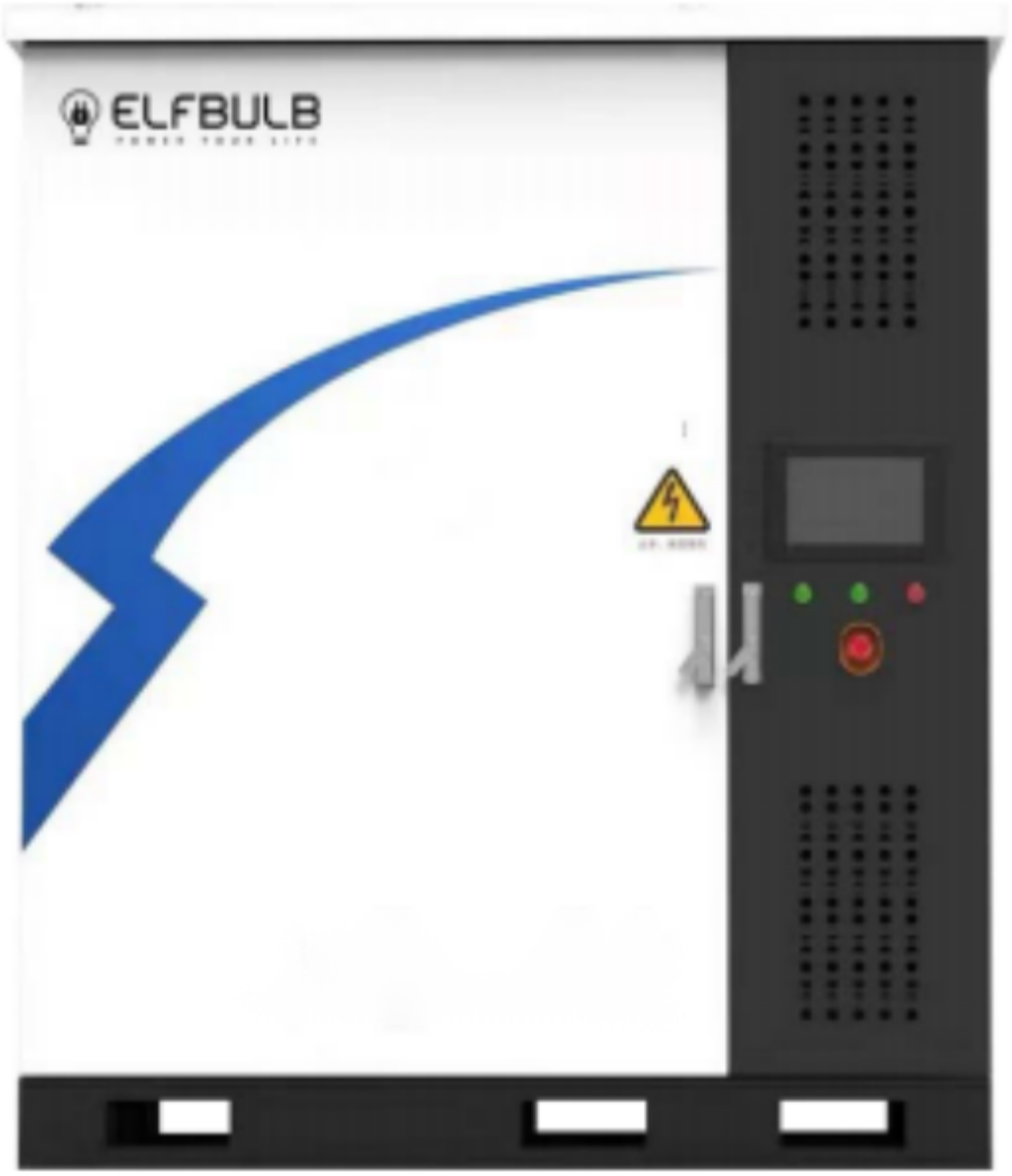
YY-215P100K-PV series optical storage integrated cabinet system product specification (neutral version)

YY**-215P100K-PV**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1. Professional terminology

■ Energy Storage Converter Power Conversion System, PCS

Energy storage inverter, also known as bidirectional energy storage inverter. It can invert the DC power of the energy storage battery into AC power, which is transmitted to the power grid or used for AC load; it can also rectify the AC power of the power grid into DC power to charge the energy storage battery.

■ Static Tranasfer Switch, STS

Used for switching between two power supplies, it is an automatic switching switch for selecting one of the two power supplies. Under normal working conditions, when the main power supply is within the normal operating voltage range, the load is connected to the main power supply. When the main power supply fails, the load switches to the backup power supply. After the main power supply returns to normal, the load automatically switches to the main power supply.

■ Battery Cluster

The battery module is connected in series, parallel, or series-parallel, and can operate independently after being connected to the energy storage converter and ancillary facilities. It should also include components such as battery management system, monitoring and protection circuit, electrical and communication interface, etc.

Battery Management System (BMS)

Manage a unit of energy storage, including all battery clusters in the battery system. It can monitor and control all battery clusters in the system, estimate battery cluster capacity, estimate battery cluster remaining power (SOC), diagnose battery cluster faults, balance control strategies, safety control strategies, etc. It can upload battery system information, status, and battery alarms.

■ Energy Management System

The energy management system is the decision-making center of the energy storage system, and its core functions are safety optimization scheduling strategy and visualization. Energy transformation decision-making, real-time monitoring and control, operation and maintenance management analysis, remote real-time control, etc.

Fire Fighting System (FFS)

The fire extinguishing system can monitor the battery system in real time, detect and report fires early, and timely block the occurrence of fires. It consists of a triggering device, a fire alarm device, and a fire extinguishing device.

2. Product description

2.1 Product Introduction

YY-215P100K-PV series energy storage All in One is mainly used in industrial and commercial, data center, park energy storage and other scenarios.

The energy storage system integrates EMS, energy storage converter, MPPT, energy storage battery, cooling air conditioning, fire protection system and system distribution, and adopts an outdoor integrated cabinet design.

Deeply integrate subsystems such as power electronics, battery management, energy scheduling, intelligent temperature control, and smart Cloud Computing Platform to achieve high efficiency, low energy consumption, long lifespan, intelligent management, and operation and maintenance.

Modularization design, can be quickly expanded (AC side can support up to 8 parallel outputs), to meet the needs of different application scenarios.

2.2 System composition

YY-215P100K-PV series energy storage All in One AC side is connected to the power grid, and the DC side is internally connected to the battery. It can be applied to scenarios such as power expansion, optical storage and charging, peak shaving and valley filling. According to the selected operating mode, the battery can be subjected to constant voltage, constant current, and constant

Power charging and discharging.

2.3 Product model

Model: YY-215P100K-PV

Note:

YY-215P100K: Energy Storage All in One

100kW: 100kW power

215kWh: 215kWh battery capacity

PV: With MPPT module, it can directly charge energy storage batteries with photovoltaic power generation

2.4 Internal equipment layout

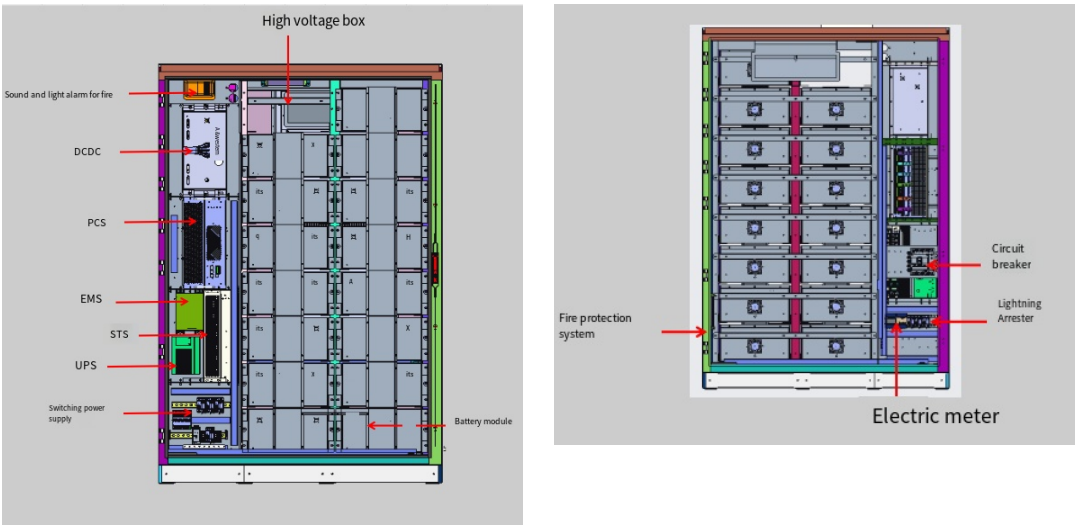

Figure 2 Internal equipment layout diagram

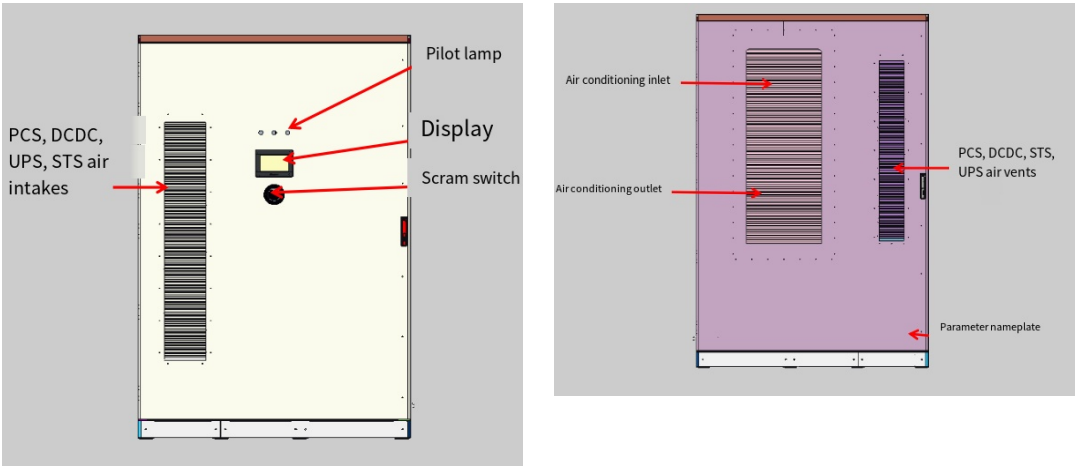

Figure 3 Layout diagram of external devices

2.5 Mechanical parameters

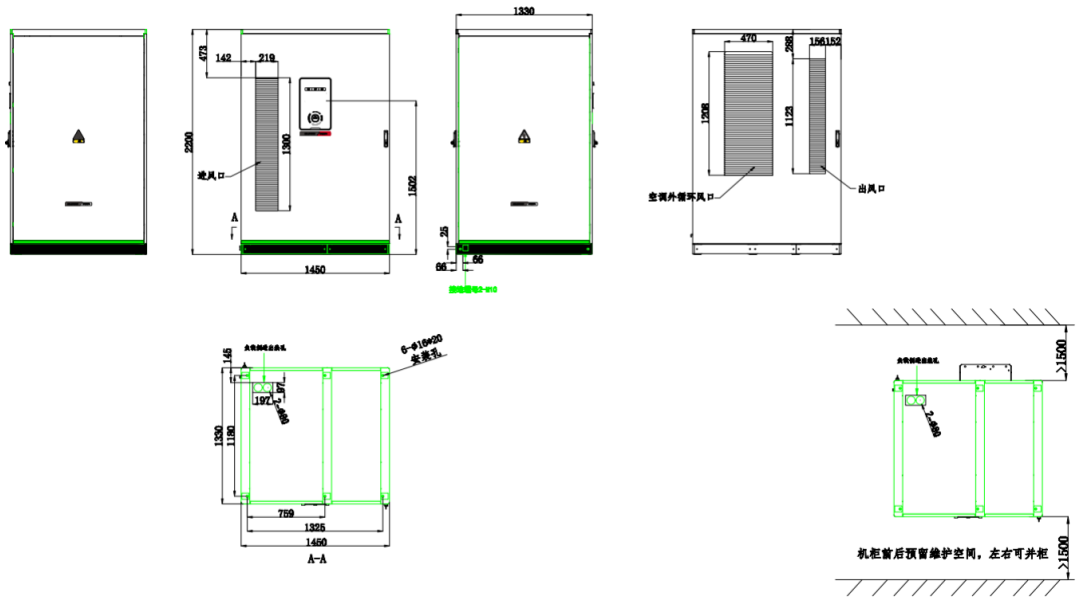

Figure 4 Mechanical dimension diagram

3. Specification parameters

Table 2 Specifications

Product model	YY-215P100K-PV
Battery parameters	
Cell type	Lithium iron phosphate 3.2V/280Ah
Battery Pack Configuration	14.336kWh/1P16S
Battery system configuration	1P22440S
Battery system capacity	215kWh
Battery rated voltage	768VDC
Battery voltage range	600~876VDC
Charge-discharge rate	0.5P
Number of charge and discharge	6000
Battery cooling mode	Air conditioning intelligent air cooling

AC parameter	
Rated power	100kW
Maximum power	110kW（10min） 120kW（1min）
Current total harmonic distortion rate	≤3%
Direct current component	< 0.5% output rated current
Rated voltage	3*230V/400V
Allowable grid voltage range	360V~440V
Access method	3P4W+PE
Rated grid frequency	50/60Hz
Power factor range	1 (lead)~ -1 (lag)
Off-grid operation	**Support, but only 50% load capacity**
Efficiency	
PCS maximum efficiency	98.8%
System maximum efficiency	90%
DC/DC Module	
PV side	
Rated power	120kW (PV input 8 * 15kW)
Rated current	360A (PV input 8 * 45A)
Rated voltage	350V
Maximum voltage	1000V
Voltage range	150~1000V

Full power voltage range	340~1000V
Low side voltage requirements in buck mode	150V ≤ low voltage terminal voltage ≤ high voltage terminal voltage, maximum 1000V
Low side starting voltage	150V
Voltage stability	1%
Current stability	1%
DC high voltage side	
Rated power	120kW
Rated current	180A
Rated voltage	700V
Maximum voltage	1000V
Voltage range	350~1000V
Full power voltage range	680~850V
Low voltage side voltage requirement for buck mode 1000V ≥ high voltage terminal voltage * 0.95 > low voltage terminal voltage, minimum 350V	
High voltage side starting voltage: 350V	
Voltage stability: 1%	
Current stability 1%	
Protection	
DC input reverse protection	Support
AC input reverse Self-Adaptation	Support
Insulation impedance detection	Support

AC overcurrent protection	Support
AC overvoltage protection	Support
AC short circuit protection	Support
Grid-side surge protection	Support
Power grid abnormal automatic switching	Support
Low pressure crossing	Support
High voltage crossing	Support
Communication and human-machine interaction	
Communication interface	RS232/RS485/WiFi/4G/Ethernet
Human-machine interaction	Touch screen/indicator light
System parameters	
Weight	2.3t
Dimensions (width * depth * height)	1450*1050*2200mm
Protection level	IP55
Noise	＜75dB
Working temperature	-20 ℃~ + 55 ℃ (reduction above 40 ℃)
Storage temperature	-20℃~+55℃
Relative humidity	5%~ 95% non-condensing
Fire protection programme	Perfluorohexanone/aerosol (optional)
Working altitude	≤ 4000m (reduction required for exceeding 2000m)

Cooling mode	Air conditioning intelligent air cooling

4. External interface description

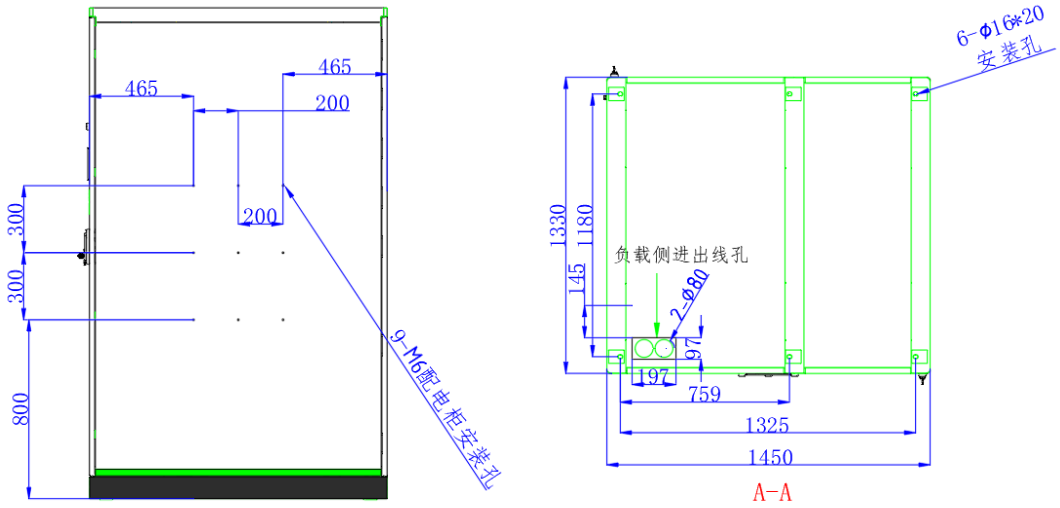

Figure 5 External interface view

Table 3 System external interface

Function	Locus number	Specifications	Remarks
Grid-side interface	AC Grid	AC400V 50kW	Power grid side inlet and outlet holes
Diesel generator	AC DG	AC400V 300kW	Generator side inlet and outlet holes
Load interface 1	AC OUT1	AC400V 60kW	Load-side inlet and outlet holes
Load interface 2	AC OUT2	AC400V 100kW	Load-side inlet and outlet holes
Photovoltaic input interface	DC IN	DC 120KW	DC side inlet hole

Communication interface	EMS External Communications	RS234/RS485/WiFi/Ethernet/4G	

Table 4 Recommended Cable Specifications

Product model	Cable connection position	Terminal specification	Cable recommendation
YY-215P100K-PV	Grid:A/B/C/N	OT terminal, M8	70mm2
	DG:A/B/C/N	OT terminal, M10	120mm2
	DC：DC+/DC-	OT terminal, M8	70mm²
	PE	OT terminal, M8	50mm2

5. Marking, packaging, transportation, storage

5.1 Mark

This product has a nameplate, which includes information such as product name, model, rated power, nominal voltage, rated capacity, and product number.

This product has our company logo on the front.

This product has danger warning signs in obvious places.

5.2 Transport

Forklift transport

If the installation location and transportation road are stable, forklift transportation can be used. When using forklift transportation, the following requirements must be met:

Before transportation, please ensure that the cabinet doors are tightly locked. Choose to transport in good weather conditions, remove any obstacles that may exist or may exist on the transportation road, and ensure that the road is unobstructed. Prepare for personnel evacuation in advance and prohibit unrelated personnel from entering the transportation road.

At least 2 people are required for transportation. The forklift must have the corresponding load-bearing capacity, and the length of the fork legs must meet the equipment requirements. Test adjustment should be conducted before transportation to ensure the safety and reliability of the tools. The plug should be inserted into the socket at the bottom of the cabinet, and transportation should not be carried out

outside the plug.

During transportation, ensure that the energy storage integrated cabinet is kept in a balanced state, transported at a uniform speed, with as low a fluctuation height as possible, and no significant shaking is allowed. Try to ensure a smooth transportation process for the equipment.

Take off and land with care to avoid impact or vibration.

When moving, pay attention to the ground being flat and free of debris, and avoid contact with sharp objects on the ground.

Lifting transport

When using lifting transportation, the following requirements must be met:

Before transportation, please ensure that the cabinet doors are locked and choose to transport in good weather conditions.

Prepare for personnel evacuation in advance, and prohibit standing within 5m-10m of the lifting area and equipment to ensure on-site safety.

During transportation, there are professional personnel to direct the entire process.

The strength of the sling used must meet the weight of the equipment.

Use all necessary auxiliary means to ensure the smooth transportation process of the equipment as much as possible.

Before transportation, test hoisting should be carried out. After the test adjustment is 300mm away from the support surface, the inspection should be suspended to ensure that the sling and the connection between the sling are firm and reliable before lifting.

When lifting, ensure vertical lifting, avoid dragging, and do not push the equipment. When lifting, the equipment should be transported at a uniform speed, with the lowest possible height and no significant shaking.

Handle with care during takeoff and landing to avoid impact or vibration. Note that during the lifting process, the cabinet should not pass over people, let alone stay.

The site where the equipment is placed should be solid, flat, well-drained, and free of obstacles or protrusions.

5.3 Storage

The equipment must be placed in a ventilated, clean, and dry space, with a temperature between -40 ℃~ + 60 ℃ and an ambient temperature change of < 1 ℃/min. When stored for a long time, it must be covered or corresponding measures taken to ensure that the module is not affected by pollution and the environment. After the user purchases the module, the following points must be noted for temporary and long-term storage:

When storing, try to pack it into our company's packaging box according to the original packaging.

Do not allow the equipment to be placed in humid, high temperature, or outdoor exposure for a long time.

Long-term storage can lead to the deterioration of electrolytic capacitors. It is necessary to ensure that they are powered on once a year for at least 5 hours. The input voltage must be slowly increased to the rated value using a voltage regulator.

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6. Daily maintenance

During each on-site maintenance, a functional check should be conducted on the YY-215P100K-PV series energy storage All in One, mainly including:

1. Check the connection cable;

2. Check the working condition of the energy storage All in One;

3. Check the operation mode switch of energy storage All in One;

4. Check the status of the All in One indicator light of the energy storage;

5. Check the status of the dustproof net. If the dust accumulation is serious, the dustproof net needs to be replaced.

6. Check the condensation state of the energy storage All in One, and ventilate if there is condensation;

7. Product warning label

The warning signs on and inside the YY-215P100K-PV series energy storage All in One cabinet contain important information for safe operation of YY-215P100K-PV series energy storage products.

Figure 6 shows electrical hazard signs

8. Precautions for use

In order to ensure the safety of the staff, the operator must be completed by professional technicians and must follow the relevant regulations of the local or power industry; before using the product, please read the user manual and product warning labels carefully.

1) When using this product for the first time, please check whether the equipment is damaged or in any other dangerous state; before installation, all power supplies connected to All in One must be disconnected and stored to ensure that the equipment is in a power-off state;

This product is a high-voltage equipment. Except for professionals, personnel should stay away from it without permission and should not touch or operate it.

Before any installation and maintenance work, first disconnect the grid-side circuit breaker, then disconnect the battery-side DC switch, and use relevant equipment for testing.

If the operation needs to wait for 20 minutes after power-off or use related equipment to consume electricity, make sure that the energy storage integrated cabinet is in a no-power state before allowing operation.

During the use of the product, if there is any odor or abnormal phenomenon, please immediately cut off the power. The operation of the energy storage All in One in a fault state may cause electric shock or fire accidents.

During the use of this product, important parameters on the control panel should not be modified at will to avoid affecting the normal use of the product.

Long-term unused: When the battery system is left unused for a long time, the total air switch and DC micro circuit breaker on the distribution box should be disconnected, and the system should be charged every three months to achieve a

SOC of more than 30%. When the product is stored in a low-charge state, it will cause the battery to be over-discharged, seriously affecting the product life and even damaging the product.

Necessary grounding connection is required.

If users find any abnormal phenomena that cannot be solved by the product, they should contact our company as soon as possible. It is strictly prohibited to disassemble the product or replace the battery in the battery pack without permission.

9. Hazard warning

It is strictly prohibited to disassemble and self-assemble this product and the battery inside the product. The product has a protective mechanism and circuit inside to avoid accidents

Improper disassembly and assembly will damage the protective function, causing the battery to overheat, smoke, deform, or burn.

Liquids, debris, or debris are strictly prohibited from entering the interior of this product. Conductive liquids and debris may cause internal short circuits in this product, leading to equipment damage.

Heating and incineration of products are strictly prohibited. Heating and incineration of batteries will cause melting of battery isolators and loss of safety functions

Or electrolyte combustion. Overheating will cause the battery to heat up, smoke, deform or burn.

4) It is strictly prohibited to rain or throw the product into water. Otherwise, it will cause the internal protection circuit function of the battery to be lost and abnormal

The battery may generate heat, smoke, deform, or burn due to chemical reactions.

5) Prohibit damaging products and batteries. It is prohibited to chisel metal into batteries, hammer or smash products and batteries, or other methods

Damage the product, otherwise it will cause the battery to heat up, smoke, deform or burn.

It is strictly prohibited to change the internal cable connection of the energy storage All in One, which may cause short circuit or fire.

It is strictly prohibited to open the battery cabinet door or related equipment during operation, which may cause electric shock accidents.

After powering on, it is strictly prohibited to touch the product and surrounding circuits with wet hands, otherwise there is a risk of electric shock.

When connecting external cables and internal copper bars of this product, it is necessary to ensure that the installation torque of the cable is correct. Too small a torque may increase the contact resistance, leading to overheating, and too large a torque may cause fatigue damage to the bolts.