Pytes

Quick Installation and Operation Guide

All-in-One BESS

Pi STATION 261EX

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Support Contact Information

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Version:1.0, September 2026

Subject to change without notice.

For the Pytes Pi STATION 261EX - Complete User Manual,

scan the QR code:

Note: This quick guide briefly describes required installation steps. Please refer to the User Manual for more detailed information.

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1. Before Using

Warning

1. This equipment may only be installed, operated and maintained by a qualified skilled person (electrician).
2. The local safety regulations and relevant operating procedures must be observed during the installation, operation and maintenance of the equipment, otherwise the equipment may get damaged. The safety precautions mentioned in the manual are only a supplement to local safety regulations.

Danger

1. Keep the Li-ion battery away from water, dust and contamination, otherwise it may cause explosion or other harmful conditions that may even lead to personal injury.
2. Do not short-circuit the Li-ion battery.
3. Observe the positive (+) and negative (-) marks on the Li-ion battery and equipment and ensure correct use. Do not reverse the Li-ion battery.
4. Do not dismantle, crush, puncture, open or shred the Li-ion battery.
5. Before removing or reconnecting with the running system, the power must be off and the system should be shut down, otherwise there will be a risk of electric shock.
6. Do not expose Li-ion battery to heat or fire. In case of fire, please use dry powder fire extinguisher.
7. Do not dismantle any part of the system without contacting PYTES or PYTES authorized technical engineers. System failure caused by such will not be covered by the warranty.
8. Before operating the inverter, make sure that all batteries have been started up.

Caution

1. Do not dispose of batteries in fire. The batteries may explode.
2. Do not open or mutilate batteries. Released electrolyte can prove harmful to the skin and eyes. It may be toxic.
3. A battery can present a risk of electric shock and burns by high short-circuit current.
4. A malfunctioned battery can reach temperatures that exceed the threshold of contact surface. The following precautions should be observed when working on batteries:
   a) Disconnect the power and loads before connecting or disconnecting battery terminals;
   b) Do not wear any metal objects, including watches and rings;
   c) Use tools with insulated handles;
   d) Do not lay tools or metal parts on top of batteries;
   e) Wear personal protective equipment;
   f) Make sure the battery is well grounded.

Contact with any part of a poorly grounded or ungrounded battery can cause electric shock and burns by high short-circuit current.

The risk of such hazards can be reduced if conductive surroundings are removed by a skilled person during installation and maintenance.

The battery should be charged within 12 hours when it's fully discharged or over-discharging protection mode is activated. Fail to follow this instruction will damage the battery and is not covered by warranty.

This symbol on the product means: Do not dispose of this product with general household waste. Consult your local regulations for proper disposal instructions.

2. Safety and Handling Instructions

Read this entire document before installing or operating the Pytes Pi STATION 261EX Battery (referred to as the “Battery”). Failure to do so or to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, or death, or may damage the battery and other property.

2.1 Optimize Battery Performance

1. Battery life is the amount of time your battery runs before it needs to be recharged.
2. Battery lifespan is the amount of time your battery lasts until it needs to be replaced.
3. Maximize both and you'll get the most out of your battery.

2.2 Avoid Extreme Ambient Temperatures

1. This equipment is designed to perform well in a wide range of temperatures, with charge: -20°C~60°C (-4°F~140°F).
2. Discharge: -20°C~60°C (-4°F~140°F) as the ideal comfort operation zone.
3. It's important to avoid exposing your battery to ambient temperatures higher than 55°C (131°F).

2.3 Energy Storage System Security

1. It is forbidden to open the cabinet door while the system is running.
2. Avoid standing at the cabinet door (including within the opening range of the door) when the energy storage system is malfunctioning.
3. Emergency evacuation of the site should be carried out when the fire audible and visual alarms are triggered.
4. The energy storage system must be equipped with protective measures such as fences and walls, and safety warning signs must be erected for isolation to avoid entry of unauthorized personnel during the operation of the equipment, which may result in personal injury or property damage.

Refer to the following list for abbreviations used in this document:

Table 1. List of Abbreviations

Abbreviation	Full Name
BAT	Battery Pack
EMS	Energy Management System
PCS	Power Conversion System
BMS	Battery Management System
DC	Direct Current
AC	Alternating Current
UPS	Uninterruptible Power Supply

3. What's in the Package

Cover plate × 4

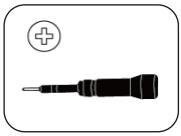
Mounting foot × 4

Power cable × 4

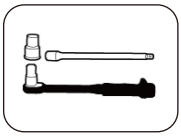
Lifting ring × 4

4. Required Personnel and Tools

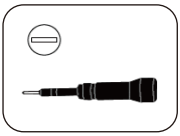
Installation tools include but are not limited to the following recommended ones. If necessary, use other auxiliary tools on site.



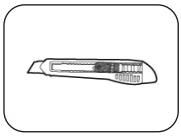
Phillips insulated torque screwdriver



Insulated torque socket wrenches (incl. extensions)

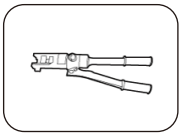


Insulated torque screwdriver



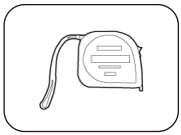
Art knife

Wire stripper



Hydraulic press

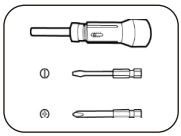
Multimeter (DC voltage range ≥ 15000V DC)



Steel tape measure

Adjustable wrench

Rubber mallet

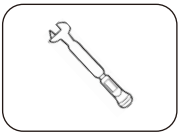


Torque screwdriver

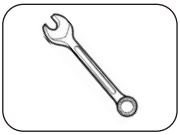
Allen key

Hammer

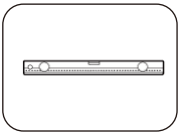
Combination sleeve



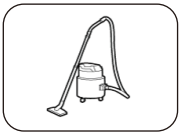
Open-end torque wrench



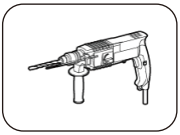
Combination wrench



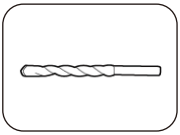
Level (for checking device horizontality)



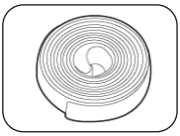
Dust catcher



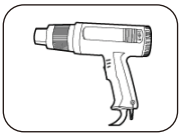
Pneumatic drill



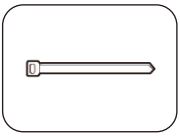
Drill 12mm



Heat shrink tubing

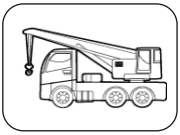


Heat gun

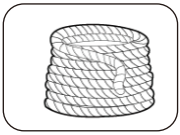


Zip ties

Insulated ladder

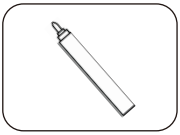


Cable cars



Sling

Forklift trucks



(Permanent) marker (pen)

Terminal crimping pliers

Wire stripper

Network wiring pliers

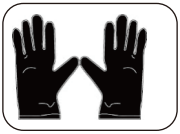
Ratcheting crimping pliers

Large range clamp ammeter

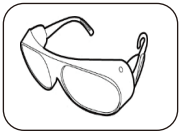
Extra-large range clamp-on ammeter

Infrared thermometer

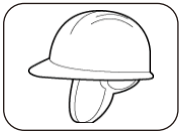
Universal plug conversion socket



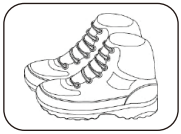
High voltage insulated gloves



Safety goggles



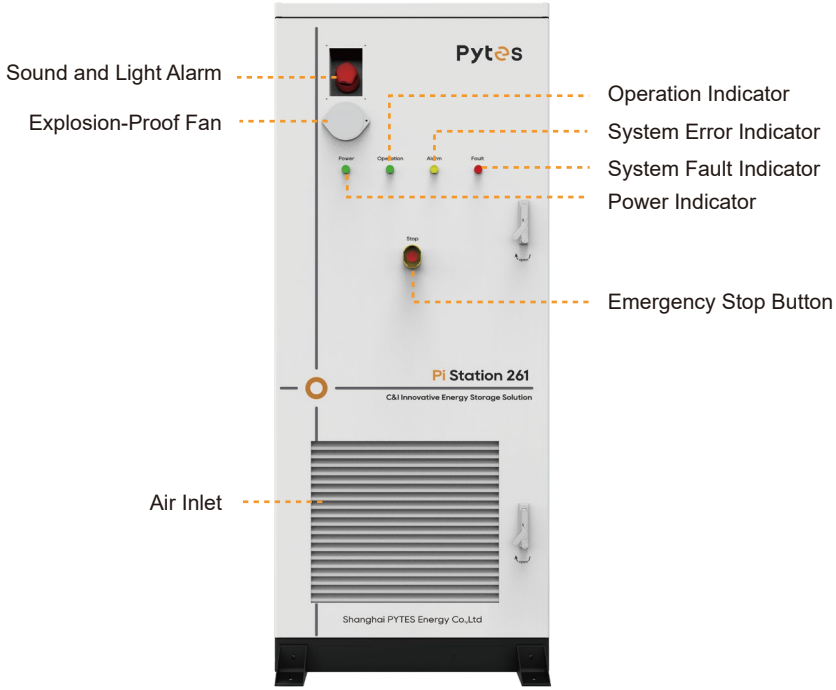
Safety helmets



Safety footwear

Only qualified professionals with training in high voltage DC systems may perform this installation.

5. Pi STATION 261EX Components



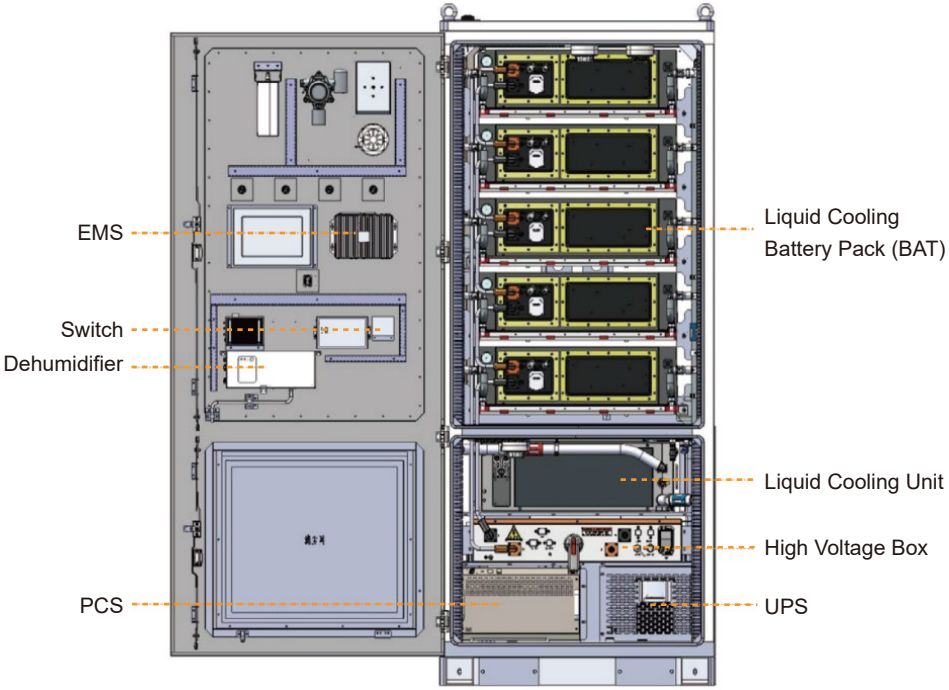


Figure 1. Pi STATION 261EX Component Diagram

6. Installation Prerequisites

6.1 Environment Requirements

1. The energy storage system must be installed on concrete or other noncombustible surfaces, and the mounting plane must be level, firm, and flat with sufficient bearing capacity. The installation level should be higher than the highest historical water level in the area and at least 300mm above the horizontal ground level, and the installation location should not be in a low-lying area.
2. The energy storage system or energy storage plant must be located in an environment free from the risk of ignition and explosion.
3. Choose a well-ventilated place.
4. Place the product on a flat and level surface to ensure stability.
5. Minimize dust and dirt in the installation area for optimal performance.
6. Ensure fire extinguishers or other fire-fighting equipment are available nearby.
7. Always power off the battery before performing any maintenance or adjustments.

Before installing or removing the battery, make sure that the system is disconnected from any power source and that the battery device is turned off.

6.2 Space Requirements

The energy storage integration cabinet must be installed with adequate clearance from walls and other equipment to meet the requirements for minimum access aisles, evacuation paths and ventilation.

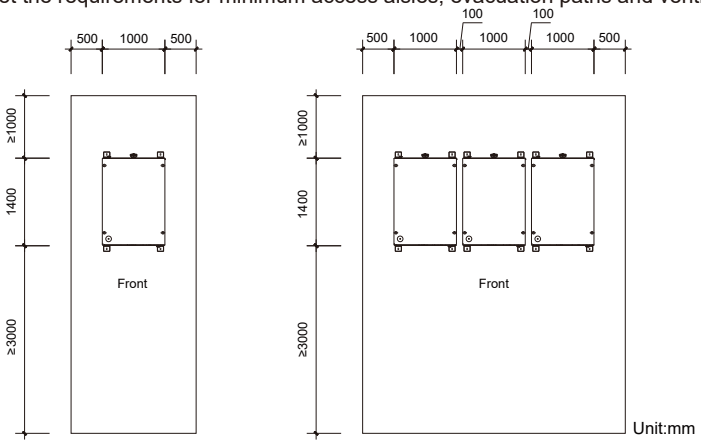


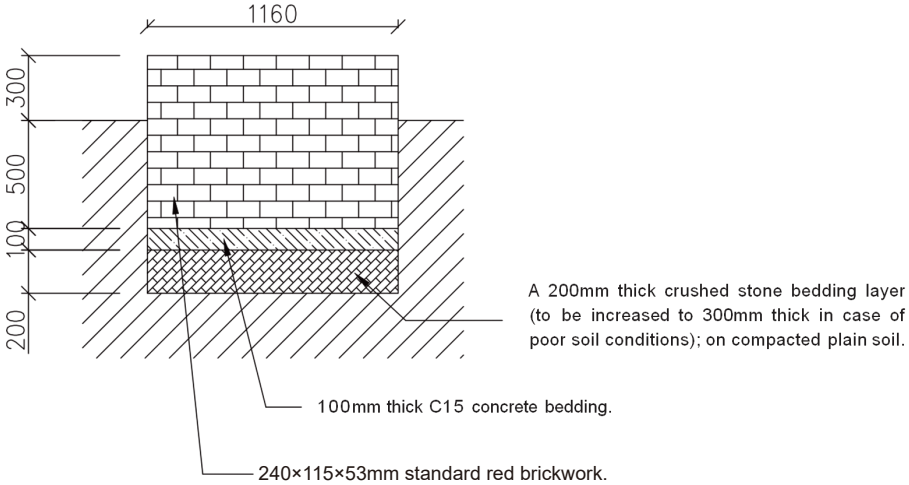
Figure 2. Recommended System Installation Space

Table 2. Specific Space Requirements

Distance	Requirement
Distance from rear wall	≥1000mm
Side to side cabinet distance	100mm
Distance from side wall	500mm
Distance from front wall	≥3000mm

6.3 Foundation Requirements

The energy storage cabinet weighs 2.5 tonnes. It must be placed on a stable, non-combustible surface (concrete) that is perfectly level to prevent structural twisting of the cabinet.



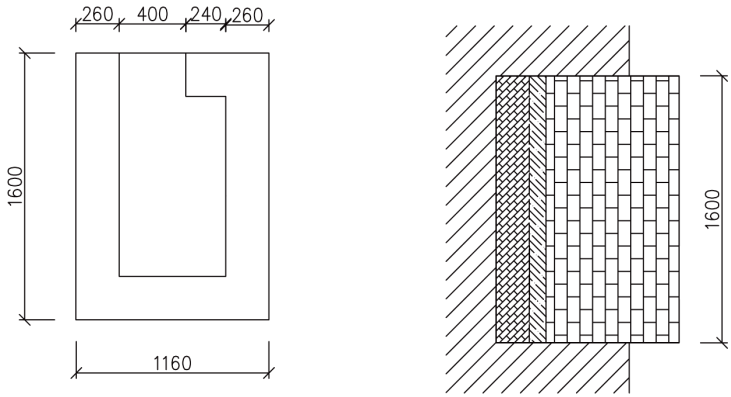


Figure 3. Cabinet Foundation Layout

Build the concrete foundation according to the dimensions in Figure 3. Crucially, cast a weep hole (as shown in the detail below) into the foundation wall to allow any trapped groundwater to drain out, preventing water pressure against the cabinet.

Note: Ensure the top surface of the concrete foundation is smooth, flat, and level to support the cabinet weight evenly.

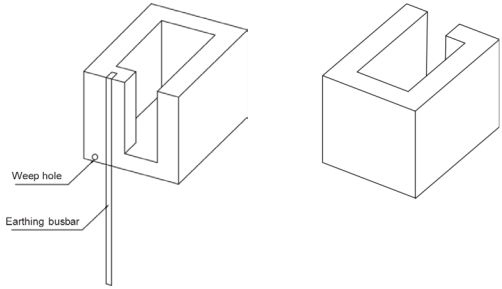


Figure 4: Foundation Finishing Details (Weep Hole and Leveled Concrete Surface)

⚠ SAFETY PRECAUTIONS (Foundation Inspection):

- **Curing verification:** Do not place the 2.5-tonne cabinet on the foundation until the concrete has fully cured (minimum 7-14 days). Placing the cabinet on uncured concrete may cause structural failure, cracking, or tilting of the cabinet.
- **Weep hole clearance:** Ensure the weep hole is clear of debris and positioned to drain water away from the cabinet base. Blocked weep holes can cause water accumulation, increasing the risk of electric shock and corrosion of the cabinet's metal base.
- **Trip hazards:** Keep the foundation area clean and free of protruding rebar, sharp edges, or construction debris to prevent personal injury during the lifting and placement of the cabinet.
- **Load capacity:** Confirm the ground beneath the foundation is stable and compacted. If the soil has settled or eroded before installation, do not proceed - consult a civil engineer.

7. Product Installation

Step 1. Install the top lifting ring of the energy storage system as follows.

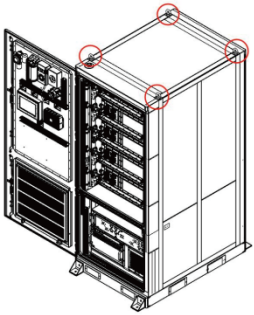


Figure 5. Top Lifting Ring Mounting Diagram

Note: Before lifting, refer to the layout rendering (Figure 4) to confirm the exact orientation and clearances for the cabinet on the foundation. Proceed after confirmation.

Step 2. Use a crane or forklift to place the energy storage system on the foundation. A single Pi STATION 261EX device weighs 2.5 tonnes, so it is essential to ensure that the transportation equipment used has a minimum load capacity matching this weight.

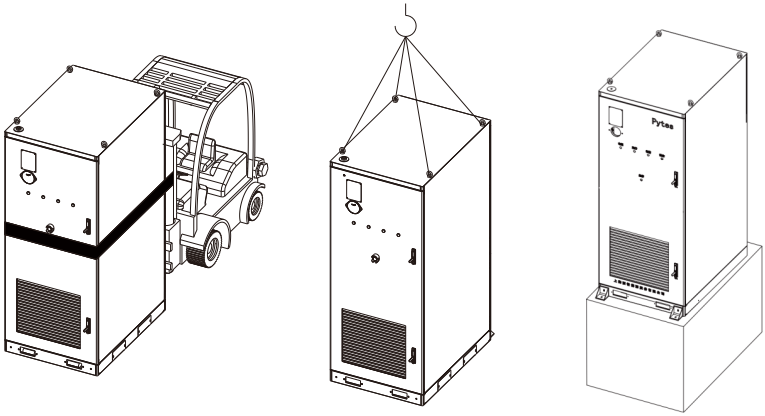


Figure 6. Lifting and Positioning of Pi STATION 261EX

Step 3. (1) Drill the holes into the foundation through the waist hole on the cabinet base.
Number of holes: 4, diameter of hole: 12mm, Depth of hole: 80-90mm.
(2) Fix the energy storage cabinet on the foundation with M10×100 expansion screws through the waist hole on the base.
Tightening torque: 45N·m

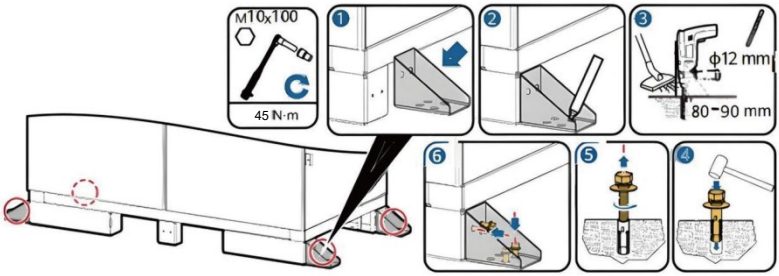


Figure 7. Installation and Fixation Diagram of Energy Storage Cabinet

8. Electrical Connection

Step 1. Connect the negative terminal of the high voltage box to the negative terminal of BAT1.

Step 2. Connect the battery packs in series, from the positive terminal of BAT1 to the negative terminal of BAT2, and then connect the BAT2-BAT5 in sequence.

Step 3. Connect the positive terminal of the high voltage box to the positive terminal of the BAT5.

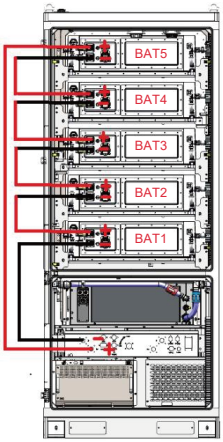


Figure 8. Power Cable Connection Diagram

⚠ **Make sure the mounting cables and equipment are not energized before installation.**

Step 4. Select bolts of appropriate size and use a wrench to fasten the L1, L2, L3 and N phase cables to the disconnect switch of the energy storage cabinet. Securely connect the ground wire to the designated grounding point.

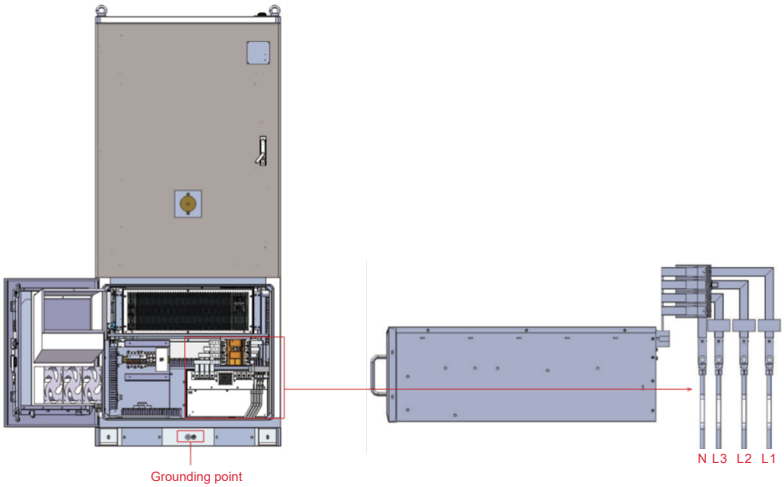


Figure 9. Power and Ground Wire Connection Diagram

Step 5. Connect terminals 13 and 14 on the lower row of the double terminal strip at the rear of the energy storage cabinet to terminals 21 (485A) and 22 (485B) of the reverse power meter, respectively (13 connects to 21, 14 connects to 22). This connection is only required for the master cabinet and not needed for slave cabinets.

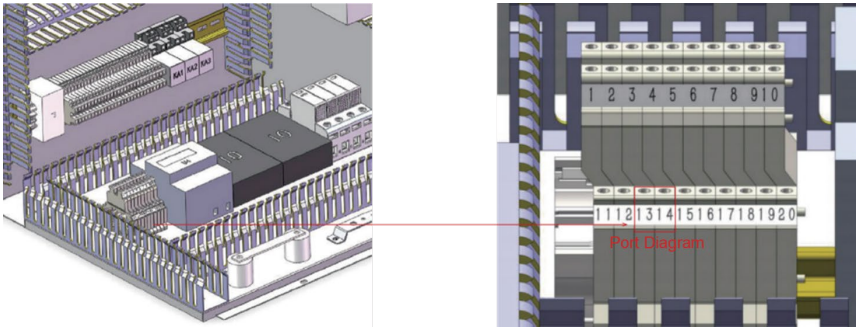


Figure 10. Power Meter Terminal Connection Diagram

Step 6. Refer to the DTSD1352-CT secondary meter wiring diagram. DTSD1352 represents the master meter on the user's grid side. The current direction of the wiring harness should match the direction of the arrow on the mutual indicator.

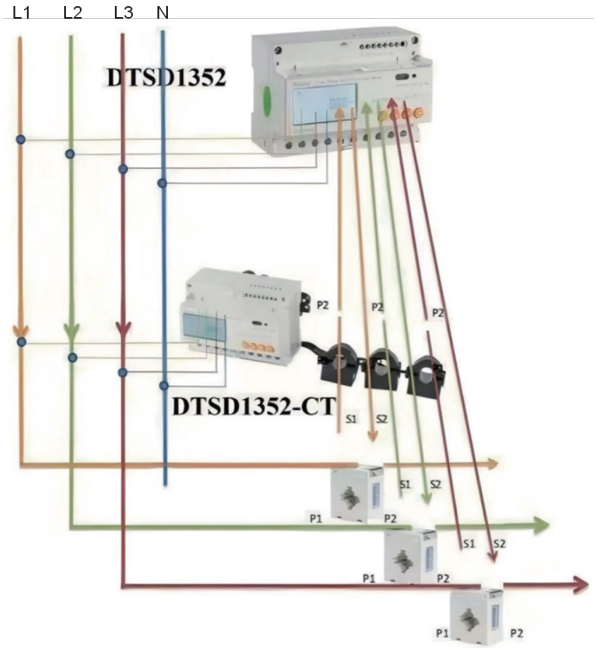


Figure 11. DTSD1352-CT Meter Wiring Diagram

Step 7. For a master-slave cabinet system, the switches in the master and slave cabinets shall be interconnected via Ethernet cables.

9. Power-On Operation

Note: Before starting the system, strictly check the connection terminals to ensure that the terminals are firmly connected.

Step 1. Switch the grid-connecting cabinet or grid circuit breaker to the ON position.

Step 2. Switch the QF4 circuit breaker (between the AC side of the liquid-cooled energy storage cabinet and the grid) to the ON position.

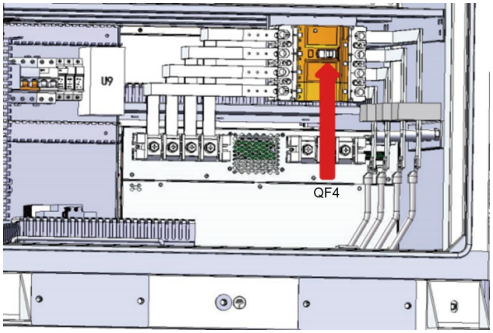


Figure 12. QF4 Circuit Breaker ON

Step 3. Switch the disconnect switch on the high voltage box to the ON position.

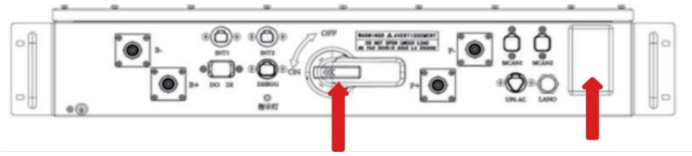


Figure 13. Schematic Diagram of High Voltage Box

Step 4. Switch on the circuit breakers of each liquid-cooled energy storage cabinet component in the following sequence: QF5 → QF3 → QF8 → QF2 → QF6 → QF10 → QF9.

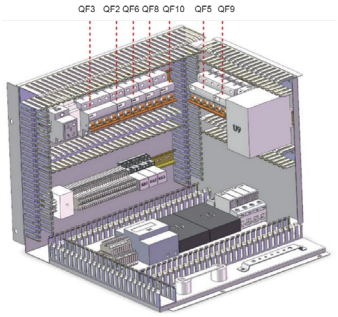
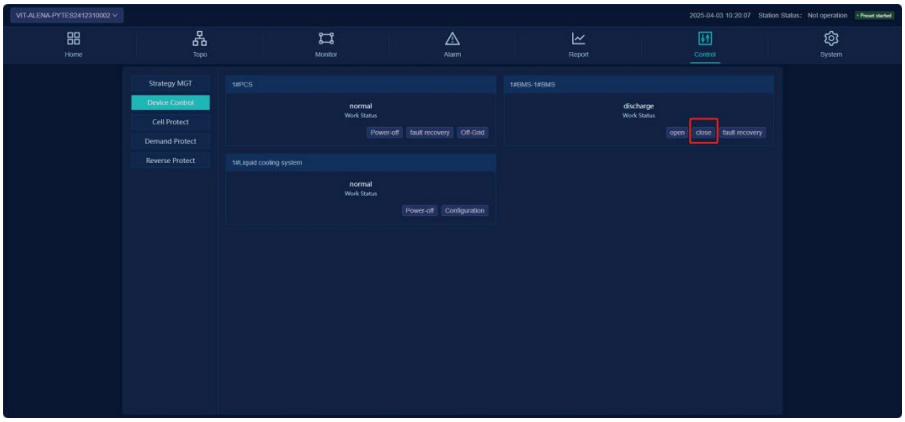


Figure 14. Circuit Breaker Position Diagram

Step 5. If the UPS is inactive, press and hold the ON button to start the UPS.

Figure 15. UPS Startup Diagram

Step 6. Log in to the cloud platform. Navigate to “Control Center - Device Control”, close the high voltage box contactor and power on the liquid cooling system. Then, configure the operation strategy and activate it to initiate normal operation.



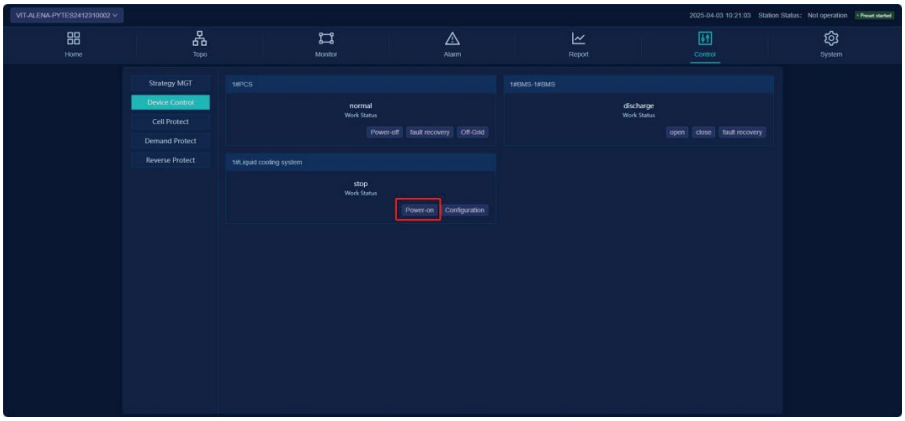


Figure 16. Device Control Interface

10. Reset Procedure for Fault and Power Failure

Purpose:

This procedure outlines the standardized steps to safely restore power to the liquid-cooled energy storage cabinet following a power outage, fault trip, or emergency stop (e.g., fire alarm, water immersion).

⚠ CRITICAL SAFETY WARNING:

DO NOT switch on all circuit breakers simultaneously. Restoring power to all components simultaneously constitutes a high-risk and non-compliant operation, which may result in severe equipment damage and personal injury.

Risks of Simultaneous Power-On:

- High inrush current: A massive surge current may overload the system.
- Protection device malfunction: Circuit breakers or fuses may experience nuisance tripping, or fail to trip under fault conditions.
- Dangerous arcing: High inrush currents may produce hazardous arcs.
- Safety violation: The operation violates standard safety procedures.

The correct and only safe method is to follow the standard reset procedure below to distribute the load and mitigate risks.

Standard Reset Procedure:

Step 1. First confirm that QF4 circuit breaker is in the OFF state (handle to the left indicates OFF, as shown in the figure below).

Figure 17. QF4 Circuit Breaker OFF

Step 2. Switch off the following circuit breakers of each liquid-cooled energy storage cabinet component: QF3, QF2, QF6, QF8, QF10, QF9.

Step 3. After the external power supply is restored, switch on the circuit breakers of each liquid-cooled energy storage cabinet component in the following sequence: QF4 → QF3 → QF8 → QF2 → QF6 → QF10 → QF9.

Step 4. If the UPS is inactive, press and hold the ON button to start the UPS.

Step 5. Log in to the cloud platform. Navigate to “Control Center - Device Control”, close the high voltage box contactor and power on the liquid cooler. Configure the operation strategy and activate it to initiate normal operation.

11. Remote Reset Operation

Purpose:

This reset operation applies to scenarios such as emergency stop activation, PCS faults, and BMS alarm faults.

After logging into the Control Center page using password 888888 and clicking “Start” under Strategy MGT to run the strategy, the system pops up a prompt “Please go to System Management - Fault Reset menu to perform EMS reset. After resetting, issue the strategy again”. This indicates the system previously experienced an operational fault that caused the strategy to stop.

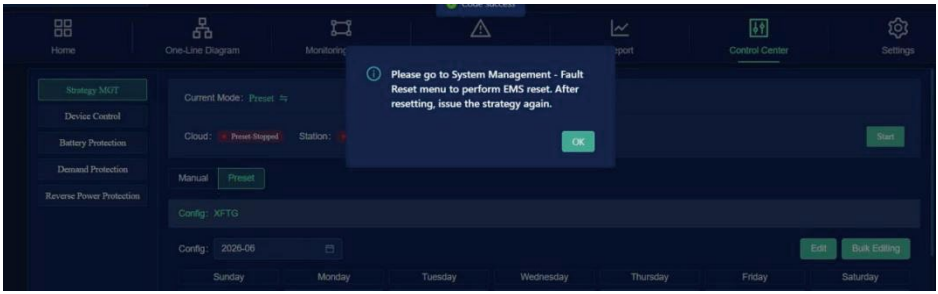


Figure 18. Operational Fault Prompt

Standard Reset Procedure:

Step 1. Log in to the Control Center using password 888888, navigate to the Device Control page, then click “Fault Recovery” for the PCS device.

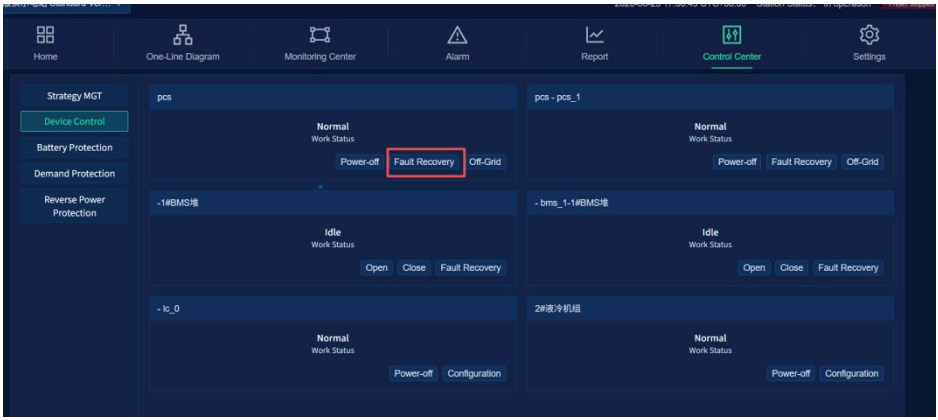


Figure 19. Fault Recovery Button

Step 2. Then check the fault status of the PCS device on the Monitoring Center page. Proceed to the next step if the status is “Normal”; if the status shows “Fault”, click “Fault Recovery” again.

Step 3. After confirming that the PCS device fault status displayed on the Monitoring Center is “Normal”, log in to the Control Center page, navigate to the Device Control, and click “Close” to close the BMS contactor.

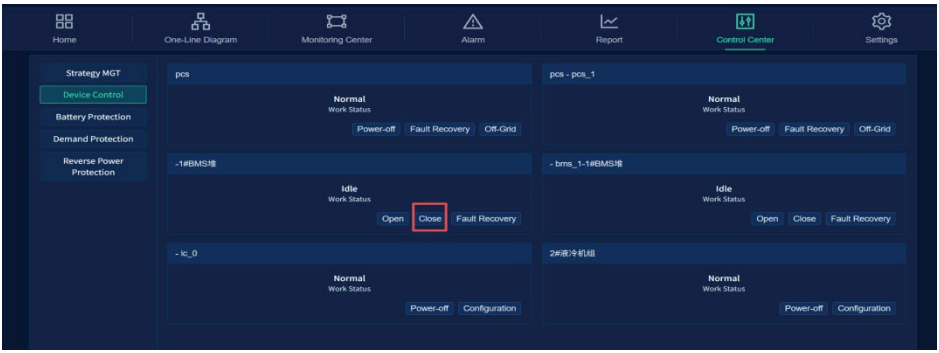


Figure 20. BMS Contactor Close Button

Step 4. Check the “DC Voltage” of the PCS device on the Monitoring Center page. Proceed to the next step if the DC voltage is within the normal range.

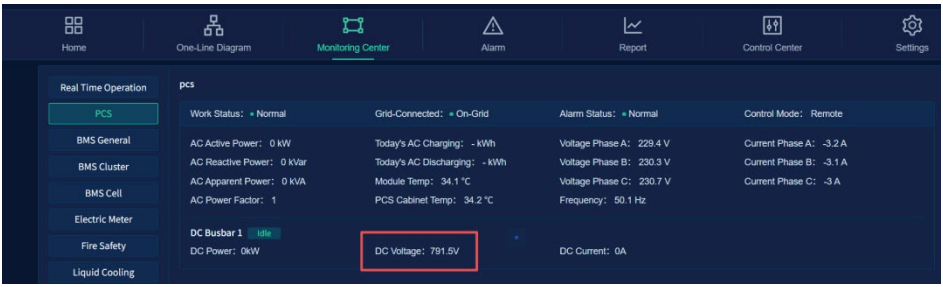


Figure 21. Check PCS DC Voltage

Step 5. Navigate to the EMS Recovery page under Settings, click “EMS Recovery”, enter the password 888888, and then click “Confirm” (it usually takes 1 to 2 minutes for a response after clicking “Confirm” due to network latency).

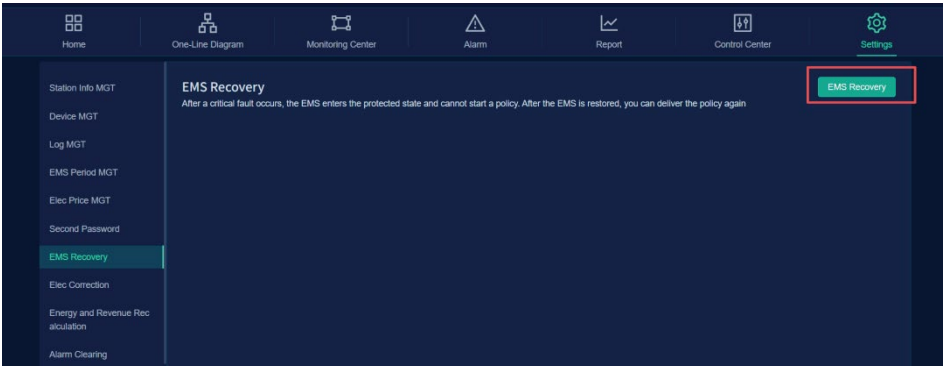


Figure 22. EMS Recovery Button

Step 6. Log in to the Control Center page using password 888888, then click “Start” under Strategy MGT to activate the strategy.

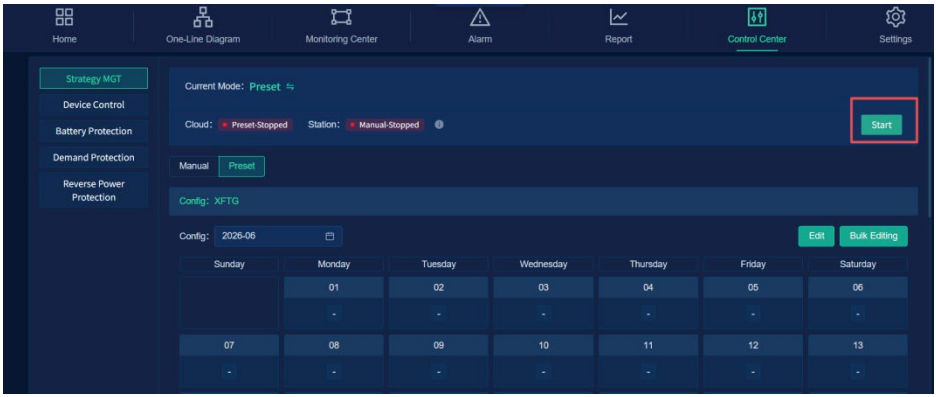


Figure 23. Strategy Start Button

12. Power-Down Operation

Step 1. Log in to the cloud platform and stop the strategy in “Control Center - Strategy MGT”.

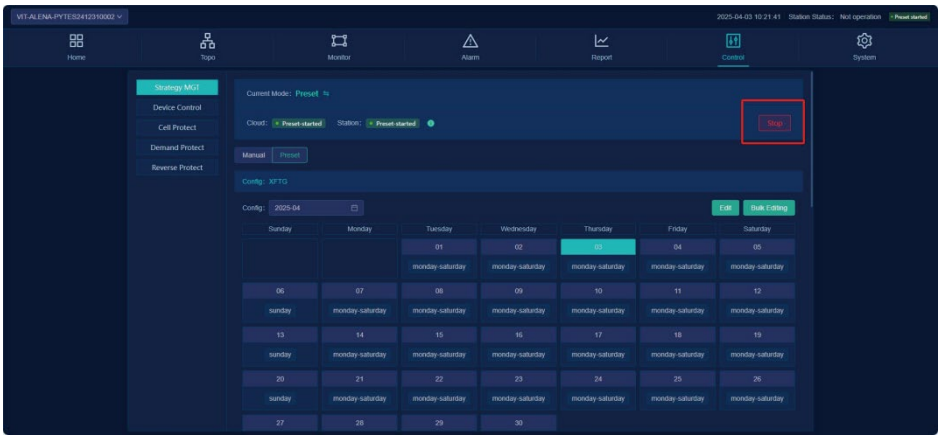


Figure 24. Strategy Stop Button

Step 2. Navigate to “Control Center - Device Control - Liquid Cooling System”, shut down the liquid cooling system when its operating status is standby.

Step 3. Switch off the circuit breakers of each liquid-cooled energy storage cabinet component in the following sequence: QF9 → QF10 → QF6 → QF2 → QF8 → QF3 → QF5.

Step 4. Press and hold the OFF button on the UPS to turn off the UPS.

Step 5. Switch the QF4 circuit breaker (between the AC side of the liquid-cooled energy storage cabinet and the grid) to the OFF position.

⚠ **Do not discard this document! After installation, keep it adjacent to the Battery for future reference!**

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