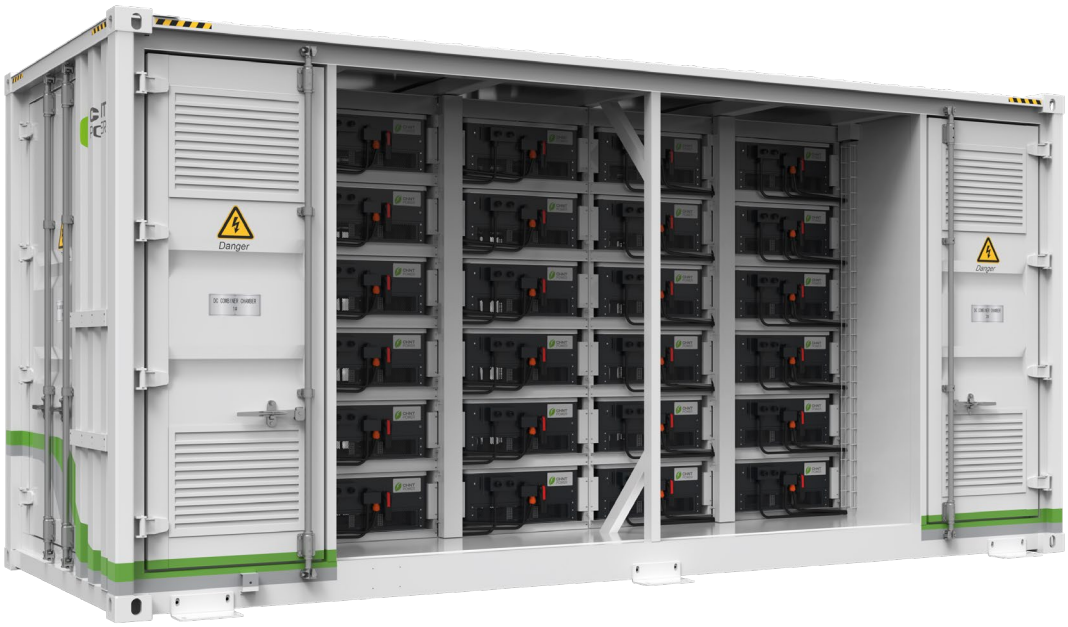
CPS PSW4.8M-EU

PCS Container

User Manual



Shanghai Chint Power Systems Co., Ltd

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Revision History

Version	Date	Change Content
V 1.0	16/10/2025	First version
V 1.1	07/01/2026	Update model from CPS PSA4.8M-EU to CPS PSW4.8M-EU Update nameplate

Contents

1. Preface

Dear user, thank you very much for choosing the CPS PSW series PCS Container (Hereinafter referred to as PCS Container) developed and produced by Shanghai Chint Power Systems Co., Ltd (Hereinafter referred to as Chint). Chint PCS Container is a highly reliable product, which is widely used in high-standard energy storage systems.

IMPORTANT!

The product description, installation, safe operation, troubleshooting and other important information are contained in this manual. Please read this Manual carefully and make sure that you fully understand all contents before performing any operation.

This manual contains the following main contents:

- **Safety Instructions**

  The introduction for the safety precautions that need to be paid attention to when operating and maintaining the PCS Container.

- **System Introduction**

  The introduction for the system structure and electrical principle of the PCS Container.

- **Installation**

  The detailed introduction for the installation, wiring steps and precautions of the PCS Container.

- **Power-on and Power-off Operations**

  The detailed illustration for the power-on and power-off steps of the PCS Container.

- **Maintenance and Troubleshooting**

  The introduction for the maintenance and troubleshooting of the PCS Container.

- **Technical Data**

  The introduction for technical data of the PCS Container.

- **Quality Assurance**

  The introduction for quality assurance clauses of the company.

- **Routine Maintenance**

  The introduction for the routine maintenance of the PCS Container.

In case of any problem arising in using, installation or operation, please refer to this manual first, and contact your local dealer or representative. The instructions in this manual may help you solve most of the use, installation and operation problems.

Applicable Personnel

This manual is applicable to authorized and qualified engineers or operators authorized by the owner, and these people can perform wiring, operation, maintenance, and daily management of the PCS Container.

Manual Management

Please read this manual carefully before using the product. Please keep this Manual and other documents of the product together and ensure these are accessible for relevant personnel.

Copyright Restriction

Version Upgrade

Due to the update and improvement of products, the contents of the Manual will be updated, adjusted and revised accordingly, and the products purchased by users shall be subject to the physical objects. You can get the latest version of the Manual through the corresponding sales channels, or you can download the latest version of the Product User Manual from our official website http://www.chintpower.com.

2. Safety Instructions

Please read the safety instructions in this chapter carefully before installing and using the PCS Container. We will not be liable and provide quality assurance if personal injury or equipment damage is caused as a result of failing to follow the safety instructions in this manual!

2.1. Definition of Symbols in this Manual

	**Danger:** There is a high-level potential danger that, if not avoided, may result in death or serious injury to personnel.
	**Warnings:** There is a moderate potential danger that, if not avoided, may result in death or serious injury to personnel.
	**Caution:** There is a low-level potential hazard that, if not avoided, may result in moderate or mild injury to personnel.
	**Note:** There is a potential risk that, if not avoided, may result in the equipment not functioning properly or causing property damage.
	**Remarks:** Additional information in the manual that highlights and supplements the content and may also provide tips or tricks to optimize the use of the product, which helps solve problems or save time.

2.2. Interpretation of Product Markings

	**Electric Shock Hazard:** This marking indicates that there is high voltage inside the machine body, and touching it may cause electric shock.
	**Energy danger:** Pay attention to the danger of electric shock, and please operate the machine 5 minutes after the discharge is completed.
	**High Temperature:** This product complies with international safety standards, but it generates heat during operation. Therefore, never touch the cooling fin or the metal surface of the PCS Container during operation.
	**Noise prevention:** This marking indicates that the equipment noise has a risk of hearing damage and hearing protection devices is required.
	**Protective Earthing:** This marking is located at the protective earth (PE) terminal and shall be firmly earthed to ensure operator safety.
	**CE Certification:** The PCS Container meets the requirements of CE certification.

2.3. Precautions for Product Safety

DANGER:

It is necessary to manually shut down through the EMS before the PCS Container is repaired. The DC switch on the PV side should be disconnected and the discharge procedure is executed, and then the AC switch on the grid side should be disconnected, confirm that the PCS Container has no power and the PCS Container can be examined and repaired!

WARNING:

All operations and connections shall be completed by professional engineering and technical personnel!

To prevent the risk of electric shock during equipment maintenance or installation, please ensure that all DC and AC power has been disconnected from the equipment, and ensure that the equipment is reliably earthed.

WARNING:

The connected PV panel will generate DC voltage and charge the DC bus capacitor of the PCS Container when it is exposed to sunlight. The charge is still stored in the capacitor when the PV input to the PCS Container is cut off. Therefore, please ensure that the electric energy inside the PCS Container has been completely discharged before maintenance of the equipment. It is necessary to measure the voltage and confirm safety before operation.

CAUTION:

As the equipment is heavy and large in shape, it is recommended that users use forklifts for handling as much as possible. Please pay attention to the center of gravity position of the PCS Container during handling to prevent toppling.

CAUTION:

High temperature will be generated by the PCS Container during working. Please do not touch the cooling fin and metal surface of the PCS Container!

NOTE:

The PCS Container is specially designed to generated AC power and connect to the public grid. Do not directly connect the AC output terminal of the equipment to private AC electrical equipment.

NOTE:

It is forbidden to directly close the DC switch if the DC switch trips due to a fault. The system must be reset first, and then the DC switch should be closed manually according to prompt of the touch screen.

NOTE:

The PCS Container should not be exposed to direct sunlight, so as to avoid reducing energy conversion efficiency due to excessive internal temperature of the PCS Container.

NOTE:

AC and DC switches should be disconnected and external power supply should be used if it is necessary to update the program.

NOTE:

When the PCS Container is in a charging state, the discharge command is invalid and can only be executed after the charging process is completed.

IMPORTANT:

Before choosing the grid code, contact your local power supply company. If the PCS Container is working under a wrong grid code, the power supply company may cancel the operating license for the equipment.

Before operating the PCS Container, ensure that the whole system complies with national standards and applicable safety regulations.

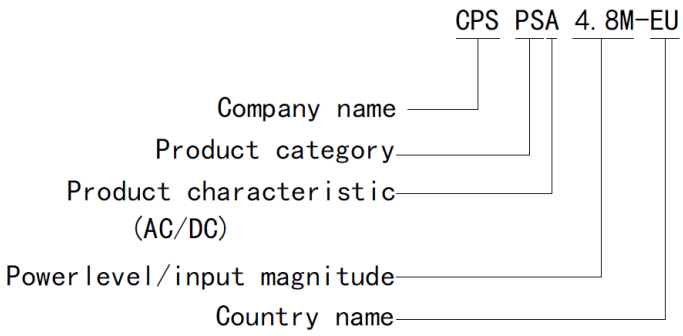
3. System Introduction

3.1. PCS Container

CPS PSW series PCS Container integrates PCS, AC/DC power distribution, etc. featuring high efficiency, reliability and environmental sustainability. The PCS Container is used with battery container and PMVS (Prefabricated Medium Voltage Station). Key functional characteristics of the PCS Container include:

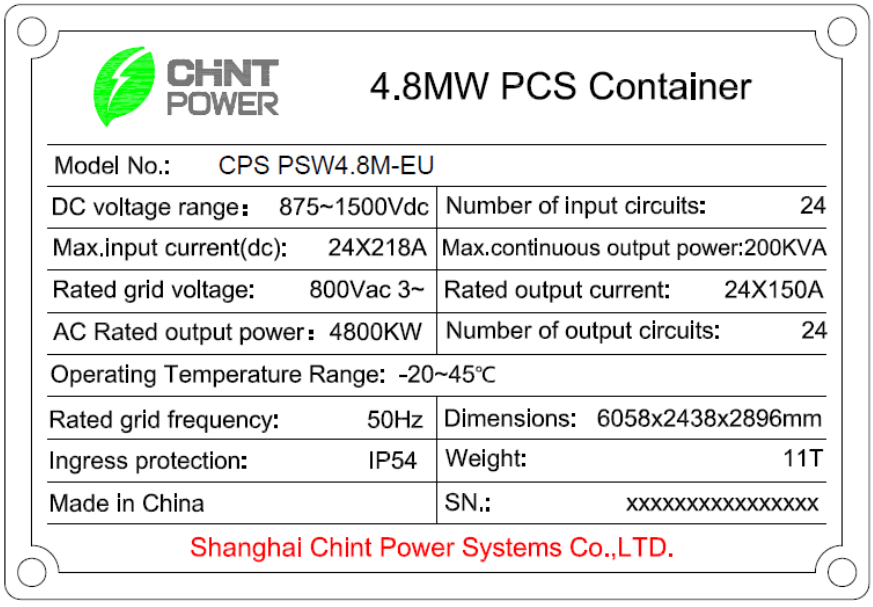
- Reasonable and efficient layout, improved space utilization rate, integrated design of "conversion", lean intelligence for integrated product delivery
- Secondary circuit integration, unified measurement, protection and communication
- Unified external communication interface, quick commissioning, integrated data acquisition and optical fiber ring network, intelligent operation management
- Support for high/low voltage ride-through, frequency ride-through and dispatching, efficient and stable power grid adaptation
- Feature high stability with flexible configuration and support 110% overload, full power capacity up to 45°C (45°C without derating)
- Support multi-machine parallel connection, PQ control (i.e. active and reactive power control function) and VF control (i.e. PCS maintains the output voltage and frequency unchanged, output active power and reactive power are determined by load), etc.
- 1500V wide DC voltage range, flexible DC terminal configuration
- Multiple applications such as peak-load shifting, peak shaving and frequency regulation and new energy grid connection auxiliary, etc.

3.2. Introduction of Series and Model



The AC rated output power of PCS Container is 4800kW. The maximum DC input voltage of the PCS Container is 1500V, and the rated AC output voltage is 800V. The specific voltage and frequency can be set according to the actual grid connection requirements, which can adapt to power grid applications in different countries.

3.3. Nameplate of PCS Container



CHINT POWER

4.8MW PCS Container

Model No.:	CPS PSW4.8M-EU		
DC voltage range:	875~1500Vdc	Number of input circuits:	24
Max.input current(dc):	24X218A	Max.continuous output power:200KVA	
Rated grid voltage:	800Vac 3~	Rated output current:	24X150A
AC Rated output power:	4800KW	Number of output circuits:	24
Operating Temperature Range: -20~45℃			
Rated grid frequency:	50Hz	Dimensions:	6058x2438x2896mm
Ingress protection:	IP54	Weight:	11T
Made in China		SN.:	xxxxxxxxxxxxxxx

Shanghai Chint Power Systems Co.,LTD.

Figure 3-1 Nameplate

3.4. Basic Principle of PCS Container

The basic principle of the PCS Container is shown in the following figure. The DC voltage output from the battery container is connected to the DC input terminal, and then converted into three-phase AC voltage (3*800VAC) through PCS, and then connected to the power grid after step-up.

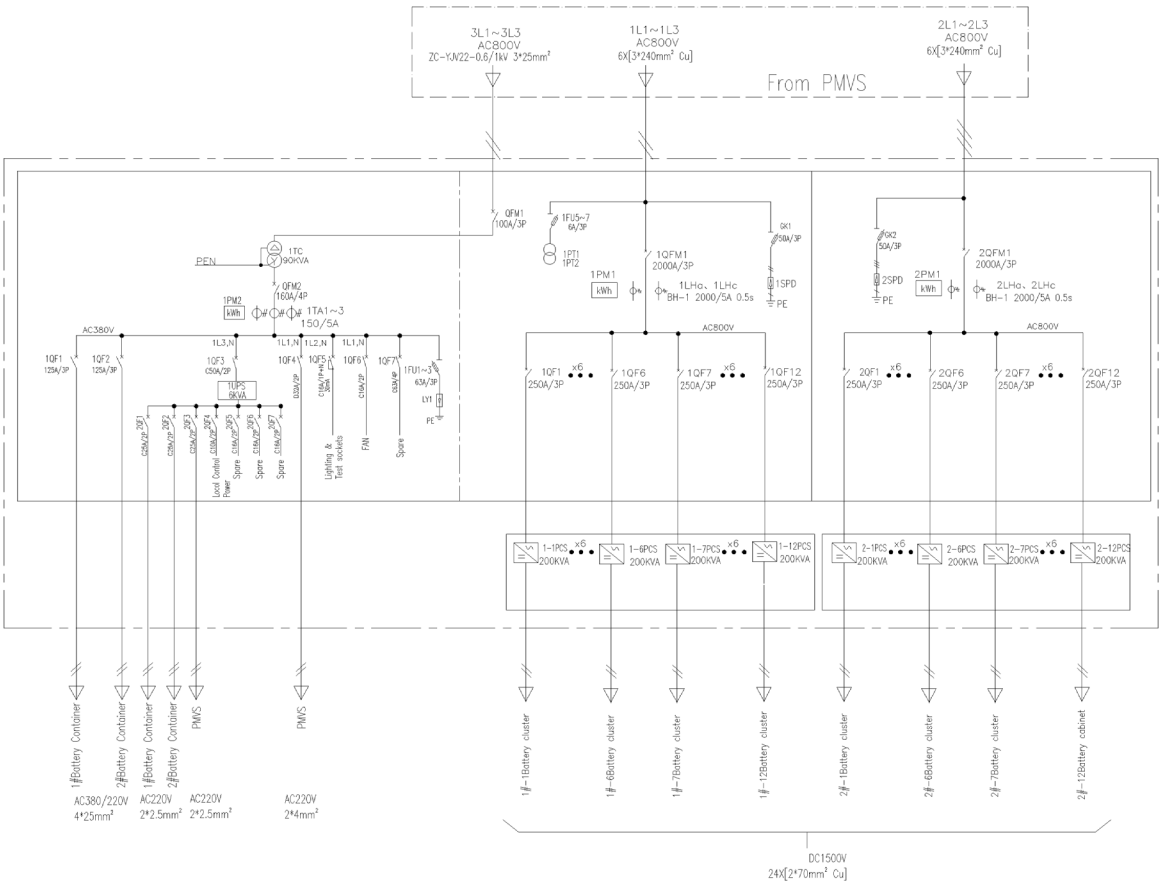


Figure 3-2 Basic Principle of PCS Container

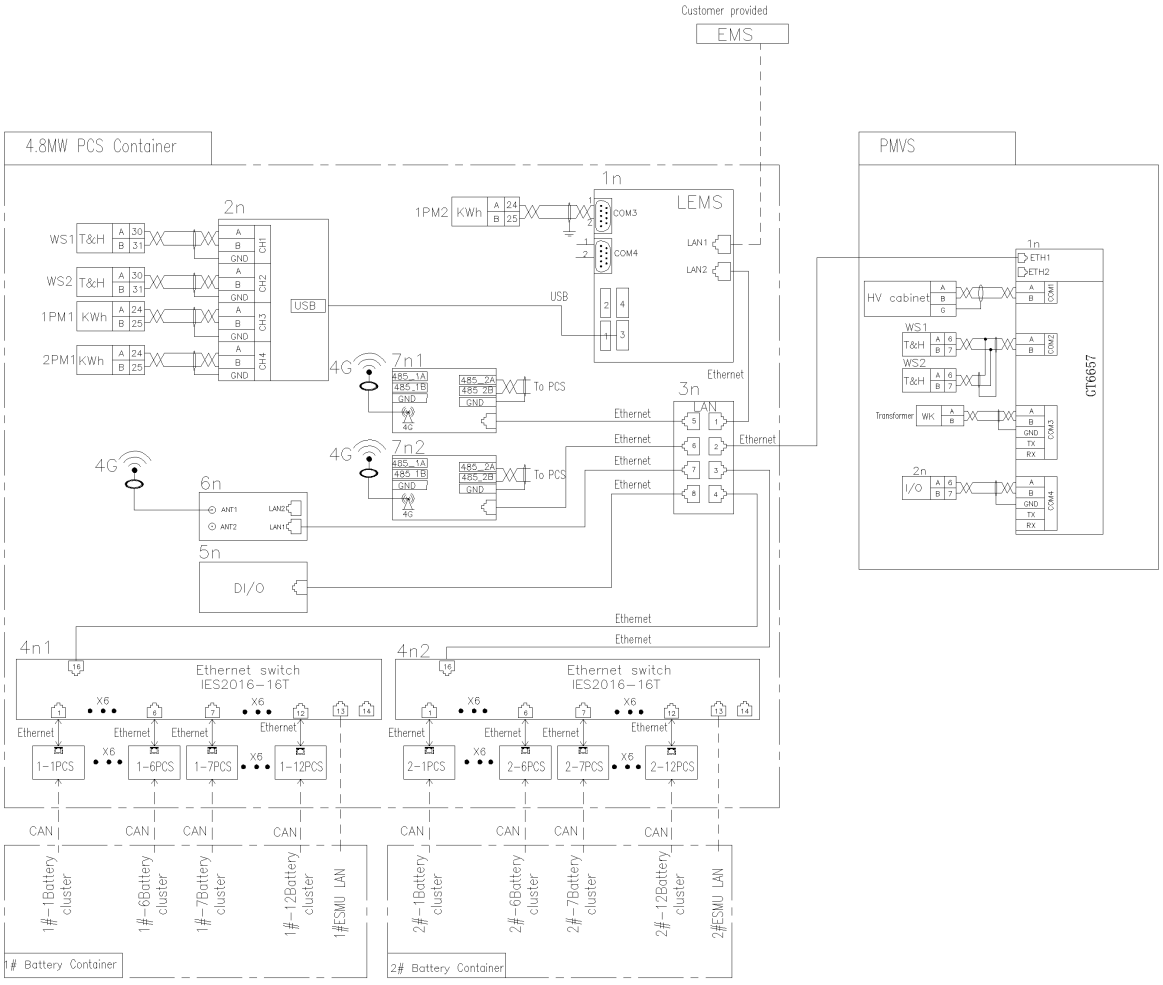


Figure 3-3 Communication diagram

3.5. Dimension and Appearance

Refer to the following figure for the dimension and appearance of PCS Container:

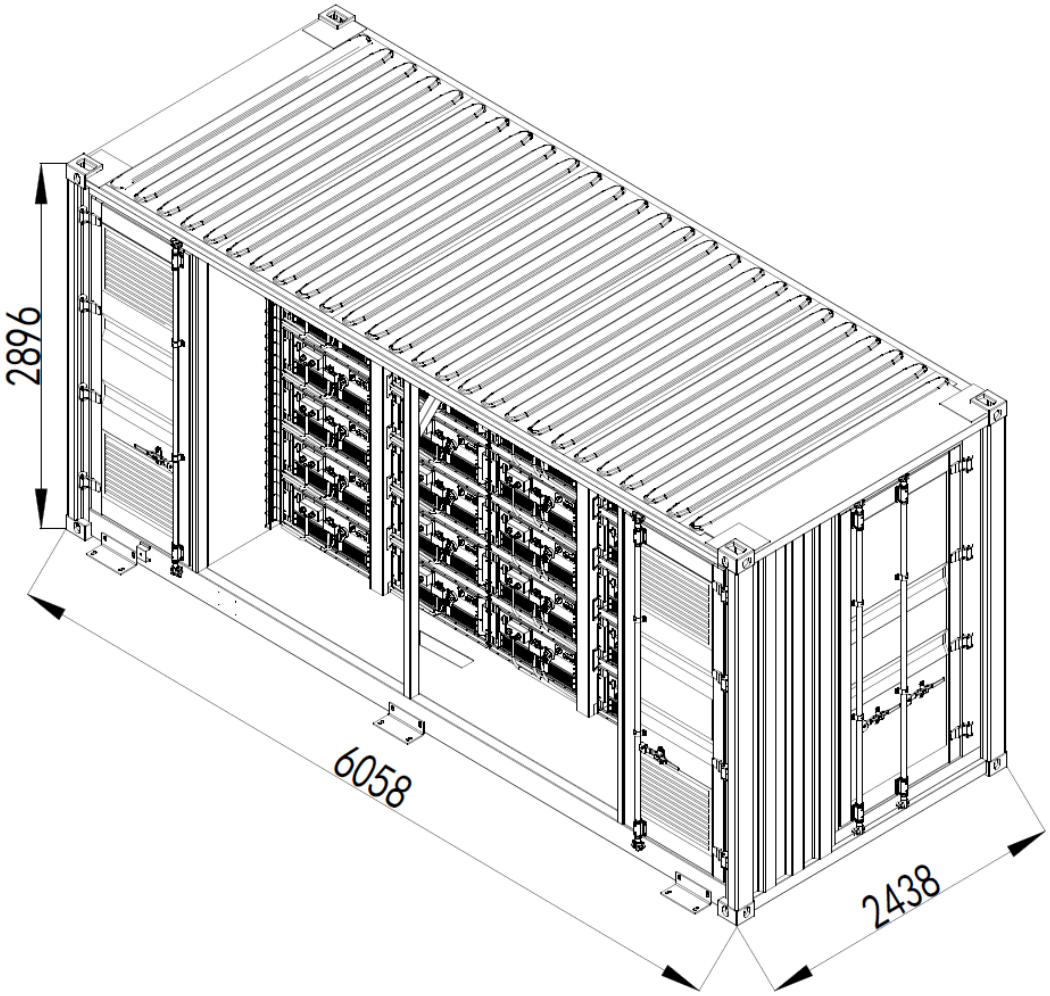


Figure 3-4 Overall Dimensions (Unit:mm)

3.6. Main Components of PCS Container

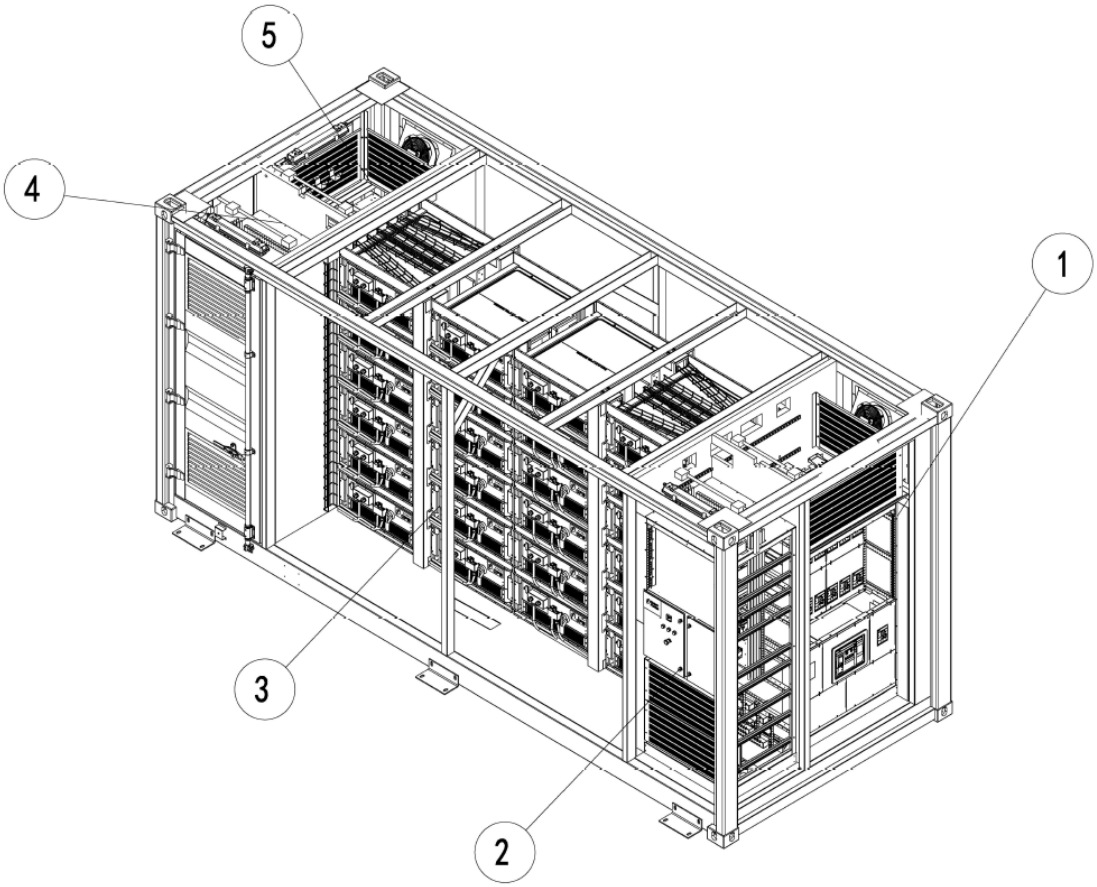


Figure 3-5 Diagram of main components

Table 3-1 Name of main components

No.	Name
1	2#AC combiner cabinet
2	2#DC combiner cabinet
3	PCS Cabinet
4	1#DC combiner cabinet
5	1#AC combiner cabinet

3.6.1. **AC Combiner Cabinet**

This AC combiner cabinet adopts a "12 in 1" structural design and is a key equipment specifically built to integrate the AC outputs of multiple distributed energy storage inverters (PCS). The input end of the cabinet is equipped with 12 branch circuits, each fitted with a Molded Case Circuit Breaker (MCCB). Serving as an independent protection and control unit for each branch circuit, these MCCBs respectively connect to the AC outputs of 12 units of 200KW PCS. Its core function is to perform switching operations on each PCS and provide overload and short-circuit protection, ensuring that a fault in any single unit will not affect the overall operation of the system.

Inside the cabinet, a copper busbar system converges the electrical energy from the 12 circuits and transmits it to the main Air Circuit Breaker (ACB) at the output end. Acting as the main outlet of the system, this circuit breaker undertakes the overall protection and on-off control of the entire combiner circuit, and features extremely high breaking capacity and reliability. Finally, the electrical energy integrated through convergence is uniformly output via this air circuit breaker and connected to the upper-level power distribution system.

An auxiliary power extraction switch is configured inside this combiner cabinet. If the customer side connects to the grid at 800V, power will be drawn from the busbar inside the combiner cabinet; if the customer side needs to step up the voltage for grid connection, power will be drawn from the upper-level power distribution system.

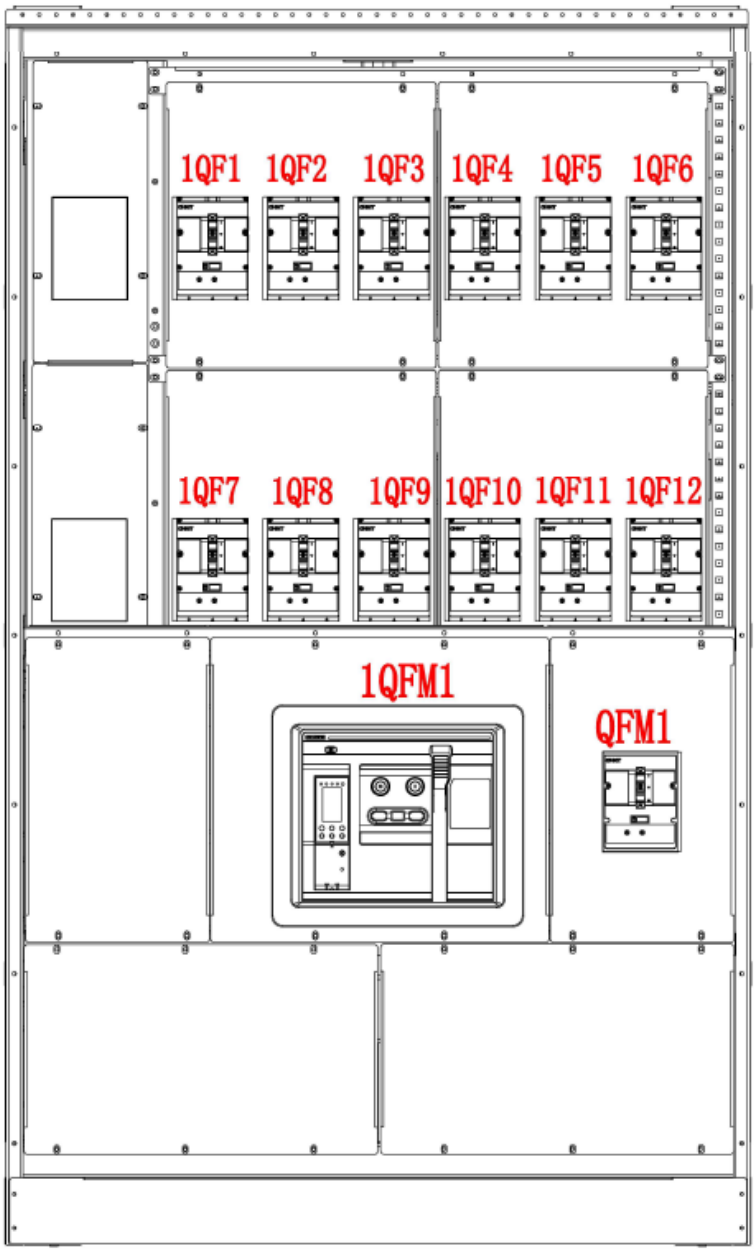


Figure 3-6 1#AC combiner cabinet

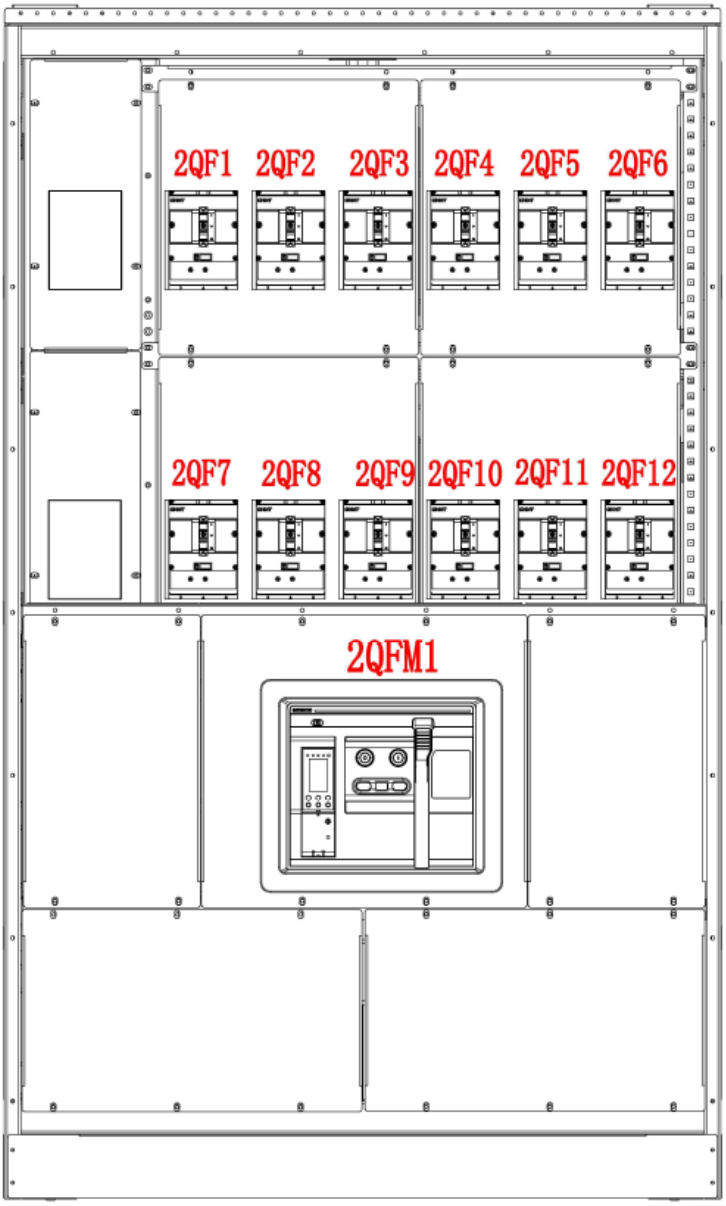


Figure 3-7 2#AC combiner cabinet

3.6.2. **PCS**

The PCS Container contains 24 PCS units, with the following layout:

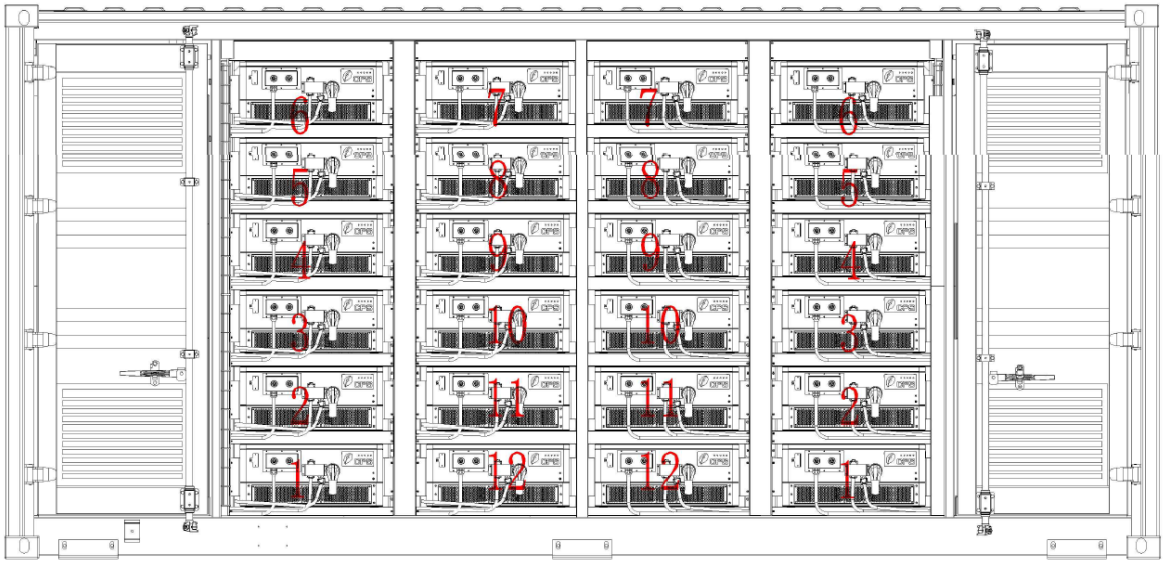


Figure 3-8 PCS layout

Figure 3-9 PCS

The key features of PCS are as follows:

- Integrated DC disconnect switch
- Protection functions for enhanced reliability and safety
- Full power capacity up to 45°C
- IP66 outdoor rated
- Integrated DC-DC bi-directional converter
- Wide DC voltage range, suitable for different batteries
- Modular design, easy for maintenance

Refer to the following figure for the circuit diagram of PCS:

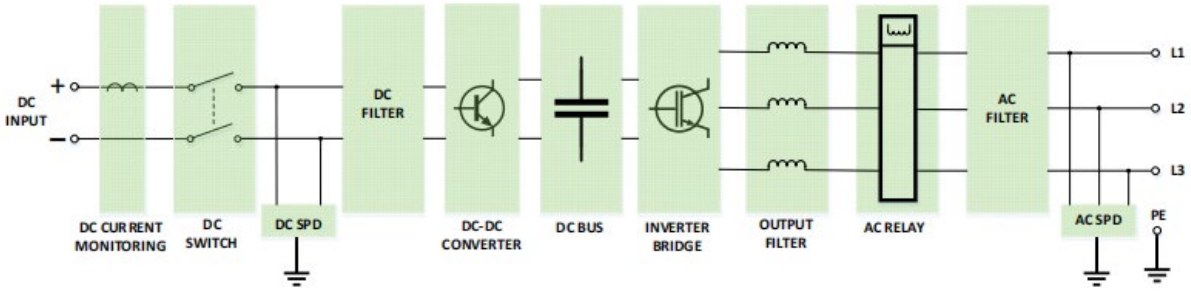


Figure 3-10 Circuit diagram of PCS

3.6.3. **DC Combiner Cabinet**

There is a confluence junction copper bar in the DC wiring cabinet. The positive and negative power cables from a group of battery cluster are connected to a group of confluence copper bars, and then connected to PCS through the copper bar.

The layout is shown below:

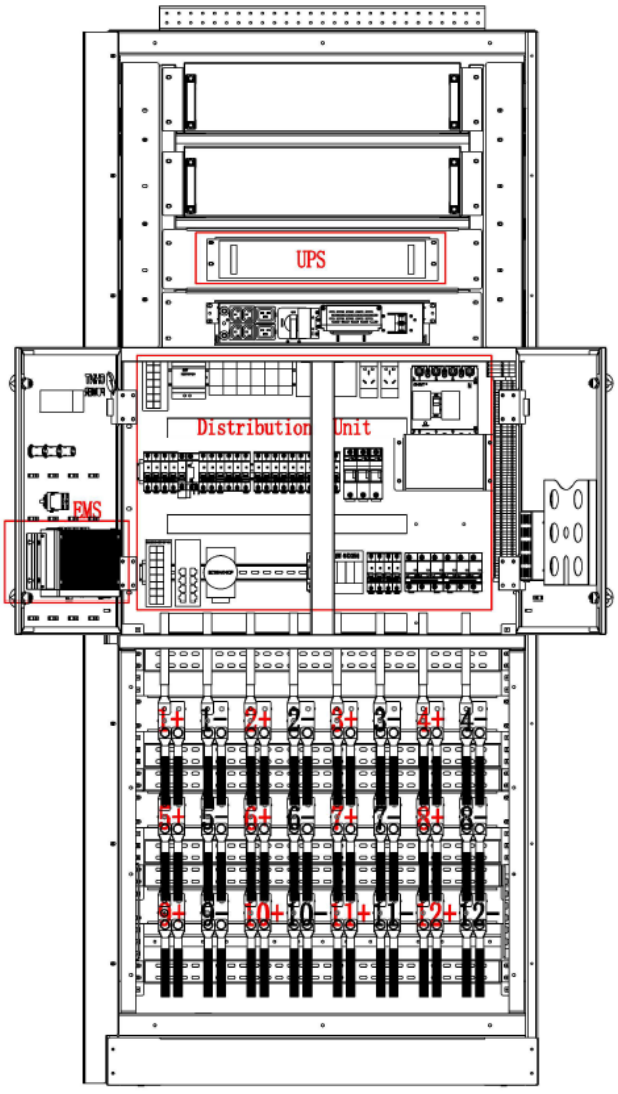


Figure 3-11 1#DC distribution diagram

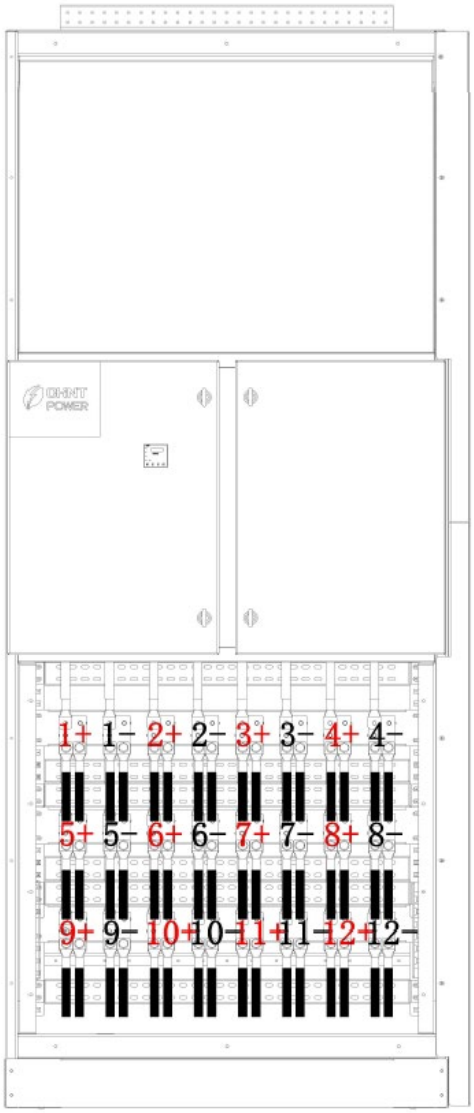


Figure 3-12 2#DC distribution diagram

4. Installation

4.1. Basic Requirements

- The environmental parameters (including protection grade, working temperature range, humidity, altitude, etc.) of the installed product are within the range specified in chapter 8 Technical Data;
- The grid voltage is within the normal range;
- The grid connection permit has been obtained from the local electricity services department;
- The installation personnel must be professional electricians or have received professional training;
- Sufficient air convection space;
- Keep away from flammables and explosives;
- Keep away from electromagnetic interference sources.

4.2. Scope of Supply

CPS PSW4.8M-EU is delivered in a complete machine package, and the deliverables are shown in the following table.

Table 4-1 Scope of Supply

No.	Description	Qty.
1	CPS PSW4.8M-EU	1
2	User Manual	1
3	Packing list	1
4	Certificate of Conformity	1

4.3. Optional Product Accessory

PCS Container supports the following optional accessory:

Table 4-2 Optional Accessory

No.	Configuration	Function
1	Auxiliary Circuit Meter	Measurement of control load

IMPORTANT:

You need to confirm what optional functions are required for the PCS Container before ordering, ensure that the delivered PCS Container meets the use requirements.

4.4. List of Installation Tools

Please refer to the following table for tools required for installing this product.

Table 4-3 Preparation of Installation Tools

No.	Name	Specification	Description
1	Open-end wrench	14 mm	For M8 hexagon head screw
2	Open-end wrench	17 mm	For M10 hexagon head screw
3	Open-end wrench	19 mm	For M12 hexagon head screw
4	Straight screwdriver	3 mm	For Dry contact wiring
5	Sleeve	7 mm	For M4 nut
6	Sleeve	10 mm	For M6 nut
7	No.2 Phillips head screwdriver	0.8-1 N·m (7.1-8.9 in-lb).	For ST5.0xL13mm Cross-slot self-tapping screws
8	No.2 Phillips head screwdriver	1.2 N·m (10.6 in-lb).	For M4X10 Cross-slot combination screw
9	Torque wrench	10 N·m (88.5in-lb)	For M16/M12 two-headed screw
10	Torque wrench	25 N·m (221.3 in-lb)	For M10 hexagon head screw
11	Torque wrench	40 N·m (354.0 in-lb)	For M12 nut
12	Torque wrench	50 N·m (442.5 in-lb)	For M12 hexagon head screw
13	Torque wrench	140±5 N·m (1283 ~ 1391 in-lb)	For M16x50 combined screws

4.5. Mechanical Installation

4.5.1. Installation Requirements for PCS Container

1. The PCS Container shall be installed on the structure supported by cement foundation or channel steel, with surface made of flame-resistant materials. It is necessary to make sure that the foundation is smooth, solid, safe and reliable, and has sufficient bearing capacity. The foundation surface shall not be sunk or inclined.

2. Cable trenches should be preset according to the overall design of the power station and the incoming and outgoing mode of cables at the bottom of the PCS Container when foundation is built. The AC side of the PCS Container supports side outlet copper bars wiring rather than bottom wiring. The DC side is equipped with waterproof connectors for wiring. The specific wiring position of the PCS Container is shown in the following figure, and it is the top view of the PCS Container.

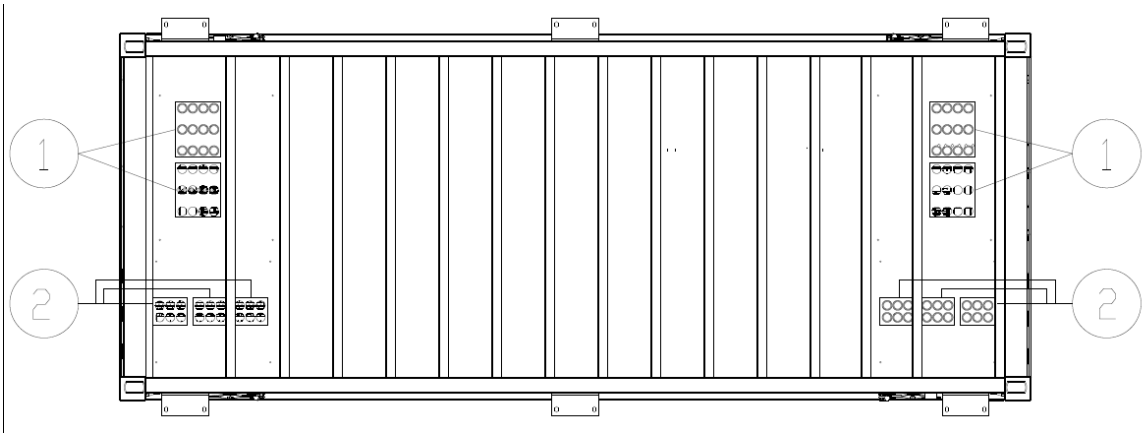


Figure 4-1 Location of incoming and outgoing cable holes

Table 4-4 Description of incoming and outgoing cable holes

No.	Description
1.	AC wiring hole
2.	DC wiring hole

3. The installation foundation of the PCS Container must be designed and constructed in advance according to certain standards to meet the requirements of mechanical support, cable wiring, ventilation and heat dissipation. Foundation should be constructed to at least meet the following requirements:

   - The climatic environment, geological conditions and other characteristics of the PCS Container installation site should be fully considered;
   - The surrounding environment shall be dry, well ventilated and away from flammable and explosive areas;
   - Foundation should be constructed in relatively high elevation areas in the power station area;
   - The soil on the installation site needs to have a certain compactness, and certain measures need to be taken to ensure the stability of the foundation if the soil is loose. The bottom of the foundation pit for foundation construction must be tamped and filled;
   - The foundation should be sufficient to provide effective load-bearing support for the PCS Container and raise the PCS Container to prevent rainwater from eroding the base and interior of the PCS Container;
   - The cement foundation should be constructed with adequate cross-sectional area and height. Recommended cross-sectional area is (length × width)

6700mm×3100mm. The foundation height should be determined by the construction party according to the site geology;

- Cable wiring should be considered in the construction of foundations. The cable trench can be constructed at the bottom of the PCS Container according to the overall design planning of the power station, namely a preset cable trench in the foundation. The cable trench can also be constructed outside the rear door side of the PCS Container and be paralleled to the housing.

4. Low cement piers with sufficient supporting capacity shall be set up on the foundation to ensure the firm installation of the PCS Container and meet the requirements of cable wiring, and incoming and outgoing positions for cables should be reserved at the same time. The recommended scheme is shown in the following figure (Unit: mm):

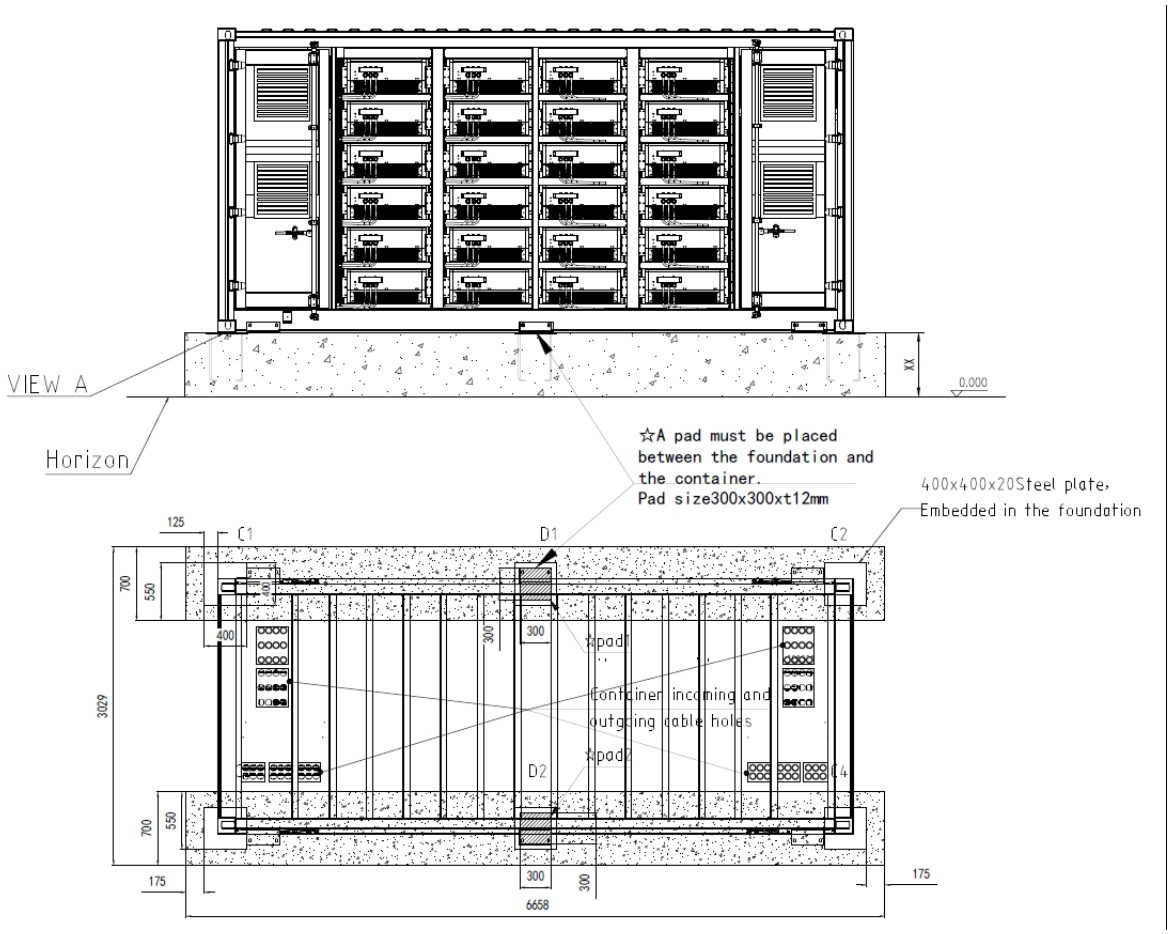


Figure 4-2 Reference diagram of installation foundation

5. Appropriate distance must be reserved between the PCS Container and walls and other equipment to meet the requirements of minimum maintenance access, escape routes and ventilation, as shown in the following figure and table.

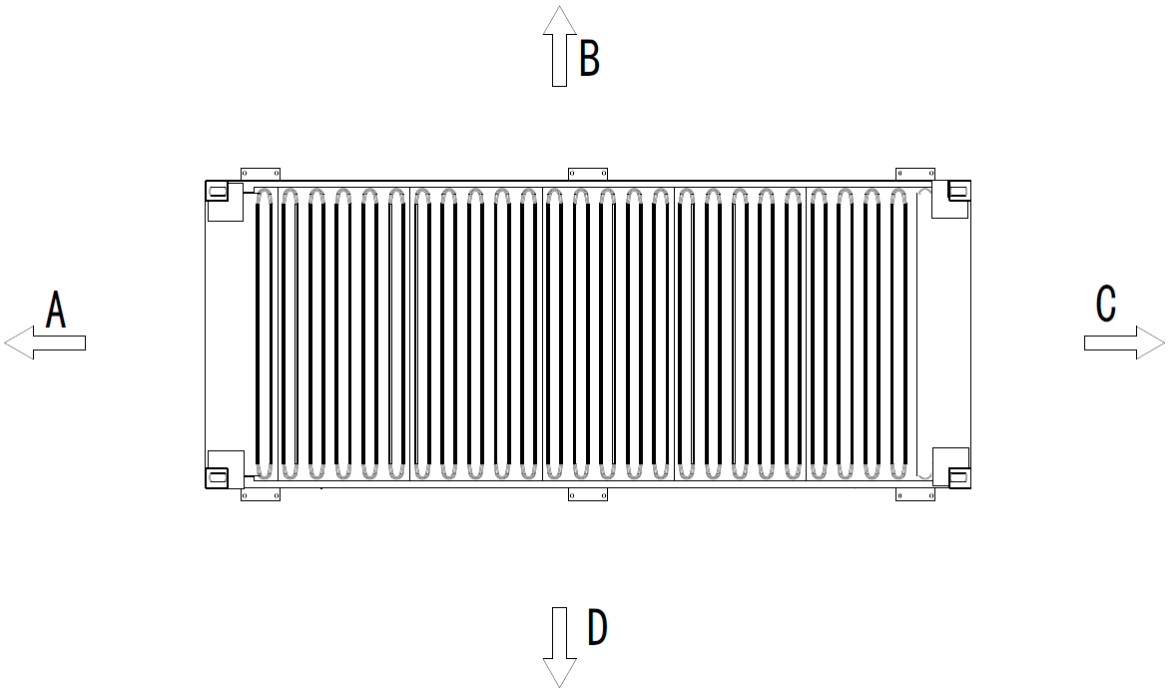


Figure 4-3 Diagram of installation space distance

Table 4-5 Installation Distance

No.	Recommended minimum distance	Remarks
A	2000 mm	Meet the requirements of normal door opening and closing, user operation, wiring construction, etc.
B	2500 mm	
C	2000 mm	
D	2500 mm	

4.5.2. On-site Handling of PCS Container Installation

4.5.2.1. Lifting Precautions

DANGER:

- During the whole process of lifting the PCS Container, the safety operation regulations of the crane must be strictly followed.
- It is forbidden to stand within 10m of the operation area. In particular, it is forbidden to stand under the lifting arm and the lifted or moved machine to avoid casualties.
- In case of bad weather conditions, such as heavy rain, fog and strong wind, the lifting operation should be stopped.

When lifting the PCS Container, the following requirements should be met at minimum:

- Site safety must be ensured during lifting operations.
- Professional operators shall direct the entire lifting and installation process.
- The sling used shall have a bearing capacity of more than 10 tons and a length of more than 6.5 meters. Four slings shall be used, with one attached to each corner of the PCS Container. The angle between each sling and the equipment should not be less than 60° (Figure 4-4), and the total bearing capacity of the four slings shall be at least 40 tons.
- The crane shall have sufficient arm length and radius of rotation, please refer to the dimensions of the PCS Container (Figure 3-4).
- Use the four lifting lugs on the PCS Container for lifting.
- Ensure that all sling joints are safe and reliable, and all slings connected with lifting rings are of equal length.
- The length of the sling can be properly adjusted according to the actual requirements of the site.
- During the whole lifting process, the PCS Container must be stable and not skewed.
- The PCS Container shall be lifted vertically, and no dragging on the ground is allowed during lifting. It shall not be dragged or pushed on any surface.
- After the PCS Container is lifted 300mm away from the supporting surface, suspend to lift and check the connection between the sling and the PCS Container. Only after confirming that the connection is firm can continue to lift the machine.

- After the PCS Container is in place, it shall be placed gently and landed stably. It is strictly prohibited to place the Container outside the vertical landing by swinging the lifting appliance.
- The PCS Container shall be placed on a solid and flat ground with good drainage and no obstacles or protrusions, and the PCS Container shall be supported by the base only.
- Take all necessary auxiliary measures to ensure the safe and smooth lifting of the PCS Container.

4.5.2.2. Handling with Crane

Install the sling into the four lifting lugs on the PCS Container for lifting, and use a crane to move the PCS Container to an appropriate position for installation, as shown in the following figure.

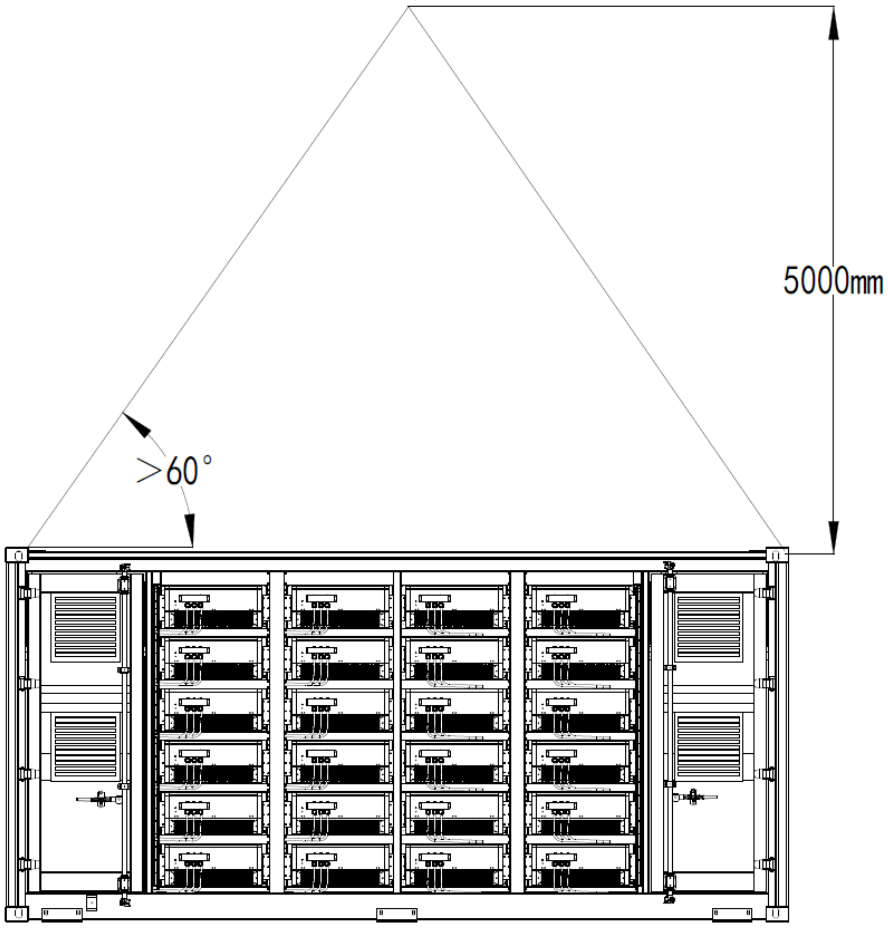


Figure 4-4 Schematic Diagram of Crane Handling

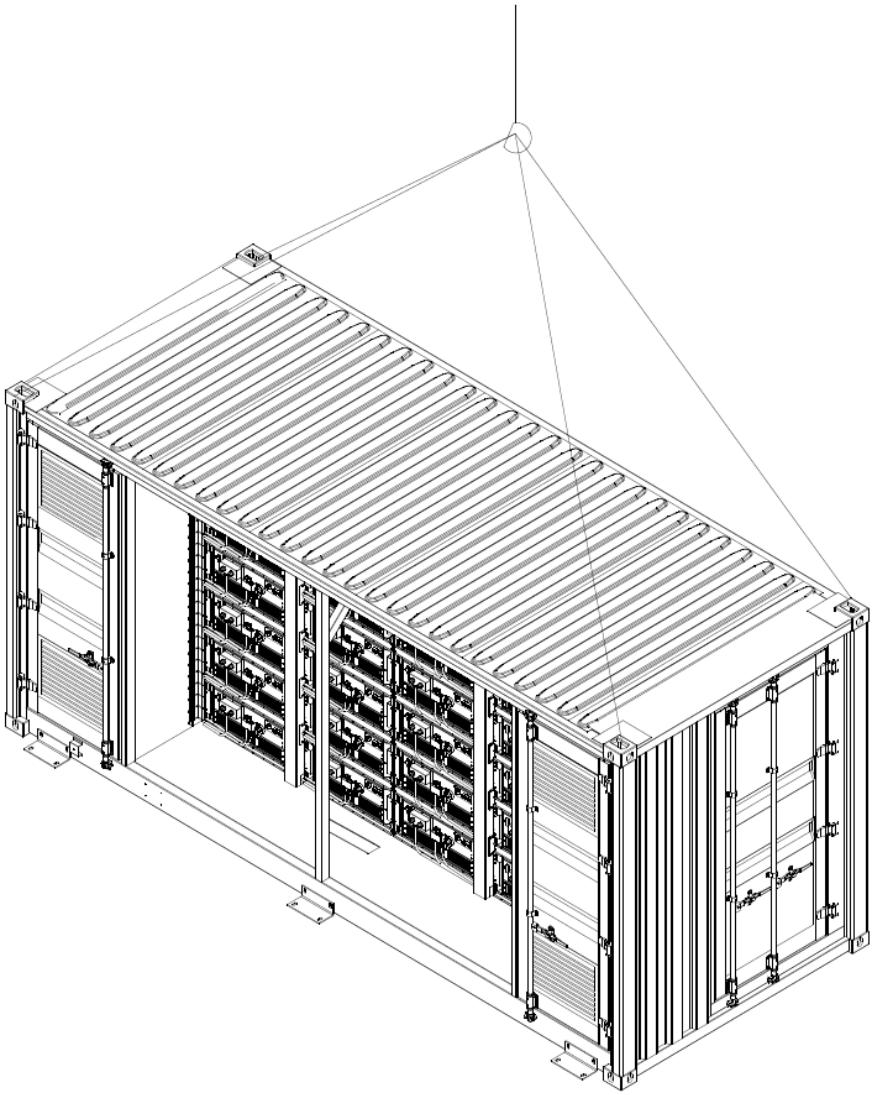


Figure 4-5 PCS Container Lifting

4.5.3. **Fix PCS Container on the Foundation**

Lift the PCS Container to the installation area, use six L-shaped angle steel to fix the PCS Container on the foundation.

1. There are L-shaped angle steel mounting holes reserved at the bottom of the PCS Container.

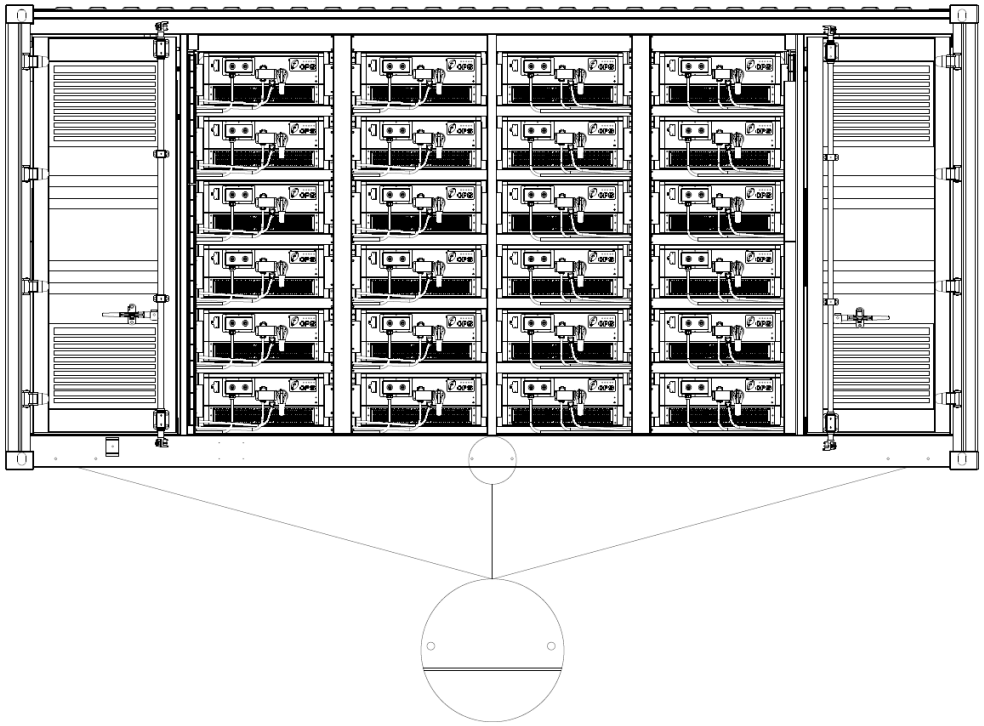


Figure 4-6 Positions of fixing point

2. Mark the drill location with the L-shaped angle steel.

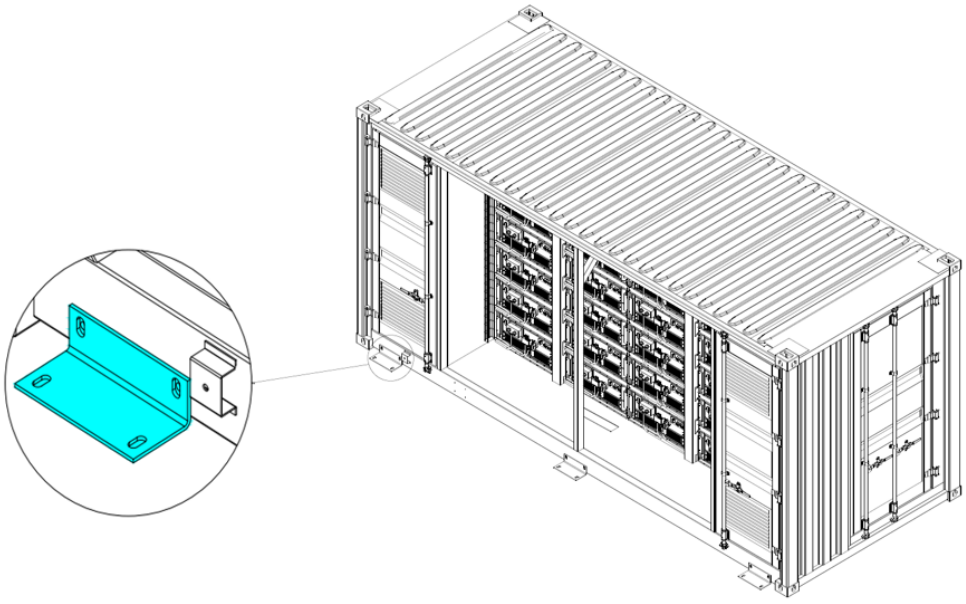


Figure 4-7 Mark the drill locations.

3. Use a percussion drill (Φ16 mm bit) to drill a hole of 70 mm depth. Use the rubber hammer to knock in the four expansion tubes.

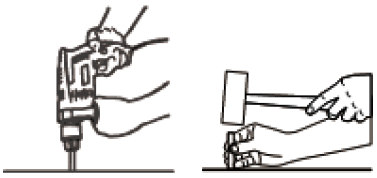


Figure 4-8 Drill and install expansion tube

4. Screw off the nuts from the expansion tubes. Put the L-shaped steel on the ground and make sure expansion tubes pass through holes of the L-shaped steel.

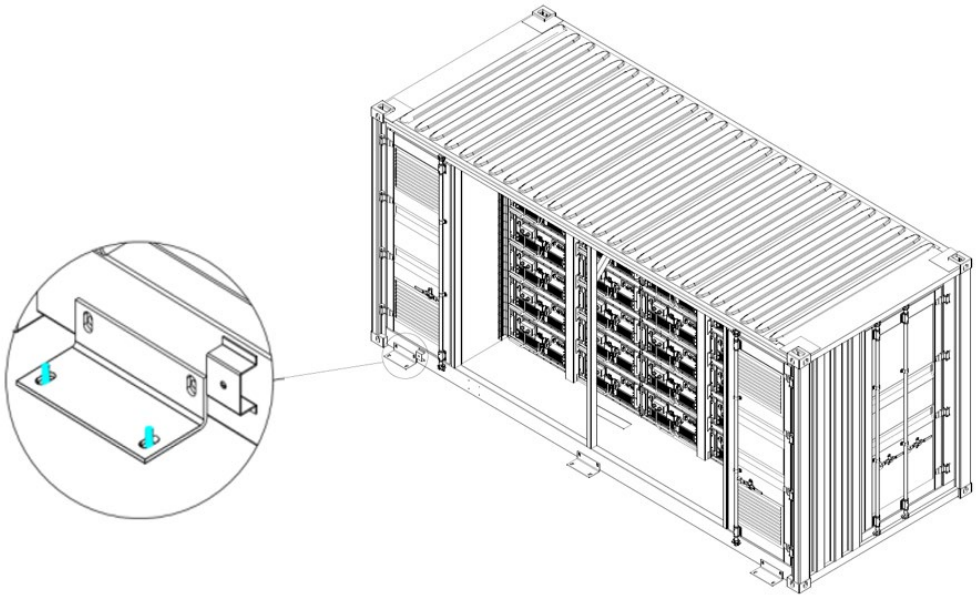


Figure 4-9 Install the L-shaped steel

5. Tighten the nuts and M16x50 combined screws. Torque:140±5 N·m (1283 ~ 1391 in-lb)

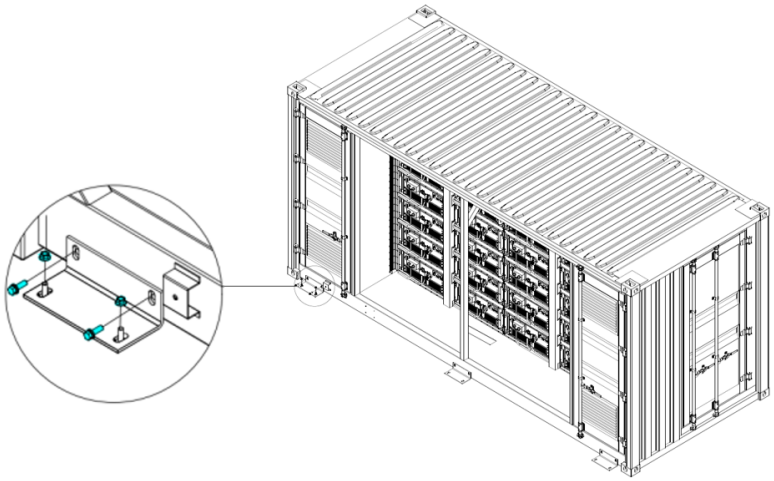


Figure 4-10 Fix the container

6. Install the other L-shaped steels in the same way.

4.5.4. Electrical Connection

Before delivery, the electrical connection in the equipment has been completed. On site, the electrical connection includes grounding, high voltage side wiring, DC side wiring and communication wiring.

WARNING:

- The configuration of the grid level, frequency, and other technical parameters must meet the technical parameter requirements of PCS Container.
- The PCS Container can be connected to the power grid only after being approved by the local power supply company and installed by professional technicians.
- All electrical connections must comply with local electrical installation standards.

4.5.5. Grounding

Grounding includes equipotential connection inside the PCS Container and grounding of external grounding points.

- Internal grounding

  Before leaving the factory, the equipotential connection between all the equipment in the PCS Container has been completed, and they are uniformly summarized to the grounding copper bar.

- External grounding

  In order to facilitate grounding, there are two grounding points outside the PCS Container.

  Grounding point is as shown below:

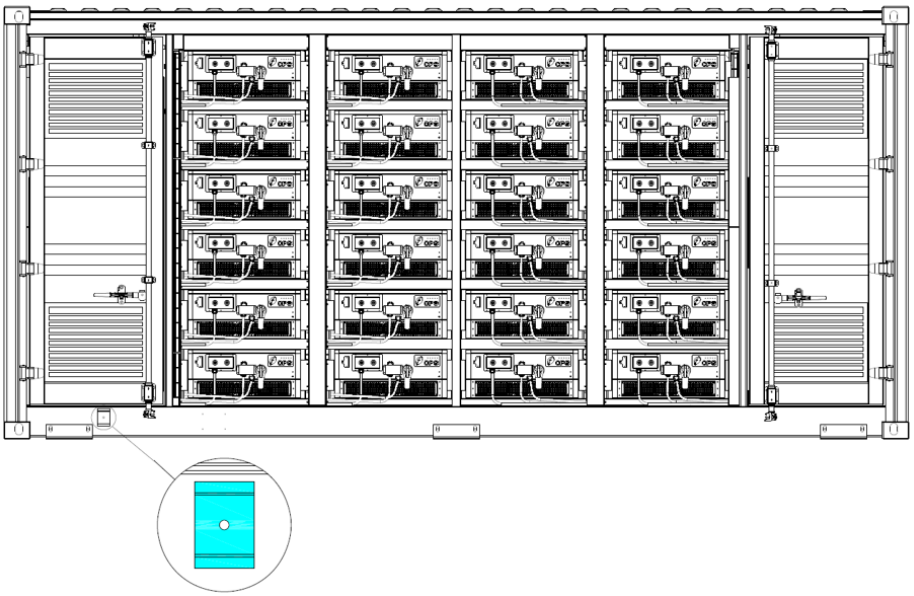


Figure 4-11 Grounding point

Measure the conductivity between the equipment grounding terminal and the total equipotential bonding copper bar to ensure the effectiveness of the internal grounding connection. External contacts of PCS Container shall be reliably grounded by the following method:

Use 70mm^2 ~ 95mm^2 grounding cables to reliably connect the external grounding point of the PCS Container to the grounding point of the photovoltaic system. After completion, use M12 bolts to tighten and the torque is 50±5 N·m (398 ~ 487 in-lb).

4.5.6. **DC Connection**

1. To get the best performance from your PCS Container, follow these guidelines:
    - Ensure that the maximum output voltage of the battery cluster is lower than 1500V.
    - Ensure that the polarity on the DC input side is correct, i.e. the positive pole of the battery cluster is connected to the positive DC input of the PCS Container, and the negative pole of the battery cluster is connected to the negative input of the PCS Container.
    - The 4800KW PCS Container supports up to 24 inputs, and the maximum current of each DC input is 218A.
    - For DC input, it is recommended that each input copper bar be connected with up to two cables. The size of the DC wiring copper bar is shown in the following figure, and the cable diameter recommendations are shown in the following table.

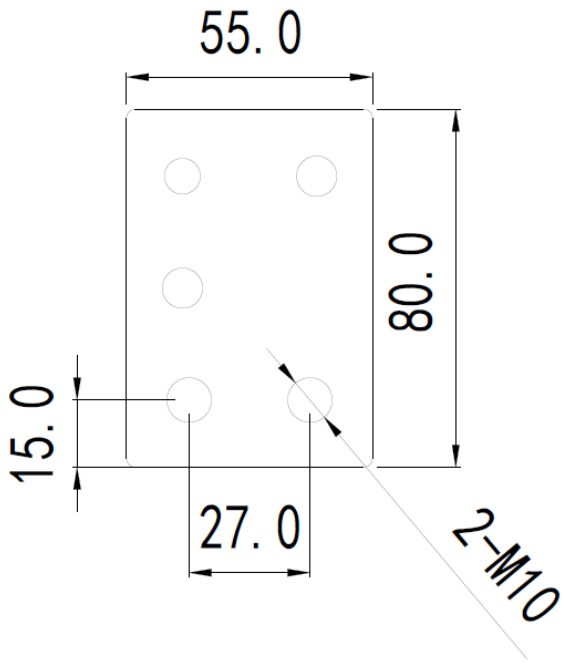


Figure 4-12 Diameter of Copper Bar for DC Wiring (mm)

Table 4-6 Cable Parameters

Parameter	**Value**
Machine type	CPS PSW4.8M-EU
Number of DC input channels	24
Recommended cable diameter	120mm² AL/50mm² AL
Bolt	M10
Torque	25 N·m (221.3 in-lb)

2. Connect the DC positive (1+, 2+, 3+…) and negative cables (1-, 2-, 3-…) to the positive and negative copper bars of PCS accordingly. The positions of the DC input positive and negative wiring copper bars are shown in the following figure:

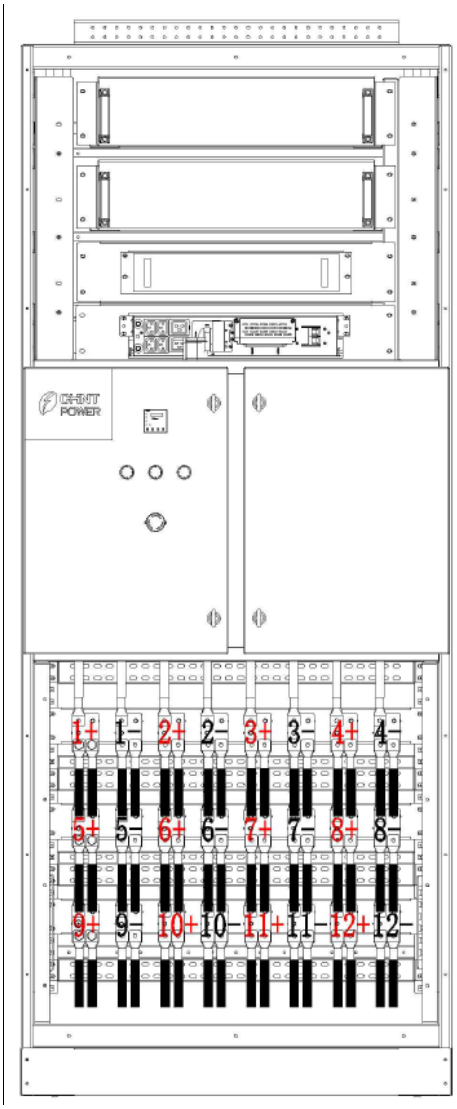


Figure 4-13 DC Input Wiring Position

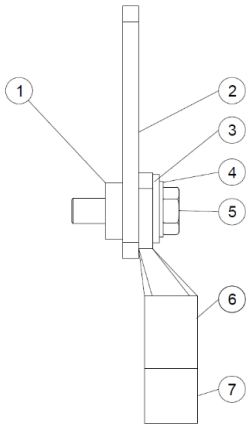
NOTE:

There are twelve groups of DC inputs on one side below the DC combiner cabinet, with DC "+" wiring copper bar located in the left and DC "-" wiring copper bar in the right.

3. The following principles are recommended for DC input wiring:

- It is recommended to use standard copper terminals or copper-aluminum composite terminals.
- Copper or aluminum-core cables with an operating temperature of 90°C or above are recommended.
- Hexagonal cross section is recommended for the crimping of wiring terminals and cables with 2-3 times.

- Please confirm the number of DC input channels, select an appropriate cable diameter, then fix the wiring terminal on the copper bar according to the connection method shown in the following figure, and lock it with a torque wrench. Torque: 25 N·m (221.3 in-lb).



1. Nut
2. Copper bar
3. Flat washer
4. Spring washer
5. Bolt
6. Terminal
7. Cable

Figure 4-14 Connection of DC Input Cable

4.5.7. **Communication Connection**

1. Communication connection with battery container BMS:

   The PCS Container is directly connected to the BMS of battery container through Ethernet and CAN interfaces

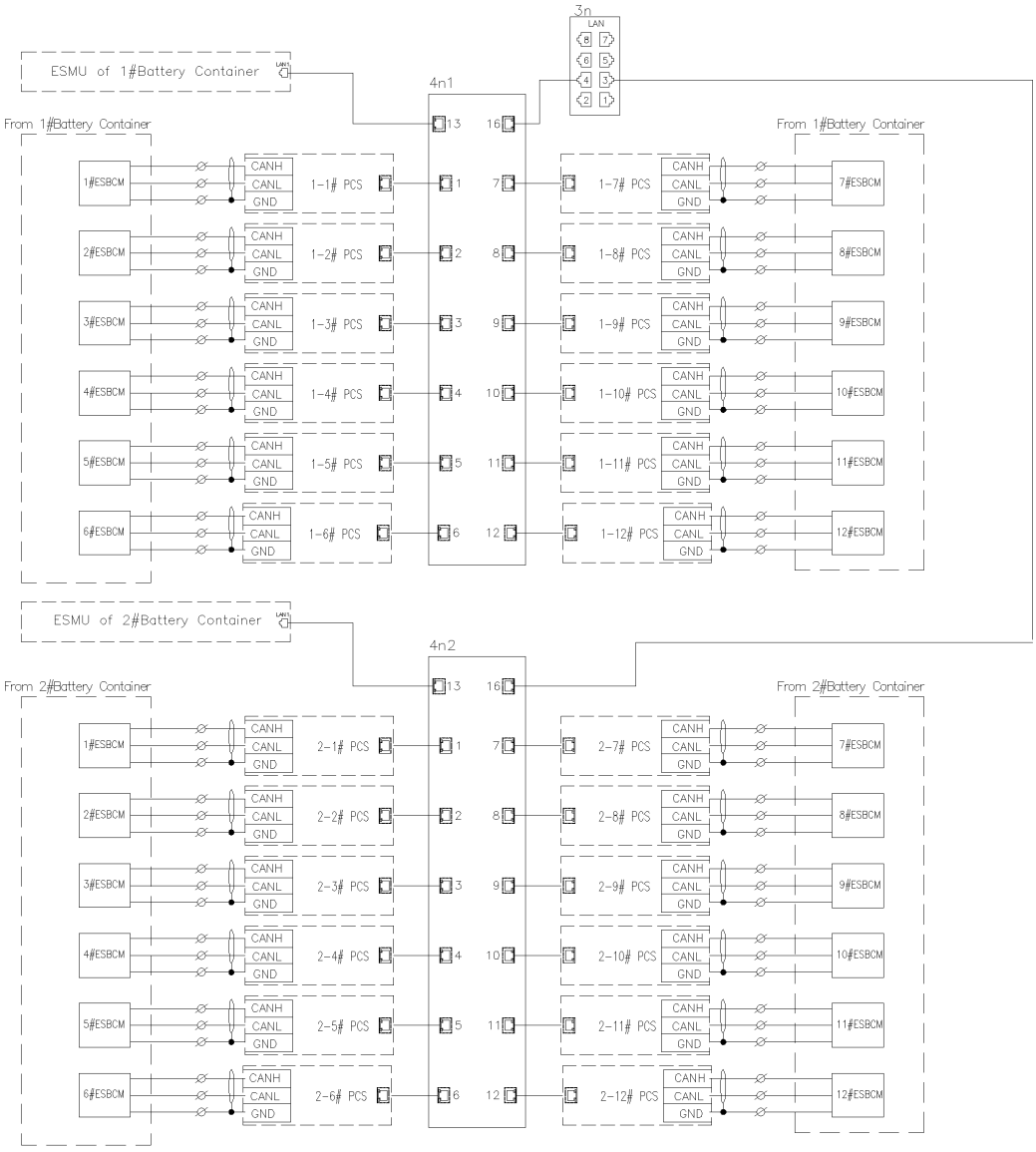


Figure 4-15 Communication Interface

2. Communication with background upper computer

   - Each PCS Container is reserved with 3 Ethernet signal interfaces and 2 optical fiber interfaces for communication with the background. The communication cable shall be a shielded network cable, and both ends of the crystal plug with a straight-through twisted pair shall comply with the T-568B standard. Each group of twisted pairs shall correspond to each other at both ends one by one, and the

same color shall be kept consistent in the corresponding slots of the crystal plugs at both ends.

- For remote monitoring of multiple PCS Container, the Ethernet interface or optical fiber interface on the PCS Container is connected in parallel with the corresponding interface of another PCS Container and connected to the monitoring background through the bus.

4.5.8. **Checks after Wiring**

Inspection items	**Acceptance criteria**
Equipment appearance	The appearance of the equipment is completed without damage, rust and paint peeling. If there is paint peeling, please carry out touch-up operation. Equipment labels are clearly visible. Damaged labels should be replaced promptly.
Cable appearance	The protective cable wrapping is intact and there is no obvious damage. The threading cable and hose are in good condition.
Cable connection	The cable connection location is the same as the design. The terminals are made in accordance with the specifications, and the connection is firm and reliable. The labels at both ends of each cable are clear, and the labels are oriented in the same direction. The wiring meets the principle of strong and weak electricity separation.
Cable arrangement	The cables are neat and beautiful. The wire buckle joints are cut neatly, and no spikes are exposed. Allowance shall be reserved at the turning as required and shall not be tightened. The cables are straight and smooth, and the cables in the cabinet do not cross.
Container cleaning	The interior of the container is clean and tidy, free of excess cables, wire ends, terminals and tools. There are no obvious sundries outside the equipment.

5. Power-on and Power-off Operations

After the wiring is completed, perform the following steps to power on and power off the PCS Container.

5.1. Power-on operation process

After completing all pre-power-on inspection items, the system can be powered on. The steps are as follows:

1. In the DC combiner cabinet, press the power on/off button of UPS for 3 seconds, the UPS power indicator light is ON, the red indicator light of UPS power is on, and the power supply of the control loop is normal.

Figure 5-1 Power on UPS

2. Close 2QF1-2QF7 micro circuit breaker to supply control power to the 4.8MW PCS container, Battery container and PMVS;

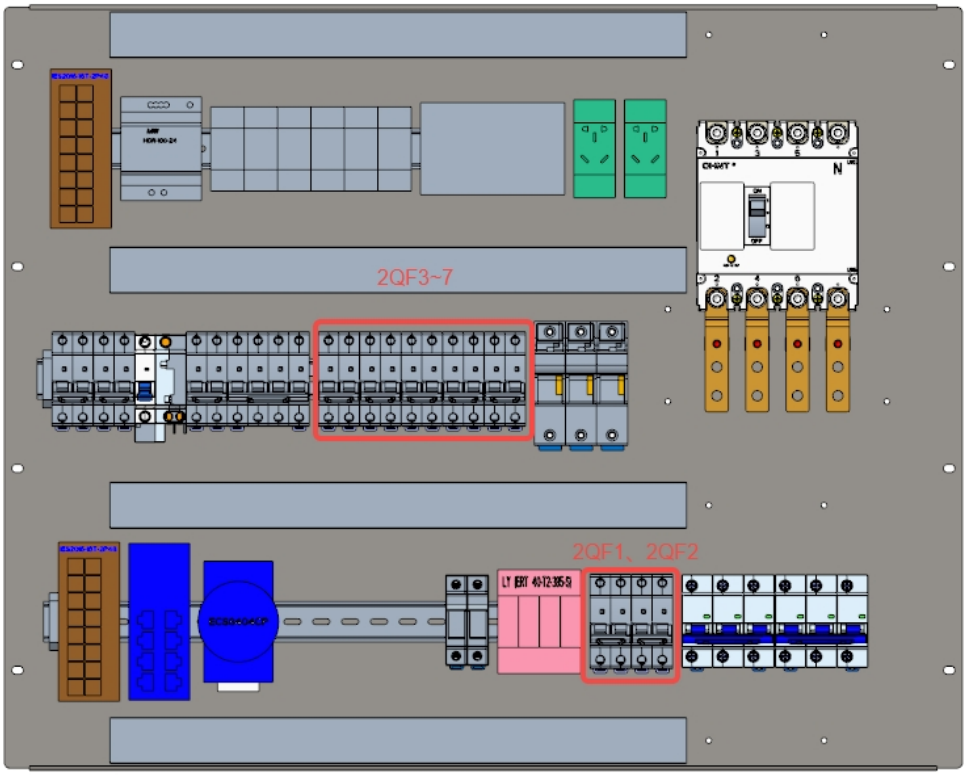


Figure 5-2 Close 2QF1-2QF7 micro circuit breaker

3. Move to the corresponding 1#&2# battery container, close the QFM2, 1QF1-1QF4 micro circuit breaker to turn on the white indicator light of utility power supply and supply power to the control loop of battery container, fire power supply, so that it does not send a trip signal; Close the plastic case circuit breaker QFM1, miniature circuit breaker QF1-QF5;

Figure 5-3 Circuit breaker of battery container

4. Move to the PCS Container, and successively close the air circuit breaker 1QFM1, plastic case circuit breakers 1QF1-1QF12, QFM1 in 1# AC Combiner Cabinet and close the air circuit breaker 2QFM1, plastic case circuit breakers 2QF1-2QF12 in 2# AC Combiner Cabinet.

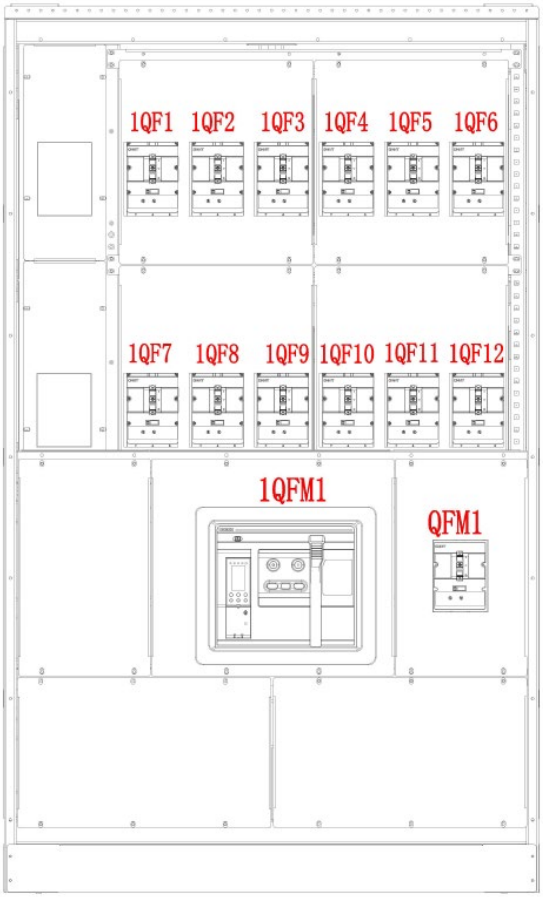


Figure 5-4 Plastic case circuit breakers 1QF1-1QF12, 1QFM1 and QFM1

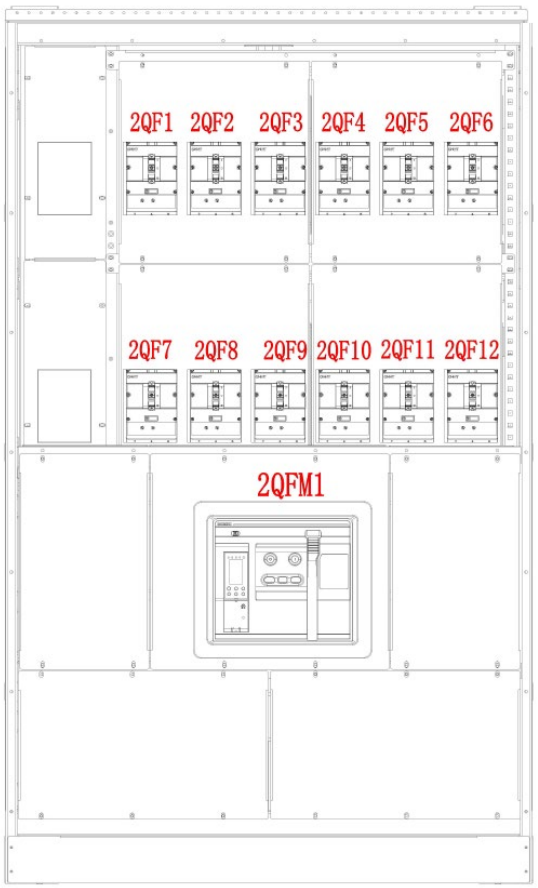


Figure 5-5 Plastic case circuit breakers 2QF1-2QF12, 2QFM1

5. Move to the 1#&2# DC Combiner Cabinet, successively close the QFM2 in the distribution unit, the miniature circuit breaker 1QF1-1QF6. Verify that the white indicator light of utility power supply is on, the grid circuit power supply is normal, and the UPS interface shows the grid mode;

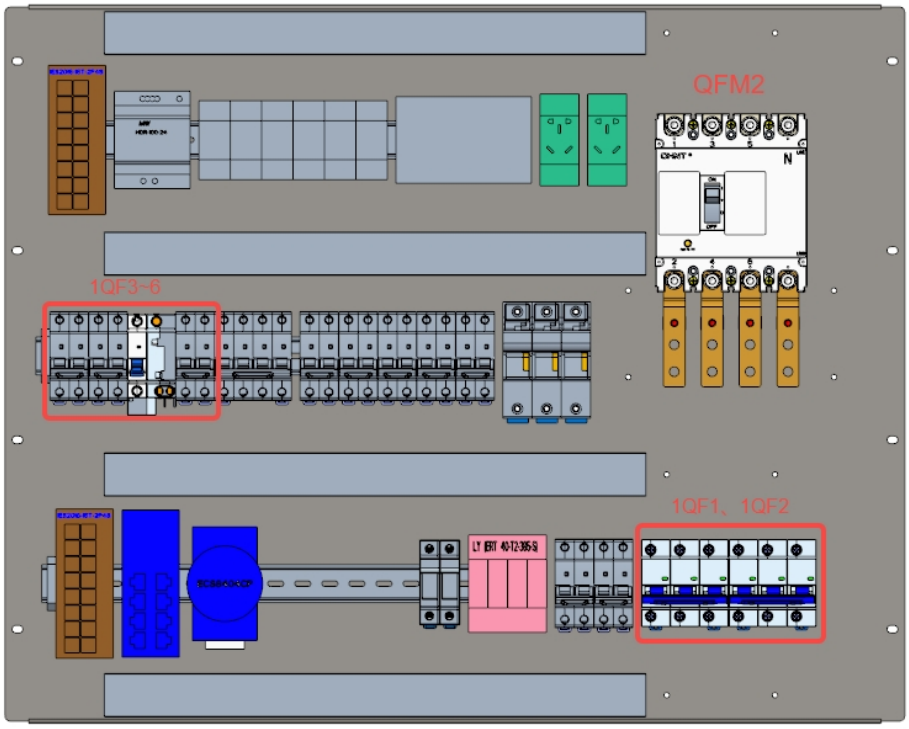


Figure 5-6 Distribution unit

6. Check whether there is a fault signal in the battery cell parameter data set on the BMS screen of the 1#&2# battery container, and conduct the next operation after the fault is resolved;
7. Move to the PCS Container, and rotate the DC isolation switch of 24 PCS units counterclockwise to the ON position;

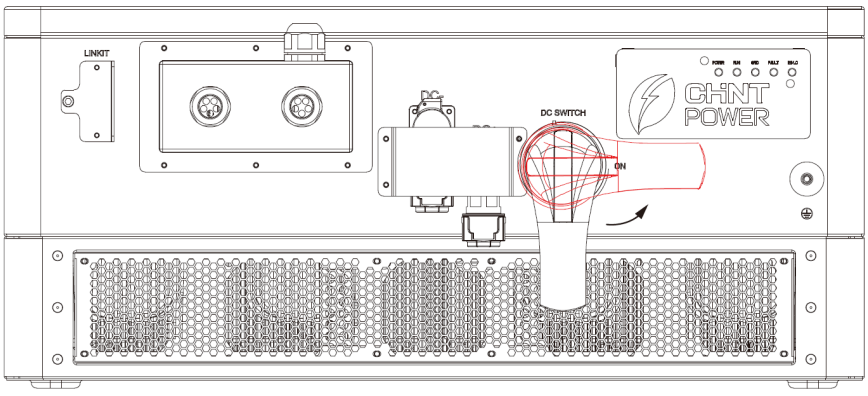


Figure 5-7 Schematic diagram of PCS

8. Check the EMS in the distribution unit to check the current fault, and carry out the next operation after the fault is resolved;
9. The DC side battery is powered on, and PCS startup instructions are sent through the EMS system and charge and discharge strategies are carried out.

5.2. Power-off operation process

1. Issue the shutdown instruction via the EMS system on the left door of distribution unit. Under normal circumstances, the PCS will be shut down;

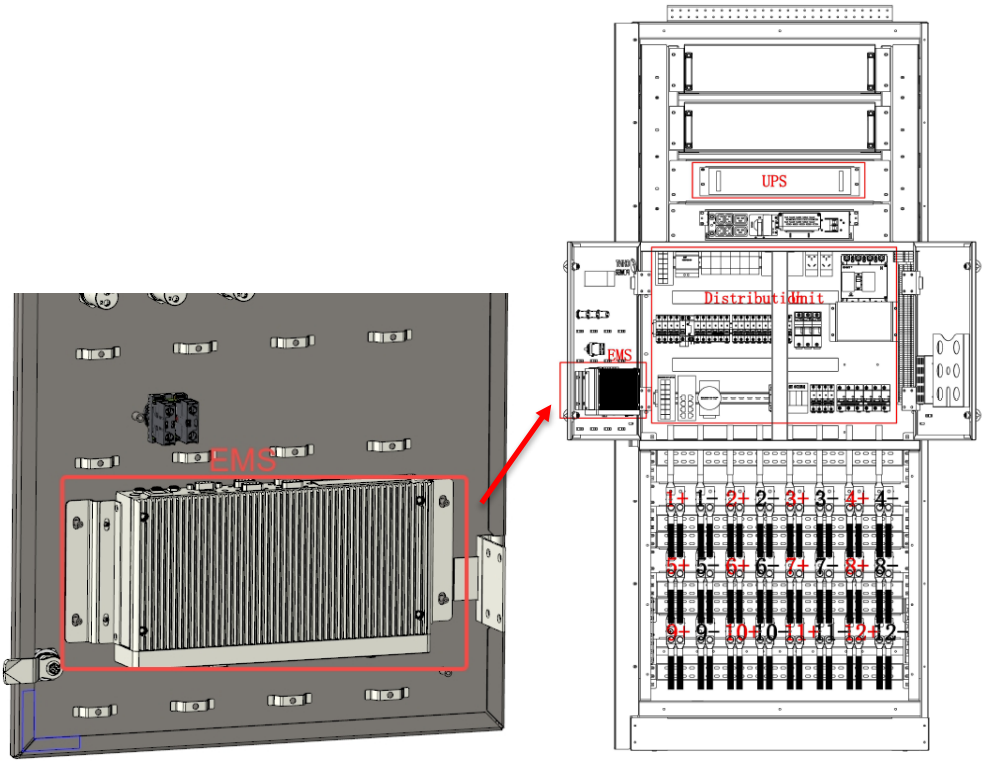


Figure 5-8 Position of EMS

2. Then successively disconnect the plastic shell circuit breaker QFM2, micro circuit breaker 1QF1-1QF6 in the distribution unit;

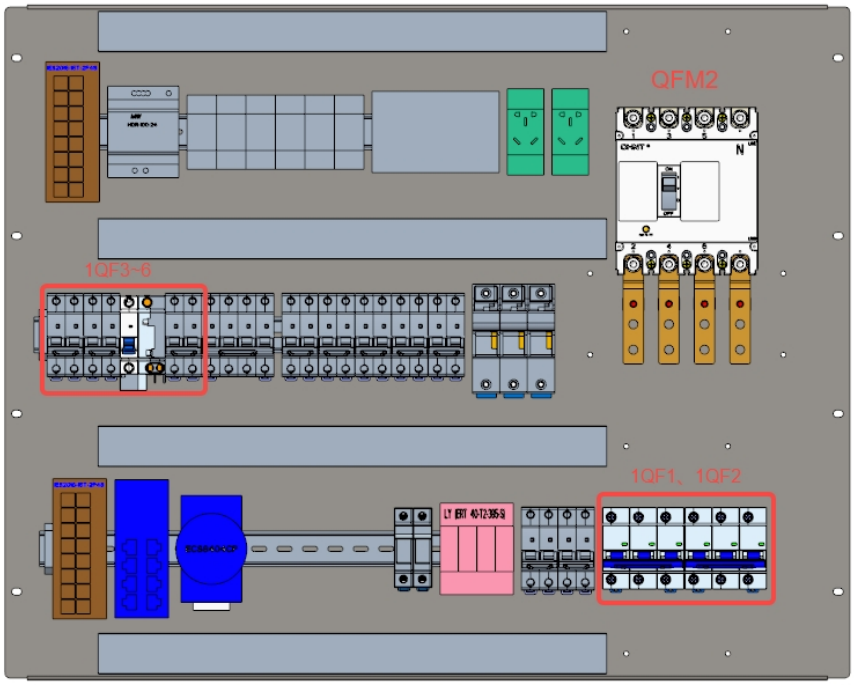


Figure 5-9 Distribution unit

3. Disconnect the micro circuit breaker 2QF1-2QF5 in the distribution unit. See Figure 5-2.
4. Long press the UPS OFF button for 3 seconds to shut down the UPS. See Figure 5-1.
5. Rotate the DC isolation switch of 24 PCS units clockwise to the OFF position; (If the power outage is for a short time, skip this step).
6. Successively disconnect the air circuit breaker 1QFM1, plastic case circuit breaker QF1-QF12、QFM1 in the 1# AC Combiner Cabinet and disconnect the air circuit breaker 2QFM1, plastic case circuit breakers QF1-QF12 in 2# AC Combiner Cabinet; (If the power outage is for a short time, skip this step). See Figure 5-4 and Figure 5-5.
7. Move to the corresponding 1#&2# battery container, successively disconnect the plastic case circuit breaker QFM1, mini circuit breaker QF1-QF4,QFM2, 1QF1-1QF5. See Figure 5-3.

6. Operation

The LEMS (local controller) can be used to control the startup and shutdown of the PCS and set the power.

Refer to the user manual of LEMS.

7. Maintenance and Troubleshooting

7.1. Maintenance

7.1.1. Regular Maintenance

Table 7-1 Regular maintenance

Item	Method	Maintenance intervals
System clean	1. Check the temperature and dust of the PCS container. Clean enclosure if necessary. 2. Check if the air inlet and outlet as well as air vent filter are normal. Clean the air inlet and outlet as well as air vent filter, with soft brush or vacuum cleaner, if necessary.	6 months to 1 year (depending on the installation environment)
Cable entry	Check whether the cable entry is insufficiently sealed or the gap is excessively large, and reseal the entry when necessary.	Once a year
Electrical connection	1. Check whether all cables are firmly in place. If loose, please tighten all the cables referring to 3.5 Electrical connection. 2. Check for cable damage, especially whether the cable surface is scratched or smooth. Repair or replace the cables if necessary.	6 months to 1 year

7.2. Service and Replace

7.2.1. Replace the PCS

DANGER:

Please disconnect the electrical connection in strict accordance with the following steps. Otherwise, the PCS container may be damaged, and the personal and life safety of service personnel may be endangered.

Dismount and replace the PCS units according to the following steps when the service time is due or when it is needed:

1. Turn off all switches according to the power-off operation process in 4.2 Power-off operation process;
2. Turn off the operation and switch of DC side equipment (such as battery container equipment);

3. Turn the DC switch (1) on PCS units to OFF position;

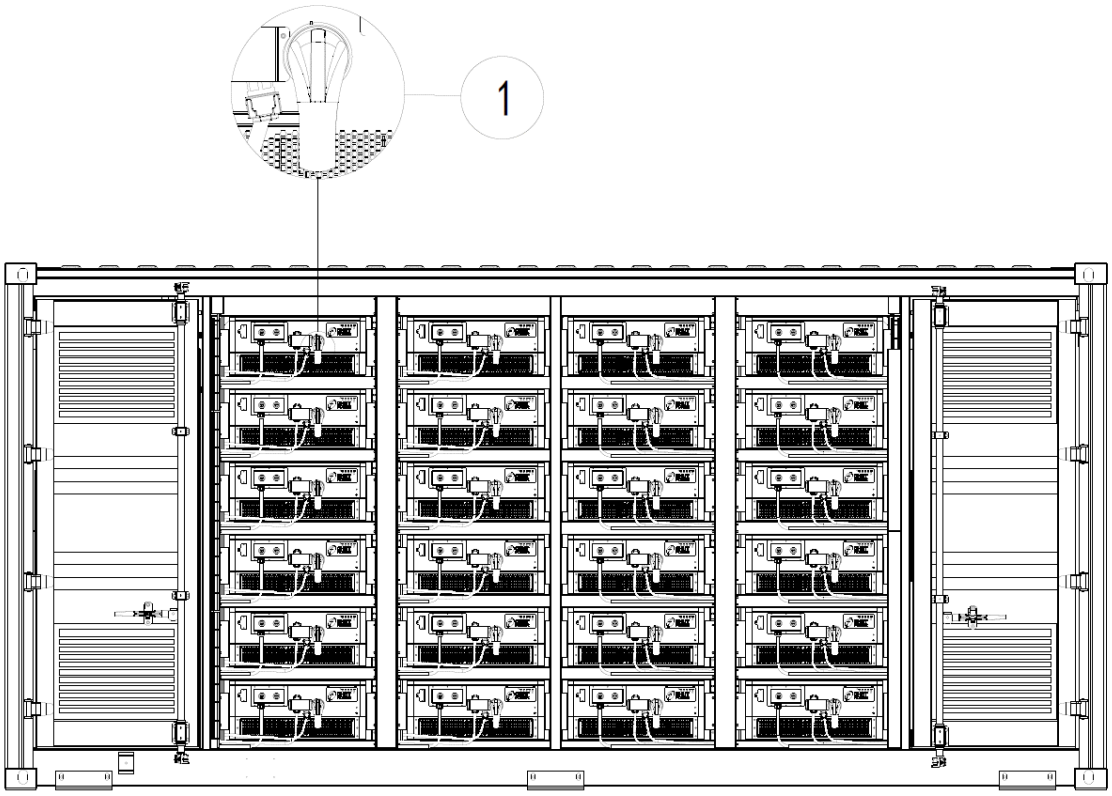


Figure 7-1 DC switch

4. Remove the DC cable and AC cable (1), and PCS grounding cable (2) of PCS incoming and outgoing cables;

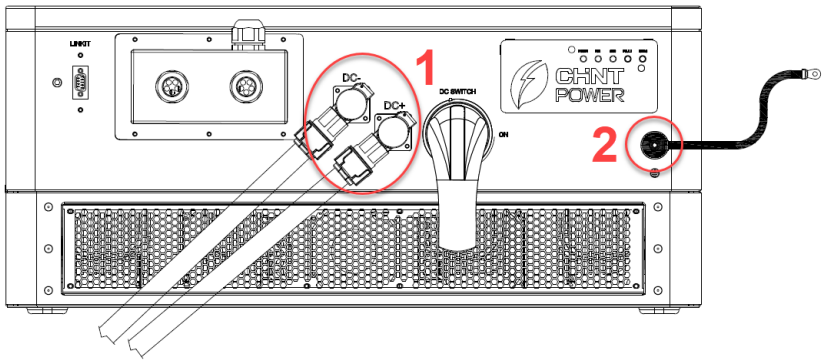


Figure 7-2 Schematic Diagram of Cables

5. Remove the ten combination screws (1) of the PCS to remove it;

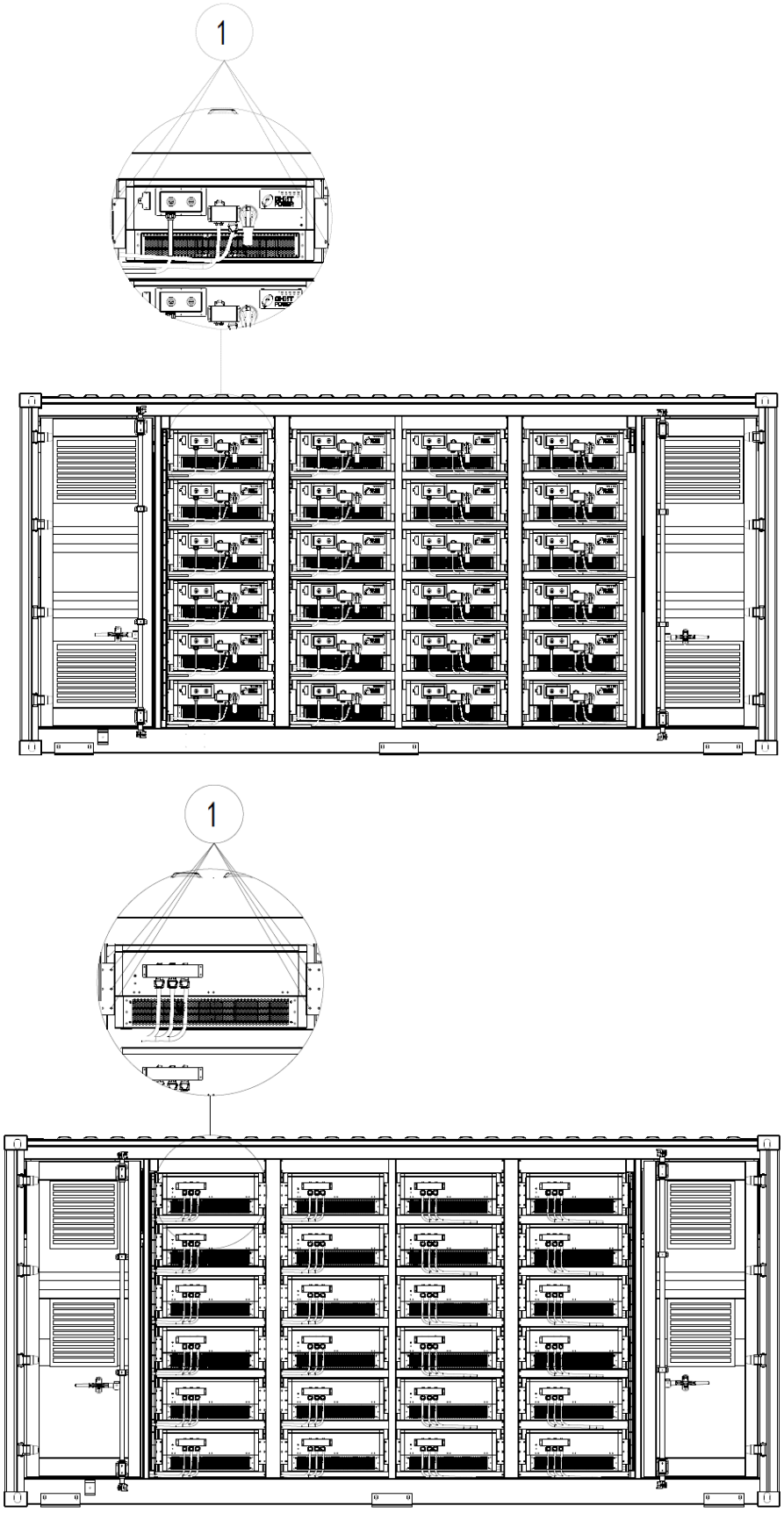


Figure 7-3 Remove the PCS Combination Screw

6. Install a new PCS on the mounting bracket and tighten the ten combination screws; Torque: 12.5 N·m (110.6 in-lb);

NOTE:

The Weight of one PCS is about 120 kg (≈265 pounds).

It is recommended to have four people in total to move the PCS.

WARNING:

Watch out for falling of device when replacing the PCS.

Support the PCS carefully when the external part is approaching to the warning line.

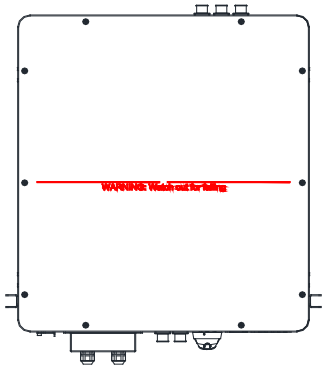


Figure 7-4 Watch out for the Dropping Safety Line

7. Connect the incoming and outgoing DC cables, AC cables, and PCS grounding cables in the reverse order of cable removal;

8. Turn the DC switch (1) on PCS to “On” position;

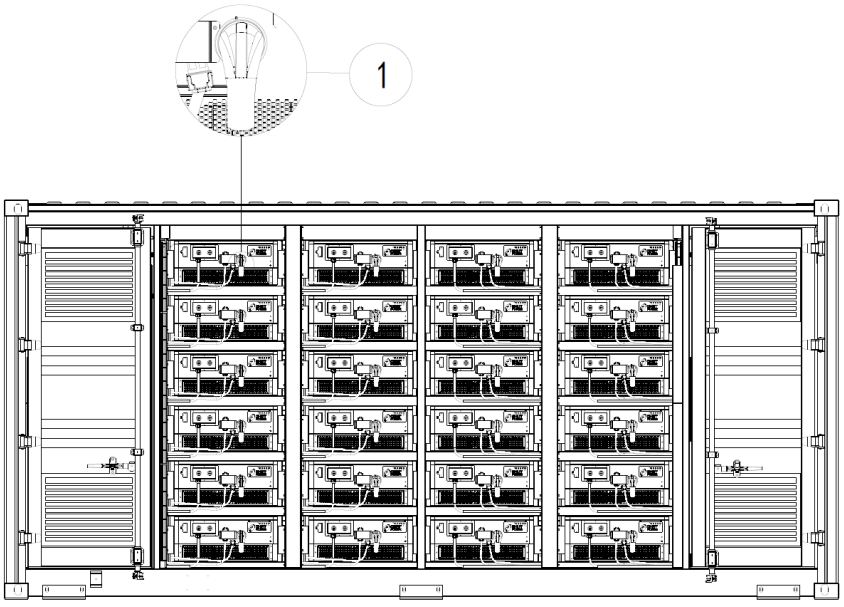


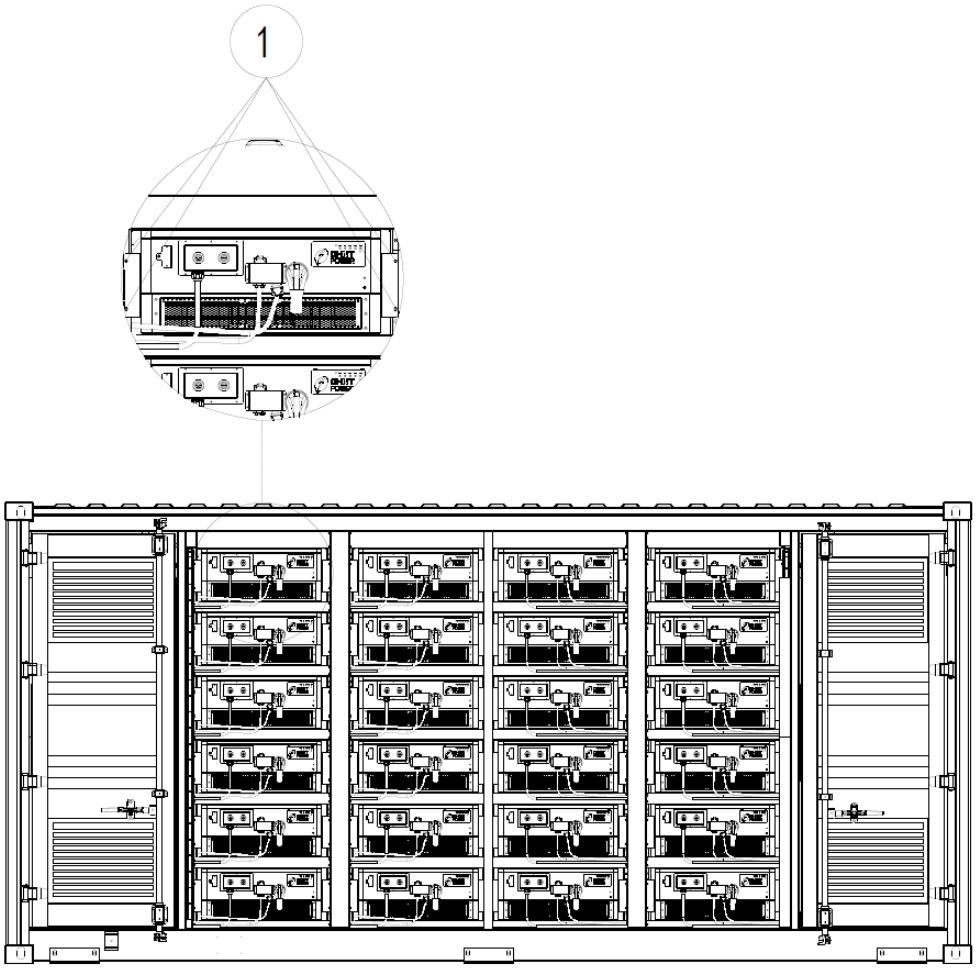
Figure 7-5 DC switch

9. Run the equipment and check whether the newly replaced PCS operates normally.

7.2.2. **Replace Cooling Fans**

If the internal temperature of the PCS is higher than normal operating temperature or abnormal noise is heard assuming the air vent is not blocked and is clean, it may be necessary to replace the external fans. Please refer to the following steps for replacing the cooling fans.

1. Remove the ten combined bolts (1) of PCS and remove the PCS from the bracket.



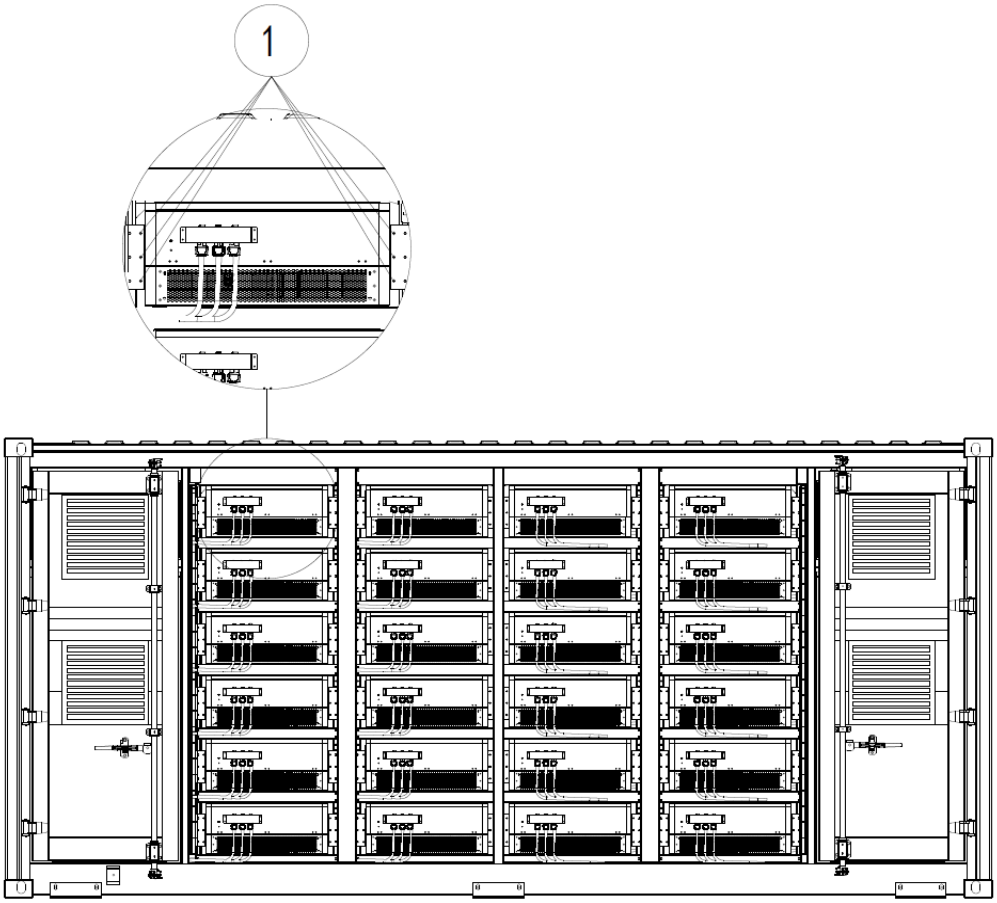


Figure 7-6 Remove the PCS Combination Screw

NOTE:

The weight of one PCS is about 120kg (≈265 pounds).

It is recommended to have four people in total to move the PCS.

WARNING:

Watch out for falling of device when replacing the PCS.

Support the PCS carefully when the external part is approaching to the warning line.

2. Put the PCS on flat ground and use a No.2 Phillips head screwdriver to unscrew the eight screws on the front plate and take off the fan tray.

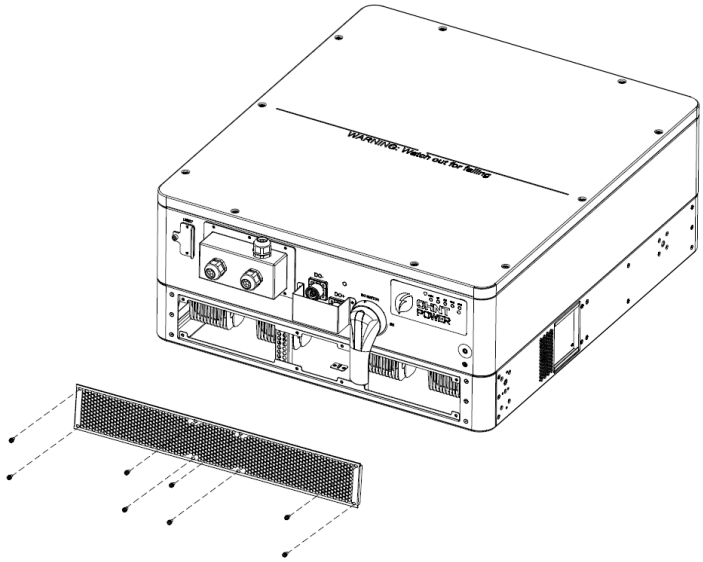


Figure 7-7 Remove screws

3. Disconnect the cable connector from the cooling fan and cut the cable ties (1).

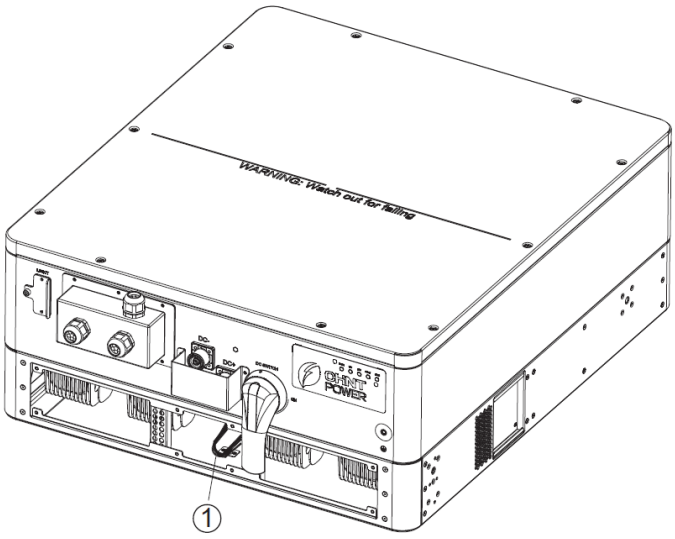


Figure 7-8 Cut the cable ties

4. Use a No.2 Phillips head screwdriver to take off the four M4 screws (2) on the left or right clamp plate and remove the clamp plate (3).

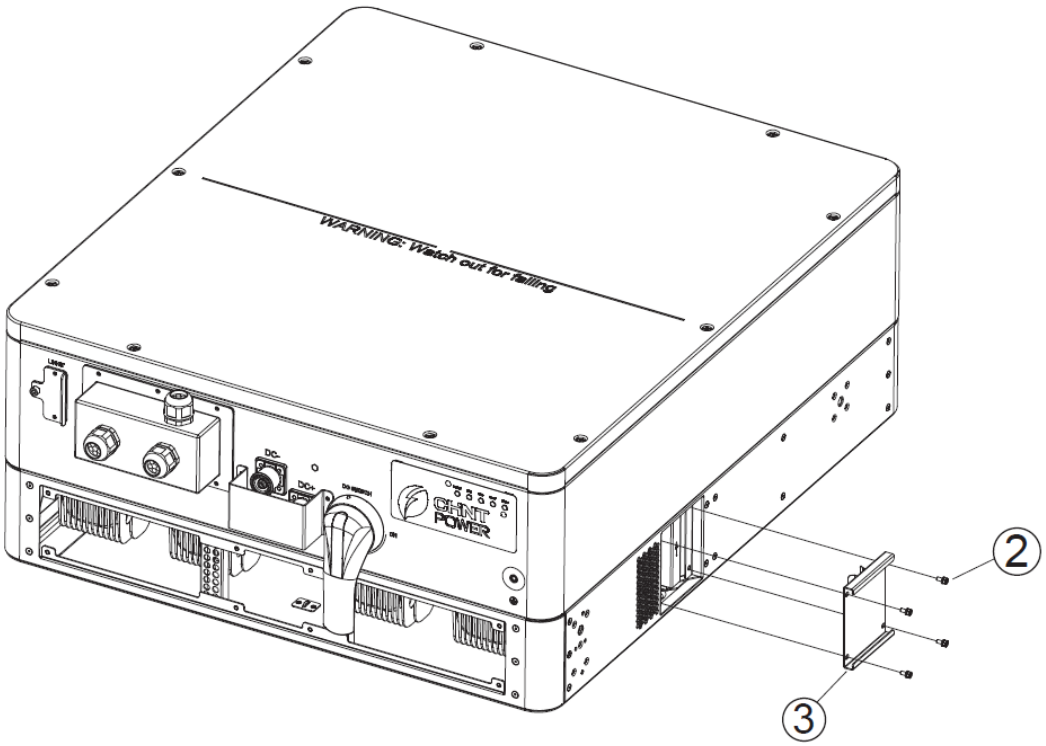


Figure 7-9 Remove the clamp plate out

5. After removing the clamp plate, pull out the fan tray with the aid of the exposed handle (1) of the fan tray.

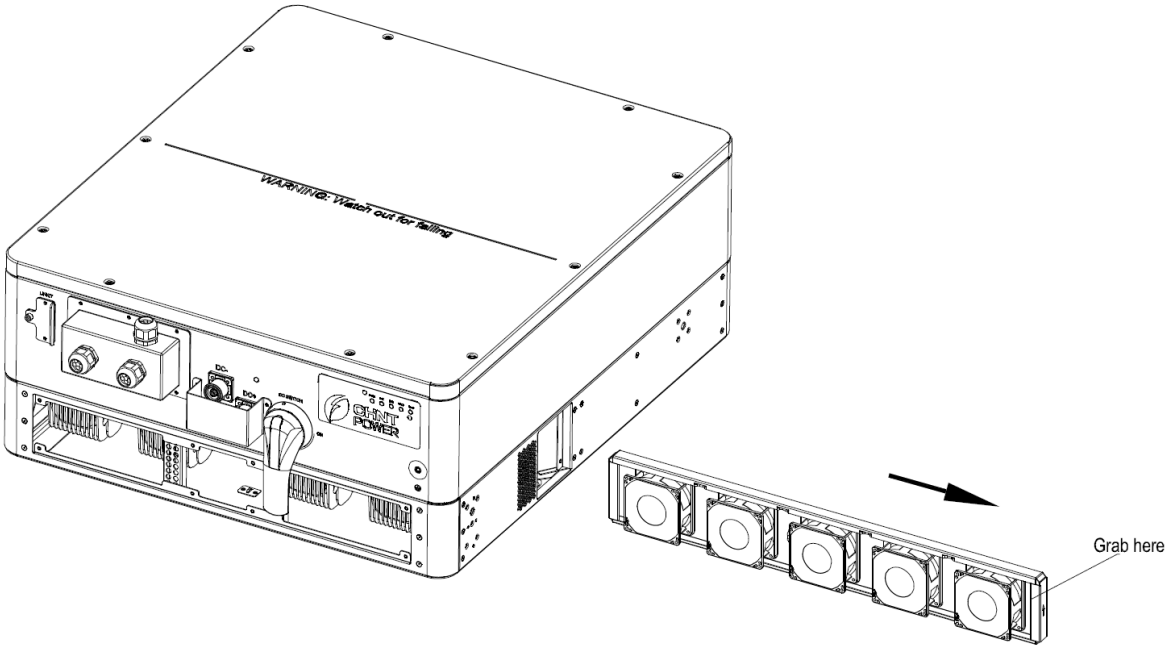


Figure 7-10 Pull out the fan tray

NOTE:

Do not pull it too hard to protect the fan cables from being damaged.

6. Cut off the cable ties between fan cable and fan tray, remove the damaged fans and replace them. Tighten the tapping screws with a torque value of 0.8-1 N·m (7.1-8.9 in-lb).

NOTICE:

A rubber pad shall be placed between the fan and fan tray to reduce noise caused by vibration.

7. Fix the new cooling fan on the fan tray and fasten the cable on the fan tray with cable ties in ways shown as below.

   Torque value: 0.8-1N·m (7.1-8.9 in-lb)

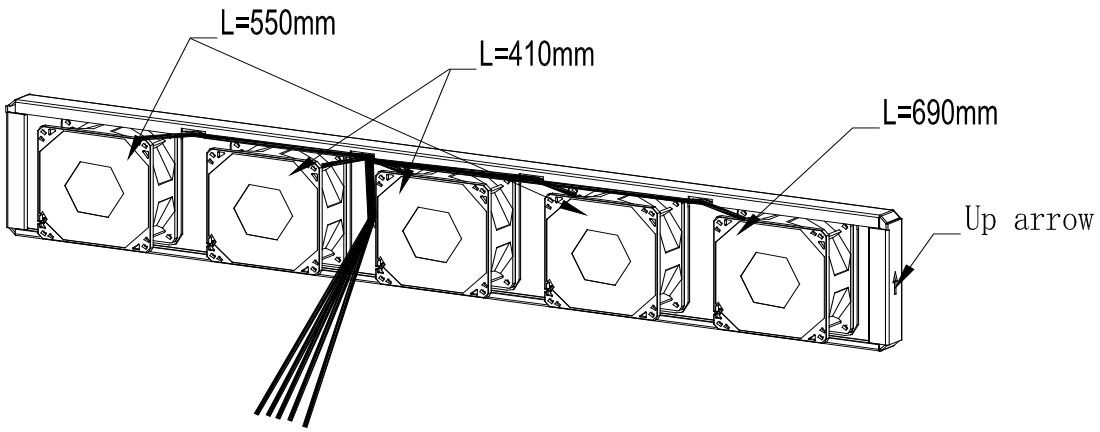


Figure 7-11 Fasten the cable on the fan tray with cable ties

NOTICE:

Fan cables shall be placed in the groove of the fan tray.

8. Install the fan trays, clamp plates and front plate to the PCS, and tighten the screws.

   Torque value: 1.2 N·m (10.6 in-lb).

9. Install the PCS and tighten the combined screws.

   Torque: 25 N·m (221.3 in-lb)

7.3. Fault Analysis and Troubleshooting

Please refer to the definition of LED lights as shown in the following figure and table and troubleshooting as shown in Table 7-3:

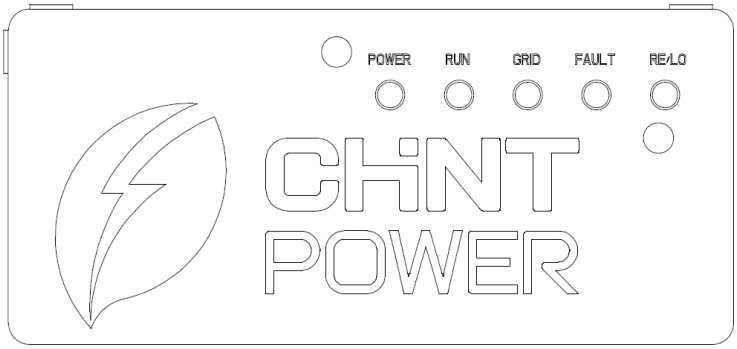


Figure 7-12 LED lights

Table 7-2 LED lights and indication

LED lights	Name	Status	Indication
POWER	Working power indicator	ON	Energized (control panel starts to work)
		OFF	Power supply not working
		Slow flash	The system is not powered on or the communication between MCU and DSP is abnormal
RUN	Grid-tied operation indicator	ON	In grid-tied power generation state
		Slow flash	Derated running status (light on 0.5s, light off 2.0s)
		OFF	In other operation status or power supply not working
GRID	Grid status indicator	ON	Grid on
		OFF	Power supply not working
		Flash	Grid fault (light on 0.5s, light off 2.0 s)
FAULT	Fault status indicator	ON	Indicates a Fault
		Slow flash	Indicates Alarm (light up 0.5s, light off 2s)
		Fast flash	Protective action (light up 0.5s, light off 0.5s)
RE/LO	Remote/local status	ON	Remote control mode is enabled
		OFF	Remote control mode is disabled

Table 7-3 Fault Information

Fault name	Fault explanation	Fault cause	Fault handling
TempSensor Err	Prompt detection of abnormal temperature	1.Temperature Sensor socket connector has poor contact; 2.Temperature Sensor is damaged;	1.Observe temperature display; 2.Switch off 3-phase working power supply and then reboot the system; 3.Contact service personnel
CommErr	Communication inside PCS fails	Terminal block connecters of internal communication wires have poor contact	1.Observe for 5 minutes and see whether the alarm will be eliminated automatically; 2.Switch off 3-phase power supply and then reboot the system; 3.Contact service personnel
ExtFanErr	Cooling fan failure by visual check	1.Fan is blocked; 2.Fan service life has expired; 3. Fan socket connecter has poor contact.	1.Observe for 5 minutes and see whether the alarm will be eliminated automatically; 2.Check for foreign objects on fan blades; 3.Switch off 3-phase power supply and then reboot the system; 4.Contact service personnel
EepromErr	Internal alarm	Internal memory has a problem	1.Observe for 5 minutes and see whether the alarm will be eliminated automatically; 2.Contact service personnel
TempOver	Ambient or internal temperature is too high	1.Ambient temperature outside the PCS is too high; 2.Fan is blocked; 3.Convection airflow is insufficient due to improper installation.	1.Confirm that external ambient temperature is within the specified range of operating temperature; 2.Check whether air inlet is blocked; 3.Check whether fan is blocked; 4.Check whether the location of installation is appropriate or not; 5.Observe for 30 minutes and see whether the alarm will be eliminated automatically; 6.Contact service personnel

Fault name	Fault explanation	Fault cause	Fault handling
GridV.OutLim	Grid voltage exceeds the specified range	1.Grid voltage is abnormal; Power grid breaks down 2.Cable connection between the PCS and the grid is poor;	1.Observe for 10 minutes and see whether the alarm will be eliminated automatically; 2.Check whether the grid voltage is within the specified range; 3.Check whether the cable between the PCS and power grid is disconnected or has any fault; 4.Contact service personnel
GridF.OutLim	Grid frequency is abnormal, or power grid is not detected	1.Grid frequency is abnormal; 2.Cable connection between the PCS and the grid is poor;	1.Observe for 10 minutes and see whether the alarm will be eliminated automatically; 2.Check whether the grid frequency is within the specified range; 3.Check whether the cable between the PCS and power grid is disconnected or has any fault; 4.Contact service personnel
Battery VoltOver*	Battery voltage exceeds the specified value	Battery overvoltage	1.Observe for 30 minutes and see whether the alarm will be eliminated automatically; 2.Check whether battery voltage exceeds the specified range; 3.Turn off the battery input switch, wait for 5 minutes, and then turn on the switch again; 4.Contact service personnel
GFCI.Err	System leakage current is too high	1.Excessive parasitic capacitance on battery module due to environmental factor; 2.Grounding is abnormal; 3.Internal PCS fault	1.Observe for 10 minutes and see whether the alarm will be eliminated automatically; 2.Detect whether the electrical connection is abnormal 3.Contact service personnel
IntProtect 0010~0620	Internal protection of the PCS	Protection procedure occurs inside the PCS	1.Observe for 10 minutes and see whether the alarm will be eliminated automatically;

Fault name	Fault explanation	Fault cause	Fault handling
			2.Contact service personnel
IntFault 0010~0150	Internal fault of the PCS	Fault occurs inside the PCS	1.The PCS can be forced to restart once if it is required by operation and if it is confirmed that there is no other problem; 2.Contact service personnel

8. Technical Data

Model Name	CPS PSW4.8M-EU
DC Input	
Max. DC Input Voltage	1500V
Min. DC Voltage	875V
DC Voltage range for nominal power	950-1500V
Number of CPS ECB200KTL PCS Units	24
Number of DC inputs	24
AC output	
Rated power	4800kVA / 4800kW
Rated grid frequency	50/60Hz
Medium voltage ranging	800V AC
Environment	
Protection degree	IP54
Cooling	Forced air cooling
Operating temperature range	-4°F to +113°F / -20°C to +45°C * For the condition of -22°F to +140°F / -30°C to +60°C, consult the manufacturer for solutions.
Storage temperature range	-22°F to +140°F / -30°C to +60°C
Operating humidity	0-95% (no condensation)
Operating altitude	9843ft/3000m (>6562ft/2000m derating)

Display and communication	
Communication	RS485 / Ethernet / CAN
Modbus data mapping	CPS
Mechanical	
Dimensions (W x H x D)	6058×2896×2438mm
Weight*	20, 000kg
Safety	
Certifications and standards	IEC 62109, IEC 62477, IEC 61000, IEC 62920, EN 50549-2:2019, EN 50549-10:2022, RfG:2016, NC RfG:2018, PTPiREE:2021, UNE 217001:2020, RD 647:2020, RD 1699:2011, RD 661:2007, RD 413:2014, UNE 217002:2020, NTs Version 2.1, VDE 4110, VDE 4120
Smart-grid features	Volt-Ride Thru, Freq-Ride Thru, Ramp-Rate, PF, Volt-VAR, Freq-Watt, Volt-Watt
Protective functions	
Black start	Yes
Reverse polarity protection	Yes
Overvoltage protection	Yes
Grid monitoring	Yes
Ground fault monitoring	Yes
Active / reactive power response time	< 100ms

*Note: The weight is a nominal value. Always consult the actual measured weight before handling or installation.

9. Quality Assurance

9.1. Liability Exemption

1. The warranty period of the product has expired;
2. The equipment serial number cannot be provided or is unclear;
3. Product damage during transportation/storage/handling;
4. Misuse, abuse, wilful damage, negligent or accidental damage;
5. Improper testing, operation, maintenance or installation by the customer, including but not limited to:
    - Failure to meet the system requirements for safe operating environment or external power parameters provided in writing;
    - Failure to operate the covered product in accordance with its operating manual or user guide;
    - Relocate and install the system in case of non-compliance with Chint power requirements;
    - Unsafe grid environment or chemical environment or other conditions of similar nature;
    - Direct fault caused by wrong voltage or power system;
    - Unauthorized dismantling of the product or unauthorized alteration of the product software;
6. The customer entrusts the installation and maintenance personnel not designated by the Company to install, maintain or disassemble the product;
7. Equipment damage caused by violation of safety warnings contained in the product manual and relevant statutory safety specifications;
8. Equipment damage due to the operating environment beyond that specified in the product manual or failure to install, use and maintain the product according to the requirements of the product manual;
9. Force majeure events (including but not limited to acts of the public enemy, acts of governmental authorities or domestic or foreign agencies, sabotage, riots, fires, floods, typhoons, explosions or other catastrophes, epidemics or quarantine restrictions, labour disturbances or shortages, accidents, freight embargoes or any other events beyond the control of the Company);
10. Lightning protection measures are not taken or not standardized (lightning protection measures of PV system shall be implemented with reference to corresponding UL

standards and specifications, otherwise PV devices such as modules, inverters and power distribution facilities may be damaged by lightning);

11. Other circumstances that are not within the scope of the Company's after-sales warranty.
12. Equipment failure or software damage caused by using non-standard components/accessories, connection of incompatible configurations (such as batteries, etc.) or other brand products or accessories without permission, improper configuration selection/storage/use.

9.2. Quality clause (warranty clause)

1. For products that fail during the warranty period, our company will repair or replace with new products free of charge.
2. The customer must show the invoice and date of purchase. In addition, the product shall carry a legible logo for warranty service; otherwise, our company shall have the right to refuse to provide quality assurance.
3. The replaced unqualified products shall be returned to us.
4. It is necessary to provide reasonable time for our company to overhaul the equipment.
5. For further warranty terms, please refer to the standard warranty terms applicable at the time of purchase.

If you have any questions about the CPS PSW4.8M-EU PCS Container, please contact us. We will be very happy to serve you.

10. Routine Maintenance

Environmental factors such as ambient temperature, humidity, dust, and vibration accelerate aging and wear of internal components in the PCS Container, potentially leading to operational failures. Regular maintenance is therefore essential to ensure normal functionality and extend service life.

All actions aimed at maintaining the PCS Container in optimal operating condition fall under the scope of maintenance work.

10.1. Safety Precautions

High voltage DANGER! Electric shock DANGER!

Serious injury or death!

After shutdown, please wait at least 10 minutes before opening the door. Before performing maintenance work, make sure that the interior of the device is completely de-energized.

Only qualified and authorized personnel may perform operations such as maintenance on the PCS Container.

During maintenance, do not leave metal parts such as screws and washers in the PCS Container, otherwise the equipment may be damaged!

The entry of wind, sand and moisture may damage the electrical equipment in the PCS Container or affect the operation performance of the equipment!

- Do not open the equipment cabinet door in the PCS Container in the wind and sand season or when the relative humidity in the surrounding environment is greater than 95%.
- Maintenance work can only be started when there is no wind and sand and the weather is clear and dry.

In order to ensure the safety of operators when maintaining or overhauling the PCS Container, be sure to abide by the following five safety rules:

- Professionals ensure that PCS Container cannot be re-energized accidentally.
- Use electrical inspection equipment to ensure that the interior of the PCS Container is completely de-energized.
- Have the necessary ground and short-circuit connections made by professionals.
- For possible live parts near the operating part, use insulating cloth to cover them.
- Check whether the escape route is blocked.

10.2. Maintenance

10.2.1. Overview

The PCS Container has IP54 protection grade and is suitable for outdoor use. However, harsh environment or long-term operation will cause the aging of the PCS Container or damage to the internal equipment. Regular maintenance and inspection of the PCS Container, and replacement of aging and damaged components will effectively prolong its service life and improve the performance of internal equipment.

Non-routine inspections should be prioritized, particularly when system performance shows significant degradation.

10.2.2. Maintenance Period

In order to ensure the good operation of the equipments in the PCS Container, the PCS Container should be maintained regularly.

The maintenance intervals given in this section are reference values. The actual maintenance period should be reasonably determined based on the actual environmental conditions of the project site. If the operating environment of the PCS Container is relatively harsh, such as in a desert area, the corresponding maintenance period should be shortened. In particular, internal and external cleaning, anti-corrosion and anti-rust work, etc., should be more frequent.

If the PCS Container is installed in a desert area, it is recommended that the inside and outside of the PCS Container should be carefully inspected and thoroughly cleaned after each sandstorm.

Failure to comply with the torque requirements may cause fire at the connection!

During the electrical connection process, the bolts must be tightened strictly to the torques described in this manual.

Incorrect wiring sequence may cause fire. Please pay attention to the connection sequence of the wiring parts. When connecting, make sure that the connector is tight. Inadequate connections or oxidation of the contact surfaces can also cause excessive heat which may cause fire.

10.3. Maintenance Items

Routine inspection and maintenance must comply with the relevant regulations of the power company. Inspection, maintenance and repair can only be performed by trained personnel who are familiar with the equipment. Personnel must be certified and comply with safety regulations issued by the power company.

Table 10-1 Maintenance items

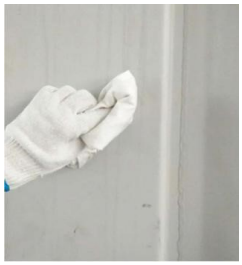
Inspection item	Inspection method	Period
System Status and Cleaning	Check whether the PCS Container and internal equipment are damaged or deformed.	Once a month
	Check whether there is abnormal noise during the operation of the internal equipment.	
	Check whether the temperature inside the PCS Container is too high.	
	Check that warning signs, labels, etc. are clearly visible and not defaced. Replace if necessary.	
	Check whether the humidity and gray scale are too heavy, and clean the equipment if necessary.	
	Check whether there is oxidation or corrosion signs inside the PCS Container. If any, remove rusts.	
Cable connection	Check whether the power cable is loose. If it is loose, tighten it according to the torque specified in the manual.	Once every half a year after the first commissioning and once every two years thereafter.
	Check whether the power cables and control cables are damaged, especially whether the skin in contact with the metal surface has any signs of cuts.	
	Check whether the insulating wrapping tape of the power cable terminal is peeled off.	
Fan / heat exchange	Clean or replace the dust filter.	Once every half a year after the first commissioning, and once every half a year to once a year thereafter.
	Check the operating status of the fan/heat exchanger.	
	Check whether the fan / heat exchanger makes abnormal sound during operation.	

Inspection item	Inspection method	Period
Equipment maintenance	For maintenance of various internal equipment, please refer to relevant manuals.	/
AC/DC Combiner cabinet	Check for condensation on inside panels and top cover.	Once a month
Other equipment	Replace damaged lamps promptly.	When necessary
	Replace damaged smoke sensors and fire extinguishers promptly.	
	Replace the temperature and humidity controller in time.	
	Clean the screen	Once half a year
	Replace the screen	Once a year

10.4. Paint Repair Measures

Check the appearance of the cabinet for damage:

Case 1: Surface dirt caused by water stains and dust can be cleaned

Illustration	Step
	1. Use a rag (or other scrubbing tool) dampened with water to scrub the dirty parts of the surface. 2. If it cannot be cleaned with water, scrub with 97% alcohol until the surface cleanliness reached an acceptable range. (You can also try to use a non-corrosive cleaner commonly used in your area)

Material:

- Rag
- Water
- Alcohol or other non-corrosive cleaning agents

Case 2: The surface is dirty & the topcoat is damaged, and the surface traces cannot be cleaned.

Illustration	Step
	1. Use sandpaper to polish the rough or scratched parts of the surface paint to make the surface smooth.
	2. Using a cloth dampened with water or 97% alcohol, scrub the damaged area to remove surface stains.
	3. After the surface is dry, use a soft brush to touch up the scratched parts of the paint, and try to keep the paint brushing as uniform as possible.

Material:

- Sandpaper
- Rag
- Water
- Alcohol
- Brush
- The color number is RAL7035 paint

Case 3: The primer is damaged and the substrate is exposed.

Illustration	Step
	1. Use sandpaper to polish the rough or scratched parts of the surface paint to make the surface smooth.
	2. Using a cloth dampened with water or 97% alcohol, scrub the damaged area to remove surface stains and dust.
	3. After the surface is dry, spray zinc-rich primer to protect the exposed parts of the substrate. The coating shall completely cover the exposed substrate.
	4. After the primer is dry, use a soft brush to touch up the damaged parts, and try to keep the paint brushing as uniform as possible.

Material:

- Sandpaper
- Rag

- Water
- Alcohol
- Zinc rich primer
- Brush
- The color number is RAL7035 paint

It is necessary to check whether the protective paint sprayed on the shell of the PCS Container has peeled off, peeled paint, etc. If any, please repair it in time. The entire exterior of the PCS Container should be repainted with special protective paint every 5 years.

10.5. Filter Screen Maintenance and Replacement

The position of filter sceen is shown as below:

Figure 10-1 Filter screen inside the support panel

The fixing bracket of the filter screen is fixed with a lock, as shown in the figure below. When replacing it, you need to open the lock with a key, then tilt the support panel, take out the filter screen, replace it with a new filter screen, and then lock the support panel in a correct position.

1. Open the lock with keys attached and tilt the support panel.

Figure 10-2 Open the locks of the support panel

2. Unlock the buckles on the inner support panel.

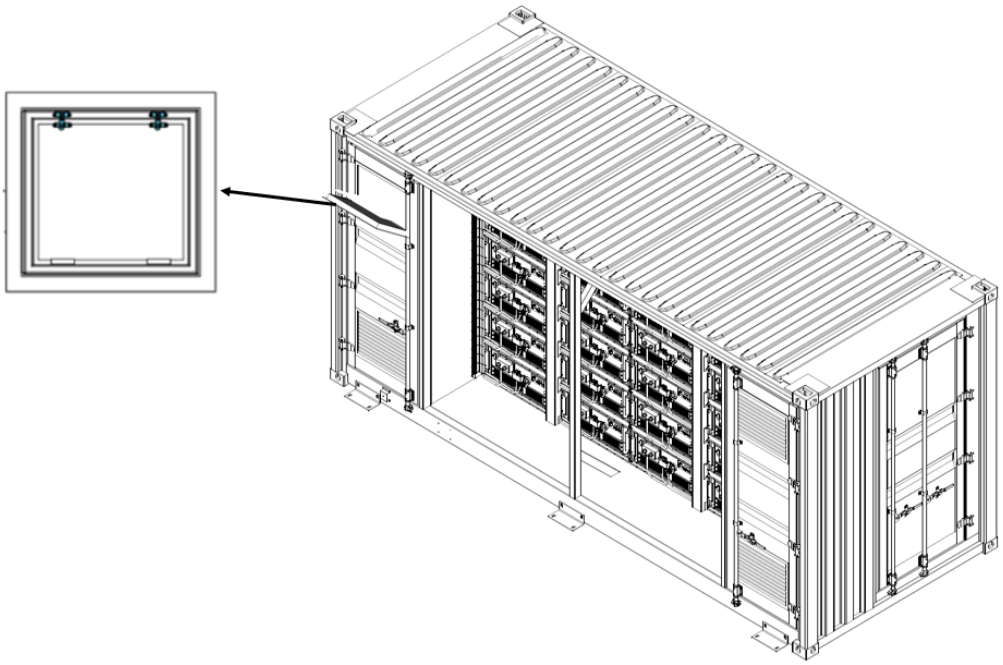


Figure 10-3 Buckles on the inner support panel

3. Pull out the filter screen at first, insert a new one and then fasten it with buckles.

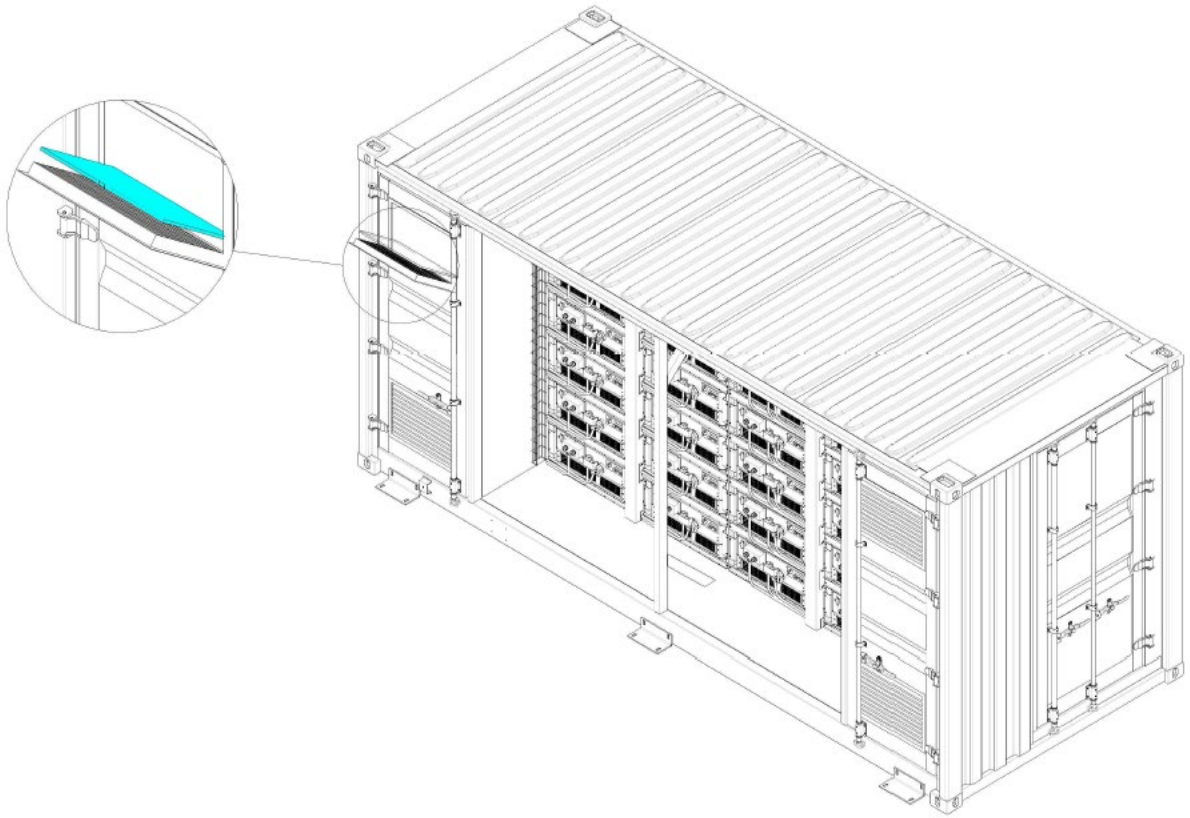


Figure 10-4 Replace the filter screen

4. Install the support panel to its original position and lock it.

Shanghai CHINT Power Systems Co., Ltd

Headquarters: No.5999, Guangfulin Road, Songjiang District, Shanghai, 201616, China

Switchboard: +86-21-37791222-866000

Fax: +86-21-37791222-866001

Website: www.chintpower.com

Service Hotline: +86-21-37791222-866300

Email: service.cps@chint.com