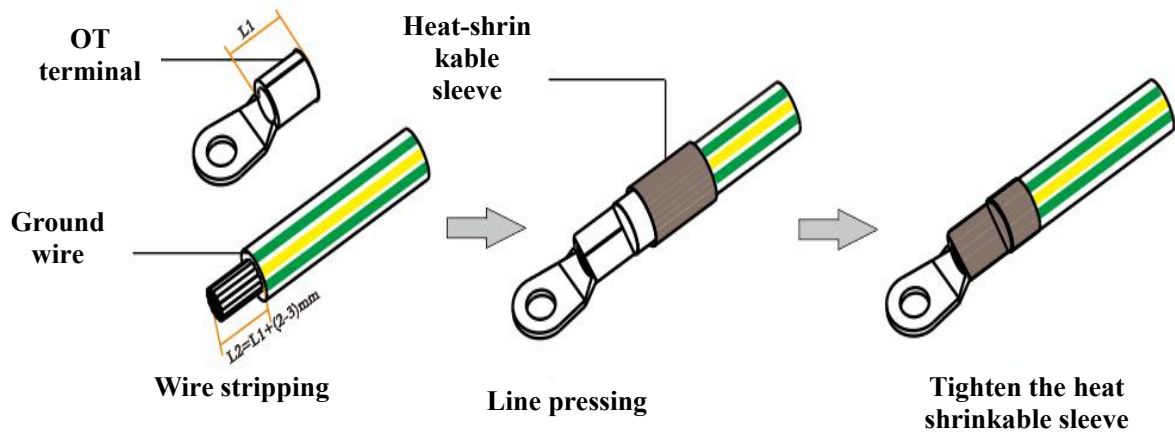


Figure 3-2 Schematic Diagram of Cable Making (OT terminal)

Note:

1. Users need to prepare OT terminals, cables and heat shrinkable sleeves for protecting grounding wires by themselves.
2. Users need to use tools--diagonal pliers, wire stripping pliers, wire pressing pliers, hot air gun and M6 Phillips screwdriver.

Table 3-2 Recommended Table for Specifications of Protective Ground Wire Cable

| Cable type                 | Conductor attribute | Cross-sectional area of conductor (mm <sup>2</sup> ) | Terminal specifications | Tightening torque (N.m) |
|----------------------------|---------------------|------------------------------------------------------|-------------------------|-------------------------|
| Protective grounding cable | Copper core wire    | ≥10                                                  | OT terminal:            | 5                       |

Note: All copper core wires are multi-stranded.

## 3.2 Connecting AC Cables

---



### Warning

- The lock head and fixing screw of AC cable must be tightened, otherwise there is a risk that PID products will be damaged or caught fire!
  - When connecting the AC cable, make sure that the AC circuit breaker is open!
- 

The specific connection steps of AC cable are as follows:

- (1) Remove the cable lock on AC side and the tail plug;
- (2) Pass the cable through the waterproof cable lock, as shown in Figure 3-3;
- (3) Use wire stripping pliers to strip the insulation layer and cable sheath according to the dimensions shown in Figure 3-3-① - ②, and select the corresponding terminal according to the cable used to make the AC output cable, where two layers of heat shrinkable sleeves are required. Refer to Figure 3-2 for the cable making process;
- (4) Connect the AC cable from the low-voltage distribution cabinet to the left terminal block L1/L2/L3 through the AC INPUT cable lock. Refer to Table 3-2 for the fastening torque of the terminal fastening screws;
- (5) Connect the PE on the terminal block to the block for low-voltage distribution function;
- (6) After the connection is completed, tighten the plastic nut at the tail of the cable lock to ensure waterproof;
- (7) Repeat the above steps to connect the right terminal block L1/L2/L3 with the subarray controller input by using AC cable. After the connection is completed, tighten the plastic nut at the tail of the cable lock to ensure waterproof.

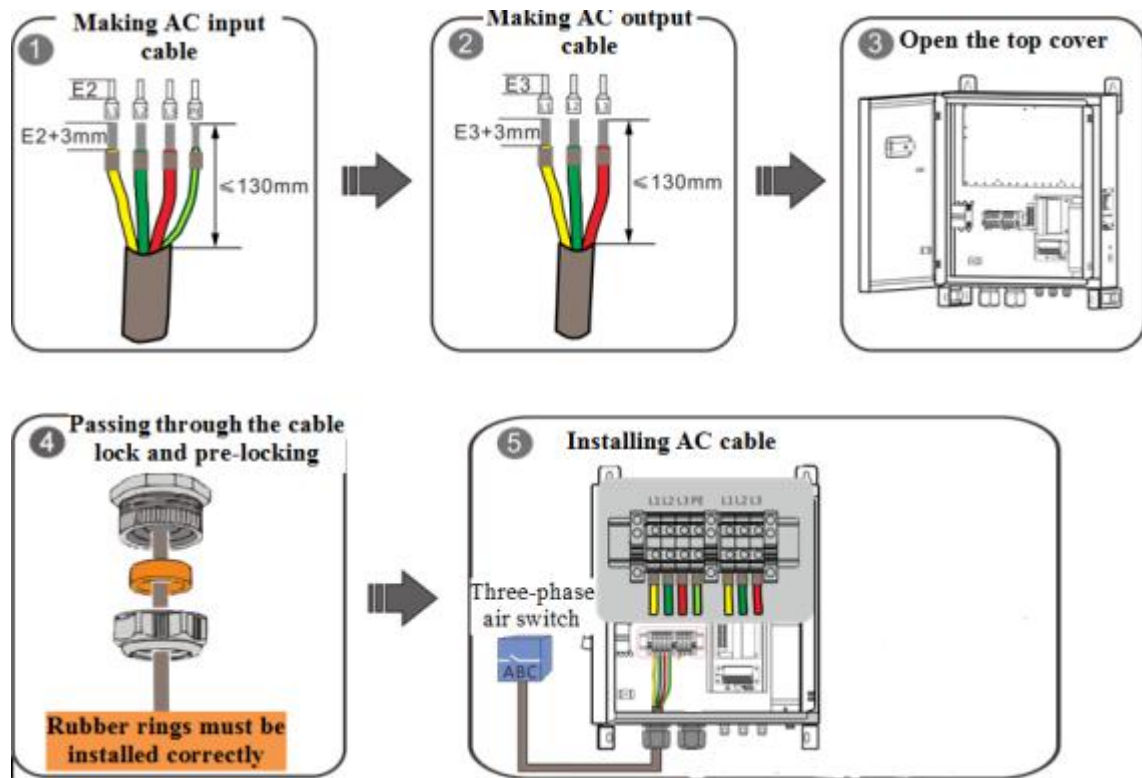


Figure 3-3 Cable Connection on AC Side

Note:

1. Cable terminals shall be installed along the direction of terminal row;
2. Users need to provide their cable and heat shrinkable sleeve for AC input line.
3. Users need to use tools-diagonal pliers, wire stripping pliers, wire pressing pliers, hot air gun, M8 screwdriver and M8 outer hexagonal sleeve.

Table 3-3 AC Cable Specification Recommendation Table

| Cable type     | Conductor attribute | Cross-sectional area of conductor (mm <sup>2</sup> ) | Withstand voltage of cable (V)        | Outside diameter of cable (mm) | Terminal specifications | Tightening torque (N.m) |
|----------------|---------------------|------------------------------------------------------|---------------------------------------|--------------------------------|-------------------------|-------------------------|
| Ac power cable | Copper core wire    | L1\L2\L3:6~10<br>PE:6~10                             | ≥1.2* rated voltage of three-phase AC |                                | Tubular terminal        | 1.2                     |

### 3.3 Connecting the Communication Cable



#### Warning

- Please connect the communication cable strictly according to the PID product communication port label!

PID products need to be connected with the 8th 485 of intelligent subarray controller through RS485 communication port (A+/A-). It is recommended to use double-core reinforced insulated cable with shielding layer, which is fastened to the grounding point. Connect the communication cable as follows:

- (1) Remove the lock head of communication cable and the tail plug;
- (2) Pass the communication cable through the cable lock;
- (3) Use wire stripping pliers to strip off the insulation and protective layer of the cable as shown in Figure 3-4- ①; select an OT terminal with a suitable size to make a communication cable. The shielding layer needs to be wrapped with insulating tape, and the end is reserved with 15mm for fixing screws;
- (4) There is a 6-bit terminal row on the communication board near the machine inlet, which is marked

with DO+/DO-, A+/A-, B+/B- from left to right (as shown in Figure 3-4);

(5) Connect the completed communication cable to the corresponding terminal and fasten it with a Phillips screwdriver. Refer to Table 3-2 for the fixed torque. The shielding layer is directly locked at the grounding point with a torque of 1.4N.M;

(6) After the connection is completed, tighten the plastic nut at the tail of the cable lock to ensure waterproof.

Table 3-4 Recommendation Table of Communication Cable Specifications

| Cable type          | Conductor attribute     | Cross-sectional area of conductor (mm <sup>2</sup> ) | Outside diameter of cable (mm) | Terminal specifications | Terminal width (mm) | Tightening torque (N.m) |
|---------------------|-------------------------|------------------------------------------------------|--------------------------------|-------------------------|---------------------|-------------------------|
| Communication cable | Double-core copper wire |                                                      |                                |                         | ≤6.5                | 0.8                     |

Note:

1. Users need to bring their own communication cables, OT terminals, heat shrinkable sleeves and insulating tapes.
2. Users need to use tools-diagonal pliers, wire stripping pliers, wire pressing pliers, hot air gun and M3\M4 Phillips screwdriver.
3. The copper wire of the shielding layer of communication cable needs to be arranged and wrapped with insulating tape, so please ensure that the distance between the exposed copper wire and electronic components is greater than 15mm.

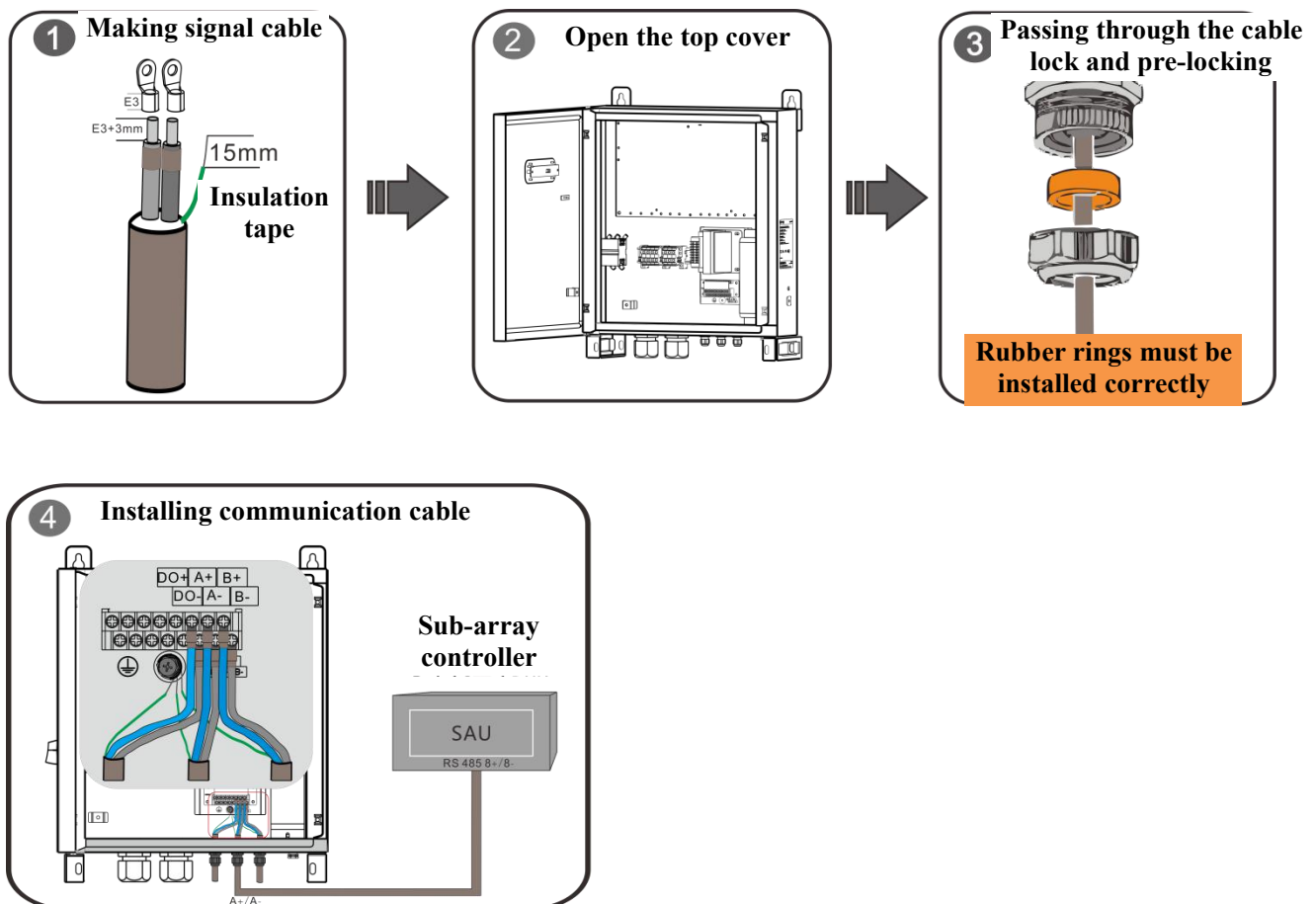


Figure 3-4 Schematic Diagram of Communication Cable Installation

### 3.4 Checking after Installation

| S/N | Inspection item                             | Inspection result: Yes√/No× |
|-----|---------------------------------------------|-----------------------------|
| 1   | Check whether the switch is in "OFF" state. | <input type="checkbox"/>    |

|   |                                                                                                                                                                                                     |                          |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 2 | Check whether the PID products are installed firmly and whether the screws on both sides of the installation backboard are fastened.                                                                | <input type="checkbox"/> |
| 3 | Check whether operating tools and unused screws are left in the cabin.                                                                                                                              | <input type="checkbox"/> |
| 4 | Check whether the external grounding wire is connected correctly, whether the terminals are fastened and whether the grounding is reliable, so as to ensure no open circuit or short circuit.       | <input type="checkbox"/> |
| 5 | Check whether the AC input cable is connected correctly and the terminals are fastened to ensure no open circuit or short circuit.                                                                  | <input type="checkbox"/> |
| 6 | Check whether the communication cable is connected correctly and the terminals are fastened to ensure no open circuit or short circuit.                                                             | <input type="checkbox"/> |
| 7 | Check whether the plastic nuts on the AC side and the tail of RS485 cable lock are tightened, and whether they have been sealed (such as fireproofing mud) when a single cable cannot be tightened. | <input type="checkbox"/> |
| 8 | Check whether the waterproof plug at the tail of the cable lock which is not needed is inserted properly, and whether the nut at the tail is locked tightly.                                        | <input type="checkbox"/> |
| 9 | Check whether the upper cover of the junction box is installed in place and whether the screws are tightened.                                                                                       | <input type="checkbox"/> |

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## Chapter IV Product Operation

---



### **Danger**

- Non-professionals shall not open the panel of PID products, because there is a danger of high voltage!
  - When PID products work normally, there is dangerous voltage in the equipment! Be sure to operate PID products according to the instructions in this manual!
  - Only professionals may operate PID products, and others are not allowed to operate without authorization!
- 

### 4.1 On-off Operation

#### 4.1.1 Start-up operation

Please confirm the following items before powering on PID products for the first time:

- (1) The installation site environment meets the relevant requirements in Chapter II of this manual;
- (2) The connection of input and output power cables, communication cables and ground cables shall meet the requirements of Chapter III of this manual;
- (3) The box transformer breaker connected with the AC side of PID products is in disconnected state;
- (4) Turn the knob switch to the "OFF" position;
- (5) The voltage and frequency of the access point shall be measured before starting up to ensure that the grid-connected specifications of PID products meet the requirements of Chapter VI.

After meeting the above conditions, start the machine according to the following steps:

- (1) Close the circuit breaker connected between the box transformer and PID products;
- (2) Turn the knob switch to the "ON" position;
- (3) The connection with PID products is established through 485 communication. If the PID products have no fault and alarm information, the PID products will be automatically turned on and connected to the grid without human intervention; if PID products have fault and alarm information, please contact customer service personnel.

#### 4.1.2 Shutdown operation

Shut down as follows:

- (1) Perform shutdown operation through 485 communication or other communication methods;
- (2) Disconnect the circuit breaker connecting the box transformer and PID products;
- (3) Turn the PID product SWITCH to "OFF".

### 4.2 Disconnection

Before performing the disconnection operation on PID products, it is necessary to ensure that the PID products are in a complete power-down state. The operation steps are as follows:

- (1) Disconnect the circuit breaker connected between the box transformer and PID products, and make warning signs to prevent other people from misoperation!
- (2) Remove waterproof parts with the words "AC INPUT" and "AC OUTPUT" on the AC side, remove AC power lines and functional grounding lines, and properly handle the removed power cables.
- (3) Remove waterproof parts of communication ports and communication cables, and properly handle the removed communication cables.
- (4) Remove protective grounding wire.

## Chapter V Product Specifications

### 5.1 General Parameters

Table 5-1 General Parameters

| Item                | Specification                                |
|---------------------|----------------------------------------------|
| Model               | AgilePID                                     |
| Dimension           | 475 (width) × 602 (height) × 173 (thickness) |
| Net weight          | 15kg                                         |
| Working temperature | -30~60℃                                      |
| Storage temperature | -40~70℃                                      |
| Relative humidity   | 0~100%, no condensation                      |
| Altitude            | 4000m (it may be operated at 5000m altitude) |
| Class of pollution  | Class III                                    |

### 5.2 Electrical Characteristics (Input)

Table 5-2 AC Input

| Item                                  | Specification                                |
|---------------------------------------|----------------------------------------------|
| Input rated voltage                   | 500VAC/540VAC/630VAC/800VAC                  |
| Startup voltage                       | 400 VAC                                      |
| Network type                          | IT                                           |
| Output working voltage range          | -20%~+15%                                    |
| Max. input current                    | 0.5 Aac                                      |
| Rated frequency                       | 50 Hz /60 Hz                                 |
| Maximum supported square matrix power | 12.5MW (double winding) /25MW (double split) |

### 5.3 Electrical Characteristics (Output)

Table 5-3 AC Output

| Item                 | Specification |
|----------------------|---------------|
| Max. output current  | 1.1 Adc       |
| Maximum output power |               |

### 5.4 Electrical Characteristics (System Characteristics)

Table 5-4 System Characteristics

| Item                            | Specification        |
|---------------------------------|----------------------|
| Standby power consumption       | <5 W                 |
| Display the operation interface | Indicator light      |
| Insulation resistance           | > 10 MΩ(1000Vdc)     |
| IP grade                        | IP65                 |
| Incoming line mode              | Down-in and down-out |

## Chapter VI Product Maintenance

This chapter introduces the maintenance of PID products, including the maintenance cycle and maintenance methods of PID products. Please read the instructions in this section carefully before maintaining PID products.



### **Danger**

- Professionals may maintain PID products, and others are not allowed to operate without authorization!
- In order to ensure the safety of maintenance personnel, it is not allowed to touch any live parts of PID products when they are running, and it is necessary to check whether the grounding points of the products are connected reliably.
- Please use the qualified spare parts provided by our company. If the equipment is damaged due to the use of spare parts not provided by our company, it has nothing to do with our company.
- Unauthorized or licensed disassembly of PID products may cause equipment damage. This kind of equipment damage has nothing to do with our company!

Periodic inspection and maintenance of PID products may confirm the status of PID products in time and improve the working reliability of PID products. The periodic check list is shown in Table 6-1.

Table 6-1 Periodic Checklist

| Inspection content | Method                                                                                                                                                                    | Inspection cycle      |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Cable connection   | Check whether the AC/DC cables are connected reliably, damaged and whether the waterproof locks are tightened;<br>Check whether the grounding wire is connected reliably. | Once every six months |

## **After-sales Service Information**

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Sineng Electric Co., Ltd. provides customers with all-round technical support. Users may contact the nearest Sineng Electric Co., Ltd. office or customer service center, or directly contact the company headquarters.

Sineng Electric Co., Ltd.

Address: No.6 Hehui Road, Huishan Economic Development Zone, Wuxi city, Jiangsu province

Post Code: **214174**

Customer Service Hotline: **0510-88888118**

Fax: **0510-85161899**

## Product Warranty Card

**Thank you for choosing PID products produced by our company.**

**Project Model:** \_\_\_\_\_

**Factory No.:** \_\_\_\_\_

**Please refer to the instructions in the *User Manual* for the specifications, implementation standards and technical conditions of this product.**

**This product is guaranteed for \_\_\_\_ year(s). During the warranty period, our company will provide free component repair or replacement services for failures caused by non-human causes and irresistible factors (including but not limited to earthquakes, mudslides, floods, typhoons and wars).**

**User Name:** \_\_\_\_\_

**User Address:** \_\_\_\_\_

\_\_\_\_\_  
**Contact:** \_\_\_\_\_

**User Phone Number:** \_\_\_\_\_

**E-mail:** \_\_\_\_\_

Sineng Electric Co., Ltd.

Address: No.6 Hehui Road, Huishan Economic Development Zone, Wuxi city, Jiangsu province

Post Code: 214174

Customer service Hotline: 0510-88888118

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